W807

WCR - VOLUME 2
WHITING-1
(W807)

INTERPRETED DATA

ESSO EXPLORATION AND PRODUCTION
AUSTRALIA INC.

10 Enclosures

WELL COMPLETION REPORT
WHITING-1
VOLUME II

INTERPRETED DATA

GIPPSLAND BASIN
VICTORIA

ESSO AUSTRALIA LIMITED

Compiled by: P.A.ARDITTO/G.F.BIRCH/J.ROCHE NOVEMBER, 1985

WHITING-1

WELL COMPLETION REPORT

VOLUME II
(Interpreted Data)

CONTENTS

FIGURES

APPENDICES

ENCLOSURES

INTRODUCTION

Whiting-1 was drilled to assess the hydrocarbon potential of a small closure on the Barracouta-Snapper trend, 17km east of Barracouta-4. Whiting has no closure at the Top of the Latrobe, but closure is attained at the intra-Latrobe levels by minor reversal along the axis of the trend.

The well was programmed to -2600 metres, but porosity and good hydrocarbon indications below this level provided the incentive to extend the well 400 metres below the projected T.D.

PREVIOUS DRILLING HISTORY

No previous wells have been drilled on the Whiting Prospect but the Barracouta and Snapper Fields, to the west and east respectively, have major gas accumulations at the top of the Latrobe Group and a number of small intra-Latrobe oil accumulations.

GEOLOGICAL INTERPRETATION

Structure

Post-drill mapping in the Whiting area has modified the pre-drill interpretation. The mapped top of the Latrobe Group, was in fact the "coarse clastics", whereas the P. asperopolus and M. diversus coal markers came in 12 metres and 14 metres low to prediction respectively. The basic shape of the structure has, however, not changed. Seismic quality does not permit reliable mapping below the Upper M. diversus, but it appears that structural relief increases with depth.

Although there is no closure at the top of the Latrobe, there is 46 metres of closure at the P. asperopolus seismic marker and and this increases to 64 metres at the Upper L. balmei level and to approximately 100 metres at the Lower L. balmei horizon.

Faulting in the upper Latrobe at Whiting is minor, but structuring increases below the Upper L. balmei where a number of transverse faults intersect the feature. It appears, however, that these faults have no effect on reservoir communications within the prospect and may be beneficial in migrating hydrocarbons into the structure.

STRATIGRAPHY

Stratigraphic Summary

AGE	UNIT/HORIZON	DEPTH PREDICTED mKB	DEPTH DRILLED mKB	THICKNESS mSs
Pleistocene to Middle Miocene	Gippsland Limestone	74	74	53
Middle to Early Miocene	Lakes Entrance Fm.	971	1164	1143
Middle to Early Miocene	LATROBE GROUP Gurnard Fm.	1269	1282	1261
	"coarse clastics"	1289	1287	1266
Late Cretaceous	TOTAL DEPTH	2621	3011	2990

Latrobe Group

The stratigraphy at Whiting-1 is generally as predicted, however there are some discrepancies in the deeper lithologies.

The interval from T.D. to -2504 metres consists of thinly bedded sandstone, shale and coal. Sands may range up to 10 metres in thickness, but generally the section within the bottom half of the Lower L. balmei and Upper T. longus indicates a marked increase in shale content compared to the equivalent section in the Wirrah prospect. Whiting-1 penetrated 19 metres of volcanic material within the Lower L. balmei zone from -2617 to -2636 metres. Electric log response is diagnostic of a typical volcanic washout interval - very low gamma-ray and a marked decrease in sonic velocity.

Between -2504 and -2379 metres, sand thickness increases significantly, ranging up to 15 metres. The section is a sequence of stacked blocky sand units, interbedded with thin shales and coals. Logs show a "fining upward" character, possibly braided to point bar channel sands.

A repetitive sequence of shales with thin sand and coal units occur from -2379 to -1929 metres. The quantity of sandstone throughout the Upper L. balmei is similar to that of the T. longus section. Sandstone thickness is generally less than 10 metres and it is possibly associated with areally limited point bar sands and lower delta plain deposists.

From -1929 to -1439 metres, a series of thick braided stream and point bar sands separated by relatively thin alluvial shales and coals, occur throughout the M. diversus and P. asperopolus zones. This unit is considered to be stratigraphically equivalent to the Wirrah and Snapper reservoirs.

The interval from -1439 metres to the eroded top of the Latrobe Group is interpreted to be lower delta plain sediments, consisting of thinly interbedded sandstone, shale and coal. The proportion of coal significantly increases throughout the P. asperopolus and lower N. asperus zones, suggesting a proximal marsh to back swamp environment.

At the top of the Latrobe Group, the glauconitic Gurnard Formation is 5 metres thick in Whiting-1, compared to about 20 metres in the adjacent Barracouta, Snapper and Wirrah Fields. This suggests that the greater portion of the Gurnard Formation at the Whiting-1 locality may have been eroded.

Seaspray Group

The Gippsland Limestone and Lakes Entrance Formation comprises limestone and calcareous siltstone as predicted. A major unconformity representing at least 15 million years, that is all of the Oligocene and part of the Early Miocene, separates the Lakes Entrance Formation from the Latrobe Group. The lowermost portion of the Lakes Entrance appears to be strongly re-crystallised, due possibly to exposure during the 15 million year hiatus.

HYDROCARBONS

Whiting-1 was suspended as a new hydrocarbon discovery after penetrating 26 oil and gas zones between P. asperopolus and T. longus in the Latrobe Group.

The main oil accumulation (P250) was a 13.5m gross column from -1460.5 to -1474 metres at the P. asperopolus level. The oil-water contact is clearly defined from logs at -1474m and is used for the resource calculations whereas the pressure data defines the O.W.C. at -1475m. The only other oil encountered was a gas-oil accumulation (L410) at the Upper L. balmei level. This consists of a 29m gross gas column overlying a 3m gross oil column between -1858.25 and -1890.25 metres. A gas accumulation (L460) from -2382.5 to -2456 metres has a pressure inferred gross column of 73.5 metres at the L. balmei level. In addition, four smaller gas intervals were also encountered in the well.

P250 Zone: The P250 zone consists of 2 sands of the same fluid system, exhibiting a common oil-water contact at -1474 metres. Whiting-1 encountered 9.5 metres of net oil sand. A production test over the perforated interval -1462 to -1465 metres flowed oil at the rate of 5323 MSTB/D day and gas at the rate of 1.2 GSCF/D.

M100 Zone: A hydrocarbon accumulation over the interval -1714.5m to -1718.0m was interpreted from logs. Although untested, resistivity and neutron-density character is suggestive of oil rather than gas.

L410 Zone:

The L410 zone consists of two sands at the top of the Upper L. balmei. The sands are from -1858.25 metres to the GOC at -1887 metres and from the GOC to the OWC at -1890.25 metres. Net gas sand thickness is 14 metres and net oil sand thickness is 3.25 metres. RFT pressure data indicate these sands are probably in communication.

L450 and L455 Zones:

A further two minor gas columns occur within the Upper L. balmei, designated L450 and L455. These have net sand thicknesses of 4.25 metres and 8.50 metres respectively, however no log contact is observed for either zone. Extropolated RFT gas-water contacts for each zone are -2310 metres and -2382 metres.

L460 Zone:

The main gas accumulation consists of four sands at the Lower L. balmei from -2382.5 metres to the GWC at -2456 metres - a gross column of 74 metres. Based on RFT pressures, the gas sands are interpreted to be in communication. An RFT sampled 124 cu. ft. gas from -2397 metres.

T510 Zone:

A 22 metre gross gas interval consisting of two sands interpreted to be in pressure communication occur within the Upper T. longus zonule. No GWC is observed, however an RFT gas-water contact at -2804 metres is inferred.

GEOPHYSICAL INTERPRETATION

Post-drill mapping over Whiting was carried out on a 1 km grid comprising G74A lines, reprocessed and migrated in 1980-81. These data were available for the pre-drill mapping. Data quality is good down to and including the middle M. diversus seismic marker, below which the signal to noise ratio decreases markedly.

The top of the Latrobe Group in Whiting-1 was penetrated at -1256m, 8m low to prediction. Examination of the synthetic seismic trace suggests that the reflector mapped as top of Latrobe originates from an accoustic impedance contrast at the top of "coarse clastics", as was the case in the Wirrah area. A revised seismic interpretation was carried out on photographically-squeezed sections and tied to the wells. Seismic lag between the synthetic trace and the seismic was 5 ms.

Time ties for the P. asperopolus and middle M. diversus seismic markers are consistent with the synthetic seisomogram, therefore the existing time interpretation of A. J. Young (1982) was carried unchanged.

A seismic event in the Upper L. balmei zone at 1.449 s two-way was tied by the synthetic seismogram to the top of a coal at -1940m. Interpretation was carried out at this horizon on a grid of photographically-squeezed lines.

Velocity interpretation was done using A. J. Young's picked scattergram V_{NMO} values at top Latrobe (i.e. now "coarse clastics") level as the most likely case. Profiles were constructed through the scatter of the V_{NMO} data to provide maximum and minimum volume cases for intra-latrobe horizons.

A depth conversion to the top of "coarse clastics" was made by multiplying one-way time and V_{NMO} and by a conversion factor of 0.941 to tie the well. Depth maps for the P. asperopolus and Upper L. balmei horizons were constructed using a constant interval velocity to isopach down from the top of "coarse clastics". Interval velocities used were 2818 ms^{-1} and 3149 ms^{-1} respectively, derived from the Whiting-1 well data.

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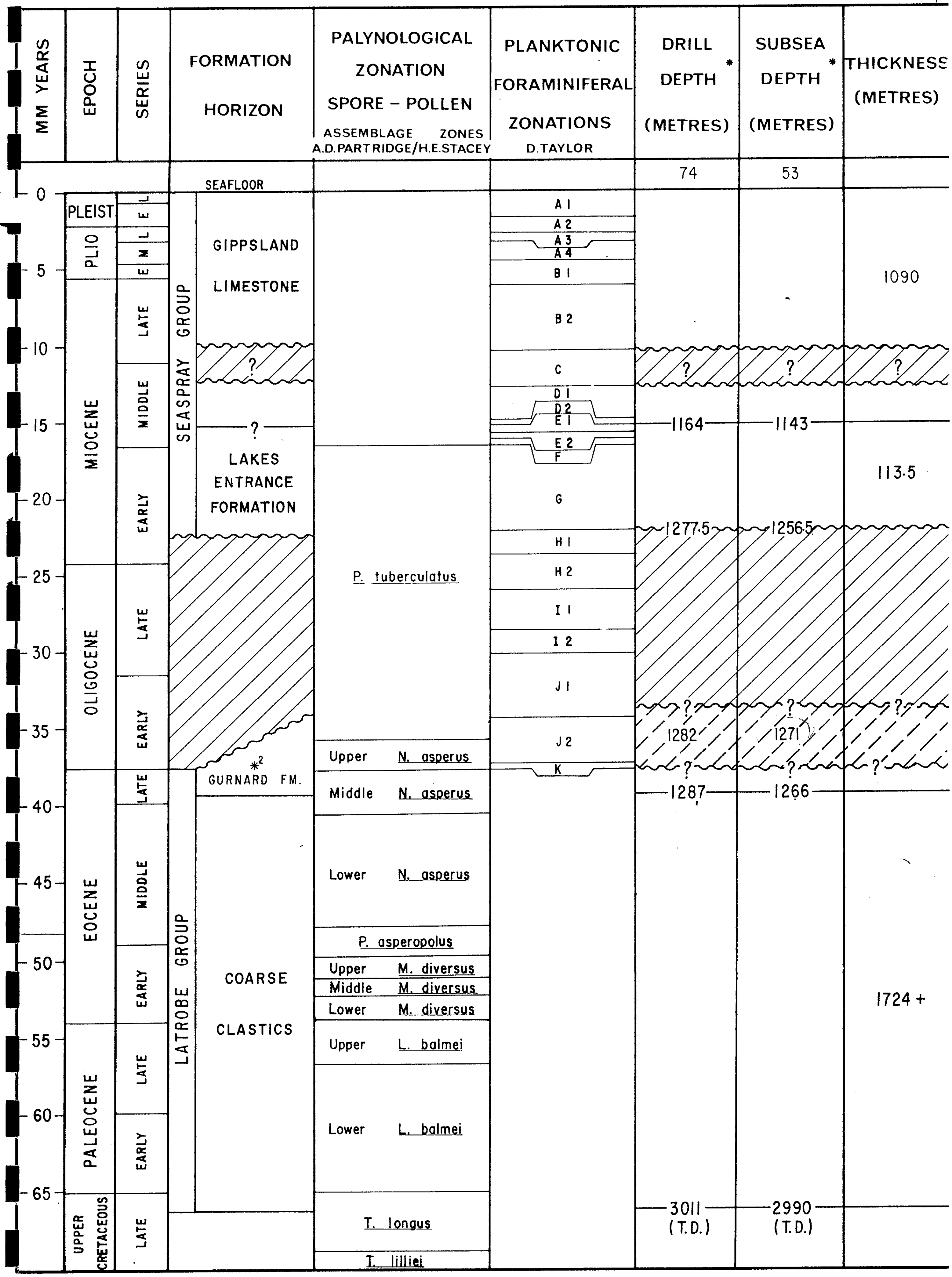
FIGURES

WHITING – 1
STRATIGRAPHIC TABLE



* Depths are True Vertical Depths

*2 It is not possible to determine palynologically whether the upper part of the Gurnard Formation is of Upper N. asperus or P. tuberculatus age.

APPENDIX 1

APPENDIX 1

APPENDIX 1

FORAMINIFERAL ANALYSIS, WHITING-1

GIPPSLAND BASIN

by

J.P. Rexilius

Esso Australia Ltd

Palaeontology Report: 1983/25. July 18, 1983.

0525L

INTERPRETATIVE DATA

INTRODUCTION

Twenty four (24) sidewall core samples were processed for foraminiferal analysis in Whiting-1, from 805 to 1288m. Only the planktonic foraminifera have been scrutinised. Adequate planktonic foraminiferal faunas occur in most samples of Gippsland Limestone (exception: SWC's 93, 130 and 131) and Lakes Entrance Formation (exception: SWC 82). With the exception of SWC 81 at 1280.4m, all samples of Gurnard Formation were barren of foraminifera. Sidewall core 81 only contained agglutinated foraminifera.

Tables 1 and 2 provide a summary (Basic and Interpretative) of the palaeontological analysis in Whiting-1. A summary of the biostratigraphic breakdown of the stratigraphic units in Whiting-1 is given below.

SUMMARY

AGE	UNIT	ZONE	DEPTH (m)
Recent/Early Pliocene	?	(not sampled)	(seafloor to 805m)
Early Pliocene/ Late Miocene	Gippsland Limestone	B-1	805-898m
		Indeterminate	923m
Late Miocene		B-2	953m
Mid Miocene		D-1/D-2	978-1168m
log break at 1173m			
Early Miocene	Lakes Entrance Formation	F	1219m
Early Miocene		G	1255-1272m
-		Indeterminate	1276.6m
log break at 1277.5m			
-	Gurnard Formation	Indeterminate	1280.4-1284m
log break at 1287m			
-	Latrobe Group (coarse clastics)	Indeterminate (not sampled)	1288m (1288m-TD)

GEOLOGICAL COMMENTS

Log character indicates that the base and top of the Gurnard Formation is at 1287m and 1277.5m. The Gurnard Formation in Whiting-1 cannot be age dated using foraminifera or spore pollen. The age of the basal part of the Lakes Entrance Formation is Early Miocene and is assignable to Zone G. The Lakes Entrance Formation rests disconformably on the Gurnard Formation at the Whiting-1 location. The lowermost sample of Lakes Entrance Formation in Whiting-1 (SWC 82 at 1276.6m) is strongly recrystallised. Recrystallisation at the base of the carbonate section in the Gippsland Basin is widespread.

On the basis of lithological and faunal character, the boundary between the Gippsland Limestone (prograding shelf carbonates) and the Lakes Entrance Formation (pelagic carbonate) is placed between 1168m and 1219m. Sidewall core 88 at 1219 is Zone F in age and consists essentially of a planktonic foraminiferal ooze. Planktonic foraminifera in this uppermost sample of Lakes Entrance Formation are abundant, well preserved and represent a dominant element (greater than 90%) of the foraminiferal assemblage. Sidewall core 89 at 1168m is a calcareous siltstone with bryozoan fragments and has been assigned to Zones D-1/D-2. Planktonic foraminifera in this lowermost sample of Gippsland Limestone are impoverished and poorly preserved. The boundary between the Gippsland Limestone and the Lakes Entrance Formation cannot be adequately picked on the basis of log character in Whiting-1. The boundary has been tentatively placed at 1173m on the basis of a subtle log change.

The absence of Zone C in Whiting-1 may indicate a possible disconformity or maybe the result of a gap in sampling.

A significant increase in the proportion of large, well rounded quartz grains was noted in SWC 131 at 923m. The sample consists of fine grained calcarenite (normal lithology of the Gippsland Limestone) but contains an anomalously high proportion of quartz (approximately 10% of the washed residue). The sample is not age diagnostic but on the basis of superposition can be assigned to Zones B-1 or B-2. The high proportion of quartz at 923m may reflect a relative fall in sea-level. Vail's Tertiary Global Cycle Chart indicates a type-1 unconformity at 6.6 Ma. This event coincides approximately with the boundary between Zones B-1 and B-2 in the Gippsland Basin. It is possible that a disconformity occurs at about this time in the Gippsland Basin but it cannot be confirmed by micropalaeontological evidence because its duration is beyond the biostratigraphic resolution of the local planktonic foraminiferal zonation.

DISCUSSION OF ZONES

The Tertiary biostratigraphy in Whiting-1 is based on the Gippsland Basin planktonic foraminiferal zonal scheme of Taylor (in prep).

Indeterminate Interval : 1276.6 - 1284m.
Sidewall cores at 1276.6, 1280.4 and 1284m cannot be age dated using planktonic foraminifera. Sidewall core 82 at 1276.6m contains indeterminate planktonics while samples at 1280.4 and 1284m are barren of planktonic foraminifera.

Zone G : 1255 - 1272m.
The uphole appearance of *Globigerinoides trilobus* at 1272m defines the base of Zone G in Whiting-1. The presence of advanced forms of *Globigerinoides trilobus* and *Globorotalia miozea miozea* indicates that SWC 83 at 1272m is high in Zone G. The top of the zone is defined by the evolutionary appearance of *Globigerinoides bisphericus* from *G. trilobus* at 1219m.

Zone F : 1219m.
A typical zone F planktonic foraminiferal assemblage comprising *Globigerinoides bisphericus* without the *Praeorbulina-Orbulina* plexus occurs in SWC 88 at 1219m.

Zones D-1/D-2 : 978 - 1168m.
The appearance of *Orbulina universa* at 1168m defines the base of Zone D-2 in Whiting-1. The extinction of *Globorotalia miozea miozea* at 978m defines the top of Zone D-1.

Zone B-2 : 953m.
The association of *Globorotalia acostaensis* and *G. miotumida miotumida* in SWC 97 at 953m indicates that the sample is assignable to Zone B-2.

Indeterminate Interval : 923m.
Sidewall core 131 at 923m is recrystallised and only contains an impoverished assemblage of indeterminate planktonic foraminifera.

Zone B-1 : 805 - 898m.
The presence of *Globorotalia miotumida conomiozea* s.s. in the absence of *Globorotalia puncticulata* in this interval defines Zone B-1 in Whiting-1.

REFERENCES

TAYLOR, D.J. (in prep). Observed Gippsland biostratigraphic sequences of planktonic foraminiferal assemblages.

MACPHAIL, M.K., 1983. Palynological analysis, Whiting-1, Gippsland Basin. Esso Australia Ltd., Palaeontology Report, 1983/27.

MICROPALEONTOLOGICAL DATA SHEET

BASIN: GIPPSLAND ELEVATION: KB: 21.0m GL: 53.0m

WELL NAME: WHITING-1 TOTAL DEPTH: 3011m.

AGE		FORAM. ZONULES	HIGHEST DATA Preferred Depth	Rtg	Alternate Depth	Rtg	Two Way Time	LOWEST DATA Preferred Depth	Rtg	Alternate Depth	Rtg	Two Way Time
PLEISTOCENE		A_1										
		A_2										
PLIOCENE		A_3										
		A_4										
		B_1	805	1				898	1			
MIOCENE	LATE	B_2	953	1				953	1			
		C										
	MIDDLE	D_1	978	1								
		D_2						1168	1			
		E_1										
		E_2										
	EARLY	F	1219	0				1219	0			
		G	1255	0				1272	0			
		H_1										
OLIGOCENE	LATE	H_2										
		I_1										
		I_2										
	EARLY	J_1										
		J_2										
EOCENE		K										
		Pre-K										

COMMENTS: The absence of Zone C may be attributed to hiatus or a gap in sampling.

CONFIDENCE RATING:
- 0: SWC or Core - Complete assemblage (very high confidence).
- 1: SWC or Core - Almost complete assemblage (high confidence).
- 2: SWC or Core - Close to zonule change but able to interpret (low confidence).
- 3: Cuttings - Complete assemblage (low confidence).
- 4: Cuttings - Incomplete assemblage, next to uninterpretable or SWC with depth suspicion (very low confidence).

NOTE: If an entry is given a 3 or 4 confidence rating, an alternative depth with a better confidence rating should be entered, if possible. If a sample cannot be assigned to one particular zone, then no entry should be made, unless a range of zones is given where the highest possible limit will appear in one zone and the lowest possible limit in another.

DATA RECORDED BY: J.P. Rexilius DATE: 2/5/83.

DATA REVISED BY: J.P. Rexilius DATE: 2/7/83.

TABLE-1

SUMMARY OF PALAEONTOLOGICAL ANALYSIS, WHITING-1, GIPPSLAND BASIN

INTERPRETATIVE DATA

NATURE OF SAMPLE	DEPTH (M)	MICROFOSSIL YIELD	PRESERVATION	DIVERSITY	ZONE	AGE	
SWC 102	805	Low	Moderate	Low	B-1	Early Pliocene/Late Miocene	
SWC 132	841	Moderate	Moderate	Moderate	B-1	Early Pliocene/Late Miocene	
SWC 100	872	Very low	Poor	Low	B-1	Early Pliocene/Late Miocene	
SWC 99	898	Moderate	Moderate	Low	B-1	Early Pliocene/Late Miocene	
SWC 131	923	Very low	Poor	Very low	Indeterminate	-	
SWC 97	953	Low	Poor	Moderate	B-2	Late Miocene	
SWC 96	978	Low	Moderate/poor	Moderate	D-2/D-2	Mid Miocene	
SWC 95	1003	Moderately low	Moderate/poor	Moderately low	D-1/D-2	Mid Miocene	
SWC 94	1038	Moderately low	Moderate/poor	Moderate	D-1/D-2	Mid Miocene	
SWC 93	1069	Low	Poor	Low	Indeterminate	-	
SWC 92	1095	High	Moderate	Moderate	D-1/D-2	Mid Miocene	
SWC 130	1114	Very low	Very poor	Very low	Indeterminate	-	
SWC 90	1148	Moderate	Moderate/poor	Moderate	D-1/D-2	Mid Miocene	
SWC 89	116	Very low	Poor	Low	?D-1/D-2	? Mid Miocene	
SWC 88	1219	High	Good	Moderate	F	Early Miocene	
SWC 87	1255	High	Good	Moderate	G	Early Miocene	
SWC 86	1259	High	Good	High	G	Early Miocene	
SWC 85	1264	High	Moderate/good	Moderate	G	Early Miocene	
SWC 84	1268	High	Good	High	G	Early Miocene	
SWC 83	1272	High	Good	Moderate	G	Early Miocene	
SWC 82	1276.6	Low	Very poor	Very low	Indeterminate	-	Sample recrystallised
SWC 81	1280.4	Barren	-	-	-	-	Agglutinated foraminifera
SWC 80	1284	Barren	-	-	-	-	Fish teeth
SWC 79	1288	Barren	-	-	-	-	

BASIC DATA

TABLE-2 : FORAMINIFERAL DATA, WHITING-1.

RANGE CHART : TERTIARY PLANKTONIC FORAMINIFERA

TABLE-2

SUMMARY OF PALAEONTOLOGICAL ANALYSIS, WHITING-1, GIPPSLAND BASIN.

BASIC DATA

NATURE OF SAMPLE	DEPTH (M)	MICROFOSSIL YIELD	PRESERVATION	DIVERSITY	COMMENTS
SWC 102	805	Low	Moderate	Low	
SWC 132	841	Moderate	Moderate	Moderate	
SWC 100	872	Very low	Poor	Low	
SWC 99	898	Moderate	Moderate	Low	
SWC 131	923	Very low	Poor	Very low	
SWC 97	953	Low	Poor	Moderate	
SWC 96	978	Low	Moderate/poor	Moderate	
SWC 95	1003	Moderately low	Moderate/poor	Moderately low	
SWC 94	1038	Moderately low	Moderate/poor	Moderate	
SWC 93	1069	Low	Poor	Low	
SWC 92	1095	High	Moderate	Moderate	
SWC 130	1114	Very low	Very poor	Very low	
SWC 90	1148	Moderate	Moderate/poor	Moderate	
SWC 89	116	Very low	Poor	Low	
SWC 88	1219	High	Good	Moderate	
SWC 87	1255	High	Good	Moderate	
SWC 86	1259	High	Good	High	
SWC 85	1264	High	Moderate/good	Moderate	
SWC 84	1268	High	Good	High	
SWC 83	1272	High	Good	Moderate	
SWC 82	1276.6	Low	Very poor	Very low	Sample recrystallised
SWC 81	1280.4	Barren	-	-	Agglutinated foraminifera
SWC 80	1284	Barren	-	-	Fish teeth
SWC 79	1288	Barren	-	-	

APPENDIX 2

APPENDIX 2

APPENDIX 2

APPENDIX 2

PALYNOLOGICAL ANALYSIS
WHITING-1, GIPPSLAND BASIN

by

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Esso Australia Ltd.
Palaeontology Report 1983/28.
0535L

July 1983.

INTRODUCTION

Sixty eight (68) sidewall cores, two conventional core and three cuttings samples were processed and examined for spore-pollen and dinoflagellates. Recovery was mostly low to fair but, with the exception of the Paleocene section, preservation and diversity of the palynofloras were adequate to obtain reliable age-determinations.

Palynological zones and lithological facies divisions from the base of the Lakes Entrance Formation to the total depth of the well are given below. Occurrences of spore-pollen and dinoflagellate species are tabulated in the accompanying range chart. Anomalous and unusual occurrences of taxa are listed at the end of the Biostratigraphy Section (see Table 2).

SUMMARY

UNIT/FACIES	ZONE	DEPTH (m)
Lakes Entrance Formation	*P. tuberculatus*	1276.6
log break at 1277.5m		
Gurnard Formation	Indeterminate (mixed *P. tuberculatus* and Upper-Middle *N. asperus* Zone palynofloras).	1280.4 - 1284.0
log break at 1287m		
Latrobe Group Coarse Clastics	Middle *N. asperus*	1301.2
	Lower *N. asperus*	1317.8 - 1437.0
	P. asperopolus	1456.0 - 1542.0
	Upper *M. diversus*	1577.5 - 1676.3
	Middle *M. diversus*	1715.8
	Lower *M. diversus*	1734.0 - 1859.1
	Upper *L. balmei*	1889.5 - 2358.5
	Lower *L. balmei*	2402.8 - 2738.5
	Upper *T. longus*	2767.0 - 2993.5
		3011 T.D.

GEOLOGICAL COMMENTS

1. The Whiting-1 well contains a continuous sequence of sediments from the Late Cretaceous Upper T. longus Zone to at least the Middle Eocene uppermost Lower N. asperus Zone.

2. The recrystallised limestone, at 1276.6m and close to the picked base of the Lakes Entrance Formation (1277.5m; Rexilius 1983), is Oligocene-Early Miocene in age, probably the latter based on foraminiferal data from 1272.0m (Rexilius ibid). Elements of an Early Eocene palynoflora have been reworked into this stratum.

3. Spore-pollen recovered from the Gurnard Formation, picked on lithological and log characteristics as occurring between 1277.5 to 1287.0m (Rexilius ibid), are mostly P. tuberculatus Zone species. This is inconsistent with the age of the formation in the Barracouta-4 and 1 wells (Middle N. asperus) and Snapper-3 well (Lower N. asperus). Moreover species which range no higher than the Upper N. asperus Zone also occur within the Gurnard Formation in Whiting-1, suggesting that mixing by bioturbation of P. tuberculatus, Upper N. asperus and Middle N. asperus Zone floras has occurred. In this context it is noted that traces of glauconite extend from 1287 to 1292m. Although the Gurnard Formation cannot therefore be assigned to a particular zone, its age is likely to be Late Eocene/Early Oligocene.

4. Whilst it is not clear whether there is an age break between the greensands and the top of the underlying coarse clastics at about 1288m, the latter are unlikely to be younger than Middle N. asperus Zone in age. Below 1317.8m, the sediments are certainly Lower N. asperus Zone or older in age.

5. Unlike in the Gurnard Formation, dinoflagellates are rare or absent in the top 73m Latrobe Group coarse clastics (1287-1359.5m) but become common to abundant at 1374.0m and 1415.2m. The highest coal occurs at 1349.0m and the highest major thickness of coal at approximately 1370m. Because preservation of the palynofloras varies across this interval, it is not clear from the data at what depth the transition from a marine to a terrestrial environment occurs, but because of low dinoflagellate species diversity it is likely that the samples at 1374.0m and 1415.2m record marginal marine environments rather than marine transgressions per se.

6. Two marine transgressions are recorded: 1) within the P. asperopolus Zone ~~section~~ at 1527.5m, and 2) at the base of the Lower M. diversus Zone at 1859.0m. The former is represented by abundant Homotryblium tasmanensis and is likely to correlate with the P. asperopolus Zone marine transgression recorded by Partridge (1974) for the Barracouta-4 well. The presence of Sapotaceoidaepollenites rotundus at 1527.5m in Whiting-1 indicates the marine transgression is Middle rather than Early Eocene in age and therefore more likely to correspond to the second (Wetzeliella edwardsii Zone) of the two P. asperopolus Zone transgressions recognised by Partridge (1976). The second (Lower M. diversus Zone) marine transgression is recorded by a spore-pollen and dinoflagellate assemblage virtually identical to that recorded from the Rivernook Bed of the onshore Princetown Section, Otway Basin (Cookson & Eisenack 1967) and is likely to represent the same (Apectodinium hyperacantha Zone) event. Paleocene spore-pollen have been reworked by the transgression into the siltstone at 1859.0m in Whiting-1.

7. The Lower N. asperus Zone and Upper M. diversus Zone seismic markers lie within sections dated as Lower N. asperus and Upper M. diversus Zone in age respectively. The P. asperopolus Zone seismic marker lies approximately 13m within the Lower N. asperus Zone section.

8. Because of poor sample control in the adjacent Barracouta and Snapper wells, it is difficult to ascertain whether the relatively thick (approximately 469m) Upper L. balmei Zone section in Whiting-1 is a feature of the Gippsland Basin in this general area.

9. The well bottomed in Maastrichtian Upper T. longus Zone sediments. This is consistent with Barracouta-1. The Barracouta-3 and Snapper-3 wells appear to have bottomed in Lower T. longus or T. lilliei Zone sediments (see attached revised palynology data sheets).

BIOSTRATIGRAPHY

The zone boundaries have been established using the criteria of Stover & Evans (1973), Stover & Partridge (1973) and subsequent proprietary revisions.

Upper Tricolpites longus Zone : 2993.5 - 2767.0m.
Samples within this section contain diverse but poorly to very poorly preserved palynofloras. The lowest sample able to be age-determined is at 2993.5m and is no older than Upper T. longus Zone in age if the specimens of

Tetracolporites verrucosus and Stereisporites punctatus are in situ. This is uncertain since 1) the sample lacks species restricted to the Late Cretaceous and 2) contains an unusually high number of Lystiepollenites balmei pollen for a Late Cretaceous sample. Although the base of the zone has been provisionally placed at 2993.5m, a more reliable base is at 2958.0m, defined by the simultaneous occurrence of T. verrucosus and S. punctatus with Tricolpites longus, Proteacidites gemmatus, P. otwayensis and P. reticuloconcavus in a Gambierina rudata - dominated assemblage. These taxa and Tricolpites waiparensis, Proteacidites clinei and Tricolporites lilliei occur infrequently up to 2767.0m. The top of the zone, at 2767.0m is defined by the highest occurrence of Proteacidites reticuloconcavus.

Lower Lygistepollenites balmei Zone : 2738.5 - 2402.8m.
Most of the samples from this and the overlying Upper L. balmei Zone contained palynofloras dominated by gymnosperms (including the nominate species) and Proteacidites spp. Other general L. balmei Zone marker species, eg. Polycolpites langstonii and frequent to abundant Australopollis obscurus were uncommon. The base of the zone is picked at 2738.5m. This sample contains Tetracolporites multistrixus, a species which ranges no lower than the Lower L. balmei Zone in the Bass Basin, in an assemblage lacking taxa which range no higher than the T. longus Zone. Tetracolporites verrucosus, which ranges no higher than the Lower L. balmei Zone, occurs in cuttings at 2680-85m and 2635-40m but not in the sidewall core samples until 2585.5m. The top of the zone is placed at 2402.8m, based in the highest occurrence of T. verrucosus.

Upper Lygistepollenites balmei Zone : 2358.5 - 1889.5m.
The zone is defined by the constant occurrence of Verrucosisporites kopukuensis in association with (usually) frequent to abundant Lygistepollenites balmei and (less frequently) other species which range no higher than the Upper L. balmei Zone, eg. Australopollis obscurus and Nothofagidites endurus. As noted in Table 2, much of the section contains apparently anomalous occurrences of Late Cretaceous, Early Paleocene or, at 1889.5m, Eocene species. The top of the zone is provisionally picked at 1889.5m, based on the highest occurrence of frequent Lygistepollenites balmei. Verrucosisporites kopukuensis, which first appears in thie Zone, does not occur in the Upper L. balmei Zone sediments above 2141.2m. The presence of abundant Australopollis obscurus at 2010.5m demonstrates this sample is certainly no younger than Upper L. balmei Zone in age. Surprisingly, Haloragacidites harrisii which first appears in the Lower L. balmei Zone was not recorded below this depth in the Whiting-1 well.

Lower Malvacipollis diversus Zone : 1859.1 - 1734.0m.
This zone is represented by three sidewall cores separated by barren intervals. The lowermost, at 1859.1m contains a diverse spore-pollen assemblage in which Spinizonocolpites prominatus and Malvacipollis diversus are common to abundant and Crassiretitriletes venraadschoovenii, Polypodiaceoisporites varus and Proteacidites pachypolus are present. Dinoflagellates are frequent but very poorly preserved and only Cordosphaeridium bipolare could be identified with confidence. Reworked specimens of the Late Cretaceous-Paleocene species Lygistepollenites balmei and Gambierina rudata are present. The upper two samples, at 1780.5m and 1734.0m, contain species which first appear in this zone, eg. Cupanieidites orthoteichus, Ilexpollenites anguloclavatus, Ischyosporites irregularis, Proteacidites biornatus and Schizocolpus marlinensis. The top of the zone, at 1734.0m, is defined by Cyathidites gigantis, a species which ranges no higher than the Lower M. diversus Zone.

Middle Malvacipollis diversus Zone : 1715.8m.
The Middle M. diversus Zone is represented by one sample only. The age determination is based on the occurrence of species which first appear in this zone, eg. Anacolosidites acutullus and Proteacidites tuberculiformis, in an assemblage lacking Upper M. diversus Zone indicator species.

Upper Malvacipollis diversus Zone : 1676.3 - 1577.5m.
Samples within this interval contain diverse palynofloras dominated by Malvacipollis spp. including M. diversus, Haloragacidites harrisii, Gleicheniidites circinidites and Proteacidites including species such as P. ornatus, P. tuberculiformis and P. kopiensis which typically range no lower than the Middle M. diversus Zone. The base of the zone, at 1657.5m is defined by the first appearance of Bysmapollis emaciatus. The presence of Crassiretitriletes vanraadshoovenii demonstrates this sample is no younger than Upper M. diversus Zone in age. The top of the zone at 1577.5m is defined by Myrtaceidites tenuis, Proteacidites pachypolus and Kuylisporites waterbolkii in an assemblage containing Malvacipollis diversus but lacking Proteacidites asperopolus.

Proteacidites asperopolus Zone : 1542.0 - 1456.0m.
Samples within this interval are dominated by Haloragacidites harrisii and Proteacidites spp. The base of the zone is defined by the first occurrence of Proteacidites asperopolus in association with Myrtaceidites tenuis at 1542.0m. This sample contains the only frequent occurrence of Proteacidites pachypolus in the well. The sidewall core sample at 1527.5m contains numerous

dinoflagellates including Apectodinium hyperacantha and (common) Homotryblium tasmanensis in addition to P. pachypolus, P. asperopolus and M. tenuis. The top of the zone is picked at 1456m, the highest sample containing Proteacidites asperopolus in a Proteacidites-dominated assemblage (30 %). Occurrences of Milfordia hypolaenoides and Sapotaceoidaepollenites rotundus indicate this sample is close to P. asperopolus/Lower N. asperus Zone boundary.

Lower Nothofagidites asperus Zone : 1437.0 - 1317.8m.
The zone is characterised by samples containing Proteacidites asperopolus with common to abundant Nothofagidites pollen separated by intervals of low spore-pollen recovery in which swollen palynomorphs suggest prolonged saturation with liquid hydrocarbons. The base of the zone, at 1437.0m, is defined by the presence of Periporopollenites vesicus, a species which first appears in this zone and a marked increase in abundance of Nothofagidites (to 39%). Tricolporites simatus occurs at 1417.0m, Proteacidites asperopolus, P. pachypolus and Periporopollenites vesicus occur at 1415.2m in an assemblage containing the dinoflagellate species Deflandrea flounderensis and (caved) Vozzhenikovia extensa. The top of the zone is defined by the last appearance of Proteacidites asperopolus. The presence of Nothofagidites falcatus and Verrucatosporites attinatus indicate that this sample is close to the Lower/Middle N. asperus Zone boundary.

