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AUSTRALIAN AQUITAINE PETROLEUM PTY. LTD.

WYRALLAH NO. 1

WELL COMPLETION REPORT

W.C.R

VIC/P17

OFFSHORE GIPPSLAND BASIN

PG/223/84

V. Djokic.
September 1984.

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1. SUMMARY

Wyrallah-1, the fifth well to be drilled in the permit VIC/P17 by Australian Aquitaine Petroleum Pty. Ltd. and its co-venturers, was spudded on April 16, 1984, and reached a total depth of 1160m (K.B.) on April 21, 1984.

The well was located 9 km west of Kyarra No. 1 and 20 km southwest of Perch No. 1. It was drilled with the semi-submersible rig, the "Southern Cross".

The well was designed to test a structure mapped at the top of the Latrobe Group, adjacent to a high angle reverse fault. The rollover of the upthrown block forms a structural ridge extending from Wyrallah No. 1 eastwards to Kyarra No. 1 where another small structure is present.

Areal closure of the time structure at the top of the Latrobe Group was measured at 2.8sq. km. Depth conversion marginally increased this structure to 3.2sq. km.

The top of the Latrobe Group was intersected at 874m (K.B.) and 286m of Late Eocene - Late Palaeocene Latrobe sediments were penetrated before drilling was stopped at 1160m K.B. near the base of the Latrobe Formation.

No shows were encountered during drilling. Log interpretation and sidewall cores showed that the main reservoirs of the Late Eocene, Top Latrobe Formation, as well as Middle Eocene intra-Latrobe sands have good reservoir properties but are water-saturated.

Drilling stopped at 1160m on April 20, 1984, and the well was plugged on April 24, and abandoned on April 26, 1984.

II. INTRODUCTION

Wyrallah No. 1 was the fifth well drilled in permit VIC/P17 by Australian Aquitaine Petroleum Pty. Ltd. (25%) as Operator for :

Australian Occidental Pty. Ltd.	25 %	(10 %)*
Agex Pty. Ltd.	12.5 %	
Consolidated Petroleum (Aust) N.L.	12.5 %	
Laurel Bay Petroleum Ltd.	0.0 %	(15 %)*
Alliance Resources Ltd.	25 %	

Prior to drilling, the GA81A, GA82B, GA83 seismic surveys were carried out and Edina No. 1, Omeo No. 1, Kyarra No. 1A and Tarra No. 1 were drilled by Australian Aquitaine Petroleum Pty. Ltd. and its co-venturers in the permit VIC/P17.

The GA81A Seismic Survey commenced on November 1, 1981, and was compled on November 26, 1981. A total of 3495 km of seismic was shot. This comprised a 1.5 km x 1.5 km grid over much of the permit area, with a wider spaced grid over the west and southwestern part of the permit.

The GA82B Seismic Survey commenced on June 15, 1982, and was completed on June 18, 1982. A total of 403 km of seismic was shot.

The GA83 Seismic Survey was shot in April 1983, and a total of 217 km was recorded.

The first well, Edina No. 1 was spudded on September 26, 1982, and was plugged and abandoned on November 1, 1982, at a T.D. of 2549m.

Omeo No. 1 was spudded on November 2, 1982, and was plugged and abandoned on February 10, 1983, at a T.D. of 3379m.

Kyrarra No. 1 was spudded on February 11, 1983, and was plugged and abandoned on February 28, 1983, at a T.D. of 1280m.

* Interest after farmin commitments fulfilled.

Tarra No. 1 was spudded on March 4, 1983, and was plugged and abandoned on April 21, 1983, at a T.D. of 2905m.

Based on the interpretation of these surveys and regional stratigraphic correlation of nearby wells (Perch No. 1, Kyarra No. 1), the Wyrallah No. 1 well location was chosen at shotpoint 480 on line GA82B-212.

The location was at 43 km east of Port Welshpool where a supply and logistics base had been established by Aquitaine, in association with Phillips and Shell.

The semi-submersible rig, the "Southern Cross" was contracted to carry out drilling operations and Wyrallah No. 1 was spudded on April 16, 1984. The well was plugged and abandoned, as a dry hole, at a total depth of 1160m K.B., and the rig released on April 26, 1984.

III. WELL HISTORY

A. General Data

(i)	Well Name and Number	Wyrallah No. 1.
(ii)	Name and Address of Operator	Australian Aquitaine Petroleum Pty. Ltd., 99 Mount Street, North Sydney. N.S.W. 2060.
(iii)	Name and Address of Title Holder/s	Australian Aquitaine Petroleum Pty. Ltd., 99 Mount Street, North Sydney. N.S.W. 2060. Alliance Resources Ltd., 15th Floor, Collins Tower, 35 Collins Street, Melbourne. VIC. 3000. Consolidated Petroleum (Aust) N.L., Hartogen House, 15 Young Street, Sydney. N.S.W. 2000. Agex Pty. Ltd., Level 16 - AGL Building, 111 Pacific Highway, North Sydney. N.S.W. 2060.
(iv)	Petroleum Title	Permit VIC/P17.
(v)	District	Gippsland Basin, Victoria.
(vi)	Location	S.P. 480, Line No. GA82B-212. Latitude 38°40'36.8"S Longitude 147°05'04.9"E Northings 5 719 059m, Eastings 507 366m. Zone 55 AMG.

(vii)	Elevation	Water depth: 32m BMSL.
(viii)	Total Depth	1160m K.B.
(ix)	Date Drilling Commenced	April 16, 1984.
(x)	Date Total Depth Reached	April 21, 1984.
(xi)	Date Well Abandoned	April 24, 1984 (plugged).
(xii)	Drilling Time in Days to T.D.	Five days.
(xiv)	Status	Plugged and abandoned.
(xv)	Total Cost (by Technical Cost Control)	A$ 2,100,000.

B. Drilling Data

(i)	Drilling Contractor	South Seas Drilling Company, 60 Cunningham Street, Sale. VIC. 3850.
(ii)	Drilling Plant	Semi-submersible rig, "Southern Cross", twin-hulled, designed to drill to a depth of 6100m in water depths from 30m to 600m. Power - Two EMD MD-18 Diesel engines rated at 1950 H.P. each; one EMD MD-12 Diesel engine rated at 1500 H.P. Mooring - Eight anchors, 15 tons each with 2000 ft. of chain plus 800 ft. steel cables per anchor. Mast - Lee C. Moore, 40' x 40' x 152', with load capacity of 450 tons (1,000,000 lbs). Draw Works - Oilwell E2000 driven by two GE 752 electric motors. Mud Pumps - 2 Oilwell A-1700PT rated at 1600 H.P. Mud Tanks - Four tanks having a total capacity of 1200 bbls., and one PILL tank having a capacity of 105 bbls. Drill String - 5" drill pipe. $9^3/4$". 8" drill collars.
(vi)	Blowout Preventors	Three Shaffer L.W.S. $18^3/4$" - 10000 psi. Two Hydril G.GL. $18^3/4$" - 5000 psi.

(iv) Well Control Equipment — Four VALV.CON Accumulators 2" - 10000 psi.

Chokes - 2 CIW AMJ H2 2 1/16" - 10000 psi, 1 SWACO Super Choke.

(v) Hole Size and Depth

Size		Interval
26"	to	215 m
17½"	to	784 m
12¼"	to	1160 m (TD)

(vi) Casing and Cementing Details

Size	Weight	Grade	Depth	Cement	Cemented to
20"	133 lb/ft	X56	207 m	33T	Seabed
13 3/8"	68 lb/ft	J55	780 m	44T	Seabed

(vii) Drilling Fluid

. 26" hole: High viscosity spud mud, with returns to seafloor. Viscosity (Marsh) 100.

. 17½" hole: Type: seawater/prehydrated gel.

Average properties:-

S.G.	: 1.08
Vis. (Marsh)	: 37.5
PV	: 5
YP	: 20.5
Gel.	: 10 (0'), 12.5 (10')
Ph	: 9.4
WL	: 10m^3
ClNa	: 20000 ppm

. 12¼" hole: Type: seawater/prehydrated gel/polymer/ lignosulphonate.

Average properties:-

S.G.	: 1.08
Vis.	: 43.5
PV	: 8
YP	: 13
Gel.	: 10 (0'), 15 (10')
Ph	: 10
WL	: NC
ClNa	: 17000 ppm.

(viii) Perforating and Shooting Record

Nil.

(ix) Plug-back and Squeeze Job: Abandonment.

- On abandonment:

Plug 1	12¼" hole. 1020m-1122m (10T cement class G)
Plug 2	12¼" hole. 13 3/8" casing. 730m-830m (10T cement class G)
Plug 3	13 3/8" casing. 80m-152m. (7T cement class G)
Note:	13 3/8" casing cut at 68.5m K.B. 20" casing cut at 645m K.B. Subsea wellhead recovered from seabed.

(x) Fishing Operation

Nil.

(xi) Sidetracked Hole

Nil.

(xii) Communication

VHF and UHF radio-link

Ship-to-Shore Telex

Telephone line with facsimile.

(xiii) Base of Operation

Welshpool, Victoria.

Location -

(i) Site Investigation

After plugging the well and prior to moving the rig from the location of Wyrallah No. 1, divers inspected the seafloor within 30m of the wellhead for any debris. No debris was found.

After the rig move, a Side-Scan Sonar Survey was conducted by Racal-Decca Survey personnel to investigate the seafloor for any foreign objects that could be present in the area.

An area of approximately 6km^2 (3 km x 3 km) of seafloor around the wellhead was surveyed. This can be compared to the anchor pattern which was established on a 600m radius from the wellhead.

No debris could be detected on examination of the records.

All relevant data from the survey ware filed with Australian Aquitaine Petroleum Pty. Ltd., at their North Sydney office.

(ii) Anchoring Methods

Rig anchors (8), positioned approximately 600m from the rig (900m length of chain and cables), marked by buoys.

(iii) Transportation

From Welshpool base to the rig location:

- 2 x supply, anchor handling, towing vessels
- 1 x stand-by vessel
- 1 x landing, towing vessel (mob./demob.)
- 2 x Bell 222 helicopters.

C. Formation Sampling

(i) Ditch Cuttings

Logged samples were collected from the rig shale-shakers by the mud-logging personnel (Core Lab.). These samples were collected at 10m intervals from 20" casing depth (215m to 784m), and 3m intervals thereafter to total depth at 1160m.

Four sets of washed and dried cuttings, plus one set of washed and air-dried cuttings, were collected. One complete set of washed and dried plus one set of washed and air-dried cuttings was deposited with the B.M.R.'s core and cuttings laboratory in Fyshwick, A.C.T., and another set of washed and dried with the Mines Department Store (Oil and Gas Division)) Port Melbourne, in Victoria.

One complete set of cuttings was kept by Aquitaine in their Artarmon Store in Sydney, and one set was sent to S.N.E.A.(P) in Pau, France - for analysis.

In addition, two sets of unwashed and air-dried cuttings were collected and kept by Aquitaine in their Artarmon Store in Sydney.

(ii) Coring

Nil.

(iii) Sidewall Cores

Sidewall cores were taken with Schlumberger's CSTU and CSTV equipment.

A total of 51 shots were fired during Run No. 1 (one 30 and one 21 shot gun) and 50 shots recovered with one bullet empty.

Sidewall cores were sent to Dr. David Taylor (Pal-Tech) and Helene A. Martin (University of New South Wales) for paleontological and palynological analyses, respectively.

In addition, selected sidewall cores were sent to AMDEL for source rock analyses and detailed petrology (see Attachments 6, 7 and 8).

A complete description of sidewall cores are present in Appendix 2.

WYRALLAH-1

D. Logging and Surveys

(i) Electric and Wireline Logging

Schlumberger ran the following logs:

Depth (m)	Date	Logs	Additional Services
Suite No. 1 (775m)	19.4.84	ISF-SLS-GR-SP LDL-GR-CAL.	CST (shot 51, recovered 50)
Suite No. 2 (1155m)	22.4.84	ISF-SLS-MSFL GR-SP.	Computer process logs.
		LDL-CNL-GR-CAL.	Cyberdip.
		HDT	Cyberlook.
		Velocity Survey	LDT Quicklook.

Details of log interpretation are listed in Appendix 3.

(ii) Mud Log and Composite Log

The ditch gas was continuously monitored by Core Lab and the Master Log prepared by Core Lab personnel is included in Enclosure 4.

(iii) Velocity Survey

A velocity survey was conducted by Schlumberger, shooting from 1150m K.B. to 235m K.B. The results are included in Attachment B.

(iv) Deviation Survey

The deviation of the hole from vertical was measured by TOTCO survey equipment. Maximum deviation recorded was 1 degree and details are listed in the Final Technical Report (Attachment 1) and plotted on Fig. 3.

(v) Navigation Survey

The rig was positioned using an "Oasis" and "JMR-4A" positioning system. The survey was conducted by Racal-Decca. Results are summarised in Attachment 2.

E. TESTING: NIL

E. Testing

Nil.

IV. GEOLOGY

A. Previous Exploration and Surveys

The Gippsland Basin has been a target for oil exploration since the 1930's with early drilling activities concentrated in the onshore section of the basin where oil seeps are known. The first offshore drilling did not take place until 1965 when Esso drilled "Gippsland Shelf No. 1" which was renamed Barracouta No. 1. In this year, both Barracouta and Merlin fields were discovered; the discovery wells were Gippsland Shelf No. 1 and 4, respectively.

Production from the Gippsland Basin is now entering its twelfth year. The major oil and gas prospects have been defined and five oil and two gas fields have been developed. Further development of known fields is continuing and platforms are being designed or fabricated for Cobia, Fortescue, Flounder and Bream.

Exploration by Australian Aquitaine Petroleum Pty Ltd and its partners commenced in November 1981, after the granting of permit VIC/P17. During November, the GA81 Seismic Survey was carried out and a total of 3536 line kilometres was shot.

This comprised a 1.5 km x 1.5 km grid over much of the permit area, with a wider spaced grid over the west and southwestern part of the permit.

During June 1982, the GA82 Seismic Survey was carried out and an additional 403 km of seismic was shot.

In addition, four wells: Edina-1, Omeo-1, Kyarra-1 and Tarra-1 were drilled between September 1982 and April 1983.

During April 1983, the GA83 Seismic Survey was carried out and an additional 217 km of seismic was shot.

Based on interpretation of those surveys and regional stratigraphic correlation with nearby wells (Perch-1, Kyarra-1) Wyrallah-1 well location was chosen at shotpoint 480, line GA82B-212.

B. Regional Geology

The Gippsland Basin formed as the results of two separate phases of continental separation along new plate boundaries. Initial formation has been related to a phase of intra-cratonic rifting between the Tasmanian block and the Australian mainland which occurred between 140 and 100 MY BP (Elliot, 1972). The rift extended from the Otway Basin to the Bellona Gap on the Lord Howe Rise to the east.

