DEPARTMENT OF MINES
SOUTH AUSTRALIA

GEOLOGICAL SURVEY
PETROLEUM EXPLORATION DIVISION

RE-INTERPRETATION OF STRUCTURAL CONTOUR PLAN OF "C" HORIZON (TOP OF CADNA-OWIE FORMATION) WESTERN GREAT ARTESIAN BASIN

by

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STUDENT GEOLOGIST
PETROLEUM SECTION

Rept. Bk. No. 72/29

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SUMMARY

The structural contour map compiled in 1963 for the South Australian portion of the Great Artesian Basin, and subsequently revised in 1964 and 1968, has now been revised using information available up to January, 1972 and converted from a 200 feet contour interval to a contour spacing of 100 metres.

The Cadna-owie Formation represents the datum formation, and the methods and problems of identifying it are discussed.

The broad geotectonic features and regional structure of the area are fairly accurately shown on the map. In some areas a very detailed structural picture has been derived.

INTRODUCTION

The accompanying contour plan is the third revision of a Cretaceous structural contour map prepared by the Petroleum Section in March 1963 (Freytag, 1963). The amount of information for datum control at that time was restricted to water bores near the basin margin, a dozen or so oil exploration wells and too widely separated reconnaissance seismic reflection surveys. This amount of information had to be sufficient to produce a contour map of the South Australian portion of the Great Artesian Basin, and consequently discrepancies arose later when new exploration wells were sunk and water bores were levelled.

Since the last revision of the map (Townsend, 1968), the increase in the number of oil exploration wells sunk and the increase in seismic and hydrologic data, has provided enough information to make a revision necessary. The conversion to metric system was combined with this revision and the contour interval chosen was 100 metres.

The relationship of the stratigraphic sequence to seismic evidence has been clarified over a large portion of the area. Important lateral variations in the Cadna-owie Formation have been determined as a result of field reconnaissance by members of the Petroleum Geology Section, especially around the Peake and Denison region. A greater structural and stratigraphic knowledge in the zones of marginal outcrops has resulted from Departmental mapping in the regions of the Peake and Denison Ranges (Reyner, 1965), Marree (Forbes, 1965), Oodnadatta by Freytag and particularly by the detailed study of these sediments by Wopfner et. al. (1970).

ACKNOWLEDGEMENT

Since this report is a compilation and revision of data, both company and individual sources were used. In addition to data supplied under the lease requirements within the State, information beyond the State boundaries has been obtained from various companies. The co-operation of these companies is acknowledged.

The valuable advice and assistance given by all members of the Petroleum Exploration Division is greatly appreciated.

STRUCTURE AND DATUM HORITON

Compilation of the map is based on the depth, relative to mean sea level, to the top of the Cadna-owie Formation. Wopfner et al. (1970) describe the upper units as generally fine to very fine-grained sandstone with laminated to very thin bedding. The units are typically feldspathic, argillaceous and silty,

and an abundance of mica flakes gives the rocks a marked fissility. Calcareous cement is very common. These units can be correlated with horizons of similar lithology across the basin into southern Queensland and northwest New South Wales.

The Cadna-owie Formation represents the sedimentary record of the Early Cretaceous marine transgression, and in general, these sediments were laid down under shallow-water, marginal-marine conditions. The great variety of rock types in the formation however, suggests that there were areas of specialized marginal-marine and brackish-water environments. The abrupt changes in vertical and lateral lithology within these strata show that deposition was fairly rapid, and that there was mild tectonic instability (Wopfner et al., op. cit.).

The Cadna-owie Formation offers the best properties for a datum as it is continuous over the South Australian portion of the Great Artesian Basin and retains a fairly uniform thickness throughout the deeper parts of the basin, ranging from 46 to 76 metres (Wopfner, 1969; Wopfner et. al., op. cit.).

The nomenclature of this section of the Cretaceous sediments has been revised since the original compilation, and subsequent revisions, of the map. The Cadna-owie Formation is now used in preference to Transition Beds, as the latter term contravenes the Australian Code of Stratigraphic Nomenclature. In deeper sections of the basin, private companies still use Transition Beds, although the term is invalid. Bulldog Shale has replaced the term Roma Formation, and Algebuckina Sandstone is used instead of Hooga Sandstone. The relationship of the Departmental usage to that of private companies is shown in Table 1.

DEPARTMENTAL USAGE	PRIVATE COMPANY USAGE	B.M.R. USAGE (QLD.)
Bulldog Shale	Roma Formation	Wallumbilla Formation
Cadna-owie Formation	Transition Beds	Hooray Sandstone
Algebuckina Sandstone	MOOGA Sandstone	

TABLE 1: Comparison of Cretaceous nomenclature as used by the Department of Mines, private companies and the B.M.R. (Qld.).