Middle Nothofagidites asperus Zone : 1301.2m.
The interval between 1317.8 and 1288.0m is characterised by very low to negligible spore-pollen and dinoflagellate recovery. One sample only, at 1301.2m, is provisionally assigned a Middle N. asperus Zone age on the basis of very rare Vozzhenikovia extensa in a sparse Nothofagidites spp. - dominated palynoflora.

Proteacidites tuberculatus Zone : 1276.6m.
The occurrence of Cyatheacidites annulatus and Foveotriletes lacunosus confirm a P. tuberculatus Zone age for the glauconite-free calcareous sample at 1276.6m. C. annulatus also occurs in samples at 1280.4m and 1284.0m, since the latter sample contains a single well preserved grain of Proteacidites crassus which is not known to range above the Lower N. asperus Zone and the former Ischyosporites gremius, which ranges no higher than the Upper N. asperus Zone, the interval from 1280.4 to 1284.0 cannot be reliably dated. A corroded specimen of the Middle to late Eocene species P. tuberculiformis occurs at 1276.6m. The occurrence of Beaupreadites elegansiformis is consistent with this sample being no younger then Early Miocene in age.

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TABLE I : SUMMARY OF PALYNOLOGICAL ANALYSIS WHITING-1, GIPPSLAND BASIN.

INTERPRETATIVE DATA

SAMPLE NO.	DEPTH (m)	YIELD	DIVERSITY SPORE POLLEN	LITHOLOGY	ZONE	AGE	CONFIDENCE RATING	COMMENTS
SWC 82	1276.6	Good	Fair	Calci. stst.	P.tuberculatus		0	C.annulatus
SWC 81	1280.4	Good	Low	Calci.stst,glau.	Indeterminate		2	C.annulatus, I.gremius
SWC 80	1284.0	Low	Fair	Calci.stst.glau?	Indeterminate		2	C.annulatus, P.crassus
SWC 79	1288.0	Barren	-	Ss., glau	-		-	
SWC 78	1292.0	V. low	Low	Ss.	Indeterminate		-	Nothofagidites common
SWC 77	1301.2	V. low	Fair	Ss.	Middle N.asperus		2	V.extensa
SWC 76	1304.9	Varren	-	-			-	
SWC 75	1317.8	Good	High	Ss.	Uppermost Lower N.asperus	Middle Eocene	0	P.vesicus, T.simatus, P.asperopolus, V.attinatus
SWC 74	1322.5	Low	Low	Ss.	Uppermost Lower N.asperus	Middle Eocene	1	V.attinatus, P.asperopolus, T.simatus
SWC 72	1332.0	V. low	V. low	Ss.	Indeterminate		-	
SWC 70	1341.5	Barren	-	Ss.	-		-	
SWC 69	1342.5	Low	V. low	Ss.	Lower N.asperus	Middle Eocene	1	N.falcatus
SWC 67	1359.5	Moderate	Fair	Calci.slt.	Lower N.asperus	Middle Eocene	1	Nothofagidites common, P.asperopolus
SWC129	1374.0	Moderate	High	Slst.,carb.	Lower N.asperus	Middle Eocene	2	Senegalium asymmetricum, Deflandrea obliquipes, D.oebisfeldensis.
SWC 65	1382.5	V. low	Low	Ss.	Lower N.asperus	Middle Eocene	2	Frequent Nothofagidites, T.cf.simatus
SWC 63	1415.2	Good	High	Clyst.	Lower N.asperus	Middle Eocene	0	Abundant Nothofagidites, P.vesicus, P.asperopolus, P.pachypolus, D.flounderensis.
SWC 62	1417.0	Moderate	High	Ss.	Lower N.asperus	Middle Eocene	1	T.simatus, Nothofagidites common.
SWC 61	1437.0	V. good	V. high	Slst.	Lower N.asperus	Middle Eocene	0	Nothofagidites abundant (39%), P.vesicus
SWC 60	1456.0	Good	Fair	Slst.	P.asperopolus	Middle Eocene	1	P.asperopolus, Proteacidites, common (30%) Nothofagidites,uncommon (13%) M.hypolaenoides, S.rotundus.
SWC 59	1461.0	Moderate	Fair	Ss.	P.asperopolus	Middle Eocene	2	
SWC 58	1478.5	Barren	-	Coal	-	-	-	H.harrisii
SWC 51	1492.0	Barren	-	Ss.	-	-	-	
SWC 56	1525.0	Moderate	High	Ss.	P.asperopolus	Middle Eocene	0	P.asperopolus, frequent M.tenuis, abundant Proteacidites.

TABLE 1 : SUMMARY OF PALYNOLOGICAL ANALYSIS WHITING-1, GIPPSLAND BASIN.

INTERPRETATIVE DATA

SAMPLE NO.	DEPTH (m)	YIELD	DIVERSITY SPORE POLLEN	LITHOLOGY	ZONE	AGE	CONFIDENCE RATING	COMMENTS
SWC 50	1527.5	Moderate	High	Slst.,carb.	P.asperopolus	Middle Eocene	0	P.asperopolus, M.tenuis, S.rotundus, P.rugulatus, Apectodinium hyperacantha, Homotriblium tasmaniensis common.
SWC 49	1542.0	Good	High	Ss.	P.asperopolus	Early/Middle Eocene	0	P.asperopolus, M.tenuis, B.verrucosus.
SWC 48	1577.5	Low	Fair	Clyst.	Upper M.diversus	Early Eocene	1	M.tenuis, M.diversus, P.pachypolus, K.waterbolkii.
SWC 47	1590.3	V. good	V. high	Ss.	Upper M.diversus	Early Eocene	0	Frequent M.tenuis & M.diversus, P.pachypolus, K.waterbolkii.
SWC 46	1604.5	Barren	-	Ss.	-	-	-	
SWC 45	1640.7	Low	Fair	Ss.	Upper M.diversus	Early Eocene	2	M.diversus common.
SWC 44	1657.5	Low	High	Slst.	Upper M.diversus	Early Eocene	2	B.emaciatus, G.divaricatus, P.leightonii, P.ornatus.
SWC 54	1665.5	Moderate	High	Slst.	No older than Middle M.diversus	Early Eocene	-	I.gremius, P.ornatus, P.tuberculiformis
SWC 53	1668.0	V. low	V. low	Slst.	No older than Middle M.diversus	Early Eocene	-	T.paenestriatus
SWC 43	1676.3	Good	High	Slst.	Upper M.diversus	Early Eocene	2	B.emaciatus, A.acutullus, D.delicatus, P.tuberculiformis
SWC 42	1715.8	Good	V. high	Slst.	Middle M.diversus	Early Eocene	1	A.acutullus, P.tuberculiformis, T.moultonii
SWC 41	1734.0	Good	Fair	Clyst.	Lower M.diversus	Early Eocene	0	C.gigantis, I.irregularis, P.biornatus
SWC 52	1739.0	Barren	-	Ss.	-	-	-	-
SWC 40	1756.0	Barren	-	Slst.	-	-	-	-
SWC 39	1780.5	Good	High	Slst.,carb.	Lower M.diversus	Early Eocene	1	C.orthoteichus, I.anguloclavatus, I.irregularis, S.marlinensis.
SWC 38	1802.5	Barren	-	Slst.	-	-	-	
SWC 36	1859.1	Good	Fair	Clyst.	Lower M.diversus (A.hyperacantha)	Early Eocene	0	C.vanraadshoovenii, P.varus, P.pachypolus, abundant S.prominatus, A.hyperacantha, C.bipolare

TABLE 1 : SUMMARY OF PALYNOLOGICAL ANALYSIS WHITING-1, GIPPSLAND BASIN.

INTERPRETATIVE DATA

SAMPLE NO.	DEPTH (m)	YIELD	DIVERSITY SPORE POLLEN	LITHOLOGY	ZONE	AGE	CONFIDENCE RATING	COMMENTS
SWC 35	1889.5	V. low	Fair	Slst.	Upper L.balmei	Paleocene	1	L.balmei, V.kopukuensis
SWC 34	1925.0	Low	V. low	Ss., carb.	L.balmei	Paleocene	-	L.balmei
SWC 33	1950.5	V. low	V. low	Slst.	L.balmei	Paleocene	-	L.balmei, T.tuberculiformis
SWC 32	1980.5	V. low	V. low	Slst.	L.balmei	Paleocene	-	A.obscurus, P.angulatus
SWC 31	2010.5	Low	Fair	Slst.	Upper L.balmei	Paleocene	2	L.balmei, A.obscurus, P.prodigus
SWC127	2042.0	Barren	-	Slst.	-	-	-	
SWC124	2141.2	Moderate	Fair	Slst.,carb.	Upper L.balmei	Paleocene	1	L.balmei, V.kopukuensis
SWC120	2233.0	Good	Fair	Slst.	L.balmei	Paleocene	-	T.cf.verrucosus, frequent N.endurus
SWC 20	2358.5	Good	High	Slst. carb.	Upper L.balmei	Paleocene	1	L.balmei, V.kopukuensis
SWC116	2402.8	Good	High	Clyst.	Lower L.balmei	Paleocene	1	Frequent T.verrucosus, L.balmei
SWC 18	2457.0	V. low	V. low	Clyst.	L.balmei	Paleocene	-	L.balmei
SWC 17	2486.5	Good	Fair	Sl. carb.	Lower L.balmei	Paleocene	1	T.verrucosus, B.mutabilis
SWC 15	2551.0	Good	High	Ss.	Lower L.balmei	Paleocene	1	Frequent T.verrucosus, & L.balmei
CTS	2545-50	Low	Fair	-	Lower L.balmei	Paleocene	3	
SWC 14	2585.5	Good	Fair	Slst.	Lower L.balmei	Paleocene	2	T.verrucosus, common A.obscurus
CTS	2585-90	Low	Fair	-	Lower L.balmei	Paleocene	3	
CTS	2635-40	Low	Fair	-	Lower L.balmei	Paleocene	3	T.verrucosus, P.catastus
SWC 11	2678.0	Low	V.low	Slst.	Indeterminate	-	-	L.balmei, T.confessus
CTS	2680-85	Low	Low	-	Lower L.balmei	Paleocene	3	T.verrucosus, caved Eocene species
Core	2687.87	V. low	Low	-	Indeterminate	-	-	P.angulatus common, L.balmei
Core	2689.04	V. low	Low	-	Indeterminate	-	-	L.balmei, Stereisporites sp. common
SWC111	2717.0	Negligible	V. low	Slst.	Indeterminate	-	-	
SWC 9	2738.5	Low	Low	Coal	Lower L.balmei	Paleocene	2	L.balmei, T.multistrixus
SWC110	2749.0	Barren	-	Ss.	-	-	-	
SWC 8	2767.0	Good	Fair	Clyst. carb.	Upper T.longus	Maastrichtian	1	P.reticuloconcavus, common T.verrucosus, T.cf.lilliei
SWC108	2793.0	Low	Low	Clyst. carb.	Upper T.longus	Maastrichtian	1	T.lilliei, S.punctatus
SWC107	2801.5	Barren	-	Ss.	-	-	-	

TABLE I : SUMMARY OF PALYNOLOGICAL ANALYSIS WHITING-1, GIPPSLAND BASIN.

INTERPRETATIVE DATA

SAMPLE NO.	DEPTH (m)	YIELD	DIVERSITY SPORE POLLEN	LITHOLOGY	ZONE	AGE	CONFIDENCE RATING	COMMENTS
SWC 6	2827.1	Barren	-	Slst.	-	-	-	
SWC106	2887.0	Moderate	Fair	Sh.,carb.	Upper T.longus	Maastrichtian	1	T.verrucosus, P.clinei, T.waiparensis
SWC 3	2926.5	V. low	Fair	Slst.,carb.	Upper T.longus	Maastrichtian	1	T.verrucosus, P.otwayensis, R.mallatus, abundant G.rudata
SWC 2	2958.0	Moderate	Fair	Slst.,carb.	Upper T.longus	Maastrichtian	0	T.longus, P.gemmatus, P.otwayensis, P.reticuloconcavus, T.verrucosus, S.punctatus, frequent G.rudata
SWC 1	2993.5	V. low	Fair	Slst.	Upper T.longus	Maastrichtian	1	T.verrucosus, S.punctatus, P.angulatus
SWC103	2998.0	Barren	-	Ss.	-	-	-	

TABLE 2.

ANOMALOUS AND UNUSUAL OCCURRENCES OF SPORE-POLLEN TAXA IN WHITING-1.

SAMPLE NO.	DEPTH(m)	ZONE (CONFIDENCE RATING)	TAXON	COMMENTS
SWC 82	1276.6	P. tuberculatus (0)	Lygistepollenites florinii	Abundant
SWC 82	1276.6	P. tuberculatus (0)	Beaupreadites elegansiformis	Uncommon in Early Miocene
SWC 82	1276.6	P. tuberculatus (0)	Podocarpidites ostentatus	Uncommon in Early Miocene
SWC 80	1284.0	P. tuberculatus (1)	Latrobosporites crassus	= L. cf. crassus (Stover & Partridge 1973)
SWC 80	1284.0	P. tuberculatus (1)	Proteacidites crassus	Not known above Lower N. asperus Zone
SWC 78	1292.0	Indeterminate	T. reticulatus Cookson 1947	Rare species
SWC 77	1301.2	N. asperus	Erdtmanipollis sp.	Rare species
SWC 75	1317.8	Uppermost Lower N. asperus (0)	Dodonaea, tricolporate Cunoniaceae, Umbelliferae	Essentially modern taxa
SWC 75	1317.8	Uppermost Lower N. asperus (0)	Elphredripites notensis	Rare species
SWC 75	1317.8	Uppermost Lower N. aperus	Verrucosisporites cristatus	Not recorded below Uppermost Middle N. asperus Zone
SWC 63	1415.2	Lower N. asperus (0)	Tricolporites gigantis	Ms. species (Macphail)
SWC 63	1415.2	Lower N. asperus (0)	Milfordia hypolaenoides	Rare species
SWC 62	1417.0	Lower N. asperus (1)	Rhamnaceae	Modern taxon
SWC 61	1437.0	Lower N. asperus (0)	Proteacidites callosus	Rare species
SWC 60	1456.0	P. asperopolus (1)	Schizocolpus rarus	Rare species
SWC 56	1525.0	P. asperopolus (0)	Gemmatricolporites divaricatus	Rare species
SWC 56	1525.0	P. asperopolus (0)	Tricolpites reticulatus Cookson	Rare species
SWC 49	1542.0	P. asperopolus (0)	Proteacidites callosus	V. rare species
SWC 49	1542.0	P. asperopolus (0)	Proteacidites alveolatus	V. rare species

TABLE 2.

ANOMALOUS AND UNUSUAL OCCURRENCES OF SPORE-POLLEN TAXA IN WHITING-1.

SAMPLE NO.	DEPTH(m)	ZONE (CONFIDENCE RATING)	TAXON	COMMENTS
SWC 49	1542.0	P. asperopolus (0)	Proteacidites xestoformis	Rarely recorded in this zone (also at 1527.5m)
SWC 49	1542.0	P. asperopolus (0)	Tricolporites palisadus	Ms. species (Macphail)
SWC 47	1590.3	Upper M. diversus (0)	Tricolpites incisus	Not recorded below P. asperopolus Zone
SWC 45	1640.7	Upper M. diversus (2)	Proteacidites sp.	Transitional between P. annularis and P. callosus
SWC 44	1657.5	Upper M. diversus (2)	Matonisporites ornamentalis	Rare below Lower N. asperus Zone
SWC 44	1657.5	Upper M. diversus (2)	Palycolpites aff. P. langstonii	Species resembling P. langstonii but less than 40u length
SWC 44	1657.5	Upper M. diversus (2)	Tricolporites circumlumenus	Ns. species (Macphail)
SWC 44	1657.5	Upper M. diversus (2)	Triporopollenites cf. spinosus	
SWC 43	1673.3	Upper M. diversus (2)	Basopollis mutabilis, B. otwayensis	Not recorded above Lower M. diversus Zone
SWC 43	1673.3	Upper M. diversus (2)	Polycolpites aff. P. langstonii	Not recorded above Lower M. diversus Zone (40u)
SWC 42	1715.8	Middle M. diversus	Basopollis otwayensis	Possibly reworked.
SWC 41	1734	Lower M. diversus (0)	Tricolporites moultonii	Not recorded below Middle M. diversus Zone
SWC 39	1780.5	Lower M. diversus (1)	Basopollis otwayensis	Frequent in assemblage
SWC 39	1780.5	Lower M. diversus (1)	Foveosporites balteus	Not recorded below Upper M. diversus Zone
SWC 39	1780.5	Lower M. diversus (1)	Peromonolites vellosus	Not recorded below Middle M. diversus Zone
SWC 39	1780.5	Lower M. diversus (1)	Tricolpites gigantis	Ms. species (Macphail)
SWC 35	1889.5	Upper L. balmei (1)	Banksieacidites arcuatus	Not recorded below uppermost Lower M. diversus Zone
SWC 35	1889.5	Upper L. balmei (1)	Ischyosporites irregularis	Not recorded below Lower M. diversus Zone
SWC 35	1889.5	Upper L. balmei (1)	Proteacidites amolosexinus	Not recorded above Lowermost Lower L. balmei Zone
SWC 32	1980.5	(Upper) L. balmei	Proteacidites angulatus	Not recorded above Lower L. balmei Zone

TABLE 2.

ANOMALOUS AND UNUSUAL OCCURRENCES OF SPORE-POLLEN TAXA IN WHITING-1.

SAMPLE NO.	DEPTH(m)	ZONE (CONFIDENCE RATING)	TAXON	COMMENTS
SWC 31	2010.5	Upper L. balmei (2)	Tricolpites gigantis	Ms. species (Macphail)
SWC 124	2141.2	Upper L. balmei (1)	Proteacidites gemmatus	Rarely recorded above Lower L. balmei Zone
SWC 124	2141.2	Upper L. balmei (1)	Tubulifloridites truswellii	Ms. species (Macphail). Not recorded above T. longus Zone
SWC 120	2233	Upper L. balmei (2)	Nothofagidites endurus	Abundant in sample
SWC 20	2358.5	Upper L. balmei (1)	Proteacidites angulatus	Not recorded above Lower L. balmei Zone
SWC 116	2402.8	Lower L. balmei (1)	Tricolporites marginatus	Ms. species (Stover & Evans 1969)
SWC 15	2551.0	Lower L. balmei (1)	Uvatisporites	Rare species
SWC 15	2551.0	Lower L. balmei (1)	Tricolporites marginatus	Rare species
Core	2687.9	? Lower L. balmei	Tricolpites gigantis	Ms. species (Macphail

PALYNOLOGY DATA SHEET

BASIN: GIPPSLAND ELEVATION: KB: 21.0 GL: -53.00

WELL NAME: WHITING-1 TOTAL DEPTH:

AGE	PALYNOLOGICAL ZONES	HIGHEST DATA Preferred Depth	Rtg	Alternate Depth	Rtg	Two Way Time	LOWEST DATA Preferred Depth	Rtg	Alternate Depth	Rtg	Two Way Time
NEOGENE	*T. pleistocenicus*										
	M. lipsis										
	C. bifurcatus										
	T. bellus										
	P. tuberculatus	1276.6	0				1276.6	0			
PALEOGENE	Upper *N. asperus*										
	Mid *N. asperus*	1301.2	2				1301.2	2			
	Lower *N. asperus*	1317.8	0				1437.0	0			
	P. asperopolus	1456.0	1				1542.0	0			
	Upper *M. diversus*	1577.5	1				1676.3	2	1590.3	0	
	Mid *M. diversus*	1715.8	1				1715.8	1			
	Lower *M. diversus*	1734.0	0				1859.1	0			
	Upper *L. balmei*	1889.5	2				2358.5	1			
	Lower *L. balmei*	2402.8	1				2738.5	2	2551.0	1	
LATE CRETACEOUS	*T. longus*	2767.0	1				2993.5	1			
	T. lilliei										
	N. senectus										
	U. *T. pachyexinus*										
	L. *T. pachyexinus*										
	C. triplex										
	A. distocarinatus										
EARLY CRET.	*C. paradoxus*										
	C. striatus										
	F. asymmetricus										
	F. wonthaggiensis										
	C. australiensis										
	PRE-CRETACEOUS										

COMMENTS:

CONFIDENCE RATING:
- O: SWC or Core, Excellent Confidence, assemblage with zone species of spores, pollen and microplankton.
- 1: SWC or Core, Good Confidence, assemblage with zone species of spores and pollen or microplankton.
- 2: SWC or Core, Poor Confidence, assemblage with non-diagnostic spores, pollen and/or microplankton.
- 3: Cuttings, Fair Confidence, assemblage with zone species of either spores and pollen or microplankton, or both.
- 4: Cuttings, No Confidence, assemblage with non-diagnostic spores, pollen and/or microplankton.

NOTE: If an entry is given a 3 or 4 confidence rating, an alternative depth with a better confidence rating should be entered, if possible. If a sample cannot be assigned to one particular zone, then no entry should be made, unless a range of zones is given where the highest possible limit will appear in one zone and the lowest possible limit in another.

DATA RECORDED BY: M.K. Macphail DATE: June 27, 1983.

DATA REVISED BY: DATE:

PALYNOLOGY DATA SHEET

BASIN: GIPPSLAND | ELEVATION: KB: ______ GL: ______

WELL NAME: SNAPPER-3 | TOTAL DEPTH: ______

AGE	PALYNOLOGICAL ZONES	HIGHEST DATA Preferred Depth	Rtg	Alternate Depth	Rtg	Two Way Time	LOWEST DATA Preferred Depth	Rtg	Alternate Depth	Rtg	Two Way Time
NEOGENE	*T. pleistocenicus*										
	M. lipsis										
	C. bifurcatus										
	T. bellus										
	P. tuberculatus										
PALEOGENE	Upper *N. asperus*										
	Mid *N. asperus*										
	Lower *N. asperus*										
	P. asperopolus										
	Upper *M. diversus*										
	Mid *M. diversus*										
	Lower *M. diversus*										
	Upper *L. balmei*	5970	1				6306	2			
	Lower *L. balmei*	7274	2				8934	2			
LATE CRETACEOUS	*T. longus*	9948	1				9948	1			
	T. lilliei										
	N. senectus										
	U. *T. pachyexinus*										
	L. *T. pachyexinus*										
	C. triplex										
	A. distocarinatus										
EARLY CRET.	*C. paradoxus*										
	C. striatus										
	F. asymmetricus										
	F. wonthaggiensis										
	C. australiensis										
PRE-CRETACEOUS											

COMMENTS: Revision of Paleocene-Late Cretaceous sections only. Depths in feet. Revision based on original data sheets of L.E. Stover & A.D. Partridge 1971. The sample at 9948' is Upper T. longus Zone in age and the interval between 10,102' to 10,253' no older than T. lilliei Zone in age.

CONFIDENCE RATING:
- O: SWC or Core, Excellent Confidence, assemblage with zone species of spores, pollen and microplankton.
- 1: SWC or Core, Good Confidence, assemblage with zone species of spores and pollen or microplankton.
- 2: SWC or Core, Poor Confidence, assemblage with non-diagnostic spores, pollen and/or microplankton.
- 3: Cuttings, Fair Confidence, assemblage with zone species of either spores and pollen or microplankton, or both.
- 4: Cuttings, No Confidence, assemblage with non-diagnostic spores, pollen and/or microplankton.

NOTE: If an entry is given a 3 or 4 confidence rating, an alternative depth with a better confidence rating should be entered, if possible. If a sample cannot be assigned to one particular zone, then no entry should be made, unless a range of zones is given where the highest possible limit will appear in one zone and the lowest possible limit in another.

DATA RECORDED BY: L.E. Stover/A.D. Partridge DATE: June 1971/December 1971.

DATA REVISED BY: M.K. Macphail. DATE: July 29, 1983.

PALYNOLOGY DATA SHEET

BASIN: GIPPSLAND ELEVATION: KB: +31 ft. GL:

WELL NAME: BARRACOUTA-3 TOTAL DEPTH:

AGE	PALYNOLOGICAL ZONES	HIGHEST DATA					LOWEST DATA				
		Preferred Depth	Rtg	Alternate Depth	Rtg	Two Way Time	Preferred Depth	Rtg	Alternate Depth	Rtg	Two Way Time
NEOGENE	*T. pleistocenicus*										
	M. lipsis										
	C. bifurcatus										
	T. bellus										
	P. tuberculatus										
PALEOGENE	Upper *N. asperus*										
	Mid *N. asperus*										
	Lower *N. asperus*										
	P. asperopolus										
	Upper *M. diversus*										
	Mid *M. diversus*										
	Lower *M. diversus*										
	Upper *L. balmei*										
	Lower *L. balmei*	6300	2								
LATE CRETACEOUS	*T. longus*	7748	1				8414	1			
	T. lilliei	8844	2								
	N. senectus										
	U. *T. pachyexinus*										
	L. *T. pachyexinus*										
	C. triplex										
	A. distocarinatus										
EARLY CRET.	*C. paradoxus*										
	C. striatus										
	F. asymmetricus										
	F. wonthaggiensis										
	C. australiensis										
PRE-CRETACEOUS											

COMMENTS: Revision of Paleocene-Late Cretaceous sections only. Depths in feet. Revision based on original data sheets of P.R. Evans & R.D. Mulholland (1969). The sample at 7748' is Upper T.longus Zone in age and that at 8414' Lower T.longus Zone in age. The sample at 8844' is no older than T.lilliei Zone in age but may be younger.

CONFIDENCE RATING:
- 0: SWC or Core, Excellent Confidence, assemblage with zone species of spores, pollen and microplankton.
- 1: SWC or Core, Good Confidence, assemblage with zone species of spores and pollen or microplankton.
- 2: SWC or Core, Poor Confidence, assemblage with non-diagnostic spores, pollen and/or microplankton.
- 3: Cuttings, Fair Confidence, assemblage with zone species of either spores and pollen or microplankton, or both.
- 4: Cuttings, No Confidence, assemblage with non-diagnostic spores, pollen and/or microplankton.

NOTE: If an entry is given a 3 or 4 confidence rating, an alternative depth with a better confidence rating should be entered, if possible. If a sample cannot be assigned to one particular zone, then no entry should be made, unless a range of zones is given where the highest possible limit will appear in one zone and the lowest possible limit in another.

DATA RECORDED BY: P.R. Evans/R.D. Mulholland. DATE: October 1969.

DATA REVISED BY: M.K. Macphail. DATE: July 29, 1983.

PALYNOLOGY DATA SHEET

BASIN: GIPPSLAND | ELEVATION: KB: +31ft. GL:

WELL NAME: BARRACOUTA-1 | TOTAL DEPTH:

AGE	PALYNOLOGICAL ZONES	HIGHEST DATA Preferred Depth	Rtg	Alternate Depth	Rtg	Two Way Time	LOWEST DATA Preferred Depth	Rtg	Alternate Depth	Rtg	Two Way Time
NEOGENE	*T. pleistocenicus*										
	M. lipsis										
	C. bifurcatus										
	T. bellus										
	P. tuberculatus										
PALEOGENE	Upper *N. asperus*										
	Mid *N. asperus*										
	Lower *N. asperus*										
	P. asperopolus										
	Upper *M. diversus*										
	Mid *M. diversus*										
	Lower *M. diversus*										
	Upper *L. balmei*	5653	2				5653	2			
	Lower *L. balmei*	6124	3	6450	1		7251	1			
LATE CRETACEOUS	*T. longus*	7708	3	7722	2		8700	1			
	T. lilliei										
	N. senectus										
	U. *T. pachyexinus*										
	L. *T. pachyexinus*										
	C. triplex										
	A. distocarinatus										
EARLY CRET.	*C. paradoxus*										
	C. striatus										
	F. asymmetricus										
	F. wonthaggiensis										
	C. australiensis										
PRE-CRETACEOUS											

COMMENTS: Depths in feet. Paleocene-Late Cretaceous sections revised using data sheets (L.E. Stover/A.D. Partridge 1971). All T.longus Zone samples are Upper T.longus Zone in age.

CONFIDENCE RATING:
- O: SWC or Core, Excellent Confidence, assemblage with zone species of spores, pollen and microplankton.
- 1: SWC or Core, Good Confidence, assemblage with zone species of spores and pollen or microplankton.
- 2: SWC or Core, Poor Confidence, assemblage with non-diagnostic spores, pollen and/or microplankton.
- 3: Cuttings, Fair Confidence, assemblage with zone species of either spores and pollen or microplankton, or both.
- 4: Cuttings, No Confidence, assemblage with non-diagnostic spores, pollen and/or microplankton.

NOTE: If an entry is given a 3 or 4 confidence rating, an alternative depth with a better confidence rating should be entered, if possible. If a sample cannot be assigned to one particular zone, then no entry should be made, unless a range of zones is given where the highest possible limit will appear in one zone and the lowest possible limit in another.

DATA RECORDED BY: L.E. Stover/A.D. Partridge | DATE: June 1971, December 1971.

DATA REVISED BY: M.K. Macphail. | DATE: July 29, 1983.

APPENDIX 3

WHITING - 1 QUANTITATIVE LOG ANALYSIS

Whiting-1 wireline logs have been analysed for effective porosity and water saturation over the interval 1250-3010m KB. Analysis was carried out using a reiterative technique which incorporates hydrocarbon correction to the porosity logs, density-neutron crossplot porosities, a Dual Water saturation relationship, and convergence on a preselected grain density window by shale volume adjustment.

Logs Used and Log Quality

LLD, LLS, MSFL, GR, Caliper, RHOB (LDT), PHIN (CNL).

Resistivity, gamma ray and neutron porosity logs were corrected for borehole and environmental effects.

The corrected resisitivity logs were then used to derive Rt and invasion diameter.

Coals and carbonaceous shales were edited for an output of:

VSH = 0, PHIE = 0, and Swe = 1.

The LDT/CNL log exhibits excessive apparent crossover in water sands. Crossplots indicate the CNL derived porosity is less than both LDT and Sonic porosities in clean water sands. To remedy this .03 pu has been added to the environmentally corrected CNL log.

Apart from this, log quality is good.

Analysis Parameters

Apparent shale density and shale neutron porosity values were derived from crossplots of the density and neutron logs. Shale resistivities were read directly from the logs.

The apparent connate water salinities used and the method by which they were obtained will be discussed later in the text.

Table 1 summarises the analysis parameters.

Shale Volume

An initial estimate of VSH was calculated from the GR assuming a linear response between shale and clean sand:

$$VSH = \frac{GRlog - GRmin}{GRmax - GRmin} \qquad - 1$$

Total Porosities

Total porosity was initially calculated from a density-neutron logs using the following algorithms:

$$h = 2.71 - RHOB + PHIN\,(RHOF - 2.71) \qquad - 2$$

if h is greater than 0, then

$$\text{apparent matrix density, } RHOMa = 2.71 - h/2 \qquad - 3$$

if h is less than 0, then

apparent matrix density, $RHOMa = 2.71 - 0.64h$ - 4

Total porosity: $$PHIT = \frac{RHOMa - RHOB}{RHOMa - RHOF}$$ - 5

where RHOB = environ. corrected bulk density in gms/cc
PHIN = environ. corrected neutron porosity in limestone porosity units.
RHOF = fluid density (1.0 gms.cc)

Bound Water Resistivities (Rwb) and Saturation of Bound Water (Swb)

Rwb and Swb were calculated using the following relationships:

$$Rwb = \frac{RSH * PHITSH^m}{a}$$ - 6

where PHITSH = total porosity in shale from density-neutron crossplots.
RSH = Rt in shales.

$$Swb = \frac{VSH * PHITSH^m}{PHIT}$$ - 7

Free Water Resistivities (Rw) and Salinities

Apparent free water resistivities and salinities were calculated using the following relationships:

$$Rw = \frac{Rt * PHIT^m}{a}$$ - 8

where a = 1, m = 2, and PHIT = total porosity determined from density-neutron logs using equations 2 and 3.

$$\text{Salinity (ppm)} = \left[\frac{300,000}{Rw(Ti + 7) - 1}\right]^{1.05}$$ - 9

where Ti = formation temperature in ^{o}F.

It should be emphasised that the calculated salinities are apparent salinities. It is not absolutely essential that true free water salinities be used in water saturation calculations for the following reasons:

(a) in order to obtain true free water salinities appropriate a and m values must be known or obtained and this data is generally not available.

(b) the calculated water saturation values using the apparent salinities are virtually similar to those obtained using true salinities as long as the appropriate a, m and n are used in the calculations.

The sands in the interval 1250 - 1850m have been subjected to fresh water flushing making precise determination of apparent free water salinities difficult. The apparent salinities in the water bearing sands are very variable. They not only vary from sand to sand but also within individual sand intervals. An attempt was made to "normalise" the variable salinities within the sand intervals by using the following relationship:

$$Rw = \frac{Ro * PHIT^m * Rwb\ (Swb - 1)}{Ro * PHIT^m * (Swb - Rwb)}$$ -10

where Ro = Rt in water bearing sands

and salinities were calculated using equation 9. The salinities were then averaged for each sand. As for the hydrocarbon bearing zones within the interval the apparent free water salinities (or connate water salinities) were taken to be the salinities of the sands, below the limit of fresh water flushing. The adjacent fresh water aquifer salinities were not used in the saturation calculations for the following reasons:

(i) water saturations obtained using fresh water salinities tended to be high and inconsistent with hydrocarbon recoveries.

(ii) SP deflections opposite hydrocarbon bearing sands suggest that the free water salinities are higher than the aquifer salinities and probably closer to mud filtrate salinities.

(iii) in Tarwhine-1 and Wirrah-1 where fresh water flushing is present hydrocarbon bearing sands calculate to be water bearing if adjacent fresh water aquifer salinities are used.

Free water salinities are summarised in Table 2.

Water Saturations

Water saturations were determined from the Dual Water model using the following relationships:

$$\frac{1}{Rt} = SwT^{n} * \left(\frac{PHIT^{m}}{aRw}\right) + SwT^{(n-1)} \left[\frac{Swb * PHIT^{m}}{a} \left(\frac{1}{Rwb} - \frac{1}{Rw}\right)\right] \qquad -11$$

and

$$\frac{1}{Rxo} = SwT^{n} * \left(\frac{PHIT^{m}}{aRw}\right) + SwT^{(n-1)} \left[\frac{Swb * PHIT^{m}}{a} \left(\frac{1}{Rwb} - \frac{1}{Rmf}\right)\right] \qquad -12$$

where SwT = total saturation in the virgin formation
SxoT = total saturation in the invaded zone
Rmf = resistivity of mud filtrate
n = saturation exponent

Hydrocarbon Corrections

Hydrocarbon corrections to the environmentally corrected density and neutron logs were made using the following relationships:

$$RHOBHC = RHOB + 1.07\ PHIT\ (1-SxoT)\ [(1.11-0.15P)\ RHOF - 1.15\ RHOH] \qquad -13$$

$$PHINHC = PHIN + 1.3\ PHIT\ (1-SxoT)\left[\frac{RHOF\ (1-P) - 1.5\ RHOH + 0.2}{RHOF\ (1-P)}\right] \qquad -14$$

where RHOBHC = hydrocarbon corrected RHOB
PHINHC = hydrocarbon corrected PHIN
RHOH = hydrocarbon density (0.25 gms/cc for gas, 0.7 gms/cc for oil)
P = mud filtrate salinity in parts per unity

Grain Density

Grain density (RHOG) was calculated from the hydrocarbon corrected density and neutron logs using the following relationships:

$$RHOBC = \frac{RHOBHC - VSH * RHOBSH}{1 - VSH} \qquad -15$$

$$PHINC = \frac{PHINHC - VSH * PHINSH}{1 - VSH} \qquad -16$$

and equations 2, 3 and 4 are then used to compute RHOG.

where RHOBSH = environ. corrected bulk density of shale
PHIN = environ. corrected neutron porosity of shale

The calculated grain density was then compared to the upper and low limits of the grain densities and if it fell within the limits, effective porosity (PHIE) and effective saturation (Swe) were calculated as follows:

$$PHIE = PHIT - VSH * PHITSH \qquad -17$$

$$Swe = 1 - \frac{PHIT}{PHIE} (1-SwT) \qquad -18$$

If the calculated grain density fell outside the limits, VSH was adjusted in small increments or decrements and PHIT, SwT, SxoT and RHOG were then recalculated.

All zones with VSH greater than 60%, Swe, was set to 1 and PHIE set to 0.

The results of the analysis are summarised in Tables 3 and 4.

Comments

1. Below the limit of fresh water flushing (approximately 1850m) water bearing sands with apparent free water salinities of 25000 ppm and 15000 ppm are present. An apparent free water salinity of 25000 equivalent was chosen for the hydrocarbon zones within the interval of fresh water flushing.

2. A comparison analysis using an apparent free water salinity of 15000 ppm, for the hydrocarbon bearing zones within the interval of fresh water flushing was carried out and the Swe range and average Swe for each zone is listed in Table 5. The comparison shows that there are only minor differences between Swe values obtained using the two different free water salinities.