The boundary of the Gippsland Basin is marked to the south by the marginal fault system which brings basement rocks of the Bassian Rise in contact with basinal sediments. The northern boundary is an unconformable contact between basin sediments and rocks of the Tasman Fold Belt, while the western boundary with the Otway Basin is marked by the Selwyn Fault on Mornington Peninsula.

Initial sedimentation occurred in the latest Jurassic or Early Cretaceous with a sequence of entirely non-marine greywackes, chloritic mudstones and occasional coals being deposited. Much of the coarse clastic component of these sediments was derived from contemporaneous acid to intermediate volcanics which are inferred to have a southerly provenance. These sediments are collectively termed the Strzelecki Group and appear to have limited hydrocarbon source and reservoir potential.

The separation of the Lord Howe Rise and New Zealand from eastern Australia around 80 MY to 60 MY BP marked a general increase in the rate of subsidence within the Gippsland Basin. Fluviatile sedimentation continued in the Late Cretaceous but gave way to prograding deltaic complexes during the Palaeocene and Eocene.

Individual complexes have yet to be delineated by well and seismic data although Loutit and Kennett (1981) have related sedimentary cycles within the Gippsland Basin to global eustatic and sea level changes. These depositional cycles are recognisable from the Late Cretaceous to Late Eocene Latrobe Group through to the Oligocene to Early Miocene Lakes Entrance Formation (Fig. 4). At the top of the Latrobe Group a regional transgression inundated the basin and caused the formation of a series of barrier systems during the periods of stillstand. Associated with these barrier systems are glauconitic, nearshore marine facies together with lagoonal and marsh facies in which coal-forming carbonaceous sediments were laid down. This transgressive sequence, which marks the final phase of Latrobe sedimentation, is termed the Gurnard Formation; although this classification is still informal.

The Latrobe sequence, containing mainly channel, point bar and barrier sand bodies, is the primary reservoir sequence within the Gippsland Basin. Intra-Latrobe seals are formed by siltstone and coal sequences of the marsh facies while the top of the Latrobe Group is sealed by the glauconitic siltstone of the Gurnard Formation and the calcareous siltstones and claystones of the Lakes Entrance Formation.

During the Oligocene and into the Early Miocene, deposition of shale and marl occurred throughout the basin and onlapped the basin margins and structural "highs". Miocene sedimentation gradually changed in style from the shales and marls of the Lakes Entrance Formation to the bryozoan limestone and marl of the Gippsland Limestone.

This limestone sequence is characterised offshore by two major depositional features. On the southern platform a massive linear slump zone occurs which can be traced seismically for more than 130 km. Over the remainder of the basin complex channelling is in evidence caused by structural movements and eustatic sea level changes.

The final period of basinal development was marked by a return to continental clastic sedimentation in southern Gippsland, with marine sedimentation continuing on the continental shelf. The highland region north of the basin and the South Gippsland Hills along the western margin, were uplifted during the Kosciusko uplift in the Late Pliocene.

C. (i) Regional Stratigraphy

The stratigraphy of the Offshore Gippsland Basin is summarised in Fig. 4.

Basement

The basement is composed of slightly metamorphosed Palaeozoic sediments of the Tasman Geosyncline. These rocks are exposed in the Victorian Ranges to the north and from islands along the Bassian Rise to the south. The Geosyncline sediments are composed of deformed siltstones, shales, sandstones and igneous rocks of Ordovician and Silurian age which are overlain by Devonian-Carboniferous red beds made up of conglomerates, sandstones and pebbly sandstones with interbedded rhyolite, rhyodacite and trachytes.

Four wells (Groper-1, Groper-2, Bluebone-1 and Mullet-1) located along the southern margin of the basin reached basement rocks in granite and in red siltstones and sandstones. Although the basin centre has never been reached by drilling, aeromagnetic surveys suggest that basement rocks will be similar to those found onshore.

Lower Cretaceous (Strzelecki Group)

The pre-rift Strzelecki Group represents the first sediments to have been deposited in the basin. The group consists of non-marine immature greywackes, shales and coals.

The greywackes are medium grained and composed of quartz, rock fragments and feldspath grains held together by abundant chloritic and kaolinite clay matrix and minor calcareous cement. The shales are micaceous and slightly carbonaceous. The rocks are interpreted to have been deposited in an alluvial fan and plain environment in a rapidly subsiding basin.

The sandstones contain much volcanic material and thus tend to have poor reservoir characteristics. The maximum thickness of the group is estimated to be more than 3500m.

Upper Cretaceous-Eocene (Latrobe Group)

Latrobe Undifferentiated or Latrobe Coarse Clastics:

This sequence refers to the Late Cretaceous-Eocene synrift and post rift sediments onlapping the Strzelecki Group and which contain major hydrocarbon accumulations. The maximum thickness of the sequence is estimated to be approximately 5000m.

Towards the end of Early Cretaceous, the southeastern part of the basin was encroached by a marine shoreline, but the western and central basin was still largely a site of non-marine deposition. The synrift sediments of mainly Late Cretaceous age were deposited in alluvial plain and alluvial fan environment, and consist of quartzose sandstones, siltstone or mudstone and coal. The post-rift upper section of mainly Palaeocene-Eocene age shows sandstone bodies embedded in deltaic and swamp deposits.

Gurnard Formation: This formation refers to the glauconitic sediments deposited in the Offshore Gippsland Basin during Mid to Late Eocene. Erosion on the northeastern side of the basin and on some anticlines (for example at Perch and Dolphin) at the end of Eocene possibly caused removal of these sediments which are now encountered only on the wells located in the southeastern and central basin. The sediments consist of impermeable glauconite siltstones, mudstones or sandstone providing top seals for the Kingfish and Bream fields. The formation maximum thickness is about 100m.

Flounder Formation: This occurs only in the eastern side of the basin (outside of VIC/P17) and is composed of marginal marine to marine sediments which filled channels cut during the Early Eocene time. The fill of up to 500m thick (as encountered at Flounder No. 1) consists of clayey siltstone containing varying amounts of coarse clastics. The siltstone is grey-brown in colour, micaceous, pyritic and contains both benthonic and planktonic foraminifera.

Turrum Formation: This also occurs only in the eastern side of the basin where, during the Late Eocene, the area was eroded by the Marlin channel and later filled with marine shales of latest Eocene age. The shales are up to 350m thick, dark grey-brown in colour, slightly calcareous, slightly pyritic and micaceous.

Oligocene

The Oligocene has been known as the Lakes Entrance Formation. This formation refers to the calcareous mudstone (maximum thickness 500m) overlying the Latrobe Group. The mudstone is light grey to light olive-green in colour, with a variable argillaceous and calcareous content. It contains marine fauna, slightly glauconitic and pyritic. On the basin margin the Oligocene is unconformably overlain by Early Miocene whereas in the basin centre, the contact is often gradual.

Miocene

The Miocene has been known as the Gippsland Limestone and consists of limestones, marls and calcareous mudstones overlying conformably or unconformably the Oligocene Lakes Entrance Formation.

Slumping and sub-marine channelling are common in the Miocene and are probably related to the tectonic and structural movements in the basin and sea level changes.

Pliocene-Recent

Up to 350m of marine calcarenites lie between the Miocene Gippsland Limestone and the sea floor. Stratigraphic data on this uppermost sequence are generally lacking, although foraminiferal assemblages suggest that the lower part of the sequence may belong to the Late Miocene.

C. (ii) Stratigraphy of Sediments Penetrated

The regional stratigraphy of the offshore Gippsland Basin is summarised in Fig. 4.

The stratigraphy of sediments penetrated in Wyrallah No. 1 are summerised in Fig. 7 and Table 1.

TABLE 1

AGE		Foram Zones	Spore Pollen Zones	FORMATION		FORMATION TOPS (m) K.B.		THICK-NESS (m)		PALAEO-ENVIRON-MENT
Pliocene - Recent				Undifferentiated		Sea Bed 53m K.B.		227		Marine
Miocene	Mid - Late	E_1-D		Gippsland Limestone		280 ?		540		Marine
Miocene	Early	D? to H_1		Lakes Entrance	Upper (Marl) Member	820			19	Marine
Oligocene	Late	l_1 to H_1		Lakes Entrance	Upper (Marl) Member	839?	820	55	23	Marine
Oligocene	Early	J	NFF	Lakes Entrance	Lower (glauconitic claystone) Member	862			13	Near Shore Marine
Eocene	Late	NFF	NFF MNA	Latrobe Formation		874	875		160	Non-marine -Marginal Marine
Eocene	Mid	NFF	LNA	Latrobe Formation		1035			58	Non-Marine
Eocene	Early	NFF	NFF	Latrobe Formation		1099 ?			42?	Non-Marine
Palaeo-cene	Late		ULB	Latrobe Formation		1135 ?			25+	Non-Marine

NFF = No fossil, foraminifera, spores or pollen found.
MNA = Middle N.asperus.
LNA = Lower N.asperus.
ULB = Upper L.balmei.

Palaeocene-Recent (undifferentiated) sea floor - 280m? K.B.

Most of this section was drilled with no sample returns (seafloor - 215m K.B.)

These recent sediments are comprised mainly of marl, calcarenite, and associated coquina beds of bryozoa, brachiopods and foraminiferas.

The marls are medium grey to grey, soft, soluble, embedded with fossil fragments (up to 30%) decreasing with depth. The calcarenites are light grey becoming medium grey with depth, fine to medium grained, subrounded, loosely cemented, fair visual porosity, becoming firmer towards the base; slightly sandy and glauconitic in part with minor limestone, white, light grey to grey, hard, cryptocrystalline.

Stratigraphic data on this sequence are lacking and the lower part of this sequence may be transitional into the Late Miocene-Gippsland Limestone sediments.

The base is tentatively picked at 280m based on the decrease of coquinitic limestone.

Miocene (280m? - 839m K.B.)

The Miocene sequence consists of two formations, the Gippsland Limestone and the Lakes Entrance Formation.

Gippsland Limestone - Middle to Late Miocene
(280m? - 820m K.B.)

The Gippsland Limestone Formation is composed mainly of calcarenite interbedded with marl and local silty and arenaceous facies distribution.

Calcarenite is grey, tan, cream, occasionally grey-green, fine grained, argillaceous and glauconitic in part, poor visual porosity with occasional dolomite/dolomitic calcarenite, tan, brown, sucrosic, with good visual porosity.

Marl: grey, light grey, becoming light to medium grey, grey-green towards the base, soft, soluble, slightly glauconitic and calcarenitic in part, with minor Siltstone: grey to medium grey, occasionally dark grey, firm-hard, well cemented, slightly calcareous and arenaceous interbeds; minor loose quartz grains, clear, coarse, rounded.

Lakes Entrance Formation- Early Miocene (820m-839m?) to Early-Late Oligocene (839m-875m)

The top of this sequence has been picked at 820m from log characteristics, lithological changes and micro-palaeontological zonations (see Attachment 7) where a bounding hiatus between Early Miocene and Middle Miocene is present.

Also based on micropalaeontological zonations, there was an apparent unconformity between Early and Late Oligocene at 862m which subdivides the Lakes Entrance into an upper (marl) Member and lower (glauconitic claystone) Member.

Upper (Marl) Member 820m-862m - Late Oligocene to Early Miocene: is composed of Marl, light grey-medium grey, soft, slightly glauconitic (< 5%), silty and calcarenitic in part, becoming pyritic and slightly micaceous toward the base, with minor Siltstone: medium grey, light brown, calcareous, soft, glauconitic in part, occasionally dark grey, firm to hard, grading to very fine sandstone.

Lower (glauconitic claystone) Member 862m-875m - Early Oligocene: is composed of calcareous claystone, light to medium grey, soft, very glauconitic (up to 30% in part), slightly sandy, occasionally green-grey, moderately firm, with traces of pyrite, mica and fine trace of weathered ferruginous specks at top with minor siltstone, slight grey calcareous cement, very glauconitic, firm, grading to very fine sandstone.

Latrobe Group

On a regional basis, the Latrobe Group is comprised of two formations: the Gurnard and undifferentiated Latrobe Formations.

No Gurnard Formation was encountered at Wyrallah No. 1.

However, at Kyarra No. 1 where glauconitic sandstone and siltstone of the Gurnard Formation was encountered, it was originally interpreted as being of Early Oligocene age.

A recent re-examination of this glauconitic formation from Kyarra No. 1 indicated that the formation, in fact, belongs to the Late Eocene (Middle N.asperus) - (see Attachment 9).

Undifferentiated Latrobe Formation - 875m-TD (1160m) - Late Eocene-Late Palaeocene: This sequence sharply underlies the Lakes Entrance Formation. No foraminifera or other fossil fauna were found in this sequence (see Attachment 7). However, based on the palynological study (Attachment 6), the presence of the Middle N.asperus association from 918m to 991m and possible presence at 887m, places the top of this sequence within the Late Eocene. Whether this sequence disconformably underlies the Lakes Entrance Formation cannot be positively determined as no spores or pollen were found in the uppermost part of this sequence (875m-887m).

Late Eocene (875m-1035m K.B.) - Middle N.asperus: This sequence has been interpreted as being deposited in a low coastal plain-marginal marine environment and consists of Sandstone: medium grey, light brown to brown, fine grained, angular-subangular, occasionally subrounded-rounded, at top becoming light grey-medium grey, grey, fine-medium-coarse grained, subangular to subrounded, slightly argillaceous, carbonaceous and micaceous in part with generally good visual pososity with interbeds of Lignite: brown, brittle; Claystone: light grey to dark grey, occasionally grey-green, soft, silty, occasionally Carbonaceous Shale: firm, sandy in part, and micaceous.

Middle Eocene (1035m-1099m K.B.) - Lower N. asperus: This sequence has been interpreted as being deposited in a fluvial-low coastal plain environment and consists of Sandstone: light-medium grey, fine to coarse, occasionally pebbly, angular-subangular, poorly sorted, argillaceous, becoming very fine grained, grading to Siltstone with depth, very argillaceous, subangular-subrounded, well sorted, slightly micaceous in part; Claystone: light grey, soft, soluble, sandy, slightly micaceous, becoming light grey-white, occasionally beige with depth, and Lignite: (mainly at the top of the sequence), brown, dark brown, brittle.

Early Eocene? (1099m-1135m?) to Late Palaeocene (1135m? - T.D.: The top of this sequence has been picked at 1090m, mainly from log characteristics as it was barren of foraminifera with the exception of SWC 1 (1151m) where the Upper L. balmei spore pollen zone was present.

This sequence has been interpreted as being deposited in a fluvial environment and consists mainly of Claystone: light grey, white, soft, soluble, slightly sandy and silty in part, interbedded with minor Sandstone: light grey, fine to very fine grained, subrounded-angular, mainly angular, argillaceous, grading in part to Siltstone

Lithologically and stratigraphically this sequence corresponds to the basal Latrobe sediments encountered at Kyarra No. 1.