HYDROLOGIC IDENTIFICATION

The oil exploration wells show that the Cadna-owie Formation lacks permeability in the deeper parts of the basin, and is generally indurated with sparry calcite. Towards the marginal areas however, the formation may develop a good porosity and permeability, and since a large number of water bores have been drilled in this area, the depth to the top of the Cadna-owie Formation can be obtained from the bores' lithological logs. If the bore has been levelled then an accurate subsea depth can be derived. Where the lithological logs are poor, the depth to artesian water is taken.

One difficulty with this method is that the lithological logs do not differentiate between the Cadna-owie Formation and the underlying Algebuckina Sandstone. Therefore an incorrect depth is obtained if the Cadna-owie Formation lacks permeability and the depth to artesian water is taken.

The locations and details of water bores were obtained from records kept in the Petroleum Geology Section. It was possible to use a greater number of water bore records than previously, because these bores had been levelled by the surveying section of the Department of Mines since the last revision of the map. A list of all the water bores used for depth control is given in Appendix 1.

SEISMIC IDENTIFICATION

Seismic reflection surveys have shown that there is a continuous reflecting horizon over the South Australian portion of the Great Artesian Basin, and this horizon has been called the "C" reflector (base of marine Cretaceous).

The nature of this reflector results from the sharp velocity changes at the top boundary of the Cadna-owie Formation. The velocity increases sharply on entering the Cadna-owie Formation from the overlying Bulldog Shale. There is also an increase in velocity on entering the underlying Algebuckina Sandstone. This is shown in the enclosed continuous velocity logs through the Cadna-owie Formation (taken from Freytag, 1964).

The areal extent and the uniform reflecting properties of the Cadna-owie Formation allow it to be identified easily, as well as providing accurate depth control to the top of the formation.

In the revision of the map a number of new seismic surveys were incorporated. These were generally the farmout areas in the Delhi-Santos-Vamgas licence areas P.E.L. 5 and 6. In some of the seismic surveys the "C" horizon was presented as an isochron map This required the author to choose the velocity function over the area concerned to produce the subsea depth contours. Unfortunately some of these surveys did not give depths which corresponded with previous seismic identification or with stratigraphic depths provided by water bores and oil exploration wells. It was assumed in these cases that a wrong reflecting horizon or slightly different velocity was chosen. Where this occurred, water bore, oil well and older

information was used. A list of all surveys referred to is enclosed in Appendix II.

ADDITIONAL INFORMATION

Due to the large number of oil exploration wells now present in the area, there are many good stratigraphic control points. The information obtained from the wells provides a means of checking the accuracy of seismic work near these wells. All the oil exploration wells used for depth control are included in Appendix I.

In areas where there was limited new information the last revision of the map was used (Townsend, 1968).

BASE MAP AND COMPILATION

The area was divided into four adjoining sections, each to a scale of 1:500 000. The work was carried out on these four base maps. It was difficult to use information from the map of 1968 because of the different projections used in the base maps.

The base maps are to be photographically reduced to a scale of 1:1 000 000.

GENERAL DISCUSSION

From the contour map a large number of the features can be seen, for example, the Gidgealpa High, Innamincka Dome, Boorthanna Trough and Birdsville Track Ridge.

One distinct feature of the map is the northeasterly trending features. The majority of the faults, drainage channels, highs and troughs in the area follow this trend. Even the contours exhibit this feature if regional structures are ignored. The gradients also have a northeasterly trend and this is particularly obvious in the southwest corner of the map. The possible cause of all

these features is that basement tectonics have influenced the overlying sediments. This can also be seen by the "P" horizon which exhibits similar structures (Krieg, 1967).

An attempt will be made to revise this structural contour map every four years, due to the increasing amount of information becoming available through new oil exploration in the Great Artesian Basin.

