

COMMONWEALTH OF AUSTRALIA
DEPARTMENT OF NATIONAL DEVELOPMENT
BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS

Petroleum Search Subsidy Acts
PUBLICATION No. 12

SUMMARY OF DATA AND RESULTS

**Drilling Operations in the Sydney Basin
New South Wales, 1958-1962**

OF

**AUSTRALIAN OIL AND GAS CORPORATION LIMITED
FARMOUT DRILLERS NO LIABILITY**

AND

EXOIL (N.S.W.) PTY LIMITED

*Issued under the Authority of the Hon. David Fairbairn
Minister for National Development*

1965

36

COMMONWEALTH OF AUSTRALIA

DEPARTMENT OF NATIONAL DEVELOPMENT

MINISTER: THE HON. DAVID FAIRBAIRN, D.F.C., M.P.

SECRETARY: SIR HAROLD RAGGATT, C.B.E.

BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS

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THIS REPORT WAS PREPARED FOR PUBLICATION IN THE PETROLEUM EXPLORATION BRANCH

ASSISTANT DIRECTOR: M. A. CONDON

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Canberra, A.C.T.*

FOREWORD

Under the Petroleum Search Subsidy Act 1959-1961, agreements relating to subsidized operations provide that the information obtained may be published by the Commonwealth Government six months after the completion of field work.

The growth of the exploration effort has greatly increased the number of subsidized projects and this increase has led to delays in publishing the results of operations.

The detailed results of subsidized operations may be examined at the Bureau of Mineral Resources in Canberra and Melbourne (after the agreed period) and copies of the reports may be purchased.

In order to make the main results of operations available early, short summaries are being prepared for publication. These will be grouped by area and date of completion as far as practicable. Drilling projects and geophysical projects will be grouped separately. In due course, full reports will be published concerning those operations which have produced the more important new data.

This Publication contains summaries of data and results of four drilling operations undertaken in the Sydney Basin, New South Wales: Mulgoa No. 2, Mount Hunter No. 1, Stockyard Mountain No. 1, and Kurrajong Heights No. 1. The information has been abstracted by the Petroleum Exploration Branch of the Bureau of Mineral Resources from well completion reports furnished by Australian Oil and Gas Corporation Limited, Farmout Drillers N.L., and Exoil (N.S.W.) Pty Limited.

J.M. RAYNER
DIRECTOR

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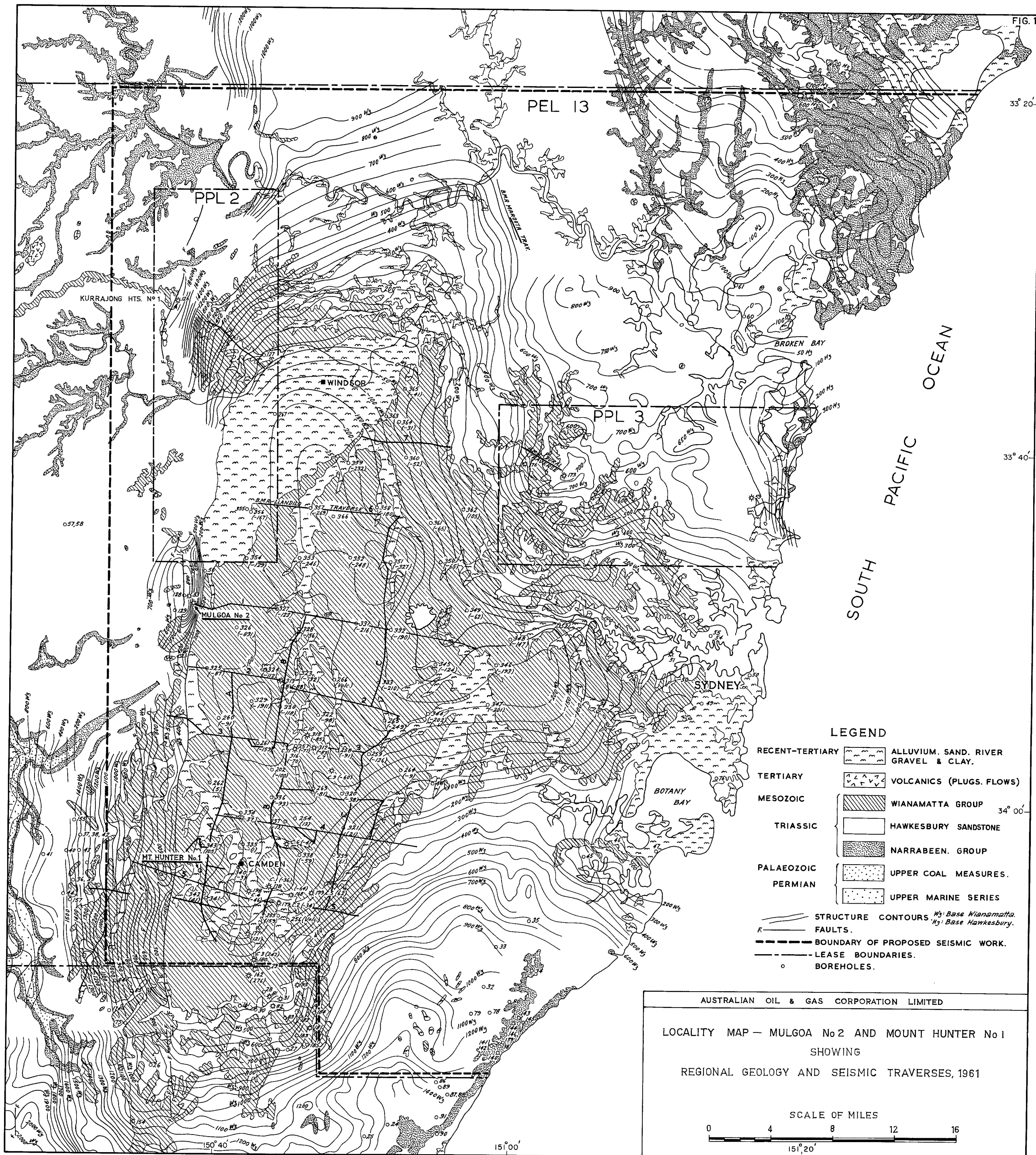
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MULGOA NO. 2

of

AUSTRALIAN OIL AND GAS CORPORATION LIMITED

SUMMARY OF DATA AND RESULTS

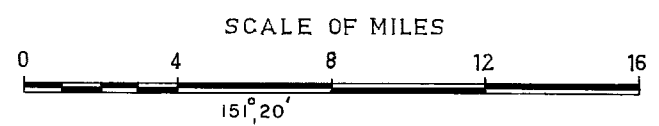


LEGEND

- | | | |
|--|--|--------------------------------------|
| RECENT-TERTIARY | | ALLUVIUM, SAND, RIVER GRAVEL & CLAY. |
| TERTIARY | | VOLCANICS (PLUGS, FLOWS) |
| MESOZOIC | | WIANAMATTA GROUP |
| TRIASSIC | | HAWKESBURY SANDSTONE |
| | | NARRABEEN. GROUP |
| PALAEZOIC | | UPPER COAL MEASURES. |
| PERMIAN | | UPPER MARINE SERIES |
| STRUCTURE CONTOURS W ₃ : Base Wianamatta, H ₃ : Base Hawkesbury. | | |
| F. FAULTS. | | |
| --- BOUNDARY OF PROPOSED SEISMIC WORK. | | |
| --- LEASE BOUNDARIES. | | |
| ○ BOREHOLES. | | |

AUSTRALIAN OIL & GAS CORPORATION LIMITED

LOCALITY MAP — MULGOA No 2 AND MOUNT HUNTER No 1
SHOWING
REGIONAL GEOLOGY AND SEISMIC TRAVERSES, 1961



MULGOA NO. 2

SUMMARY OF DATA AND RESULTS *

SUMMARY

Mulgoa No. 2 Well was located in the central-western part of the Sydney Basin, about 35 miles west of Sydney, New South Wales. The well was drilled by the Operator, Australian Oil and Gas Corporation Limited, using a Bucyrus Erie 48-L cable-tool rig, to a total depth of 5630 feet. Drilling commenced on 20th September, 1958, and was completed on 5th November, 1959. A programme of coring and gas sampling was carried out, but no electric logging, perforating or testing operations were undertaken.

The well penetrated 2498 feet of Triassic shales and sandstones and 3132 feet of Permian coal measures, sandstones, shales, and siltstones.

The objective of the drilling operation was to test the petroleum potential of the Permian strata in the Mulgoa Anticline. Pre-Permian rocks were expected between 5000 and 5200 feet but the well was still in sediments of Permian age when mechanical difficulties caused it to be abandoned at 5630 feet. The well was sited on the eastern flank of the anticline, some 15 miles east (basinwards) of outcropping Permian strata.

Many natural gas shows were encountered in the Triassic and Permian beds but none proved to be of commercial significance. The only large flows of natural gas were at 2579 feet and at 3558 to 3559 feet, and these proved to be blowouts in coal seams. Flows in both cases quickly subsided. Orifice meter tests of twelve gas flows gave a maximum yield of 40 Mcf/D, reducing to 10 Mcf/D after 20 hours.

The stratigraphic drilling operation at Mulgoa No. 2, New South Wales, was subsidized under the Petroleum Search Subsidy Act 1957-1958, from surface to total depth.

* Abstracted from Well Completion Report, Mulgoa No. 2 Well, Sydney Basin, New South Wales, by D.J. McGarry, Australian Oil and Gas Corporation Limited, 1960.

WELL HISTORY

General Data

Well name and number:	Mulgoa No. 2
Location:	Latitude 33° 48' 39" S. Longitude 150° 38' 28" E.
Name and address of Tenement Holder:	Australian Oil and Gas Corporation Limited, 261 George Street, Sydney, New South Wales
Details of Petroleum Tenement:	Petroleum Exploration Licence No. 13, issued by the State of New South Wales
Total Depth:	5630 feet
Date drilling commenced:	20th September, 1958
Date drilling completed:	5th November, 1959
Date well abandoned:	8th June, 1960
Date rig released:	8th June, 1960
Elevation (ground):	497 feet
Elevation (floor level):	501 feet (datum for depths)
Status:	Dry hole; plugged and abandoned
Cost:	£50,850

Drilling Data

Drilling Plant:

Make:	Bucyrus Erie
Type:	48-L Oil Well Spudder

Hole sizes and depths:	19 1/2" to 65 feet
	16 1/2" to 1063 feet
	12 1/4" to 1240 feet
	12" to 2763 feet
	8 3/4" to 3582 feet
	5 7/8" to 5630 feet (T.D.)

Casing details:

Size (in.):	18	13 3/8	9 5/8	6 5/8
Weight (lb./ft):		48	36	20
Grade:		H	J	J
Range:		2	2	2
Setting depth (ft):	65	1063	1240 2763 (final)	3582

Logging and Testing

Ditch Cuttings:

Interval: Sampled at end of each drilling run, which generally averaged less than ten feet.

Coring: Twelve coring runs were made using a Baker core barrel and 5 5/8" bit (core diameter 2 1/16"). A total of 64.5 feet was cored and 52.75 feet recovered (81.8% recovery).

Gas Testing: Wherever possible samples were obtained from each separate gas horizon by the wellsite geologist, and despatched to the Chemical Laboratory of the N.S.W. Department of Mines for analysis. Gas flows were also tested with an orifice meter.

GEOLOGY

Stratigraphy

Wianamatta Group (Triassic) : Surface to 70 feet

Dark grey to black, carbonaceous shale with thin flaggy sandstone at base.

Hawkesbury Sandstone (Triassic) : 70 to 850 feet (780 feet)

Light grey to white, medium to coarse-grained, quartz sandstone. Finely conglomeratic in part and with a few thin grey shale beds.

