WELL-LOG DATA, OFFICER BASIN, SOUTH AUSTRALIA

BY J.F. LINDSAY AND K. REINE

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Australian Geological Survey Organisation

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SUMMARY

The Officer Basin is a poorly exposed Neoproterozoic and Early Palaeozoic intracratonic basin in south central Australia. The Officer Basin Project was developed co-operatively between the Australian Geological Survey Organisation (AGSO) and the Department of Mines and Energy, South Australia (MESA) as part of the National Geoscience Mapping Accord (Lindsay & others, 1991; Leven & Barton, 1991). The main AGSO objectives were to evaluate the resource potential of the region and promote petroleum exploration by developing a depositional and post-depositional model of the basin.

These objectives were accomplished by means of an integrated basin analysis involving the reassessment of existing seismic, well-log and potential field data and the gathering of approximately 550 km of new seismic data. The results of this work have been assembled as a major basin atlas (Lindsay, in prep.). This record summarises details of the analysis and reassessment of well-log data from the South Australian part of the basin.

INTRODUCTION

The Officer Basin underlies one of the most arid and inaccessible regions of the Australian continent and for that reason is perhaps the most poorly understood of the continent's intracratonic basins (Fig. 1). The basin is very poorly exposed due largely to a widespread Pleistocene and Holocene sand-dune cover. As is the case in many intracratonic basins in Australia, hydrocarbon prospectivity is perceived to be relatively limited and in combination with access and logistical problems the basin has been seen as a high risk prospect. As a consequence only a limited number of wells have been drilled in the South Australian part of the basin. Most are to the extreme east with only one well drilled close to Western Australian border (Birksgate #1).

Beginning in 1990 the Australian Geological Survey Organisation (AGSO), as part of a larger basin study program, gathered 550 km of new seismic data (Fig. 2) and re-evaluated earlier seismic data and some key existing well-log data from the South Australian part of the basin and assembled a digital database (Lindsay, in prep.). In the following document the extent of the well-log data in this part of the basin is outlined and the re-evaluated data are summarised to make the information contained within the database more readily accessible.

GEOLOGIC SETTING

The Officer Basin extends west to east from longitude 125°E in Western Australia to longitude 132° 30'E in South Australia, a distance of more than 1100 km (Fig. 1). From north to south it extends from latitudes 27°S to 32°S, a distance of 550 km, and covers an area of 375,000 km^2 (Palfreyman, 1981). To the north the basin terminates against the older (Early to Middle Proterozoic) Musgrave Block whereas to the south it is onlapped by the younger sediments (Cretaceous to Tertiary) of the Eucla Basin. The Archaean to Middle Proterozoic Gawler Block forms the basin margin to the southeast.

The South Australian part of the basin can be subdivided into several distinct morphological features (Fig. 2). The Birksgate Sub-basin and Munyarai Trough occur along the northern margin of the basin and are in turn separated from a much larger platform area, the Murnaroo Platform, to the south by a shallow ramp or a low ridge (Ammaroodinna Ridge).

The basin contains a complex late Proterozoic to Cretaceous depositional succession much of which is either shallow marine or sub-aerial (Fig. 3). The stratigraphy of the eastern Officer Basin is summarised by Pitt & others (1980) and Brewer & others (1987) and more recently Gravestock & Hibburt (1991) and Lindsay (in prep.) have presented sequence stratigraphic models for the succession.

PLAY CONCEPTS

The Officer Basin has a very similar history to that of the Amadeus Basin (Lindsay & Korsch, 1989,1991; Lindsay & others, 1987) so we would expect a similar stratigraphy and perhaps some overall similarities in petroleum potential and play concepts (Gravestock, 1990a, 1990b). Like the Amadeus, the Officer Basin has a series of major sub-basins along its northern margin which shallow to the south to a broad platform, the Murnaroo Platform (Fig. 2 & 4). Hydrocarbon shows have been encountered along the southern margin of the sub-basins towards the eastern end of the basin in association with the Ammaroodinna Ridge. Anticlines and fault traps associated with the Alice Spring Orogeny are the most likely structural traps as are diapiric structures and anticlines associated with salt movement. The best potential for thrust related plays is towards the eastern end of the Munyarai Trough in the Marla Overthrust Zone (e.g. seismic line 85.0093, Fig. 2). A number of shallow wells have been drilled

Figure 1. Distribution of Neoproterozoic and early Palaeozoic intracratonic basins on the Australian craton. Basins initiated in the Neoproterozoic are stippled those initiated in the early Palaeozoic are hatched while the cross-hatched areas indicate the distribution of basic volcanics (after Lindsay & others, 1987).

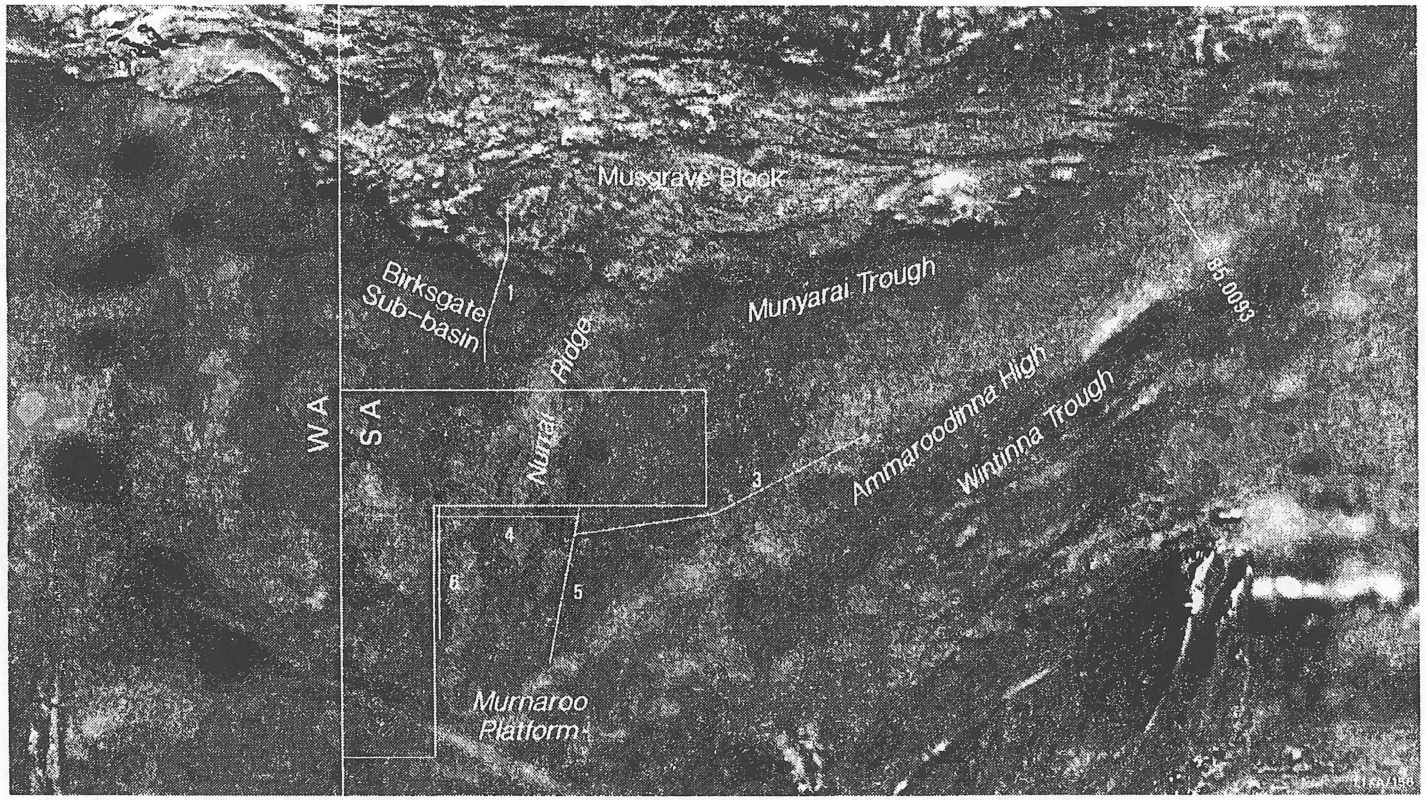

Figure 2. Greyscale image of total magnetic intensity for the eastern portion of the Officer Basin and the Musgrave Block in southern Australia showing basin architecture and the location of deep seismic reflection profiles (93AGS.I1 to L6) and seismic line 85.0093. The area outlined between the northernmost deep seismic line and the southern grid indicates the boundaries of a conservation park which was not accessible to the survey.

in this area (Fig. 4). The most likely source rocks in the region probably occur within the Ungoolya Group and any trapping structures would potentially have access to hydrocarbons from a very large area of the sub-basin. By analogy with the Dingo Field in the Amadeus Basin the Ungoolya Group is most likely to be gas prone. Evaporitic units of the Alinya Formation (Fig. 3) also have some source rock potential but have as yet received little attention. A detailed burial history analysis is available in Moussavi-Harami & Gravestock (in prep.).

A limited number of wells have been drilled on or near the Ammaroodinna Ridge and associated structure along the basin's southern margin (Fig. 4). Giles #1 well is especially significant in that it was drilled on a basement high and is the only well that penetrates the lower part of the Neoproterozoic succession and offers source and reservoir information on the Pindyin Sandstone and Alinya Formation. Birksgate #1 well is the only well drilled within the Birksgate Sub-basin and is significant in that it penetrates a large proportion of the Ungoolya Group which, whilst of relatively low quality, has considerable potential as a source rock. Several wells penetrate a significant proportion of the succession in the Munyarai Trough although Munyarai #1 well is perhaps most significant in that it is a deep well and is the most basinward of the cluster of wells on the southern margin of the trough.

WELL-LOG DATA

Approximately 56 mineral and petroleum exploration wells have been drilled in the South Australian part of the Officer Basin (Table 1). Most were shallow mineral exploration holes drilled in the search for evaporitic minerals and penetrate a very limited part of the stratigraphic record. However, a number of wells (some drilled as wildcat petroleum wells) penetrate much deeper and provide insight into the basin's history. AGSO, as part of its basin program in the Officer Basin, has reinterpreted 25 of these deeper wells all of which are included in hard copy form as Appendix I.

As well as traditional wireline logs (gamma-ray and sonic) this hardcopy output includes interpreted lithologic logs with formation boundaries, palaeontology (where available), basic sequence stratigraphy, cored intervals, hydrocarbon shows and the age of the interval intersected.