D. Structure

Wyrallah consists of a structural culmination of the Latrobe Group sediments adjacent to a high angle reverse basement fault. The rollover on the upthrown block forms a structural ridge extending from Wyrallah eastwards to Kyarra No. 1.

Displacement along the fault decreases from Kyarra to Wyrallah where the fault becomes a monoclinal flexure in the upper Latrobe Group sediments. Further to the west along the same trend, the flexure again becomes a displacement and the fault persists beyond the area of investigation.

Deformation associated with the fault can be followed through to the Late Miocene after which sedimentary onlap is observed. Later sediments show no disturbance.

The Strzelecki Formation was encountered at Kyarra where unconformably dipping seismic events are observed beneath the Latrobe Group. No such dipping events are discernable at Wyrallah. Nevertheless, the top of Strzelecki can be traced from Kyrarra to Wyrallah with a moderate degree of confidence.

Although the structure is well defined in time, questions may arise when considering depth conversion. At the top Latrobe level, by considering only burial, one would have expected a higher average velocity in Kyarra than in Wyrallah. This is not the case, as the wells show that average velocity in Wyrallah is about 1.2% higher. Sonic logs for both Kyarra and Wyrallah wells are consistent; however, a higher velocity peak can be seen on the Wyrallah log at 520 msec. TWT. This may explain why the time/depth curves for the two wells start diverging from this point. The maximum difference in velocities occurs at 750m below MSL where the Wyrallah average velocity is about 2.5% higher than in Kyarra (Fig. 9).

The higher average velocity at Wyrallah may be due to a localized high velocity unit within the pre-Latrobe sediments. If that is so, the structure is flattened but could still exist by 5 to 10 metres (Fig. 10). This represents the extreme case.

Alternatively, if the velocity increase from Kyarra to Wyrallah is purely gradual, this will give a slight tilt of the depth structure compared to the time structure and therefore weaken the eastern closure while enhancing the western one. (The tilt is very small as the velocity gradient is very low).

Both hypotheses could have a geological significance by assuming either a channel on top of the structure or a gradual change in facies. Seismic facies hardly give any clue. The second geological assumption is obviously more favourable for structural closure.

E. Reservoir Properties and Source Rocks

The main prospective reservoir sequence in the Gippsland Basin is the Late Cretaceous-Late Eocene Latrobe Group. Porosities and permeabilities within these sediments are very good.

Statistical analyses at the top Latrobe, of core porosities gives a mean porosity of 21% with a standard deviation of less than 5%. However, shale laminae can greatly affect both porosity and permeability. Permeabilities vary greatly but an average of 320 millidarcies (vertical) and 700 millidarcies (horizontal) could be expected.

In Wyrallah-1, a number of potential reservoirs were encountered from 874m to 1067m, major zones being 874m-883m, 984m-977m, 995m-1035m and 1047m-1067m, all belonging to the undifferentiated Latrobe Formation.

Log analyses indicated good to excellent porosity (25-35%). The enlarged borehole in several places (874m-883m, 894m-902m, 957m-977m, 996m-1006m) plus the argillaceous nature of the sandstones in places, may indicate that the log porosities read too high.

However, some of the sidewall cores taken over these intervals display fair to good visual porosity, with some other samples having poor to no porosity at all (from thin sections), but fair to good visual porosity.

No accurate permeabilities were measured as no cores were cut.

However, the mudcake buildup in the parts of the hole which were not washed out indicate that these sands have good permeability.

The source rock analysis of sidewall cores in this sequence indicate that there is an adequate organic matter (Type II-III). Appreciable concentration of resinite and suberinite in coals from 991m and 1040m provide good source potential for light oil and/condensate. However, with maximum vitrinite reflectance of 0.42% at 1130m, these sediments are immature for generating hydrocarbons.

(see attachment 9) and a long distance for horizontal migration from the centre of the basin has to be considered in the exploration of this part of the VIC/P17 permit.

F. Relevance to the Occurrence of Hydrocarbons

The maximum gas reading obtained during drilling of Wyrallah No. 1 was 0.35% to total gas at 884m-894m associated with coals (C_1 only) in Top of the Latrobe Formation.

No indication of oil or fluorescence were detected in the sidewall cores, cuttings or drilling fluid.

Log analyses indicate the absence of hydrocarbons, and reservoirs being saturated with fresh water.

The absence of hydrocarbons in Wyrallah No. 1 may be explained by no hydrocarbon migration, or if some were trapped it was biodegraded until complete destruction by fresh water and bacteria.

G. Contribution to Geological Concepts Resulting from Drilling, and Conclusions

1. The Lakes Entrance Formation (820m-875m) is interpreted as being Early Oligocene-Early Miocene in age and disconformably underlies the Middle-Late Miocene sequence of the Gippsland Limestone Formation.

   The base of the Miocene sequence was picked at 839m K.B. from electric logs, and indications from palynological studies of S.W.C.'s.

2. There is a possible disconformity between Early and Late Oligocene separating Lakes Entrance Formation into Upper (Marl) Member and Lower (glauconitic claystone) Member.

   The base of the Oligocene sequence was picked at 874m K.B. from the electric log and lithological changes.

3. The Gurnard Formation (uppermost part of the Latrobe Group) which was encountered at Kyarra No. 1 (located 9 km east of Wyrallah-1) was not present at Wyrallah-1.

4. Although there is a sharp change in lithology and on the electric logs between the base of the Lakes Entrance Formation (Early Oligocene) and underlying undifferentiated Latrobe Formation (Late Eocene-Late Palaeocene), the stratigraphic relationship is not clear.

   Whether undifferentiated Latrobe Formation disconformably underlies the Lakes Entrance cannot be positively determined as no palaeontological or palynological evidence was present in the uppermost part of the Latrobe Formation (874m-887m).

5. The Late Eocene sequence of the undifferentiated Latrobe Formation has been interpreted as being deposited in a low coastal plain-marginal marine environment whereas the Middle Eocene-Late Palaeocene sequence has been

interpreted as being deposited in a fluvial-low coastal plain environment.

6. Post-drilling velocity analyses places the validity of structural closure at question (see Section IV. D. Structure).

7. Drilling of Wyrallah-1 as well as Kyarra-1 contributing to the concept that this western part of the VIC/P17 permit has very low or no potential for hydrocarbon accumulations for the following reasons:

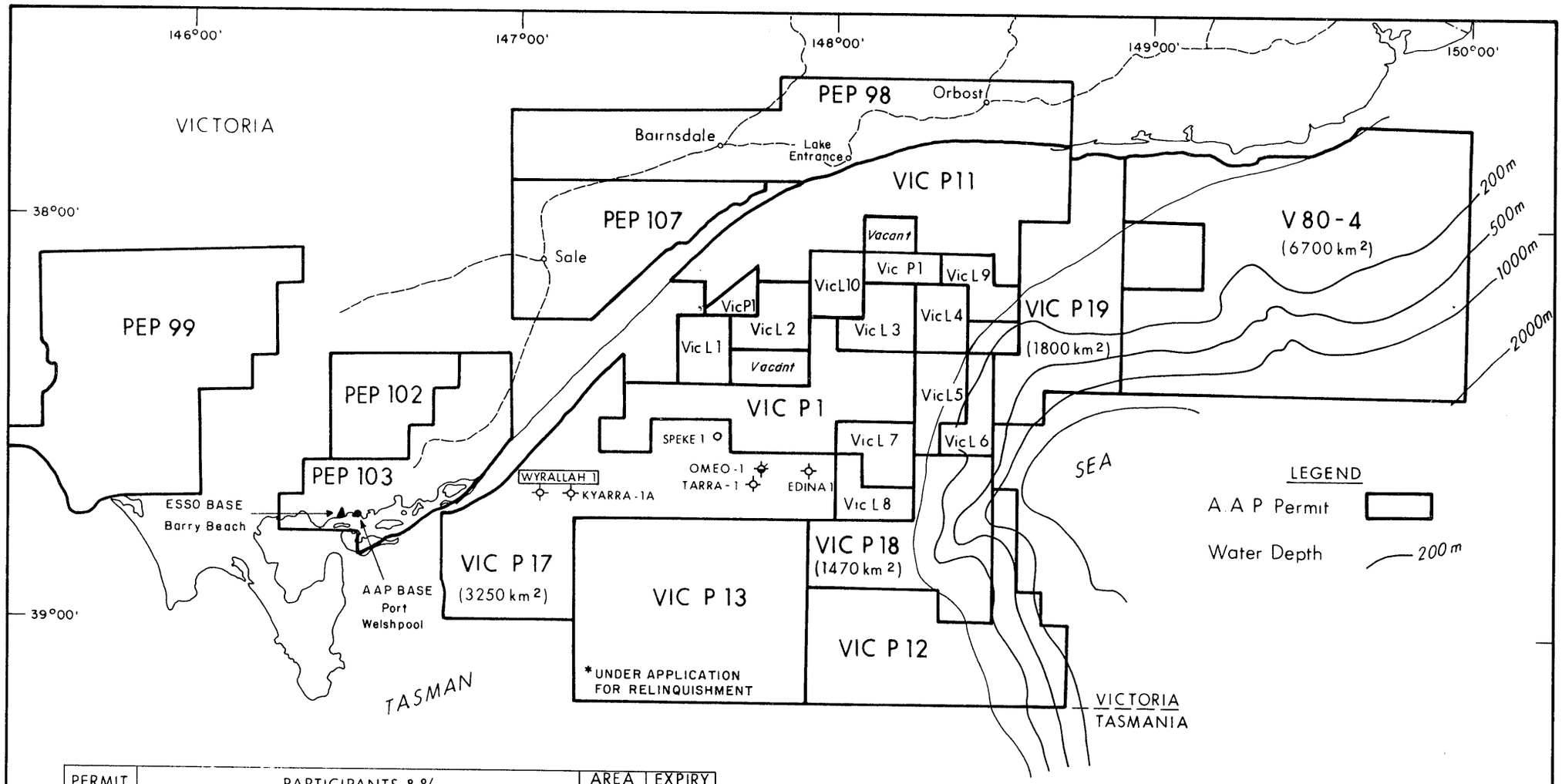
   7.1 The source rock analyses indicate that these sediments are immature for generating hydrocarbons (see Attachment 9).

   7.2 - No hydrocarbon migration occurred, or
   - it was biodegraded until complete destruction by fresh water or bacteria.

   7.3 This part of the permit is apparently not valuable because of the long range horizontal migration of oil it involves, plus the destructive action of fresh water and biodegradation observed in Perch No. 1, Dolphin No. 1 and Palmer No. 1.

   7.4 The drilling of Wyrallah No. 1 after Kyarra No. 1 has effectively tested the significant structural feature of the area with remaining structures being of lower amplitude.

   No stratigraphic play can be envisaged because of the lack of lateral seal properties of all sediments even in a lagoonal environment in this area.



PERMIT	PARTICIPANTS & %	AREA Km²	EXPIRY DATE
Vic P1	ESSO 50, BHP 50	1894	23/10/84
Vic P11	Gas & Fuel 33 3, Beach 33 3, Forminee 33 3	3451	7/8/84
Vic P12	Cultus 37 5, Archaean 17 5, York 17·5, Metramar 17 5, Sovereign 10	2670	7/1/85
Vic P13 *	Bass Strait 32 94, Bass 08 G 16·47, Youngblood 30 0, Siberia 8 24 South Eastern Res 12 35 STATUS OF VIC/P13	3605	6/3/85
Vic P17	AAP 25, Occidental 25, Alliance 25, Agex 12 5, Cons Pet 12 5	3250	2/9/87
Vic P18	Phillips 33 3, Lend Lease Inv 33·3, M I M 33 3	1470	1/9/87
Vic P19	Shell 40, News Corp 20, TNT 20, Crusader 15, Mincorp 5	1800	1/9/87
Vic L1-11	ESSO 50, BHP 50	3100	31/3/88
PEP 98	Mincorp, Southern Oil, Alan Robert Burns, Derek Rose Gascoine	2880	7/7/83
PEP 99	Victor Pet., Resources Ltd	3605	26/11/83
PEP 102	Frontier Resources	804	30/8/83
PEP 103	Arganaut Intern. Corp.	1456	24/8/83
PEP 107	Beach Petroleum	1622	1/3/85

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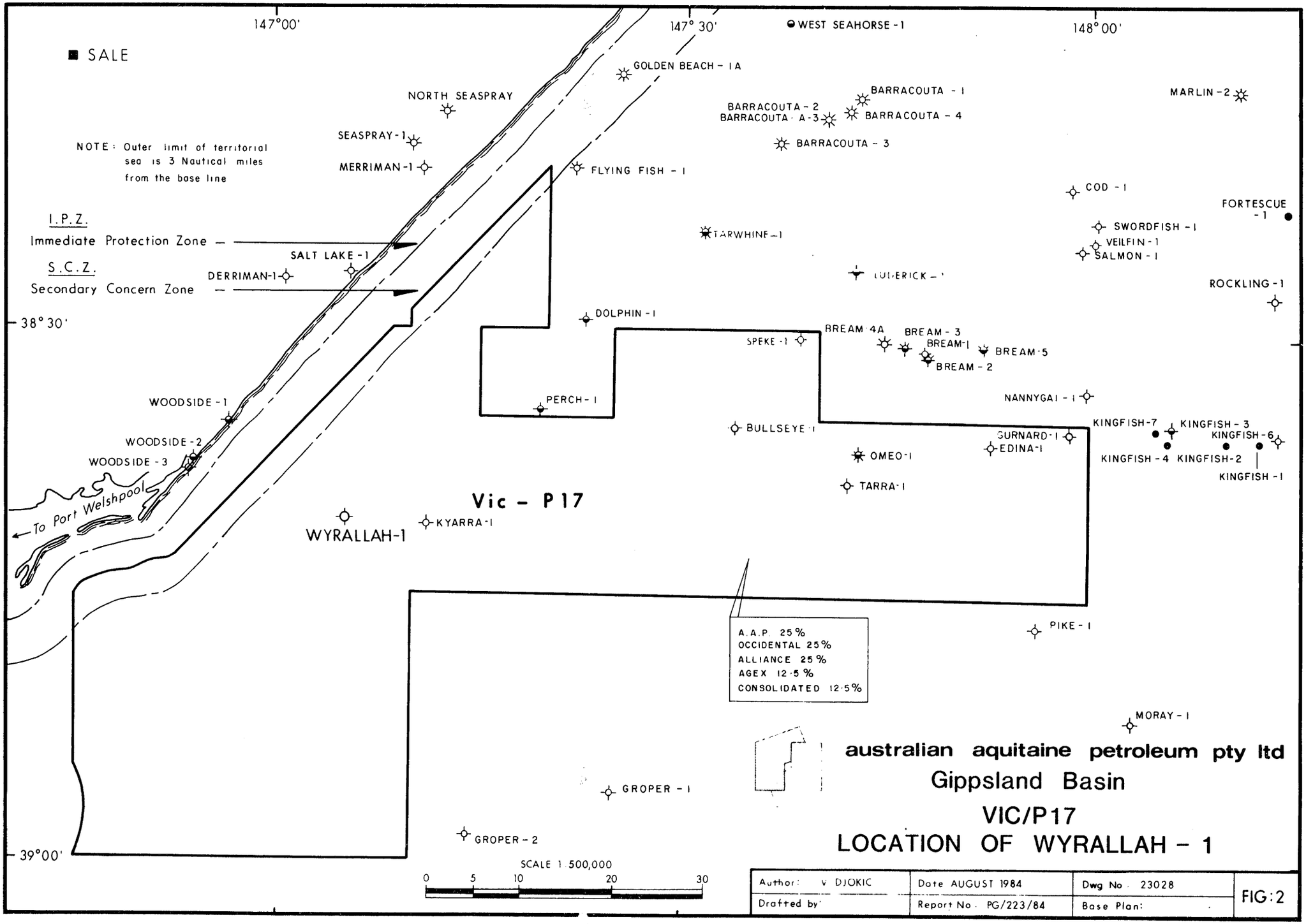
GIPPSLAND BASIN