Narrabeen Group (Triassic) : 850 to 2498 feet (1648 feet)

Mostly medium-grained sandstone, in part finely conglomeratic, with thin interbeds of grey and greenish shale. Grey, micaceous shale, with some chocolate shale, are dominant in the upper part of the sequence, and 50 feet of dark grey shales occur at the base. The interbedded shales and sandstones from 850 to 950 feet can

be correlated with the Gosford Formation. The shales from 950 to 985 feet are correlated with the Bald Hill Claystone or Collaroy Claystone, and the remainder is the equivalent of the Clifton Subgroup.

Lithgow Coal Measures (Permian) : 2498 to 2865 feet (367 feet)

Interbedded grey shale, black carbonaceous shale, coal seams, grey, fine to medium-grained, lithic sandstone and grey tuffaceous shale.

Coal Measures (Permian - probably equivalent to Tomago Coal Measures): 2865 to 3597 feet (732 feet)

Interbedded grey shale, grey siltstone, fine to medium-grained, grey lithic sandstone, and thin ill-defined coal stringers.

Capertee Group (Permian) : 3597 to 5630 feet (2033 feet +)

Interbedded grey siltstone (calcareous in part), dark grey shale (carbonaceous in part), fine to medium-grained, grey lithic sandstone, and medium to coarse-grained, pebbly sandstone. Thin limestone beds are interbedded with the carbonaceous strata near the top of the sequence. The beds contain brachiopod fragments, rugose corals, and arenaceous foraminifera.

Structure

Mulgoa No. 1 (drilled in 1935, T.D. 3119 feet) and Mulgoa No. 2 were both located on the Mulgoa Anticline, a small structure forming part of the Lapstone Monocline. Mulgoa No. 2 was sited one mile east and 300 feet below the crest of the anticline, and approximately 1 1/2 miles east-south-east of Mulgoa No. 1. The anticline has a north-south axis, a maximum closure of 300 feet over an area of ten square miles, and is faulted on the western flank.

Occurrence of Natural Gas

Numerous gas shows were encountered during drilling. The results of analyses indicate a generally high carbon dioxide content of the gas encountered in the Narrabeen Group, the Lithgow Coal Measures, and the unnamed coal measures to 3597 feet. Analyses of gas from the Capertee Group showed a low carbon dioxide content and a relatively high ethane and propane content.

REFERENCES

- | | | |
|----------------|-------|--|
| HARPER, L.F., | 1916: | The geology and mineral resources of the southern Coalfield. <u>Geol. Surv. N.S.W. Mem. 7.</u> |
| McELROY, C.T., | 1962: | Explanatory notes to the Sydney 1:250,000 Geological Sheet, I/56-5, 2nd Edition. <u>Bur. Min. Resour. Aust. Expl. Notes.</u> |

ADDITIONAL DATA FILED IN THE
BUREAU OF MINERAL RESOURCES

The following additional data relating to Mulgoa No. 2 Well, have been filed in the Bureau of Mineral Resources, Canberra, and are available for reference:

- | | | |
|------|---|--------|
| (i) | Well Completion Report | 22 pp. |
| | Appendix I : Core descriptions | 5 pp. |
| | Appendix II : Micropalaeontology by Irene Crespin | 2 pp. |
| | Appendix III : Gas analyses by Chemical Laboratory,
N.S.W. Department of Mines | 1 p. |
| | Appendix IV : Water analyses by N.S.W. Water
Conservation and Irrigation
Commission | 2 pp. |
| | Appendix V : Coal analysis by Chemical Laboratory,
N.S.W. Department of Mines | 1 p. |
| | Appendix VI : Porosity and permeability determinations
by Bureau of Mineral Resources | 1 p. |
| (ii) | Daily well logs for period 29th September, 1958 to 3rd June, 1960. | |

MOUNT HUNTER NO. 1

of

AUSTRALIAN OIL AND GAS CORPORATION LIMITED

SUMMARY OF DATA AND RESULTS

MOUNT HUNTER NO. 1

SUMMARY OF DATA AND RESULTS *

SUMMARY

Mount Hunter No. 1 Well was located in the Sydney Basin approximately three miles west of Camden, New South Wales, and 17 miles south of Mulgoa No. 2. The well was drilled by the Operator, Australian Oil and Gas Corporation Limited, using a Bucyrus Erie 28-L cable-tool rig, to a total depth of 3512 feet. Drilling commenced on 26th October, 1961, and was completed on 5th February, 1962. A programme of coring, gas and water sampling, and Gamma-Ray logging was undertaken.

The well penetrated 2111 feet of Triassic shales and sandstones and 1401 feet of Permian coal measures, sandstones, shales, and siltstones.

Mount Hunter No. 1 was drilled to obtain stratigraphic information and to test the petroleum potential of the Triassic and Permian sediments in a structure located by seismic survey.

Several gas producing horizons were intersected by the well but the yields were too small for economic production. The well was plugged at 300 feet and the upper portion was left open for conversion to a water bore.

The stratigraphic drilling operation at Mount Hunter No. 1, New South Wales, was subsidized under the Petroleum Search Subsidy Act 1959, from surface to total depth.

* Abstracted from: Well Completion Report, Mount Hunter No. 1, Sydney Basin, New South Wales, by D. Rose, Australian Oil and Gas Corporation Limited, March, 1962.

WELL HISTORY

General Data

Well name and number:	Mount Hunter No. 1
Location:	Latitude 34° 03' 30" S. Longitude 150° 38' 50" E.
Name and address of Tenement Holder:	Australian Oil and Gas Corporation Limited, 261 George Street, Sydney, New South Wales
Details of Petroleum Tenement:	Petroleum Exploration Licence No. 13, issued by the State of New South Wales
Total Depth:	3512 feet
Date drilling commenced:	26th October, 1961
Date drilling completed:	5th February, 1962
Date well abandoned:	3rd March, 1962
Date rig released:	3rd March, 1962
Elevation (ground):	282 feet
Elevation (floor level):	285 feet (datum for depths)
Status:	Left open to 300 feet for conversion to water bore
Cost:	£16,083

Drilling Data

Drilling Plant:

Make:	Bucyrus Erie
Type:	28-L Cable Tool Spudder

Hole sizes and depths:	17"	to	51 feet
	12 1/2"	to	1065 feet
	8 7/8"	to	1730 feet
	6"	to	3512 feet (T.D.)

Casing details:

Size (in.):	13 3/8	9 5/8	6 5/8
Weight (lb./ft):	48	36	20
Setting depth (ft):	51	1065	1483
			1730 (final)

Logging and Testing

Ditch Cuttings:

Interval: Sampled at end of each drilling run which varied from two to ten feet.

Coring: Eleven coring runs were made using a Baker core barrel and 5 5/8" bit (core diameter 2 1/16"). A total of 61 feet was cored and 39'8" recovered (65% recovery).

Gas Testing: Well head flow rates were determined using a 2" orifice well tester. Gas samples were submitted to the N.S.W. Department of Mines for analysis.

Gamma-Ray logging: Gamma-Ray logging was carried out by the Bureau of Mineral Resources.

GEOLOGY

Stratigraphy

Wianamatta Group (Triassic) : Surface to 180 feet

Blue-grey silty shale with a little grey, fine-grained lithic sandstone near base.

Hawkesbury Sandstone (Triassic) : 180 to 747 feet (567 feet)

White, coarse-grained, quartz sandstone with thin bands of blue-grey silty shale.

Narrabeen Group (Triassic) : 747 to 2111 feet (1364 feet)

The Narrabeen Group is subdivided, somewhat arbitrarily, into the Gosford Formation, and the Clifton Subgroup.

Gosford Formation : 747 to 861 feet (114 feet)

Grey, fine-grained lithic sandstone grading downwards into coarse-grained quartz sandstone. Interbeds of blue-grey silty shale are common.

Clifton Subgroup : 861 to 2111 feet (1250 feet)

This section consists of the Collaroy or Bald Hill Claystone from 861 to 1004 feet - mostly chocolate shale and interbedded grey shale and coarse-grained sandstone - and an undifferentiated series consisting of coarse-grained to conglomeratic sandstone with thin bands of grey silty shale and some grey siltstone.

Lithgow Coal Measures ? (Permian) : 2111 to 2432 feet (321 feet)

Interbedded, blue-grey silty shale, grey, medium-grained to silty sandstone, grey to black carbonaceous shale, buff to cream chert, and coal seams from 4 to 18 feet thick.

Tomago Coal Measures ? (Permian) : 2432 to 3338 feet (906 feet)

Interbedded, grey, medium-grained sandstone, grey siltstone, blue-grey to black shale, grey and white chert, and a few thin coal seams. The shale is carbonaceous in parts and the sandstone may be conglomeratic. The interbedding is irregular.

Capertee Group (Permian) : 3338 to 3512 feet (174 feet+)

Grey, calcareous, fine to coarse-grained sandstone with thin limestone bands and dark grey shale in parts.

Structure

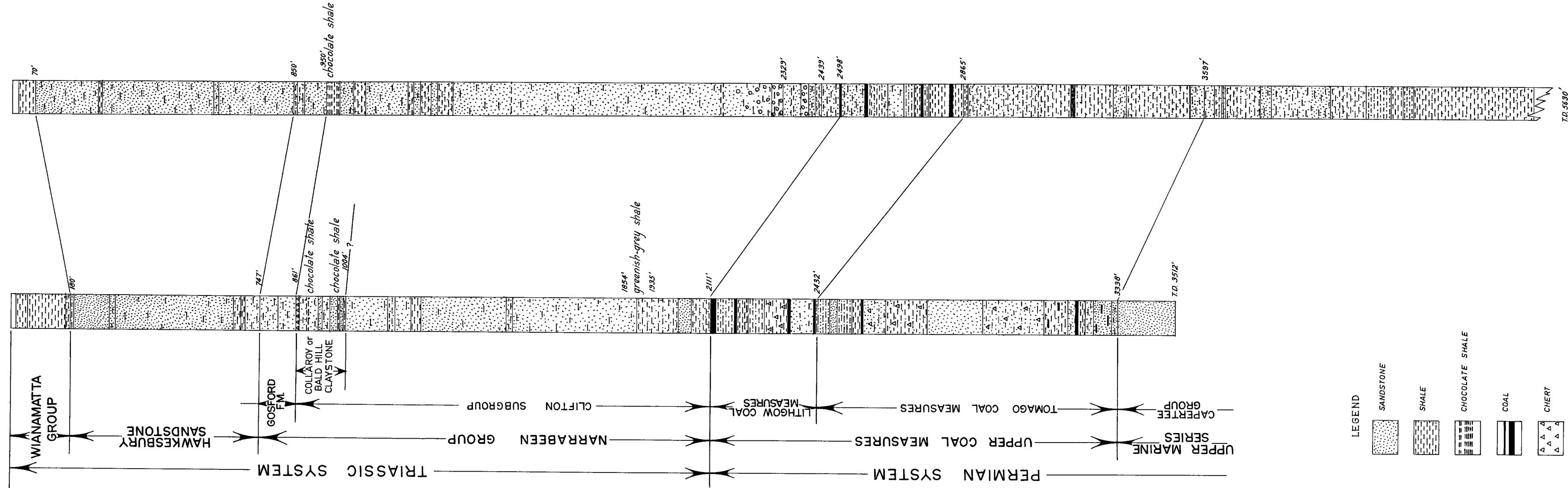
Mount Hunter No. 1 Well was located on east dipping sediments in an area where seismic, aeromagnetic, and geological surveys had indicated the possibility of local closure resulting from very gentle folding, and of regional closure against the Nepean Fault.