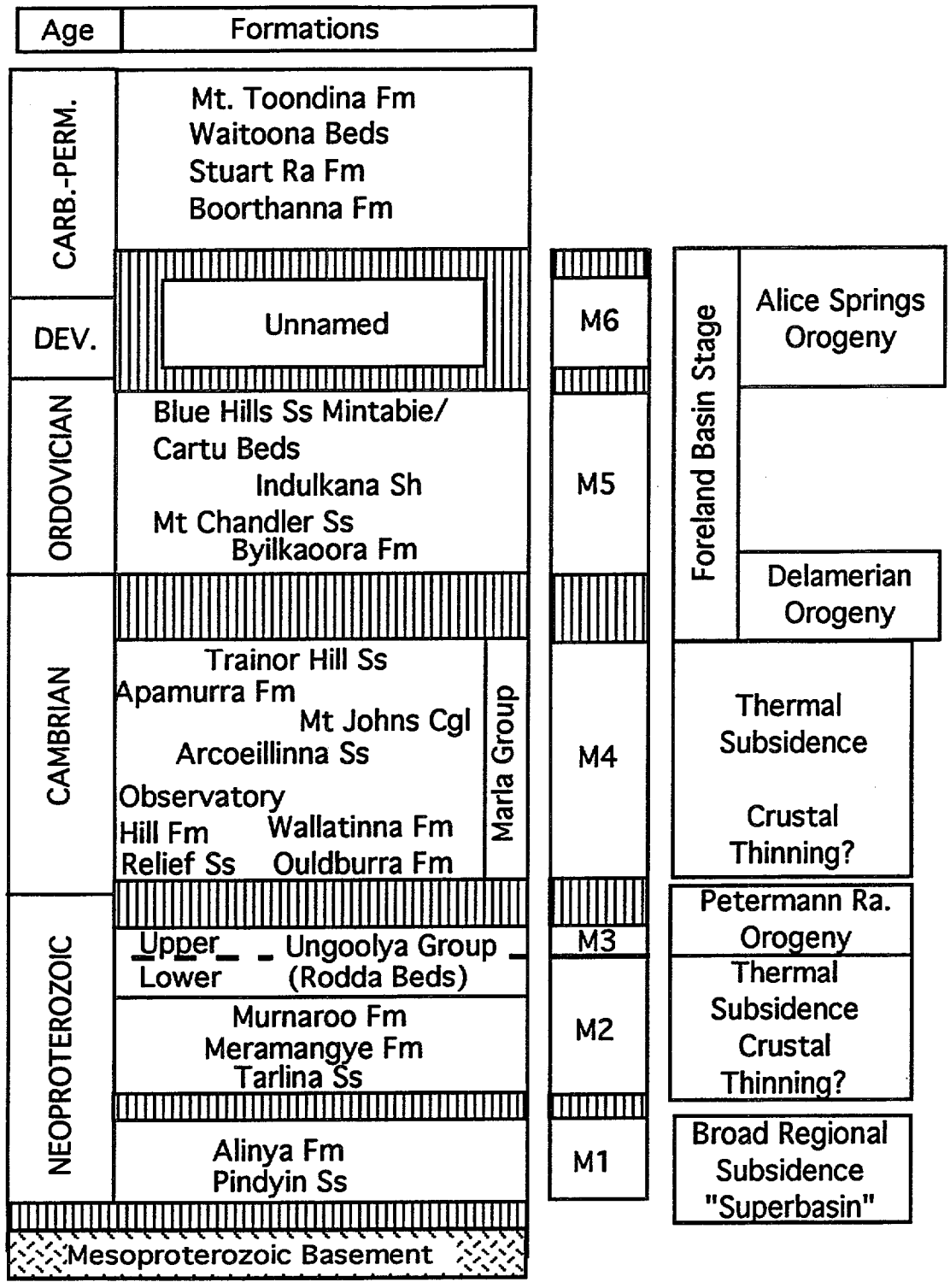

Figure 3. Simplified stratigraphy for the central and eastern Officer Basin, South Australia (adapted from Gravestock and Lindsay, 1994). Megasequences are labelled M1 to M6.

*Birksgate #1
Byilkaoora #1
*Byilkaoora #2
*Byilkaoora #3
*Emu #1
EOB #2
*Giles #1
*Karkaro #1
*Karlaya #1
*Lake Maurice East #1 (SMD #5002)
Lake Maurice West #1 (SMD #5001)
*Lairu #1
*Manya #1
*Manya #2
Manya #3
*Manya #4
*Manya #5
*Manya #6
Marla #1
Marla #IA
Marla #IB
Marla #2
*Marla #3
Marla #4
*Marla #5
Marla #6
Marla #7
Marla #8
Marla #9
Marla #10
*Meramangye #1
*Middle Bore #I
Mt.Willoughby #1
*Munta #1
*Munyarai #1
*Murnaroo #I
Nicholson #1
Nicholson #1A
Nicholson #2
OBD #1
OBD #3
OBD #5
OBD #6
OBD #7
OBD #8
OBD #9
OBD #10
OBD #11
OBD #12
*Observatory Hill #I
*Officer #1
Rodda #2
*Ungoolya #1
Wallira #2
Wallira West #1
*Wilkinson #1

Table 1. Listing of all exploration wells within the Officer Basin, South Australia. A more comprehensive listing of these wells is available in Hibburt (1990).

*Reinterpreted wells

Original uninterpreted wireline logs are available in digital form from:

Wiltshire Geological Services
13 St. Andrews Avenue
Mt. Orsmond
South Australia 5064
Phone (08) 379 3246 Fax (08) 370 7732

The following listing provides basic information about the wells in Appendix I:

Birksgate #1: Exoil

Location: OEL 28 27° 56'20"S 129° 48'10" E

Elevation(KB)/Total Depth (m): 387.7 1878.2

Date Spudded/Completed: 30:01:1967 09:03:1967

Cored Interval (m): 722.4-725.4; 816.9-820.0; 964.7-973.2;1098.8 1116.8; 1250.0-1256.1; 1376.5-1382.6; 1678.5-1681.6; 1875.4-1878.2

References: Analabs (1984); CRA (1982); Surdam & others (1982); van Niel (1984)

Byilkaoora #2: Comalco

Location: EL 696 27° 18' 05"S 133° 26' 58"E

Elevation(KB)/Total Depth (m): 353.0 806.7

Date Spudded/Completed: 09:05:1982 11:06:1982

Cored Interval (m): 400.0-806.7 (TD)

References: Comalco (1986, p. 434-487)

Byikaoora #3: Comalco

Location: EL 696 27°19' 39"S 133° 36' 51"E

Elevation(KB)/Total Depth (m): 326.6 698.0

Date Spudded/Completed: 15.05.1982 27.06.1982

Cored Interval (m): 264.0-698.0 (TD)

References: Comalco (1986, p. 550-595)

Emu #1: Exoil

Location: OEL 28 28° 37'45"S 132° 12' 05"E

Elevation(KB)/Total Depth (m): 246.1 417.9

Date Spudded/Completed: 28:08:1963 25:10:1963

Cored Intervals (m): 63.7-66.8; 152.7-155.8; 246.0-248.4; 336.8-339.9; 413.3-416.4 (TD)

No wireline logs

References: Surdam & others (1982); Analabs (1984); CRA (1982); van Niel (1984)

Giles #1: Comalco

Location: PEL 23 28° 25'59"S 132° 23'08"E

Elevation(KB)/Total Depth (m): 297.9 1326.8

Date Spudded/Completed: 17:09:1985 25:10:1985

Cored Interval (m): 1971.50-1326.76 (TD)

References: Dunster (1986)

Karkaro #1: MESA

Location: 28° 35' 58"S 133° 46' 27"E

Elevation(KB)/Total Depth (m): 206.8 481.6

Date Spudded/Completed: 15:05:1969 02:06:1969

Cored Intervals (m): 70.4-70.9; 313.9-316.9; 408.4-409.6; 434.0-438.9; 443.7-445.9; 476.4-481.3

Karlaya #1: Comalco

Location: PEL 23 28° 09' 31"S 132° 04' 58"E

Elevation(KB)/Total Depth (m): 355.3 2363.3

Date Spudded/Completed: 28:04:1987 06:07:1987

Cored Interval (m): 1012.90-2363.25 (TD)

References: Dunster (1987a)

Lairu #1: Comalco

Location: PEL 23 28° 09' 53"S 132° 08' 49"E

Elevation(KB)/Total Depth (m): 302.3 2039.6

Date Spudded/Completed: 11:07:1987 02:09:1987

Cored Interval (m): 1062.85-2039.55 (TD)

References: Dunster (1987b); Comalco (1987)

Lake Maurice East #1 (SMD #5002): MESA

Location: EL 919 29° 37' 00"W 131° 28' 00"E

Elevation(KB)/Total Depth (m): 218.0 738.9

Date Spudded/Completed: --:06:1982 --:--:1984

Cored Interval (m): 117.3-738.9 (TD)

Manya #1: MESA

Location: 27° 52' 29"S 133° 40' 21"E

Elevation(KB)/Total Depth (m): 242.5 151.3

Date Spudded/Completed: 10:09:1974 24:09:1974

Cored Intervals (m): 136.5-138.5; 148.8-151.3

References: Thornton (1975, 1978)

Manya #2: Comalco

Location: EL 699 27° 56' 03"S 133° 42' 51"E

Elevation(KB)/Total Depth (m): 236.0 646.0

Date Spudded/Completed: 28:10:1980 07:12:1980

Cored Interval (m): 4.8-643.8 (TD)

References: Comalco (1986, p. 3-35).

Manya #4: Comalco

Location: EL 698 28° 02' 11"S 133° 47'16"E

Elevation(KB)/Total Depth (m): 234.0 806.7

Date Spudded/Completed: 06:04:1981 19:05:1981

Cored Interval (m): 273.0-806.7 (TD)

References: Comalco (1986, p.115-136, p. 22-82)

Manya #5: Comalco

Location: EL 1073 27° 31' 39"S 134° 00'10"E

Elevation(KB)/Total Depth (m): 294.0 1333.3

Date Spudded/Completed: 20:05:1982 10:05:1983

Cored Interval (m): 398.0-1333.3 (TD)

References: Comalco (1986, p. 137-180)

Manya #6: Comalco

Location: EL 1073 27° 40' 24"S 134° 43' 00"E

Elevation(KB)/Total Depth (m): 265.6 1764.7

Date Spudded/Completed: 03:06:1982 09:07:1983

Cored Interval (m): 229.5-1764.7 (TD)

References: Comalco (1986, p.137-264); Smyth (1989)

Marla #3: Comalco

Location: EL 107 27° 17' 01"E 133° 45' 04"E

Elevation(KB)/Total Depth (m): 307.0 650.0

Date Spudded/Completed: 29.08.1984 15.09.1984

Cored Interval (m): 44.4-650.0 (TD)

References: Comalco (1986, p. 615-640)

Marla #5: Comalco

Location: EL 1070 27° 23' 28"S 133° 40' 36"E

Elevation(KB)/Total Depth (m): 306.0 649.9

Date Spudded/Completed: 19:10:1984 09:11:1984

Cored Interval (m): 79.0-649.9 (TD)

References: Comalco (1986, p.655-672)

Meramangye #1: Comalco

Location: EL 1076 28° 22' 10"S 132° 16' 28"E

Elevation(KB)/Total Depth (m): 260.2 690.6

Date Spudded/Completed: 27:09:1984 12:10:1984

Cored Interval (m): 96.2-690.6 (TD)

References: Comalco (1986, p. 315-347).