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APPENDIX I

WATER BORE	LATITUDE	LONGITUDE	GRID	ELEVATION (GROUND) ‡METRES	*DEPTH (SUBSEA) ‡ METRES
BLOOD'S CREEK	26°16'50"	135°5'50"	G1	(?) 201	-211
OPOSSUM	26°22'50"	135°20'40"	G1	(?) 183	-192
JUNCTION	26°40'	135°18'30"	G1	144	-205
MT. SARAH	26°57'20"	135°17'30"	G1	132	-143
COONADATTA	27°33'45"	135°27'	G2	117	-315
WIRE CREEK	27°16'20"	135°30'	G2	112	-296
ALLANDALE	27°43'	135°36'30"	G2	132	-229
ONE TREE	28°11'30"	135°32'	G3	76	-10
WILLOW	28°35'15"	135°30'30"	G3	76	+52
STRANGWAY SPRINGS	29°9'25"	136°4'45"	H4	44	-47
BERESFORD	29°14'30"	136°39'45"	H4	30	-64
COWARD SPRINGS	29°24'	136°49'10"	H4	17	-73
LAKE LETTIE NO.3	29°20'40"	137°56'45"	I4	17	-470
ALBERRIE CREEK	29°38'30"	137°32'30"	I4	28	-43
GOYDER LAGOON	27°1'	138°54'	J2	31	-1395
MT. GASON	27°19'45"	138°45'15"	J2	44	-1268
MIRRA MITTA	27°43'15"	138°44'30"	J2	36	-964
MUNGERANIE	28°1'30"	138°41'	J3	58	-949
MULKA	28°22'15"	138°39'15"	J3	63	-995
CANNUWAUKANINNA	28°47'20"	138°33'30"	J3	19	-822
FROME CREEK	29°36'	138°6'15"	J4	45	-126
COMBYANNA	29°7'	138°45'30"	J4	31	-454
JEWELLERY	29°5'	138°56'20"	J4	23	-428
TROUDANINNA	29°11'55"	138°58'40"	J4	46	-349
CHAPPALANNA	29°16'15"	138°49'15"	J4	60	-277
CLAYTON DAM	29°29'55"	138°39'5"	J4	75	-261
NICK OF TIME	29°19'	138°55'	J4	83	-252
JUNCTION	29°46'25"	138°43'	J4	95	-79
WELL CREEK	29°34'25"	138°8'50"	J4	71	-191
TWO MILE	29°43'20"	138°15'10"	J4	69	-53
MARREE	29°39'45"	138°3'55"	J4	45	-59
LAKE BILLY	29°33'50"	138°28'15"	J4	68	-249
CLAYTON	29°16'50"	138°22'15"	J4	45	-473
TARKANINA	29°18'50"	138°30'	J4	53	-315
DULKANINNA	29°2'10"	138°27'35"	J4	38	-607
SINCLAIR	29°9'18"	138°35'20"	J4	68	-482
LAKE HARRY	29°26'25"	138°14'25"	J4	45	-370
KALLADEINA	27°39'30"	139°7'	K2	(?)61	-1130
WOOLATCHIE	29°52'	139°50'15"	K4	49	-483
LAKE CROSSING	29°33'	139°53'	K4	11	-401
MURNPEOWIE	29°35'15"	139°3'15"	K4	83	-229
TOONKETCHEN	29°18'	139°8'15"	K4	49	-483
MONTECOLLINA	29°23'30"	139°59'40"	K4	9	-735
DEAN'S LOOKOUT	29°39'5"	139°34'50"	K4	51	-231
QUART POT	29°43'30"	139°23'25"	K4	97	-124

WATER BORE	LATITUDE	LONGITUDE	GRID	ELEVATION (GROUND) ±METRES	*DEPTH (SUBSEA) ± METRES
METEOR	29°27'10"	139°27'50"	K4	40	-240
PETERMORRA	29°38'30"	139°39'	K4	56	-312
POONTANA	30°7'5"	139°50'	K5	(?)99	-398
COONANNA	29°52'25"	140°46'30"	L4	81	-490
YANDANA	29°58'45"	140°24'	L4	37	-437
TIBURLOOKA	30°38'	140°54'	L5	(?)152	-168
MULOONURTINA	30°7'	140°8'	L5	15	-413
COONEE CREEK	30°14'30"	140°41'30"	L5	(?)61	-332
ARBOOLA	30°32'46"	140°20'30"	L5	(?)52	-258
CURRAWORRA	30°32'	140°39'30"	L5	(?)67	-265
CULBERTA	30°39'20"	140°24'40"	L5	(?)64	-128
GLENMANYE NO. 2	30°47'	140°30'50"	L5	(?)73	-422
KIDMAN NO. 1	30°55'30"	140°55'30"	L5	(?)91	-19