ADDITIONAL DATA FILED IN THE BUREAU OF MINERAL RESOURCES

The following additional data relating to Mount Hunter No. 1 Well, have been filed in the Bureau of Mineral Resources, Canberra, and are available for reference:

- | | | |
|-------|---|--------|
| (i) | Well Completion Report | 12 pp. |
| | Appendix A : Gas flow data | 7 pp. |
| | Appendix B : Water flow data .. | 3 pp. |
| | Appendix C : Gamma-Ray logging report .. | 2 pp. |
| (ii) | Description of cuttings | |
| (iii) | Daily well logs for period 26th October, 1961 to 3rd March, 1962. | |

MT. HUNTER No.1 MULGOA No.2



CORRELATION SECTION
MT. HUNTER No.1 & MULGOA No.2 WELLS

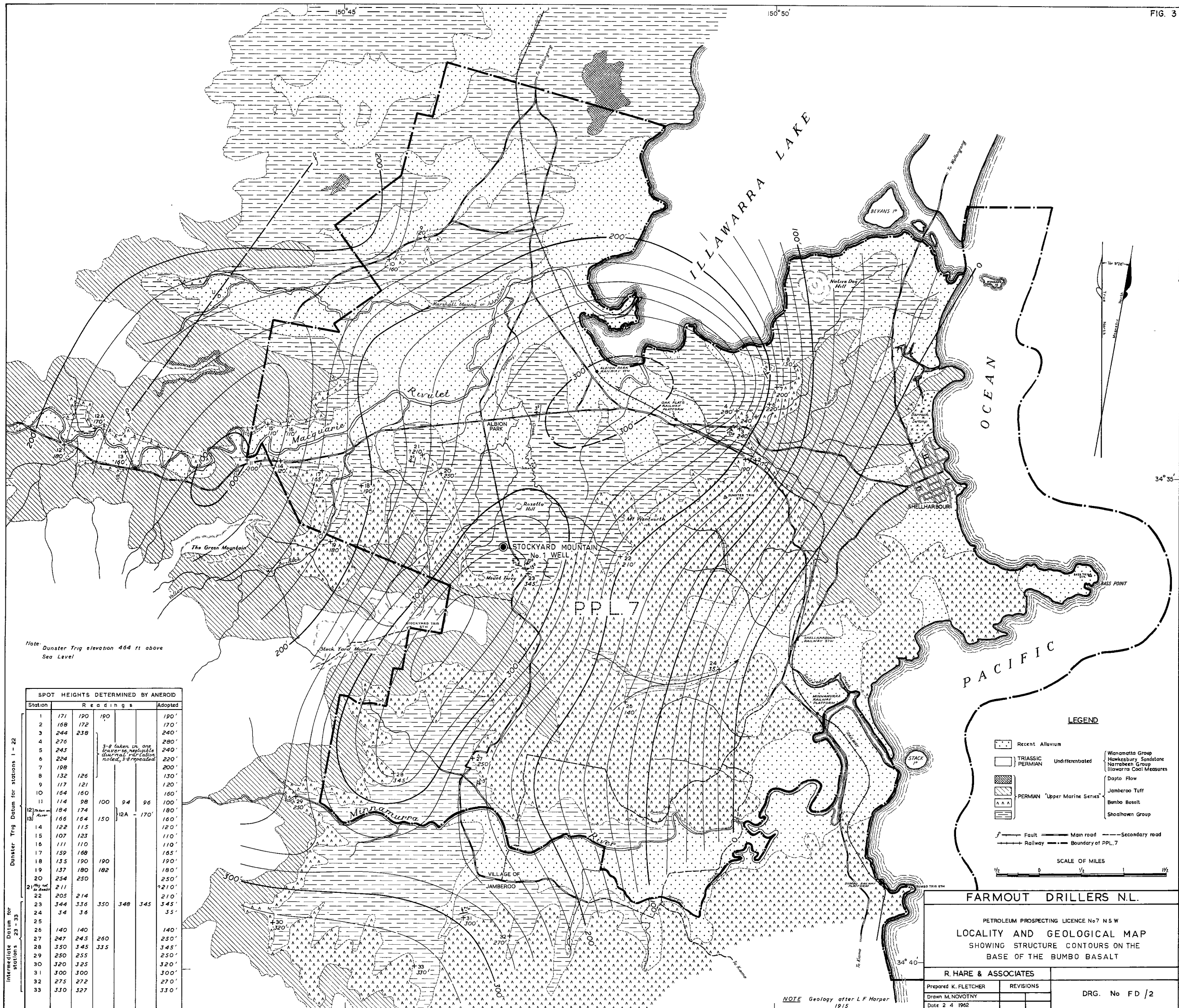
VERTICAL SCALE : 250 Feet = 1 Inch.

STOCKYARD MOUNTAIN NO. 1

of

FARMOUT DRILLERS NO LIABILITY

SUMMARY OF DATA AND RESULTS



STOCKYARD MOUNTAIN NO. 1

SUMMARY OF DATA AND RESULTS *

SUMMARY

Stockyard Mountain No.1 Well was drilled in the Sydney Basin, about 10 1/2 miles south-west of Port Kembla, on a surface structure known as the Stockyard Mountain Dome. The operating company, Farmout Drillers No Liability, drilled the well under a farmout arrangement with Consolidated Oil Limited, on New South Wales Petroleum Prospecting Licence No. 7. The well was drilled by Woodside (Lakes Entrance) Oil Company N.L., using a Brewster N.4 rig, to a total depth of 3516 feet. Drilling commenced on 30th July, 1962, and was completed on 12th October, 1962. A full programme of logging, testing, and coring was undertaken.

The well penetrated three feet of Recent alluvium and scree, 3282 feet of Permian sediments and volcanics, and bottomed at 3516 feet in interbedded sandstone, siltstone, and shale of presumed Devonian age.

Stockyard Mountain No. 1 was drilled to test the petroleum potential of the complete Permian sequence on a known closed structure, the Stockyard Mountain Dome.

A number of porous interbeds were present between 1867 and 2060 feet in the Permian Nowra Sandstone, and the gas detection equipment recorded very small amounts of hydrocarbon gas present in the drilling mud while drilling below 1890 feet. A drillstem test of the interval 1859 to 2110 feet yielded 560 feet of fresh water.

The stratigraphic drilling operation at Stockyard Mountain No. 1, New South Wales, was subsidized under the Petroleum Search Subsidy Act 1959-1961, from surface to total depth.

* Abstracted from: Well Completion Report, Stockyard Mountain No. 1, New South Wales, by R. Hare and Associates, March, 1963.

WELL HISTORY

General Data

Well name and number:	Stockyard Mountain No. 1
Location:	Latitude 34° 35' 41" S. Longitude 150° 46' 53" E.
Name and address of Tenement Holder:	Consolidated Oil Limited, C/- 375 George Street, Sydney, New South Wales
Details of Petroleum Tenement:	Petroleum Prospecting Licence No. 7, issued by the State of New South Wales
Total Depth:	3516 feet
Date drilling commenced:	30th July, 1962
Date drilling completed:	12th October, 1962
Date well abandoned:	15th October, 1962
Date rig released:	16th October, 1962
Elevation (ground):	162 feet
Elevation (K.B.):	174 feet (datum for depths)
Status:	Abandoned
Cost:	£81,369

Drilling Data

Drilling Plant:

Make:	Brewster
Type:	N.4

Hole sizes and depths:	17"	to	55 feet
	12 1/4"	to	551 feet
	8 3/4"	to	3516 feet (T.D.)

Casing details:

Size (in.):	13 3/8	9 5/8
Weight (lb./ft):	48	36
Grade:	H.40	J.55
Range:	2	2
Setting depth (ft):	55	549

Logging and Testing

Ditch Cuttings:

Interval: Ten feet from surface to T.D.

Coring: Fourteen cores were cut using a Hughes Type "J" core barrel with hard formation cutter heads. A total of 111.5 feet was cored and 92.25 feet (82.7%) recovered.

Electric and other logging (Schlumberger):

Electric Log: 100 - 3515 feet (3 runs)

Microlog-Caliper: 100 - 3513 feet (3 runs)

Drilling Time and Gas Log: A drilling time log was maintained below 200 feet.

Formation Testing: Four drillstem tests were carried out during the drilling operation.

GEOLOGY

Stratigraphy

General:

The stratigraphic section encountered in Stockyard Mountain No. 1 Well is tabled below:

<u>Age</u>	<u>Formation</u>	<u>Lithology</u>	<u>Depth</u>	<u>Thickness</u> (feet)
			<u>Intervals</u> (feet)	
Recent Permian	Gerringong Volcanics	Alluvium and scree	12- 15	3
		Tuff and alluvium	15- 45	30
		Shale, siltstone, sandstone, and basalt between 970 and 1250	45-1610	1565
	Nowra Sandstone	Sandstone	1610-2065	455
	Wandrawandian Siltstone	Sandstone, shale, siltstone	2065-2549	484
Devonian	Conjola Beds	Rhyolitic and tuffaceous claystone, with sandstone, siltstone, carbonaceous shale and minor coal.	2549-3255	706
		Basal conglomerate.	3255-3297	42
		White to pink siliceous sandstone, reddish-brown to light grey siliceous siltstone, and maroon, red, brown, grey, and green shale.	3297-3516(T.D.)	219+

Detailed :

Recent : Surface to 15 feet (3 feet)
Alluvium and scree.

Gerrigong Volcanics (Permian) : 15 to 45 feet (30 feet)

Interbedded, grey and brown, fine-grained tuff, brown chert, dark grey basalt, and light grey, fine-grained, quartz sandstone.

Berry Shale (Permian) : 45 to 1610 feet (1565 feet)

This formation consists of a dominantly shaly unit to 362 feet, a siltstone unit to 840 feet, an interbedded unit of sandstone, siltstone, and shale to 970 feet, volcanics, dominantly basalt, to 1250 feet, and a second shale unit, with sandstone interbeds below 1371 feet, to 1610 feet.

The upper shale unit (45 to 362 feet) is dark grey, silty, hard shale, with minor amounts of grey, carbonaceous siltstone and fine-grained pyritic sandstone. The siltstone unit (362 to 840 feet) is mostly medium grey siltstone containing traces of mica, pyrite, and carbonaceous material, with minor shale and sandstone as above.

The interbedded unit (840 to 970 feet) consists of interbeds of grey and brown, fine to medium-grained, hard sandstone, grey, hard, micaceous, siliceous siltstone, light grey, hard, dolomitic siltstone, and a few interbeds of shale and siltstone similar to those in the higher units.

The volcanics (970 to 1250 feet) include a dark to medium grey, porphyritic basalt and grey-brown, porphyritic rhyolite with bands of fine-grained sandstone in the upper part and buff to grey siliceous dolomite near the base.

The lower shale unit (1250 to 1610 feet) is mostly dark grey to brown and black micaceous shale with interbeds of sandstone similar to that in the higher units.

Nowra Sandstone (Permian) : 1610 to 2065 feet (455 feet)

Light grey to white, fine-grained to very coarse-grained sandstone, generally siliceous but kaolinitic and calcareous in places. Porous zones were noted and tested but fresh water only was recovered.

Wandrawandian Siltstone (Permian) : 2065 to 2549 feet (484 feet)

Interbedded, grey-brown, fine-grained sandstone, dark brown to black, silty, carbonaceous, micaceous shale, and grey to black, tuffaceous, argillaceous siltstone. A thin bed of finely crystalline fossiliferous limestone was noted between 2380 and 2390 feet.

Conjola Beds (Permian) : 2549 to 3255 feet (706 feet)

Interbedded basic volcanics, tuffaceous claystone, siliceous sandstone, argillaceous and tuffaceous siltstone, carbonaceous shale, and minor amounts of dolomite, conglomeratic sandstone, quartzite, and coal.

Basal Conglomerate (Permian) : 3255 to 3297 feet (42 feet)

The basal unit of the Permian is a grey conglomerate containing pebbles and cobbles of quartzite, sandstone, chert, siltstone, schist, and slate.

Devonian Sediments : 3297 to 3516 feet (219 feet +)

Interbedded, light green to pink, siliceous sandstone; grey to red-brown siltstone; and red-brown, grey, maroon, and green shale. No fossils were found and the age was assumed to be Devonian.

Structure

Stockyard Mountain No. 1 was drilled on a domal structure having an area of approximately nine square miles and a closure of 200 feet on the base of the Bumbo Basalt. There is no certain evidence that the structure extends downwards in the Permian sediments. Dips measured in Cores 13 (3415 to 3425 feet) and 14 (3511 to 3516 feet) taken in the Devonian beds vary from 6° to 15° and are in keeping with the angular unconformity between the Devonian and Permian strata.