Middle Bore #I: Comalco

Location: EL 107327o 48' 20" 133o48'35"

Elevation(KB)/Total Depth (m): 262.4 557.6

Date Spudded/Completed: 29:04:1985 17:05:1985

Cored Interval (m): 159.5-557.6 (TD)

References: Comalco (1986)

Munta #1: Comalco

Location: PEL 23 28° 21' 27"S 131° 53' 52"E

Elevation(KB)/Total Depth (m): 371.2 2075.0

Date Spudded/Completed: 21:09:1987 01:12:1987

Cored Interval (m): 724.40-2075.00 (TD)

References: Comalco (1988); Cucuzza (1987)

Munyarai #1: Continental

Location: OEL 28 27° 41' 53"S 132° 00' 03"E

Elevation(KB)/Total Depth (m): 419.9 2898.6

Date Spudded/Completed: 06:07:1968 22:08:1968

Cored Intervals (m): 249.3-253.0; 544.1-548.6; 631.9 634.9; 866.5-869.6; 921.1-927.2; 1195.4-1200.6; 1479.5-1482.5; 1692.9-1696.8; 2133.6 2136.6; 2194.3-2197.6; 2287.2-2290.3;

2438.4-2441.,4; 2532.9-2535.9; 2609.7-2612.7; 2752.3-2755.4; 2895.6-2898.6

References: Analabs (1984); McKirdy & Cox (1986a, 1986b); Long & others (1988); CRA (1982); van Niel (1984)

Murnaroo #I: MESA

Location: 29° 01'25"S 132° 01'35"E

Elevation(KB)/Total Depth (m): 226.7 627.5

Date Spudded/Completed: 02:11:1976 07:12:1976

Cored Interval (m): 51.7-627.5 (TD)

References: Analabs (1984); Smyth (1989); CRA (1982); van Niel (1984); Gatehouse (1979a)

Observatory Hill #I: MESA

Location: 28° 58'18"S 131° 59' 56"E

Elevation(KB)/Total Depth (m): 212.9 400.1

Date Spudded/Completed: 09:05:1986 26:05:1986

Cored Interval (m): 1.5-400.1 (TD)

References: McKirdy & others (1986); Smyth (1989)

Officer #1: Continental

Location: OEL 28 27° 30' 52"S 132° 18'10"E

Elevation(KB)/Total Depth (m): 405.0 183.3

Date Spudded/Completed: 15:11:1968 23:11:1968

Cored Interval (m): 91.4-94.5; 180.1-183.2

Ungoolya #1: Comalco

Location: PEL 23 28° 08'39"S 132°11' 15"E

Elevation(KB)/Total Depth (m): 324.1 2192.6

Date Spudded/Completed: 02:11:1985 02:01:1986

Cored Interval (m): 309.2-2192.6(TD)

References: Smyth (1989); Henry (1986)

Wilkinson #1: MESA

Location: 29° 52'02"S 132° 33'55"E

Elevation(KB)/Total Depth (m): 183.7 710.0

Date Spudded/Completed: 05:06:1978 17:08:1978

Cored Interval (m): 107.9-111.05; 210.0-710.0 (TD)

References: Analabs (1984); McKirdy & Cox (1986a, 1986b); CRA (1982); Gerdes (1983); van Niel (1984); Gatehouse (1979b)

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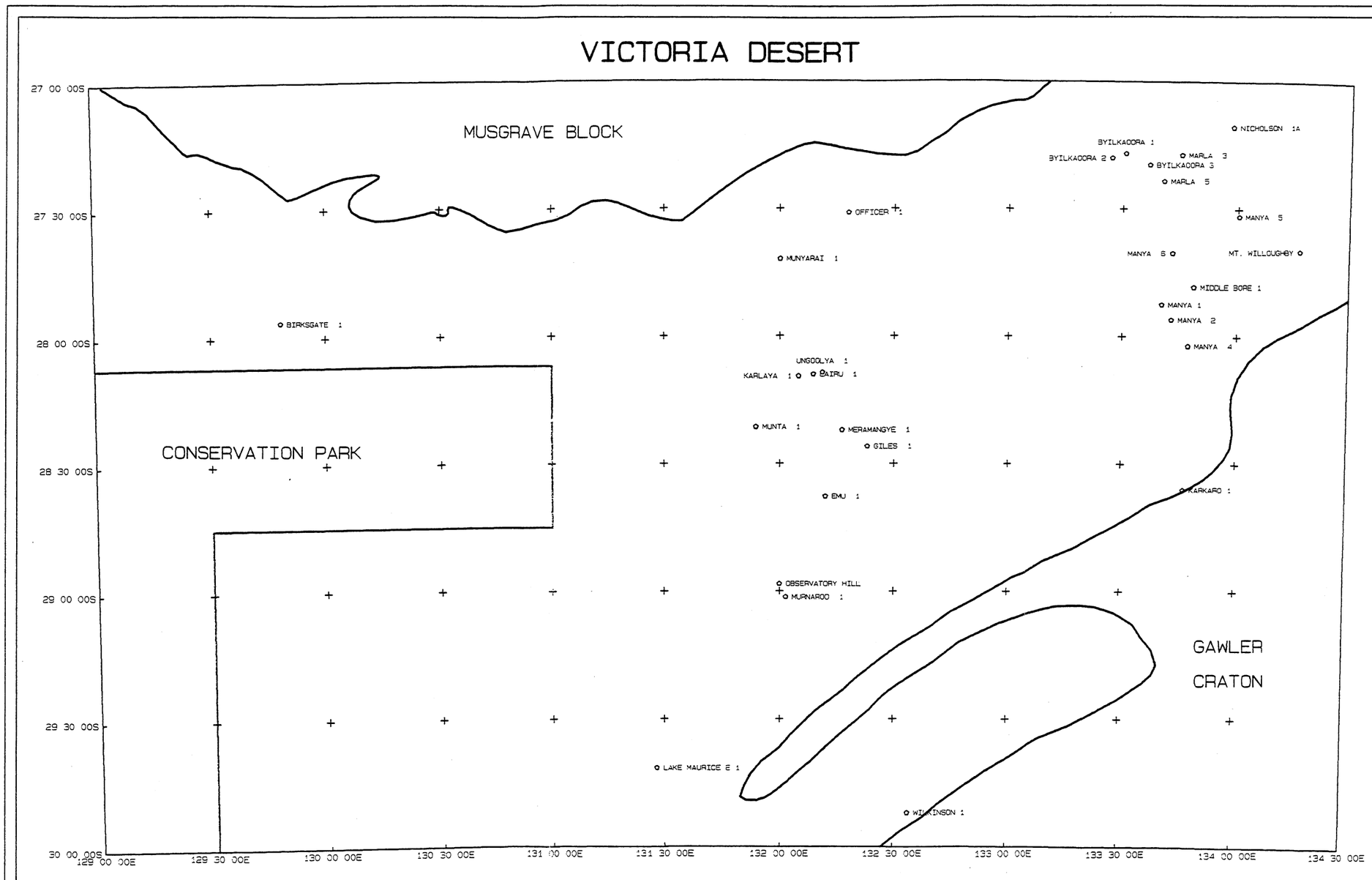

Figure 4. Officer Basin, South Australia showing the location of deeper exploration wells.

1 : 1000000
0 20 40 60 80 100
KILOMETRES

LAMBERT CONFORMAL CONIC PROJECTION
AUSTRALIAN NATIONAL SPHEROID
PARALLELS 27 30 00S AND 29 30 00S CENTRAL MERIDIAN 132 00 00E

OFFICER BASIN, SA

WELL LOCATIONS

20-DEC-94
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OFFICER BASIN, SOUTH AUSTRALIA

AGSO AUSTRALIAN GEOLOGICAL SURVEY ORGANISATION

BIRKSGATE 1

PLOT CREATED : 2-DEC-1994 14: 19: 47

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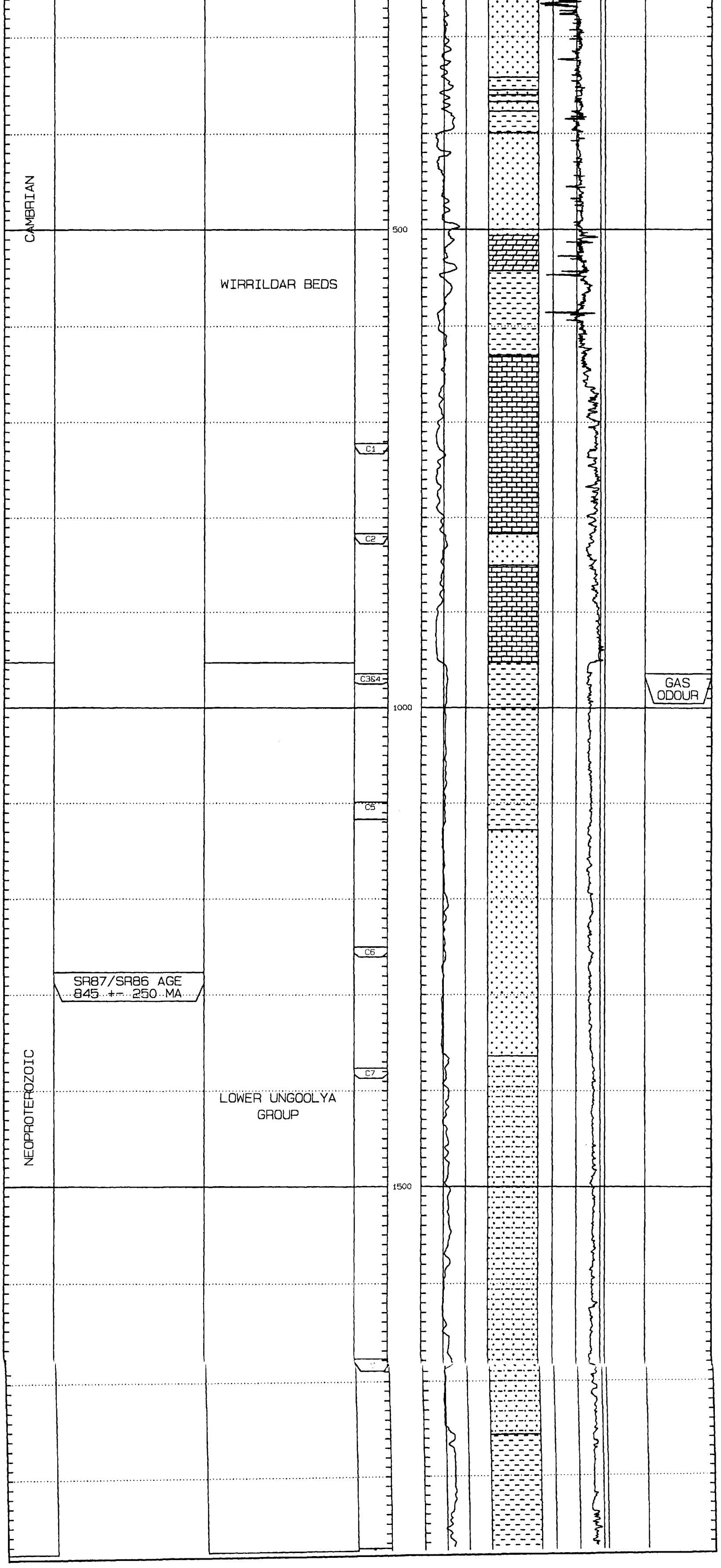
Ph: 08 379 3246 FAX 08 379 7732