OIL EXPLORATION WELL	LATITUDE	LONGITUDE	GRID	ELEVATION (K.B.) ±METRES	*DEPTH (SUBSEA) ±METRES
MT. CRISPE NO. 1	26°26'43"	135°22'36"	G1	131	-53
WITCHERRIE NO. 1	26°22'20"	135°39'10"	G1	87	-194
OODNADATTA NO. 1	27°26'	135°21'	G2	129	-167
BOORTHANNA NO. 1	28°56'4"	135°45'18"	G3	115	+112
COOTANOORINA NO. 1	28°0'30"	135°20'	G3	108	-5
WEEDINA NO. 1	28° 28'31"	135°39'20"	G3	100	+94
PURNI NO. 1	26°17'10"	136°5'35"	H1	78	-903
MOKARI NO. 1	26°19'6"	136°26'22"	H1	68	-1124
POONARUNNA NO. 1	27°54'20"	137°54'50"	I2	5	-1160
PUTAMURDIE NO. 1	26°16'26"	139°46'35"	K1	41	-1169
PANDIEBURRA NO. 1	26°45'24"	139°25'31"	K1	36	-1237
KALLADEINA NO. 1	27°39'29"	139°24'	K2	331	-1258
FLY LAKE NO. 1	27°38'13"	139°56'48"	K2	35	-1649
TINDILPIE NO. 1	27°54'27"	139°56'7"	K2	53	-1659
GIDGEALPA NO. 5	28°1'29"	139°58'37"	K3	51	-1342
SPENCER NO. 1	28°10'1"	139°51'49"	K3	36	-1290
LAKE HOPE NO. 1	28°7'22"	139°48'10"	K3	16	-1406
WIRRARIE NO. 1	28°15'4"±	139°54'32"	K3	29	-1357
DARALINGIE NO. 1	28°21'41"	139°58'30"	K3	29	-1389
DARALINGIE NO. 2	28°23'21"	139°58'1"	K3	27	-1418
PANDO NO. 1	28°24'58"	139°48'25"	K3	30	-1200
PANDO NO. 2	28°25'48"	139°49'44"	K3	43	-1218
PANDO NORTH NO. 1	28°23'26"	139°48'4"	K3	27	-1281
BOXWOOD NO. 1	28°31'25"	139°50'46"	K3	28	-1232
WANCOOCHA NO. 1	28°31'45"	139°59'1"	K3	37	-1251
TOPWEE NO. 1	28°15'40"	139°59'9"	K3	33	-1428
WEENA NO. 1	29°5'38"	139°50'51"	K3	30	-967
COONGIE NO. 1	27°12'3"	140°6'56"	L2	34	-1504
YANPURRA NO. 1	27°20'19"	140°49'15"	L2	112	-1516
INNAMINCKA NO. 1	27°29'22"	140°55'15"	L2	126	-1071

OIL EXPLORATION WELL	LATITUDE	LONGITUDE	GRID	ELEVATION (K.B.) ‡METRES	*DEPTH (SUBSEA) ‡METRES
PACKSADDLE NO. 1	27°32'40"	140°45'37"	L2	135	-1414
COONATIE NO. 1	27°29'6"	140°20'15"	L2	47	-1768
KUDRIEKE NO. 1	27°28'56"	140°10'50"	L2	43	-1768
MOORARI NO. 1	27°34'19"	140°7'43"	L2	48	-1694
MOORARI NO. 2	27°33'9"	140°7'49"	L2	41	-1724
MUDRANGIE NO. 1	27°37'46"	140°16'45"	L2	45	-1697
TIRRAWARRA NO. 1	27°40'33"	140°7'29"	L2	39	-1597
TIRRAWARRA NO. 2	27°41'17"	140°5'48"	L2	37	-1606
TIRRAWARRA NO. 3	27°37'24"	140°6'54"	L2	39	-1655
MERRIMELIA NO. 1	27°49'4"	140°6'54"	L2	55	-1516
MERRIMELIA NO. 2	27°42'	140°14'4"	L2	63	-1513
MERRIMELIA NO. 3	27°37'25"	140°21'26"	L2	59	-1487
MERRIMELIA NO. 4	27°47'5"	140°7'51"	L2	63	-1489
MERRIMELIA NO. 5	27°46'30"	140°9'20"	L2	41	-1498
COOPERS CREEK NO. 1	27°48'22"	140°1'38"	L2	37	-1620
BURLEY NO. 1	27°48'16"	140°39'40"	L2	53	-1602
GIDGEALPA NO. 1	27°56'47"	140°5'1"	L2	55	-1533
GIDGEALPA NO. 2	27°56'45"	140°3'6"	L2	54	-1365
GIDGEALPA NO. 3	27°58'28"	140°3'12"	L2	54	-1427
GIDGEALPA NO. 4	27°58'37"	140°0'38"	L2	50	-1395
GIDGEALPA NO. 6	27°55'24"	140°2'29"	L2	54	-1452
GIDGEALPA NO. 8	27°57'2"	140°1'40"	L2	60	-1396
GIDGEALPA NO. 9	27°59'25"	140°1'18"	L2	58	-1404
GIDGEALPA NO. 10	27°57'42"	140°3'19"	L2	54	-1399
GIDGEALPA NO. 11	27°56'45"	140°2'26"	L2	54	-1376
GIDGEALPA NO. 12	27°58'37"	140°1'34"	L2	57	-1363
GIDGEALPA NO. 13	27°55'52"	140°2'46"	L2	60	-1397
GIDGEALPA NO. 7	28°2'25"	140°0'28"	L3	51	-1407
MOOMBA NO. 1	28°9'11"	140°16'11"	L3	37	-1574
MOOMBA NO. 2	28°10'56"	140°13'36"	L3	33	-1564
MOOMBA NO. 3	28°8'8"	140°12'26"	L3	46	-1603
MOOMBA NO. 4	28°12'56"	140°15'6"	L3	37	-1616
MOOMBA NO. 5	28°2'32"	140°13'7"	L3	49	-1617
MOOMBA NO. 6	28°2'4"	140°9'39"	L3	41	-1631
MOOMBA NO. 7	28°5'46"	140°19'4"	L3	42	-1602
MOOMBA NO. 8	28°6'44"	140°7'48"	L3	36	-1593
MOOMBA NO. 9	28°9'11"	140°9'48"	L3	41	-1613
BIG LAKE NO. 1	28°12'36"	140°20'7"	L3	43	-1588
DELLA NO. 1	28°6'34"	140°40'25"	L3	63	-1254
DELLA NO. 2	28°6'44"	140°35'17"	L3	45	-1316
DELLA NO. 3	28°3'54"	140°40'46"	L3	68	-1262
DULLINGARI NO. 1	28°8'2"	140°52'41"	L3	98	-1272
STRZELECKI NO. 1	28°13'7"	140°38'16"	L3	67	-1266
STRZELECKI NO. 2	28°17'27"	140°36'6"	L3	60	-1255
MUDLALEE NO. 1	28°19'22"	140°31'31"	L3	55	-1203
MURTEREE NO. 1	28°23'48"	140°34'22"	L3	45	-1234
TOOLACHEE NO. 1	28°25'55"	140°46'53"	L3	56	-1230
TOOLACHEE NO. 2	28°18'48"	140°49'32"	L3	72	-1220
TOOLACHEE NO. 3	28°27'52"	140°46'46"	L3	68	-1255
TOOLACHEE NO. 4	28°22'9"	140°48'44"	L3	63	-1259
TOOLACHEE NO. 5	28°21'14"	140°45'52"	L3	67	-1252