Occurrence of Hydrocarbons

Minor showings of gas were encountered in Stockyard Mountain No. 1, but none was of commercial significance. A Johnston Williams hot filament type gas detector and a Honeywell recorder were used for the detection of hydrocarbon gas, and the readings used in the preparation of a gas log. Below 1890 feet very small traces of hydrocarbon gas were detected in the drilling mud.

Porosity and Permeability

A number of thin porous beds are present in the Nowra Sandstone between 1867 and 2059 feet. These beds total 51 feet; the porosity is estimated to range between 10 and 14 percent. Permeability appears to be poor. A test of these porous beds yielded 560 feet of fresh water. Two thin porous units are also present at the top of the Wandrawandian Siltstone. These were included in the drillstem test of the porous unit of the Nowra Sandstone, which yielded fresh water. Micrologs indicated that several thin porous stringers appear to be present in the Wandrawandian Siltstone between 2307 and 2324 feet. These total in the aggregate less than four feet and are probably fresh water bearing. Several thin streaks of porosity each less than one foot, may also be present in the basal Wandrawandian between 2536 and 2541 feet. Elsewhere, the section penetrated in the Stockyard Mountain No. 1 Well was non-porous.

ADDITIONAL DATA FILED IN THE
BUREAU OF MINERAL RESOURCES

The following additional data relating to Stockyard Mountain No. 1 Well, have been filed in the Bureau of Mineral Resources, Canberra, and are available for reference:

- (i) Well Completion Report 28 pp.
 - Appendix 1 : Petrological report by W.A.J. Saunders 1 p.
 - Appendix 2 : Petrological report by D.R. Pinkstone 1 p.
 - Appendix 3 : Palynological report by J.P.F. Hennelly 1 p.
 - Appendix 4 : Water analysis, D.S.T. No. 4, by 1 p.,
Geological Survey of N.S.W. ..
 - Appendix 5 : Core analysis results by Bureau of Mineral 1 p.
Resources
 - Appendix 6 : Electric logging 1 p.
- (ii) Daily drilling reports for period 30th July, 1962 to 16th October, 1962.
- (iii) Well logs including the following:
 - (a) Electrical Log
 - Run 1, 100- 970 feet (2",5" = 100 ft)
 - Run 2, 970-2081 feet (2",5" = 100 ft)
 - Run 3, 2081-3515 feet (2",5" = 100 ft)
 - (b) Microlog
 - Run 1, 100- 969 feet (2",5" = 100 ft)
 - Run 2, 969-2079 feet (2",5" = 100 ft)
 - Run 3, 2079-3513 feet (2",5" = 100 ft)

KURRAJONG HEIGHTS NO. 1

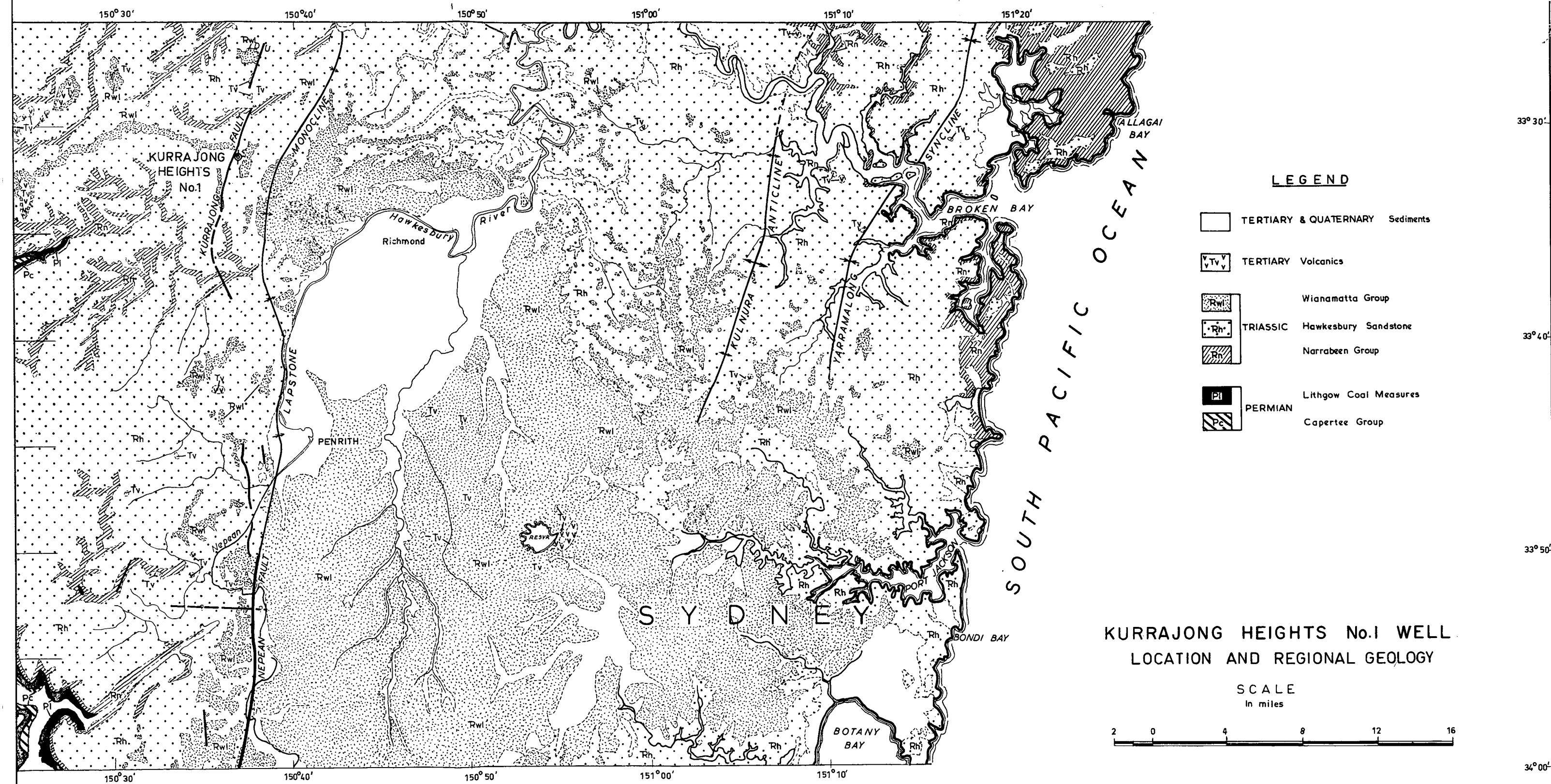
of

AUSTRALIAN OIL AND GAS CORPORATION LIMITED

and

EXOIL (N.S.W.) PTY LIMITED

SUMMARY OF DATA AND RESULTS



E. A. WEBB

May, 1963

KURRAJONG HEIGHTS NO. 1

SUMMARY OF DATA AND RESULTS*

SUMMARY

Kurrajong Heights No. 1 Well was located in the central-western part of the Sydney Basin, about 12 miles west-north-west of Windsor, New South Wales, and approximately 19 1/4 miles north of Mulgoa No. 2. In 1955, the well was drilled by Australian Oil and Gas Corporation Limited, to 4756 feet where drilling was suspended. In 1962, Exoil (N.S.W.) Pty Limited, under a farmout agreement with Australian Oil and Gas Corporation Limited, deepened the well to a total depth of 9132 feet. The same rig, a National-Ideal 55, was used to drill both sections of the hole.

The drilling contractor, Oil Drilling and Exploration Limited, commenced drilling at Kurrajong Heights No. 1 on 11th February, 1955. Operations were suspended on 2nd August, 1955, at 4756 feet. The contractor resumed drilling on 23rd July, 1962, and the well was abandoned on 25th November, 1962 at total depth 9132 feet. A full programme of logging, testing, and coring was undertaken.

The well penetrated 2899 feet of Triassic sediments, predominantly sandstone, 4950 feet of Permian sediments, chiefly sandy siltstone and sandy shale, and was abandoned at 9132 feet after drilling through 1267 feet of volcanics of supposed Permian or Carboniferous age.

The objective of the well was to test the petroleum potential of the Triassic and Permian sediments over a structural "high" indicated by geological survey. The Triassic and Permian sediments down to 4495 feet included suitable reservoir rocks, but the Permian below 4495 feet, although partly marine, did not appear to contain suitable source beds.

No significant shows of oil or gas were recorded and no significant fluid was recovered from twelve drillstem tests at depths ranging from 1046 feet to 7997 feet.

The stratigraphic drilling operation at Kurrajong Heights No. 1 was subsidized under the Petroleum Search Subsidy Act 1959-1961, from 4756 feet to total depth.

* Abstracted from: Well Completion Report, Kurrajong Heights No. 1, New South Wales, by J. Stuntz, Australian Oil and Gas Corporation Limited, R.G. Perry, Bullock and Associates Pty Ltd and E.A. Webb, Consulting Geologist, May, 1963.

WELL HISTORY

General Data

Well name and number:	Kurrajong Heights No. 1
Location:	Latitude 33°31'45"S. Longitude 150°37'15"E.
Name and address of Tenement Holder:	Australian Oil and Gas Corporation Limited, 261 George Street, Sydney, New South Wales
Details of Petroleum Tenement:	Petroleum Prospecting Licence No. 2, issued by the State of New South Wales
Total Depth:	9132 feet
Date drilling commenced:	11th February, 1955
Date drilling suspended:	2nd August, 1955
Depth when suspended:	4756 feet
Date drilling recommenced:	23rd July, 1962
Date drilling completed:	21st November, 1962
Date well abandoned:	25th November, 1962
Date rig released:	25th November, 1962
Elevation (ground):	1863.5 feet
Elevation (K.B.):	1879 feet (datum for depths)
Status:	Plugged and abandoned
Cost:	£157,516 (1962 drilling)

Drilling Data

Drilling Plant:	
Make:	National-Ideal
Type:	55
Hole sizes and depths:	17 1/2" to 709 feet 12 1/4" to 2175 feet 8 3/4" to 9132 feet (T.D.)

Casing details:

Size (in.):	13 3/8	9 5/8
Weight (lb./ft):	48	36
Grade:	H.40	J.55
Range:	3	3
Setting depth (ft):	681.5	2164

Logging and Testing

Ditch Cuttings:

Intervals: Ten feet from surface to 740 feet. Five feet from 740 to 9132 feet (T.D.).

Coring: Thirty-six cores were cut using a Hughes "J" Type core barrel with hard formation cutter heads. A total of 305 feet was cored and 219.3 feet (71.9%) recovered.

Electric and other logging:

(i) 1955

Electric Log: 720-4755 feet (2 runs)

(ii) 1962 (Schlumberger)

Electric Log: 642-9129 feet (3 runs)

Microlog: 2164-9127 feet (2 runs)

Caliper Log: 642-3742 feet (1 run)

Gamma Ray Log: 20-9128 feet (1 run)

Temperature Log: 24-1874 feet (1 run)

Velocity Survey: The well was surveyed to a depth of 9000 feet by Petty Geophysical Company.

Drilling Time and Gas Log: The log was maintained below 4756 feet by Core Laboratories Inc.

Formation Testing: Drillstem tests were run using a Johnston full-hole Type "D" tester. Seven zones were tested with a total of twelve drillstem tests; seven were successful and five were mis-runs. No significant fluid was recovered in the drillstem tests.

GEOLOGY

Stratigraphy

General:

Tabled below is the stratigraphic sequence encountered in Kurrajong Heights
No. 1 Well:

<u>Age</u>	<u>Formation</u>	<u>Depth Intervals (feet)</u>	<u>Thickness (feet)</u>
Triassic	Hawkesbury Sandstone	16- 740	724 +
Triassic	Narrabeen Group	740-2915	2175
Permian	Lithgow Coal Measures(?)	2915-3367	452
Permian	Tomago Coal Measures(?)	3367-4495	1128
Permian	Capertee Group	4495-7865	3370
Permo-Car- boniferous(?)	Volcanics	7865-9132 (T.D.)	1267 +

Detailed:

Hawkesbury Sandstone (Triassic) : Surface to 740 feet (724 feet +)

White, medium to coarse-grained, quartzose sandstone, conglomeratic in part.