OFFICER BASIN, SOUTH AUSTRALIA

AGSO
AUSTRALIAN GEOLOGICAL SURVEY ORGANISATION

BYILKAOORA 2

PLOT CREATED : 2-DEC-1994 14: 10: 24

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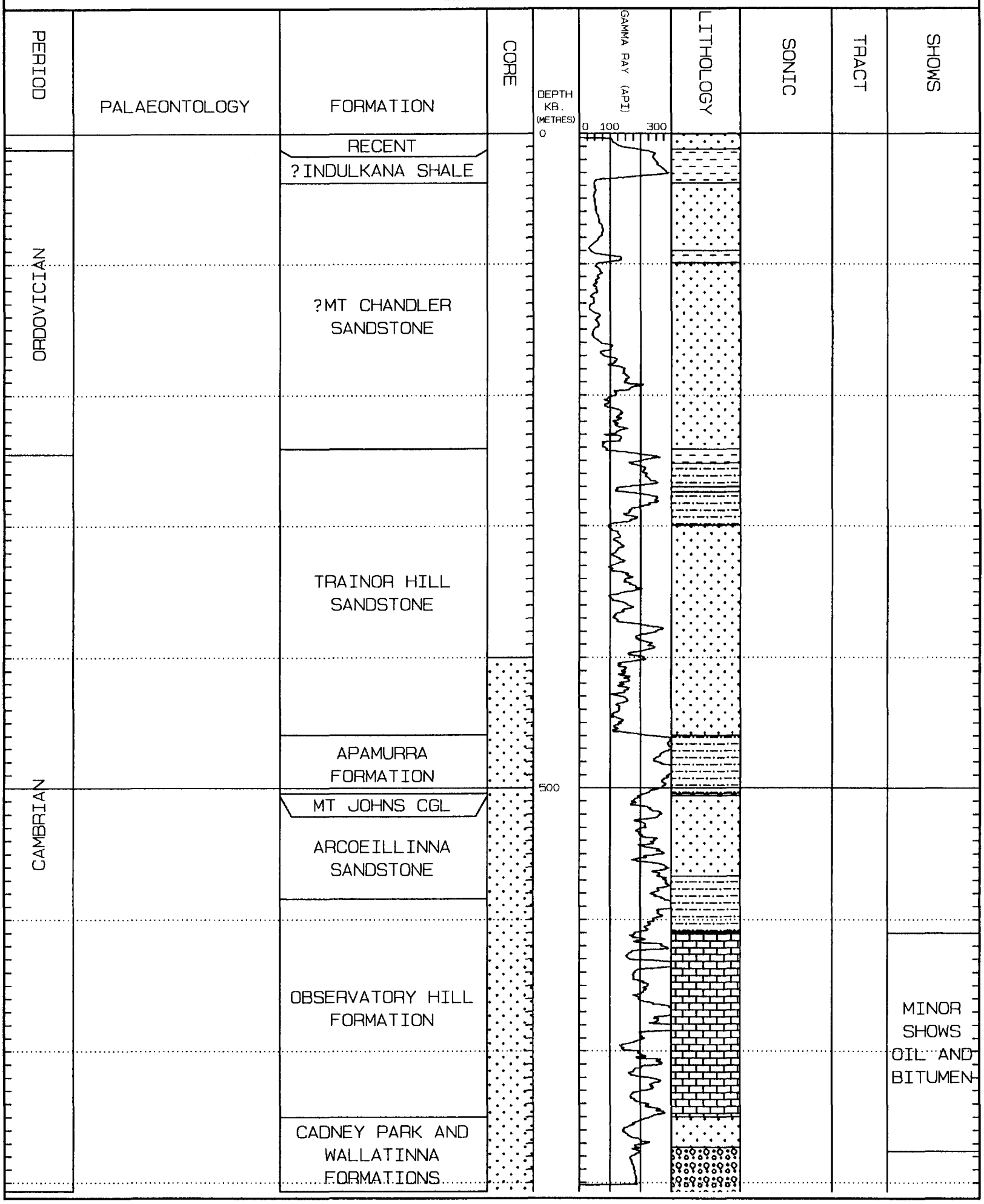

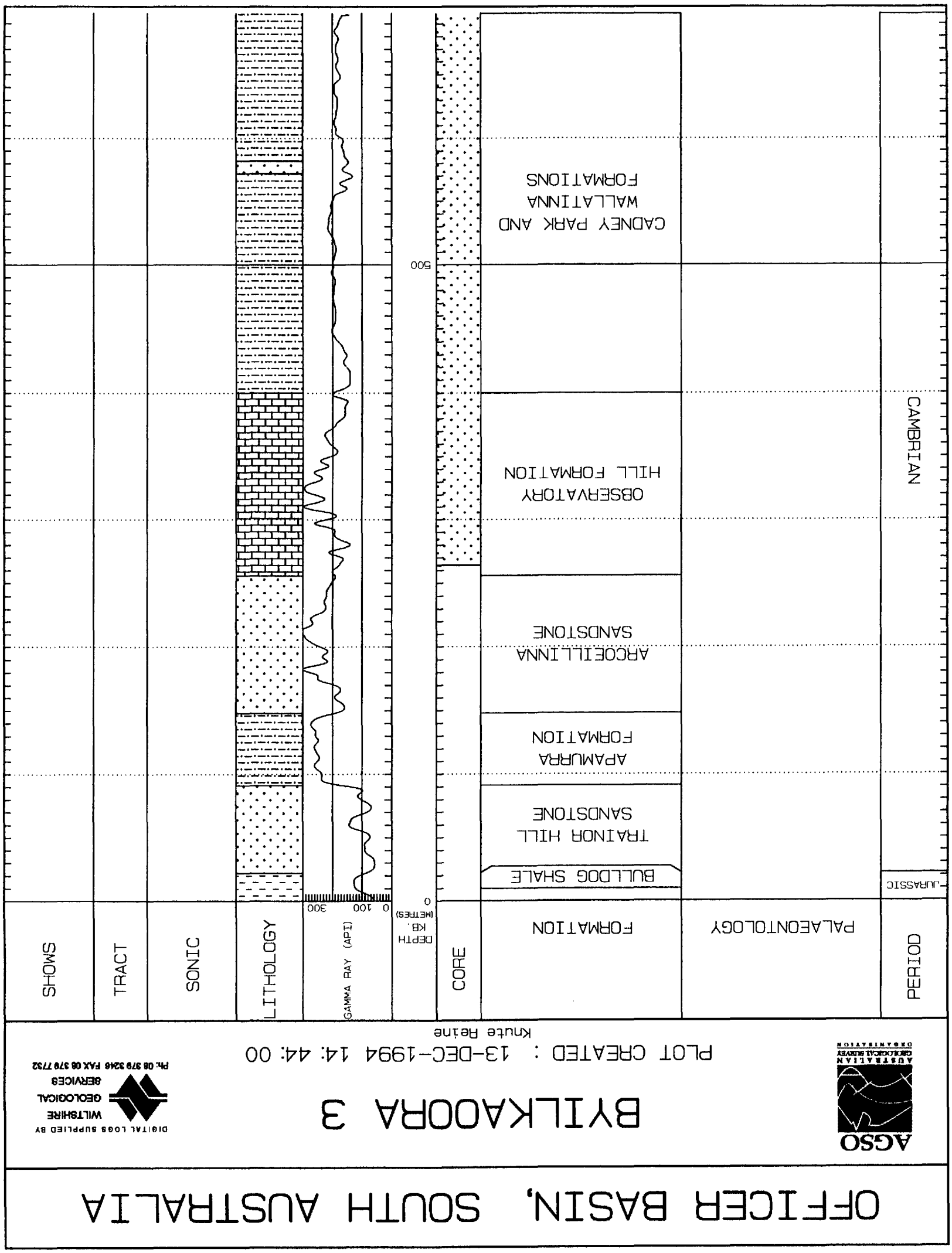

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BYILKAOORA 3

PLOT CREATED : 13-DEC-1994 14:44:00

Knute Reine

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AUSTRALIAN GEOLOGICAL SURVEY ORGANISATION

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User : kreine File : px22295.djt Date : December 13, 1994

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AUSTRALIAN GEOLOGICAL SURVEY ORGANISATION

EMU 1

PLOT CREATED : 2-DEC-1994 15:24:34

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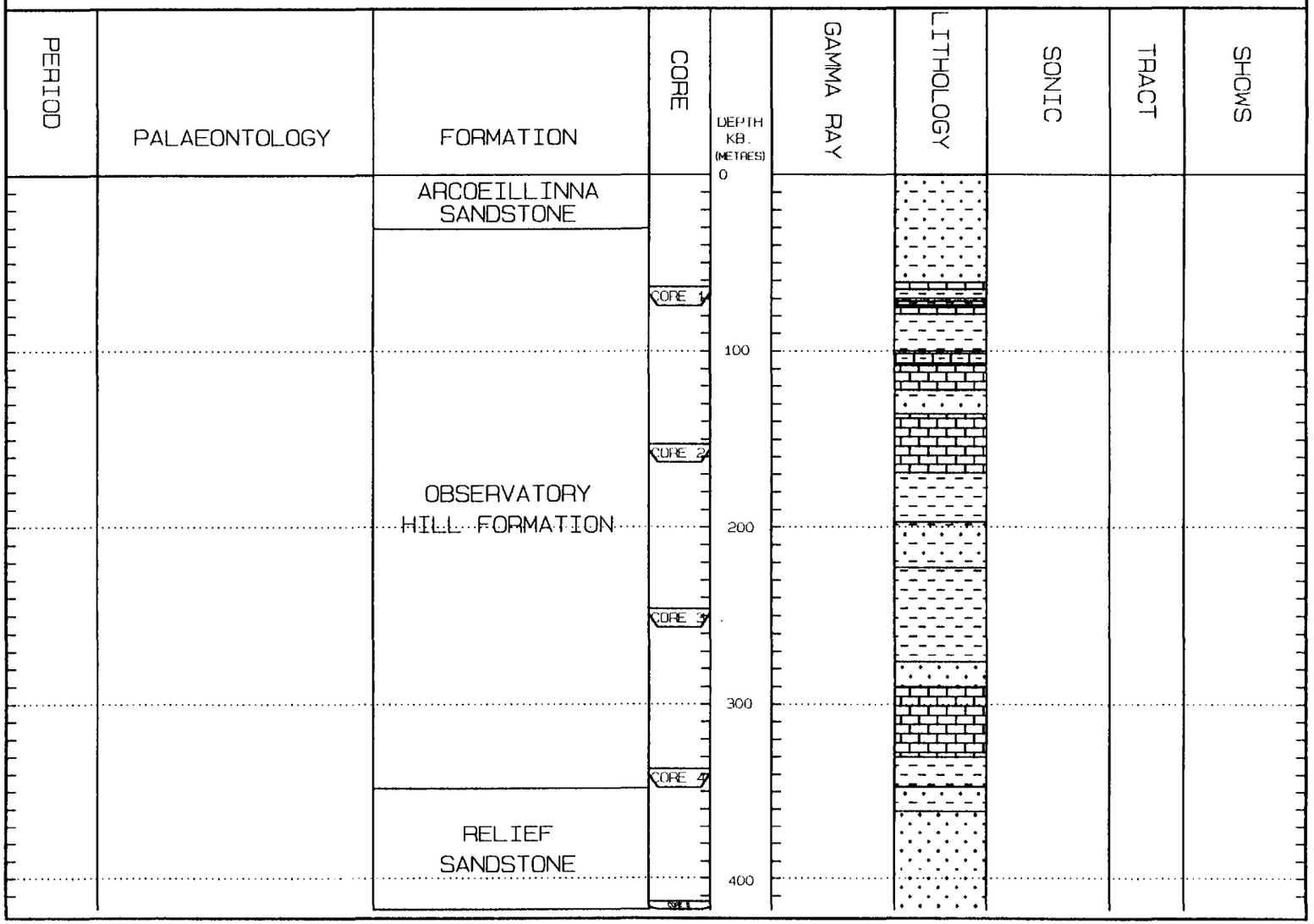