ANALYSIS PARAMETERS

TABLE 1

	1250-1475m KB	1475-1835m KB	1835-2365m KB	2365-2685m KB	2685-2700m KB	2700-3015m KB
a	1	1	1	1	1	1
m	2	2	2	2	2	2
n	2	2	2	2	2	2
Bulk density of shale (gm/cc)	2.490	2.520	2.640	2.640	2.640	2.670
Neutron Porosity of Shale	0.365	0.335	0.335	0.335	0.335	0.330
RSH (ohmm)	20.000	20.000	12.000	25.000	40.000	60.000
Rmf (ohmm) @ 17^{o}C	0.158	0.158	0.158	0.158	0.158	0.158
Grain density - lower limit (gm/cc)	2.650	2.650	2.650	2.650	2.650	2.650
Grain density - upper limit (gm/cc)	2.670	2.670	2.670	2.670	2.670	2.670
GR Maximum api units	180.000	180.000	180.000	180.000	180.000	180.000
GR Minimum api units	25.000	25.000	25.000	25.000	25.000	25.000
Invaded zone fluid density (gm/cc)	1.000	1.000	1.000	1.000	1.000	1.000

TABLE 2

Depth Interval (m KB)	Apparent Free Water Salinity (ppm)
1429.25 - 1430.50	3300
1437.75 - 1438.75	3400
1458.25 - 1464.75	200
1468.00 - 1472.00	2000
1481.50 - 1488.75	25000 *
1493.00 - 1495.00	25000 *
1495.00 - 1500.75	1900
1502.25 - 1513.75	2000
1514.25 - 1522.00	1900
1524.75 - 1527.00	1700
1535.75 - 1541.75	1520
1542.25 - 1542.75	2900
1543.25 - 1554.75	1600
1555.75 - 1567.50	1900
1568.00 - 1577.00	2200
1579.50 - 1589.75	2900
1591.25 - 1604.25	4300
1608.50 - 1610.00	6100
1611.00 - 1621.00	5100
1621.75 - 1623.50	3300
1634.25 - 1640.50	4300
1641.25 - 1643.50	5500
1658.75 - 1661.75	25000 *
1670.50 - 1671.00	2700
1678.25 - 1698.50	2300
1716.75 - 1723.75	25000 *
1725.75 - 1726.25	25000 *
1735.50 - 1739.00	25000 *
1739.25 - 1747.00	2200
1757.50 - 1763.00	25000 *
1763.00 - 1778.50	2300
1784.25 - 1793.25	2600
1804.50 - 1812.75	25000 *
1820.50 - 1833.75	4800
1850.00 - 2000.00	25000
2000.00 - 2515.00	15000
2515.00 - 2615.00	25000
2615.00 - 2650.00	15000
2650.00 - 3010.00	6500

* Calculated from below the limit of fresh water flushing.
All salinities are apparent salinities.

WHITING #1 SUMMARY OF RESULTS

TABLE 3

(i) Hydrocarbon Bearing Sands

Depth Interval (m KB)	Gross Thickness (m)	Net Porous Thickness (m)	Porosity Range	*Porosity Average	Sw Range	*SW Average	Hydrocarbon Type	
1481.50 - 1488.75	7.25	7.25	.104-.292	.235	.017-.426	.080	Oil	
1493.00 - 1495.00	2.00	2.00	.149-.294	.262	.055-.260	.166	Oil	OWC - 1495
1658.75 - 1661.75	3.00	3.00	.216-.320	.290	.075-.157	.111	Gas	
1716.75 - 1724.00	7.25	7.00	.143-.287	.248	.085-.377	.180	Gas	
1735.50 - 1739.00	3.50	3.50	.119-.281	.227	.151-.291	.207	Oil	OWC - 1739
1757.50 - 1763.00	5.50	5.25	.141-.295	.239	.060-.238	.159	Gas	GWC - 1763
1804.50 - 1812.75	8.25	8.00	.118-.282	.232	.106-.437	.191	Gas	
1854.75 - 1855.25	.50	.50	.240-.250	.245	.316-.460	.371	Gas	
1879.25 - 1883.75	4.50	4.50	.117-.316	.220	.126-.473	.221	Gas	
1897.50 - 1908.00	10.50	9.75	.134-.286	.240	.237-.634	.399	Gas	GOC - 1908
1908.00 - 1911.25	3.00	3.00	.217-.296	.250	.458-.670	.567	Oil	OWC - 1911.25
1940.50 - 1947.00	6.50	6.50	.161-.281	.229	.324-.585	.440	Gas	
2114.00 - 2125.00	11.50	10.25	.103-.230	.168	.248-.665	.489	Gas	
2146.00 - 2156.50	10.50	9.00	.118-.253	.180	.480-1.00	.722	Gas	GWC 2156.5
2203.00 - 2205.00	2.00	1.50	.166-.216	.189	.266-.409	.343	Gas	
2297.00 - 2301.50	4.50	4.25	.109-.248	.192	.135-.640	.341	Gas	
2342.00 - 2356.25	14.25	8.50	.103-.204	.103	.090-.600	.384	Gas	
2403.50 - 2419.50	16.00	11.50	.101-.228	.161	.115-.425	.323	Gas	
2423.75 - 2430.25	6.50	4.75	.101-.209	.151	.242-.510	.412	Gas	
2439.25 - 2451.50	12.25	11.25	.100-.222	.158	.085-.398	.247	Gas	
2466.00 - 2477.00	11.00	9.50	.110-.210	.181	.190-.795	.358	Gas	GWC - 2477

WHITING #1 SUMMARY OF RESULTS — TABLE 3 (cont.)

(i) Hydrocarbon Bearing Sands

Depth Interval (m KB)	Gross Thickness (m)	Net Porous Thickness (m)	Porosity Range	*Porosity Average	Sw Range	*SW Average	Hydrocarbon Type	
2685.50 - 2692.00	6.50	5.50	.110-.194	.134	.573-.862	.721	Gas	
2698.50 - 2702.00	3.50	3.50	.108-.188	.146	.331-.758	.567	Gas	
2712.75 - 2713.00	.25	.25	.107-.120	.121	.658-.700	.679	Gas	
2749.75 - 2750.50	.75	.75	.111-.128	.121	.348-.526	.442	Gas	
2756.75 - 2759.50	2.75	2.25	.108-.160	.135	.398-.463	.438	Gas	
2760.75 - 2761.00	.25	.25	.121-.152	.136	.443-.628	.536	Gas	
2775.50 - 2790.50	15.00	6.75	.101-.164	.128	.278-.821	.521	Gas	
2796.50 - 2803.75	7.25	4.00	.109-.206	.142	.317-.490	.422	Gas	
2833.50 - 2836.75	3.25	2.25	.108-.168	.123	.460-.627	.520	Gas	
2865.75 - 2868.75	3.00	2.25	.110-.134	.119	.591-.922	.758	Gas	GWC - 2868.75
2934.50 - 2940.00	5.50	3.25	.111-.200	.141	.261-.590	.453	Gas	
2944.75 - 2948.75	4.00	3.50	.105-.162	.129	.199-.912	.513	Gas	GWC - 2948.75
2961.25 - 2965.00	3.75	3.75	.103-.232	.173	.255-.505	.411	Gas	
2986.00 - 2989.50	3.50	3.00	.102-.169	.134	.623-.953	.788	Gas	
2997.00 - 2999.50	2.50	2.50	.107-.206	.162	.492-.784	.608	Gas	GWC - 2999.5
	48 m	32.75 gas						

* Refers to net sand with porosities greater than 10%.

SUMMARY OF RESULTS   TABLE 3 (cont.)

(ii) Water Bearing Sands

Depth Interval (m KB)	Gross Thickness (m KB)	Net Porous Thickness (m KB)	Porosity Range	*Porosity Average
1307.75 - 1343.00	35.25	34.00	.134-.310	.252
1352.25 - 1373.75	21.50	16.50	.162-.299	.237
1400.25 - 1406.25	6.00	5.50	.210-.292	.265
1458.25 - 1472.00	13.75	10.75	.179-.339	.287
1495.00 - 1527.25	32.25	27.75	.160-.313	.270
1535.75 - 1604.25	68.50	63.50	.106-.373	.276
1608.50 - 1621.00	12.50	11.50	.102-.297	.232
1634.25 - 1643.50	9.25	8.75	.127-.297	.253
1678.25 - 1698.50	20.25	20.25	.216-.307	.273
1739.00 - 1747.00	8.00	8.00	.259-.311	.290
1763.00 - 1778.50	15.50	15.50	.189-.310	.253
1783.75 - 1793.25	9.50	9.00	.143-.284	.222
1818.75 - 1834.00	20.25	13.25	.152-.316	.259
1911.25 - 1934.00	22.75	20.50	.106-.305	.195
2003.25 - 2009.00	5.75	4.75	.102-.275	.220
2066.25 - 2069.75	3.50	3.50	.107-.237	.183
2156.50 - 2161.25	4.75	3.00	.155-.255	.201
2235.25 - 2239.00	3.75	2.25	.117-.209	.157
2255.75 - 2261.25	5.50	4.50	.102-.208	.166
2477.00 - 2482.00	5.00	5.00	.124-.222	.167
2489.50 - 2499.50	10.00	9.50	.102-.201	.161
2506.75 - 2513.00	6.25	1.00	.104-.155	.125
2518.25 - 2523.00	4.75	2.75	.127-.202	.159
2535.50 - 2539.00	3.50	2.50	.100-.140	.123
2600.00 - 2603.25	3.25	2.00	.105-.163	.126
2906.50 - 2910.75	4.25	2.00	.103-.146	.117

11451/50

FLUID CONTACTS TABLE 4

Depth (m KB)	Type of Contact
1495.00	OWC
1739.00	OWC
1763.00	GWC
1908.00	GOC
1911.25	OWC
2156.50	GWC
2477.00	GWC
2868.75	GWC
2948.75	GWC
2999.50	GWC

TABLE 5

Depth (m KB)	Swe Range	Swe Average
1481.50 - 1488.75	.020 - .432	.093
1493.00 - 1495.00	.077 - .276	.208
1658.75 - 1661.75	.100 - .198	.144
1716.75 - 1723.75	.113 - .476	.234
1725.75 - 1726.25	.390 - .493	.450
1735.50 - 1739.00	.201 - .383	.276
1757.50 - 1763.00	.083 - .470	.208
1804.50 - 1812.75	.134 - .669	.254

Water saturations using connate water salinity of 15,000 ppm NaCl equiv.

* Refers to porosities greater than 10%.

APPENDIX 3

APPENDIX 3

WHITING-1

QUANTITATIVE LOG ANALYSIS

Interval: 1250-3010m KB

Analyst : W.J. Mudge

Date : August, 1983

APPENDIX 4

APPENDIX 4

AN EVALUATION OF
WHITING-1 "GLOBAL"

Analysis by Schlumberger

K. Kuttan
W.J. Mudge

August, 1983

AN EVALUATION OF WHITING-1 "GLOBAL" ANALYSIS

Schlumberger were requested to perform a "Global" analysis on Whiting-1 after the well was completed.

Global is one of Schlumberger's sophisticated log interpretation programs which has the following features:

(i) uses all available information - as many log measurements as there are available, geological constraints and local knowledge

(ii) uses a error model to relate tool responses to petrophysical parameters such as porosity, lithology and fluid saturation.

(iii) uses probability concepts to compute a maximum likelihood solution

(iv) provides a quality control curve that indicates how well the answer fits a chosen model and also whether the model is inadequate, or if insufficient information is available to solve the interpretation problem.

To carry out the analysis Schlumberger was provided the following data:

(i) all logs
(ii) mudlog
(iii) RFT pressures and recoveries

Two passes of Global were carried out by Schlumberger. The only difference between the two passes is that in the second pass, the amount of dolomite interpreted from the LDT log is reduced.

A detailed inhouse log analysis of Whiting-1 using the dual water model was carried out and the following is a discussion of the comparison between the two analysis.

1. <u>Formation Salinities, Water Saturations and Porosities</u>

(a) Table 1 summarises the formation salinities used in Global and the inhouse analysis, for the various intervals. Schlumberger assumed that the connate water salinities of the hydrocarbon zones in the interval 1250-1850m to be the same as the adjacent aquifer sands which have been subjected to fresh water flushing. We feel that this is an incorrect assumption for the following reasons:

(i) The fresh water sands have strongly developed positive SP, whereas opposite the hydrocarbon bearing zones, SP is significantly suppressed or not developed (Fig. 1). Schlumberger may argue, that the suppression or poor development of SP is due to hydrocarbon effect. However, examination of numerous Gippsland logs where good SP logs were obtained no evidence of SP suppression by hydrocarbons could be found. This would imply that the SP suppression or lack of development is due to the connate waters in the hydrocarbon zones being more saline than the adjacent aquifer waters.

TABLE 1

Global		Inhouse	
Depth (m)	Salinity (ppm)	Depth (m)	Salinity (ppm)
1250 - 1800	2800	1250 - 1850	25000 (for Hydrocarbon zones)
1800 - 1850	8900	1850 - 2000	25000
1850 - 2793	15000	2000 - 2515	15000
2793 - 3000	6200	2515 - 2615	25000
		2615 - 2650	15000
		2650 - 3010	6500

(ii) The oil sand in the interval 1481-1495m has calculated porosities of 28-30%. Water saturation from Global is 25-30% (Fig. 2). A production test in this oil sand proved the sand has permeabilities of the order of 1.8 darcys relative to oil. Reservoirs with similar petrophysical properties have been shown elsewhere in the Gippsland Basin, from capillary pressure data, to have water saturation of the order of 10%. To calculate water saturations of this magnitude the connate water salinities in the hydrocarbon bearing sands must be more saline than the adjacent aquifer waters.

(iii) A gas bearing sand is present in the interval 1716-1724m. Within this sand, over the interval 1721-1723m Global calculates an average porosity of 20% and an average water saturation of 75% (Fig. 3). We feel that the water saturation value is inconsistent with the calculated porosity and with the fact that gas is present above and below this interval. Similar inconsistencies in Global, are seen over intervals 1736-1737.5m and 1757-1759m. These inconsistencies indicate that the connate salinities within the hydrocarbon zones are probably more saline than the adjacent fresh water aquifer.

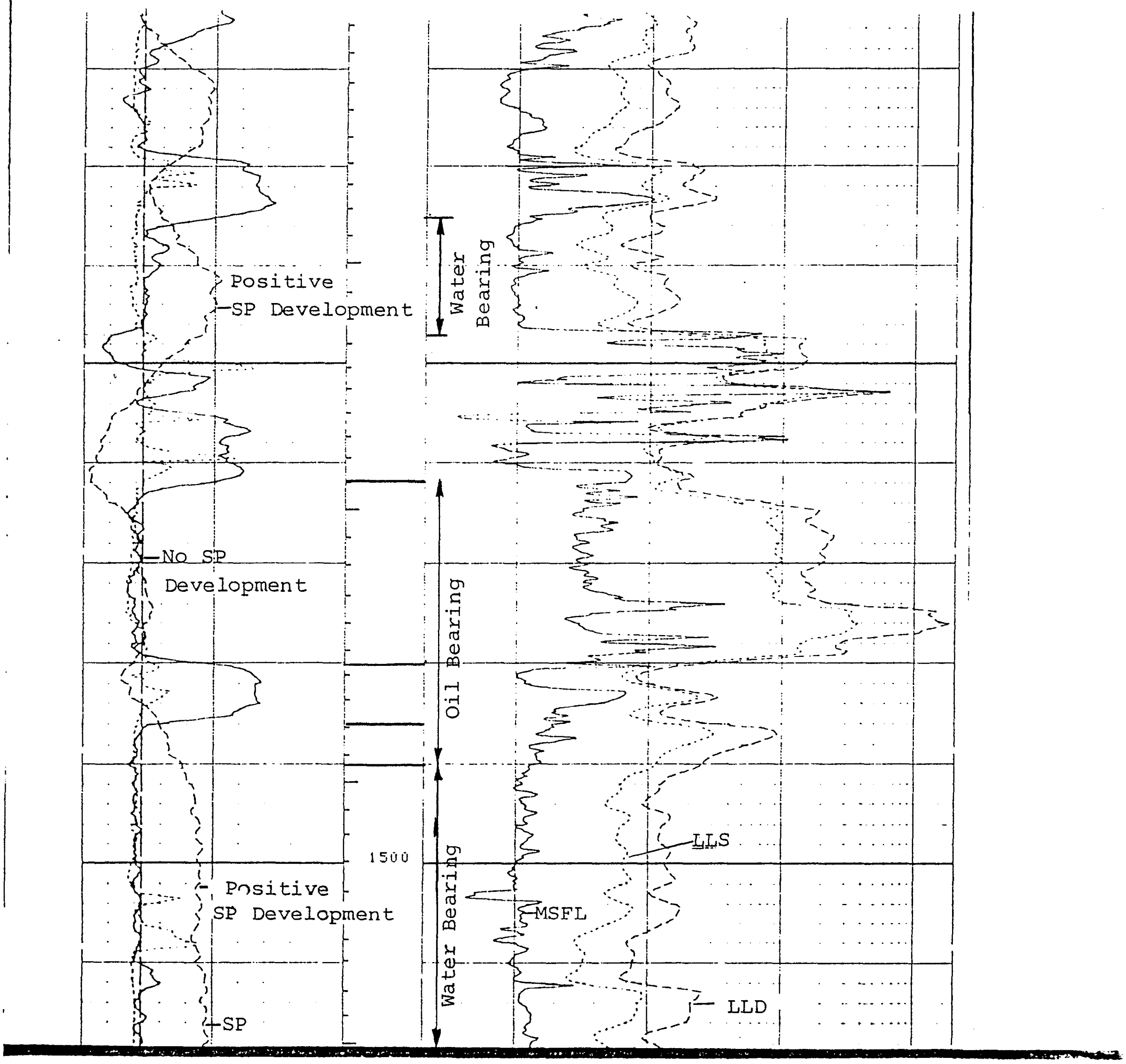
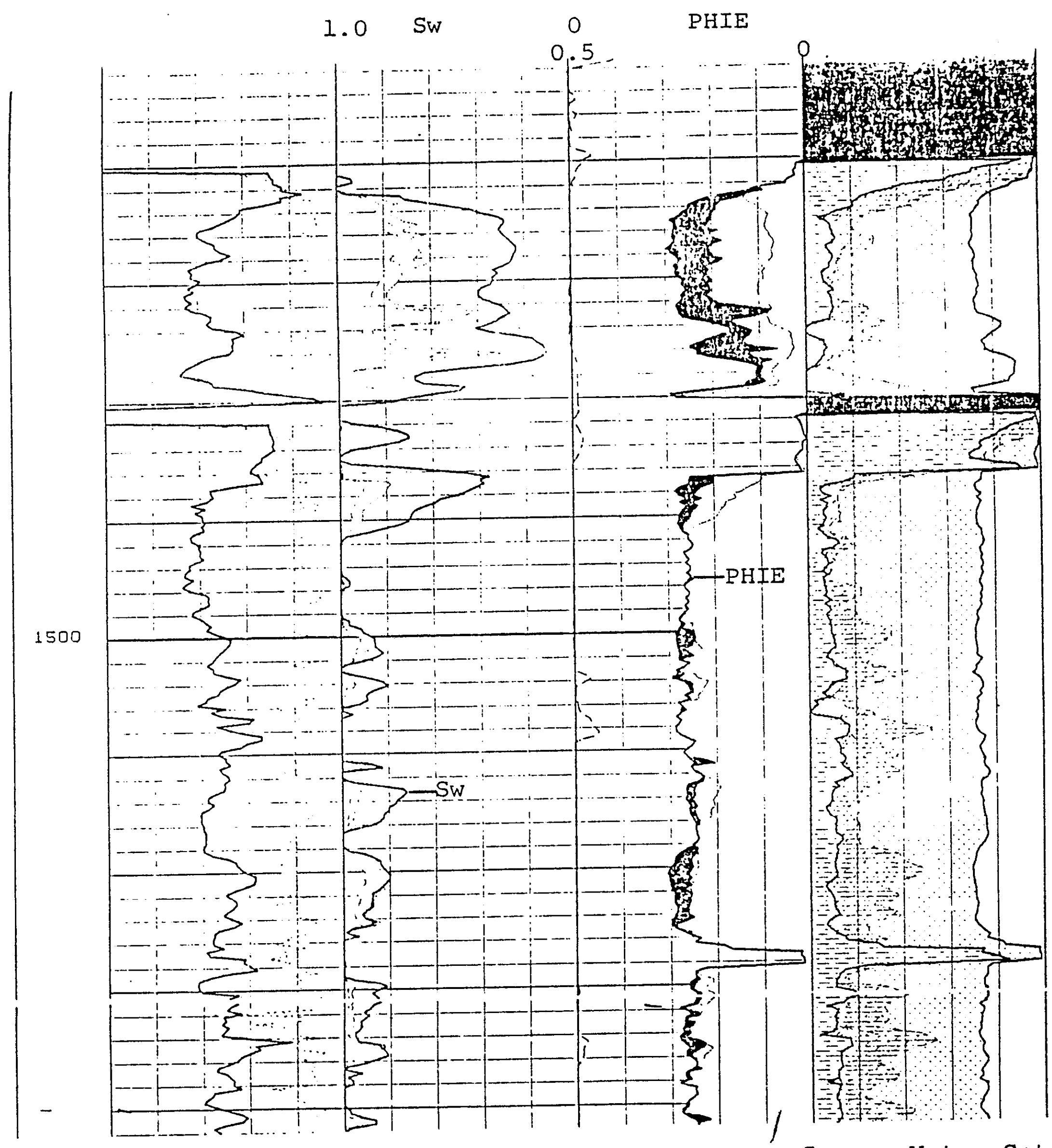


Figure 1   Whiting-1 DLL MSFL GR SP Log



Sw = Water Saturation
PHIE = Effective Porosity

Figure 2 Whiting-1 'Global' Analysis

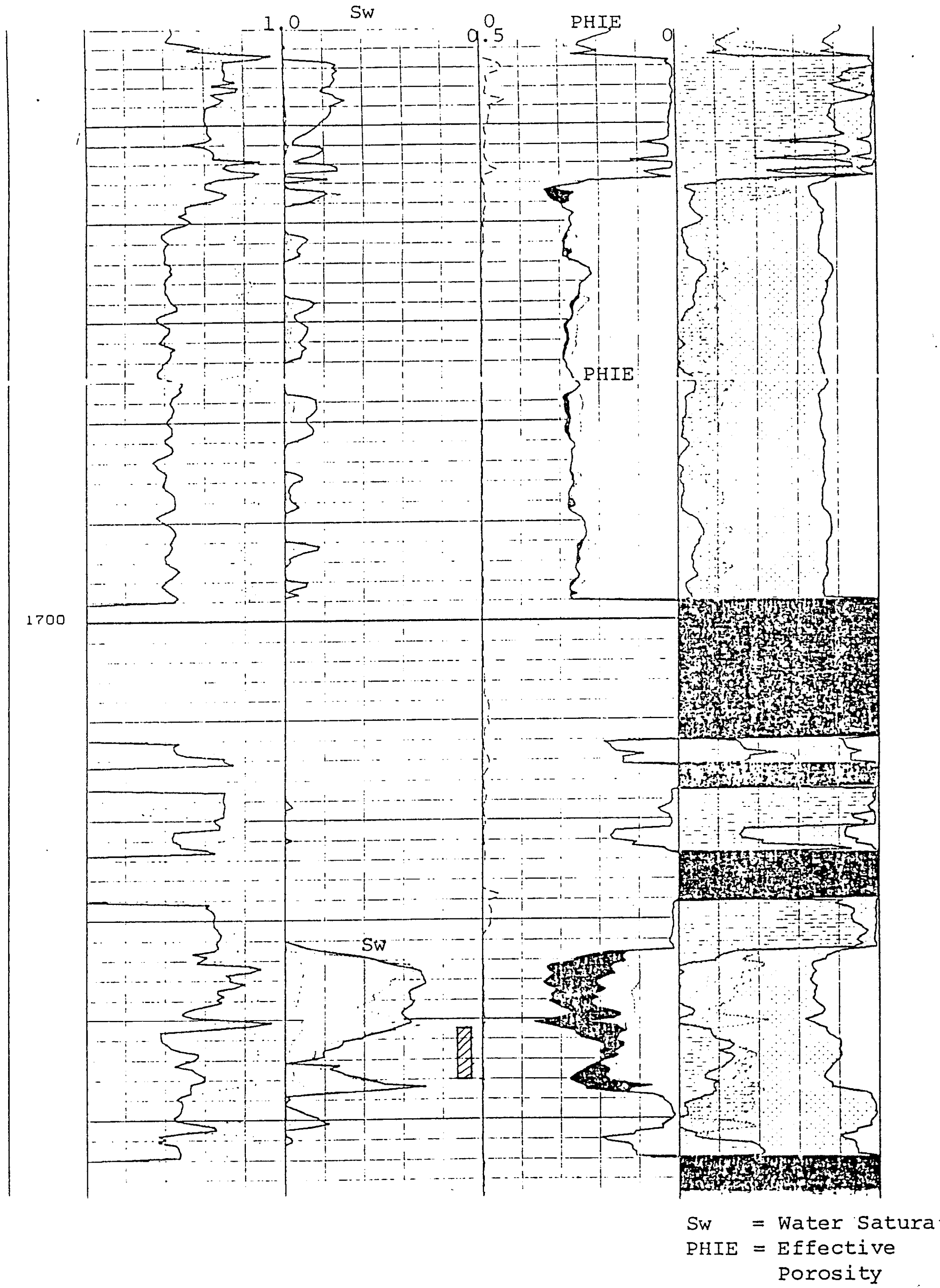


Figure 3 Whiting-1 'Global' Analysis

Zone with anomalous Sw

(iv) Below 1850m (below the limit of flushing), gas sands are present over the intervals 2298-2304m, 2340-2356m, 2403-2419m, 2440-2452m and 2466-2477m. Taking the cleanest zones, (ie. with very low shale content) porosities from Global are of the order 20-25% and average water saturations of 15-25%. These sands have similar resistivity profiles to the gas sands within the interval of fresh water flushing. However the gas sands in the interval of fresh water flushing have porosities of the order 25-32% and water saturations of 25-60%. It seems very odd that sands that are clean and with higher porosities appear to have higher saturations. In our opinion these upper sands have better petrophysical properties (high porosities, higher permeabilities and low shale content) and therefore ought to have at least similar or more probably lower saturations than the gas sands below 1850m. This again suggests that the connate water salinities of the hydrocarbon sands are probably more saline than the adjacent aquifer waters.

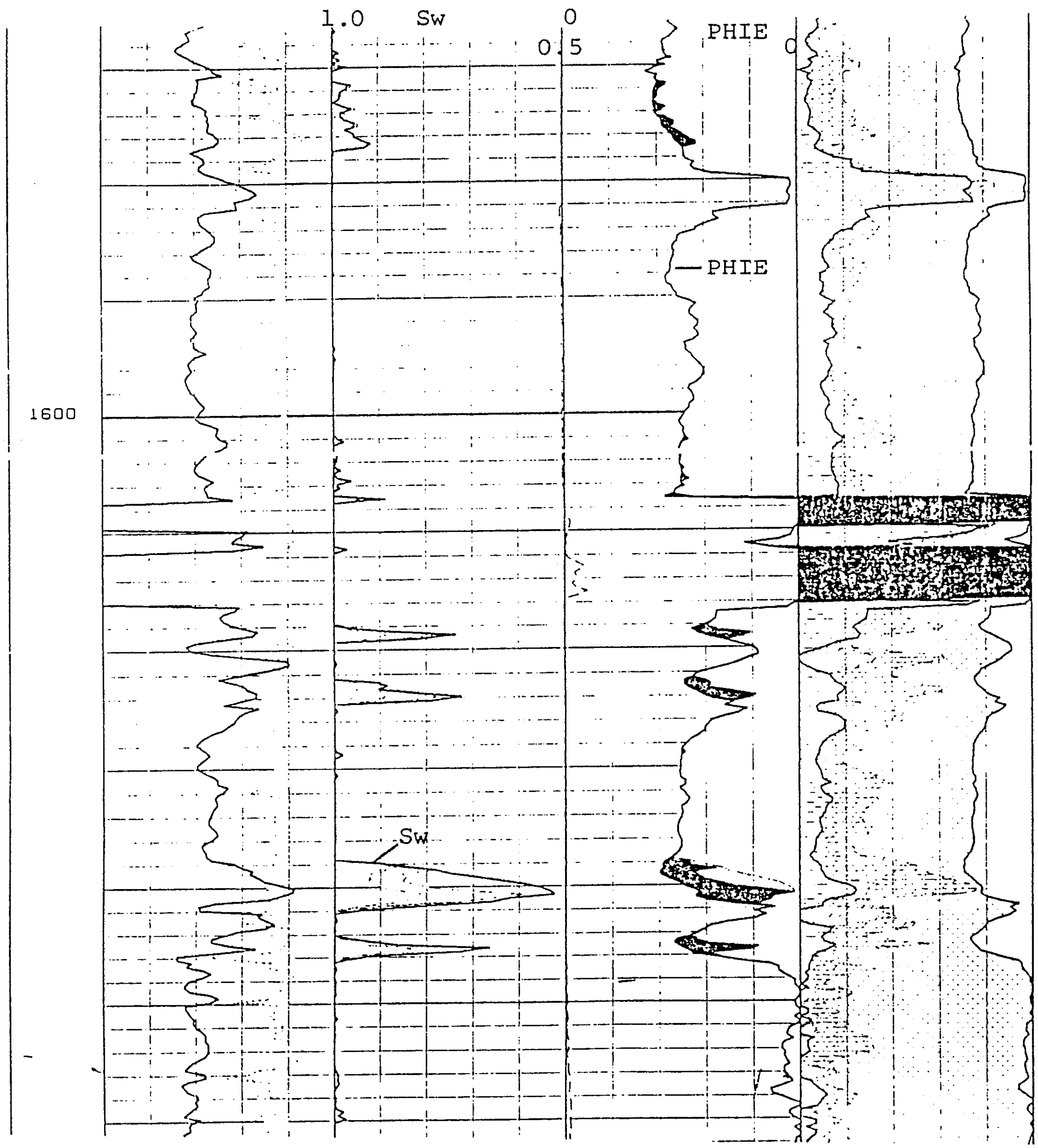
The inhouse analysis has used the apparent connate water salinities from the water bearing sands below the zone of flushing for calculating water saturations in the hydrocarbon zones within the interval of flushing. We believe the inhouse analysis results are consistent with the petrophysical properties of these upper sands and with the hydrocarbon recoveries.

(b) The interval 1850-2650m is very similar in both analysis. This is due to similar salinities being used over the interval. Porosities over the interval are generally in good agreement.

(c) Over the interval 1619-1621m, which is the base of a sand, Global indicates the presence of movable hydrocarbons (water saturations of the order 20%). It seems very strange that hydrocarbons should be trapped at the base of a water bearing sand (Fig. 4).

(d) Below 2650m, the analyses differ mainly in water saturation determinations and this is mainly due to the different salinities that were used to compute water saturations. In Global, salinities of 15000 ppm and 6200 ppm were used over the intervals 2650-2793m and 2793-3010m respectively. The inhouse analysis used a salinity of 6500 ppm from 2650-3010m. Using all available information (mud log shows, resistivity and porosity profiles) we believe the apparent connate water salinities are constant from 2650-3010m and is probably 6500 ppm.

(e) Below 2793m, both analyses used similar salinities for connate water. The inhouse analysis indicates the presence of fluid contacts at 2948.75m and 2999.5m whereas Global does not show any of these contacts to be present. Further, a hydrocarbon sand with a fluid-water contact, over the interval 2995-3000m, identified by the inhouse analysis is absent in the Global analysis.



Sw = Water Saturation
PHIE = Effective Porosity

Figure 4 Whiting-1 'Global' Analysis

Porosities

Overall, Global porosities are between 1-3 porosity units higher than the inhouse analysis. However, Global porosities in gas bearing sands are consistently higher (up to 6 porosity units) than, the adjacent (or underlying clean water bearing sands (Fig. 3). This is most pronounced over the interval 1250-1850m. We believe that it is highly unlikely that these gas sands have better porosities than the surrounding water sands. The inhouse analysis calculates comparable porosities in both gas and water sands.

Hydrocarbon Type

(i) Oil zones are present over the intervals 1735-1739m and 1908-1911m. Both these zones have been identified by Global as being gas bearing.

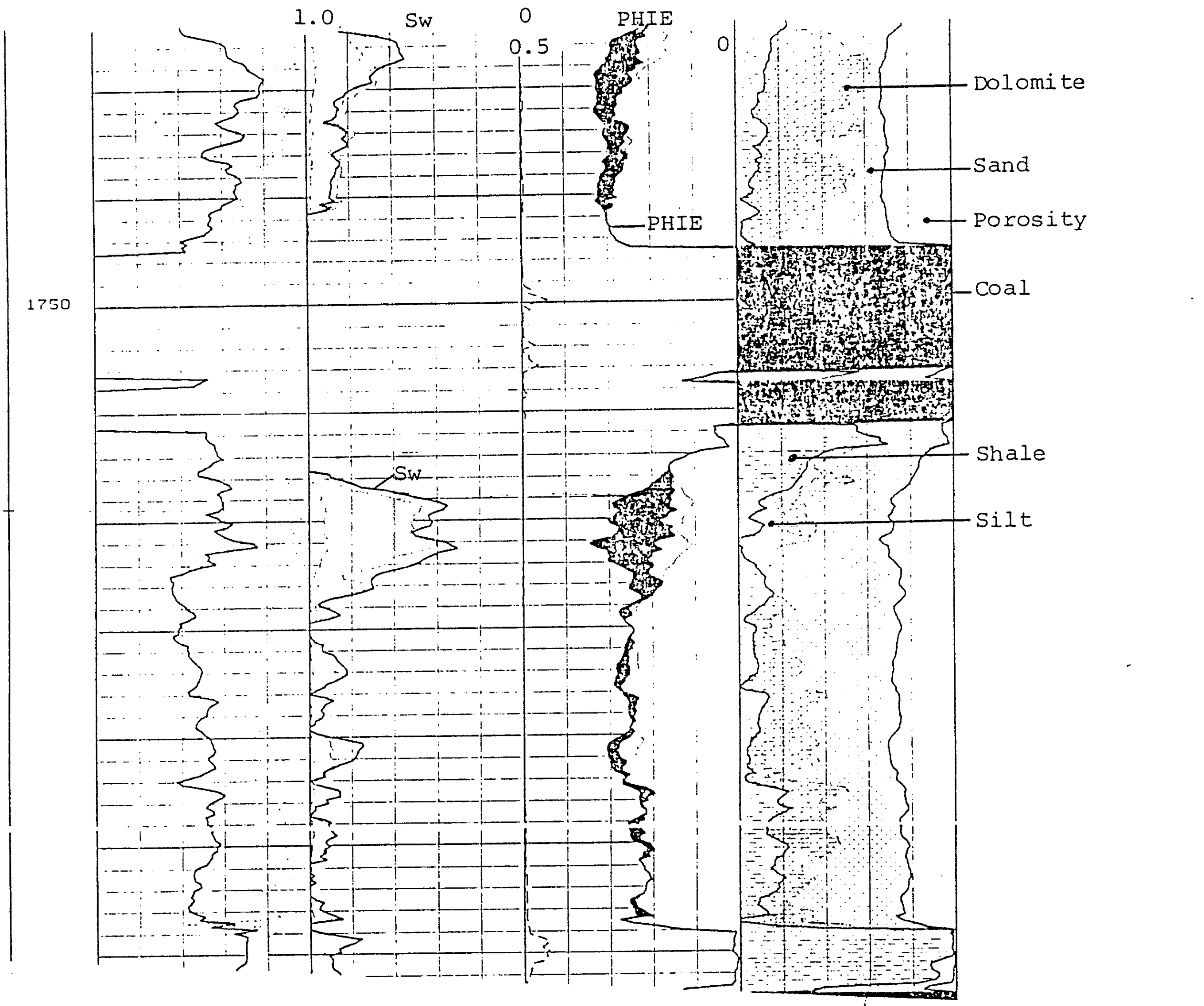
(ii) The hydrocarbon content of the sands in the intervals 2297-2302m, 2400-2477m, 2685-2702m appear to have been correctly identified by Global. However, all other hydrocarbon zones below 2000m, appear to have been identified by Global as having oil. We believe this is incorrect, and in fact most of them are gas bearing.

Lithology

Most of the sands have been described by Global as having a dolomitic component and in fact some sands have been interpreted to have a large proportion of dolomite matrix (Fig. 5). We believe this interpretation is incorrect and in fact, except for a few sands, most of the sands are dolomite free (Fig. 6).