OIL EXPLORATION WELL	LATITUDE	LONGITUDE	GRID	ELEVATION (K.B.) ‡METRES	*DEPTH (SUBSEA) ‡METRES
TOOLACHEE NO. 6	28°24'14"	140°50'3"	L3	73	-1258
NAPPACOONGEE NO. 1	28°1'53"	140°44'39"	L3	84	-1151
TILPAREE NO. 1	28°30'10"	140°38'20"	L3	46	-1227
MULGA NO. 1	28°39'35"	140°31'50"	L3	44	-1169
KUMBARIE NO. 1	28°54'58"	140°11'	L3	27	-1042
TINGA TINGANA NO. 1	29°0'45"	140°5'38"	L4	31	-1034
GURRA NO. 1	29°1'23"	140°16"	L4	36	-927
CHERRI NO. 1	29°7'21"	140°12'45"	L4	36	-903
FORTVILLE NO. 3	29°7'35"	140°53'55"	L4	101	-702
COOTABARLOW NO. 1	30°16'	140°8'30"	L5	30	-380
COOTABARLOW NO. 3	30°24'	140°12'50"	L5	30	-345
LAKESIDE BORE	30°42'	140°8'30"	L5	41	-268
BLACK OAK BORE	30°59'45"	140°12'	L5	23	-108