User : kreine File : px9653.djt Date : December 2, 1994

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AGSO AUSTRALIAN GEOLOGICAL SURVEY ORGANISATION

GILES 1

PLOT CREATED : 5-DEC-1994 08: 42: 20

Knute Reine

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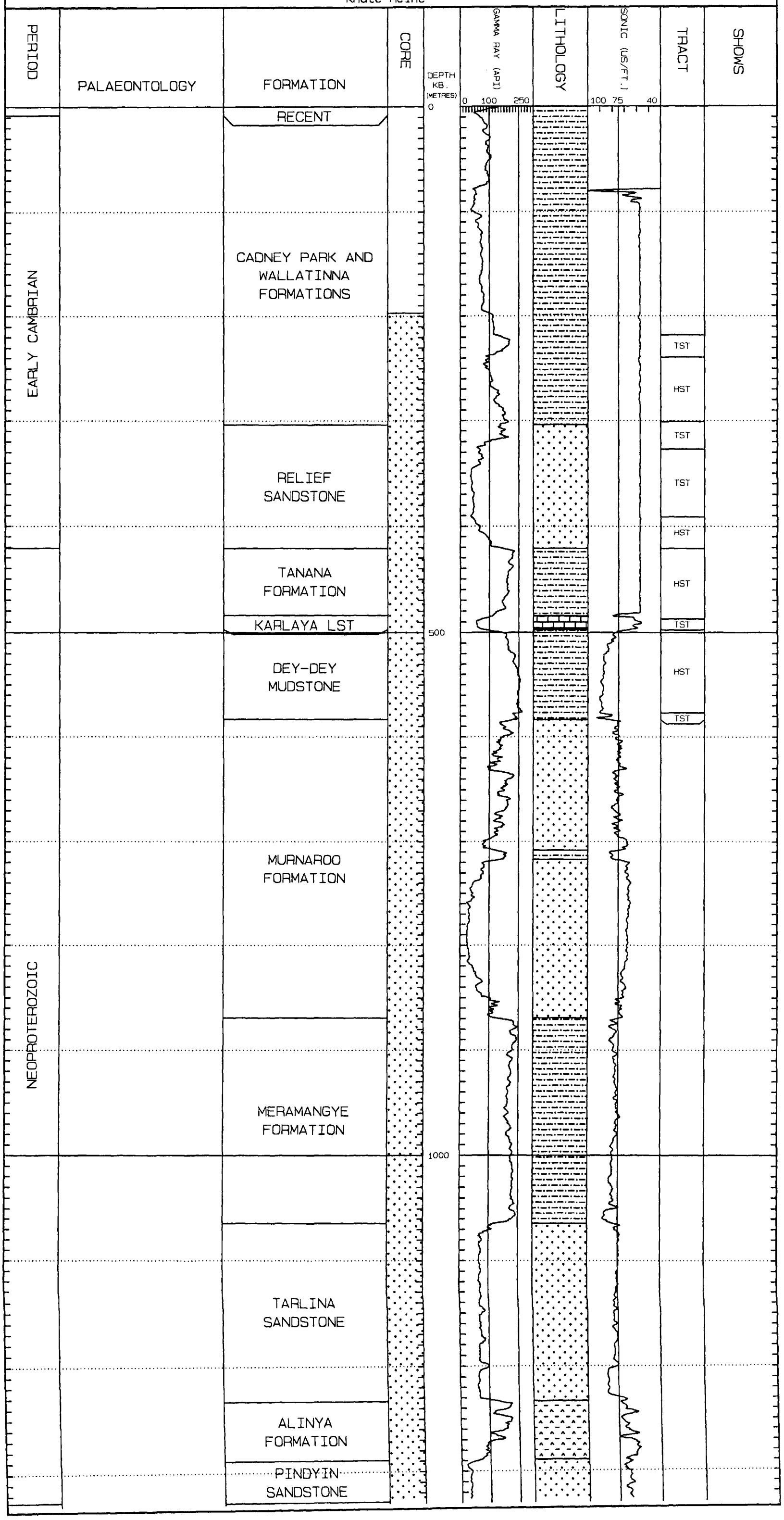

User : kreine File : px4274.djt Date : November 17, 1994

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KARKARO 1

DIGITAL LOGS SUPPLIED BY
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PLOT CREATED : 17-NOV-1994 09: 18: 58
Knute Reine

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AUSTRALIAN GEOLOGICAL SURVEY ORGANISATION

KARLAYA 1

PLOT CREATED : 9-DEC-1994 09: 04: 59

Knute Reine

DIGITAL LOGS SUPPLIED BY
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PERIOD	PALAEONTOLOGY	FORMATION	CORE	DEPTH KB. (METRES)	GAMMA RAY (API) 0 100 300	LITHOLOGY	SONIC (US/FT.) 100 75 40	TRACT	SHOWS
		RECENT DUNE SAND		0					
ORDOVICIAN		MT CHANDLER SANDSTONE							
MID-LATE CAMBRIAN		TRAINOR HILL SANDSTONE		500					
		APPAMURRA FORMATION		1000					
EARLY CAMBRIAN		ARCOEILLINNA SANDSTONE							
		OBSERVATORY HILL FORMATION							MINOR OIL SHOW
		CADNEY PARK AND WALLATINNA FORMATIONS						HST	
		MENA MUDSTONE							
		MUNTA LIMESTONE						TST	
		NARANA FORMATION		1500				HST TST HST HST	
NEOPROTEROZOIC		TANANA FORMATION						TST HST TST HST	
		KARLAYA LIMESTONE		2000				TST	OIL SHOW
		DEY-DEY MUDSTONE						HST	

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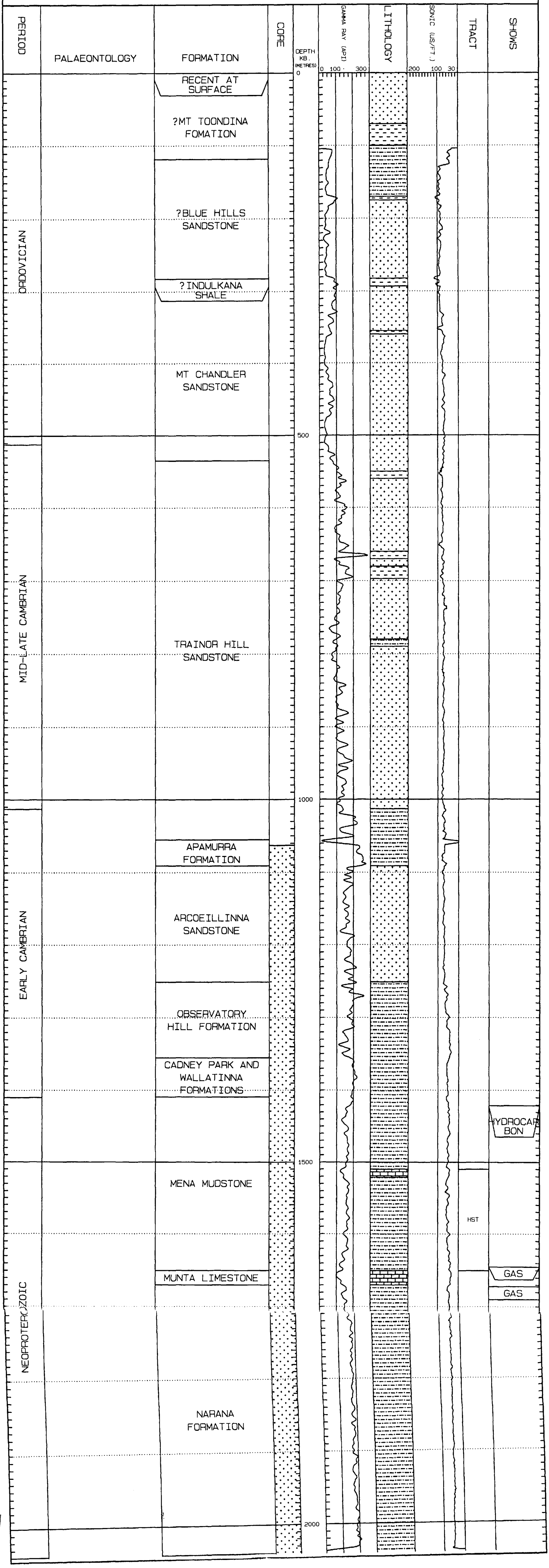
LAIRU 1

PLOT CREATED : 6-DEC-1994 14: 08: 23

Knute Reine



User : kreine File : px20283.dlt Date : December 5, 1994

OFFICER BASIN, SOUTH AUSTRALIA

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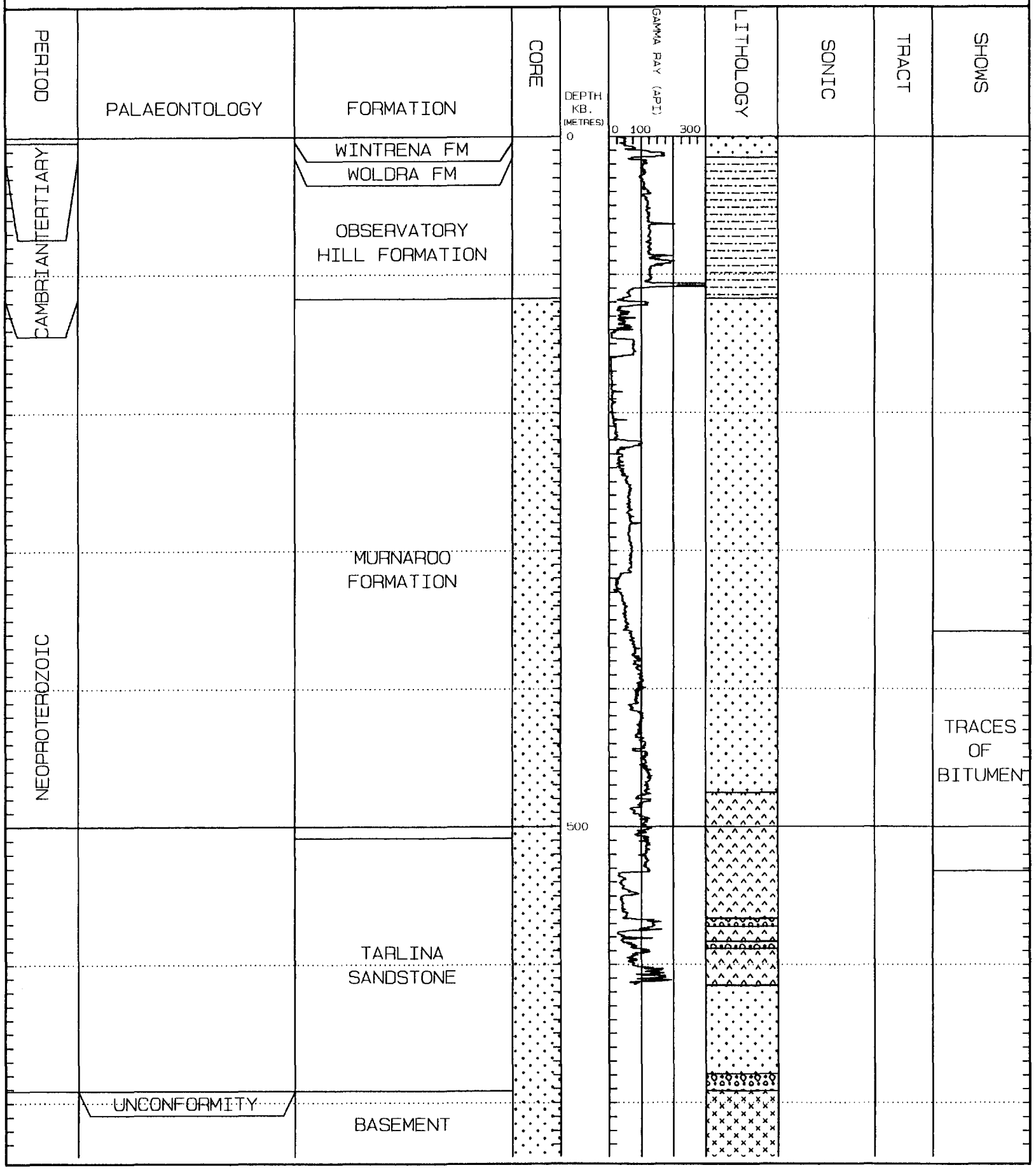
AUSTRALIAN GEOLOGICAL SURVEY ORGANISATION

LAKE MAURICE EAST 1

PLOT CREATED : 5-DEC-1994 14: 18: 52

Knute Reine

DIGITAL LOGS SUPPLIED BY
WILTSHIRE GEOLOGICAL SERVICES
Ph: 08 379 3246 FAX 08 379 7732



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AUSTRALIAN GEOLOGICAL SURVEY ORGANISATION

MANYA 1

PLOT CREATED : 21-NOV-1994 15: 27: 28

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Ph: 08 379 3248 FAX 08 379 7732