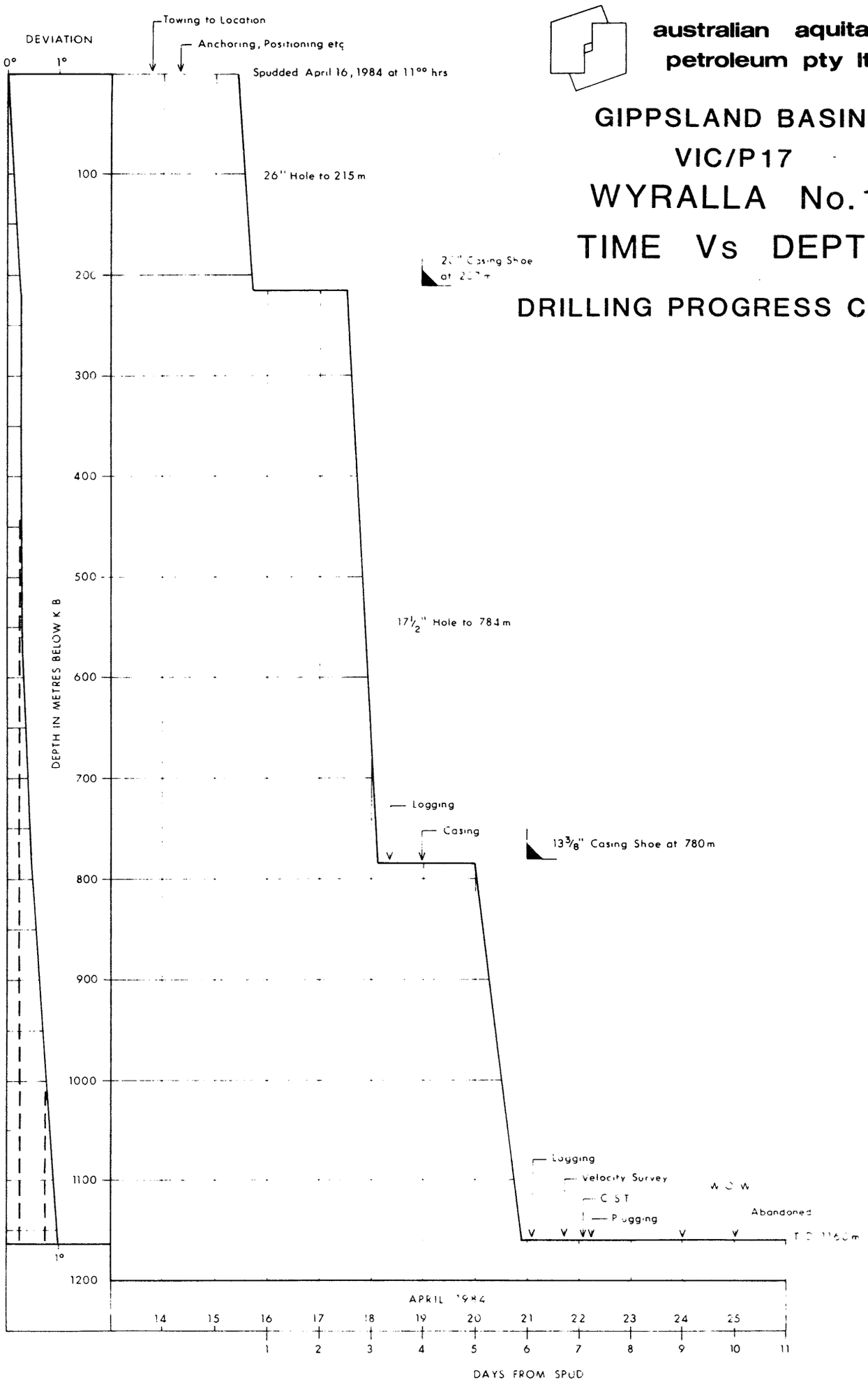
OFFSHORE PERMIT MAP

SCALE

Km 15 10 5 0 15 30 45 60 Km

Author: C. LAMBERT	Date: APRIL 1984	Dwg. No: 23403	FIG. 1
Drafted by: L.H.	Report No: GP/223/84	Base Plan: 22062	


147°00'
147° 30'
148°00'
SALE
WEST SEAHORSE - 1
GOLDEN BEACH - 1A
NORTH SEASPRAY
BARRACOUTA - 1
BARRACOUTA - 2
BARRACOUTA - A-3
BARRACOUTA - 4
BARRACOUTA - 3
MARLIN - 2
SEASPRAY - 1
NOTE : Outer limit of territorial sea is 3 Nautical miles from the base line
MERRIMAN - 1
FLYING FISH - 1
COD - 1
FORTESCUE - 1
I.P.Z.
Immediate Protection Zone
SWORDFISH - 1
TARWHINE - 1
VEILFIN - 1
SALMON - 1
SALT LAKE - 1
S.C.Z.
Secondary Concern Zone
DERRIMAN - 1
TUSKERICK - 1
ROCKLING - 1
38° 30'
DOLPHIN - 1
BREAM - 4A
BREAM - 3
SPEKE - 1
BREAM - 1
BREAM - 5
BREAM - 2
PERCH - 1
NANNYGAI - 1
WOODSIDE - 1
KINGFISH - 7
KINGFISH - 3
KINGFISH - 6
BULLSEYE - 1
GURNARD - 1
WOODSIDE - 2
EDINA - 1
OMEO - 1
KINGFISH - 4
KINGFISH - 2
WOODSIDE - 3
KINGFISH - 1
TARRA - 1
To Port Welshpool
Vic - P17
WYRALLAH - 1
KYARRA - 1
A.A.P. 25 %
OCCIDENTAL 25 %
ALLIANCE 25 %
AGEX 12·5 %
CONSOLIDATED 12·5 %
PIKE - 1
MORAY - 1
GROPER - 1
GROPER - 2
39°00'
SCALE 1:500,000
0 5 10 20 30
australian aquitaine petroleum pty ltd
Gippsland Basin
VIC/P17
LOCATION OF WYRALLAH - 1
Author: V DJOKIC
Date AUGUST 1984
Dwg No 23028
Drafted by:
Report No PG/223/84
Base Plan:
FIG:2



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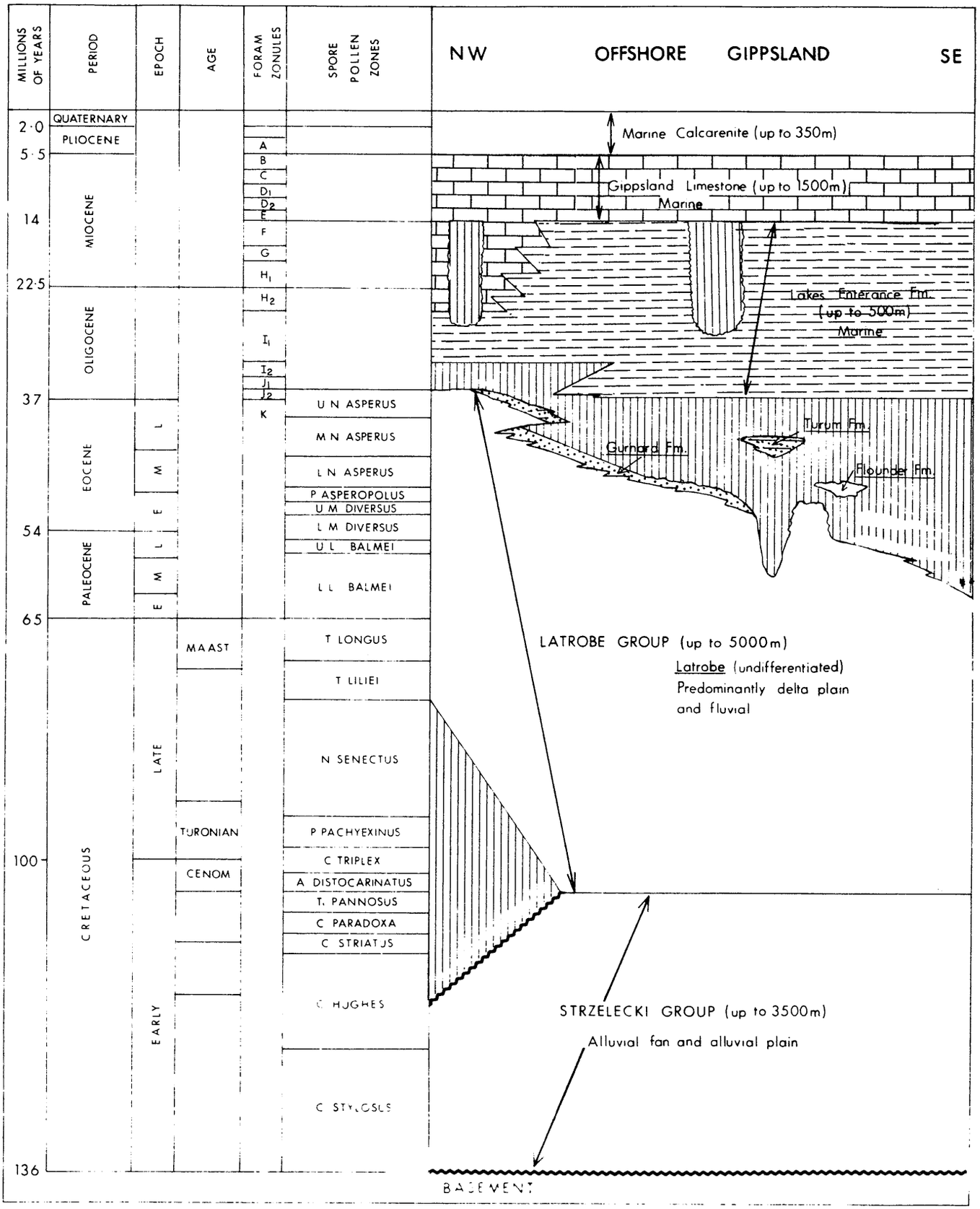
GIPPSLAND BASIN
VIC/P17
WYRALLA No.1
TIME Vs DEPTH
DRILLING PROGRESS CHART

FIG. 3



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Gippsland Basin VIC/P17

STRATIGRAPHY

OFFSHORE GIPPSLAND BASIN

FIG: 4

N.B. MODIFIED FROM THRELFALL ET AT , 1976

Report No PG /223/84 Dwg No AUGUST 1984 Dwg No 20375

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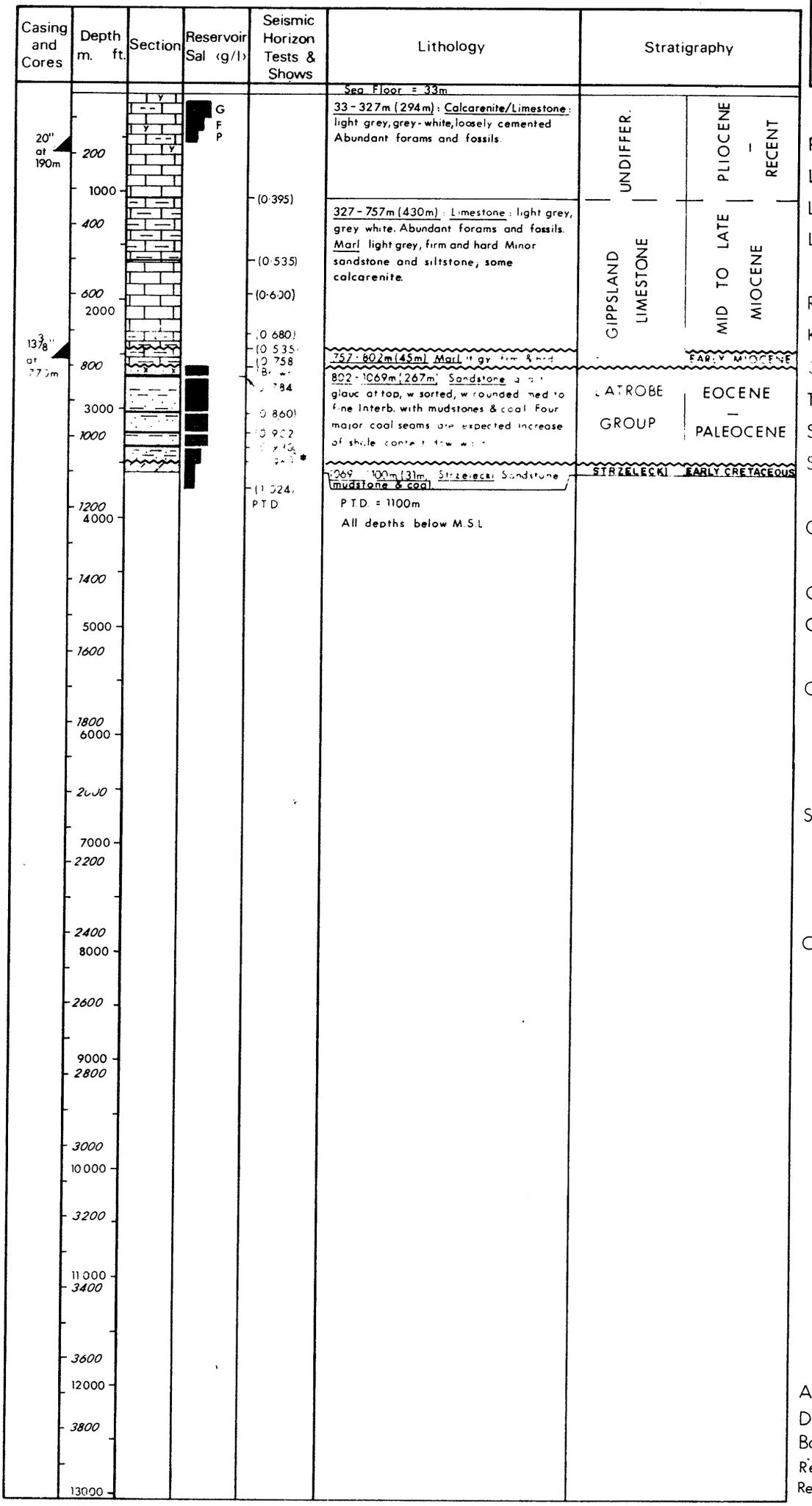
WYRALLAH - 1

PREDICTED SECTION



Permit VIC/P17

Location SP480 Line GA82B-212

Latitude 38°40'36·8"S

Longitude 147°05'04·9"E

Rig SOUTHERN CROSS

K B 22m

G L 33m

T.D. 1100m or 1160m M.S.L. *

Status WILDCAT

Spudded MARCH / APRIL 1984

Operator A.A.P.