Narrabeen Group (Triassic) : 740 to 2915 feet (2175 feet)

740- 780 feet : Quartzose sandstone and grey shale.

780-1020 feet : Red shale, grey shale, and sandstone.

1020-2665 feet : White, medium to coarse-grained sandstone, conglomeratic in lower part, with thin shale beds.

2665-2915 feet : Shale and sandstone, conglomeratic in part.

Lithgow Coal Measures (?) (Permian) : 2915 to 3367 feet (452 feet)

A sequence of grey shale, sandstone, white cherty shale, carbonaceous shale, and coal seams. This section is regarded as a possible equivalent of the Lithgow Coal Measures.

Tomago Coal Measures (?) (Permian) : 3367 to 4495 feet (1128 feet)

Grey shale, sandstone, and siltstone, with a few coal seams; regarded as a possible equivalent of the Tomago Coal Measures.

Capertee Group (Permian) : 4495 to 7865 feet (3370 feet)

Grey sandy shale, sandy siltstone, and dense quartzose sandstone with thin coal stringers in the upper and basal parts. A dense, white, conglomeratic sandstone occurs from 6217 to 6285 feet. The lower 68 feet contain carbonaceous shale with plant remains. The full sequence is regarded as the equivalent of the Capertee Group.

Volcanics (Permo-Carboniferous?) : 7865 to 9132 feet (1267 feet+)

Altered (weathered?) basalt, probably spilitic; rhyolite, and rhyolitic welded tuff.

Structure

Kurrajong Heights No. 1 Well was located in the structurally high area between the Kurrajong Fault to the west, which downthrows 400 feet to the west, and the Lapstone Monocline, which trends north and dips 1100 feet to the east. The monoclinal axis lies about three miles east of the well. Local closure in the Hawkesbury Sandstone occurs against the Kurrajong Fault.

Relevance to Occurrence of Petroleum

No significant signs of petroleum or natural gas were encountered in the well. A gas detector was used from 4756 feet to total depth. A small gas kick of only twelve units occurred while coring in fractured lava at 7990 feet.

The upper part of the section to a depth of 4495 feet consists of Triassic and Permian non-marine sandy sediments. These sediments may contain reservoir beds but are unfavourable as source rocks.

Marine Permian strata occur from 4495 feet to the top of the lavas at 7865 feet. Thin coal seams are present so the rocks may be in part non-marine. The lithology is predominantly sandy shale and sandy siltstone with sparse organic remains. These rocks do not appear to be favourable source rocks for petroleum.

Porosity and Permeability

The lithological examination of samples showed bands of poor to good porosity in the Triassic sandstones.

Most of the sandstones between 2915 and 4495 feet were heavily cemented although porosity was evident on occasion. Sandstone from 3987 to 4000 feet showed good porosity and probably had good permeability; very little cementing material was present. Although coal produced the most prolific gas bleeding the permeability of the seams was impossible to assess from the electric log because of the thinness of the seams.

The sandstones between 4495 and 7865 feet are solidly cemented with silica and have very slight porosity, if any.

REFERENCES

- | | | |
|-----------------------|-------|---|
| CROOK, K.A.W., | 1956: | The geology of the Kurrajong-Grose River District. <u>M.Sc. Thesis, University of Sydney</u> , (Unpubl.). |
| HANLON, F.N., et al., | 1953: | Narrabeen Group: Its subdivisions and correlations between the South Coast and Narrabeen-Wyong Districts. <u>J. Proc. Roy. Soc. N.S.W.</u> , 87, 106-120. |
| RAGGATT, H.G., | 1938: | Evolution of the Permo-Triassic Basin of East-Central New South Wales. <u>D. Sc. Thesis, University of Sydney</u> , (Unpubl.). |
| WILLAN, T.L., | 1925: | Geological map of the Sydney District. <u>Geol. Surv. N.S.W. Dept Mines.</u> |

ADDITIONAL DATA FILED IN THE BUREAU OF MINERAL RESOURCES

The following additional data relating to Kurrajong Heights No. 1 Well, have been filed in the Bureau of Mineral Resources, Canberra, and are available for reference:

- | | | |
|-------|---|--------|
| (i) | Well Completion Report | 20 pp. |
| | Appendix A : Core analyses by Bureau of Mineral Resources | 1 p. |
| | Appendix B1 : Descriptions of Cores Nos 19-36 | 8 pp. |
| | Appendix B2 : Petrographic reports by D.R. Pinkstone | 3 pp. |
| | Appendix C : Palaeontological reports .. | 2 pp. |
| | Appendix D : Formation tests | 1 p. |
| | Appendix E : Velocity Survey | 4 pp. |
| | | |
| (ii) | Daily drilling reports for period 13th July, 1962 to 25th November, 1962. | |
| | | |
| (iii) | Well logs including the following: | |
| | | |
| (a) | Electrical log | |
| | Run 1, 642-2292 feet (1",5" = 100 ft) | |
| | Run 2, 2292-6791 feet (1",5" = 100 ft) | |
| | Run 3, 6791-9129 feet (1",5" = 100 ft) | |

(b) Microlog

Run 1, 2164-6789 feet (1",5" = 100 ft)

Run 2, 6789-9127 feet (1",5" = 100 ft)

(c) Caliper Log

Run 1, 642-3742 feet (1",5" = 100 ft)

(d) Gamma Ray Log

Run 1, 20-9128 feet (1",5" = 100 ft)

(e) Temperature Log

Run 1, 24-1874 feet (1",5" = 100 ft)

(iv) Velocity Survey determinations, Kurrajong Heights No. 1.

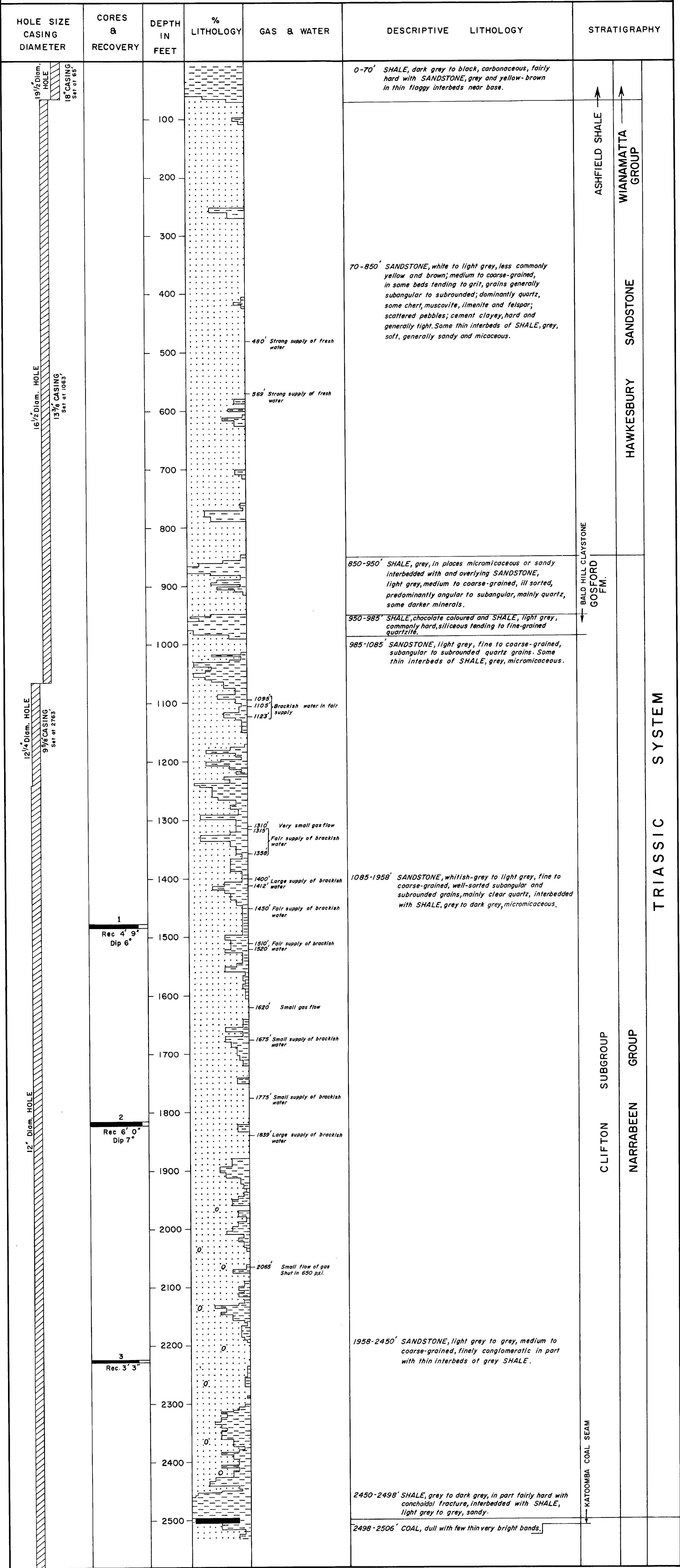
COMPOSITE WELL LOG

AUSTRALIAN OIL AND GAS CORPORATION LTD

MULGOA No. 2

LOCATION: Lat. 33° 48' 28" S. Long. 150° 38' 15" E.
DATE SPUDDED: 20th Sept. 1958
DATE COMPLETED: 5th Nov. 1959
ELEVATION: Ground level 497'; Floor level (reference) 501'

REFERENCE



MULGOA No. 2							PLATE 1 SHEET 2
HOLE SIZE CASING DIAMETER	CORES & RECOVERY	DEPTH IN FEET	% LITHOLOGY	GAS & WATER	DESCRIPTIVE LITHOLOGY	STRATIGRAPHY	
<div>12" Diam. HOLE</div> <div>9 5/8" CASING</div> <div>Set at 2763'</div> <div>8 3/4" Diam. HOLE</div> <div>6 5/8" CASING</div> <div>Set at 3582'</div> <div>5 7/8" Diam. HOLE</div> <div>5630</div>					2506-2579' SANDSTONE, grey, medium-grained, speckled appearance, part loosely cemented, part clayey cement, with some interbedded SHALE, grey.	LITHGOW	
				2562' Fair supply of salty water 2579' Large gas blowout and large supply of salty water	2579-2589' COAL, black, bright, good quality.		
	4 Rec. 2' 0"	2600				2589-2865' SHALE, grey to dark grey, interbedded with thin COAL seams and grey fine to medium-grained lithic SANDSTONE.	? TOMAGO
		2700					
		2800		2841' Small gas flow 2859' Small supply of salty water.			
	5 Rec. 4' 0"	3100			2865-3597' SHALE, dark grey to black, carbonaceous in part, interbedded with grey SILTSTONE, fine to medium-grained grey lithic SANDSTONE, and few thin COAL bands.		
		3200		3210' Gas flow 2 Mcf/D			
	6 Rec. Nil	3400		3445' Gas flow 3 Mcf/D			
		3500		3536' Gas flow 5 Mcf/D 3559' Large gas blow out			
		3600					
		3700					
	7 Rec. 2' 4"	3800			3597-4062' SHALE, dark grey to black, in part carbonaceous, with thin COAL laminae, interbedded with fine to medium-grained grey SANDSTONE, with some laminations grey LIMESTONE.		
		3900					
		4000					
		4100					
	8 Rec. 5' 0"	4200				4062-4762' SHALE, grey to dark grey, silty, micaceous, inter-laminated with grey to dark grey SILTSTONE, calcareous in part, some calcite veining.	CAPERTEE
		4300					
		4400					
		4500					
	9 Rec. 5' 0"	4600		4590' Gas flow 1 Mcf/D and small supply of salty water		4762-4936' SHALE, dark grey, silty, interbedded with dark grey micaceous SILTSTONE and fine to medium-grained whitish-grey SANDSTONE, in part calcareous, Traces of white calcite.	
		4700					
		4800		4847' Gas flow 2.6 Mcf/D and small supply of salty water.			
		4900				4936-5027' SANDSTONE, light grey, medium to coarse-grained, in part conglomeratic, pebbles up to 2" mainly quartz and chert, light hard siliceous cement.	
	10 Rec. 7' 0"	5000					
		5100				5027-5630' SHALE and SILTSTONE, dark grey, micaceous, sandy with pebbles of quartz, chert and slate, with beds of SANDSTONE, dark grey, medium-grained with scattered pebbles and abundant shaley matrix; CALCITE occurs mainly as shell fragments, in part possibly as vein material.	
		5200					
	5300						
11 Rec. 6' 0"	5400		5445' Gas flow initially 30 Mcf/D also 70 g.p.h. water.				
	5500						
12 Rec. 7' 0" Dip 6°	5600		T.D. 5630				

PERMIAN SYSTEM

COMPOSITE WELL LOG
AUSTRALIAN OIL AND GAS CORPORATION LTD
MOUNT HUNTER No.1

PLATE 2

LOCATION: Lat. 34° 03' 30" S. Long. 150° 38' 50" E.