PERIOD	PALAEONTOLOGY	FORMATION	CORE	DEPTH KB. (METRES)	GAMMARAY	LITHOLOGY	SONIC	TRACT	SHOWS
QUATERNARY		UN-NAMED		0	0 50 100				
?MIOCENE-PLIOCENE		DOONBARA FM							
		SILCRETE							
		CHANNEL SAND		50					
CRETACEOUS		CADNA-OWIE FORMATION							
L.JURASS ?E.CRETAC.		ALGEBUCKINA SANDSTONE		100					
EARLY PERMIAN		BOORTHANNA FORMATION	CORE 1						
CAMBRIAN	TRILOBITES			150					

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MANYA 2

PLOT CREATED : 22-NOV-1994 11:33:51

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WILTSHIRE GEOLOGICAL SERVICES
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PERIOD	PALAEONTOLOGY	FORMATION	CORE	DEPTH KB. (METRES)	GAMMARAY	LITHOLOGY	SONIC	TRACT	SMOHS
EARLY CAMBRIAN		OBSERVATORY HILL FORMATION		0					
		ARCOEILINNA SANDSTONE							
		MT JOHNS CONGLOMERATE							
LATE CARBONIFEROUS TO EARLY PERMIAN		BOORTHANNA FORMATION		500					
		MOUNT TOONDINA FORMATION							
JURASSIC		ALGEBUCKINA SANDSTONE							
T-Q		UNNAMED							

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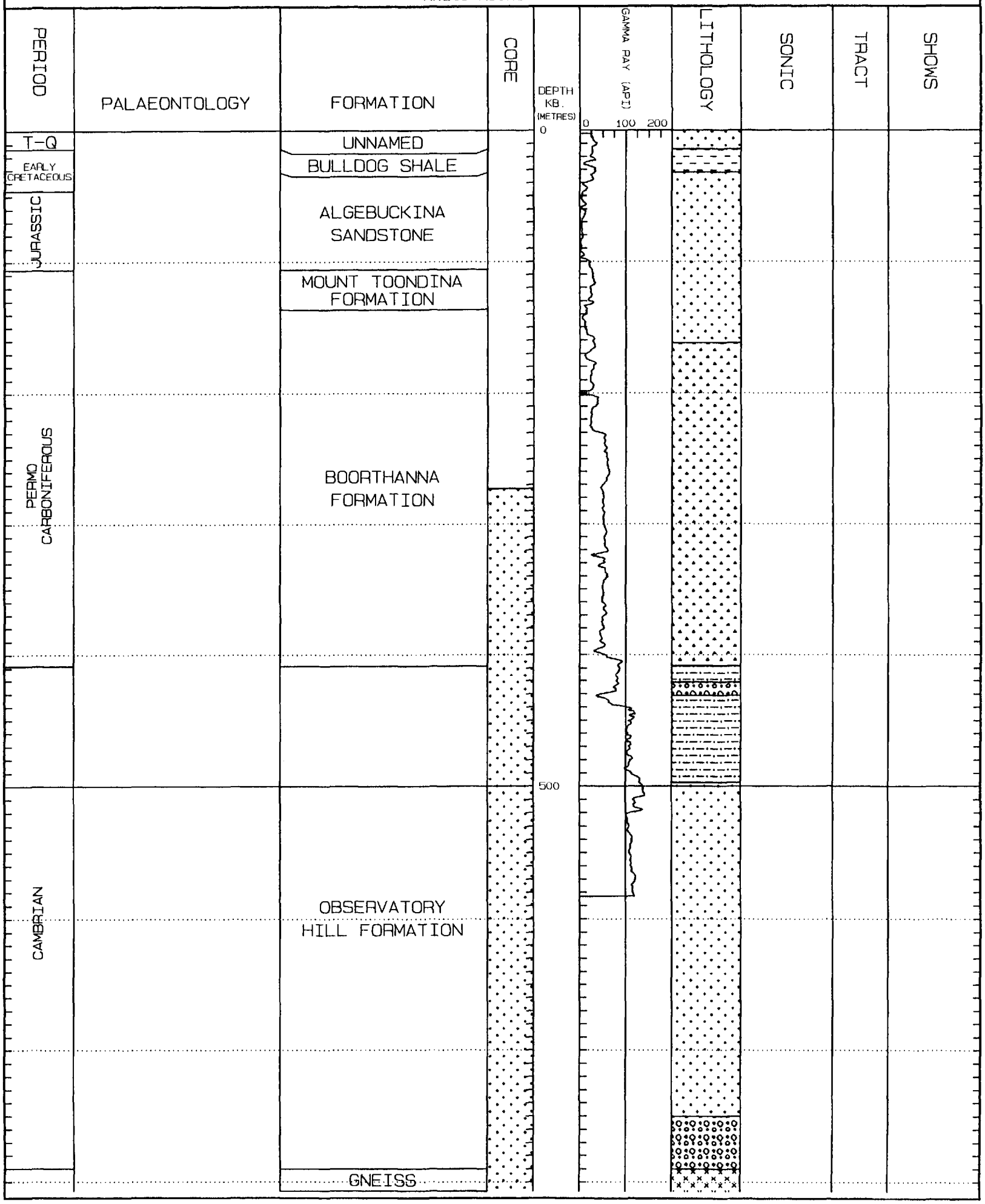
MANYA 4

DIGITAL LOGS SUPPLIED BY
WILTSHIRE GEOLOGICAL SERVICES
Ph: 08 379 3246 FAX 08 379 7732

PLOT CREATED : 22-NOV-1994 13:51:31

Knute Reine



OFFICER BASIN, SOUTH AUSTRALIA

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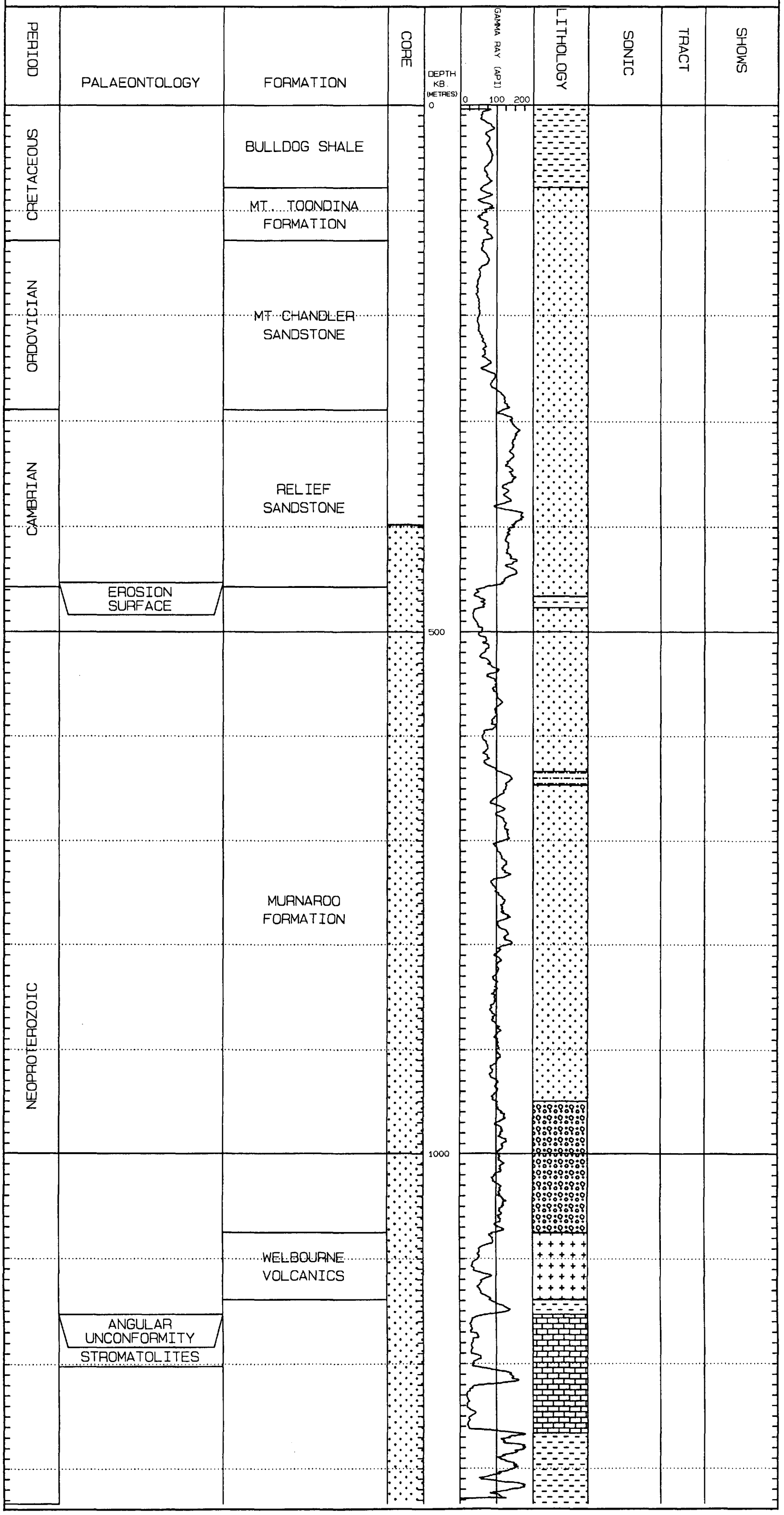
AUSTRALIAN GEOLOGICAL SURVEY ORGANISATION

MANYA 5

PLOT CREATED : 6-DEC-1994 15: 18: 09

Knute Reine

DIGITAL LOGS SUPPLIED BY
WILTSHIRE GEOLOGICAL SERVICES
Ph: 08 379 3246 FAX 08 379 7732



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AGSO AUSTRALIAN GEOLOGICAL SURVEY ORGANISATION

MANYA 6

PLOT CREATED : 7-DEC-1994 14: 55: 29

Knute Reine

DIGITAL LOGS SUPPLIED BY
WILTSHIRE GEOLOGICAL SERVICES
Ph: 08 379 3246 FAX 08 379 7732

PERIOD	PALAEONTOLOGY	FORMATION	CORE	DEPTH KB. (METRES)	GAMMA RAY (API) 0 100 200	LITHOLOGY	SONIC	TRACT	SHOWS
JURASSIC		BULLDOG SHALE		0					
		ALGEBUCKINA SANDSTONE							
PERMIAN		MT. TOONDINA FORMATION							
		BOORTHANNA FORMATION							
		CADNEY PARK AND WALLATINNA FORMATIONS		500					
	TRILOBITES								
CAMBRIAN		OULDBURRA FORMATION		1000					
				1500					
		RELIEF SANDSTONE							