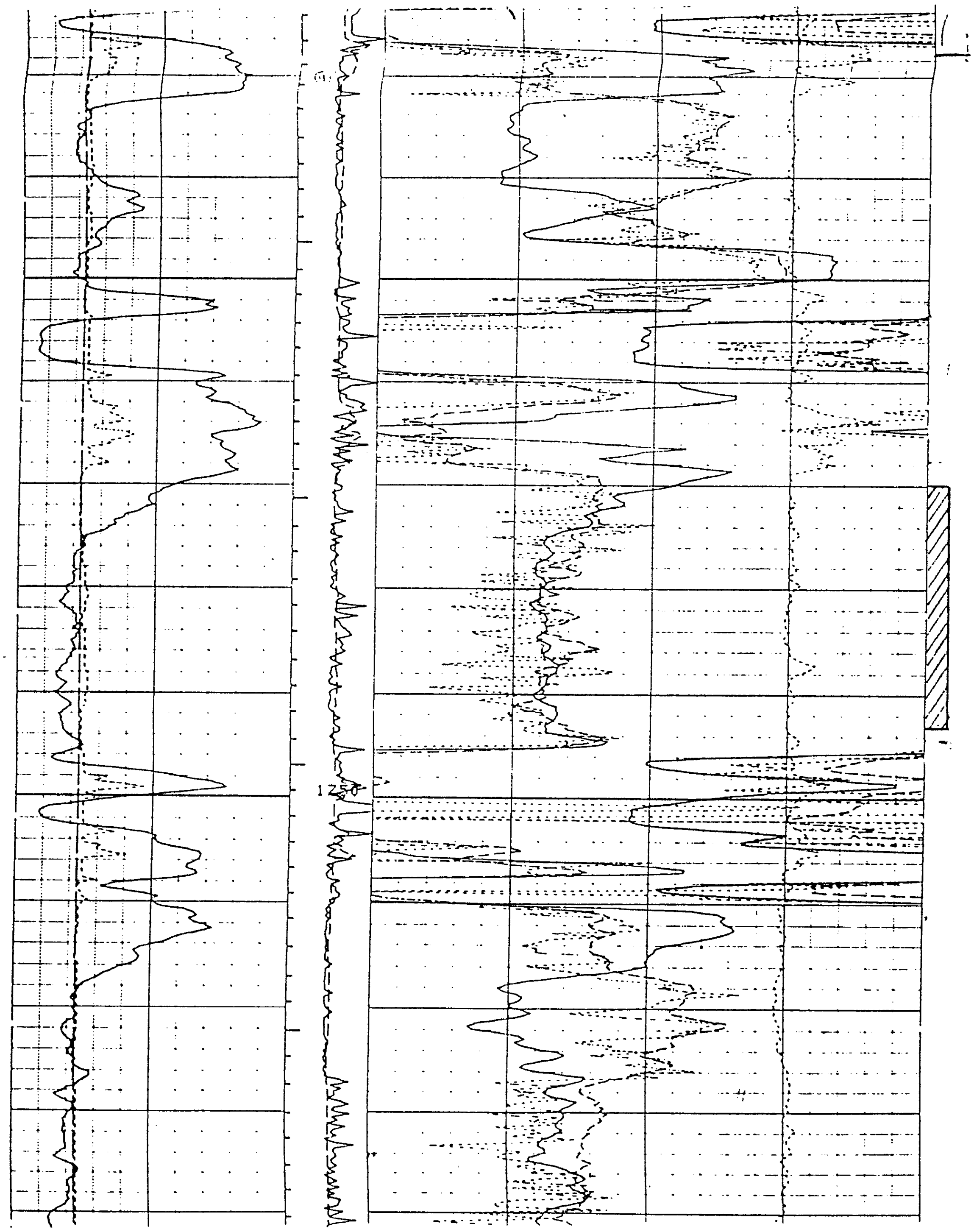
Recommendations

We recommend that Schlumberger look at some of the obvious interpretation errors that we have identified and refine the Global analysis. However, it must be emphasised that the aim of the refinement should not be to produce an analysis that is identical to the inhouse analysis. We would also like Schlumberger to provide a written report with the analysis.



Sw = Water Saturation
PHIE = Effective Porosity

Figure 5 Whiting-1 'Global' Analysis



Clean non-dolomiti sand

Figure 6 Whiting-1 LDL-CNL-GR Log

APPENDIX 5

APPENDIX 5

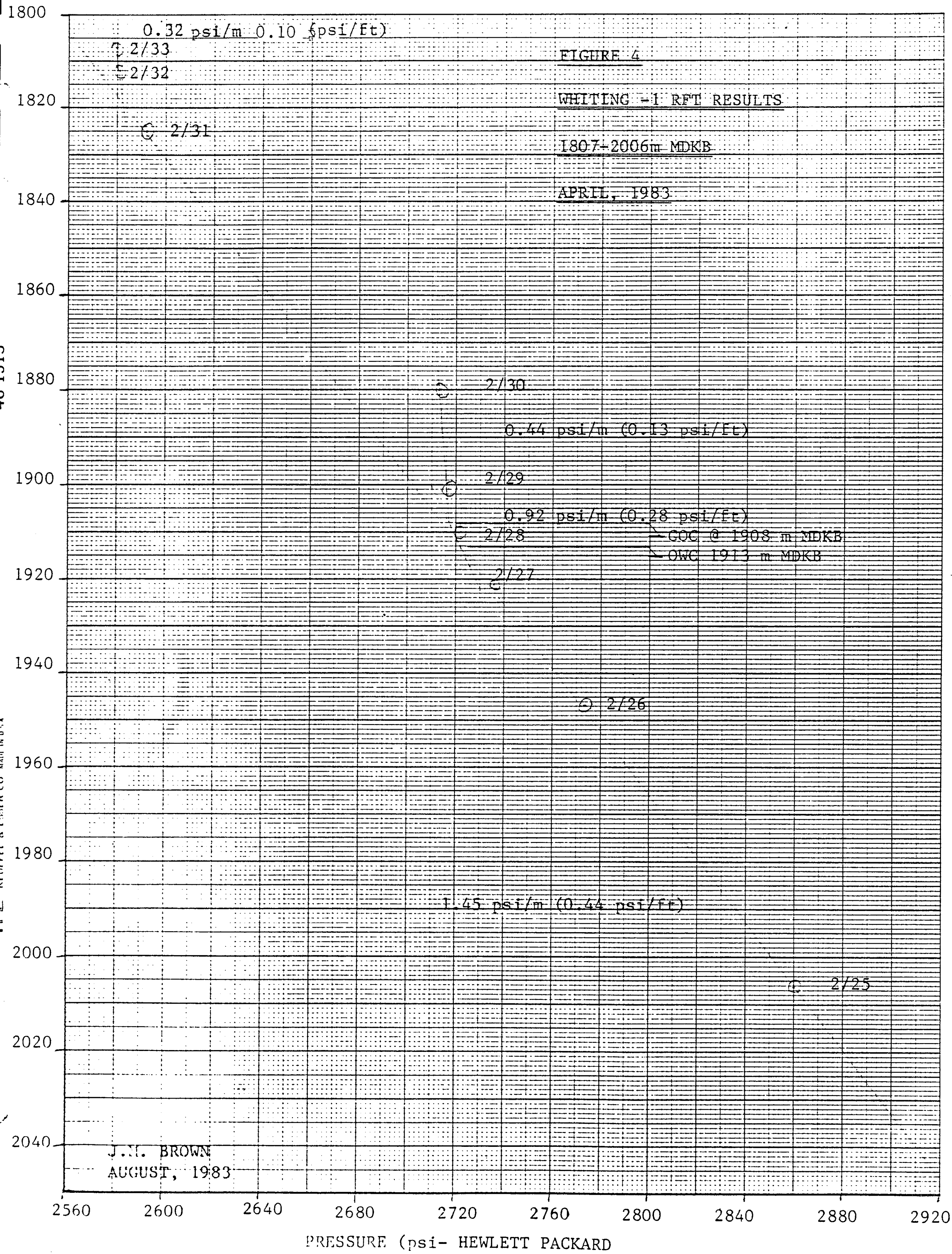


FIGURE 4
WHITING -1 RFT RESULTS
1807-2006m MDKB
APRIL, 1983
0.32 psi/m 0.10 (psi/ft)
2/33
2/32
2/31
2/30
0.44 psi/m (0.13 psi/ft)
2/29
0.92 psi/m (0.28 psi/ft)
2/28
GOC @ 1908 m MDKB
OWC 1913 m MDKB
2/27
2/26
1.45 psi/m (0.44 psi/ft)
2/25
J.M. BROWN
AUGUST, 1983
1800
1820
1840
1860
1880
1900
1920
1940
1960
1980
2000
2020
2040
2560
2600
2640
2680
2720
2760
2800
2840
2880
2920
PRESSURE (psi- HEWLETT PACKARD

APPENDIX 5

WIRELINE TEST REPORT

WHITING-1 RFT TEST PROGRAM

J.M. Brown
August 1983

WHITING-1 RFT TESTS

Summary

A series of RFT tests were conducted on the Whiting-1 exploration well over the period April 9 to April 12, 1983. The tests were carried out after drilling 12-1/4 inch hole to TD at 3011 m. Results from this RFT program confirm the presence of three main hydrocarbon zones with good sample recoveries in two of these zones.

The first major accumulation was a 15 m gross oil interval located at the P. Asperopolus from 1481 m MDKB to the OWC at 1496 m MDKB. To further evaluate this zone, a production test was later carried out and the well was perforated over the interval 1483-1486 m MDKB.

The second main hydrocarbon zone consists of four gas sands at the Upper L. Balmei from 2403 m MDKB to the GWC at 2477 m MDKB with a gross gas column of 74 m. Based on RFT pressure data these four gas sands are interpreted to be in communication.

The third main hydrocarbon zone consists of two sands at the Top of the Upper L. Balmei from 1879 m MDKB to the GOC at 1908 m MDKB and from the GOC to the OWC at 1913 m MDKB. Gross gas and oil vertical thickness were 29 m and 5 m respectively. These two sands have been shown to be in communication from RFT pretest data.

No other significant hydrocarbon columns were confirmed by RFT pretest data.

Results and Discussion

A total of six RFT runs were conducted over the interval 1401-2987.5 m MDKB as follows:

Run Number	Pretests	Interval (m MDKB)
1	4	2987.5-2688.0
2	39	2537.0-1401.0
3	1	1482.0
4	1	2801.5
5	10	2910.0-2418.0
6	1	1401.0

Of the 56 pretests attempted, 55 were successful in providing formation pressures and one pretest (with seat at 2510 m MDKB) was tight. Gross errors were encountered with the Schlumberger strain gauge reading on seat numbers 2/6 to 6/56 inclusive and all strain gauge data during and after seat no 2/6 are considered invalid. Pressure data from the Hewlett-Packard gauge are considered valid and were used for all subsequent analyses. Run numbers 3 and 5 were sample runs consisting of a 22.7 litre (6 gallon) chamber, and a 3.8 litre (1 gallon) chamber set at 1482.0 m and 2418.0 m respectively. Run 3 recovered oil while run 5 recovered gas samples. Run numbers 4 and 6 were also sample runs, but a 10.4 litre (2-3/4 gallon) chamber was used in place of the 3.8 litre chamber. Both runs 4 and 6 taken at 2801.5 m MDKB and 1401 m MDKB respectively recovered water and small amounts of gas. Full details of pretest and sample data are given in Tables 1 and 2.

The main results which are illustrated in Figures 1, 2, 3 and 4 are as follows:

1. The presence of a 15 m gross vertical oil column identified on logs was confirmed. The oil column located at the P. Asperopolus extends from 1481 m MDKB to the OWC at 1496 m. Net vertical thickness is 10 m and an average oil gradient of 0.87 psi/m (0.27 psi/ft) was measured. Sample run number 3 (1482 m MDKB) recovered 16.9 litres of 58.5° API oil with a GOR of 144 SCF/STB. Details of pressure data are plotted in the attached Figure 2.

2. The presence of a gas accumulation from 2403 m-2477 m MDKB with a gross vertical closure of 74 m at the L. Balmei was confirmed. Average pressure gradient over the above interval was 0.32 psi/m (0.10 psi/ft). The logs indicate this interval consists of four discrete sand units and pretest data indicated these sands to be in hydraulic communication with each other. Sample run No. 5 (@ 2418 m MDKB) recovered 124.1 cu ft gas and 1.7 litres of filtrate and mud. A condensate to wet gas ratio of 21.8 STB/million SCF (53°API) was measured. Details of pressure data are plotted in the attached Figure 3.

3. The presence of a 29 m gross vertical gas column (1879-1908 m MDKB) with a measured gas gradient of 0.44 psi/m (0.13 psi/ft) overlying a 5m gross vertical oil column (1908-1913 m MDKB) with a measured oil gradient of 0.92 psi/m (0.28 psi/ft) was confirmed by pretest data. These two hydrocarbon columns have a common GOC at 1908 m MDKB confirmed by two pressure seats taken within the gas column and one pressure seat taken in the oil column. These pressure data are plotted in the attached Figure 4.

4. As shown in Figure 1, there is a discontinuity in the water gradient at around 2520 m MDKB. Below this depth, the average water gradient of 1.78 psi/m was measured. This was considerably higher than the Gippsland Basin average of 1.42 psi/m. Above 2520 m MDKB the measured pressure gradient of 1.45 to 1.42 psi/m was similar to the Gippsland Basin average 1.42 psi/m.

(4444f)

TABLE 1

RFT PRETEST PRESSURES - WHITING 1

SERVICE COMPANY: Schlumberger RUN NO: 1, 2 DATE: 09/4/83 OBSERVERS: A.Lindsay, P.Priest, S.T.Koh

SEAT NO.	DEPTH (m)	DEPTH (SS) (m)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP psi	IHP ppg	FM. PRESS psi	FM. PRESS ppg	FHP psi	FHP ppg	TEST RESULT
1/1	2987.5	2966.5	PT	HP	Y	A	4995.7	9.78	4879.6	9.61	4997.7	9.78	Valid, Super-charged.
				SCH	Y	G			4861				
1/2	2871	2850	PT	HP	Y	A	4808.7	9.79	4243.0	8.70	4808.8	9.79	Valid
				SCH	Y	G	4786		4221		4785		
1/3	2801.5	2780.5	PT	HP	Y	A	4698.0	9.80	4150.2	8.72	4697.8	9.81	Valid
				SCH	Y	G	4675		4128		4676		
1/4	2688	2667	PT	HP	Y	A	4513.2	9.81	3908.5	8.56	4514.3	9.82	Valid
				SCH	Y	G	4492		3887		4493		
2/5	2537	2516	PT	HP	Y	A	4263.0	9.81	3645.6	8.46	4263.2	9.82	Valid
				SCH	Y	G	4241		3625		4241		
2/6	2510	2489	PT	HP	Y	A	4219.7	9.82	-	-	4220.0	9.83	Tight
				SCH	Y	G	4062		-		4071		
2/7	2481.7	2460.7	PT	HP	Y	A	4171.0	9.82	3550.9	8.42	4170.8	9.83	Valid
				SCH	Y	G	4058		3449		4060		

Note: From 2/6 had problems with strain gauge, hence errors in strain gauge reading.

1. Pressure Test = PT
   Sample & Pressure = SPT

2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard

3. Yes = Y
   No = N

4. PSIA = A
   PSIG = G

(4444f)

[redacted]

RFT PRETEST PRESSURES - WHITING 1

SERVICE COMPANY: Schlumberger   RUN NO: 2   DATE: 09/04/83   OBSERVERS: A.Lindsay, P.Priest, S.T.Koh

SEAT NO.	DEPTH (m)	DEPTH (SS) (m)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP		FM. PRESS		FHP		TEST RESULT
							psi	ppg	psi	ppg	psi	ppg	
2/8	2467	2446	PT	HP SCH	Y Y	A G	4147.5 4034	9.82	3542.3 3432	8.45	4149.1 4035	9.84	Valid
2/9	2451	2430	PT	HP SCH	Y Y	A G	4122.8 4009	9.82	3537.4 3426	8.50	4124.4 4009	9.83	Valid
2/10	2441.7	2420.7	PT	HP SCH	Y Y	A G	4110.1 3993	9.83	3536.6 3423	8.53	4111.1 3994	9.83	Valid
2/11	2428	2407	PT	HP SCH	Y Y	A G	4086.7 3973	9.83	3618.0 3505	8.77	4087.9 3973	9.85	Valid
2/12	2418.0	2397.0	PT	HP SCH	Y Y	A G	4070.6 3956	9.83	3526.7 3412	8.59	4071.7 3956	9.85	Valid
2/13	2403.6	2382.6	PT	HP SCH	Y Y	A G	4048.7 3934	9.84	3536.2 3422	8.66	4048.2 3933	9.85	Valid
2/14	2354	2333	PT	HP SCH	Y Y	A G	3966.2 3851	9.84	3421.4 3308	8.56	3966.1 3851	9.84	Valid

1. Pressure Test = PT
   Sample & Pressure = SPT

2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard

3. Yes = Y
   No = N

4. PSIA = A
   PSIG = G

(4444f)

TABLE 1 (cont.)

RFT PRETEST PRESSURES - WHITING 1

SERVICE COMPANY: Schlumberger   RUN NO: 2   DATE: 09/4/83   OBSERVERS: A.Lindsay, P.Priest, S.T.Koh

SEAT NO.	DEPTH (m)	DEPTH (SS) (m)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP psi	IHP ppg	FM. PRESS psi	FM. PRESS ppg	FHP psi	FHP ppg	TEST RESULT
2/15	2346.5	2325.5	PT	HP	Y	A	3952.8	9.83	3419.3	8.58	3952.6	9.83	Valid
				SCH	Y	G	3838		3306		3837		
2/16	2300	2279	PT	HP	Y	A	3876.4	9.84	3322.6	8.51	3876.9	9.86	Valid
				SCH	Y	G	3762		3209		3762		
2/17	2259	2238	PT	HP	Y	A	3807.1	9.84	3231.8	8.43	3807.3	9.84	Valid
				SCH	Y	G	3694		3118		3693		
2/18	2238	2217	PT	HP	Y	A	3770.6	9.84	3204.4	8.43	3770.6	9.84	Valid
				SCH	Y	G	3656		3091		3656		
2/19	2203.2	2182.2	PT	HP	Y	A	3710.3	9.83	3168.7	8.47	3710.3	9.83	Valid
				SCH	Y	G	3594		3056		3594		
2/20	2193.0	2172.0	PT	HP	Y	A	3692.6	9.83	3167.0	8.51	3691.9	9.84	Valid
				SCH	Y	G	3577		3051		3576		
2/21	2157.5	2136.5	PT	HP	Y	A	3636.0	9.84	3091.4	8.44	3635.9	9.84	Valid
				SCH	Y	G	3520		2978				

1. Pressure Test = PT
   Sample & Pressure = SPT
2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard
3. Yes = Y
   No = N
4. PSIA = A
   PSIG = G

(4444f)

[redacted]

RFT PRETEST PRESSURES - WHITING 1

SERVICE COMPANY: Schlumberger   RUN NO: 2   DATE: 10/4/83   OBSERVERS: A.Lindsay, P.Priest, S.T.Koh

SEAT NO.	DEPTH (m)	DEPTH (SS) (m)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP psi	IHP ppg	FM. PRESS psi	FM. PRESS ppg	FHP psi	FHP ppg	TEST RESULT
2/22	2147.2	2126.2	PT	HP SCH	Y Y	A G	3616.8 3503	9.83	3081.1 2968	8.45	3617.6 3502	9.85	Valid
2/23	2124.2	2103.2	PT	HP SCH	Y Y	A G	3580.1 3466	9.84	3053.1 2940	8.47	3580.0 3466	9.84	Valid
2/24	2115.4	2094.5	PT	HP SCH	Y Y	A G	3564.8 3451	9.84	3051.9 2939	8.50	3564.5 3450	9.84	Valid
2/25	2006.0	1985.0	PT	HP SCH	Y Y	A G	3378.3 3264	9.83	2860.2 2749	8.85	3378.0 3262	9.84	Valid
2/26	1946.0	1925.0	PT	HP SCH	Y Y	A G	3274.8 3161	9.82	2773.4 2660	8.40	3274.8 3160	9.82	Valid
2/27	1921.0	1900.0	PT	HP SCH	Y Y	A G	3232.0 3115	9.82	2736.1 2621	8.40	3231.2 3114	9.84	Valid
2/28	1910.0	1889.0	PT	HP SCH	Y Y	A G	3219.1 3103	9.83	2721.2 2607	8.40	3219.1 3102	9.83	Valid

1. Pressure Test = PT
   Sample & Pressure = SPT

2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard

3. Yes = Y
   No = N

4. PSIA = A
   PSIG = G

(4444f)

TABLE 1 (cont.)

RFT PRETEST PRESSURES - WHITING 1

SERVICE COMPANY: Schlumberger   RUN NO: 2   DATE: 10/4/83   OBSERVERS: A.Lindsay, P.Priest, S.T.Koh

SEAT NO.	DEPTH (m)	DEPTH (SS) (m)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP psi	IHP ppg	FM. PRESS psi	FM. PRESS ppg	FHP psi	FHP ppg	TEST RESULT
2/29	1901.0	1880.0	PT	HP	Y	A	3202.7	9.83	2717.0	8.43	3202.9	9.83	Valid
				SCH	Y	G	3087		2603		3086		
2/30	1880.0	1859.0	PT	HP	Y	A	3166.2	9.83	2713.4	8.51	3165.9	9.83	Valid
				SCH	Y	G	3051		2599		3048		
2/31	1825.0	1804.0	PT	HP	Y	A	3071.4	9.82	2591.9	8.37	3070.9	9.82	Valid
				SCH	Y	G	2955		2477		2953		
2/32	1812.5	1791.5	PT	HP	Y	A	3048.2	9.81	2581.2	8.40	3047.8	9.81	Valid
				SCH	Y	G	2931		2466		2930		
2/33	1807.0	1786.0	PT	HP	Y	A	3044.3	9.83	2580.8	8.42	3043.8	9.83	Valid
				SCH	Y	G	2984		2458		2917		
2/34	1771.0	1750.0	PT	HP	Y	A	2980.7	9.82	2517.1	8.38	2980.6	9.82	Valid
				SCH	Y	G	2854		2392		2852		
2/35	1745	1724	PT	HP	Y	A	2935.2	9.81	2477.8	8.37	2934.8	9.84	Valid
				SCH	Y	G	2807		2352		2806		

1. Pressure Test = PT
   Sample & Pressure = SPT

2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard

3. Yes = Y
   No = N

4. PSIA = A
   PSIG = G

(4444f)

TABLE 1 (cont.)

RFT PRETEST PRESSURES - WHITING 1

SERVICE COMPANY: Schlumberger RUN NO: 2 DATE: 10/04/83 OBSERVERS: A.Lindsay, P.Priest, S.T.Koh

SEAT NO.	DEPTH (m)	DEPTH (SS) (m)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP psi	IHP ppg	FM. PRESS psi	FM. PRESS ppg	FHP psi	FHP ppg	TEST RESULT
2/36	1718	1697	PT	HP	Y	A	2891.7	9.82	2451.8	8.42	2891.6	9.82	Valid
				SCH	Y	G	2767		2329		2766		
2/37	1659	1638	PT	HP	Y	A	2790.0	9.81	2357.6	8.38	2789.9	9.81	Valid
				SCH	Y	G	2664		2233		2664		
2/38	1575	1554	PT	HP	Y	A	2645.5	9.79	2227.0	8.34	2644.9	9.82	Valid
				SCH	Y	G	2518		2102		2516		
2/39	1500	1479	PT	HP	Y	A	2516.5	9.78	2124.4	8.36	2516.1	9.81	Valid
				SCH	Y	G	2393		2003		2392		
2/40	1493.5	1472.5	PT	HP	Y	A	2504.1	9.77	2115.4	8.36	2503.6	9.80	Valid
				SCH	Y	G	2381		1995		2379		
2/41	1486	1465	PT	HP	Y	A	2494.9	9.78	2109.0	8.38	2494.5	9.82	Valid
				SCH	Y	G	2370		1987		2369		
2/42	1482	1461	PT	HP	Y	A	2487.3	9.78	2105.1	8.39	2487.5	9.78	Valid
				SCH	Y	G	2362		1983		2361		

Note: Still had Strain Gauge problems to 2/43.

1. Pressure Test = PT
   Sample & Pressure = SPT
2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard
3. Yes = Y
   No = N
4. PSIA = A
   PSIG = G

(4444f)

TABLE 1 (cont.)
RFT PRETEST PRESSURES - WHITING 1

SERVICE COMPANY: Schlumberger RUN NO: 2, 3, 4, 5 DATE: 10-11/4/83 OBSERVERS: A.Lindsay, P.Priest, S.T.Koh

SEAT NO.	DEPTH (m)	DEPTH (SS) (m)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP		FM. PRESS		FHP		TEST RESULT
							psi	ppg	psi	ppg	psi	ppg	
2/43	1401	1380	PT	HP SCH	Y Y	A G	2349.0 2224	9.77	1987.7 1868	8.38	2349.0 2222	9.77	Valid
3/44	1482	1461.0	SPT	HP SCH	Y Y	A G	2525.7 2506	9.93	2105.4 2079	8.39	2524.1 2504	9.92	Valid
4/45	2801.5	2780.5	SPT	HP SCH	Y Y	A G	4721.5 4700	9.85	4151.3 4131	8.73	4716.3 4690	9.84	Valid
5/46	2910.0	2889.0	PT	HP SCH	Y Y	A G	4888.5 4869	9.82	4311.2 4293	8.73	4887.2 4868	9.82	Valid
5/47	2836	2815	PT	HP SCH	Y Y	A G	4764.7 4748	9.82	4261.0 4245	8.85	4764.8 4747	9.82	Valid, Super-charged
5/48	2785	2764	PT	HP SCH	Y Y	A G	4683.8 4667	9.83	4140.1 4124	8.76	4684.4 4667	9.84	Valid
5/49	2701	2680	PT	HP SCH	Y Y	A G	4548.8 4532	9.83	3937.7 3922	8.59	4549.2 4532	9.85	Valid

Note: No Problems with Strain Gauge from 3/44.

1. Pressure Test = PT
   Sample & Pressure = SPT

2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard

3. Yes = Y
   No = N

4. PSIA = A
   PSIG = G

(4444f)

TABLE 1 (cont.)

RFT PRETEST PRESSURES - WHITING 1

SERVICE COMPANY: Schlumberger RUN NO: 5, 6 DATE: 11-12/4/83 OBSERVERS: A.Lindsay, P.Priest, S.T.Koh

SEAT NO.	DEPTH (m)	DEPTH (SS) (m)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP		FM. PRESS		FHP		TEST RESULT
							psi	ppg	psi	ppg	psi	ppg	
5/50	2623.5	2602.5	PT	HP SCH	Y Y	A G	4429.4 4405	9.86	3970.3 3943	8.92	4428.3 4404	9.87	Valid, Super-charged
5/51	2603	2582	PT	HP SCH	Y Y	A G	4393.6 4372	9.86	3730.5 3712	8.45	4393.5 4372	9.87	Valid
5/52	2537	2516	PT	HP SCH	Y Y	A G	4282.8 4264	9.86	3647.6 3630	8.48	4285.6 4266	9.88	Valid
5/53	2494	2473	PT	HP SCH	Y Y	A G	4212.8 4194	9.87	3569.7 3552	8.44	4213.5 4193	9.88	Valid
5/54	2428	2407	PT	HP SCH	Y Y	A G	4102.6 4085	9.87	3637.8 3621	8.84	4102.3 4085	9.88	Valid
5/55	2418	2397	SPT	HP SCH	Y Y	A G	4083.7 4068	9.86	3524.7 3510	8.60	4085.7 4067	9.88	Valid
6/56	1401	1380	SPT	HP SCH	Y Y	A G	2352.0 2334	9.78	1988.7 1969	8.43	2350.6 2332	9.77	Valid

1. Pressure Test = PT
   Sample & Pressure = SPT

2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard

3. Yes = Y
   No = N

4. PSIA = A
   PSIG = G

(4444f)

TABLE 2

RFT SAMPLE TEST REPORT - WHITING 1

OBSERVER: A. Lindsay DATE: 11-4-83 RUN NO: 3

	Chamber 1		Chamber 2	
SEAT NO.	44		44	
DEPTH	1482.0	m	1482.0	m
	CHAMBER 1 (22.7 lit.)		CHAMBER 2 (3.8 lit.)	
A. RECORDING TIMES				
Tool Set	03-35-00	hrs		
Pretest Open	03-35-00	hrs		
Time Open	03-41-00	hrs	03-56-00	hrs
Chamber Open	03-41-00	hrs	03-56-30	hrs
Chamber Full	03-49-00	hrs	03-57-00	hrs
Fill Time	8-00	min	1-00	min
Start Build up	03-49-00	hrs	03-57-00	hrs
Finish Build up	03-55-00	hrs	04-00-00	hrs
Build Up Time	6-00	min	3-00	min
Seal Chamber	03-55-00	hrs	04-00-00	hrs
Tool Retract			04-01-00	hrs
Total Time		min	26-00	min
B. SAMPLE PRESSURES	psia		psia	
IHP	2525.7			
ISIP	2105.4		2105.0	
Initial Flowing Press.	2003.2		1987.8	
Final Flowing Press.	1992.1		1984.0	
Sampling Press. Range	11.1		3.8	
FSIP	2105.0		2105.0	
FHP			2524.1	
Form.Press.(Horner)				
C. TEMPERATURE				
Depth Tool Reached	1510	m	1510	m
Max.Rec. Temp.	75	oC	75	oC
Time Circ. Stopped	10/04/83 @ 19.30	hrs	10/04/83 @ 19.30	hrs
Time since Circ.	8.5	hrs	8.5	hrs
Form. Temp.(Horner)		oC		oC
D. SAMPLE RECOVERY				
Surface Pressure	320	psia		psia
Amt Gas	15.3	cu ft		lit.
Amt Oil	16.85	lit.		lit.
Amt Water		lit.		lit.
Amt Others - Mud	0.65	lit.		lit.
E. SAMPLE PROPERTIES				
Gas Composition				
C1	59,200	ppm		ppm
C2	3,750	ppm		ppm
C3	1,700	ppm		ppm
1C4/nC4	240	ppm		ppm
C5	40	ppm		ppm
C6+	40	ppm		ppm
CO2/H2S	0.4/tr	ppm		ppm
Oil Properties	58.5°API @ 6°C			
Colour	Dark red brown			
Fluorescence	Bright blue white			
GOR cf/bbl	144 Scf/Stb			
Water Properties				
Resistivity	0.33 @ 20	oC		oC
NaCl Equivalent	20,000	ppm		ppm
Cl-titrated	8,000	ppm		ppm
pH/Nitrates	8.5/66.5	ppm		ppm
Est. Water Type	Mud			
Mud Properties (In Hole)				
Resistivity	0.192 @ 34	oC	0.192 @ 34	oC
NaCl Equivalent	28,000	ppm	28,000	ppm
Cl-titrated	17,800	ppm	17,800	ppm
pH/Nitrates		ppm		ppm
Calibration				
Hewlett Packard Gauge No.	876			
Calibration Press.		psig		psig
Calibration Temp.		oC		oC
Mud Weight	9.7	ppg	9.7	ppg
Calc.Hydrostatic	9.93	psig	9.92	psig
RFT Chokesize	0.030		0.030	
REMARKS:	Lower Chamber Opened Small leak on 6 gallon transport valve		Upper Chamber Sealed for analysis RFS AD 1116	

(4444f)

TABLE 2 (cont.)

RFT SAMPLE TEST REPORT - WHITING 1

OBSERVER: A. Lindsay	DATE: 11-04-83		RUN NO: 4	
SEAT NO.	45		45	
DEPTH	2801.5	m	2801.5	m
	CHAMBER 1 (22.7	lit.)	CHAMBER 2 (10.4	lit.)
A. RECORDING TIMES				
Tool Set	08-43-00	hrs		
Pretest Open	08-43-00	hrs		
Time Open	08-48-00	hrs		
Chamber Open	08-48-00	hrs	10-27-00	hrs
Chamber Full	10-13-00	hrs	11-03-00	hrs
Fill Time	85-00	min	36-00	min
Start Build up	10-13-00	hrs	11-03-00	hrs
Finish Build up	10-27-00	hrs	11-07-00	hrs
Build Up Time	14-00	min	4-00	min
Seal Chamber	10-13-00	hrs	11-03-00	hrs
Tool Retract		min	11-07-00	hrs
Total Time	90-00	min	54-00	min
B. SAMPLE PRESSURES	psia		psia	
IHP	4721.5			
ISIP	4151.3		4151.2	
Initial Flowing Press.	111.8		529.6	
Final Flowing Press.	2173.7		3821.0	
Sampling Press. Range	2061.9		3291.4	
FSIP	4151.2		4150.3	
FHP			4716.3	
Form.Press.(Horner)				
C. TEMPERATURE				
Depth Tool Reached	2810	m	2810	m
Max.Rec. Temp.	110	°C	110	°C
Time Circ. Stopped	10/04/83 @ 19.30	hrs	10/04/83 @ 19.30	hrs
Time since Circ.	13.5	hrs		hrs
Form. Temp.(Horner)		°C		°C
D. SAMPLE RECOVERY				
Surface Pressure	0	psig	0	psig
Amt Gas	0.66	cu ft	0.38	cu ft
Amt Oil		lit.		lit.
Amt Water/Filtrate	19.50	lit.	9.00	lit.
Amt Others		lit.		lit.
E. SAMPLE PROPERTIES				
Gas Composition				
C1	55,750	ppm	99,306	ppm
C2	47,000	ppm	14,100	ppm
C3	38,360	ppm	11,081	ppm
1C4/nC4	10,680	ppm	3,944	ppm
C5	1,600	ppm	1,318	ppm
C6+	80	ppm	288	ppm
CO2/H2S	Nil/Nil	ppm	4%/0	ppm
Oil Properties	°API @ °C			
Colour				
Fluorescence				
GOR cf/bbl				
Water Properties				
Resistivity	0.133 @ 22	°C	0.122 @ 24	°C
NaCl Equivalent		ppm	50,000	ppm
Cl-titrated	15,000	ppm	15,500	ppm
pH/Nitrates	8/22	ppm	8/30	ppm
Est. Water Type	ph = 8		ph = 8	
Mud Properties				
Resistivity	0.192 @ 34	°C	0.192 @ 34	°C
NaCl Equivalent	28,000	ppm	28,000	ppm
Cl-titrated	17,800	ppm	17,800	ppm
pH/Nitrates		ppm		ppm
Calibration				
Hewlett Packard Gauge No.	876			
Calibration Press.		psig		psig
Calibration Temp.		°C		°C
Mud Weight	9.7	ppg	9.7	ppg
Calc.Hydrostatic	9.85	psig	9.85	psig
RFT Chokesize	0.030		0.020	
REMARKS:	Lower chamber opened. Leak from transport valve		Upper Chamber opened	

(4444f)

TABLE 2 (cont.)

RFT SAMPLE TEST REPORT - WHITING 1

OBSERVER: A. Lindsay	DATE: 12-4-83		RUN NO: 5	
SEAT NO.	55		55	
DEPTH	2418.0	m	2418.0	m
	CHAMBER 1 (22.7	lit.)	CHAMBER 2 (3.8	lit.)
A. RECORDING TIMES				
Tool Set	00-22-00	hrs		
Pretest Open	00-22-00	hrs		
Time Open	00-30-00	hrs	00-42-00	hrs
Chamber Open	00-30-00	hrs	00-42-00	hrs
Chamber Full	00-35-00	hrs	00-43-00	hrs
Fill Time	5-00	min	1-00	min
Start Build up	00-35-00	hrs	00-43-00	hrs
Finish Build up	00-41-00	hrs	00-46-00	hrs
Build Up Time	6-00	min	3-00	min
Seal Chamber	00-41-00	hrs	00-46-00	hrs
Tool Retract			00-47-00	hrs
Total Time	19-00	min	6-00	min
B. SAMPLE PRESSURES	psia		psia	
IHP	4083.7			
ISIP	3524.7		3525.0	
Initial Flowing Press.	3407.9		3325.0	
Final Flowing Press.	3366.0		3416.0	
Sampling Press. Range	41.9		91.0	
FSIP	3525.0		3525.4	
FHP			4085.7	
Form.Press.(Horner)				
C. TEMPERATURE				
Depth Tool Reached	2935	m	2935	m
Max.Rec. Temp.	116	°C	116	°C
Time Circ. Stopped	10/04/83 @ 19.30	hrs	10/04/83 @ 19.30	hrs
Time since Circ.	29.0	hrs	29.0	hrs
Form. Temp.(Horner)		°C		°C
D. SAMPLE RECOVERY				
Surface Pressure	1,800	psia		psia
Amt Gas	124.1	cu ft		lit.
Amt Oil	Nil	lit.		lit.
Amt Water	1.30	lit.		lit.
Amt Others - Mud	0.42	lit.		lit.
E. SAMPLE PROPERTIES				
Gas Composition				
C1	219,341	ppm		ppm
C2	19,155	ppm		ppm
C3	11,827	ppm		ppm
1C4/nC4	3,040	ppm		ppm
C5	599	ppm		ppm
C6+	77	ppm		ppm
CO_2/H_2S	0.3%/tr	ppm		ppm
Oil Properties	53 °API @ 16°C			
Colour	Colourless			
Fluorescence	Blue white			
GOR (Bbl condensate/mcf)	21.8			
Water Properties				
Resistivity	0.92 @ 19	°C		°C
NaCl Equivalent	7,000	ppm		ppm
Cl-titrated	3,500	ppm		ppm
pH/Nitrates	7.5/8	ppm		ppm
Est. Water Type/ph	ph = 7.5			
Mud Properties (In Hole)				
Resistivity	0.192 @ 34	°C	0.192 @ 34	°C
NaCl Equivalent	28,000	ppm	28,000	ppm
Cl-titrated	17,800	ppm	17,800	ppm
pH/Nitrates		ppm		ppm
Calibration Strain Gauge				
Hewlett Packard Gauge No.	876			
Calibration Press.		psig		psig
Calibration Temp.		°C		°C
Mud Weight	9.7	ppg	9.7	ppg
Calc.Hydrostatic	9.86	psig	9.86	psig
RFT Chokesize	0.030		0.030	
REMARKS:	Lower Chamber Opened		Upper Chamber Sealed preserved for analysis. RFS AD 1129	

(4444f)

TABLE 2 (cont.)