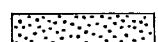
DATE SPUNDED: 26-10-61.

DATE COMPLETED: 5-2-62

RADIOACTIVE LOG: B.M.R. Failing Logmaster (A. Radeski operator)

ELEVATION: Ground Level 282' A.S.L.
Derrick Floor 285' A.S.L.

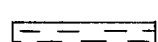
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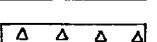
Sandstone



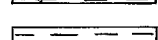
Coal



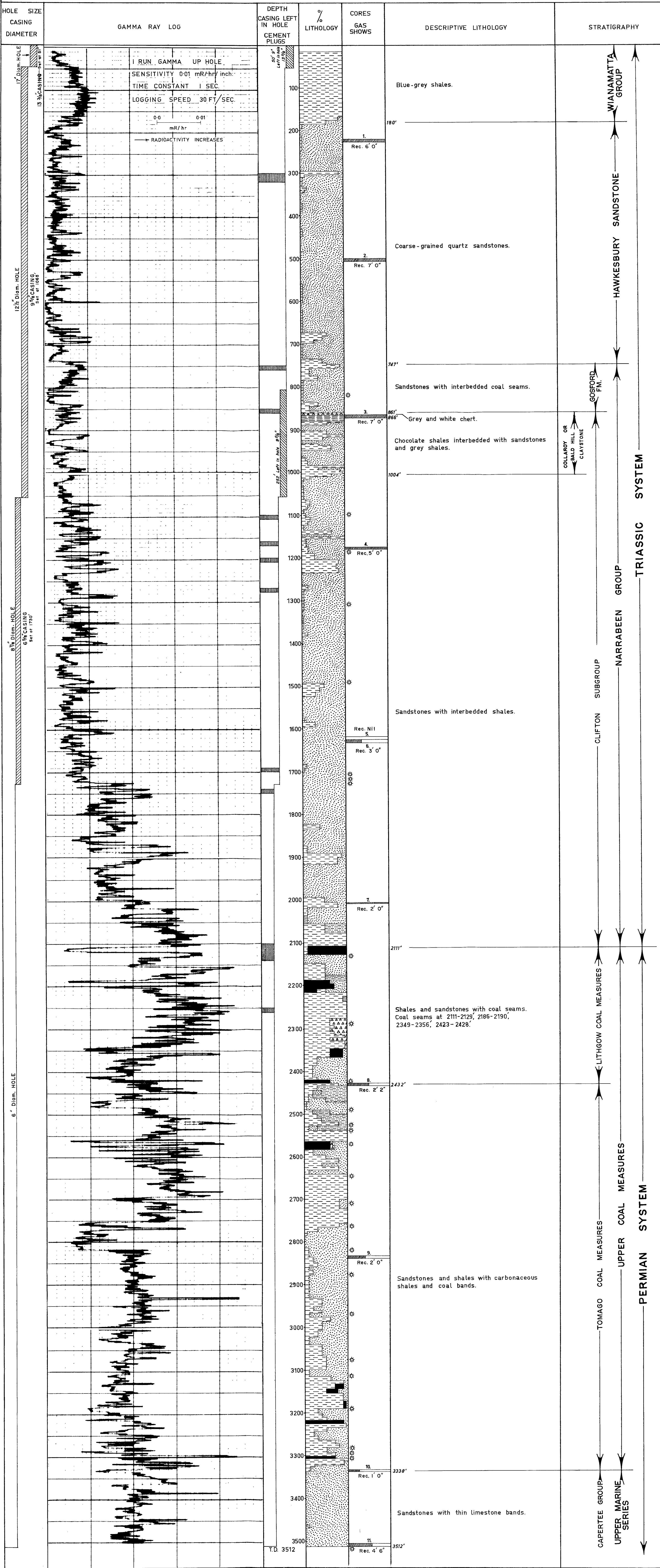
Shale



Chert



Chocolate Shale



COMPOSITE WELL LOG
COMPANY: FARMOUT DRILLERS N.L.
WELL NUMBER: STOCKYARD MOUNTAIN No.1

PLATE 3
SHEET 1

PETROLEUM TENEMENT P.P.L. No.7

STATE: NEW SOUTH WALES

4-MILE SHEET: WOLLONGONG

BASIN: SYDNEY

WELL STATUS: ABANDONED

LOCATION NE. CR. Portion 46, Terry Meadow Subdivision of the Parish of Jamberoo
Lat. 34°35'41" S. Long. 150°46'35" E.

ELEVATION Kelly Bushing 174.3' All measurements from K.B.
Ground Level 162.3'

Date Spudded: July 30, 1962
Date Drilling Stopped: Oct. 12, 1962
Date Rig off: Oct. 16, 1962
Total Depth 3516'
Driller E. Log
3516'

Hole Size In. From To
17" 0' 55'
12 1/2" 55' 551'
8 1/2" 551' 3516'

Casing In. Wt. Gr. Depth Cmt. Cmt'd to
13 3/8" 48 H40 55' 50 sacks Surface
9 1/2" 36 J 55 549' 130 sacks Surface

Cement Plugs From To Sacks
0' 17' 14
1860' 1885' 15
2110' 2200' 45

Well Head Fitting:
Drilled by: Woodside (Lakes Entrance) Oil Co. N.L.
Logged by: Schlumberger Seaco Inc.
Drilling Method: Rotary
Cemented by: Woodside (Lakes Entrance) Oil Co. N.L.
Mud Logging by: R. Hare & Associates

WELL SYMBOLS

10
Core, interval, number, and recovery

Plugged interval

Casing shoe

ELECTRIC LOG DATA						MICROLOG CALIPER DATA					
RUN No. / Depth Scale	1	2	3	1	2	3	1	2	3	1	2
Date	Aug. 15, 62	Sept. 4, 62	Sept. 12, 62	Aug. 15, 62	Sept. 4, 62	Sept. 12, 62	Aug. 15, 62	Sept. 4, 62	Sept. 12, 62	Aug. 15, 62	Sept. 4, 62
First Reading	970'	2081'	3515'	969'	2079'	3513'	969'	2079'	3513'	969'	2079'
Last Reading	100'	970'	2079'	100'	969'	2079'	100'	969'	2079'	100'	969'
Interval Measured	870'	1111'	1436'	869'	1110'	1434'	869'	1110'	1434'	869'	1110'
Casing Schlumberger	—	547'	547'	—	547'	547'	—	547'	547'	—	547'
Casing Driller	55'	549'	549'	55'	549'	549'	55'	549'	549'	55'	549'
Depth Reached	971'	2082'	3516'	972'	2082'	3516'	972'	2082'	3516'	972'	2082'
Bottom Driller	973'	2083'	3516'	973'	2083'	3516'	973'	2083'	3516'	973'	2083'
Mud Nature	Fresh Water	Fresh Water	Fresh Water	Fresh Water	Fresh Water	Fresh Water	Fresh Water	Fresh Water	Fresh Water	Fresh Water	Fresh Water
Density / Viscosity	9.5 102	10.2 80	9.6 70	9.5 102	10.2 80	9.6 70	9.5 102	10.2 80	9.6 70	9.5 102	10.2 80
Mud Resistivity	5.0 Ω @ 35°F	2.02 Ω @ 70°F	1.72 Ω @ 92°F	5.0 Ω @ 35°F	2.02 Ω @ 70°F	1.72 Ω @ 92°F	5.0 Ω @ 35°F	2.02 Ω @ 70°F	1.72 Ω @ 92°F	5.0 Ω @ 35°F	2.02 Ω @ 70°F
Mud Resistivity BHT	1.46 Ω @ 102°F	1.32 Ω @ 120°F	—	1.46 Ω @ 102°F	1.32 Ω @ 120°F	—	1.46 Ω @ 102°F	1.32 Ω @ 120°F	—	1.46 Ω @ 102°F	1.32 Ω @ 120°F
PH Fluid Loss	9-2 8	9 6	8-5 7	9-2 8	9 6	8-5 7	9-2 8	9 6	8-5 7	9-2 8	9 6
Origin of Sample	Mud Engr.	Mud Engr.	—	Mud Engr.	—	—	Mud Engr.	—	—	—	—
Rmt Rmc	—	—	—	—	—	—	—	—	—	—	—
Bit Size	1 12 1/4 to 551'	8 1/2"	8 1/2"	1 12 1/4 to 551'	8 1/2"	8 1/2"	1 12 1/4 to 551'	8 1/2"	8 1/2"	1 12 1/4 to 551'	8 1/2"
Casing Size	2 8 1/4 to T.D.	9 1/2"	9 1/2"	2 8 1/4 to T.D.	9 1/2"	9 1/2"	2 8 1/4 to T.D.	9 1/2"	9 1/2"	2 8 1/4 to T.D.	9 1/2"
Opr. Rig Time	2 hours	2 hours	5 hours	2 hours	2 hours	5 hours	2 hours	2 hours	5 hours	2 hours	2 hours
Truck No.	C-347	C-347	C-347	C-347	C-347	C-347	C-347	C-347	C-347	C-347	C-347
Recorded by	Begley	Begley	Begley	Begley	Begley	Begley	Begley	Begley	Begley	Begley	Begley
Witness	Fletcher	Fletcher	Fletcher	Fletcher	Fletcher	Fletcher	Fletcher	Fletcher	Fletcher	Fletcher	Fletcher

LITHOLOGIC REFERENCE

Conglomerate

Quartz sandstone

Siltstone

Shale

Limestone

Dolomite

Basalt

Basic volcanics and tuffaceous claystone

mi. Micaceous

cal. Calcareous

gl. Glauconitic

py. Pyritic

ch. Cherty

c. Carbonaceous

dol. Dolomitic

tuff. Tuffaceous

FARMOUT DRILLERS N.L.

COMPOSITE WELL LOG
STOCKYARD MOUNTAIN No.1 WELL

R. HARE & ASSOCIATES

VERTICAL SCALE 1 inch = 100 ft.