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AUSTRALIAN GEOLOGICAL SURVEY ORGANISATION

MARLA 3

PLOT CREATED : 14-DEC-1994 13: 46: 07

Knute Reine

DIGITAL LOGS SUPPLIED BY
WILTSHIRE GEOLOGICAL SERVICES
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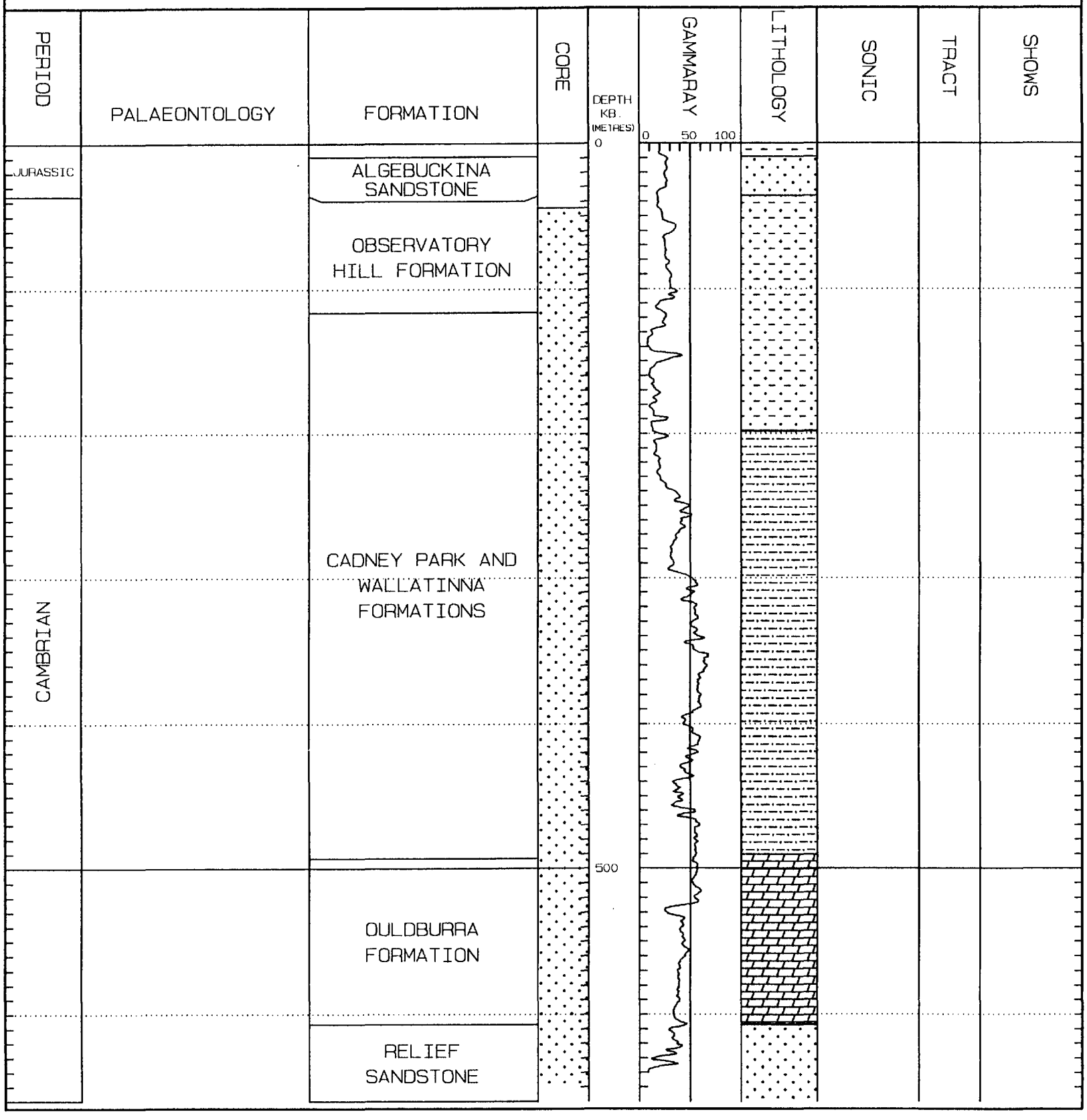

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AUSTRALIAN GEOLOGICAL SURVEY ORGANISATION

MARLA 5

PLOT CREATED : 25-NOV-1994 08: 18: 04
Knute Reine

DIGITAL LOGS SUPPLIED BY
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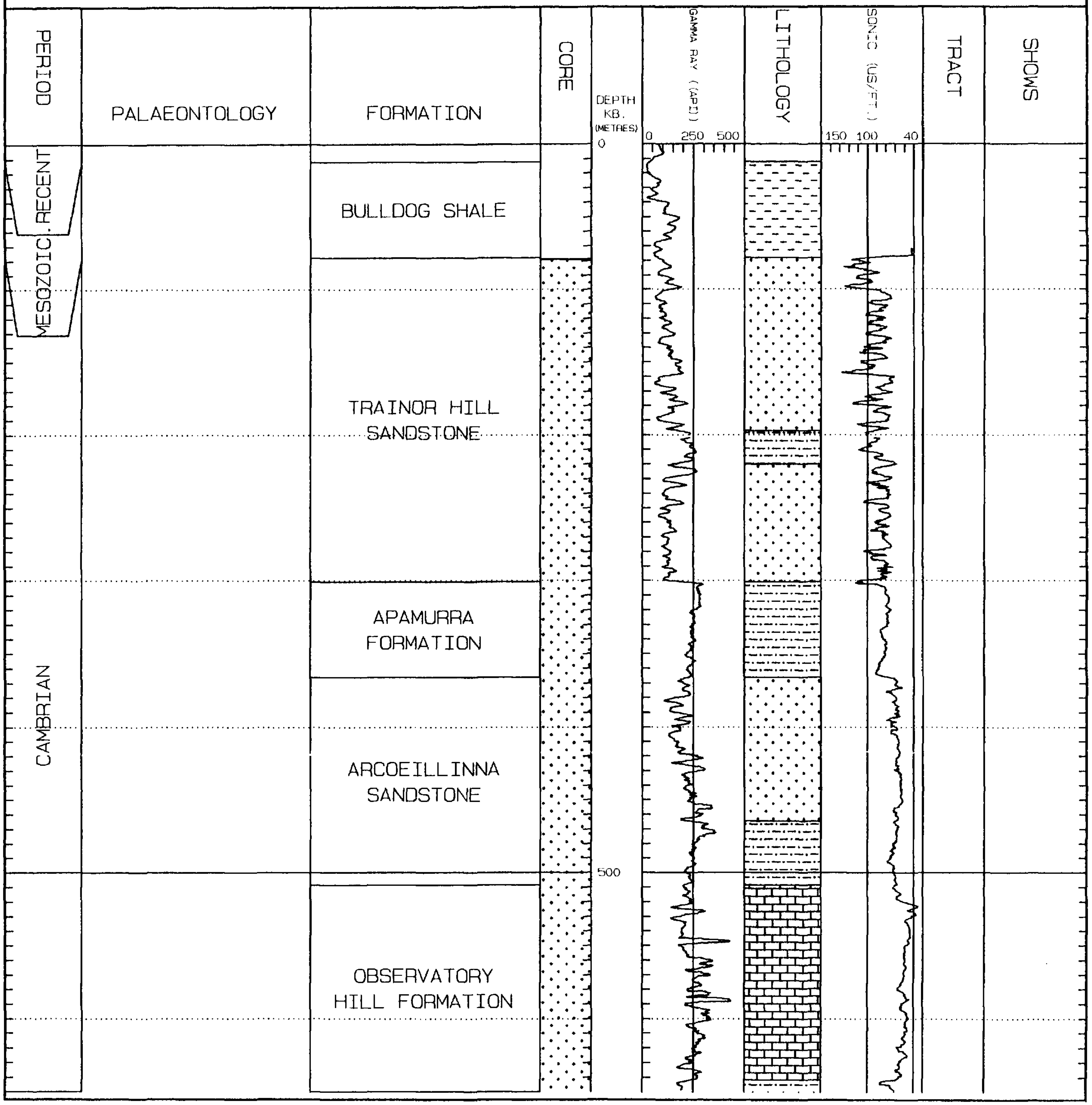
Ph: 08 379 3248 FAX 08 379 7732



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MERAMANGYE 1

PLOT CREATED : 8-DEC-1994 09:28:16

Knute Reine

AGSO
AUSTRALIAN GEOLOGICAL SURVEY ORGANISATION

DIGITAL LOGS SUPPLIED BY
WILTSHIRE GEOLOGICAL SERVICES
Ph: 08 379 3340 FAX 08 379 7732

SHOWS	TRACT	SONIC (US/FT.) 180 100 40	LITHOLOGY	GAMMA RAY (API) 0 100 300	DEPTH K.B. (METRES) 0 500	CORE	FORMATION	PALAEONTOLOGY	PERIOD
							MERAMANGYE FORMATION		NEOPROTEROZOIC
							RELIEF SANDSTONE (TYPE SECTION)		CAMBRIAN
							CADNEY PARK AND WALLATINNA FORMATIONS		
							OBSERVATORY HILL FORMATION		TERTIARY/RECENT
							PALAEO CHANNEL		
							RECENT		

User : kreine File : px19293.djt Date : December 8, 1994

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MIDDLE BORE 1

DIGITAL LOGS SUPPLIED BY
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Ph: 08 379 3248 FAX 08 379 7732

PLOT CREATED : 13-DEC-1994 08: 27: 45

Knute Reine

PERIOD	PALAEONTOLOGY	FORMATION	CORE	DEPTH KB (METRES)	GAMMA RAY	LITHOLOGY	SONIC	TRACT	SHOWS
MESOZOIC		BULLDOG SHALE		0					
PERMIAN		?MT. TOONDINA FORMATION							
CAMBRIAN		OULDBURRA FORMATION							
PROTEROZOIC		BASEMENT		500					

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MUNTA 1

PLOT CREATED : 7-DEC-1994 08:37:11

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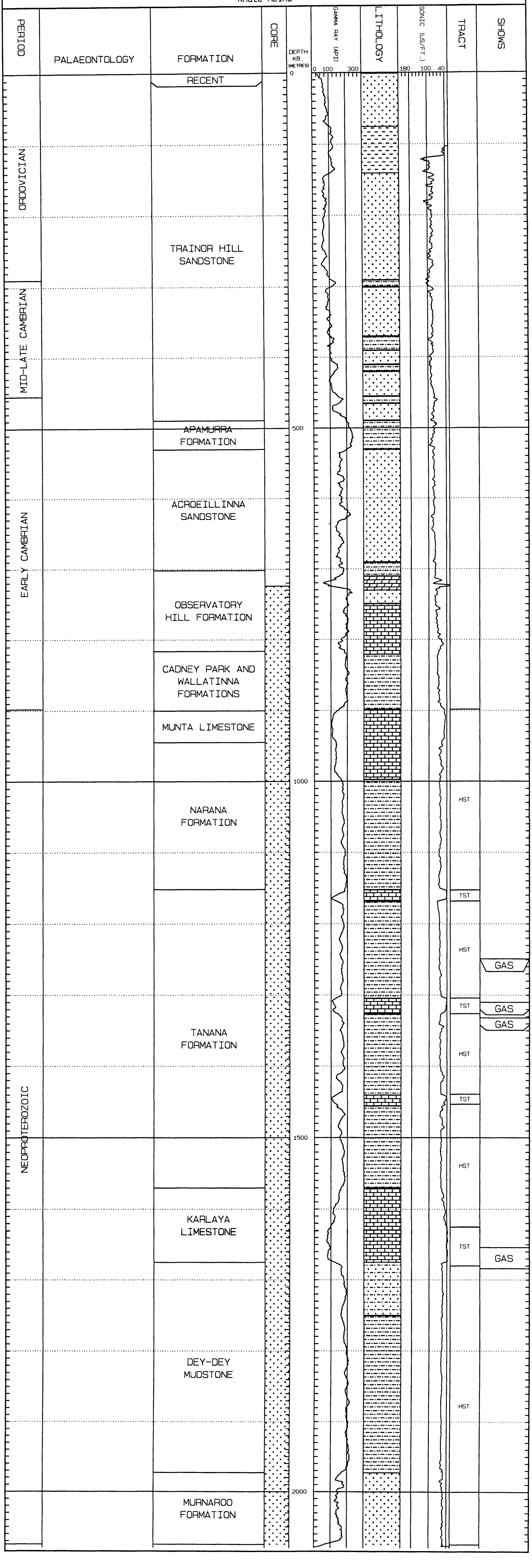

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AUSTRALIAN GEOLOGICAL SURVEY ORGANISATION

MUNYARAI 1

PLOT CREATED : 9-DEC-1994 13:53:23
Knute Reine

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WILTSHIRE GEOLOGICAL SERVICES
Ph: 08 379 5266 FAX 08 370 7732