RFT SAMPLE TEST REPORT - WHITING 1

OBSERVER: A. Lindsay	DATE: 12-04-83		RUN NO: 6	
SEAT NO.	56		56	
DEPTH	1401	m	1401	m
	CHAMBER 1 (22.7	lit.)	CHAMBER 2 (10.4	lit.)
A. RECORDING TIMES				
Tool Set	19-03-00	hrs		
Pretest Open	19-03-00	hrs		
Time Open	19-07-00	hrs	19-19-00	hrs
Chamber Open	19-07-00	hrs	19-19-00	hrs
Chamber Full	19-14-00	hrs	19-22-00	hrs
Fill Time	7-00	min	3-00	min
Start Build up	19-14-00	hrs	19-22-00	hrs
Finish Build up	19-17-00	hrs	19-25-00	hrs
Build Up Time	3-00	min	3-00	min
Seal Chamber	19-17-00	hrs	19-25-00	hrs
Tool Retract		min	19-26-00	hrs
Total Time	14-00	min	9-00	min
B. SAMPLE PRESSURES	psia		psia	
IHP	2352.0			
ISIP	1988.7		1988.5	
Initial Flowing Press.	1973.0		1972.2	
Final Flowing Press.	1974.0		1974.2	
Sampling Press. Range	1.0		2.0	
FSIP	1988.5		1988.5	
FHP			2350.6	
Form.Press.(Horner)				
C. TEMPERATURE				
Depth Tool Reached	1503	m	1503	m
Max.Rec. Temp.	76	°C	76	°C
Time Circ. Stopped	12/04/83 @ 11.45	hrs	12/04/83 @ 11.45	hrs
Time since Circ.	7	hrs	7	hrs
Form. Temp.(Horner)		°C		°C
D. SAMPLE RECOVERY				
Surface Pressure	590	psig	200	psig
Amt Gas	0.85	cu ft	0.37	cu ft
Amt Oil		lit.		lit.
Amt Water/Filtrate	21.30	lit.	10.00	lit.
Amt Others	Medium brown grey		Medium brown grey	
E. SAMPLE PROPERTIES				
Gas Composition			Insufficient Gas Sample	
C1	54,450	ppm		ppm
C2	16,270	ppm		ppm
C3	14,520	ppm		ppm
1C4/nC4	2,910	ppm		ppm
C5	270	ppm		ppm
C6+	trace	ppm		ppm
CO2/H2S	2% / 50	ppm		ppm
Oil Properties	°API @ °C			
Colour				
Fluorescence				
GOR cf/bbl				
Water Properties				
Resistivity	0.493 @ 21	°C	0.718 @ 21	°C
NaCl Equivalent	13,000	ppm	8,500	ppm
Cl-titrated	6,000	ppm	4,300	ppm
pH/Nitrates	8.5/trace	ppm	7.5/Nil	ppm
Est. Water Type	Filtrate/Formation	H2O	Formation Water	
Mud Properties				
Resistivity	0.145 @ 17	°C	0.145 @ 17	°C
NaCl Equivalent	58,000	ppm	58,000	ppm
Cl-titrated	17,500	ppm	17,500	ppm
pH/Nitrates		ppm		ppm
Calibration				
Hewlett Packard Gauge No.	876			
Calibration Press.		psig		psig
Calibration Temp.		°C		°C
Mud Weight	9.7	ppg	9.7	ppg
Calc.Hydrostatic	9.86	ppg	9.86	ppg
RFT Chokesize	0.030		0.030	
REMARKS:	Lower chamber opened		Upper Chamber opened	

(4444f)

RFT PRETEST PRESSURES - WHITING 1

SERVICE COMPANY: Schlumberger   RUN NO: 1, 2   DATE: 09/4/83   OBSERVERS: A.Lindsay, P.Priest, S.T.Koh

SEAT NO.	DEPTH (m)	DEPTH (SS) (m)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP psi	IHP ppg	FM. PRESS psi	FM. PRESS ppg	FHP psi	FHP ppg	TEST RESULT
1/1	2987.5	2966.5	PT	HP	Y	A	4995.7	9.78	4879.6	9.61	4997.7	9.78	Valid, Super-charged.
				SCH	Y	G			4861				
1/2	2871	2850	PT	HP	Y	A	4808.7	9.79	4243.0	8.70	4808.8	9.79	Valid
				SCH	Y	G	4786		4221		4785		
1/3	2801.5	2780.5	PT	HP	Y	A	4698.0	9.80	4150.2	8.72	4697.8	9.81	Valid
				SCH	Y	G	4675		4128		4676		
1/4	2688	2667	PT	HP	Y	A	4513.2	9.81	3908.5	8.56	4514.3	9.82	Valid
				SCH	Y	G	4492		3887		4493		
2/5	2537	2516	PT	HP	Y	A	4263.0	9.81	3645.6	8.46	4263.2	9.82	Valid
				SCH	Y	G	4241		3625		4241		
2/6	2510	2489	PT	HP	Y	A	4219.7	9.82			4220.0	9.83	Tight
				SCH	Y	G	4062				4071		
2/7	2481.7	2460.7	PT	HP	Y	A	4171.0	9.82	3550.9	8.42	4170.8	9.83	Valid
				SCH	Y	G	4058		3449		4060		

Note: From 2/6 had problems with strain gauge, hence errors in strain gauge reading.

1. Pressure Test = PT
   Sample & Pressure = SPT

2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard

3. Yes = Y
   No = N

4. PSIA = A
   PSIG = G

<u>RFT PRETEST PRESSURES</u> - <u>WHITING 1</u>

<u>SERVICE COMPANY:</u> Schlumberger <u>RUN NO:</u> 2 <u>DATE:</u> 09/04/83 <u>OBSERVERS:</u> A.Lindsay, P.Priest, S.T.Koh

SEAT NO.	DEPTH (m)	DEPTH (SS) (m)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP		FM. PRESS		FHP		TEST RESULT
							psi	ppg	psi	ppg	psi	ppg	
2/8	2467	2446	PT	HP	Y	A	4147.5	9.82	3542.3	8.45	4149.1	9.84	Valid
				SCH	Y	G	4034		3432		4035		
2/9	2451	2430	PT	HP	Y	A	4122.8	9.82	3537.4	8.50	4124.4	9.83	Valid
				SCH	Y	G	4009		3426		4009		
2/10	2441.7	2420.7	PT	HP	Y	A	4110.1	9.83	3536.6	8.53	4111.1	9.83	Valid
				SCH	Y	G	3993		3423		3994		
2/11	2428	2407	PT	HP	Y	A	4086.7	9.83	3618.0	8.77	4087.9	9.85	Valid
				SCH	Y	G	3973		3505		3973		
2/12	2418.0	2397.0	PT	HP	Y	A	4070.6	9.83	3526.7	8.59	4071.7	9.85	Valid
				SCH	Y	G	3956		3412		3956		
2/13	2403.6	2382.6	PT	HP	Y	A	4048.7	9.84	3536.2	8.66	4048.2	9.85	Valid
				SCH	Y	G	3934		3422		3933		
2/14	2354	2333	PT	HP	Y	A	3966.2	9.84	3421.4	8.56	3966.1	9.84	Valid
				SCH	Y	G	3851		3308		3851		

1. Pressure Test = PT
   Sample & Pressure = SPT

2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard

3. Yes = Y
   No = N

4. PSIA = A
   PSIG = G

RFT PRETEST PRESSURES - WHITING 1

SERVICE COMPANY: Schlumberger   RUN NO: 2   DATE: 09/4/83   OBSERVERS: A.Lindsay, P.Priest, S.T.Koh

SEAT NO.	DEPTH (m)	DEPTH (SS) (m)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP		FM. PRESS		FHP		TEST RESULT
							psi	ppg	psi	ppg	psi	ppg	
2/15	2346.5	2325.5	PT	HP	Y	A	3952.8	9.83	3419.3	8.58	3952.6	9.83	Valid
				SCH	Y	G	3838		3306		3837		
2/16	2300	2279	PT	HP	Y	A	3876.4	9.84	3322.6	8.51	3876.9	9.86	Valid
				SCH	Y	G	3762		3209		3762		
2/17	2259	2238	PT	HP	Y	A	3807.1	9.84	3231.8	8.43	3807.3	9.84	Valid
				SCH	Y	G	3694		3118		3693		
2/18	2238	2217	PT	HP	Y	A	3770.6	9.84	3204.4	8.43	3770.6	9.84	Valid
				SCH	Y	G	3656		3091		3656		
2/19	2203.2	2182.2	PT	HP	Y	A	3710.3	9.83	3168.7	8.47	3710.3	9.83	Valid
				SCH	Y	G	3594		3056		3594		
2/20	2193.0	2172.0	PT	HP	Y	A	3692.6	9.83	3167.0	8.51	3691.9	9.84	Valid
				SCH	Y	G	3577		3051		3576		
2/21	2157.5	2136.5	PT	HP	Y	A	3636.0	9.84	3091.4	8.44	3635.9	9.84	Valid
				SCH	Y	G	3520		2978				

1. Pressure Test = PT
   Sample & Pressure = SPT
2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard
3. Yes = Y
   No = N
4. PSIA = A
   PSIG = G

RFT PRETEST PRESSURES - WHITING 1

SERVICE COMPANY: Schlumberger   RUN NO: 2   DATE: 10/4/83   OBSERVERS: A.Lindsay, P.Priest, S.T.Koh

SEAT NO.	DEPTH (m)	DEPTH (SS) (m)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP psi	IHP ppg	FM. PRESS psi	FM. PRESS ppg	FHP psi	FHP ppg	TEST RESULT
2/22	2147.2	2126.2	PT	HP	Y	A	3616.8	9.83	3081.1	8.45	3617.6	9.85	Valid
				SCH	Y	G	3503		2968		3502		
2/23	2124.2	2103.2	PT	HP	Y	A	3580.1	9.84	3053.1	8.47	3580.0	9.84	Valid
				SCH	Y	G	3466		2940		3466		
2/24	2115.4	2094.5	PT	HP	Y	A	3564.8	9.84	3051.9	8.50	3564.5	9.84	Valid
				SCH	Y	G	3451		2939		3450		
2/25	2006.0	1985.0	PT	HP	Y	A	3378.3	9.83	2860.2	8.85	3378.0	9.84	Valid
				SCH	Y	G	3264		2749		3262		
2/26	1946.0	1925.0	PT	HP	Y	A	3274.8	9.82	2773.4	8.40	3274.8	9.82	Valid
				SCH	Y	G	3161		2660		3160		
2/27	1921.0	1900.0	PT	HP	Y	A	3232.0	9.82	2736.1	8.40	3231.2	9.84	Valid
				SCH	Y	G	3115		2621		3114		
2/28	1910.0	1889.0	PT	HP	Y	A	3219.1	9.83	2721.2	8.40	3219.1	9.83	Valid
				SCH	Y	G	3103		2607		3102		

1. Pressure Test = PT
   Sample & Pressure = SPT

2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard

3. Yes = Y
   No = N

4. PSIA = A
   PSIG = G

RFT PRETEST PRESSURES - WHITING 1

SERVICE COMPANY: Schlumberger   RUN NO: 2   DATE: 10/4/83   OBSERVERS: A.Lindsay, P.Priest, S.T.Koh

SEAT NO.	DEPTH (m)	DEPTH (SS) (m)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP psi	IHP ppg	FM. PRESS psi	FM. PRESS ppg	FHP psi	FHP ppg	TEST RESULT
2/29	1901.0	1880.0	PT	HP	Y	A	3202.7	9.83	2717.0	8.43	3202.9	9.83	Valid
				SCH	Y	G	3087		2603		3086		
2/30	1880.0	1859.0	PT	HP	Y	A	3166.2	9.83	2713.4	8.51	3165.9	9.83	Valid
				SCH	Y	G	3051		2599		3048		
2/31	1825.0	1804.0	PT	HP	Y	A	3071.4	9.82	2591.9	8.37	3070.9	9.82	Valid
				SCH	Y	G	2955		2477		2953		
2/32	1812.5	1791.5	PT	HP	Y	A	3048.2	9.81	2581.2	8.40	3047.8	9.81	Valid
				SCH	Y	G	2931		2466		2930		
2/33	1807.0	1786.0	PT	HP	Y	A	3044.3	9.83	2580.8	8.42	3043.8	9.83	Valid
				SCH	Y	G	2984		2458		2917		
2/34	1771.0	1750.0	PT	HP	Y	A	2980.7	9.82	2517.1	8.38	2980.6	9.82	Valid
				SCH	Y	G	2854		2392		2852		
2/35	1745	1724	PT	HP	Y	A	2935.2	9.81	2477.8	8.37	2934.8	9.84	Valid
				SCH	Y	G	2807		2352		2806		

1. Pressure Test = PT
   Sample & Pressure = SPT

2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard

3. Yes = Y
   No = N

4. PSIA = A
   PSIG = G

RFT PRETEST PRESSURES - WHITING 1

SERVICE COMPANY: Schlumberger RUN NO: 2 DATE: 10/04/83 OBSERVERS: A.Lindsay, P.Priest, S.T.Koh

SEAT NO.	DEPTH (m)	DEPTH (SS) (m)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP psi	IHP ppg	FM. PRESS psi	FM. PRESS ppg	FHP psi	FHP ppg	TEST RESULT
2/36	1718	1697	PT	HP	Y	A	2891.7	9.82	2451.8	8.42	2891.6	9.82	Valid
				SCH	Y	G	2767		2329		2766		
2/37	1659	1638	PT	HP	Y	A	2790.0	9.81	2357.6	8.38	2789.9	9.81	Valid
				SCH	Y	G	2664		2233		2664		
2/38	1575	1554	PT	HP	Y	A	2645.5	9.79	2227.0	8.34	2644.9	9.82	Valid
				SCH	Y	G	2518		2102		2516		
2/39	1500	1479	PT	HP	Y	A	2516.5	9.78	2124.4	8.36	2516.1	9.81	Valid
				SCH	Y	G	2393		2003		2392		
2/40	1493.5	1472.5	PT	HP	Y	A	2504.1	9.77	2115.4	8.36	2503.6	9.80	Valid
				SCH	Y	G	2381		1995		2379		
2/41	1486	1465	PT	HP	Y	A	2494.9	9.78	2109.0	8.38	2494.5	9.82	Valid
				SCH	Y	G	2370		1987		2369		
2/42	1482	1461	PT	HP	Y	A	2487.3	9.78	2105.1	8.39	2487.5	9.78	Valid
				SCH	Y	G	2362		1983		2361		

Note: Still had Strain Gauge problems to 2/43.

1. Pressure Test = PT
   Sample & Pressure = SPT

2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard

3. Yes = Y
   No = N

4. PSIA = A
   PSIG = G

RFT PRETEST PRESSURES - WHITING 1

SERVICE COMPANY: Schlumberger   RUN NO: 5, 6   DATE: 11-12/4/83   OBSERVERS: A.Lindsay, P.Priest, S.T.Koh

SEAT NO.	DEPTH (m)	DEPTH (SS) (m)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP psi	IHP ppg	FM. PRESS psi	FM. PRESS ppg	FHP psi	FHP ppg	TEST RESULT
5/50	2623.5	2602.5	PT	HP	Y	A	4429.4	9.86	3970.3	8.92	4428.3	9.87	Valid, Super-charged
				SCH	Y	G	4405		3943		4404		
5/51	2603	2582	PT	HP	Y	A	4393.6	9.86	3730.5	8.45	4393.5	9.87	Valid
				SCH	Y	G	4372		3712		4372		
5/52	2537	2516	PT	HP	Y	A	4282.8	9.86	3647.6	8.48	4285.6	9.88	Valid
				SCH	Y	G	4264		3630		4266		
5/53	2494	2473	PT	HP	Y	A	4212.8	9.87	3569.7	8.44	4213.5	9.88	Valid
				SCH	Y	G	4194		3552		4193		
5/54	2428	2407	PT	HP	Y	A	4102.6	9.87	3637.8	8.84	4102.3	9.88	Valid
				SCH	Y	G	4085		3621		4085		
5/55	2418	2397	SPT	HP	Y	A	4083.7	9.86	3524.7	8.60	4085.7	9.88	Valid
				SCH	Y	G	4068		3510		4067		
6/56	1401	1380	SPT	HP	Y	A	2352.0	9.78	1988.7	8.43	2350.6	9.77	Valid
				SCH	Y	G	2334		1969		2332		

1. Pressure Test = PT
   Sample & Pressure = SPT

2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard

3. Yes = Y
   No = N

4. PSIA = A
   PSIG = G

11191/18-25

RFT PRETEST PRESSURES - WHITING 1

SERVICE COMPANY: Schlumberger RUN NO: 2, 3, 4, 5 DATE: 10-11/4/83 OBSERVERS: A.Lindsay, P.Priest, S.T.Koh

SEAT NO.	DEPTH (m)	DEPTH (SS) (m)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP psi	IHP ppg	FM. PRESS psi	FM. PRESS ppg	FHP psi	FHP ppg	TEST RESULT
2/43	1401	1380	PT	HP	Y	A	2349.0	9.77	1987.7	8.38	2349.0	9.77	Valid
				SCH	Y	G	2224		1868		2222		
3/44	1482	1461.0	SPT	HP	Y	A	2525.7	9.93	2105.4	8.39	2524.1	9.92	Valid
				SCH	Y	G	2506		2079		2504		
4/45	2801.5	2780.5	PT	HP	Y	A	4721.5	9.85	4151.3	8.73	4716.3	9.84	Valid
				SCH	Y	G	4700		4131		4696		
5/46	2910.0	2889.0	PT	HP	Y	A	4888.5	9.82	4311.2	8.73	4887.2	9.82	Valid
				SCH	Y	G	4869		4293		4868		
5/47	2836	2815	PT	HP	Y	A	4764.7	9.82	4261.0	8.85	4764.8	9.82	Valid, Super-
				SCH	Y	G	4748		4245		4747		charged
5/48	2785	2764	PT	HP	Y	A	4683.8	9.83	4140.1	8.76	4684.4	9.84	Valid
				SCH	Y	G	4667		4124		4667		
5/49	2701	2680	PT	HP	Y	A	4548.8	9.83	3937.7	8.59	4549.2	9.85	Valid
				SCH	Y	G	4532		3922		4532		

Note: No Problems with Strain Gauge from 3/44.

1. Pressure Test = PT
   Sample & Pressure = SPT

2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard

3. Yes = Y
   No = N

4. PSIA = A
   PSIG = G

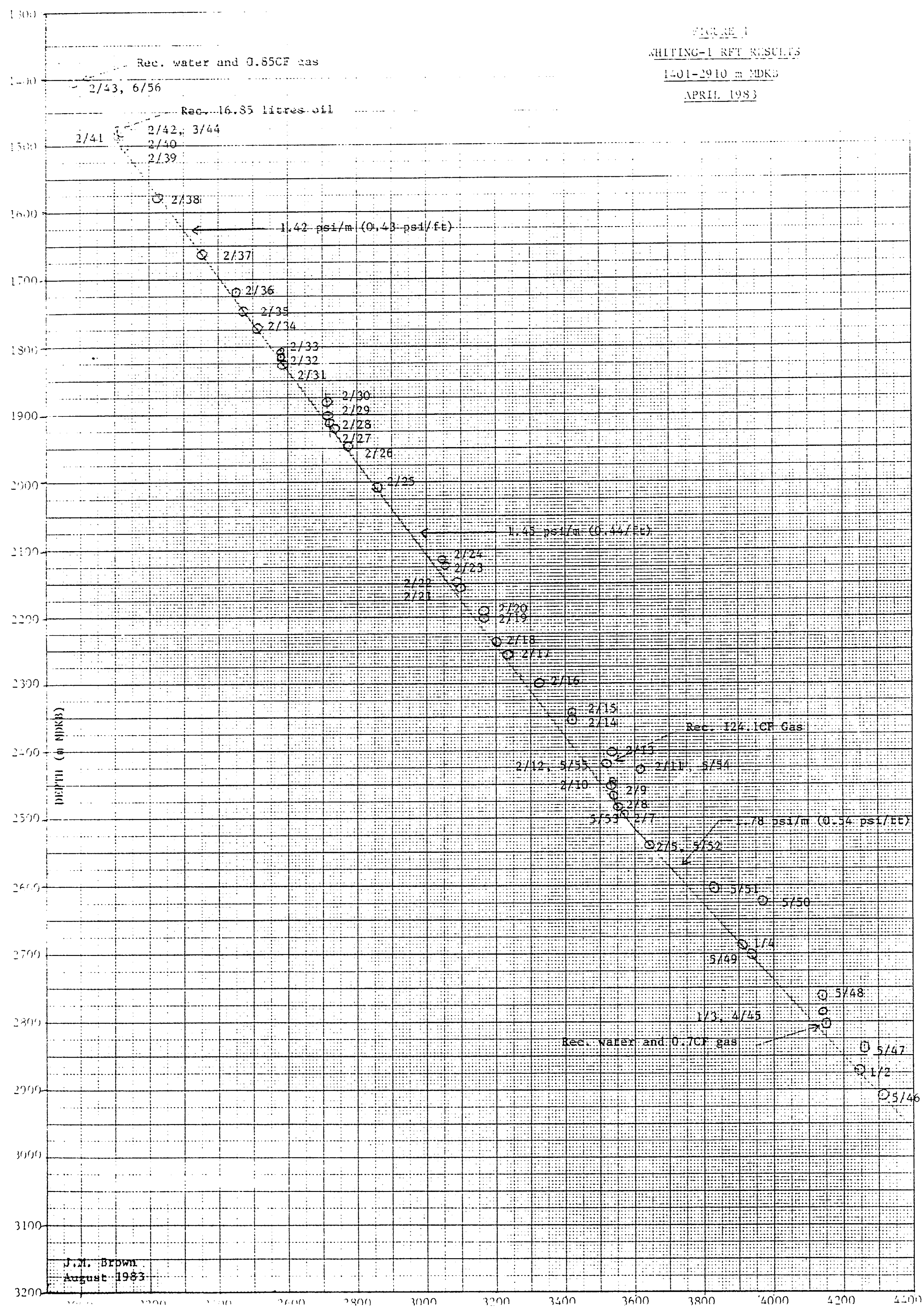


FIGURE 1
WHITING-1 RFT RESULTS
1401-2910 m MDKB
APRIL 1983
Rec. water and 0.85CF gas
2/43, 6/56
Rec. 16.85 litres oil
2/41
2/42, 3/44
2/40
2/39
2/38
1.42 psi/m (0.43 psi/ft)
2/37
2/36
2/35
2/34
2/33
2/32
2/31
2/30
2/29
2/28
2/27
2/26
2/25
1.45 psi/m (0.44/ft)
2/24
2/23
2/22
2/21
2/20
2/19
2/18
2/17
2/16
2/15
2/14
Rec. 124.1CF Gas
2/13
2/12, 5/55
2/11, 5/54
2/10
2/9
2/8
5/53
2/7
1.78 psi/m (0.54 psi/ft)
2/5, 5/52
5/51
5/50
1/4
5/49
5/48
1/3, 4/45
Rec. water and 0.7CF gas
5/47
1/2
5/46
DEPTH (m MDKB)
1300
1400
1500
1600
1700
1800
1900
2000
2100
2200
2300
2400
2500
2600
2700
2800
2900
3000
3100
3200
2200
2400
2600
2800
3000
3200
3400
3600
3800
4000
4200
4400
J.M. Brown
August 1983

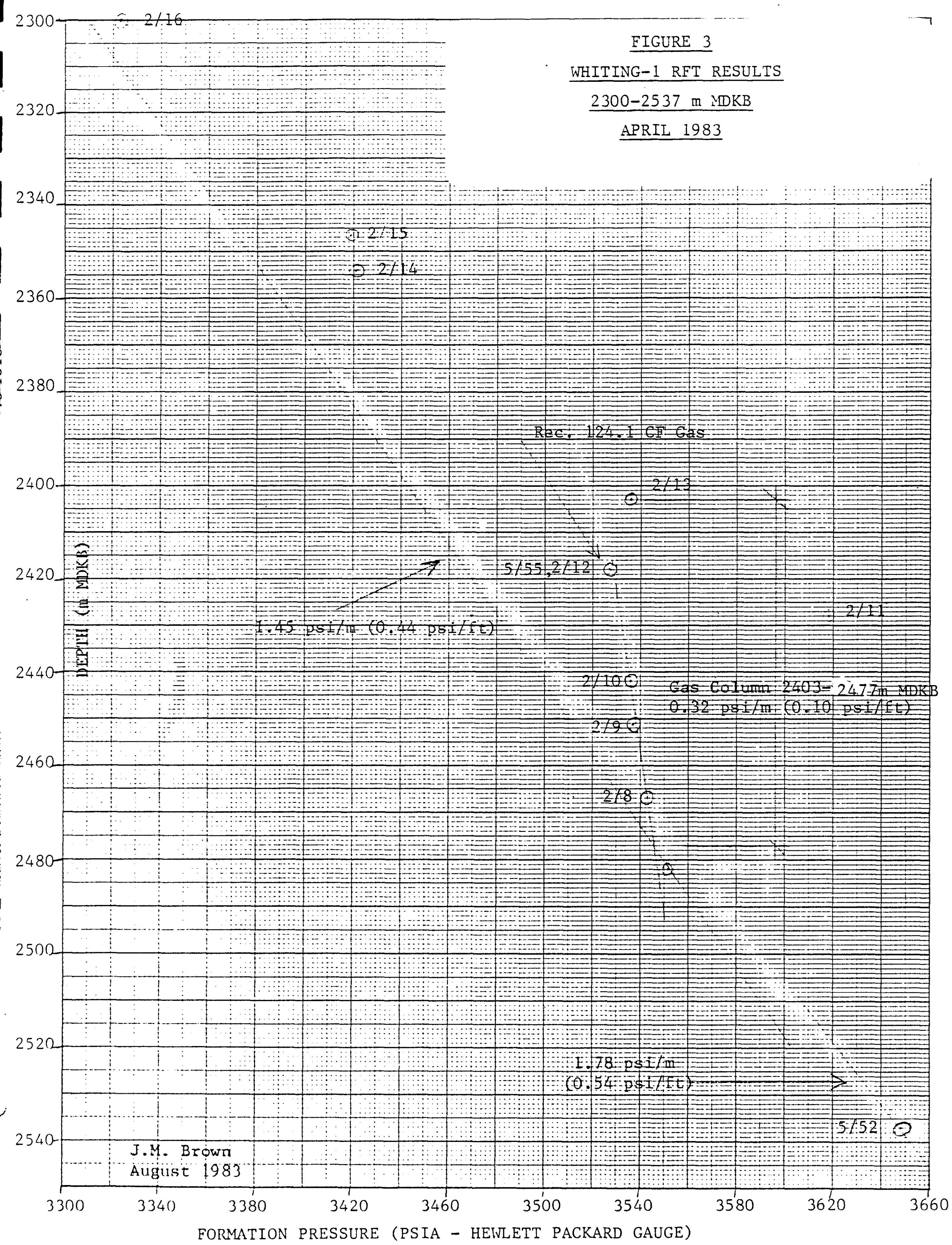


FIGURE 3
WHITING-1 RFT RESULTS
2300-2537 m MDKB
APRIL 1983
2/16
2/15
2/14
Rec. 124.1 CF Gas
2/13
5/55,2/12
1.45 psi/m (0.44 psi/ft)
2/11
2/10
Gas Column 2403-2477m MDKB
0.32 psi/m (0.10 psi/ft)
2/9
2/8
1.78 psi/m
(0.54 psi/ft)
5/52
J.M. Brown
August 1983
DEPTH (m MDKB)
FORMATION PRESSURE (PSIA - HEWLETT PACKARD GAUGE)
2300
2320
2340
2360
2380
2400
2420
2440
2460
2480
2500
2520
2540
3300
3340
3380
3420
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3540
3580
3620
3660

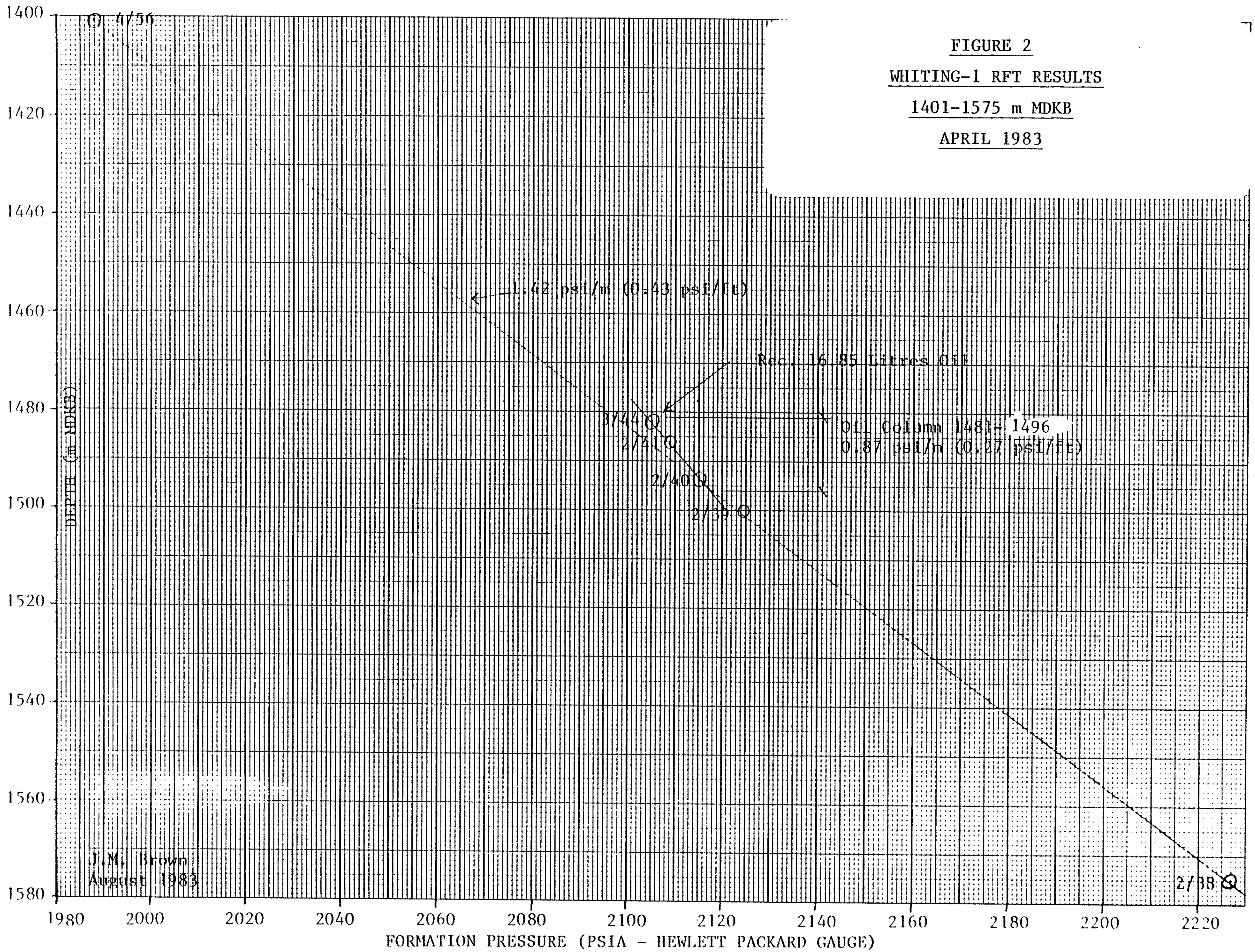

FIGURE 2

WHITING-1 RFT RESULTS

1401-1575 m MDKB

APRIL 1983

APPENDIX 6

APPENDIX 6

APPENDIX 6

WHITING-1

PRODUCTION TEST NO. 1R

I.D. Palmer/S.T. Koh
August 1983

(4477f)

WHITING-1
PRODUCTION TEST NO. 1R REPORT

Interval 1483-1486 m KB
(1462-1465 m SS)

TABLES

FIGURES

APPENDIX

(4477f)

WHITING-1 PRODUCTION TEST NO. 1R

A. SUMMARY

Production Test No. 1R was carried out on the Whiting-1 exploration well over the interval 1483-1486 m KB (1462-1465 m SS) on April 23/24, 1983. Immediately prior to Test No. 1R, Production Test No. 1 over the same interval recovered 99.7 st kL (627 STB) of oil at an average rate of 340 st kL/D (2141 STB/D), but bottomhole pressure data could not be obtained. The interval tested lies within the major oil zone discovered by Whiting-1 extending from 1481 m KB to the OWC at 1496 m KB.

During Test No. 1R, the well flowed at a stabilised rate of 846 st kL/D (5323 STB/D) through a 25.4 mm positive choke with FWHP and FWHT of 2682 kPa(g) (389 psig) and 45.5°C (114°F) respectively. The gravity of produced oil was 58° API with a measured GOR of 40.6 m^3/st kL (228 SCF/STB). No water was produced to the surface during the nine hours of major flow period. Measured productivity index for the well was 4.47 st kL/D/kPa (194 STB/D/psi). The static bottomhole pressure of 14, 415 kPa (2090.6 psia) at run depth 1475 m measured at the end of the initial build-up period was 11 kPa (1.7 psi) lower than the average final shut-in bottomhole pressure of 14,426 kPa (2092.3 psia). This pressure difference is not considered significant.

Analysis of the build-up pressure data (from HP gauge) by the Horner Plot indicated a formation permeability of 1840 md assuming an effective contributing sand thickness of 10 m (32.8 ft). Due to phase redistribution during the ETR and other wellbore effects, the MTR was only observed after 70 minutes of shut-in period which reduced the MTR pressure build-up to within 14 kPa (2 psi). This rendered the bottomhole Amerada pressure data unsuitable for build-up analysis. A flattening off of the Horner Plot to an average pressure of 14,426 kPa (2092.3 psia) was observed after five hours of pressure build-up. Extrapolated pressure (P*) of the MTR slope to infinite shut-in was 14,438 kPa (2094 psia). The lack of pressure depletion and the pressure drawdown seen relative initial Gippsland aquifer pressures suggest that pressure support from the aquifer can be expected.

A summary of the test results are given in the attached Table 1. Details of data gathered during Production Test No. 1 and Test No. 1R are given in the attached Otis Services Well Test Report.

B. BACKGROUND AND OBJECTIVES

Open hole wireline logs indicated the presence of oil in the interval from 1481 to OWC at 1496 m KB. This interval was interpreted to contain 10 m of net oil sand with an average porosity and water saturation of 24 percent and 20 percent respectively. Prior to production testing, an RFT survey was conducted in the interval and confirmed the presence of oil with the recovery of 16.85 litres of 58.5° API oil. Pressure seat No. 2/42 at 1482 m KB gave a formation pressure of 14,515 kPa (2105.1 psia). The RFT pressure data also confirmed the OWC at 1496 m KB.

The objectives of the production test were to:

(i) determine the producing characteristics of the formation;

(ii) determine fluid properties and obtain further samples for composition and PVT analysis; and

(iii) investigate flow boundaries and drive mechanism.

C. TEST DESCRIPTION

Production Test No. 1 (1483-1486 m KB)

Production Test No. 1 commenced when the interval 1483-1486 m KB was perforated underbalanced (with diesel) using the Schlumberger 2-1/8 inch enerjet at 13 shots per metre. On April 21, 1983, the well was opened for initial flow and clean-up for 63 minutes. It was then shut-in at the choke manifold for initial build-up and subsequent running of bottomhole Amerada pressure gauges. As the Schlumberger Hewlett-Packard pressure gauges malfunctioned, only the Otis Amerada pressure gauges were run to bottom. The well was re-opened for the final flow period during which flow was directed through the separator to measure oil, gas and water rates. Cumulative oil production during Production Test No. 1 was 99.7 st kL (627 STB) at an average rate of 340 st kL/D (2141 STB/D). The well was then shut-in at the surface for final build-up during which time the 0.092 inch wireline holding the downhole Amerada gauges broke. All recorded bottomhole flowing and build-up pressures were lost as the downhole Amerada gauges were not recovered. With no pressure data and because of suspected plugging in the perforations during the major flow period, it was decided to repeat the production test and the original interval 1483-1486 m KB was re-perforated. Prior to conducting Test No. 1R, new Schlumberger Hewlett-Packard pressure gauges were sent to the rig and function tested successfully.

Production Test No. 1R (1483-1486 m KB)

The well was opened for initial flow and clean-up between 0833 and 0923 on April 23, 1983 and recovered an estimated 25.6 st kL (161 STB of oil). At the end of the initial build-up period, the Hewlett-Packard gauge in tandem with Amerada gauges were run to bottom and hung at 1475 m KB. Prior to opening the well for final flow, the measured static bottomhole pressure was 14,415 kPa (2090.6 psia).

The well was opened for the final flow period at 1540 hours on April 23 on 9.5 mm (24/64 inch) choke increasing to 25.4 mm (1 inch) positive choke at 1500 hours. The well was still in the process of cleaning-up and the flow stabilising when it was shut-in at 1647 hours for 54 minutes to allow the burner nozzles to be unplugged. At 1741 hours, flow was re-established through 25.4 mm (1 inch) positive choke and quickly stabilised. At 1801 hours, the flow was directed to the test separator and the oil and gas rates measured. Average measured oil rate was 846 st kL/D (5323 STB/D) with a GOR of 40.6 m^3/st kL (228 SCF/STB) and an oil gravity of 58° API. Prior to shutting-in the well at 0030 hours on April 24, separator oil and gas samples were taken for PVT and compositional analysis. Details of samples taken are given in the attached appendix (D-15: Separator Sample Data).

After approximately five hours of major build-up the measured bottomhole pressure appeared to have stabilised at 14,426 kPa (2092.3 psia). It was monitored for a further 4-1/2 hours without discerning any additional pressure build-up and Test No. 1R was concluded at 1000 hours on April 24. Two gradient stops were made at 1444 and 1414 m KB which gave an oil gradient of 0.97 psi/m (0.30 psi/ft).

D. RESULTS AND INTERPRETATION

1. Reservoir Pressure

Figure 1 shows the wellhead and bottomhole pressures and Figure 2 is a Horner plot of the BHP data.

The static bottomhole pressure at the end of the initial build-up period was 14,415 kPa (2090.6 psia) at run depth 1475 m KB. This was 11 kPa (1.7 psi) lower than the average final static bottomhole pressure of 14,426 kPa (2092.3 psia) and 23 kPa (3.4 psi) lower than the extrapolated build-up pressure (P*) of 14,438 kPa (2094 psia). These small pressure differences are not considered significant. The RFT Hewlett-Packard pressure taken within the test interval and adjusted to the gauge depth of 1475 m KB gave a reservoir pressure of 14,468 kPa (2098.3 psia). Relative to the measured final build-up pressure of 14,426 kPa (2092.3 psia), the RFT reservoir pressure was higher by 41 kPa (6 psi). This pressure difference may have been due to measurement differences such as the use of a different Hewlett-Packard pressure gauge during the RFT survey or other factors such as the drift in aquifer pressure in the two week period between the two pressure surveys. The reservoir is believed to be in good hydraulic communication with the Gippsland Aquifer since the measured final static bottomhole pressure of 14,426 kPa (2092.3 psia) was drawndown by 366 kPa (53 psi) relative to the original Gippsland Aquifer pressure and because no pressure depletion was detected during the test.