Cost

Cost/ft.

Objectives Top Latrobe Stacked Reservoirs

Structure Top Latrobe structure. Intra-latrobe fault controlled.

Comments * Well may be terminated at any stage if the Strzelecki is encountered.

Author: K. LY

Date: MARCH 1984

Base Map No 9112

Reference No. 22999

Report No: PG/223/84

FIG. 5

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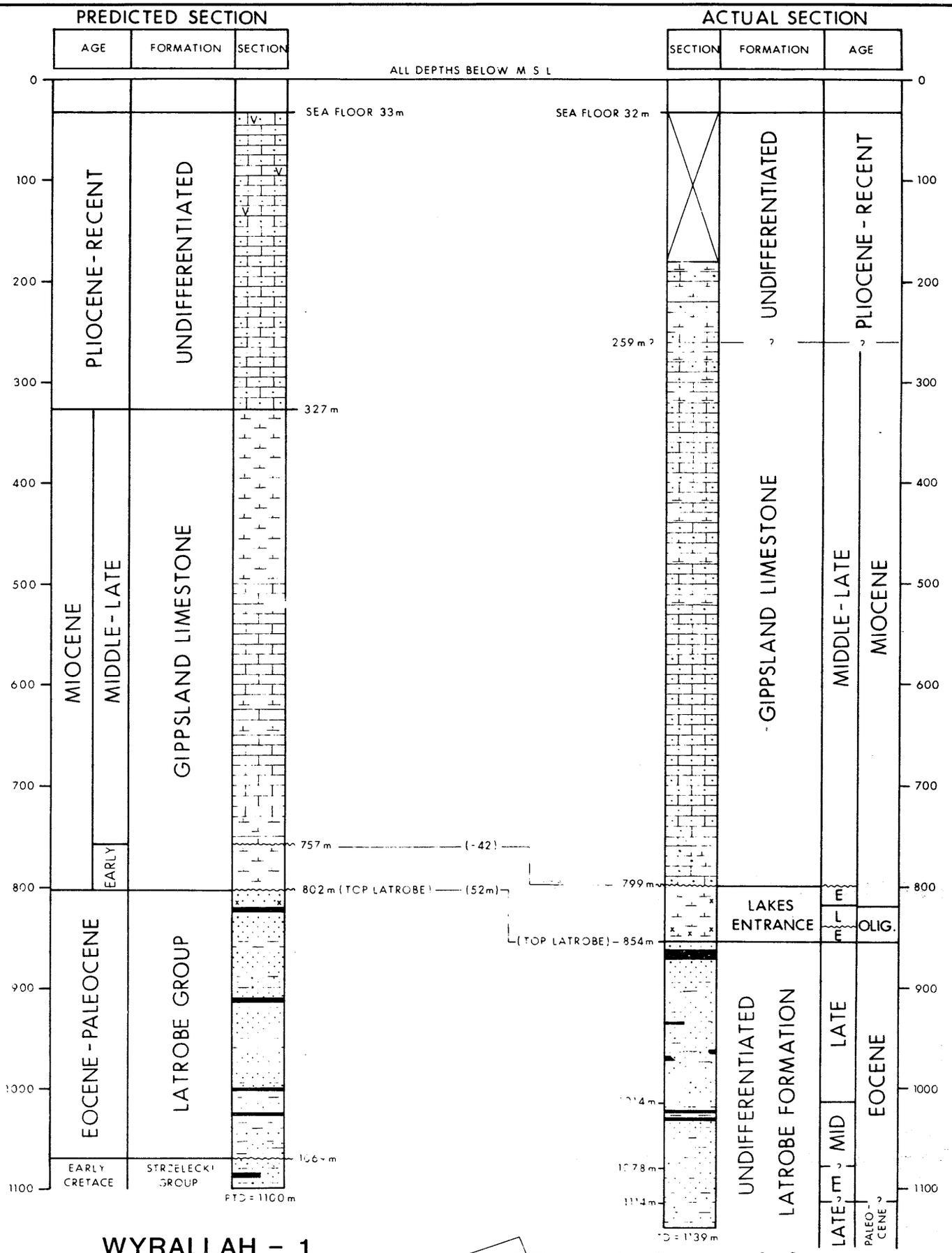
WYRALLAH No.1
COMPLETED SECTION

Casing and Cores	Depth (m)	Section	Reservoir Sal (g/l)	Seismic Horizon Tests & Shows	Lithology (All depths below KB)	Stratigraphy		
					SEA LEVEL 21m			
					SEA FLOOR 53m			
	100				53-215m No returns, samples o sea fl. or.	UNDIFF.	PLIOCENE	RECENT
20" 207m	200				215-280m Marl, med. grey - grey, soft, abund. fossil frag. (up to 30% Calcarenite Lt-med. grey, fine-med., subr., sandy, loosely cemented	?	?	?
	300				280-820m Calcarenite, grey, tan, cream, occ. grey green, fine, sl. argillaceous, glauconitic in part, occ. dolomitic, tan, brown, sucrosic, and Marl, grey, lt grey, becoming lt grey-med. grey, grey-green towards the base, soft, sl. glauconitic & calcarenitic in part, minor Siltstone & loose quartz grains, coarse, rounded.	GIPPSLAND LIMESTONE FORMATION	MIDDLE - LATE	MIOCENE
	400							
	500							
	600							
	700							
13 3/8" 780m	800							
					820-875m Marl/calc. Clayst., lt-med grey, soft, silty, v. glauc. towards base.	LAKES ENTRANCE Fm	EARLY LATE EARLY	OLIGO.
	900				875-1099m Sandstone, med. grey, lt brown, becoming lt-med grey with depth, fine-coarse, angular, subangular, occ. subrounded – rounded, sl. argillaceous & micaceous in part, interbedded with Lignite, brown, brittle, Claystone, lt grey - dk grey, soft, silty & carbonaceous Shale, firm, sandy, micaceous.	LATROBE UNDIFFERENTIATED FORMATION	LATE	EOCENE
	1000						MID. ? EARLY ?	
	1100						LATE	PALEOCENE
	1200				1099-1160m (T.D.) Mainly Claystone, lt grey, white, soft, slightly sandy & silty in part, interbedded with minor Sandstone, lt grey, fine-v. fine, angular, grading to siltstone.			

Permit	VIC / P17
Location	S.P. 480 Line GA-82B-212
Latitude	38°40'36·8"S
Longitude	147°05'04·9"E
Rig	Southern Cross
K.B.	21m AMSL
W.D.	32m BMSL
T.D.	1160m (21-4-84)
Status	P & B
Spudded	16-4-1984
Rig released	26-4-1984
Operator	AAP
Cost	$A 2 100 000 approx.
Cost/m	$A 1810
Objectives	Top Latrobe stacked reservoir.
Structure	Top Latrobe structure, Intra Latrobe fault controlled.
Comments	Strzelecki Fm not penetrated.

FIG. 6

Author: V. DJOKIC
Date: July, 1984.
Base Map No 9112
Reference No.



WYRALLAH - 1

COMPARISON OF PREDICTED TO ACTUAL DRILLED SECTION

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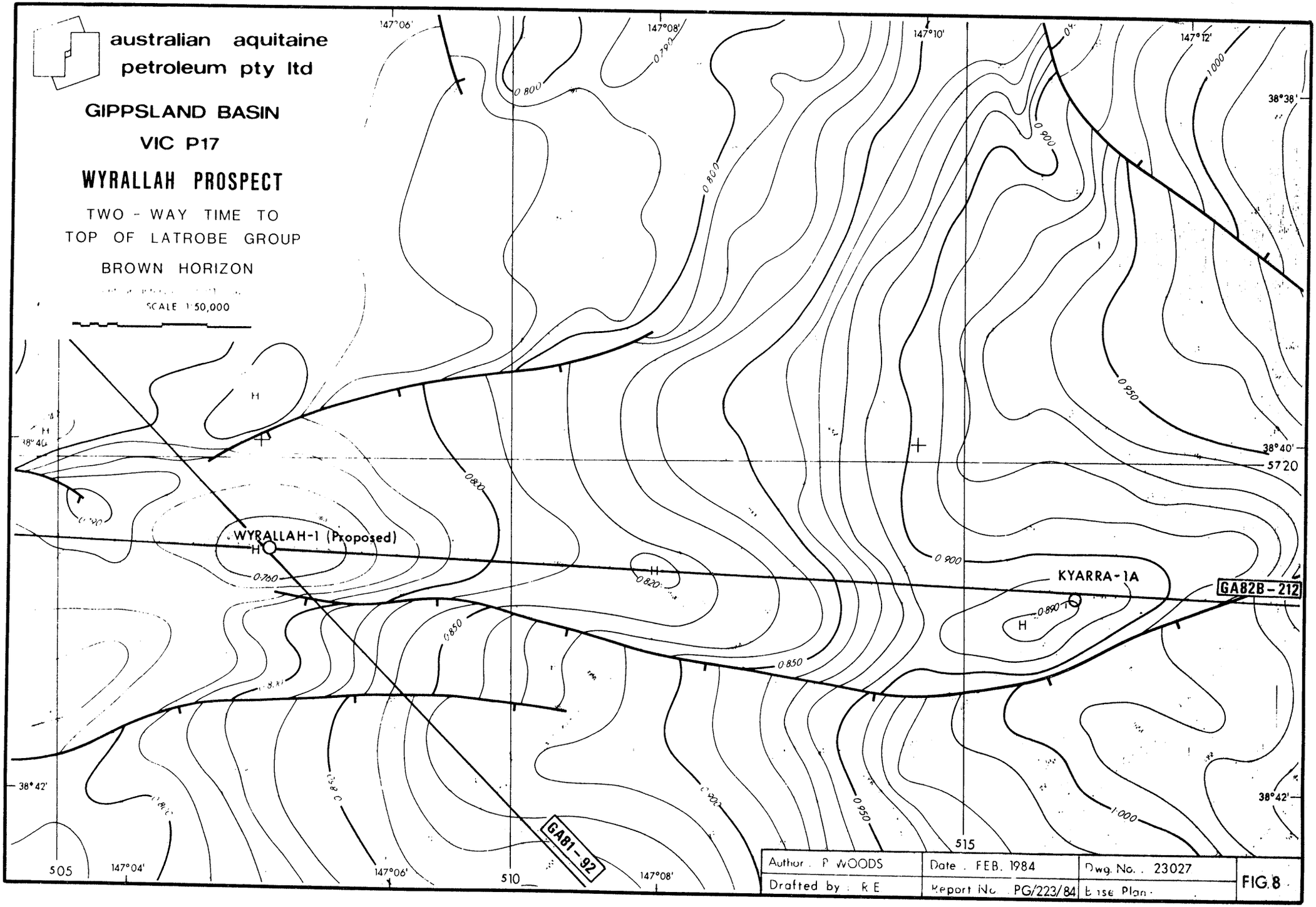
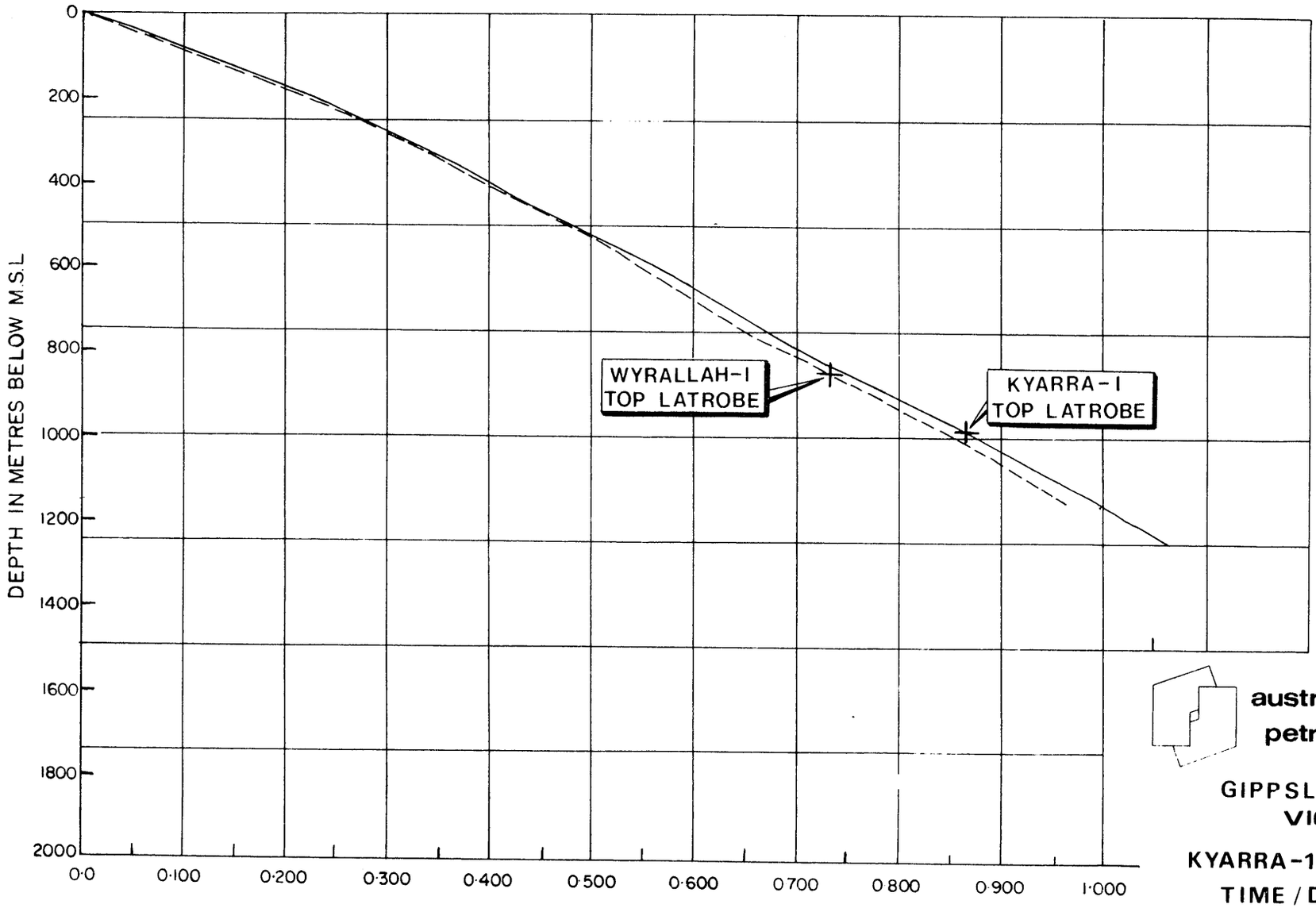
VIC/P17