PERIOD	PALAEONTOLOGY	FORMATION	CORE	DEPTH (M) METRES	GAMMA RAY (API)	LITHOLOGY	SONIC (us/ft)	TRACT	SHOWS
				0	0 100 300		100 75 40		
PERMIAN		WAITOONA BEDS							
			C1						
				500					
DEVONIAN	?SPORES	DEVONIAN (UN-NAMED)	C2						
	LATE DEVONIAN (FRASNIAN) PALYNOMORPHS 738-860 MIDDLE DEVONIAN (EIFELIAN) FISH FAUNA		C3 C3						
			C4						
			C5						
				1000					
ORDOVICIAN		BLUE HILLS SANDSTONE							
		INDULKANA SHALE	C6						
		MT CHANDLER SANDSTONE							
		TRAINOR HILL SANDSTONE							
		APAMURRA FORMATION	C7						
CAMBRIAN		ARCOEILLINNA SANDSTONE		1500					
		OBSERVATORY HILL FORMATION	C8						
		MUNYARAI FORMATION						HST	
				2000					
			C9					TST	
			C10						
NEOPROTEROZOIC		TANANA FORMATION	C11					HST	
			C12					TST	
			C13	2500				HST	
		KARLAYA LIMESTONE	C14					TST	
		DEY-DEY MUDSTONE	C15					HST	

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MURNAROO 1

Knute Reine

PLOT CREATED : 8-DEC-1994 09: 47: 46

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GEOLOGICAL
SERVICES
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SHOWS	TRACT	SONIC	LITHOLOGY	GAMMARAY	DEPTH (METRES)	CORE	FORMATION	PALAEONTOLOGY	PERIOD
				0 50 100	500		TERTIARY-RECENT AT SURFACE		QUATERNARY
							ARCOEILINNA SANDSTONE		
							OBSERVARORY HILL FM		
							CADNEY PARK AND WALLATINNA FORMATIONS		
							WILARI DOLOMITE		
							KARLAYA LIMESTONE		
							DEY-DEY MUDSTONE		
							MURNAROO FORMATION		NEOPROTEROZOIC
					0				

User : kreine File : px19894.djt Date : December 8, 1994

OFFICER BASIN, SOUTH AUSTRALIA

AGSO
AUSTRALIAN GEOLOGICAL SURVEY ORGANISATION

OBSERVATORY HILL 1

PLOT CREATED : 28-NOV-1994 15: 35: 50

Knute Reine

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OFFICER 1

PLOT CREATED : 15-NOV-1994 11:36:14

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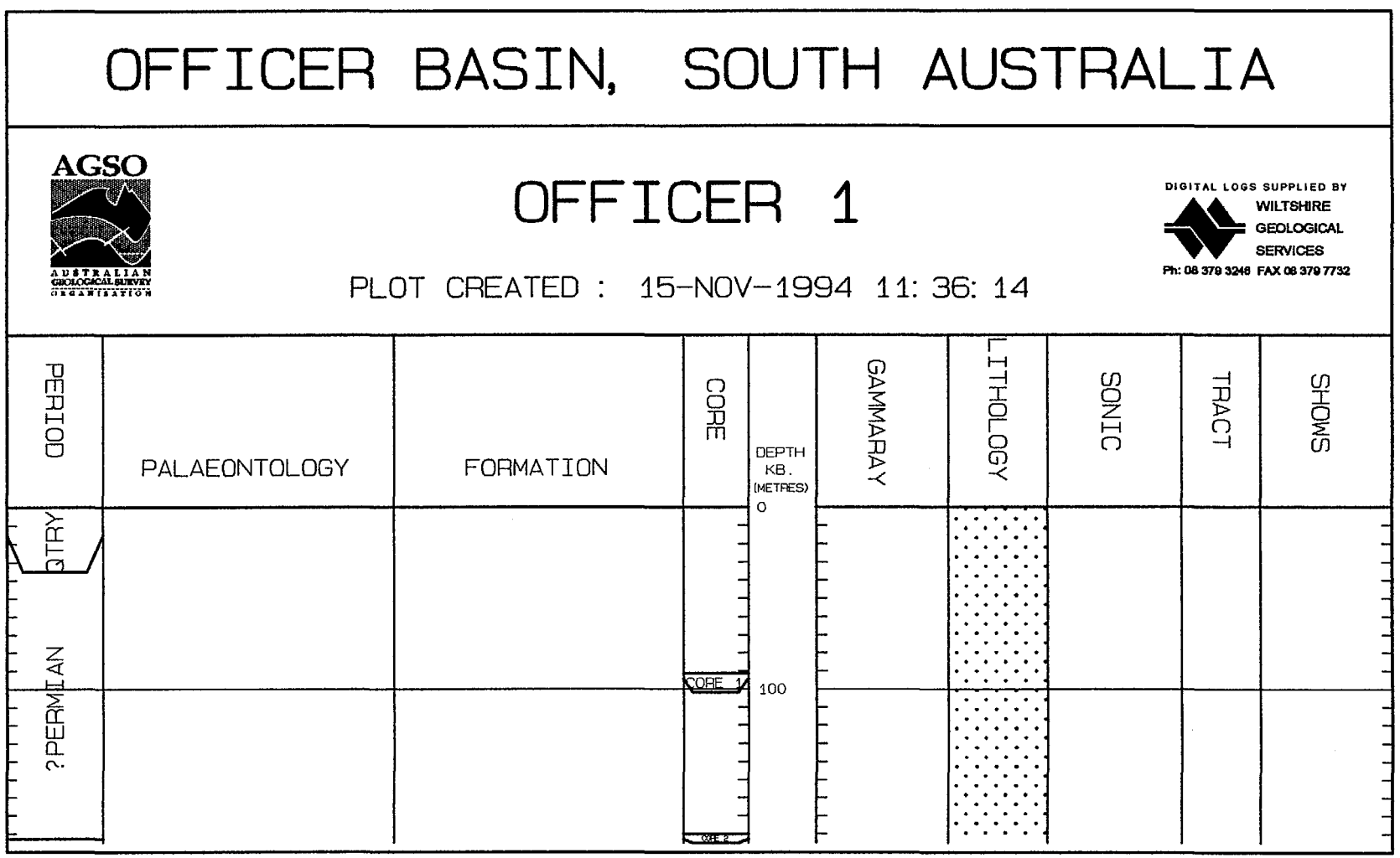


User : kreine File : px25229.djt Date : November 15, 1994

OFFICER BASIN, SOUTH AUSTRALIA

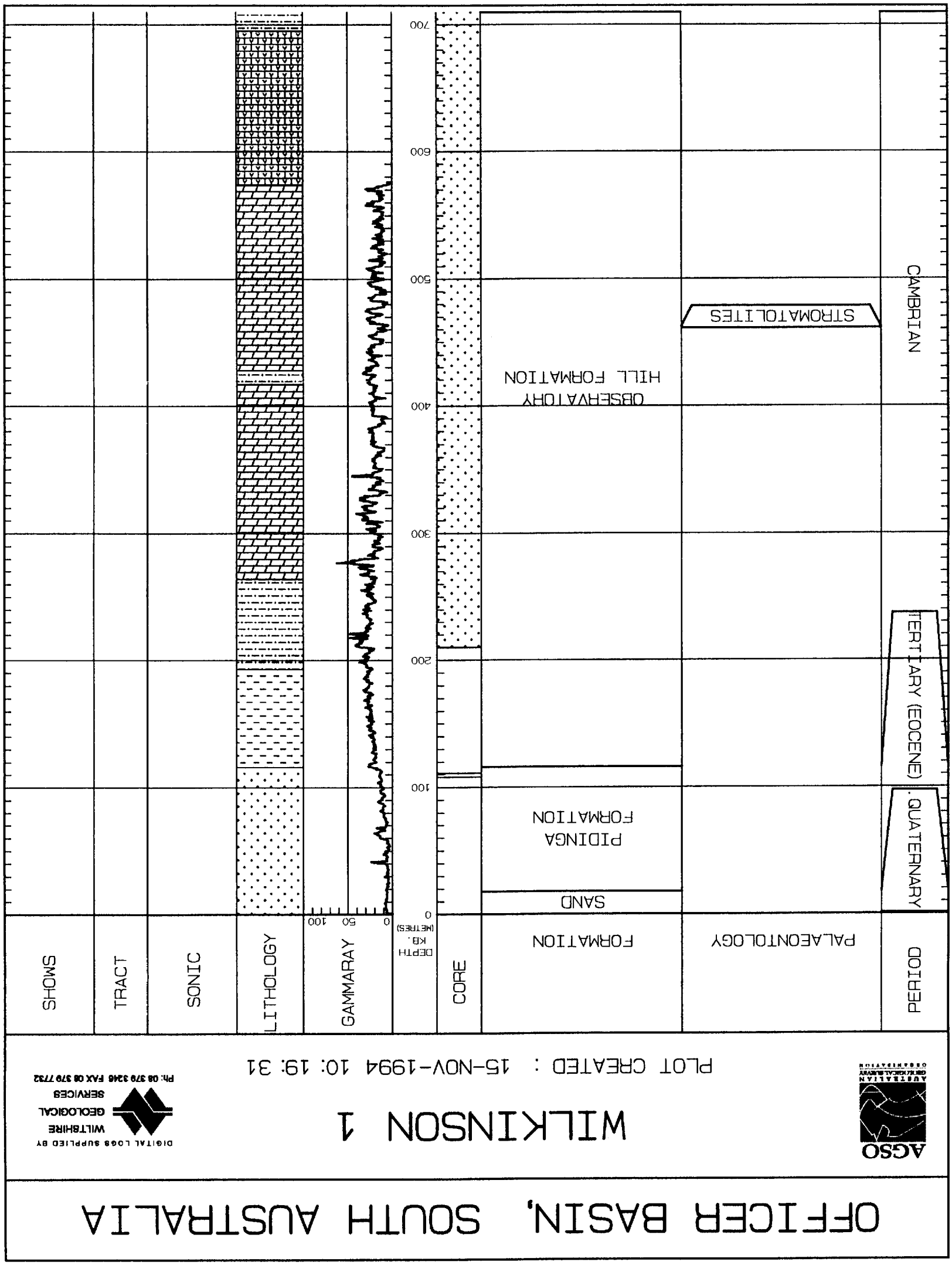
AGSO AUSTRALIAN GEOLOGICAL SURVEY ORGANISATION

UNGOOLYA 1

PLOT CREATED : 8-DEC-1994 14: 20: 52

Knute Reine

PERIOD	PALAEONTOLOGY	FORMATION	CORE	DEPTH KB (METRES)	GAMMA RAY (API) 0 100 300	LITHOLOGY	SONIC (US/FT.) 180 100 40	TRACT	SHOWS
		DUNE SAND, CALCRETE AND SILCRETE		0					
ORDOVICIAN		MT CHANDLER SANDSTONE							
	TRACE FOSSILS								
				500					
MID-LATE CAMBRIAN		TRAINOR HILL SANDSTONE							
	TRACE FOSSILS	APAMURRA FORMATION							
				1000					
EARLY CAMBRIAN		ARCOEILLINNA SANDSTONE							
		OBSERVATORY HILL FORMATION						TST HST TST HST HST	SHOW
				1500				TST HST TST HST	SHOW
NEOPROTEROZOIC		NARANA FORMATION							
				2000					



OFFICER BASIN, SOUTH AUSTRALIA

WILKINSON 1

PLOT CREATED : 15-NOV-1994 10: 19: 31

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DIGITAL LOGS SUPPLIED BY
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Ph: 08 379 3246 FAX 08 379 7732

User : kreine File : px21789.djt Date : November 15, 1994