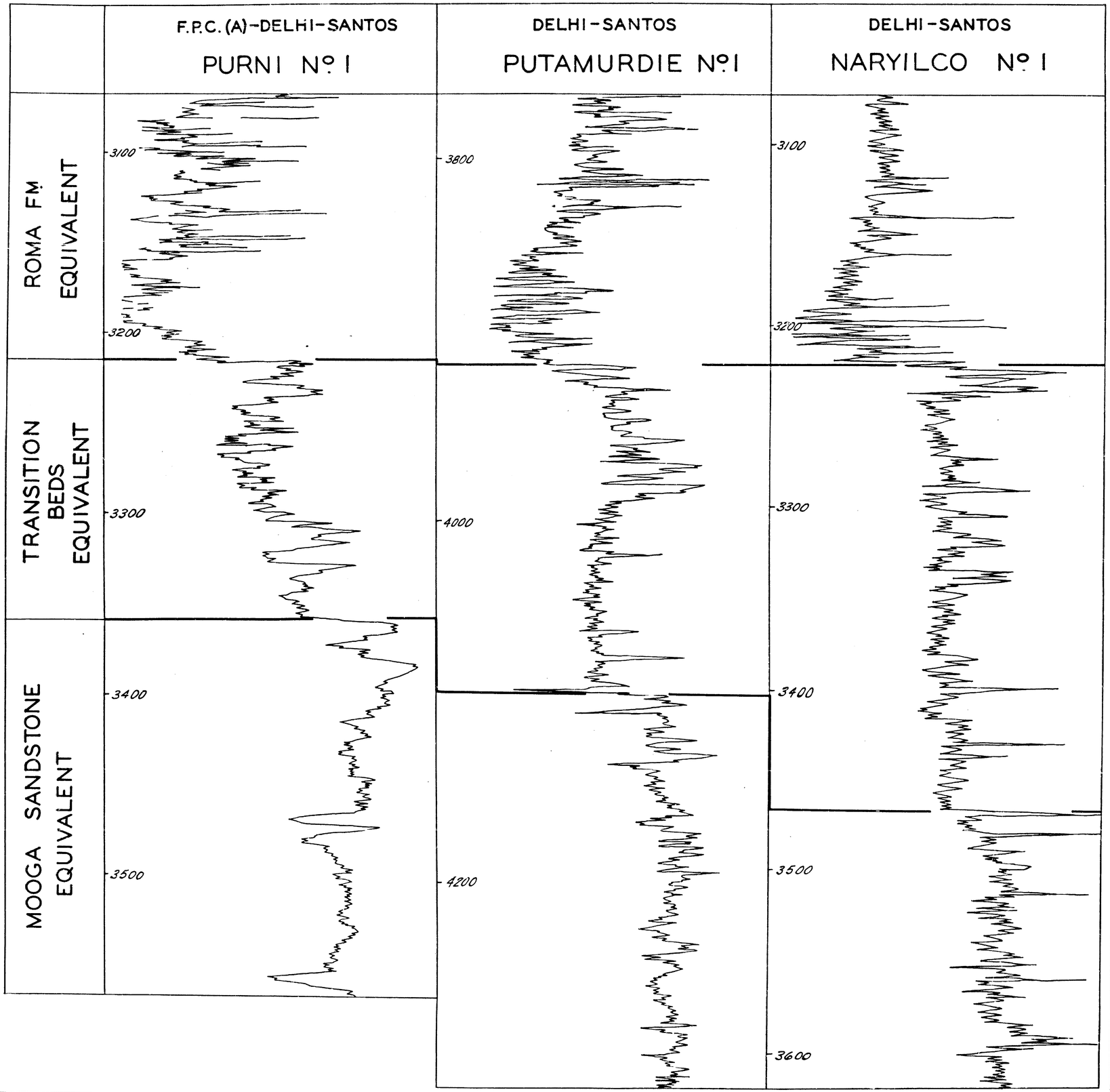
OIL EXPLORATION WELLS OUTSIDE S.A. (IN WESTERN G.A.B.)	LATITUDE	LONGITUDE	STATE	ELEVATION (K.B.) ‡METRES	*DEPTH (SUBSEA) ‡METRES
ROSENEATH NO. 1	28°9'48"	141°14'43"	QLD.	133	-1121
TICKALARA NO. 1	28°19'20"	141°24'50"	QLD.	132	-1002
ORIENTOS NO. 1	28°3'20"	141°25'38"	QLD.	144	-1098
ORIENTOS NORTH NO. 1	28°0'58"	141°25'38"	QLD.	137	-1108
EPSILON NO. 1	28°8'45"	141°9'24"	QLD.	130	-1155
NARYILCO NO. 1	28°27'4"	141°42'23"	QLD.	132(GR.)	-850
MT. HOWITT NO. 1	26°37'27"	142°28'17"	QLD.	144	-859
TALLALIA NO. 1	27°23'	141°16'	QLD.	135	-1245
INNAMINCKA NO. 2	27°27'10"	141°3'17"	QLD.	102	-1267
ARRABURY NO. 1	27°11'35"	141°4'50"	QLD.	131	-1450
GILPEPPEE NO. 1	26°25'25"	141°33'17"	QLD.	103	-1607
BETOOTA NO. 1	25°42'30"	140°49'46"	QLD.	109	-935
BIRDSVILLE TOWN BORE	25°54'40"	139°21'30"	QLD.	51	-1076
McDILLS NO. 1	25°43'50"	135°47'25"	N.T.	126	-312

* To top of Cadna-owie Formation or Transition Beds.

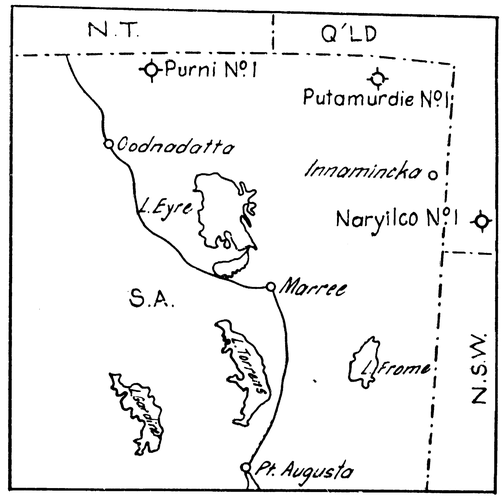
‡ To nearest metre, due to size of contour interval.