2. Radius of Investigation

The radius of investigation at the end of the MTR was approximately 920 m (3020 ft) and corresponds to a drainage area of 266 hectares (657 acres). Based on the current Whiting structure map, the OWC extends to about about 1050 m (3445 ft) from the Whiting-1 exploration well. The pore volume examined in the test is 2440 ML (15 MB).

3. Build-up Analysis

The early-time bottom hole pressure data was observed to be dominated by wellbore effects and phase segregation until approximately 70 minutes after shut-in. Approximately 90 percent of the observed total build-up of 165 kPa (24 psi) occurred within this ETR period. The remainder 14 kPa (2 psi) of build-up data occurred within the MTR period.

The MTR Horner Plot lies reasonably well on a straight line with a slope of 4.4 psi/cycle (see Figure 2). The permeability-thickness product calculated from the Horner Plot was 60350 md-ft which gave a permeability (relative to oil) of 1840 md assuming a total net sand contributing thickness of 10 m. A negative skin factor of 1.7 with a corresponding damage ratio of 0.8 was calculated; indicating near wellbore stimulation. The wellbore stimulation was probably because the test interval 1483-1486 m KB was perforated twice at 13 shots per metre using the Schlumberger 2-1/8 inch Enerjet gun.

Due to the 14 kPa pressure build-up during the MTR and small flowing bottomhole pressure drawdown, the sensitivity of the Amerada gauges was considered too low for useful build-up interpretation.

4. Productivity Index

Based on the extrapolated MTR pressure (P*) of 14,438 kPa (2094 psia), the productivity index measured during the test was 194 STB/D/psi. The measured PI is higher than the theoretical PI determined from the permeability data by about 14 percent. This confirmed the negative skin calculated from the Horner build-up analysis method which indicated the well was stimulated by up to 24 percent with a flow efficiency of 1.24. Calculation steps for the theoretical PI of 170 STB/D/psi are shown below:

$$PI = \frac{.00708\ kh}{B \times u\ (\ln\ (\frac{re}{rw})\ -0.5)}$$

$$PI = \frac{.00708 \times 1840 \times 32.8}{1.18 \times 0.26 \times (\ln\ (\frac{3027}{0.5})\ -0.5)} = 170\ STB/D/psi$$

(4477f)

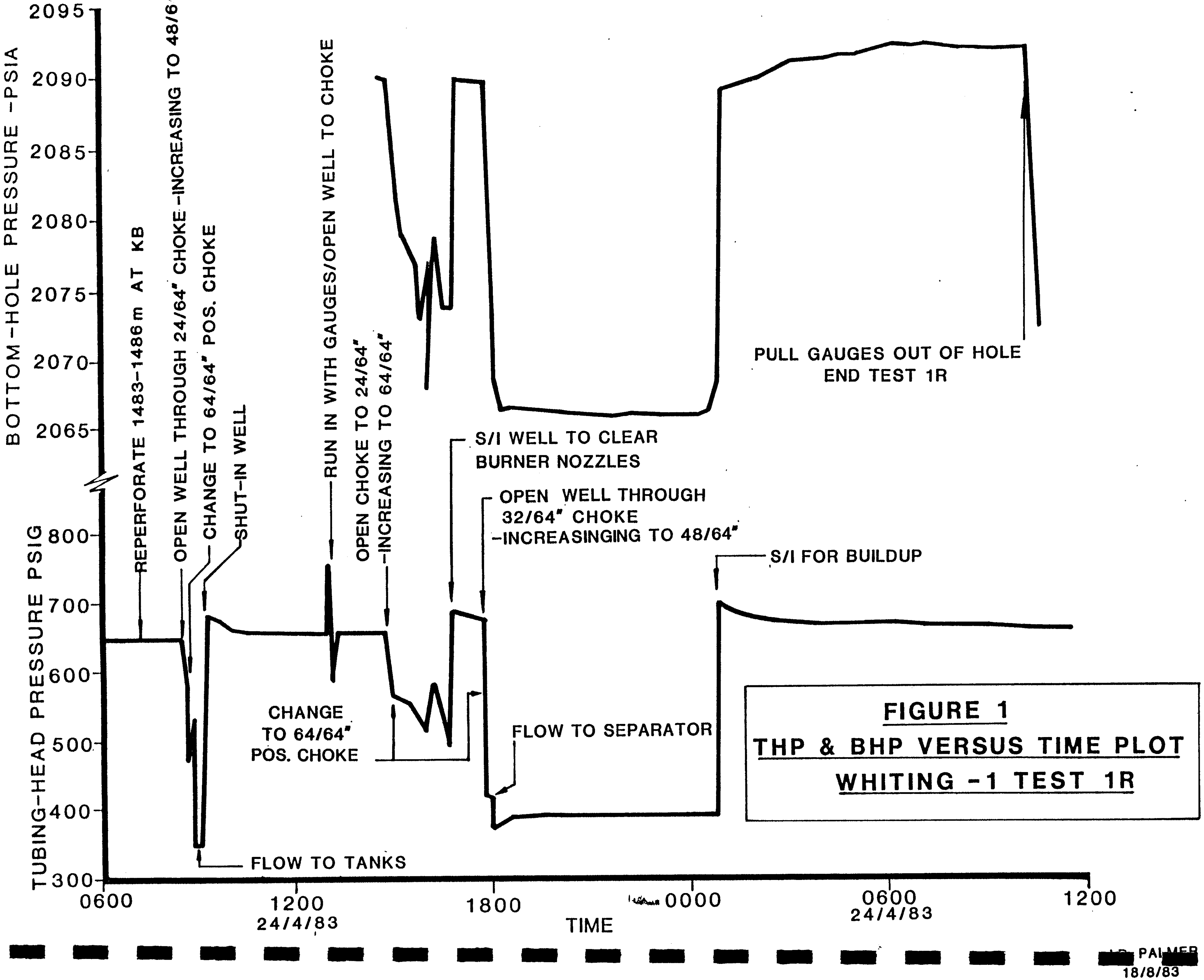

FIGURE 1
THP & BHP VERSUS TIME PLOT
WHITING -1 TEST 1R

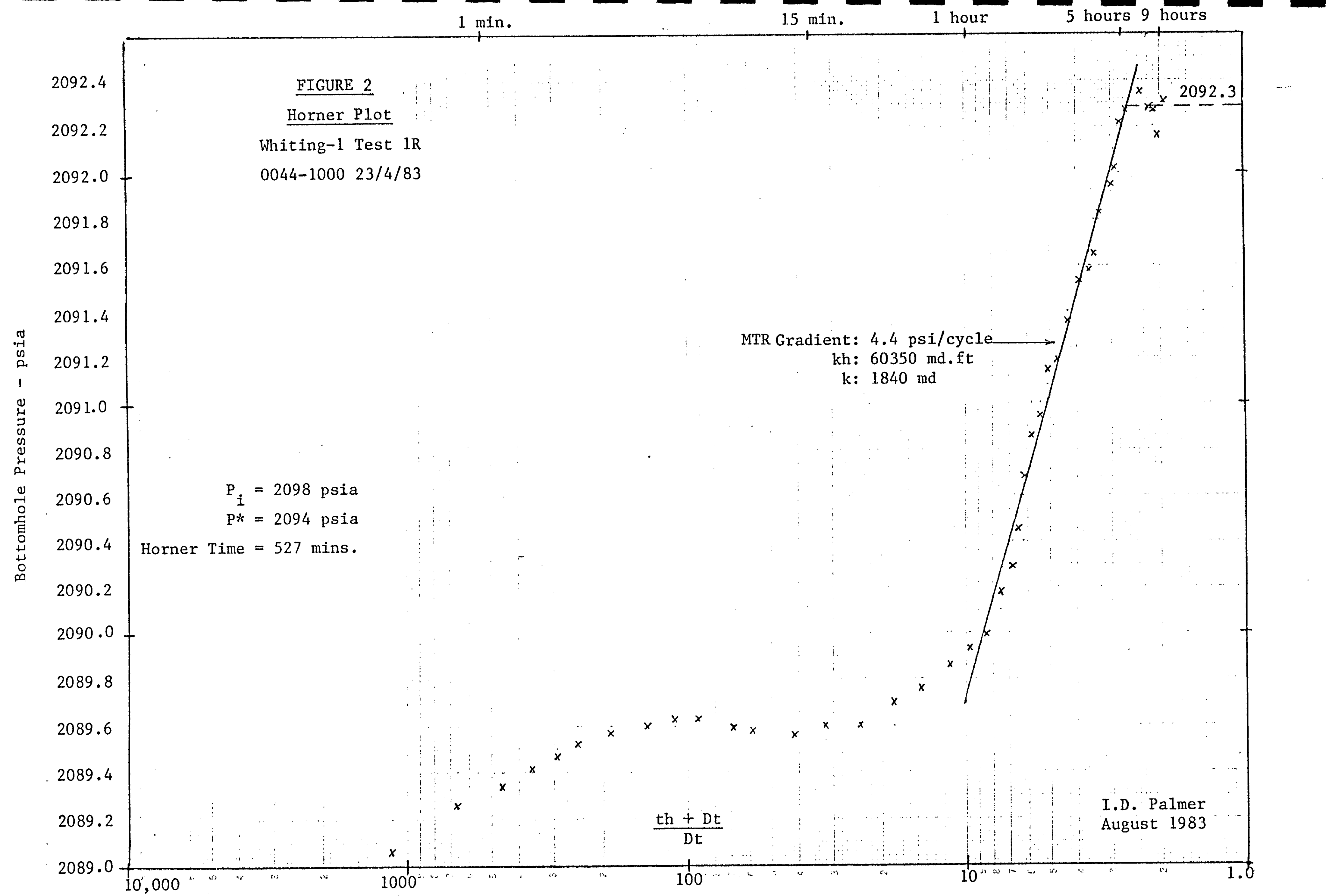
FIGURE 2
Horner Plot
Whiting-1 Test 1R
0044-1000 23/4/83
1 min.
15 min.
1 hour
5 hours
9 hours
2092.3
Bottomhole Pressure - psia
2092.4
2092.2
2092.0
2091.8
2091.6
2091.4
2091.2
2091.0
2090.8
2090.6
2090.4
2090.2
2090.0
2089.8
2089.6
2089.4
2089.2
2089.0
MTR Gradient: 4.4 psi/cycle
kh: 60350 md.ft
k: 1840 md
P i = 2098 psia
P* = 2094 psia
Horner Time = 527 mins.
th + Dt / Dt
10,000
1000
100
10
1.0
I.D. Palmer
August 1983

TABLE 2

ROCK AND FLUID PROPERTIES

1.	API Gravity	58°	Measured during test.
2.	GOR	228 SCF/STB	Measured during test @ 1758 kPa (g) (255 psig) and 56.1°C (133°F).
3.	Porosity ϕ	24	Log Interpretation - avg. for interval.
2.	Water Saturation	20%	Log interpretation - avg. for interval.
5.	Compressibility, c_t	$18.4 \times 10^{-6} psi^{-1}$	Assumes: $Co = 18.5 \times 10^{-6} psi^{-1}$ (Seahorse PVT Analysis) $Cw = 3.0 \times 10^{-6} psi^{-1}$ $Cf = 3.5 \times 10^{-6} psi^{-1}$ $C_t = Cf + Sw\ Cw + (1-Sw)\ Co$
6.	Viscosity,	uo = 0.26 cp	Source: Exxon Well Testing Manual assumptions: GOR = 230 Scf/STB temperature = 215°F Oil viscosity compares reasonably with the Seahorse (52° API, 151°F 1000 Scf/STB) viscosity of 0.21 cp.
7.	Oil Formation Volume Factor, B_o	1.18	Source: Standing Correlation

(4477f)

TABLE I

SUMMARY OF WHITING-1 WELL PRODUCTION TEST NO. 1R RESULTS

Test	Date	Perforation Interval (m RKB)	Production Fluid Time (-/Hrs)	Choke Size (mm)	Flowing WHP [kPa (Gauge)]	Stabilised Production Rate (st kL/D)	Initial Reservoir (kPa (abs)]	Flowing BHP (kPa (abs)]	Maximum BHT (°C)	Damage Ratio	Productivity Index (ST kL/D/kPa)	Permeability Thickness (md-ft)	Permeability (md)
1R	23-24 April 1983	1483-1486	Oil/9.00	25.4 (1 inch)	2682 (389 psig)	846 (5323 STB/D)	14466 (2098 psia) @ 1475 m KB	14249 (2066.5 psia) @ 1475 m KB	101.8 (215.3°F) @ 1475 m KB	0.8	4.47 (1.94 STB/D/psi)	60350	1840

Notes:

(1) All depths relative to KB (KB Southern Cross = 21 m above MSL).

(2) The damage ratio of 0.8 indicates the wellbore or near wellbore region was stimulated. This corresponds to a skin factor of -1.7.

APPENDIX

1. Sample Details

2. Otis Services - Well Test Report

SEPARATOR SAMPLE DATA

Well WHITING 1 Test IR Date 24/4/83

Producing Interval 1483-1486

Initial Reservoir Pressure 2105.1 psiA@ 1482m TVDKB (RFT)

Reservoir Temperature 215 °F @ 1474 m (maximum)

	Liquid Sample No. 1	Liquid Sample No. 2	Gas Sample No. 1	Gas Sample No. 2
Time Sampled	2315-2345	0000-0030	2315-2345	0000-0030
Length of Time Well was Produced	8 HRS	8.5 HRS	8 HRS	8.5 HRS
Container No. (OTIS)	WIA 4869	79A2779	P348177	P345536
Container Volume	1020 CC	1150 CC	11.4 LITRES	11.4 LITRES
Separator Pressure PSIG	255	255	255	255
Separator Temperature °F	133	134	133	134
Wellhead Pressure PSIG	387	389	387	389
Wellhead Temperature (°F)	114	120	114	120
Flowing Bottom-hole Pressure (psi) A	2065.9	2066.2	2065.9	2066.2
Flowing Bottom-hole Temperature (°F)	214.7	214.7	214.7	214.7
Separator Rate (Sep. bbl/D)*	6391	6345	6391	6345
Separator Gas Rate (MSCF/D)	1.245	1.252	1.245	1.252
Separator GOR (SCF/Sep. bbl)	195	197	195	197
Well Rate (STB/D)+	5228	5190	5228	5190
Well GOR (SCF/STB)+	238	241	238	241
Full Wellstream Water Cut	NIL	NIL	NIL	NIL

How Outage was Taken on Liquid Samples 3" OIL LINE UPSTREAM OF ROTRON METER.

Gas Sampling Method PURGING.

Liquid Sampling Method BRINE DISPLACEMENT.

Special Instruction for Lab MAX. OF 25 PPM H2S MEASURED FROM SEPARATOR GAS.

Sampled by OTIS.

*Rates based on Meter Readings corrected for Meter Factor Only.

+Rates corrected to Stock-Tank Conditions as per Form D-7.

APPENDIX 7

APPENDIX 7

GEOCHEMICAL REPORT

WHITING-1 WELL, GIPPSLAND BASIN, VICTORIA.

by

J.K. Emmett

Sample Handling and Analyses by:

D.M. Hill)
D.M. Ford) Esso Australia Ltd.
J. Maccoll)

Exxon Production Research Company,
Geochem Laboratories.

Esso Australia Ltd.
Geochemical Report.
0624L

October 1983.

CONTENTS

List of Tables.

List of Figures.

Appendices.

INTRODUCTION

Various geochemical analyses were performed on samples of canned cuttings, sidewall cores and conventional core, collected during drilling of the Whiting-1 well. Canned cuttings composited over 15 metre intervals were collected from 200 metres (KB) down to 3011 metres (KB) ie. total depth (TD). Alternate 15-metre intervals were analysed for C_{1-4} headspace hydrocarbon gases between 950 m(KB) and T.D. Succeeding alternate 15-metre intervals were analysed for C_{4-7} gasoline-range hydrocarbons between 965 m(KB) and 3005 m(KB). Selected samples were handpicked for more detailed analyses such as Total Organic Carbon (T.O.C.), Rock-Eval pyrolysis, kerogen isolation and elemental analysis and C_{15+} liquid and gas chromatography. Vitrinite Reflectance $\bar{R}_v$ max was measured by Professor A.C. Cook of Wollongong.

An oil sample (RFT-3 at 1482 m(KB)) was analysed for API gravity and % sulphur, and by liquid chromatography, carbon isotopes, whole oil -, C_{4-7} - and C_{15+}-gas chromatography.

DISCUSSION OF RESULTS.

The detailed headspace C_{1-4} hydrocarbon cuttings gas analysis data are listed in Table 1 and for convenience, pertinent information has been plotted in Figure 1. The C_{1-4} gas content is fairly lean down to the Top of the Latrobe Group sediments, below which it increases significantly and remains uniformly moderately-rich to rich down to T.D. (3011m). The amount of wet gas (C_{2+}) components in the cuttings gas is generally low throughout the well (usually less than 30%). Wet gas values in the 30% - 60% range were obtained between 1445 m(KB) and 1670 m(KB) which may be related to the oil shows encountered in this section of Whiting-1. On the basis of cuttings gas values, the Gippsland Limestone and Lakes Entrance Formations rate as having poor-fair hydrocarbon source potential, compared to the underlying Latrobe Group sediments which have good to very good potential to source hydrocarbons.

The detailed C_{4-7} gasoline-range hydrocarbon data sheets are given in Appendix-1 and again pertinent information has been plotted in Figure 2. Total gasoline values in the Gippsland Limestone and Lakes Entrance Formations are generally lean, confirming poor hydrocarbon source potential. Values in the Latrobe Group sediments are rich to very rich and generally contain a significant amount of C_{6+} components (particularly below about 2,000 m(KB)), indicating a very good oil source potential for this unit.

The Latrobe Group sediments also have fairly good T.O.C. values (average T.O.C. = 1.41% - Table 2) particularly when compared to the poor values of the Gippsland Limestone (average T.O.C. = 0.35%) and the Lakes Entrance Formation (average T.O.C. = 0.32%).

Vitrinite Reflectance ($\bar{R}_v$ max) data are presented in Table 3 and have been plotted against depth in Figure 3. There is some spread in the data points caused by the $\bar{R}_v$ max values from the coal samples being higher than values determined on dispersed organic matter (D.O.M.) in sediment samples. However, using the approximate line of best fit shown in Figure 3, the top of the organic maturity window for significant hydrocarbon generation (taken to be $\bar{R}_v$ max = 0.65%) occurs in the Latrobe Group section at about 2,500 m(KB). Detailed vitrinite reflectance and exinite fluorescence data are given in Appendix-1 (Report by A.C. Cook).

In Table 4, the elemental analyses of selected kerogen samples are listed. Approximate Hydrogen : Carbon (H/C); Oxygen : Carbon (O/C) and Nitrogen : Carbon (N/C) atomic ratios for these samples are given in Table 5. These ratios are labelled 'approximate' since the oxygen % is calculated by difference, and the naturally occurring organic sulphur %, which may be upto a few percent, was not determined. Figure 4 is a modified Van Krevelen Plot of atomic H/C ratio versus atomic O/C ratio, on which fields corresponding to the basic kerogen types have also been delineated. Comparison of Figure 4 with Figure 5, a similar plot which shows the principal products of kerogen evolution indicates that although Type III organic matter (ie. woody-herbaceous) predominates in the Latrobe Group Sediments, there is a significant amount of intermediate Type II-III kerogen present (ie. with higher H/C atomic ratio), and these sediments therefore have good potential to be a source of both oil and gas.

Table 6 lists the results of a suite of Whiting-1 sidewall core samples (all having T.O.C. values of 0.5% or more) which were analysed by Rock-Eval Pyrolysis. In Figure 6, Hydrogen Index (HI) has been plotted against T_{max}(^{o} C), and again fields delineating the basic kerogen types and their degree of maturation (indicated by equivalent vitrinite reflectance values) are also shown. Figure 6 confirms that the Latrobe Group sediments contain a suitable organic matter type to have good oil and gas potential, and have reached maturity below about 2500m(KB).

The C_{15+} liquid chromatography results from selected canned cuttings are listed in Table 7. The total extract values for the Gippsland Limestone Formation sample is poor and the high amount of asphaltenes indicates that this sample is presently immature. The corresponding C_{15+} gas chromatogram (Figure 7) shows that the sample contains predominantly marine derived organic matter as indicated by the prominent envelope of lower molecular weight (C_{18}-C_{25}) n-alkanes which maximise about n-C_{22} and below which there is an obvious unresolved hump of naphthenic compounds. Some non-marine input is also indicated by the odd-over-even predominance seen in the higher molecular weight n-alkanes. Total extract values for the Latrobe Group samples are fairly rich and the greater amounts of hydrocarbons present in the deeper samples (again below about 2500m) shows that these samples are probably mature as well as having good potential to source oil as well as gas. The corresponding C_{15+} gas chromatograms for the Latrobe Group samples are shown in Figures 8-12. These chromatograms indicate predominantly non-marine or terrestrial derived organic matter becoming more mature with increasing depth. This is primarily evident by the reduction in odd-over-even predominance in the deeper samples and the movement of the n-alkane maxima from n-C_{29} in the shallowest sample down to n-C_{24} in the deepest sample.

Table 8 shows the C_{4-7} gasoline-range hydrocarbon analysis data for an oil sample obtained from Whiting-1, ie. RFT-3 at 1482m. Liquid chromatography and hydrocarbon fraction carbon isotope results for the same oil are given in Table 9.

A 'whole oil' gas chromatogram, together with sulphur compound trace of this oil are shown in Figure 13, and the corresponding C_{15+} saturate fraction chromatogram is given in Figure 14. The Whiting-1 oil is a mature, very light (API gravity = 57.8^{o} at 60^{o}F) paraffinic based crude (Table 9, Figures 13 and 14) composed predominantly gasoline-range compounds (Table 8).

CONCLUSIONS

1. The top of organic maturity in Whiting-1 occurs in the Latrobe Group section at about 2,500 m(KB).

2. The Latrobe Group sediments have the best hydrocarbon source potential of the units penetrated. These sediments are rated as having good-very good potential to source both oil and gas.

3. Oil discovered in Whiting-1 is a very light, mature paraffinic-based crude.

C1-C4 HYDROCARBON ANALYSES

REPORT A - HEADSPACE GAS

BASIN - GIPPSLAND
WELL - WHITING 1

Table 1.

		GAS CONCENTRATION (VOLUME GAS PER MILLION VOLUMES CUTTINGS)								GAS COMPOSITION (PERCENT)								
										---- TOTAL GAS -----					--- WET GAS ----			
SAMPLE NO.	DEPTH	METHANE C1	ETHANE C2	PROPANE C3	IBUTANE IC4	NBUTANE C4	WET C2-C4	TOTAL C1-C4	WET/TOTAL PERCENT	M	E	P	IB	NB	E	P	IB	NB
72639 R	965.00	1313	59	29	20	9	117	1430	8.18	92.	4.	2.	1.	1.	50.	25.	17.	8.
72639 T	995.00	688	68	16	8	6	98	786	12.47	88.	9.	2.	1.	1.	69.	16.	8.	6.
72639 V	1025.00	341	30	6	6	2	44	385	11.43	89.	8.	2.	2.	1.	68.	14.	14.	5.
72639 X	1055.00	405	55	36	42	16	149	554	26.90	73.	10.	6.	8.	3.	37.	24.	28.	11.
72639 Z	1085.00	2288	230	76	46	24	376	2664	14.11	86.	9.	3.	2.	1.	61.	20.	12.	6.
72644 B	1115.00	4700	307	113	42	28	490	5190	9.44	91.	6.	2.	1.	1.	63.	23.	9.	6.
72644 D	1145.00	2078	216	86	33	21	356	2434	14.63	85.	9.	4.	1.	1.	61.	24.	9.	6.
72644 F	1175.00	6783	470	137	43	39	689	7472	9.22	91.	6.	2.	1.	1.	68.	20.	6.	6.
72644 H	1205.00	5441	368	146	21	22	577	6018	9.59	90.	6.	2.	0.	0.	67.	25.	4.	4.
72644 J	1235.00	2460	275	131	52	40	498	2958	16.84	83.	9.	4.	2.	1.	55.	26.	10.	8.
72644 L	1265.00	174	55	55	63	33	206	380	54.21	46.	14.	14.	17.	9.	27.	27.	31.	16.
72644 N	1295.00	1347	192	124	134	40	490	1837	26.67	73.	10.	7.	7.	2.	39.	25.	27.	8.
72644 P	1325.00	1283	179	114	90	44	427	1710	24.97	75.	10.	7.	5.	3.	42.	27.	21.	10.
72644 R	1355.00	31045	6533	690	254	32	7509	38554	19.48	81.	17.	2.	1.	0.	87.	9.	3.	0.
72644 U	1400.00	24079	3833	776	82	47	4738	28817	16.44	84.	13.	3.	0.	0.	81.	16.	2.	1.
72644 W	1430.00	46141	7894	1761	205	170	10030	56171	17.86	82.	14.	3.	0.	0.	79.	18.	2.	2.
72644 Y	1460.00	5621	2156	1322	414	386	4278	9899	43.22	57.	22.	13.	4.	4.	50.	31.	10.	9.
72652 D	1505.00	2669	819	700	222	292	2023	4692	43.12	57.	17.	15.	5.	6.	40.	35.	11.	14.
72652 F	1535.00	42248	15825	9618	2068	2948	30459	72707	41.89	58.	22.	13.	3.	4.	52.	32.	7.	10.
72652 H	1565.00	7519	4031	3488	700	1223	9442	16961	55.67	44.	24.	21.	4.	7.	43.	37.	7.	13.
72652 J	1595.00	3560	1825	1388	320	486	4019	7579	53.03	47.	24.	18.	4.	6.	45.	35.	8.	12.
72652 L	1625.00	1681	1068	993	200	318	2579	4260	60.54	39.	25.	23.	5.	7.	41.	39.	8.	12.
72652 N	1670.00	12308	5103	2551	395	588	8637	20945	41.24	59.	24.	12.	2.	3.	59.	30.	5.	7.
72652 P	1700.00	153848	36518	9911	1197	1582	49208	203056	24.23	76.	18.	5.	1.	1.	74.	20.	2.	3.
72652 R	1730.00	122259	24510	7686	821	1224	34241	156500	21.88	78.	16.	5.	1.	1.	72.	22.	2.	4.
72652 T	1760.00	128578	26645	7729	1065	1533	36972	165550	22.33	78.	16.	5.	1.	1.	72.	21.	3.	4.
72652 V	1790.00	176540	29867	7463	701	945	38976	215516	18.08	82.	14.	3.	0.	0.	77.	19.	2.	2.
72652 X	1820.00	27230	8082	2805	383	567	11837	39067	30.30	70.	21.	7.	1.	1.	68.	24.	3.	5.
72652 Z	1850.00	21431	8157	3387	582	814	12940	34371	37.65	62.	24.	10.	2.	2.	63.	26.	4.	6.
72655 B	1880.00	15518	3841	1482	228	355	5906	21424	27.57	72.	18.	7.	1.	2.	65.	25.	4.	6.
72655 D	1910.00	18535	4166	1585	217	321	6289	24824	25.33	75.	17.	6.	1.	1.	66.	25.	3.	5.
72655 F	1940.00	31271	4499	1048	153	196	5896	37167	15.86	84.	12.	3.	0.	1.	76.	18.	3.	3.
72655 H	1970.00	122191	16085	3575	432	466	20558	142749	14.40	86.	11.	3.	0.	0.	78.	17.	2.	2.
72655 J	2000.00	36837	3447	795	243	128	4613	41450	11.13	89.	8.	2.	1.	0.	75.	17.	5.	3.
72655 L	2030.00	56316	12993	4501	785	1066	19345	75661	25.57	74.	17.	6.	1.	1.	67.	23.	4.	6.
72655 N	2060.00	2950	1254	660	144	127	2185	5135	42.55	57.	24.	13.	3.	2.	57.	30.	7.	6.
72655 P	2090.00	52435	6712	1586	331	248	8877	61312	14.48	86.	11.	3.	1.	0.	76.	18.	4.	3.
72655 R	2120.00	62562	6063	1188	160	134	7545	70107	10.76	89.	9.	2.	0.	0.	80.	16.	2.	2.
72655 T	2150.00	30025	5603	1887	254	315	8059	38084	21.16	79.	15.	5.	1.	1.	70.	23.	3.	4.
72655 V	2180.00	86050	8032	1452	223	183	9890	95940	10.31	90.	8.	2.	0.	0.	81.	15.	2.	2.
72655 X	2210.00	36313	4557	1360	191	243	6351	42664	14.89	85.	11.	3.	0.	1.	72.	21.	3.	4.
72655 Z	2240.00	54720	4507	1139	244	161	6051	60771	9.96	90.	7.	2.	0.	0.	74.	19.	4.	3.
72656 B	2270.00	26490	2889	612	109	78	3688	30178	12.22	88.	10.	2.	0.	0.	78.	17.	3.	2.
72656 D	2300.00	25930	3395	1056	133	177	4761	30691	15.51	84.	11.	3.	0.	1.	71.	22.	3.	4.
72656 F	2330.00	32045	4834	1301	158	229	6522	38567	16.91	83.	13.	3.	0.	1.	74.	20.	2.	4.
72656 H	2360.00	44866	4937	1128	145	115	6325	51191	12.36	88.	10.	2.	0.	0.	78.	18.	2.	2.
72656 J	2390.00	27599	3726	1077	214	165	5182	32781	15.81	84.	11.	3.	1.	1.	72.	21.	4.	3.

C1-C4 HYDROCARBON ANALYSES

BASIN - GIPPSLAND
WELL - WHITING 1

Table 1. REPORT A - HEADSPACE GAS

SAMPLE NO.	DEPTH	METHANE C1	ETHANE C2	PROPANE C3	IBUTANE IC4	NBUTANE C4	WET C2-C4	TOTAL C1-C4	WET/TOTAL PERCENT	TOTAL GAS M	TOTAL GAS E	TOTAL GAS P	TOTAL GAS IB	TOTAL GAS NB	WET GAS E	WET GAS P	WET GAS IB	WET GAS NB
		GAS CONCENTRATION (VOLUME GAS PER MILLION VOLUMES CUTTINGS)								GAS COMPOSITION (PERCENT)								
72656 L	2420.00	21183	4311	1806	278	383	6778	27961	24.24	76.	15.	6.	1.	1.	64.	27.	4.	6.
72656 N	2450.00	15844	3006	1087	159	228	4480	20324	22.04	78.	15.	5.	1.	1.	67.	24.	4.	5.
72656 P	2480.00	6155	1285	726	127	199	2337	8492	27.52	72.	15.	9.	1.	2.	55.	31.	5.	9.
72656 R	2510.00	8882	1785	808	143	205	2941	11823	24.88	75.	15.	7.	1.	2.	61.	27.	5.	7.
72656 T	2540.00	79096	7109	2058	267	233	9667	88763	10.89	89.	8.	2.	0.	0.	74.	21.	3.	2.
72656 V	2570.00	17334	2853	1401	178	277	4709	22043	21.36	79.	13.	6.	1.	1.	61.	30.	4.	6.
72656 X	2600.00	6684	1565	798	100	130	2593	9277	27.95	72.	17.	9.	1.	1.	60.	31.	4.	5.
72656 Z	2630.00	17211	2292	928	152	95	3467	20678	16.77	83.	11.	4.	1.	0.	66.	27.	4.	3.
72657 B	2660.00	1973	684	436	57	81	1258	3231	38.94	61.	21.	13.	2.	3.	54.	35.	5.	6.
72657 D	2690.00	9544	3539	2635	423	642	7239	16783	43.13	57.	21.	16.	3.	4.	49.	36.	6.	9.
72657 F	2720.00	23771	3867	1820	226	305	6218	29989	20.73	79.	13.	6.	1.	1.	62.	29.	4.	5.
72657 H	2750.00	115051	12139	3140	319	410	16008	131059	12.21	88.	9.	2.	0.	0.	76.	20.	2.	3.
72657 J	2780.00	51306	9709	4274	457	658	15098	66904	22.57	77.	15.	6.	1.	1.	64.	28.	3.	4.
72657 L	2810.00	60469	7869	2558	216	374	11037	71506	15.44	85.	11.	4.	0.	1.	71.	23.	2.	3.
72657 N	2840.00	84242	15203	5452	406	669	21730	105972	20.51	79.	14.	5.	0.	1.	70.	25.	2.	3.
72657 P	2870.00	16555	4352	1944	267	381	6944	23499	29.55	70.	19.	8.	1.	2.	63.	28.	4.	5.
72657 R	2900.00	42136	8579	4494	426	671	14170	56306	25.17	75.	15.	8.	1.	1.	61.	32.	3.	5.
72657 T	2930.00	36376	7625	3742	398	612	12377	48753	25.39	75.	16.	8.	1.	1.	62.	30.	3.	5.
72657 V	2960.00	21458	4442	1779	186	256	6663	28121	23.69	76.	16.	6.	1.	1.	67.	27.	3.	4.
72657 X	2990.00	13951	4056	1631	218	322	6227	20178	30.86	69.	20.	8.	1.	2.	65.	26.	4.	5.
72657 Z	3011.00	9434	1338	483	56	81	1958	11392	17.19	83.	12.	4.	0.	1.	68.	25.	3.	4.

Table 2. TOTAL ORGANIC CARBON REPORT

BASIN - GIPPSLAND
WELL - WHITING 1

SAMPLE NO.	DEPTH	AGE	FORMATION	AN	TOC%	AN	TOC%	AN	TOC%	DESCRIPTION
72639 S	980.00	MID-LATE MIOCENE	GIPPSLAND LIMESTONE	2	.48					LT OL-MED GRY MUDST.CALC
72639 U	1010.00	MID-LATE MIOCENE	GIPPSLAND LIMESTONE	2	.17					OL-LT OL GRY SLTY LMST.
72639 W	1040.00	MID-LATE MIOCENE	GIPPSLAND LIMESTONE	2	.23					LT-MED LT GRY SLTY LMST.
72639 Y	1070.00	MID-LATE MIOCENE	GIPPSLAND LIMESTONE	2	.40					OL-LT OL GRY MUDST.CALC.
72644 A	1100.00	MID-LATE MIOCENE	GIPPSLAND LIMESTONE	2	.53					MED DK GRY MUDST.CALC.
72644 C	1130.00	MID-LATE MIOCENE	GIPPSLAND LIMESTONE	2	.39					MED GRY MUDST. V CALC.
72644 E	1160.00	MID-LATE MIOCENE	GIPPSLAND LIMESTONE	2	.27					MED-MED LT GY MUDST.CALC

===> DEPTH : .00 TO 1173.00 METRES. <=== I ===> AVERAGE TOC : .35 % EXCLUDING VALUES GREATER THAN 10.00 % <===

SAMPLE NO.	DEPTH	AGE	FORMATION	AN	TOC%	AN	TOC%	AN	TOC%	DESCRIPTION
72644 G	1190.00	EARLY MIOCENE	LAKES ENTRANCE	2	.36					OL-LT OL GY MUDST.V CALC
72644 I	1220.00	EARLY MIOCENE	LAKES ENTRANCE	2	.27					OL-LT OL GY MUDST.V CALC
72644 K	1250.00	EARLY MIOCENE	LAKES ENTRANCE	2	.32					OL-LT OL GY MUDST.V CALC

===> DEPTH : 1173.00 TO 1277.50 METRES. <=== I ===> AVERAGE TOC : .32 % EXCLUDING VALUES GREATER THAN 10.00 % <===

SAMPLE NO.	DEPTH	AGE	FORMATION	AN	TOC%	AN	TOC%	AN	TOC%	DESCRIPTION
72644 M	1280.00	PALEOCENE	LATROBE GROUP-GURNARD FM	2	.30					LT OL GRY MUDST. V CALC.

===> DEPTH : 1277.50 TO 1287.00 METRES. <=== I ===> AVERAGE TOC : .30 % EXCLUDING VALUES GREATER THAN 10.00 % <===

SAMPLE NO.	DEPTH	AGE	FORMATION	AN	TOC%	AN	TOC%	AN	TOC%	DESCRIPTION
72644 O	1310.00	PALEOCENE	LATROBE GROUP	2	.31					LT OL GRY MUDST. V CALC.
72644 Q	1340.00	PALEOCENE	LATROBE GROUP	2	.40					LT OL GRY MUDST. CALC.
72636 X	1359.50	PALEOCENE	LATROBE GROUP	1	.07					M-DK GRY SST MICA
72644 S	1370.00	PALEOCENE	LATROBE GROUP	2	30.00					BLACK COAL.ARGILL.
72639 C	1374.00	PALEOCENE	LATROBE GROUP	1	2.74					OL/GRY SLTST COALY
72636 V	1399.80	PALEOCENE	LATROBE GROUP	1	.18					M OL/GRY SST
72636 U	1415.20	PALEOCENE	LATROBE GROUP	1	5.48					OL/GRY CLST MICA
72644 X	1445.00	PALEOCENE	LATROBE GROUP	2	45.90					BLACK COAL.GRY'BLK SHALE
72636 H	1527.20	PALEOCENE	LATROBE GROUP	1	2.11					LAM M GRY SST/DK GY CLST
72652 G	1550.00	PALEOCENE	LATROBE GROUP	2	.34					LT OL GRY MUDST.SL CALC.
72652 M	1640.00	PALEOCENE	LATROBE GROUP	2	.03					PINK'GY-V LT GY SST.
72636 A	1676.30	PALEOCENE	LATROBE GROUP	1	1.26					M OL/GRY SLTST PYR S
72652 O	1685.00	PALEOCENE	LATROBE GROUP	2	.66					OL LT OL GY MUDST. CALC.
72652 Q	1715.00	PALEOCENE	LATROBE GROUP	2	.03					OL-LT OL GY MUDST.CALC.
72635 Z	1715.80	PALEOCENE	LATROBE GROUP	1	1.97					OL/GRY SLTST COALY STRKS
72652 S	1745.00	PALEOCENE	LATROBE GROUP	2	55.40					COAL.CARB GRY'BLK SHALE.
72652 U	1775.00	PALEOCENE	LATROBE GROUP	2	2.28					LT OL-BRN' GRY SHALE.
72635 W	1790.50	PALEOCENE	LATROBE GROUP	1	1.59					OL/GRY SLTST
72652 Y	1835.00	PALEOCENE	LATROBE GROUP	2	32.90					COAL. GRY' BLK SHALE.
72635 T	1859.10	PALEOCENE	LATROBE GROUP	1	.56					OL/GRY SLTST COALY STRKS
72655 A	1865.00	PALEOCENE	LATROBE GROUP	2	1.99					LT OL-DK GRY MUDST.MICA.