GIPPSLAND BASIN

NB STRZELECKI NOT PENETRATED FROM VELOCITY SURVEY EXPECTED AT 1155m M S L

Author J DJOKIC	Date AUGUST 1984	Dwg No 23805	FIG. 7
Drafted L Hazell	Report No PG/223/84	Base Plan	


australian aquitaine petroleum pty ltd
GIPPSLAND BASIN
VIC P17
WYRALLAH PROSPECT
TWO - WAY TIME TO TOP OF LATROBE GROUP
BROWN HORIZON
SCALE 1:50,000
147°06'
147°08'
147°10'
147°12'
38°38'
38°40'
38°42'
5720
505
510
515
147°04'
0 800
0 850
0 900
0 950
1 000
WYRALLAH-1 (Proposed)
KYARRA-1A
GA82B-212
GA81-92
Author . P WOODS
Date . FEB. 1984
Dwg. No. . 23027
Drafted by . R E
Report No . PG/223/84
Base Plan .
FIG.8



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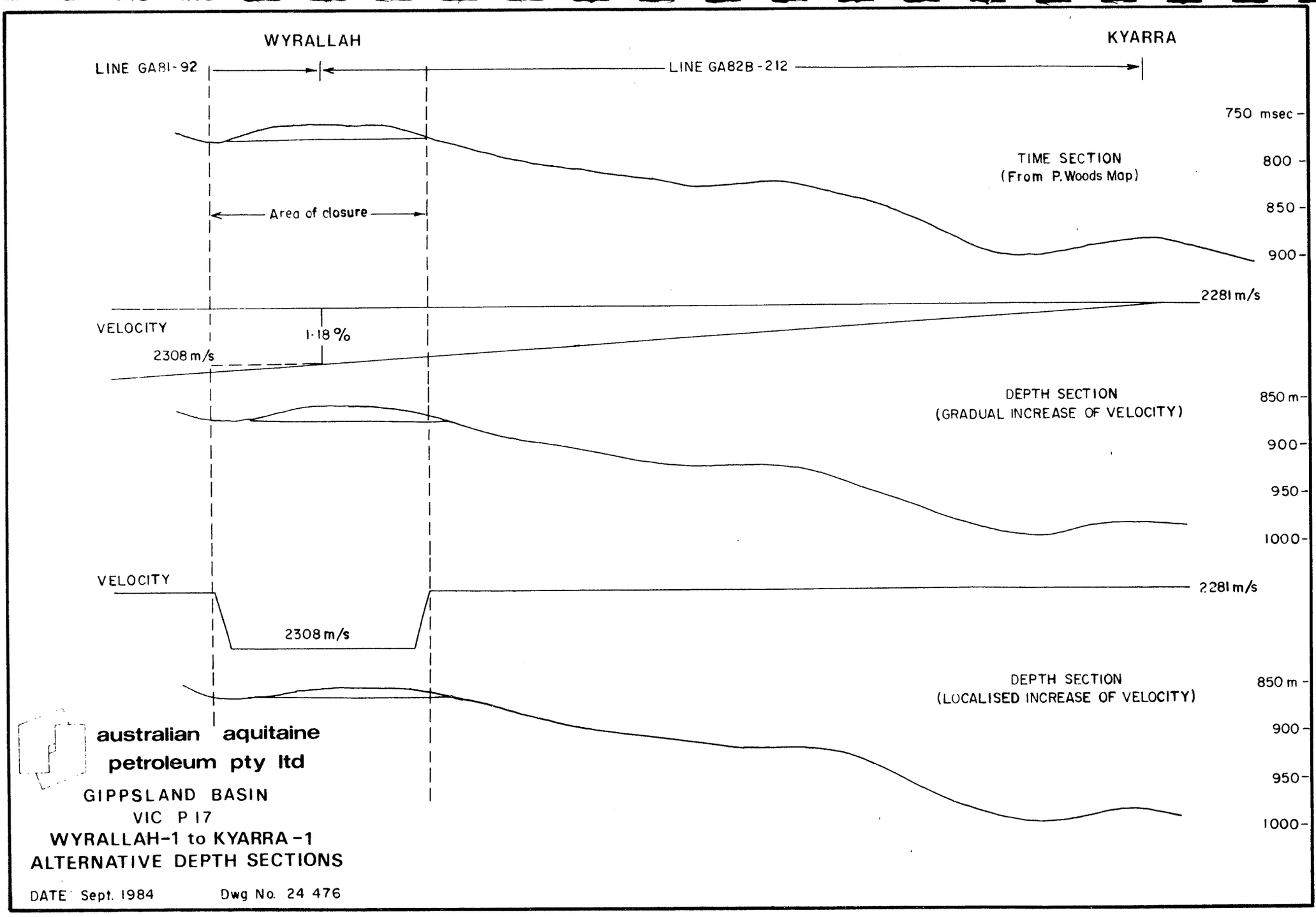
GIPPSLAND BASIN
VIC P17

KYARRA-1 & WYRALLAH-1
TIME / DEPTH CURVES

Author: P. WOODS	Date: Sept. 1984	Dwg. No. 24475
Drafted V. Dj	Report: PG/223/84	FIG. No. 9



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GIPPSLAND BASIN
VIC P 17
WYRALLAH-1 to KYARRA-1
ALTERNATIVE DEPTH SECTIONS

DATE Sept. 1984 Dwg No. 24 476

FIG. 10

APPENDIX I

CUTTING SAMPLE DESCRIPTION

215m - 257m : MARL (60-70%): Med. grey to grey, soft, soluble, washing out, embedded with fossil fragments (30%-Tr), decreasing with depth.

CALCARENITE (5-20%), Light grey, fine grained, subrounded, loosely cemented, slightly sandy in part; minor LIMESTONE (Tr-5%), white, light grey to grey, hard, cryptocrystalline and traces of loose quartz grains, clear to opaque, coarse to medium, subrounded to rounded.

257m - 280m : MARL (70-75%), as above, with very fine carbonaceous specks, interbedded with:

CALCARENITE (25-30%), medium grey, fine to medium grained, becoming firmer in part, slightly glauconitic. Fine trace of quartz grains and fossil fragments, as above.

280m - 303m : MARL (50-60%), grey, soft, soluble, with very fine carbonaceous specks, embedded with fossil fragments (5%), mainly bryozoans.

CALCARENITE (35%), grey, fine grained, moderately cemented, slightly sandy and loose quartz grains (Tr-10%), clear, coarse, rounded.

303m - 330m : MARL (50-60%), as above, and CALCARENITE (35-50%), grey, occ. tan, cream, fine, becoming more cemented, slightly glauconitic in part, and sandy.

Trace of loose quartz grains, as above.

Minor DOLOMITE, tan, light brown, sucrosic.

330m - 353m : CALCARENITE (100%), grey, tan, cream, fine calcareous cement, firm, slightly sandy and glauconitic.

Minor DOLOMITE, as above.

353m - 372m : CALCARENITE (90-95%), as above with minor CALCARENITE (5-10%), grey-green, fine grained, slightly argillaceous and glauconitic, fine, trace of fossil fragments (mainly bryozoans), and loose, coarse, rounded quartz grains, minor DOLOMITE, tan, brown, sucrosic.

372m - 423m : CALCARENITE (40-60%), grey, tan, cream, fine, calcareous cement, firm, slightly sandy and CALCARENITE (50-20%), grey-green, fine, slightly argillaceous, decreasing with depth, comm. shell fragments (5-20%), mainly bryozoans, and trace of loose quartz grains, coarse, rounded.

Minor DOLOMITE, tan, brown, sucrosic, possibly associated with CALCARENITE.

$CaCO_3$ = 65-80%.

$CaMg(CO_3)_2$ = 8-17%.

From 408 metres, generally as above, with decrease of fossil fragments and slight increase of loose quartz grains.

423m - 471m : Interbedded sequence of CALCAREOUS CLAYSTONE/MARL (20-30%), grey, soft, soluble, with fine carbonaceous specks, slightly glauconitic, decreasing with depth.

Loose quartz grains (40-50%), coarse, well rounded, translucent, yellowish.

CALCARENITE (10-4-%), white, tan, firm, calcareous cement with fragments of shells and forams.

CALCARENITE (5-15%), grey-green, fine, slightly argillaceous, sometimes glauconitic. Fine traces lignite and pyrite towards the base.

$CaCO_3$ = 50-60%.

$CaMg(Co_3)_2$ = 2-4 %.

471m - 500m : Mainly CALCARENITE, white, tan, firm, calcareous, clay cement with fragments of shells and forams, interbedded with loose quartz grains, as above, and CALCAREOUS CLAYSTONE/MARL, as above.

Minor DOLOMITE, tan, light brown, sucrosic.

$CaCO_3$ = 72%.

$CaMg(CO_3)_2$ = 10-17%.

500m - 540m : Interbedded CALCARENITE, white, tan, firm, calcareous clay cement, with fragments of shells and forams; CALCARENITE, grey-green, slightly argillaceous, occ. glauctonitic.

CALCAREOUS CLAYSTONE/MARL, grey, very soft, soluble, slightly glauconitic with fine carbonaceous specks; loose quartz grains, coarse, translucent, yellowish well-rounded, and minor DOLOMITE, tan, light brown, sucrosic.

$CaCO_3$ = 45-65%.

$CaMg(CO_3)_2$ = 5-8%.

540m - 563m : Mainly CALCARENITE, white, tan, calcareous clay cement, as above, interbedded with loose quartz grains, translucent, yellowish, coarse, well rounded.

DOLOMITE, tan, light brown, sucrosic, and minor CALCAREOUS CLAYSTONE, as above.

$CaCO_3$ = 50-60%.

$CaMg(CO_3)_2$ = 6-12%.

563m - 609m : CALCARENITE (90-100%), white, cream, fine grained, soft, calcareous clay cement with abundant shell and forams fragments, slightly sandy, and minor loose quartz grains (Tr-10%), coarse, rounded, translucent.

$CaCo_3$ = 60-70%.

$CaMg(CO_3)_2$ = 5-12%

609m - 652m : CALCARENITE, as above, with decrease of loose quartz grains, as above (Tr-5%).

$CaCO_3$ = 65-70%.

$CaMg(CO_3)_2$ = 5-8%.

652m - 684m : CALCARENITE (100%), white, cream, soft, calcareous clay cement, abundant shell and forams fragments, slightly sandy.

$CaCO_3$ = 65-70%.

$CaMg(CO_3)_2$ = 5-10%.

684m - 721m : CALCARENITE (80-100%), white, cream, soft, calcareous clay cement, abundant shell and forams fragments, slightly sandy, and MARL (Tr-20%), grey, light grey, firm, calcarenitic and glauconitic.

$CaCO_3$ = 70-78%.

$CaMg(CO_3)_2$ = 10-16%.

721m - 757m : CALCARENITE (65-90%), as above, and MARL (15-35%), grey, firm, calcarenitic.

$CaCO_3$ = 72-78%.

$CaMg(CO_3)_2$ = 4-13%.

757m - 774m : CALCARENITE (40-75%), white, cream, soft, with shell and forams fragments; MARL (20-40%), grey, firm, calcarenitic, and CLAYSTONE (5-60%), grey, dark grey, brown, calcareous, very soft, washing out, increasing with depth.

774m - 802m : CALCAREOUS CLAYSTONE/MARL (80-90%), light grey to medium grey, grey-green, soft, occ. white, kaolinitic, light grey to medium grey, fractions are calcarenitic in part, grey-green, fractions are slightly glauconitic. Minor SILTSTONE (Tr-10%), med. grey, occ. dark grey, firm to hard, well cemented, and fossil fragments (5%), associated with CLAYSTONE.

$CaCO_3$ = 35-50%.

802m - 820m : CALCAREOUS CLAYSTONE/MARL (90-100%), med. grey to light grey-green, soft, soluble, washing out, slightly glauconitic, occ. light brown, soft, silty and white, kaolinitic. Trace fossil fragments, and pyrite. Minor SILTSTONE, grey to med. grey, calcareous, minor dark grey, hard, non-calcareous.

820m - 839m : CALCAREOUS CLAYSTONE ($CaCO_3$ = 35-40%)/MARL, light grey to med. grey, soft, glauconitic, (Tr-5%), slightly silty in part, calcarenitic in part, occ. light green, soft, firm, glauconitic. Minor SILTSTONE (5-10%), medium grey, light brown-grey, soft, glauconitic in part, calcareous, minor, dark grey, hard, non-calcareous, trace fossil fragments (mainly bryozoa) and pyrite.

$CaCO_3$ = 45-60%.

839m - 862m : CALCAREOUS CLAYSTONE/MARL, light grey to medium grey, soft, glauconitic (5%), slightly pyritic and micaceous in part; minor SILTSTONE, medium grey, glauconitic, firm to hard, calcareous cement, grading to very fine SANDSTONE.

$CaCO_3$ = 35-50%.

862m - 874m : CALCAREOUS CLAYSTONE, light to medium grey, soft, very glauconitic (up to 30% in part), slightly sandy, occ. grey-green, moderate to firm, fine trace of pyrite and mica, fine trace of weathered ferruginous specks at top. Minor SILTSTONE, light grey, calcareous cement, very glauconitic, firm, grading to very fine SANDSTONE.

$CaCO_3$ = 20-35%.

874m - 884m : SANDSTONE, medium grey, light brown, fine grained, angular to subangular, occ. subrounded, argillaceous, trace mica, no fluorescence, visual porosity.

884m - 894m : LIGNITE, dark brown, brittle.

T.G. = 0.35 %
C_1 = 0.20 %
C_2 = 0.015 %
C_3 = 0.006 %

984m - 905m : SANDSTONE, light brown to brown, fine grained, angular to subangular, unconsolidated, slightly argillaceous in part, good visual porosity, no fluorescence. Minor LIGNITE beds, brown, brittle.