APPENDIX II

COMPANY	NAME OF SURVEY	ENVELOPE NUMBER
BEACH PETROLEUM N.L.	Three Corners Seismic and Gravity Survey, 1971.	1682
FLINDER'S PETROLEUM N.L.	Cooper's Creek Central, Seismic and Gravity Survey, 1970 and 1971.	1617
CRUSADER OIL N.L.	Frome Downs, Seismic and Gravity Survey, 1970.	1566
FLINDER'S PETROLEUM N.L.	Innamincka, Seismic and Gravity Survey, 1970.	1469
ASHBURTON OIL N.L.	Lake Gregory, Seismic and Gravity Survey, 1970.	1319
PURSUIT OIL N.L.	Seismic Survey - Great Artesian Basin, 1970.	1285
PEXA OIL N.L.	Carrawoona and Murta, Seismic and Gravity Survey, 1969.	1279
BRIDGE OIL N.L.	Patchawarra Central Seismic and Gravity Survey, 1970.	1212
DELHI AUSTRALIAN PETROLEUM LTD.	Southern Cooper Basin, Seismic and Gravity Survey, 1969.	1132
DELHI AUSTRALIAN PETROLEUM LTD.	Cooper Basin, Seismic and Gravity Survey, 1967.	866
DELHI AUSTRALIAN PETROLEUM LTD.	Final Report, Strzelecki - Cooper, Seismic and Gravity Survey, 1965.	569
FRENCH PETROLEUM COMPANY OF AUSTRALIA	Kallakoopah Reflection Seismic Survey, 1964.	405



LOCALITY MAP



NOTE - Rock boundaries chosen on electrical log characteristics and lithology.

Δt Increases to left

FIG. 2

DEPARTMENT OF MINES — SOUTH AUSTRALIA

CONTINUOUS VELOCITY LOGS THROUGH TRANSITION BEDS EQUIVALENTS

		Drn.	SCALE: Vert. 50 feet to 1 inch
		Tcd. B.L.S	64 – 872 994·2/3
		Ckd.	
Director of Mines		Exd.	DATE: 10-8-65

N O R T H E R N T E R R I T O R Y

S O U T H A U S T R A L I A

Q U E E N S L A N D

25° 00'

26° 00'

27° 00'

134° 00'

135° 00'

136° 00'

137° 00'

138° 00'

138° 30'

28° 00'