Table 2 cont. TOTAL ORGANIC CARBON REPORT

BASIN - GIPPSLAND
WELL - WHITING 1

SAMPLE NO.	DEPTH	AGE	FORMATION	AN	TOC%	AN	TOC%	AN	TOC%	DESCRIPTION
72655 E	1925.00	PALEOCENE	LATROBE GROUP	2	.82					LT GRY SANDSTONE.
72655 G	1955.00	PALEOCENE	LATROBE GROUP	2	.36					LT OL-MED GRY MUDST.CALC
72655 I	1985.00	PALEOCENE	LATROBE GROUP	2	.45					V LT GY VF SST.CARB.
72635 O	2010.50	PALEOCENE	LATROBE GROUP	1	.13					LT OL/GRY SLTST
72655 M	2045.00	PALEOCENE	LATROBE GROUP	2	.28					LT OL-MED GRY MUDST.CALC
72655 O	2075.00	PALEOCENE	LATROBE GROUP	2	.26					V LT-MED LT GRY VF SST.
72655 Q	2105.00	PALEOCENE	LATROBE GROUP	2	.40					V LT GRY MUDST.SL SLTY.
72655 S	2135.00	PALEOCENE	LATROBE GROUP	2	1.20					MED-MED DK GRY MUDST.
72633 X	2141.20	PALEOCENE	LATROBE GROUP	1	.78					OL/GRY SLTY CLST
72655 U	2165.00	PALEOCENE	LATROBE GROUP	2	.64					V LT-MED LT GRY F SST.
72655 W	2195.00	PALEOCENE	LATROBE GROUP	2	.35					MED GRY MUDST.SL CALC.
72655 Y	2225.00	PALEOCENE	LATROBE GROUP	2	1.62					MED DK GRY MUDST.SL CARB
72633 T	2233.00	PALEOCENE	LATROBE GROUP	1	.66					OL/GRY SDY SLTST
72656 A	2255.00	PALEOCENE	LATROBE GROUP	2	.51					LT-MED LT GRY SLTST.
72656 C	2285.00	PALEOCENE	LATROBE GROUP	2	.37					LT-MED LT GRY SLTST.
72656 E	2315.00	PALEOCENE	LATROBE GROUP	2	.47					MED LT GRY MUDST & SLTST
72656 G	2345.00	PALEOCENE	LATROBE GROUP	2	.71					V LT GRY SST. TR COAL.
72635 J	2358.50	PALEOCENE	LATROBE GROUP	1	2.48					GRY/BLK SH COALY SPECKS
72656 I	2375.00	PALEOCENE	LATROBE GROUP	2	22.20					DK-GRY' BLK SHALE.COAL.
72656 K	2405.00	PALEOCENE	LATROBE GROUP	2	.96					LT-MED LT GRY VF SST.
72656 M	2435.00	PALEOCENE	LATROBE GROUP	2	.36					OL-LT OL GRY MUDST.
72635 L	2436.50	PALEOCENE	LATROBE GROUP	1	9.05					GRY/BLK SH COAL LAM.
72656 Q	2495.00	PALEOCENE	LATROBE GROUP	2	.25					V LT GRY SST.
72656 S	2525.00	PALEOCENE	LATROBE GROUP	2	.41					LT-V LT GRY SST.
72656 U	2555.00	PALEOCENE	LATROBE GROUP	2	.83					MED LT-BRN' GRY CLYST.
72656 W	2585.00	PALEOCENE	LATROBE GROUP	2	.86					MED-MED DK GRY MUDST.
72638 N	2614.00	PALEOCENE	LATROBE GROUP	1	.83					OL/GRY SLTST
72657 A	2645.00	PALEOCENE	LATROBE GROUP	2	1.89					OL-LT OL GRY LMST.ARGILL
72657 C	2675.00	PALEOCENE	LATROBE GROUP	2	.48					MED-MED LT GRY SST.
72657 E	2705.00	PALEOCENE	LATROBE GROUP	2	1.52					OL GRY SLTY MUDST. CALC.
72657 I	2765.00	PALEOCENE	LATROBE GROUP	2	2.50					MED DK-DK GRY SHALE.
72635 F	2767.00	LATE CRETACEOUS	LATROBE GROUP	1	6.22					BR/GRY SH COALY
72638 J	2793.00	LATE CRETACEOUS	LATROBE GROUP	1	2.00					DK GRY SLTST MICA
72657 K	2795.00	LATE CRETACEOUS	LATROBE GROUP	2	1.16					LT GRY SST. CARB LAMINAE
72657 M	2825.00	LATE CRETACEOUS	LATROBE GROUP	2	6.15					GRY' BLK SHALE.COAL LAM.
72657 O	2855.00	LATE CRETACEOUS	LATROBE GROUP	2	.43					MED DK GRY CLYST.V HARD.
72635 D	2865.00	LATE CRETACEOUS	LATROBE GROUP	1	3.25					GRY/BLK SLTST COALY SPKS
72657 Q	2885.00	LATE CRETACEOUS	LATROBE GROUP	2	27.50					GRY' BLK COALY CLYST.
72633 H	2887.00	LATE CRETACEOUS	LATROBE GROUP	1	12.17					GRY/BLK SLTST COAL
72657 S	2915.00	LATE CRETACEOUS	LATROBE GROUP	2	2.26					MED-MED DK GRY VF SST.
72635 C	2936.50	LATE CRETACEOUS	LATROBE GROUP	1	1.78					M-DK SLTST COALY SPECKS
72657 U	2945.00	LATE CRETACEOUS	LATROBE GROUP	2	1.18					MED LT GRY SST.CARB.
72635 B	2958.00	LATE CRETACEOUS	LATROBE GROUP	1	.63					M-DK GRY SLTST CARB MICA
72657 W	2975.00	LATE CRETACEOUS	LATROBE GROUP	2	3.94					MED DK GRY CLYST/SLTST.
72635 A	2993.50	LATE CRETACEOUS	LATROBE GROUP	1	.69					M GRY SLTST CARB SPECKS
72657 Y	3005.00	LATE CRETACEOUS	LATROBE GROUP	2	.64					PINKISH-LT GRY SANDSTONE

===> DEPTH : 1287.00 TO 3005.00 METRES. <=== I ===> AVERAGE TOC : 1.41 % EXCLUDING VALUES GREATER THAN 10.00 % <===

12/10/83 ESSO AUSTRALIA LTD. PAGE

Table 3. VITRINITE REFLECTANCE REPORT

BASIN - GIPPSLAND
WELL - WHITING 1

SAMPLE NO.	DEPTH	AGE	FORMATION	AN	MAX. RO	FLUOR. COLOUR	NO.CNTS.	MACERAL TYPE
72636 P	1478.50	PALEOCENE	LATROBE GROUP	5	.49	GRN-DULL BRN	20	V>E>>I,COAL
72638 X	2141.20	PALEOCENE	LATROBE GROUP	5	.49	YEL-OR	13	I>E>V,DOM COMMON
72628 A	2682.26	PALEOCENE	LATROBE GROUP	5	.76	YEL-OR	25	V>I>E,DOM ABUNDANT
72635 F	2767.00	LATE CRETACEOUS	LATROBE GROUP	5	.84	YEL-BRN	21	V=E,NO I,COAL
72635 B	2958.00	LATE CRETACEOUS	LATROBE GROUP	5	.69	YEL-BRN	20	I>V>E,DOM ABUNDANT

Table 4. KEROGEN ELEMENTAL ANALYSIS REPORT

BASIN - GIPPSLAND
WELL - WHITING 1

SAMPLE NO.	DEPTH	SAMPLE TYPE	N%	C%	H%	S%	O%	ASH%	COMMENTS
			--- ELEMENTAL % (ASH FREE) ---						
72636 Z	1342.50	SWC	.66	65.67	4.95	.00	28.72	8.97	
72637 F	1317.60	SWC	1.41	63.94	4.82	.00	29.84	12.60	HIGH ASH
72637 E	1322.50	SWC	1.44	66.96	5.07	.00	26.53	7.50	
72636 X	1359.50	SWC	.60	66.11	4.93	.00	28.35	9.82	
72639 C	1374.00	SWC	.60	66.00	4.89	.00	28.51	7.08	
72636 U	1415.20	SWC	.79	65.17	4.91	.00	29.13	5.62	
72636 R	1456.00	SWC	.79	71.44	5.51	.00	22.25	7.66	
72636 H	1527.20	SWC	1.03	68.65	5.17	.00	25.15	9.64	
72636 G	1542.00	SWC	.94	71.14	5.46	.00	22.45	7.92	
72636 E	1590.30	SWC	.95	72.08	5.66	.00	21.32	4.20	
72636 B	1657.50	SWC	.84	70.79	5.23	.00	23.14	10.38	HIGH ASH
72636 L	1665.50	SWC	.88	74.18	5.51	.00	19.42	3.51	
72635 Z	1715.80	SWC	.99	74.95	5.80	.00	18.26	2.90	
72635 W	1780.50	SWC	1.07	68.59	5.34	.00	25.00	.00	
72635 T	1859.10	SWC	.96	76.42	6.30	.00	16.32	7.55	
72635 R	1925.00	SWC	.90	76.14	5.13	.00	17.82	2.21	
72638 X	2141.20	SWC	.99	81.99	6.79	.00	10.22	8.75	
72638 T	2233.00	SWC	1.18	81.36	6.40	.00	11.07	8.23	
72635 N	2358.50	SWC	1.22	81.12	5.79	.00	11.87	9.25	
72635 L	2486.50	SWC	.87	75.48	5.90	.00	17.76	.67	
72639 G	2550.00	CTS	1.23	81.71	6.06	.00	11.00	7.57	
72635 K	2551.00	SWC	1.62	82.05	5.68	.00	10.65	4.53	
72635 J	2585.50	SWC	1.72	82.67	5.46	.00	10.15	2.97	
72635 H	2595.00	CTS	1.40	81.50	5.44	.00	11.66	6.43	
72635 I	2661.00	SWC	1.14	85.21	4.25	.00	9.41	1.36	
72639 K	2687.87	CORE	.91	79.76	6.62	.00	12.71	5.59	
72639 L	2689.04	CORE	.77	77.18	5.35	.00	16.70	2.30	
72638 M	2717.00	SWC	1.25	86.25	4.13	.00	8.36	3.24	
72635 G	2735.50	SWC	1.16	84.09	5.75	.00	8.99	.94	
72635 F	2767.00	SWC	1.12	67.77	5.16	.00	25.95	19.95	HIGH ASH
72638 J	2793.00	SWC	1.33	81.62	4.76	.00	12.28	7.65	
72635 E	2827.00	SWC	1.29	85.89	4.24	.00	8.58	.85	
72635 C	2926.50	SWC	1.31	86.10	4.72	.00	7.87	2.09	
72635 B	2958.00	SWC	1.41	85.40	4.44	.00	8.74	3.00	
72635 A	2993.50	SWC	1.25	86.11	4.18	.00	8.46	2.36	

Table 5. KEROGEN ELEMENTAL ANALYSIS REPORT

BASIN - GIPPSLAND
WELL - WHITING 1

SAMPLE NO.	DEPTH	SAMPLE TYPE	AGE	FORMATION	ATOMIC RATIOS H/C	ATOMIC RATIOS O/C	ATOMIC RATIOS N/C	COMMENTS
72636 Z	1342.50	SWC	PALEOCENE	LATROBE GROUP	.91	.33	.01	
72637 F	1317.80	SWC	PALEOCENE	LATROBE GROUP	.90	.35	.02	HIGH ASH
72637 E	1322.50	SWC	PALEOCENE	LATROBE GROUP	.91	.30	.02	
72636 X	1359.50	SWC	PALEOCENE	LATROBE GROUP	.90	.32	.01	
72639 C	1374.00	SWC	PALEOCENE	LATROBE GROUP	.89	.32	.01	
72636 U	1415.20	SWC	PALEOCENE	LATROBE GROUP	.90	.34	.01	
72636 R	1456.00	SWC	PALEOCENE	LATROBE GROUP	.93	.23	.01	
72636 H	1527.20	SWC	PALEOCENE	LATROBE GROUP	.90	.27	.01	
72636 G	1542.00	SWC	PALEOCENE	LATROBE GROUP	.92	.24	.01	
72636 E	1590.30	SWC	PALEOCENE	LATROBE GROUP	.94	.22	.01	
72636 B	1657.50	SWC	PALEOCENE	LATROBE GROUP	.89	.25	.01	HIGH ASH
72636 L	1665.50	SWC	PALEOCENE	LATROBE GROUP	.89	.20	.01	
72635 Z	1715.80	SWC	PALEOCENE	LATROBE GROUP	.93	.18	.01	
72635 W	1786.50	SWC	PALEOCENE	LATROBE GROUP	.93	.27	.01	
72635 T	1859.10	SWC	PALEOCENE	LATROBE GROUP	.99	.16	.01	
72635 R	1925.00	SWC	PALEOCENE	LATROBE GROUP	.81	.18	.01	
72638 X	2141.20	SWC	PALEOCENE	LATROBE GROUP	.99	.09	.01	
72638 T	2233.00	SWC	PALEOCENE	LATROBE GROUP	.94	.10	.01	
72635 N	2356.50	SWC	PALEOCENE	LATROBE GROUP	.86	.11	.01	
72635 L	2486.50	SWC	PALEOCENE	LATROBE GROUP	.94	.18	.01	
72639 G	2550.00	CTS	PALEOCENE	LATROBE GROUP	.89	.10	.01	
72635 K	2551.00	SWC	PALEOCENE	LATROBE GROUP	.83	.10	.02	
72635 J	2585.50	SWC	PALEOCENE	LATROBE GROUP	.79	.09	.02	
72635 H	2595.00	CTS	PALEOCENE	LATROBE GROUP	.80	.11	.01	
72635 I	2661.00	SWC	PALEOCENE	LATROBE GROUP	.60	.08	.01	
72639 K	2687.87	CORE	PALEOCENE	LATROBE GROUP	1.00	.12	.01	
72639 L	2689.04	CORE	PALEOCENE	LATROBE GROUP	.83	.16	.01	
72638 M	2717.00	SWC	PALEOCENE	LATROBE GROUP	.58	.07	.01	
72635 G	2738.50	SWC	PALEOCENE	LATROBE GROUP	.82	.08	.01	
72635 F	2767.00	SWC	LATE CRETACEOUS	LATROBE GROUP	.91	.29	.01	HIGH ASH
72638 J	2793.00	SWC	LATE CRETACEOUS	LATROBE GROUP	.70	.11	.01	
72635 E	2827.00	SWC	LATE CRETACEOUS	LATROBE GROUP	.59	.07	.01	
72635 C	2926.50	SWC	LATE CRETACEOUS	LATROBE GROUP	.66	.07	.01	
72635 B	2958.00	SWC	LATE CRETACEOUS	LATROBE GROUP	.62	.08	.01	
72635 A	2993.50	SWC	LATE CRETACEOUS	LATROBE GROUP	.58	.07	.01	

ROCK EVAL ANALYSES

BASIN - GIPPSLAND
WELL - WHITING 1

Table 6. REPORT A - SULPHUR & PYROLYZABLE CARBON

SAMPLE NO.	DEPTH	SAMPLE TYPE	AGE	TMAX	S1	S2	S3	PI	S2/S3	PC	COMMENTS
72639 C	1374.0	SWC	PALEOCENE	407.	.44	4.36	.35	.09	12.45	.40	
72636 U	1415.2	SWC	PALEOCENE	408.	1.40	17.24	.66	.08	26.12	1.55	
72636 H	1527.2	SWC	PALEOCENE	420.	.62	3.83	.43	.14	8.90	.37	
72636 A	1676.3	SWC	PALEOCENE	417.	.27	.95	.39	.22	2.43	.10	
72635 Z	1715.8	SWC	PALEOCENE	424.	1.02	4.15	.50	.20	8.30	.43	
72635 W	1780.5	SWC	PALEOCENE	425.	.43	3.71	.36	.10	10.30	.34	
72635 T	1859.1	SWC	PALEOCENE	415.	.35	1.09	.18	.24	6.05	.12	
72638 X	2141.2	SWC	PALEOCENE	427.	.45	1.90	.22	.19	8.63	.19	
72638 T	2233.0	SWC	PALEOCENE	428.	.34	.93	.24	.27	3.87	.10	
72635 N	2358.5	SWC	PALEOCENE	432.	.76	5.87	.20	.11	29.35	.55	
72635 L	2486.5	SWC	PALEOCENE	430.	4.97	34.81	.36	.12	96.69	3.31	
72638 N	2614.0	SWC	PALEOCENE	433.	.30	1.05	.13	.22	8.07	11.00	
72635 F	2767.0	SWC	LATE CRETACEOUS	441.	3.40	18.90	.38	.15	49.73	1.85	
72638 J	2793.0	SWC	LATE CRETACEOUS	435.	.7·1	1.86	.16	.28	11.62	.21	
72635 D	2856.0	SWC	LATE CRETACEOUS	443.	1.20	12.17	.20	.09	60.85	1.11	
72635 C	2926.5	SWC	LATE CRETACEOUS	440.	.64	1.53	.17	.30	9.00	.18	
72635 B	2955.0	SWC	LATE CRETACEOUS	444.	.33	2.57	.20	.24	12.85	.28	
72635 A	2993.5	SWC	LATE CRETACEOUS	441.	.28	.32	.14	.47	2.28	.05	

T .C. = Total organic carbon, wt. %
S1 = Free hydrocarbons, mg HC/g of rock
S2 = Residual hydrocarbon potential (mg HC/g of rock)
S3 = CO2 produced from kerogen pyrolysis (mg CO2/g of rock)
PC* = 0.083 (S1 + S2)

Hydrogen Index = mg HC/g organic carbon
Oxygen Index = mg CO2/g organic carbon
PI = S1/S1+S2
Tmax = Temperature Index, degrees C.

PI=PRODUCTIVITY INDEX PC=PYROLYZABLE CARBON TC=TOTAL CARBON HI=HYDROGEN INDEX OI=OXYGEN INDEX

ROCK EVAL ANALYSES

BASIN - GIPPSLAND
WELL - WHITING 1

Table 6 cont. REPORT B - TOTAL CARBON,H/O INDICES

SAMPLE NO.	DEPTH	SAMPLE TYPE	FORMATION	TC	HI	OI	HI/OI	COMMENTS
72639 C	1374.0	SWC	LATROBE GROUP	2.74	159.	12.	13.25	
72636 U	1415.2	SWC	LATROBE GROUP	5.48	314.	12.	26.17	
72636 H	1527.2	SWC	LATROBE GROUP	2.11	181.	20.	9.05	
72636 A	1676.3	SWC	LATROBE GROUP	1.26	75.	30.	2.50	
72635 Z	1715.8	SWC	LATROBE GROUP	1.97	210.	25.	8.40	
72635 W	1780.5	SWC	LATROBE GROUP	1.59	233.	22.	10.59	
72635 T	1859.1	SWC	LATROBE GROUP	.56	194.	32.	6.06	
72638 X	2141.2	SWC	LATROBE GROUP	.78	243.	28.	8.68	
72638 T	2233.0	SWC	LATROBE GROUP	.66	140.	36.	3.89	
72635 N	2356.5	SWC	LATROBE GROUP	2.48	236.	8.	29.50	
72635 L	2486.5	SWC	LATROBE GROUP	9.05	384.	3.	128.00	
72638 N	2614.0	SWC	LATROBE GROUP	.83	126.	15.	8.40	
72635 F	2767.0	SWC	LATROBE GROUP	6.22	303.	6.	50.50	
72638 J	2793.0	SWC	LATROBE GROUP	2.00	93.	8.	11.63	
72635 D	2856.0	SWC	LATROBE GROUP	3.25	374.	6.	62.33	
72635 C	2926.5	SWC	LATROBE GROUP	1.78	85.	9.	9.44	
72635 B	2958.0	SWC	LATROBE GROUP	.63	407.	31.	13.13	
72635 A	2993.5	SWC	LATROBE GROUP	.69	46.	20.	2.30	

TC = Total organic carbon, wt. %
S1 = Free hydrocarbons, mg HC/g of rock
S2 = Residual hydrocarbon potential (mg HC/g of rock)
S3 = CO2 produced from kerogen pyrolysis (mg CO2/g of rock)
PC* = 0.083 (S1 + S2)

Hydrogen Index = mg HC/g organic carbon
Oxygen Index = mg CO2/g organic carbon
PI = S1/S1+S2
Tmax = Temperature Index, degrees C.

17/10/83

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PAGE 1

C15+ EXTRACT ANALYSES

BASIN - GIPPSLAND
WELL - WHITING 1

Table 7. REPORT A - EXTRACT DATA (PPM)

SAMPLE NO.	DEPTH	TYPE	AN	AGE	TOTAL EXTRACT	HYDROCARBONS: SATS.	AROMS.	TOTAL H/CARBS	NON-HYDROCARBONS: ASPH.	ELUTED NSO	NON-ELT NSO	TOTAL NSO	SULPHUR	TOTAL NON/HCS
72639 U	1010.00		2	MID-LATE MIOCENE	253.	0.	0.	0.	202.	0.	0.	0.	0.	202.
72652 O	1685.00		2	PALEOCENE	612.	23.	71.	94.	405.	102.	6.	108.	4.	517.
72655 G	1955.00		2	PALEOCENE	805.	35.	95.	130.	561.	90.	12.	102.	12.	675.
72656 E	2315.00		2	PALEOCENE	406.	73.	74.	147.	189.	51.	12.	63.	7.	259.
72656 W	2585.00		2	PALEOCENE	846.	177.	171.	348.	360.	110.	10.	120.	19.	499.
72657 Y	3005.00		2	LATE CRETACEOUS	947.	205.	214.	419.	330.	93.	57.	150.	48.	528.

17/10/83

ESSO AUSTRALIA LTD.

PAGE 1

C15+ EXTRACT ANALYSES

BASIN - GIPPSLAND
WELL - WHITING 1

REPORT B - EXTRACTS % OF TOTAL

SAMPLE NO.	DEPTH	FORMATION	HYDROCARBONS: SAT. %	AROM.%	NON-HYDROCARBONS: NSO. %	ASPH.%	SULPH%	SAT/AR	HC/NHC	COMMENTS
72639 U	1010.00	GIPPSLAND LIMESTONE	.0	.0	.0	79.8	.0	.0	.0	IMMATURE,MAINLY MARINE
72652 O	1685.00	LATROBE GROUP	3.8	11.6	17.6	66.2	.7	.3	.2	IMMATURE,NON-MARINE
72655 G	1955.00	LATROBE GROUP	4.3	11.8	12.7	69.7	1.5	.4	.2	IMMATURE,NON-MARINE
72656 E	2315.00	LATROBE GROUP	18.0	18.2	15.5	46.6	1.7	1.0	.6	IMMATURE,NON-MARINE
72656 W	2585.00	LATROBE GROUP	20.9	20.2	14.2	42.6	2.2	1.0	.7	EARLY MATURE,NON-MAR.
72657 Y	3005.00	LATROBE GROUP	21.6	22.6	15.8	34.8	5.1	1.0	.8	MATURE,NON-MARINE

Table 8.

C4-C7 OIL 16 JUN 83

76631 AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 1482 METERS

	TOTAL PERCENT	NORM PERCENT		TOTAL PERCENT	NORM PERCENT
METHANE	0.000		CHEX	0.727	2.64
ETHANE	0.000		33-DMP	0.000	0.00
PROPANE	0.172		11-DMCP	0.151	0.55
IBUTANE	0.350	1.27	2-MHEX	1.449	5.26
NBUTANE	0.861	3.12	23-DMP	0.385	1.40
IPENTANE	1.611	5.85	3-MHEX	1.306	4.74
NPENTANE	2.004	7.28	1C3-DMCP	0.400	1.45
22-DMB	0.096	0.35	1T3-DMCP	0.340	1.24
CPENTANE	0.049	0.18	1T2-DMCP	0.592	2.15
23-DMB	0.308	1.12	3-EPENT	0.000	0.00
2-MP	1.913	6.95	224-TMP	0.000	0.00
3-MP	0.981	3.56	NHEPTANE	4.594	16.68
NHEXANE	3.476	12.62	1C2-DMCP	0.062	0.22
MCP	0.857	3.11	MCH	4.461	16.20
22-DMP	0.000	0.00	ECP	0.218	0.79
24-DMP	0.247	0.90	BENZENE	0.031	0.11
223-TMB	0.000	0.00	TOLUENE	0.073	0.26

TOTALS

ALL COMP	27.713
GASOLINE	27.541

SIG COMP RATIOS

C1/C2	3.02
A /D2	6.18
D1/D2	0.08
C1/D2	5.20
PENT/IPENT	1.24
CH/MCP	0.85

PARAFFIN INDEX 1 2.068
PARAFFIN INDEX 2 31.891

INTERPRETER - R.E.METTER
ANALYST - NCP

Table 9.

WHITING-1 OIL, RFT-3, 1482m(KB

Liquid Chromatography and Carbon Isotope Results.

% Saturate Hydrocarbons	=	73.5
% Aromatic Hydrocarbons	=	6.6
% N, S, O.	=	2.7
% Sulphur	=	0.08
% Non-eluted	=	16.8
% Asphaltenes	=	0.4

^{13}C Saturate Hydrocarbons (vs. PDB)	=	$-26.5^{o}/oo$
^{13}C Aromatic Hydrocarbons (vs. PDB)	=	$-26.1^{o}/oo$

PE601296

This is an enclosure indicator page.
The enclosure PE601296 is enclosed within the container PE902572 at this location in this document.

The enclosure PE601296 has the following characteristics:

ITEM_BARCODE = PE601296
CONTAINER_BARCODE = PE902572
NAME = Geochemical log
BASIN = GIPPSLAND
PERMIT = VIC/L2
TYPE = WELL
SUBTYPE = WELL_LOG
DESCRIPTION = Gasoline Range Geochemical log (enclosure from WCR vol.2) for Whiting-1
REMARKS =
DATE_CREATED =
DATE_RECEIVED = 13/11/85
W_NO = W807
WELL_NAME = Whiting-1
CONTRACTOR = ESSO
CLIENT_OP_CO = ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE601297

This is an enclosure indicator page.
The enclosure PE601297 is enclosed within the container PE902572 at this location in this document.

The enclosure PE601297 has the following characteristics:

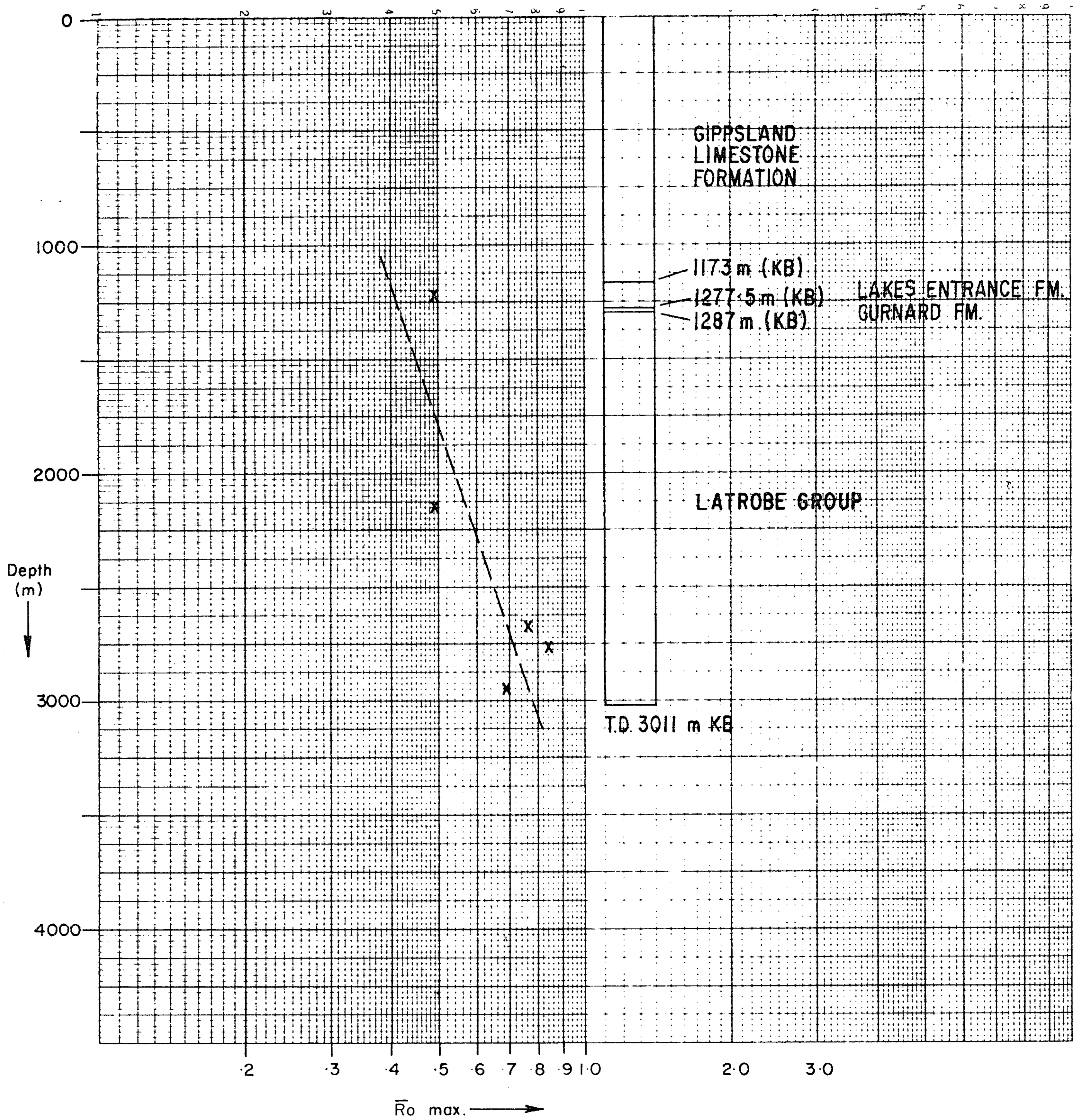
ITEM_BARCODE =	PE601297
CONTAINER_BARCODE =	PE902572
NAME =	C1-4 Cuttings Gas Log
BASIN =	GIPPSLAND
PERMIT =	VIC/L2
TYPE =	WELL
SUBTYPE =	WELL_LOG
DESCRIPTION =	Headspace C1-4 Cuttings Gas Log (enclosure from WCR vol.2) for Whiting-1
REMARKS =	
DATE_CREATED =	
DATE_RECEIVED =	13/11/85
W_NO =	W807
WELL_NAME =	Whiting-1
CONTRACTOR =	ESSO
CLIENT_OP_CO =	ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

FIG. 3

WHITING - I

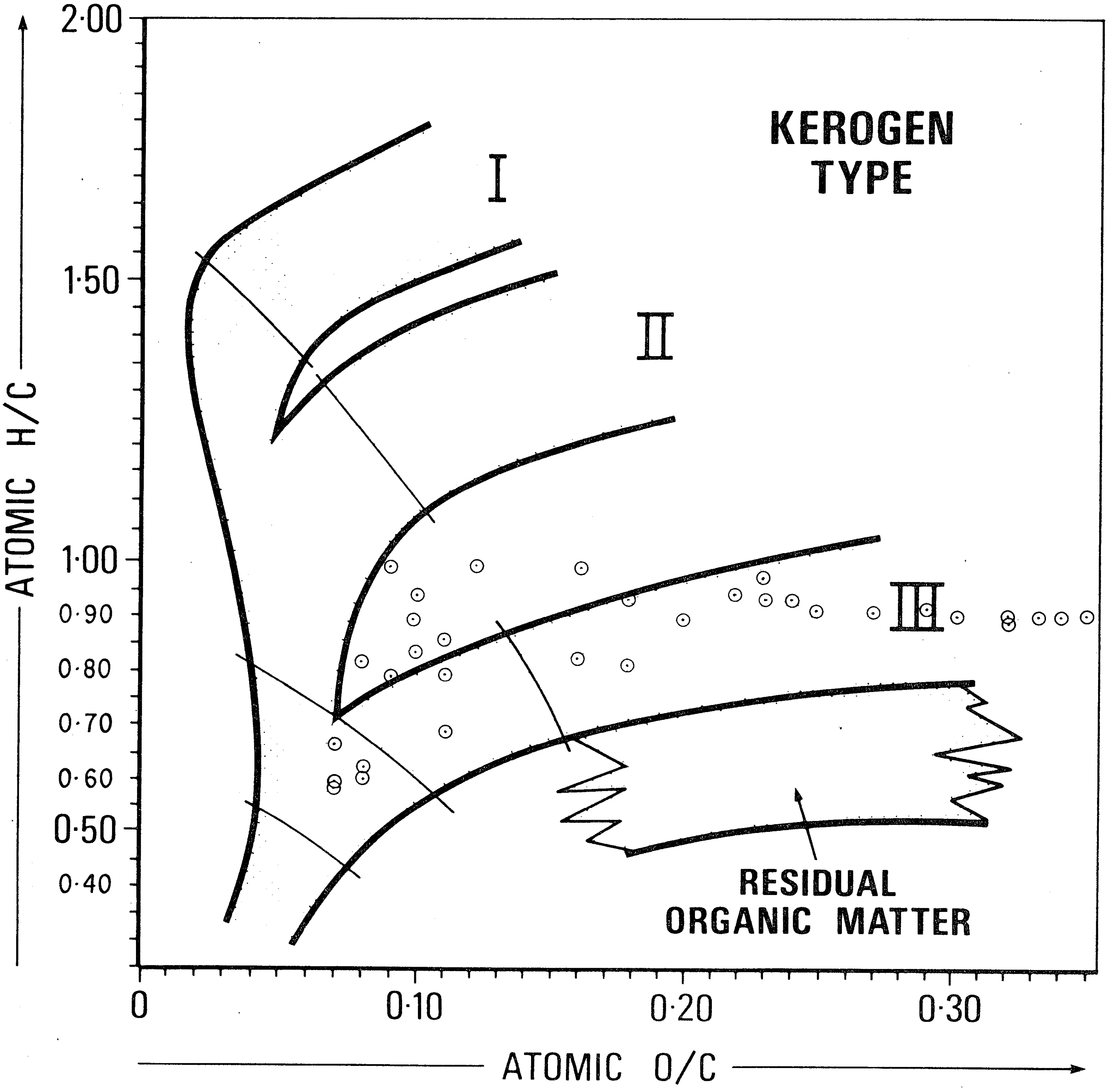
VITRINITE REFLECTANCE vs DEPTH



Dwg. 2174/OP/7

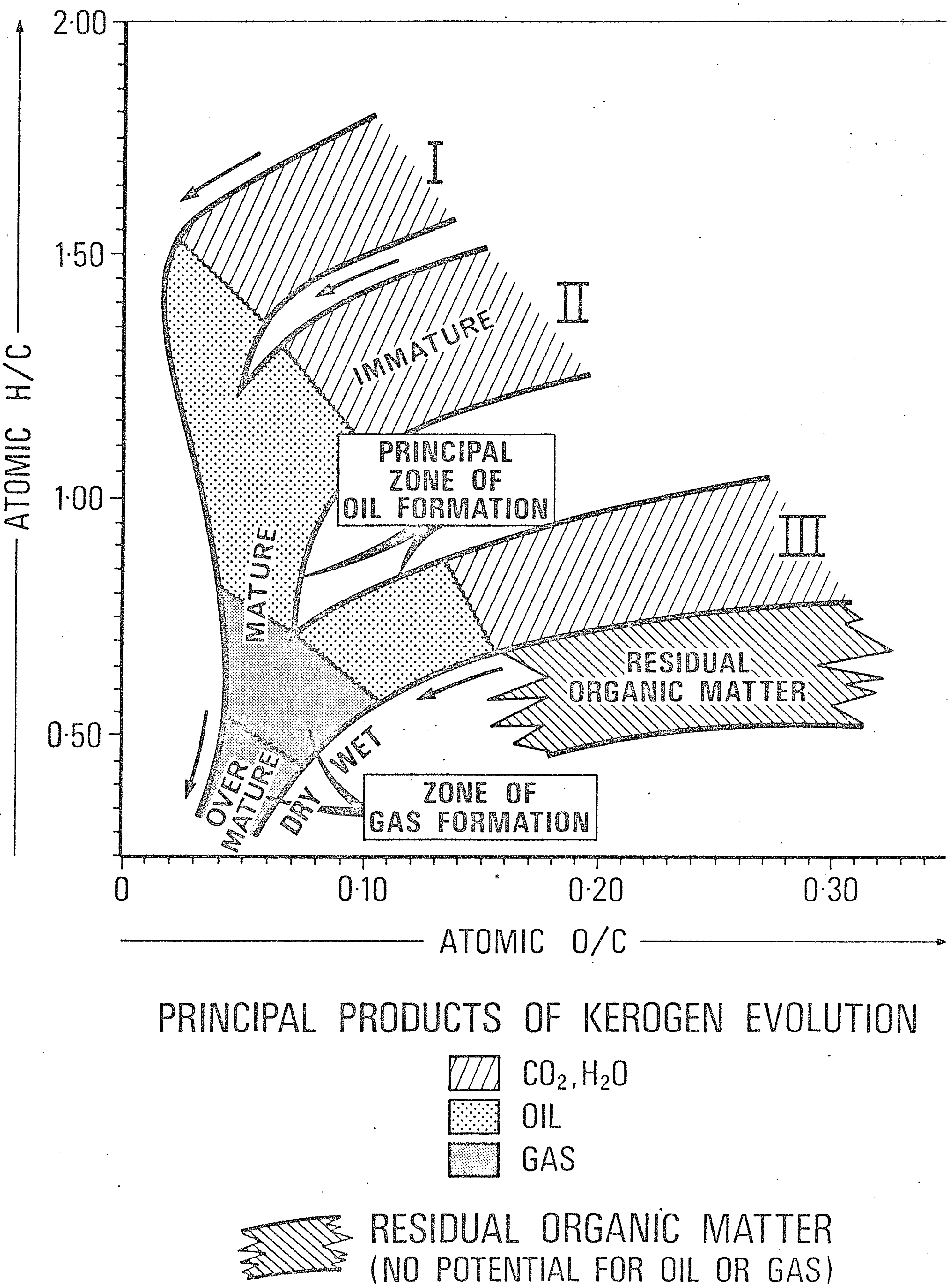
FIG. 4

WHITING-I



⊙ Latrobe Group

Figure 5.