Prepared: J. Cundill

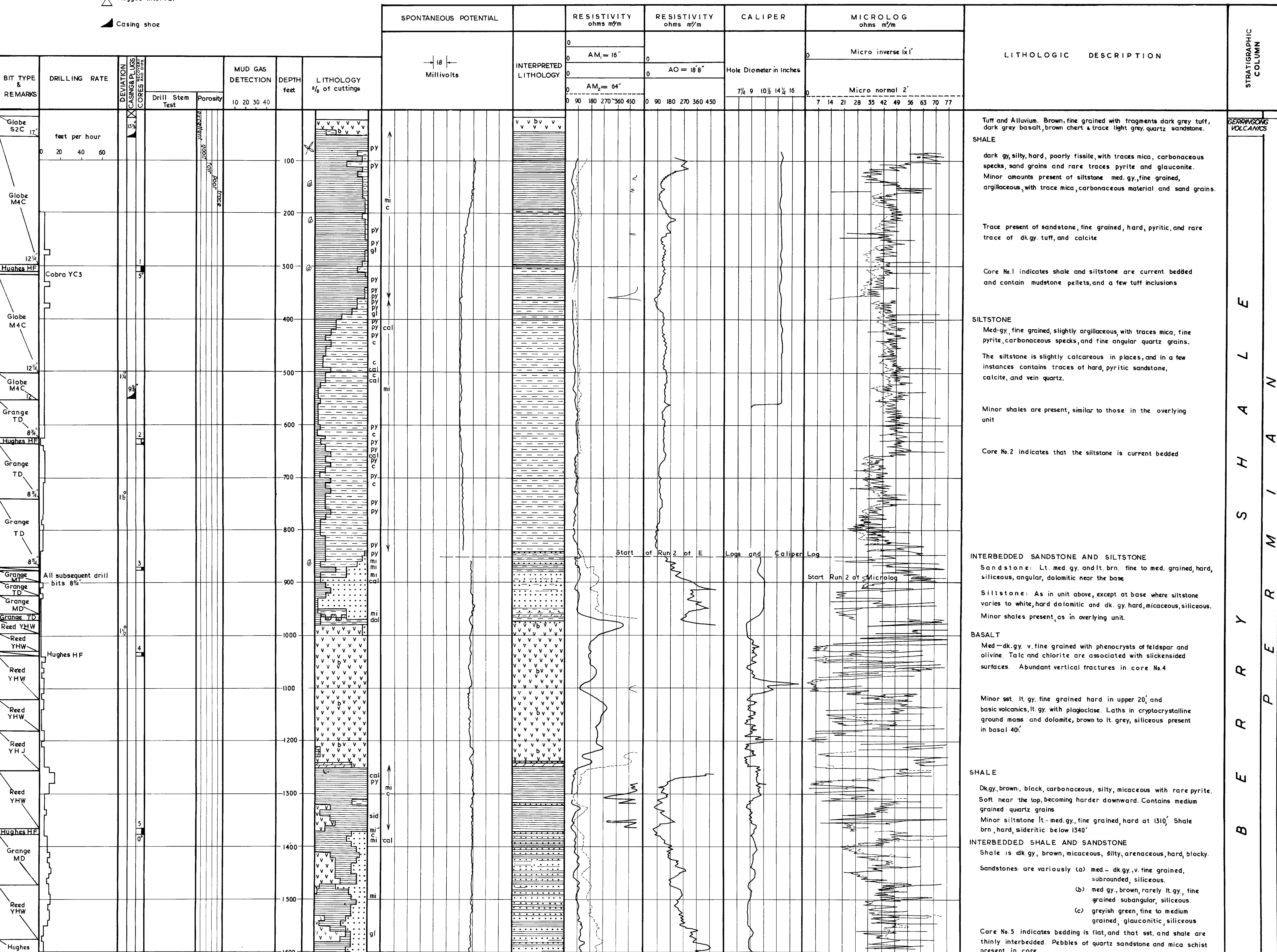
REVISION

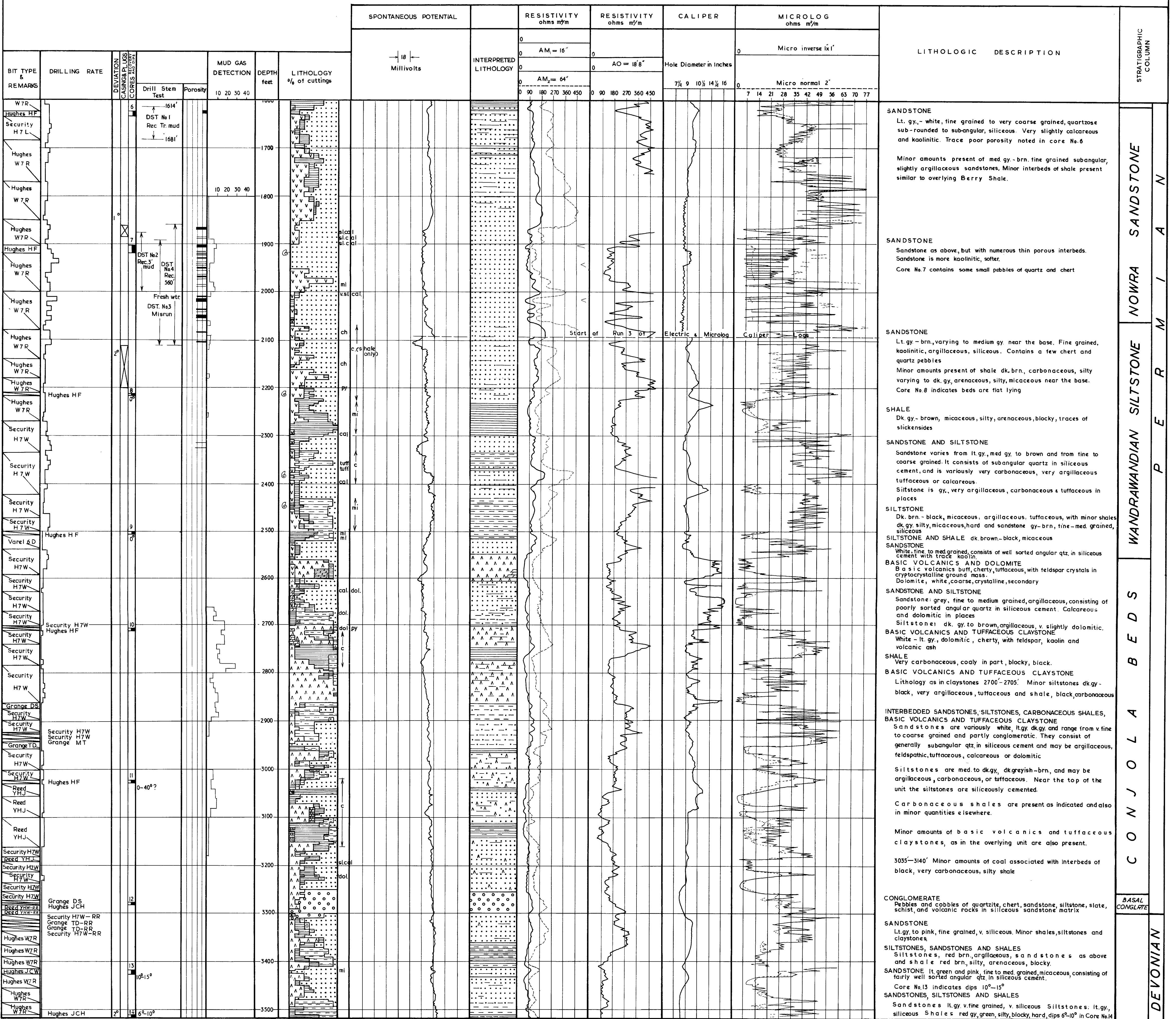
Drawn: I. Rade

DRG. No. F.D/13

Date: January, 1963

Lithology by: N. Meyers, D. Rutledge and K. Fletcher





C O M P O S I T E W E L L L O G

COMPANY: EXOIL (N.S.W) PTY. LTD. and AUSTRALIAN OIL & GAS CORPORATION LIMITED

WELL NUMBER : KURRAJONG HEIGHTS NO.1

PETROLEUM TENEMENT: P.P.L. No.2

STATE : NEW SOUTH WALES

4 - MILE SHEET: SYDNEY

BASIN : SYDNEY

WELL STATUS : ABANDONED

LOCATION: Lat. 33° 31' 45"S. Long. 150° 37' 15" E.

ELEVATION: Reference Pt. K.B. 1879'
Ground 1865'

Date Spudded: February 11, 1955
Date Drilling Suspended: August 2, 1955
Date Drilling Resumed: July 23, 1962
Date Drilling Stopped: November 21, 1962
Date Rig Off: November 25, 1962

Total Depth: Driller 9132'
E. Log 9130'

Hole Size In From To
17 1/2" 0 709'
12 1/4" 709' 2175'
8 3/4" 2175' 9132'

Casing In Wt Gr. Depth Cmt. Cmt'd. to
13 5/8" 48 H-40 681'-705' 200 sx. 389'
9 5/8" 36 J-55 720'-2164' 500 sx. 1862'

Cement Plugs From To Sacks
At surface 20
525' 575' 50
2870' 2925' 30
4625' 4680' 30
7840' 7905' 20

Well Head Fittings: Steel plate welded on top of 13 5/8" casing
Drilled by: Oil Drilling & Exploration Ltd.
Logged by: Oil Drilling & Exploration Ltd. (1955)
Schlumberger (1962)
Mud Logging by: Core Laboratories Inc.
Cemented by: Oil Drilling & Exploration Ltd.
Drilling Method: Rotary

Drafting by: GEODRAFTING SERVICES

E L E C T R I C L O G D A T A

RUN No	1	2	1	2	3	TYPE OF LOG	GAMMA
Date	1955	1955	Aug. 3, 1962	Sept. 29, 1962	Nov. 21, 1962	Run Number	1
First Reading	3253'	4755'	2292'	6791'	9129'	Date	Nov. 22, 1962
Last Reading	672'	3253'	642'	2292'	6791'	Total Depth - Driller	9132'
Interval Measured	2581'	1502'	1650'	4499'	2338'	Top & Bottom of Logged Interval	20' and 9128'
Casing Schlumberger			663'	2164'	2164'	Type of Fluid in Hole	Fr. wtr. mud
Casing Driller			661'	2164'	2164'	Fluid Level	Surface
Depth Reached			2300'	6792'	9130'	Maximum Recorded Temperature	173° F
Bottom Driller			4760'	6782'	9132'	Neutron Source Strength & Type	
Mud Nature			Fr. Wtr.	Fr. Wtr.	Fr. Wtr.	Source Spacing - In.	53"
Density/Viscosity			10.1 / 50	9.7 / 39	9.8 / 42	Length of Measuring Device	
Mud Resistivity			3.6 @ 64° F	3.5 @ 64° F	2.10 @ 84° F	O. D. of Instrument - In.	
Mud Resist. BHT			1.8 @ 132° F	1.75 @ 128° F	1.02 @ 173° F	Time Constant - Secs.	6
pH/Fluid Loss			10 / 6.3 cc/30min	9.5 / 6.5 cc/30min	9 / 8 cc/30 min.	Logging Speed - Ft. Min.	31'
Origin of Sample			Flow Line	Pit	Core Lab.	Statistical Variation - In.	
Rmt			NA	3.1 @ 64° F	.95 @ 173° F	Sensitivity Reference	
Rmc			NA	3.5 @ 64° F	1.07 @ 173° F	Recorded by	Begley
Bit Size 1			12 1/4" to 2168'	8 3/4" to TD.	8 3/4" to TD.		
2			8 3/4" to T.D.				
Casing Size			13 5/8"	9 5/8"	13 5/8" - 9 5/8"		
Opr. Rig Time			2 hrs	4 hrs.	3 hrs.		
Truck No.			231	231	SKW - 231		
Recorded by			Begley	Begley	Begley		
Witness			Perry	Perry	Perry		

R A D I O M E T R I C L O G D A T A

W E L L S Y M B O L S

Core interval number and recovery
Plugged interval
Casing shoe
Formation test interval and no.