905m - 914m : SANDSTONE, medium light grey, medium to coarse grained, subangular to subrounded, unconsolidated, slightly argillaceous, good visual porosity, no fluorescence

914m - 926m : SANDSTONE, light grey, fine grained, very argillaceous; micaceous in part.

926m - 935m : SANDSTONE, light grey, fine to medium grained, unconsolidated, slightly calcareous and argillaceous, subangular to subrounded, good visual porosity, no fluorescence.

935m - 958m : SANDSTONE, light to medium grey, very fine grained, subangular to angular, occ. medium grained, generally very fine - grading to SILTSTONE in part, very argillaceous, traces mica and carbonaceous specks, poor visual porosity, and

CLAYSTONE, medium grey to grey-green, silty, soft clay fractions, generally washed out.

958m - 978m : SANDSTONE, medium to dark grey, medium to coarse grained, generally medium, subrounded to subangular, very loose, unconsolidated, argillaceous, and carbonaceous in part, no fluorescence. Minor LIGNITE at top.

978m - 996m : Interbedded LIGNITE, brown, brittle; CLAYSTONE, light grey, dark grey, soft, silty, carbonaceous, and CARBONACEOUS SHALE, firm, sandy in part, and micaceous.

996m - 1035m : SANDSTONE, grey, medium to coarse grained, occ. pebbly (up to 4mm), subangular to subrounded, medium to dark grey clay cement, slightly calcareous in part, becoming fine to medium, angular towards the base, poorly sorted, unconsolidated, slightly argillaceous, no fluorescence.

1035m - 1048m : Interbedded CLAYSTONE, light grey, soft, soluble, sandy, slightly micaceous, LIGNITE, brown, dark brown, brittle, and SANDSTONE, medium grey, fine to pebbly, angular, poorly sorted, argillaceous.

1048m - 1071m : SANDSTONE, medium to light grey, fine to coarse grained, angular to subangular, poorly sorted, clay cemented, slightly calcareous, interbedded with SANDSTONE, medium to light grey, very fine grained, grading to SILTSTONE, well sorted, subangular to subrounded, very argillaceous and slightly micaceous. Minor LIGNITE at base.

1071m - 1093m : CLAYSTONE, light grey to white, occ. beige, soft soluble, slightly silty to sandy in part, non-calcareous.

1093m - 1160m (T.D.)
Interbedded CLAYSTONE, light grey, white, soft, soluble, slightly sandy and silty in parts, non-non-calcareous SANDSTONE, light grey, fine grained, subrounded to angular, argillaceous, grading in part to SILTSTONE.

At 1144m: CLAYSTONE, green, green-grey, firm, slightly calcareous, with fragments of COAL, black, firm, lignitic, and coarse quartz grains, subangular to subrounded (possibly reworked sediments).

APPENDIX II

SIDEWALL CORES DESCRIPTION

WYRALLAH NO. 1

SIDEWALL CORES DESCRIPTION

Shot No.	Depth (m)	% Recov.	
1	1151	50	SANDSTONE, light grey, very fine grained, subrounded to angular grains, argillaceous cement, non-calcareous, no fluorescence.
2	1144	20	CLAYSTONE, green and green-grey, firm, remains of calcified fossil fragments, calcareous. COAL, black, firm, lignitic and coarse, pebbly size quartz grains, subangular to subrounded, possible reworked sediments.
3	1139	100	CLAYSTONE, white, very soft, soluble, non-calcareous.
4	1130	100	CLAYSTONE, light grey, soft, soluble, slightly silty, non-calcareous.
5	1122	100	CLAYSTONE, light grey to white, soft, soluble, slightly silty, non-calcareous, hydrophylic.
6	1113.5	100	CLAYSTONE, white, soft, soluble, non-calcareous.
7	1104.5	100	CLAYSTONE, white to light grey, soft, soluble, non-calcareous.
8	1093	50	CLAYSTONE, light grey, soft, with abundant, very fine sandy to silty size grains, non-calcareous.
9	1080	100	CLAYSTONE, beige, soft, soluble, non-calcareous.
10	1075	100	CLAYSTONE, very light grey to white, soft, soluble, slightly silty, non-calcareous.
11	1065	50	SANDSTONE, medium to light grey, fine to coarse grains, angular to subangular, clay cemented, calcareous, no fluorescence.
12	1058	100	SANDSTONE, medium to light grey, very fine grained, grading to silt-stone, well sorted, subangular to subrounded, very argillaceous and slightly micaceous, no fluorescence.

Shot No.	Depth (m)	% Recov.	
13	1055	25	SANDSTONE, medium grey, fine to pebbly sized grains, poorly sorted, angular, soft clay bound, calcareous, no fluorescence.
14	1047	100	CLAYSTONE, light grey, soft, soluble, sandy, traces of mica.
15	1040	50	LIGNITE, brown, dark brown, brittle.
16	1030	100	SANDSTONE, grey, fine to medium grains, angular, poorly sorted, unconsolidated, slightly argillaceous, no fluorescence.
17	1020	75	SANDSTONE, grey, medium to very coarse grained (up to 4mm), medium to dark grey clay cement, subangular to subrounded, calcareous, no fluorescence.
18	1007	100	SANDSTONE, grey, medium to coarse grained, subangular to subrounded, clay cement, soft, non-calcareous, no fluorescence.
19	991	75	LIGNITE, brown, brittle.
20	988	100	Very carbonaceous SHALE, firm, imbedded with very coarse sand grains. mica, no fluorescence.
21	980	100	Laminated, light grey, silty CLAYSTONE and dark grey carbonaceous silty Claystone.
22	979	100	LIGNITE, dark brown, brittle.
23	959	60	SANDSTONE, dark grey, medium to coarse, mainly medium, very loose, argillaceous cement, carbonaceous, no fluorescence.
24	957	80	SANDSTONE, light to medium grey, very fine grained, grading to siltstone, subangular to angular, well sorted, fair visual porosity, very argillaceous, mica, no fluorescence, trace carbonaceous specks.
25	953	100	SANDSTONE, as above.

Shot No.	Depth (m)	% Recov.	
26	947	100	SANDSTONE, light grey, very fine, occ. medium grains, unconsolidated, argillaceous, no visual porosity, no fluorescence.
27	942	100	SANDSTONE, medium, light grey, very fine grained, unconsolidated, argillaceous, traces of mica, no fluorescence.
28	936.5	90	SANDSTONE, medium grey, very fine grained, silty, grading to very argillaceous SILTSTONE. Traces of mica and carbonaceous specks.
29	927	0	No recovery.
30	923	60	SANDSTONE, light grey, fine to medium, unconsolidated, slightly calcareous, no fluorescence.
31	918	60	SANDSTONE, light grey, fine grained, micaceous, very argillaceous, no fluorescence.
32	912	70	SANDSTONE, medium-light grey, medium to coarse grained, subangular to subrounded, unconsolidated, slightly argillaceous, no fluorescence.
33	904	70	SANDSTONE, brown, fine grained, angular to subangular, unconsolidated, no fluorescence.
34	892	60	LIGNITE, brown, brittle.
35	887	60	LIGNITE, as above.
36	884	50	SANDSTONE, medium grey, light brown, very fine grained, very argillaceous, traces of mica, no fluorescence.
37	880	50	SANDSTONE, medium grey, light brown, fine grained, argillaceous, angular grains, occasionally sub-rounded; no fluorescence.
38	878	10	SANDSTONE, light brown, fine grained, occasionally medium, subangular to subrounded, argillaceous, poorly sorted, no fluorescence.
39	877	40	SANDSTONE, as above.

Shot No.	Depth (m)	% Recov.	
40	880	60	SANDSTONE, as shot 37.
41	870	50	CALCAREOUS CLAYSTONE, light grey to medium grey, soft, very glauconitic, micaceous, slightly sandy.
42	865	80	CALCAREOUS CLAYSTONE, light to medium grey, soft, very glauconitic (up to 30%), minor, subrounded, fine sand grains, and traces of weathered ferruginous specks and very fine traces of pyrite.
43	861	80	CALCAREOUS CLAYSTONE, light-medium grey, soft, glauconitic and pyritic, minor fine sand grains, subrounded.
44	855	100	CALCAREOUS CLAYSTONE, light-medium grey, soft, glauconitic, slightly micaceous in part.
45	845	100	CALCAREOUS CLAYSTONE, light-medium grey, soft, glauconitic.
46	835	40	CALCAREOUS CLAYSTONE, light-medium grey, soft glauconitic.
47	825	100	CALCAREOUS CLAYSTONE, light-medium grey, soft, fine tr. glauconite.
48	815	80	CALCAREOUS CLAYSTONE, medium grey to light grey-green, soft, trace fossil fragments.
49	805	100	CALCAREOUS CLAYSTONE, grey-green, soft, occ. white, trace fossil fragments, slightly pyritic in parts.
50	795	100	CALCAREOUS CLAYSTONE, grey-green, soft, occ. white, kaolinitic.
51	785	100	CALCAREOUS CLAYSTONE, light grey to medium grey, soft, traces fossil fragments, calcarenitic in part.

APPENDIX III

LOG ANALYSES - FORMATION EVALUATION

SUMMARY OF WIRELINE SERVICES

Date	Suite	Logs Run	Interval (m)	Time Circ.Start Hrs.	Time Circ.Stopped Hrs.	Time Logger on Bottom Hrs.	Max.Rec. Temp. (BHT) C^{O}	Rm. BHT ohm-m	Rmf. BHT ohm-m	Rmc. BHT ohm-m	Scale 1:200	Scale 1:500	Hole Size
19.4.84	1	ISF-SLS-GR-SP	208-775	06.10	07.35	11.00	39.7	0.177	0.153	0.177	X	X	17½"
		LDL-GR-CAL	208-775	06.10	07.35	13.30	40.5	0.151	0.151	0.175	X	X	17½"
				19/04/84	19/04/84								Extrapolated BHT 42.0
22.4.84	2	ISF-SLS-MSFL-GR-SP	779-1155	23.00 21/04/84	01.00	05.00	40.5	0.191	0.158	0.182	X	X	12¼"
		LDL-CNL-GR-CAL	779-1155		01.00	08.00	43.3	0.183	0.151	0.175	X	X	Extrapolated BHT 53.2
		HDT	770-1152		01.00	12.00	48.8	0.169	0.139	0.161	X	X	
		Velocity Survey			22/04/84								
		*Cyberlook											
		*Cyberdip											
		*LDT Quick-look											

* Computer processed log.

WYRALLAH No1

EVALUATION OF THE WIRE LOGS IN THE LATROBE FORMATION/FORMATION EVALUATION

The Latrobe Formation was drilled from 874km (kb) to 1160m TD. Four main sandy units may be defined from the logs, confirmed by a LDT Quick look computation:

1. 874.0 - 883.5m (9.5m)
2. 894.0 - 977.5m (83.5m)
3. 995.5 - 1035.0m (39.5m)
4. 1047.0 - 1067.0m (20.0m)

Below 1067m, only metric beds of sandstones are interbedded in a mainly shale member.

Quality of logs

The induction deep curve reeds too low, especially in front of coal seams where no deflection occur as for the SFL and MSFL curves

Interpretation

SP is positive on the four main sandstones units with deflection from 30 to 60 mV which indicates a very fresh formation water. Drilling mud salinity is 24,000 ppm MaCl. Rw is difficult to obtain with accuracy: SP 30mV would give 1.6 ohm/m as well as what we could obtain from a plot of Ø vs SFL.

SFL and MSFL do not suggest any hydrocarbon zones. A Cyberlook using Rw=6 ohm/m (taken from Kyarra No. 1 well top Latrobe sandstones) do now show any indication of hydrocarbons. No Hydrocarbons either appear on the LDT Quick Look.

Interpretation (con't)

Numerous Side Wall Cores were taken, and more expecially four at the top Latrobe and no shows (no fluorescences, no cuts) were seen.

This confirming the lack of oil shows and gas during drilling.

Conclusion

The probable production of the Wyrallah No. 1 sandstones is 100% fresh water.

APPENDIX 4

WEEKLY WELL SUMMARY

AUSTRALIAN AQUITAINE PETROLEUM PTY. LTD.

WEEKLY WELL SUMMARY

WELL NAME: .....WYRALLAH.NO..1..... REPORT NO.: .....1.....

PERIOD: FROM: .....14.4.1984..... TO: .....20.4.1984.....

All depths relate to Rotary Kelly Bushings at zero tide datum (Low Water Indian Springs) which is ..53M... metres above seabed.

HOLE	SIZE	36"	26"	17½"	12¼"	8½"	
	DEPTH (m)	N/A	215	784			
CASING	SIZE	N/A	20"	13 3/8"			
	DEPTH (m)	N/A	207	780			

DATE	DEPTH AT 2400 HRS.	PROGRESS	REMARKS
14.4.84	--	--	SEMI SUBMERSIBLE RIG "SOUTHERN CROSS" DEPART VELFIN LOCATION 1800 HRS. ON TOW TO WAH #1 LOCATION.
14.5.1984	--	--	DROP NO. 1 ANCHOR AT 0609 HRS, NO. 6 AT 1206. POSITION, BALLASTING, TENSION ANCHORS, STATIC TEST.
16.4.1984	215M	162M 8HRS	RUN GUIDE BASE, RIH 26" BHA. SPUD WELL AT 1100 HRS, DRILL 26" HOLE TO 215M. WIPER TRIP. POOH PREPARE TO RUN 20" CASING - SURVEY ¼ DEGREE AT 215M.
17.4.1984	215M	--	RUN 20" CASING CEMENT W/44.5T CLASS G+ 3.8% PREHYDRATED GEL. DISPLACE WITH MUD S.G. 3.14 RIG TO RUN BOP - TEST PODS. RUN BOP. TEST 20" CASING AGAINST SHEAR RAMS TO 500 PSI. OK. INSTALL DIVERTER. RUN TEST TOOL.
18.4.1984	666M	451M 10HR30MIN	TEST BOP RAMS/VALVES 300/5000PSI, ANNULARS 300/5000 PSI WITH BLUE PODS. RUN WEAR BUSHING M/UP 17½" BHA. TAG CMT AT 188.5M. TEST DIVERTER SYSTEM. DRILL OUT CMT/SHOE 207M. WASH DOWN TO 215M. DRILL 17½" HOLE FROM 215M TO 561M. CIRCULATE. DROP TOTCO. PUMP VIS PILL. POOH RECOVER TOTCO. RIH NO FILL. DRILL 17½" HOLE 561M TO 666M.
19.4.1984	784M	118M 4HR 30MIN	DRILLING 17½" HOLE. CIRCULATE. WIPER TRIP. CIRCULATE. DROP SURVEY. POH. RIG UP SCHLUMBERGER LOGGING - RUN 1 - INDUCTION SONIC GR 208-775M. RUN 2 - LOC GR CALIPER. 208-775M. MAKE UP CSG. HNG/RUN TOOL. RIH W/BIT NO. 2 - CONTROL TRIP. DRILLING - 778TO784M TO ADJUST CSG. SHOE. CIRC. SPUD 100 BBLS HI VIS MUD. CHAIN OUT OF HOLE. PULL W/BUSHING. R/UP WEATHERFORD TONGS. PREPARE RUN 13 3/8" CASING.
20.4.1984	788M	4M 0HR 30MIN	RUN 13 3/8" CSG TO 780M. RIG UP CEMENTING LINE AND CIRC. 1300 L/MIN 450 PSI. TEST CEMENTING LINE 4000PSI-TRY TO RELEASE BOTTOM PLUG-NO SUCCESS. POOH RUNNING TOOL-CHANGE PLUGS & FOUND WASHED BALL-RIH & TEST CEMENTING LINE 400 PSI-OK. RELEASE BOTTOM

PLUG (1800 PSI) MIXING CMT. DISPLACE W/RIG PUMP 55 CUBIC M FINAL PRESSURE 800 PSI AT 1000 L/MIN PUMP PLUG 1500 PSI. POH RUNNING TOOL. WASH WELLHEAD INSTAL S/ASSEMBLY AND TEST SAME AT 1500 PSI - TEST BOP RAMS 5000/ ANNULAR 2500 AND BLIND SHEAR RAMS 500 PSI. INSTALL W/BUSHING. PICK UP BHA. TAG CMT. AT 753M. DRILL OUT CMT AND PLUGS. DRILL FORMATION FROM 784-788M IN 12¼" HOLE. CIRCULATE RIG UP TO PERFORM LEAK OFF TEST.