Blood's Creek

Wilcherrie 1

Mt Crupe 1

Junction

Mt Sarah

Mt Wills 1

Hale River 1

Purni 1

Mokari No1

Oodnadatta 2

Yardinna Bore

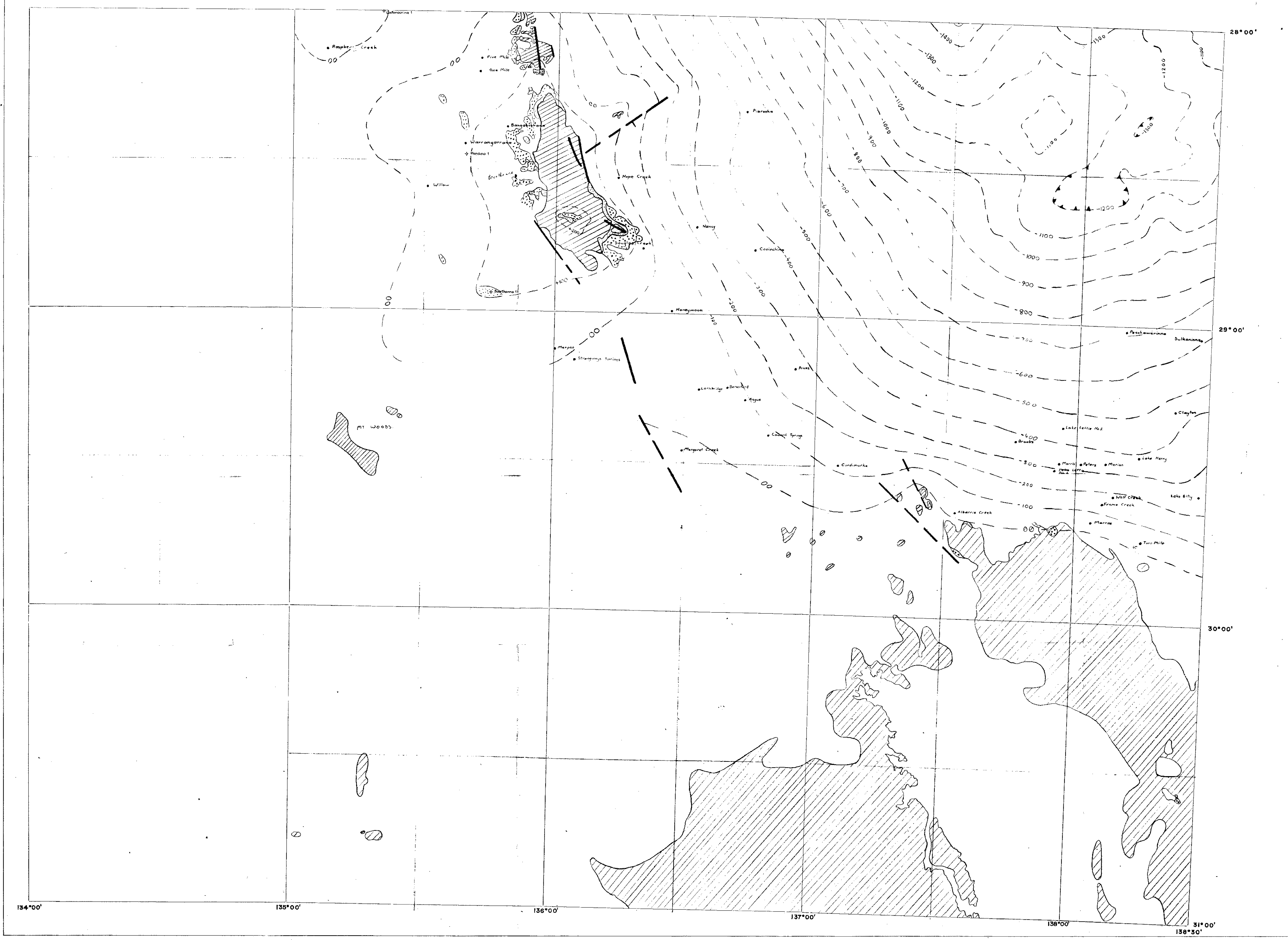
Oodnadatta 1

Poonarunna 1

CONTOURS CONJECTURAL

Here a [illegible] etc

600 metre contours


28°00'
29°00'
30°00'
31°00'
134°00'
135°00'
136°00'
137°00'
138°00'
138°30'
Cootanoorina 1
Five Mile
One Mile
Piarooka
Bangabarrana
Warrangarrana
Weedina 1
Willow
Nope Creek
Nancy
Douglas Creek
Cooinchina
Boorthanna 1
Honeymoon
Merpoo
Strangways Springs
Prices
Lethbridge
Beresford
Angus
Coward Springs
Margaret Creek
Curdimurka
Alberrie Creek
Peachawarinna
Dulkaninna
Clayton
Lake Lettie No.3
Brooks
Morris
Peters
Marion
Lake Harry
Well Creek
Frome Creek
Lake Billy
Marree
Two Mile
MT WOODS
-1400
-1300
-1200
-1100
-1000
-900
-800
-600
-500
-400
-300
-200
-100
00
+100


S.A. DEPT. OF MINES
STRUCTURAL CONTOUR PLAN ("C" horizon)
OF PORTION OF
THE GREAT ARTESIAN BASIN
STRUCTURAL DATUM IS CADNA-OWIE FORMATION
ELEVATION DATUM - MEAN SEA LEVEL
CONTOUR INTERVAL - 100 Metres
COMPILED BY I. B. FREYTAG AND M BROWNHILL MARCH 1963
REVISED BY I B FREYTAG SEPT. 1964
REVISED BY I. J. TOWNSEND JAN 1968
REVISED BY M. H. STADTER JAN. 1972
EXPLANATION
Contours in areas of good depth control
Contours in areas of limited depth control or of contour interpolation.
• Meteor - Water bore to Algebuckina Sandstone
Pueni No.1 - Oil exploration well, abandoned or completed as artesian water well
Gidgealpa No.3 - Oil exploration well completed as gas producer
Cadna-owie Formation
Algebuckina Sandstone or equivalents.
Undifferentiated pre-Mesozoic outcrops
Fault, established
Fault, inferred
up
down
SCALE:
Kms
miles
1:1,000,000
Present Scale 1:500,000
LOCALITY PLAN
GREAT ARTESIAN BASIN BOUNDARY
AREA OF STRUCTURE PLAN
Scale
ADELAIDE
QUEENSLAND
NEW SOUTH WALES
SOUTH AUSTRALIA
28°00'
29°00'
30°00'
31°00'
138°30'
139°00'
140°00'
141°00'
142°00'
143°00'
Mungeranie
Mulka
Kopperamanna
Cannuwaukaninna
Coorganna
Jewellery
Sinclair
Trowdaninna
Chappatanna
Tarkaninna
Nick of Time
Toonketchen
Montecollina
Meteor
Clayton Bore
Lake Crossing
Murnpeowie
Petermorra
Deans Lookout
Quart Pot
Junction
Woolatchie
New Tilcha
Coonarra
Yandama
Mulwowurtina
Pooritana
Cooper Creek
Cootabarlow
Arkaba
Curnamona
Culberta
Thurlooka
Lakeside
Glenmanga No. 2
Bewney
Kidman No. 1
Black Oak
Tickalara 1
Cherri 1
Tinga Tingana 1
Kumbarie 1
-1700
-1600
-1500
-1400
-1300
-1200
-1100
-1000
-900
-800
-700
-600
-500
-400
-300
-200
-100
00