Macro
Plant
Fossils

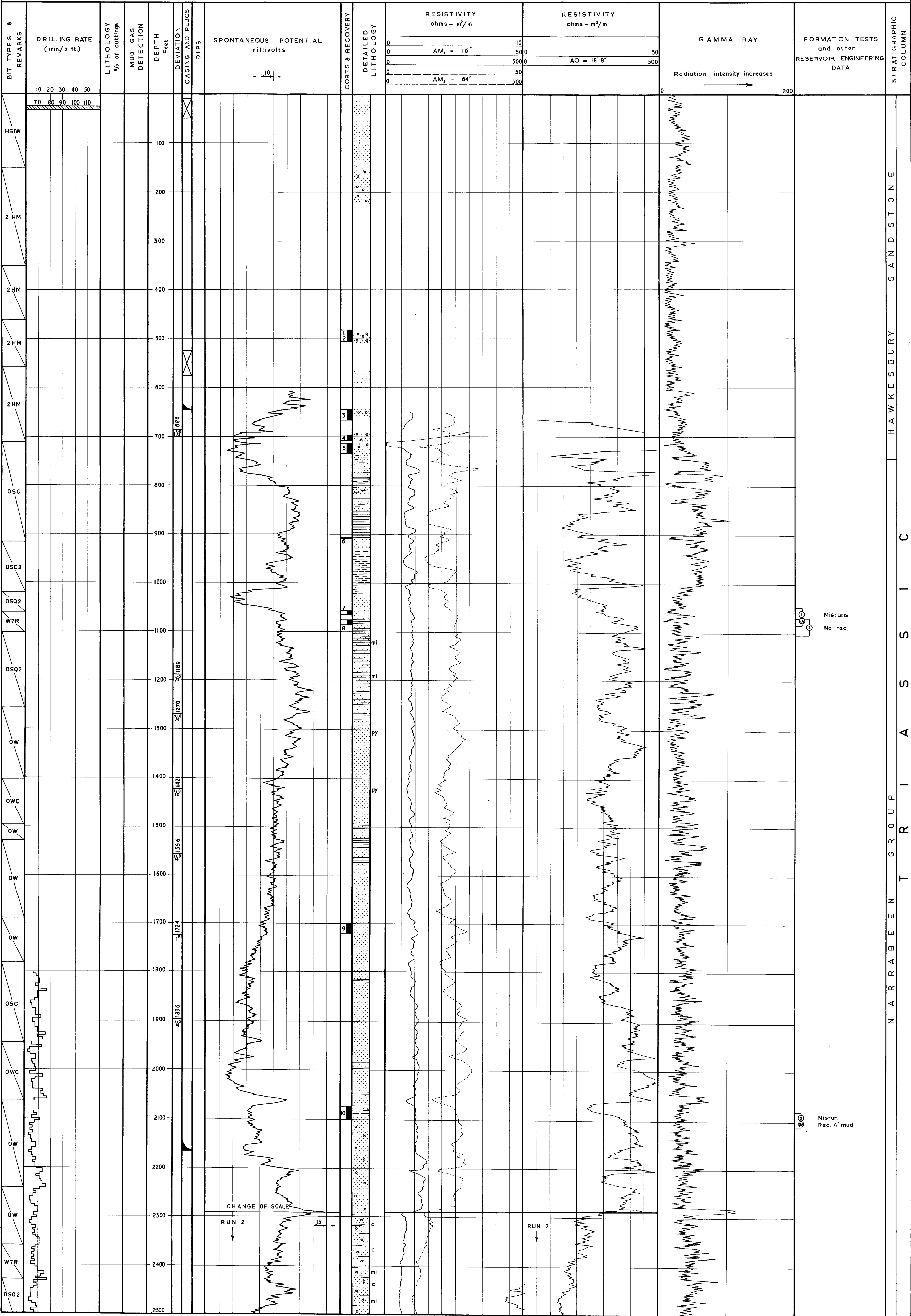
L I T H O L O G I C R E F E R E N C E

Quartz sandstone
Siltstone
Shale
Conglomerate
Coal
Metamorphic rocks
Volcanic rocks
Basalt Rh/Rhyolite

Mi Micaceous
cal Calcareous
py Pyritic
c Carbonaceous
ch Cherty
F Foraminifera

O T H E R B O R E - H O L E L O G S

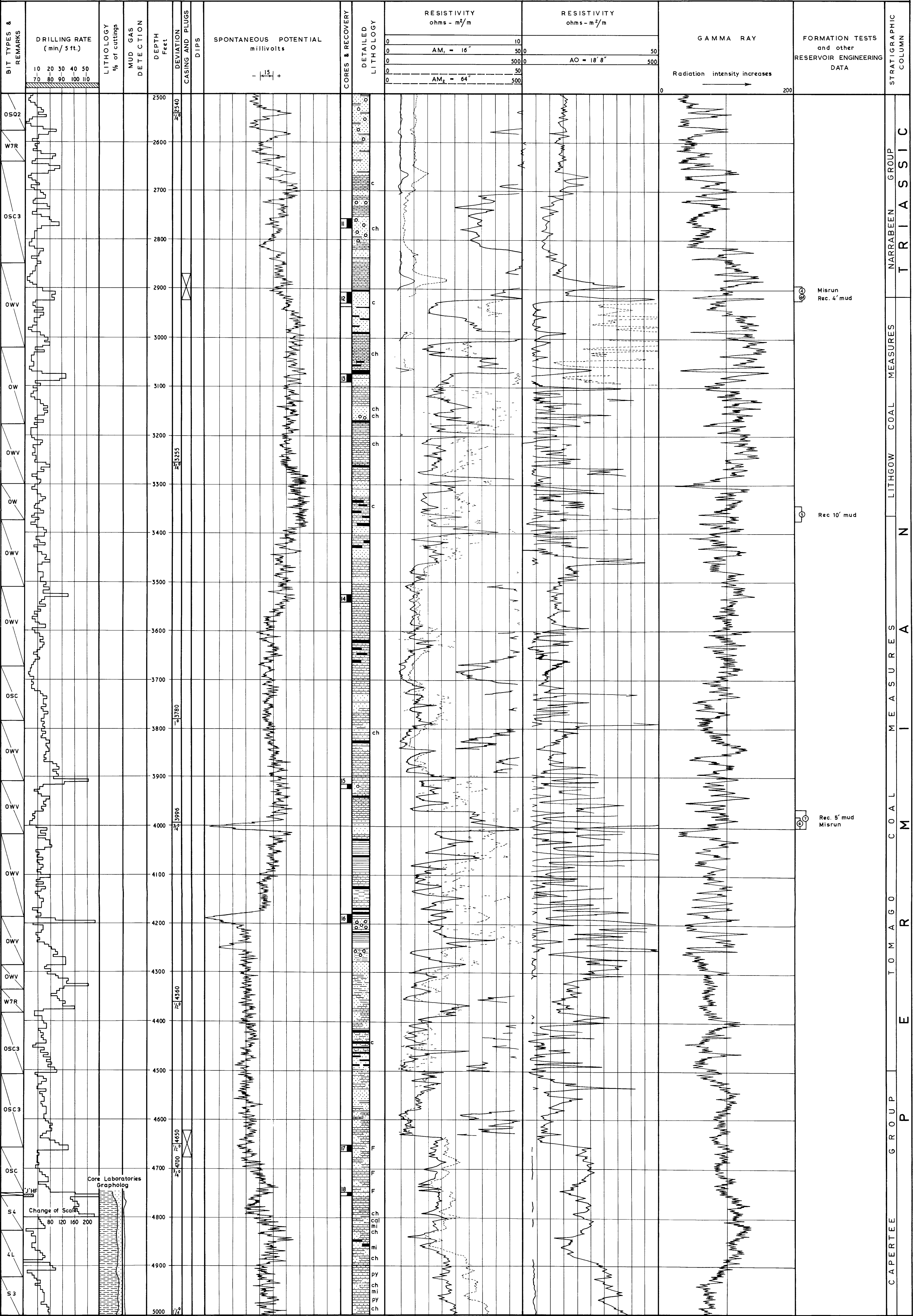
Temperature 1874'-24' (1 run)
Micro - Caliper 9127'-2164' (2 runs)
Caliper 3742'-642' (1 run)
Velocity 9132'-2164' (1 run)



COMPOSITE WELL LOG
KURRAJONG HEIGHTS NO.1 WELL

2500' - 5000'
SHEET 2 OF 4

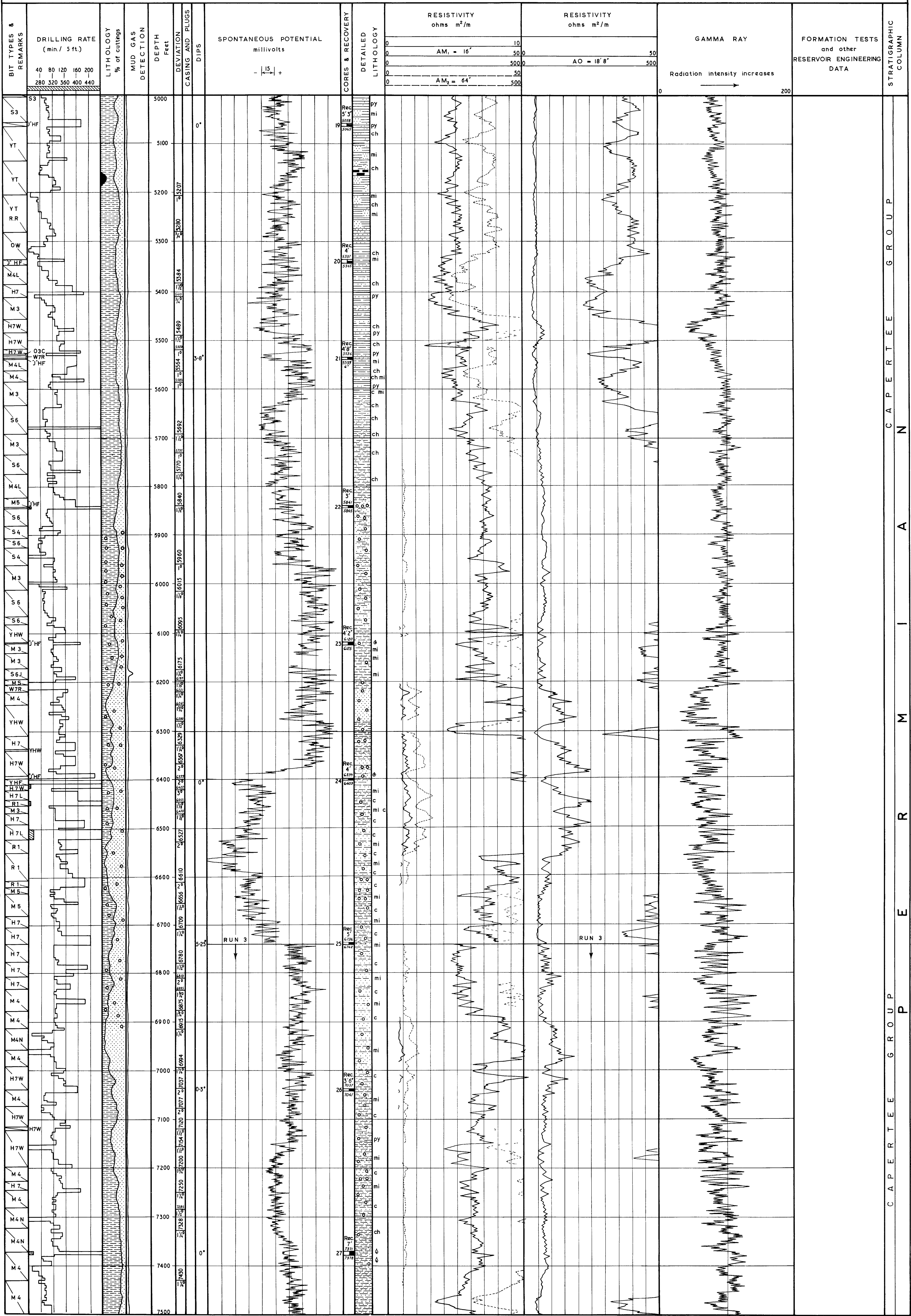
PLATE 4
SHEET 2



COMPOSITE WELL LOG
KURRAJONG HEIGHTS NO.1 WELL

5000' - 7500'
SHEET 3 OF 4

PLATE 4
SHEET 3



COMPOSITE WELL LOG
KURRAJONG HEIGHTS NO.1 WELL

7500' — 9132'
SHEET 4 OF 4

PLATE 4
SHEET 4