AUSTRALIAN AQUITAINE PETROLEUM PTY. LTD.

TIME SUMMARY

WELL NAME: ...WYRALLAH no. 1.... PERIOD: FROM: ..14.4.1984.... TO: .20.4.1984.....

TIME ANALYSIS (HOURS)		FOR WEEK	TOTAL
D:	MOVING		
D1	Moving of rig, rigging up/down, anchoring	36.5	36.5
D2	Waiting on weather during moving		
D3	Other waiting time	4.5	4.5
F:	DRILLING - CASING		
F1	Drilling on bottom, incl. connection time	23.5	23.5
F2	Trips for new bit	2.0	2.0
F3	Ancillary Drilling Operations, incl. Totco, reaming, hole cleaning, testing BOP or casing.	1.0	1.0
F4	Casing and Cementing	82.5	82.5
G:	FORMATION SURVEYS		
G1	Coring		
G2	Related Coring Operations, incl. tripping etc.		
G3	Tests and associated operations		
G4	Electric Logging Operations		
A:	INTERRUPTION OF OPERATIONS UNDER F OR G		
A1	Stuck Pipe and Fishing Operations		
A2	Mud-Losses, Flows, Treatment		
A3	Waiting on Weather		
A4	Other waiting time - Repairs		
C:	COMPLETION - PLUGGING		
C1	Completion, Stimulation, Production Tests		
C2	Abandonment of Well		
C3	WOW during completion, plugging, testing		
C4	Other Waiting time		
	TOTAL TIME:	150	150

DOWN TIME: HOURS 0.03 PERCENTAGE

AUSTRALIAN AQUITAINE PETROLEUM PTY. LTD.

[redacted] SUMMARY - BITS AND MUD

BIT AND CORE RECORD

BIT NO.	SERIAL NO.	MAKE	TYPE	NOZZLES	FROM	TO	METRES	HOURS	m/h	CONDITION
1	52837	VAREL	L3A	3 x 20	53	215	162	8	20.25	1-1-10 26"
2	52747	"	"	3 x 18	215	784	569	15	37.93	17½"
3	XA686	HUGHES	X3A	3 x 16	784	788	4	0.5	0.5/½H	(RE-DRILL FROM 753-784)

MUD PRODUCT

CHEMICAL	UNIT KG	CONSUMPTION		STOCK	CHEMICAL	UNIT KG	CONSUMPTION		STOCK
		WEEK	CUMULATIVE				WEEK	CUMULATIVE	
CEMENT "G"									
BARYTES									
BENTONITE									
CAUSTIC									

[redacted] EF" [redacted] UMM [redacted] - [redacted] AN [redacted] D [redacted]

BIT AND CORE RECORD

BIT NO.	SERIAL NO.	MAKE	TYPE	NOZZLES	FROM	TO	METRES	HOURS	m/h	CONDITION

MUD PRODUCT - WEEKENDING 20.4.1984

CHEMICAL	UNIT KG	CONSUMPTION		STOCK	CHEMICAL	UNIT KG	CONSUMPTION		STOCK
		WEEK	CUMULATIVE				WEEK	CUMULATIVE	
CEMENT "G"	KG	91,500	91,500						
BARYTES	KG	22,000	22,000						
BENTONITE	KG	40,500	40,500						
CAUSTIC	KG	3,290	3,290						
INTCAL	KG	100	100						
$CACL_2$	KG	300	300						
SODA ASH	KG	740	740						
BICARB	KG	240	240						
MUD DET	LTR.	416	416						

AUSTRALIAN AQUITAINE PETROLEUM PTY. LTD.

WEEKLY WELL SUMMARY

WELL NAME: ..WYRALLAH NO. 1..... REPORT NO.: .....2.....

PERIOD: FROM: .21.4.1984..... TO: .....27.4.1984.....

All depths relate to Rotary Kelly Bushings at zero tide datum (Low Water Indian Springs) which is .53.... metres above seabed.

HOLE	SIZE	36"	26"	17½"	12¼"	8½"	
	DEPTH (m)	N/A	215	784	1160		
CASING	SIZE	N/A	20"	13 3/8"	--		
	DEPTH (m)	N/A	207	780	--		

DATE	DEPTH AT 2400 HRS.	PROGRESS	REMARKS (4 Metres in 12¼" on 20.4.84 (Not Previously recorded in Hole Size)
21.4.1984	1160	372 19 hrs. 30 min	Perform Leak-Off Test. Drilling 788m - 879m. Circulate Bottoms Up. Drilling from 879 - 884m. Circulate Bottoms Up. Drilling from 884-1160m (T.D.). Circulate and condition mud. P.O.H. to 780m. R.I.H.
22.4.1984	1160	--	Circulated Bottom Up. Spudded 5 BBLS HI VIS mud. Dropped Totco. P.O.H. deviation 1%. Rig up Schlumberger. Run (1) ISF-BHC-MSFL-GR (2) LDT-CNT-GR (3) HDT Rig down Schlumberger. RIH. Bit - No fill. Circulated Bottom up. P.O.H. Rig up Schlumberger W.S.T.
23.4.1984	1160	--	Logging - S/Wall coring - 50 Clabs from 1150m-800m. Recovery 98%. Make up tubing. R.I.H. 1160 metres. Circulate cement from 1122m to 1020m w/ 235 sx class "G" + 2% $CACL_2$. Pull back to 830m-730m w/235 SX Class "G" + 2% $CACL_2$. P.O.H. Lay down D/P + 8" + 9 3/4" DC. Test cmt. plug to 1000 psi. R.I.H. stinger to 150m. Cmt plug from 152m to 80m W/165 SX Class "G" + 2% $CACL_2$ P.O.H. to 76m. Circulate Bottom Up/laydown stinger. R.I.H. wash wellhead.
24.4.1984	1160	--	Wash BOP and flush out lines. R.I.H. casing cutter 13 3/8" to 68.5m. Cut 13 3/8" csg. and P.O.H. R.I.H. w/csg. spear latch and P.O.H. 13 3/8" csg. Nipple down Diverter System and flow line. P.O.H. BOP and set on stump RIH. 20" csg. Cutter to 54.5m and cut csg. P.O.H. csg. cutter. Made up 20" Running Tool - P.O.H. pile JT/Pull Base plate 4 poster - Lay down pile joint (base plate on beams). Secure deck. deballast Rig. Hole abandoned at 2300 hrs.
25.4.1984	1160	--	Deballast Rig. Wait on Weather.
26.4.1984	1160	--	Wait on weather. Pulling anchors.
27.4.1984	1160	--	Pulling anchors. Last anchor bolstered 0245 hrs.

AUSTRALIAN AQUITAINE PETROLEUM PTY. LTD.

TIME SUMMARY

WELL NAME: ....WYRALLAH NO. 1... PERIOD: FROM: ..21.4.1984..... TO: ..27.4.1984.....

TIME ANALYSIS (HOURS)		FOR WEEK	TOTAL
D:	MOVING		
D1	Moving of rig, rigging up/down, anchoring	23.25	59.75
D2	Waiting on weather during moving	28.50	28.50
D3	Other waiting time	0	4.50
F:	DRILLING - CASING		
F1	Drilling on bottom, incl. connection time	19.50	43.00
F2	Trips for new bit	0	2.00
F3	Ancillary Drilling Operations, incl. Totco, reaming, hole cleaning, testing BOP or casing.	2.50	3.50
F4	Casing and Cementing	0	82.50
G:	FORMATION SURVEYS		
G1	Coring		
G2	Related Coring Operations, incl. tripping etc.		
G3	Tests and associated operations		
G4	Electric Logging Operations	29.00	29.00
A:	INTERRUPTION OF OPERATIONS UNDER F OR G		
A1	Stuck Pipe and Fishing Operations		
A2	Mud-Losses, Flows, Treatment		
A3	Waiting on Weather		
A4	Other waiting time - Repairs		
C:	COMPLETION - PLUGGING		
C1	Completion, Stimulation, Production Tests		
C2	Abandonment of Well	44.00	44.00
C3	WOW during completion, plugging, testing		
C4	Other Waiting time		
	TOTAL TIME:	146.75	296.75

DOWN TIME: HOURS 0.1112 PERCENTAGE

AUSTRALIAN AQUITAINE PETROLEUM PTY. LTD.

[redacted] WEEKLY SUMMARY - BITS AND MUD

BIT AND CORE RECORD

BIT NO.	SERIAL NO.	MAKE	TYPE	NOZZLES	FROM	TO	METRES	HOURS	m/h	CONDITION
3	XA686	HUGHES	X3A	3 x 16	788	1160	372	19.5	19.10	Continue drilling with Bit No. 3.

MUD PRODUCT

CHEMICAL	UNIT KG	CONSUMPTION		STOCK	CHEMICAL	UNIT KG	CONSUMPTION		STOCK
		WEEK	CUMULATIVE				WEEK	CUMULATIVE	
CEMENT "G"	KG	27,640	119,140		STARLOSE	KG	950	950	
BARYTES	KG	6,760	28,760		LIGNON	KG	675	675	
BENTONITE	KG	2,680	43,180						
CAUSTIC	KG	770	4,060						
INTCAL	KG	--	100						
$CACL_2$	KG	175	475						
SODA ASH	KG	480	1,220						
BICARB	KG	--	240						
MUD DET.	LTR	--	416						
CELPOL	KG	370	370						
PERMALOSE	KG	450	450						

PE902487

This is an enclosure indicator page.
The enclosure PE902487 is enclosed within the container PE902486 at this location in this document.

The enclosure PE902487 has the following characteristics:

ITEM_BARCODE	= PE902487
CONTAINER_BARCODE	= PE902486
NAME	= Seismic Line - GA81-92
BASIN	= GIPPSLAND
PERMIT	= VIC/P17
TYPE	= SEISMIC
SUBTYPE	= SECTION
DESCRIPTION	= Seismic Line - GA81-92, Final Stack Air Gun (enclosure from WCR) for Wyrallah-1
REMARKS	=
DATE_CREATED	= 31/01/82
DATE_RECEIVED	= 26/02/85
W_NO	= W864
WELL_NAME	= WYRALLAH-1
CONTRACTOR	= Western Geophysical
CLIENT_OP_CO	= Australian Aquitane Petroleum Pty Ltd

(Inserted by DNRE - Vic Govt Mines Dept)

PE902488

This is an enclosure indicator page.
The enclosure PE902488 is enclosed within the container PE902486 at this location in this document.

The enclosure PE902488 has the following characteristics:

ITEM_BARCODE	= PE902488
CONTAINER_BARCODE	= PE902486
NAME	= Seismic Line - GA82B-212
BASIN	= GIPPSLAND
PERMIT	= VIC/P17
TYPE	= SEISMIC
SUBTYPE	= SECTION
DESCRIPTION	= Seismic Line - GA82B-212, Migrated Section Air Gun, (enclosure from WCR) for Wyrallah-1
REMARKS	=
DATE_CREATED	= 30/09/82
DATE_RECEIVED	= 26/02/85
W_NO	= W864
WELL_NAME	= WYRALLAH-1
CONTRACTOR	= Western Geophysical
CLIENT_OP_CO	= Australian Aquitane Petroleum Pty Ltd

(Inserted by DNRE - Vic Govt Mines Dept)

PE601212

This is an enclosure indicator page.
The enclosure PE601212 is enclosed within the container PE902486 at this location in this document.

The enclosure PE601212 has the following characteristics:

ITEM_BARCODE	= PE601212
CONTAINER_BARCODE	= PE902486
NAME	= Composite Well Log
BASIN	= GIPPSLAND
PERMIT	= VIC/P17
TYPE	= WELL
SUBTYPE	= COMPOSITE_LOG
DESCRIPTION	= Composite Well Log, Australian Aquataine Petroleum,(enclosure from WCR) for Wyrallah-1
REMARKS	=
DATE_CREATED	= 31/07/84
DATE_RECEIVED	= 26/02/85
W_NO	= W864
WELL_NAME	= WYRALLAH-1
CONTRACTOR	= Australian Aquitane Petroleum Pty Ltd
CLIENT_OP_CO	= Australian Aquitane Petroleum Pty Ltd

(Inserted by DNRE - Vic Govt Mines Dept)

PE603972

This is an enclosure indicator page.
The enclosure PE603972 is enclosed within the container PE902486 at this location in this document.

The enclosure PE603972 has the following characteristics:

ITEM_BARCODE	= PE603972
CONTAINER_BARCODE	= PE902486
NAME	= Mud Log (Grapholog)
BASIN	= GIPPSLAND
PERMIT	= VIC/P17
TYPE	= WELL
SUBTYPE	= MUD_LOG
DESCRIPTION	= Grapholog/Mud Log, enclosure 4 of WCR, for Wyrallah-1
REMARKS	=
DATE_CREATED	= 21/04/84
DATE_RECEIVED	=
W_NO	= W864
WELL_NAME	= WYRALLAH-1
CONTRACTOR	= CORE LABORATORIES
CLIENT_OP_CO	= AUSTRALIAN AQUITAINE PETROLEUM PTY. LTD.

(Inserted by DNRE - Vic Govt Mines Dept)