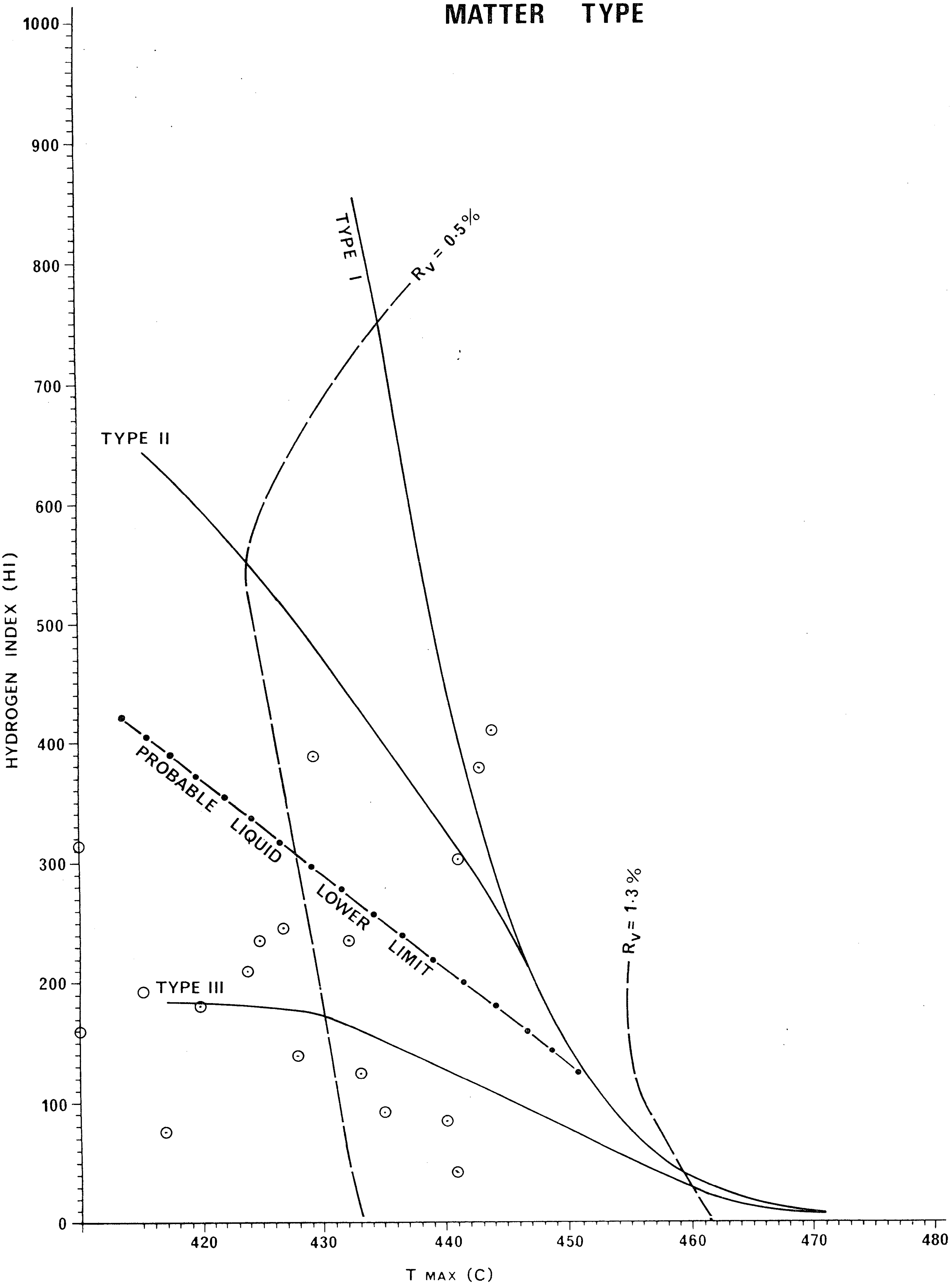


1380/BS/75

FIG.6

WHITING-1

ROCKEVAL MATURATION AND ORGANIC MATTER TYPE



C_{15+} Paraffin-Naphthene Hydrocarbons

GeoChem Sample No. E561-001

Exxon Identification No. 72639-U

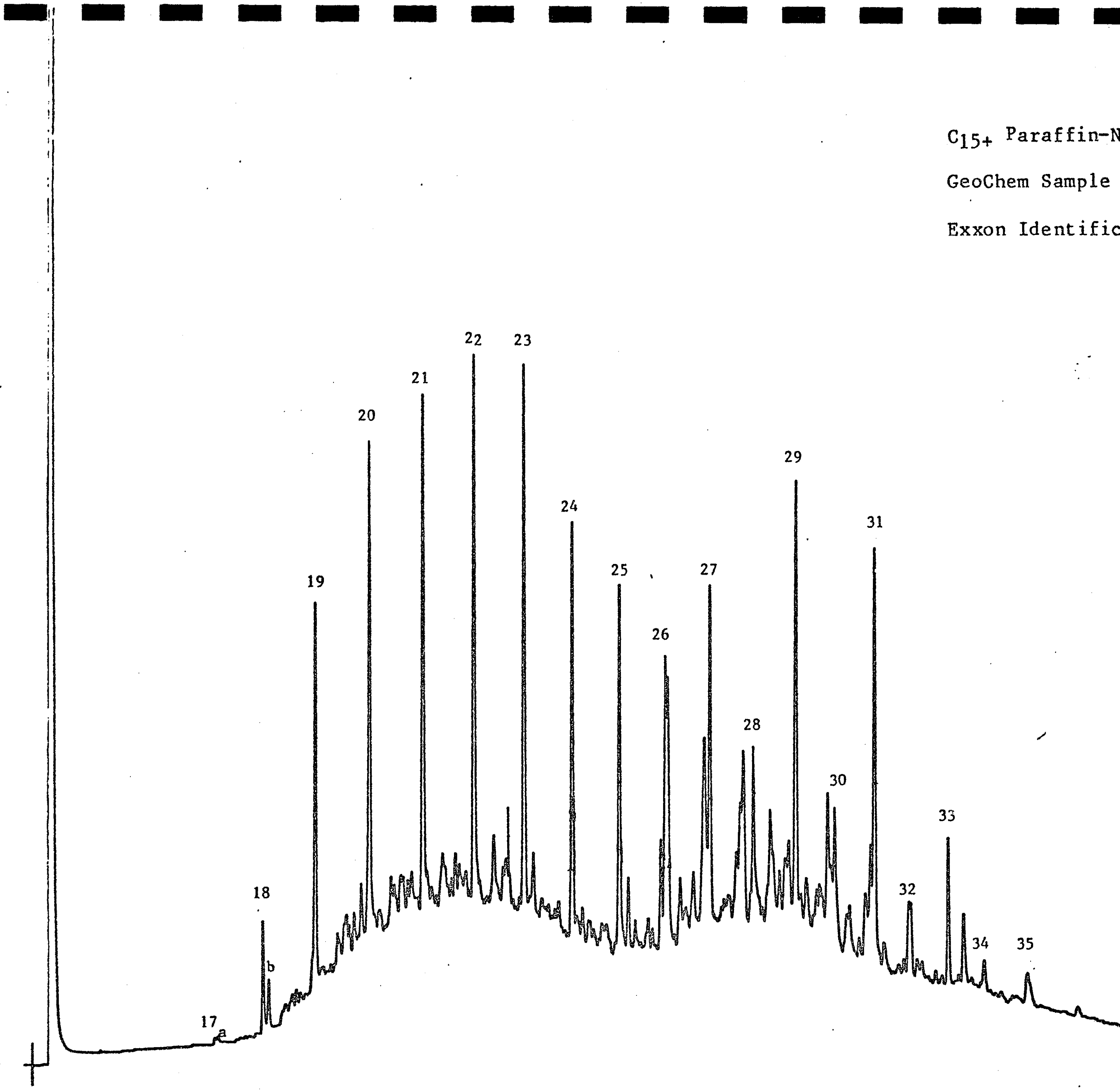


Figure 7, Whiting-1, 995-1010m(KB), Gippsland Limestone Fm.

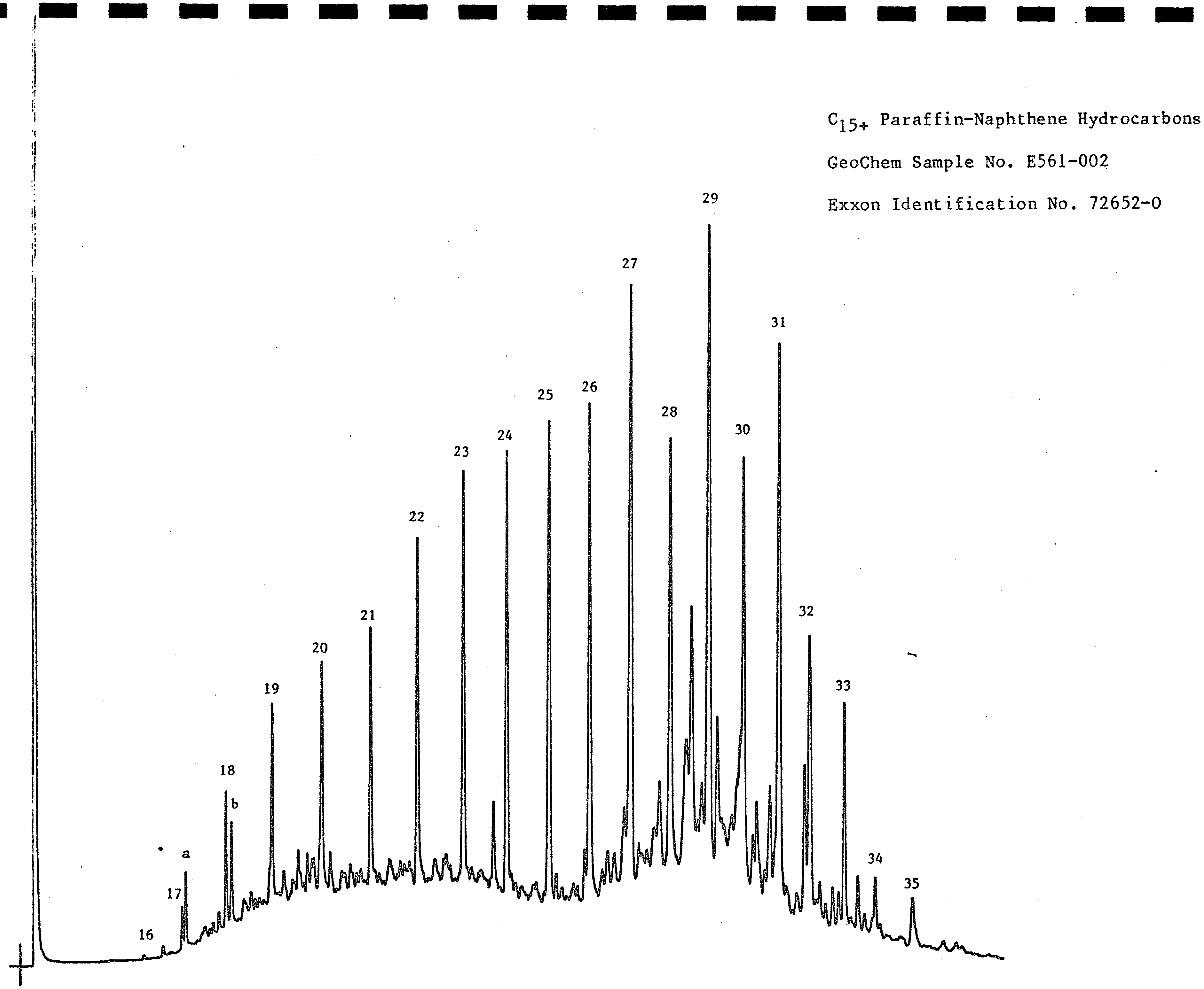


Figure 8, Whiting-1, 1670-1685m(KB), Latrobe Group.

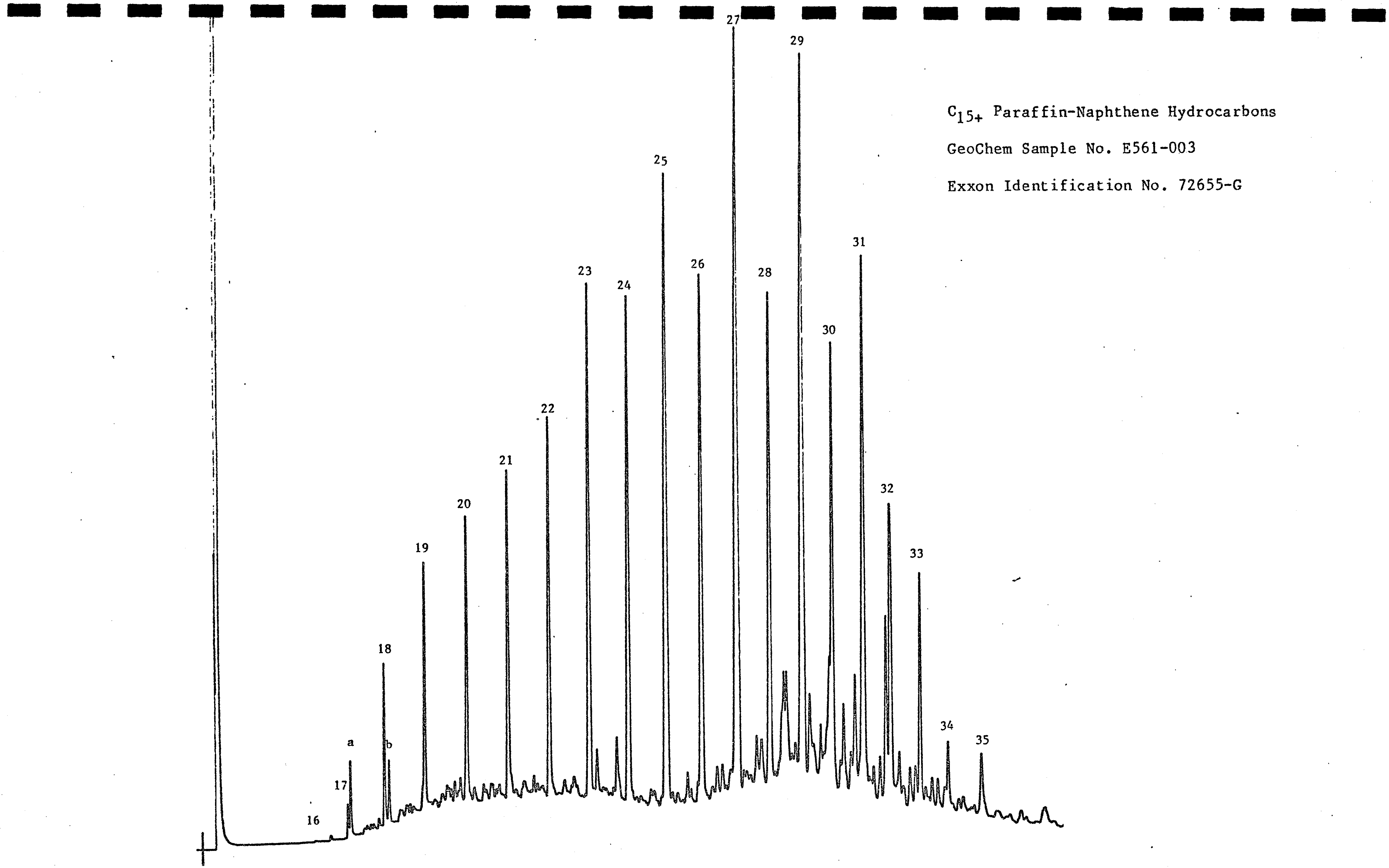


Figure 9, Whiting-1, 1940-1955m(KB), Latrobe Group.

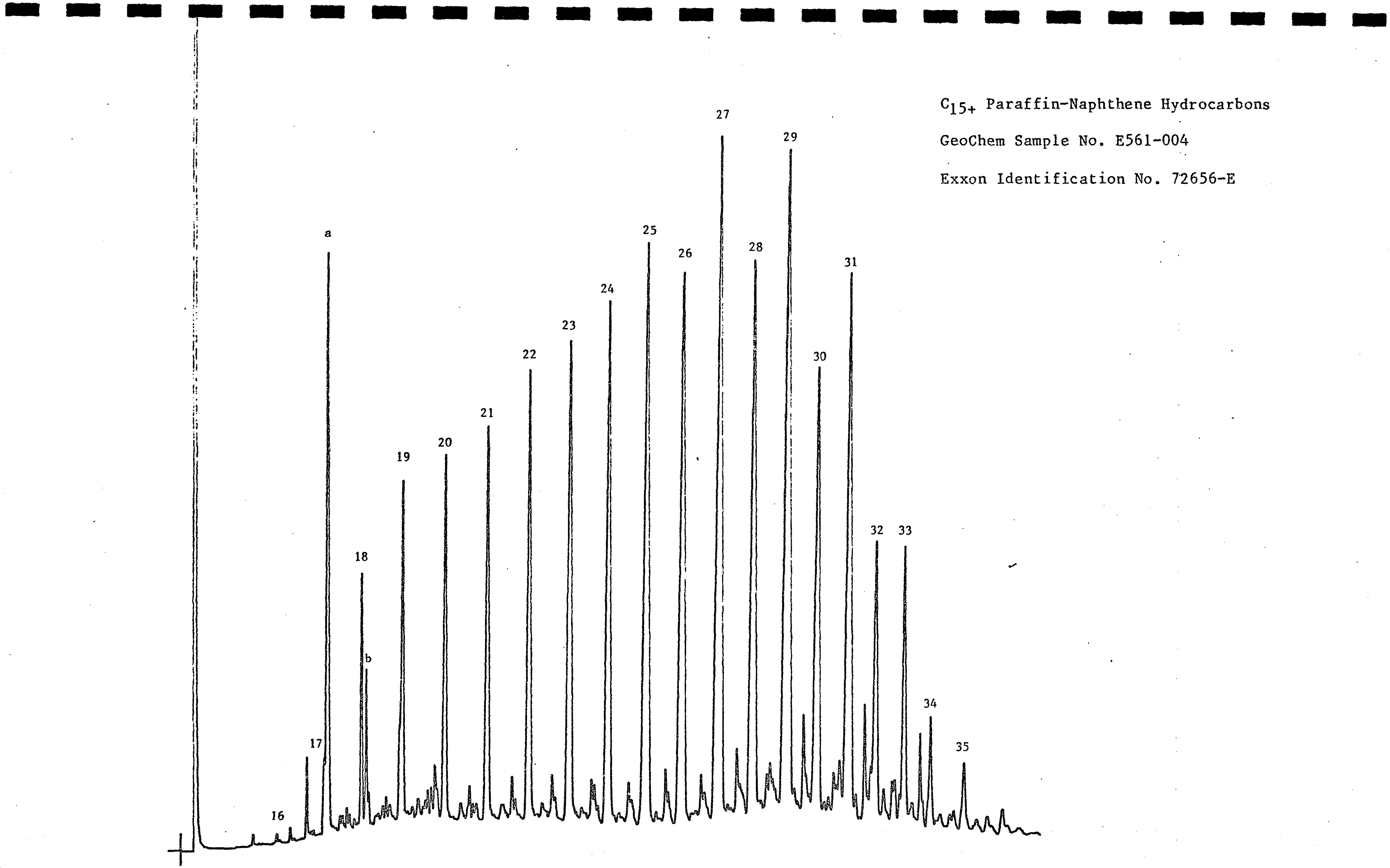


Figure 10, Whiting-1, 2300-2315m(KB), Latrobe Group.

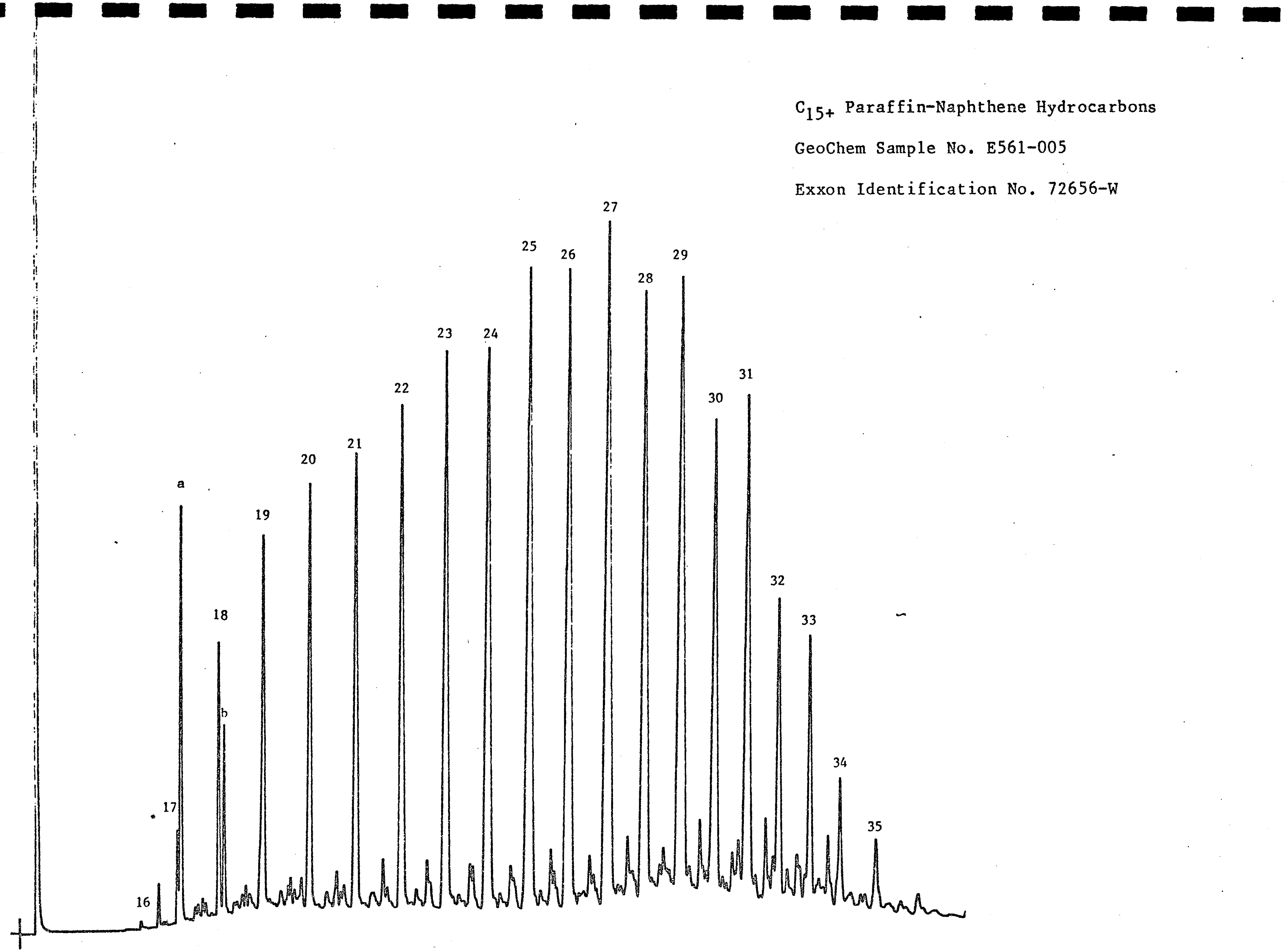


Figure 11, Whiting-1, 2570-2585m(KB), Latrobe Group.

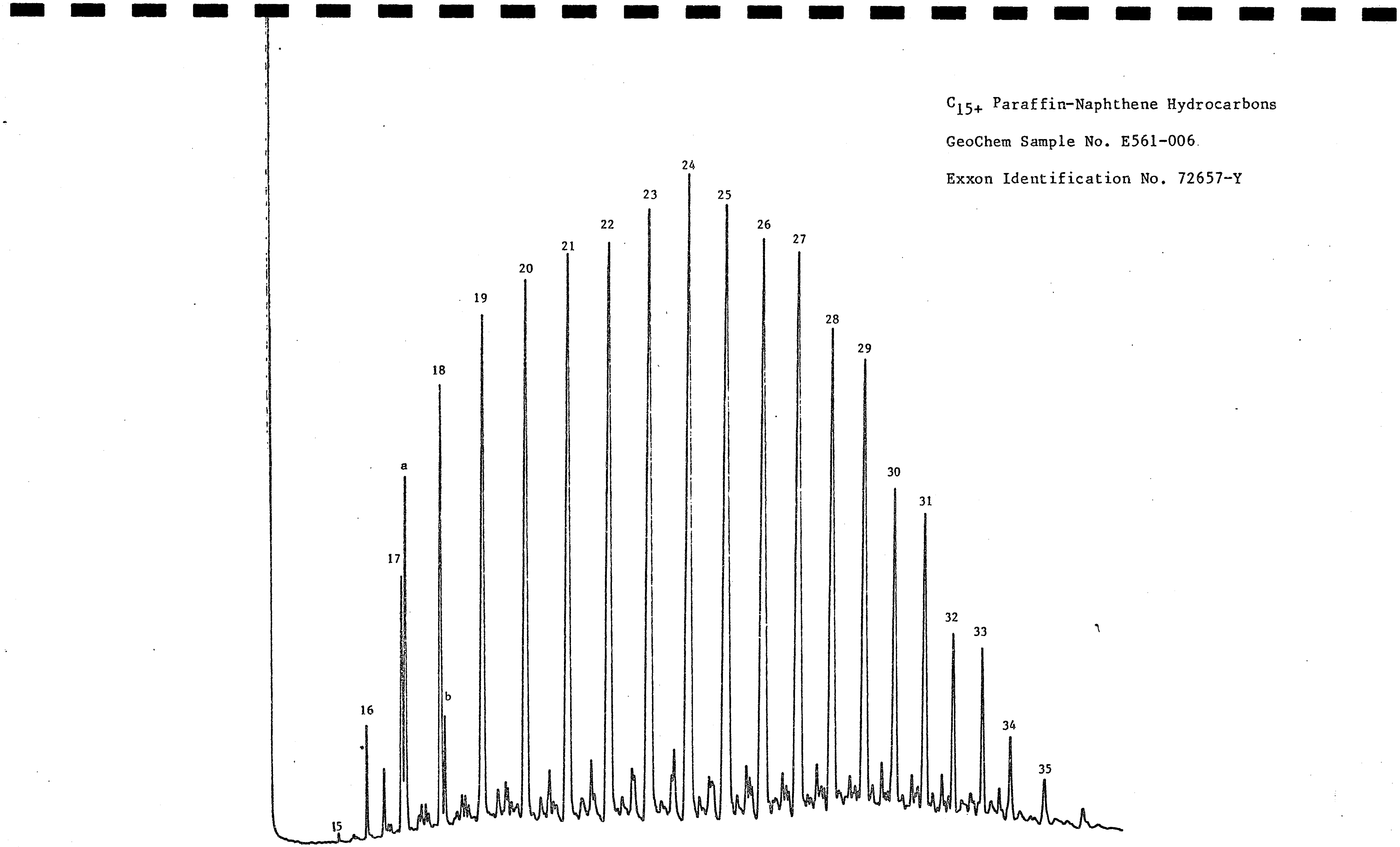


Figure 12, Whiting-2, 2990-3005m(KB), Latrobe Group.

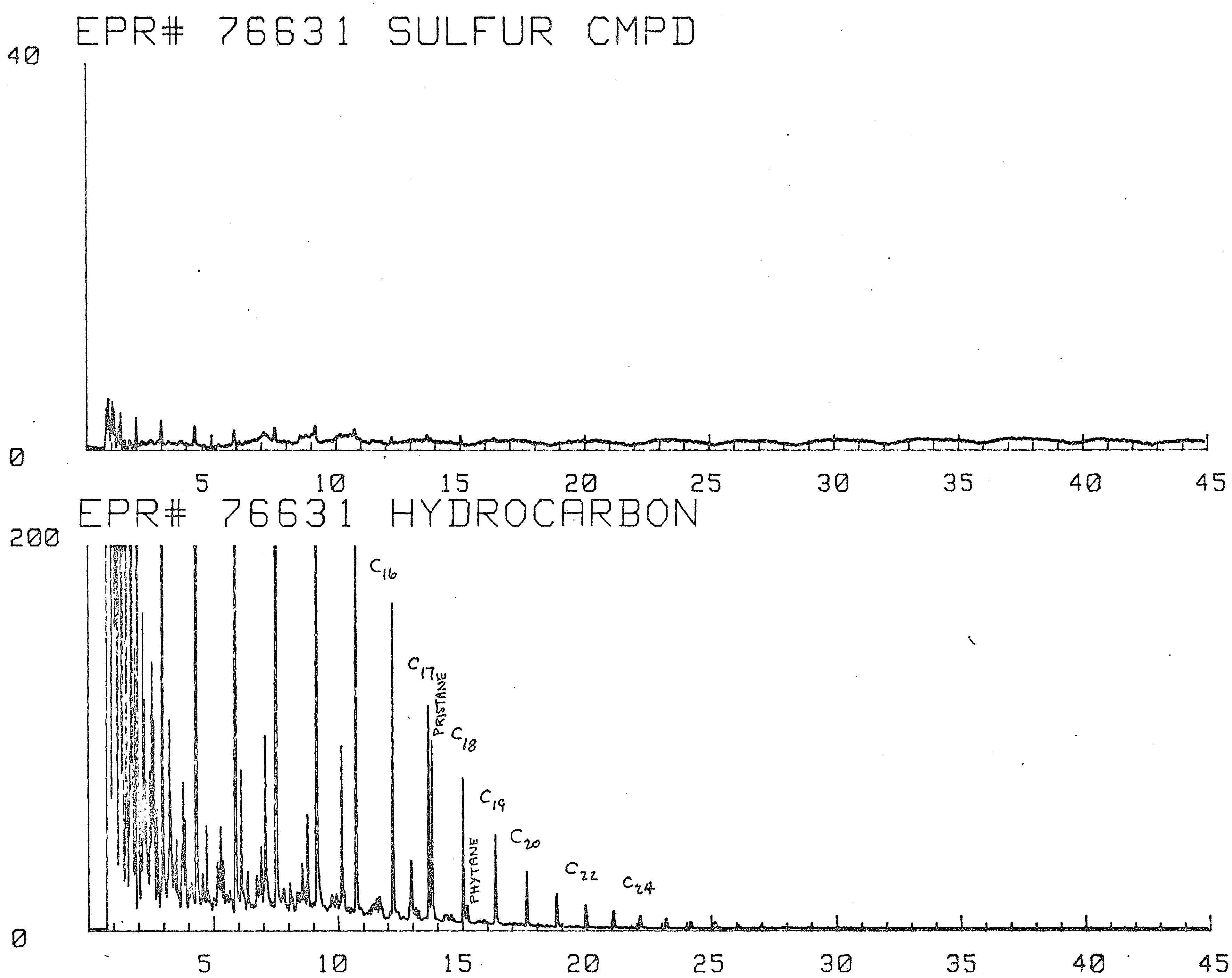


Figure 13, Whiting-1 oil, RFT-3, 1482m(KB), whole oil chromatogram and sulphur compound trace.

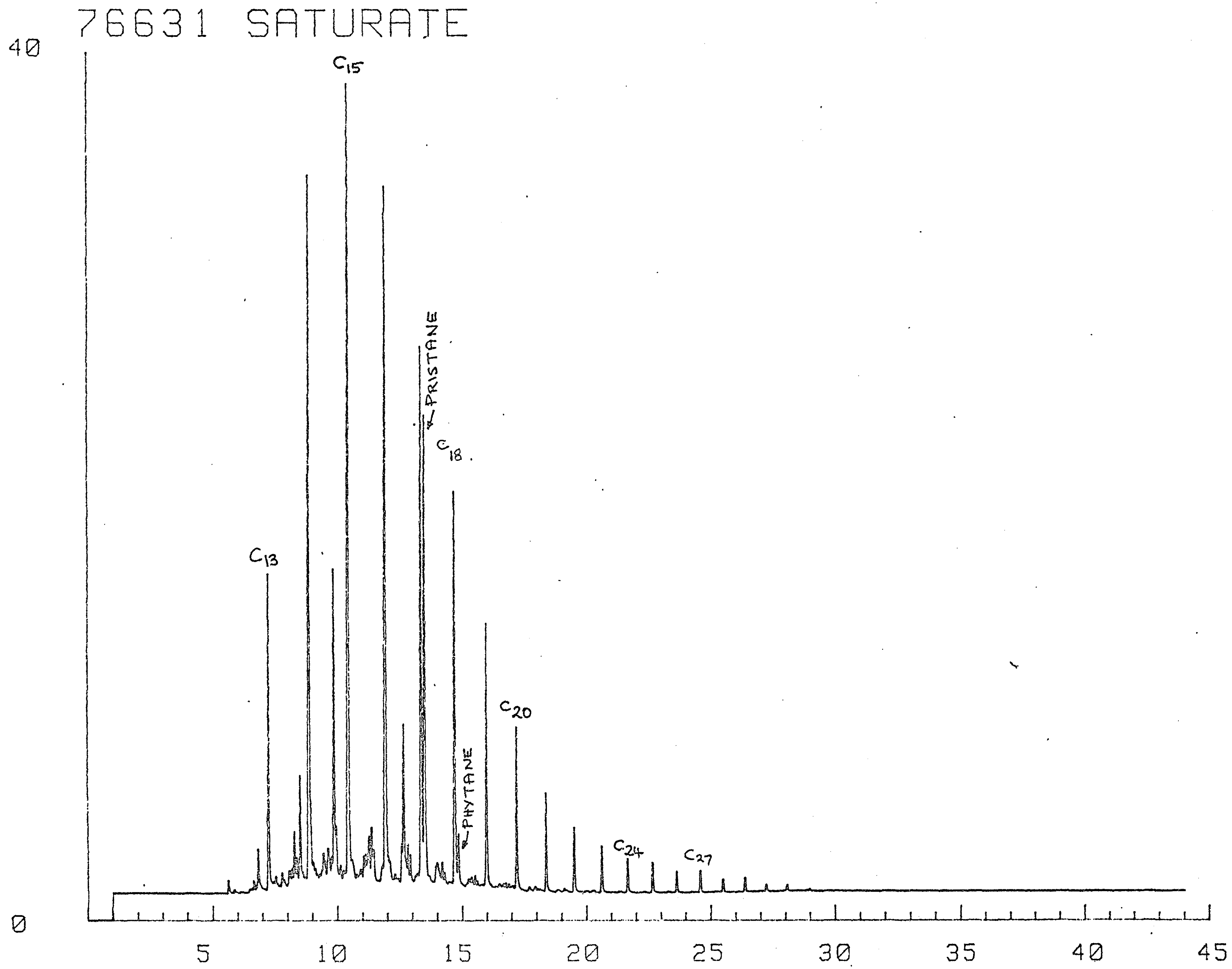


Figure 14, Whiting-1 oil, RFT-3, 1382m(KB), C_{15+} Saturate Chromatogram.

APPENDIX-1

Detailed C_{4-7} Gasoline-Range Hydrocarbon Data Sheets

05 AUG 83

726398 AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 965-980 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	0.0	
IBUTANE	32.1	4.49
NBUTANE	34.5	4.82
IPENTANE	192.1	26.82
NPENTANE	93.6	13.07
22-DMB	4.5	0.63
CPENTANE	4.6	0.65
23-DMB	7.6	1.06
2-MP	68.7	9.59
3-MP	28.7	4.00
NHEXANE	55.3	7.72
MCP	55.6	7.76
22-DMP	0.0	0.00
24-DMP	2.7	0.37
223-TMB	0.0	0.00
CHEXANE	11.4	1.59
33-DMP ,	0.0	0.00
11-DMCP	0.0	0.00
2-MHEX ,	18.9	2.64
23-DMP ,	8.9	1.24
3-MHEX ,	14.1	1.96
1C3-DMCP	11.2	1.56

	TOTAL PPB	NORM PERCENT
1T3-DMCP	9.8	1.37
1T2-DMCP	8.5	1.19
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	36.5	5.09
1C2-DMCP	0.0	0.00
MCH	17.0	2.38

	TOTALS PPB	NORM PERCENT
ALL COMP	716.	
GASOLINE	716.	
NAPHTHENES	118.	16.49
C6-7	250.	34.88

SIG COMP RATIOS

C1/C2	0.56
A /D2	6.53
C1/D2	3.37
CH/MCP	0.21
PENT/IPENT,	0.49

	PPB	NORM PERCENT
MCP	55.6	66.2
CH	11.4	13.6
MCH	17.0	20.3
TOTAL	84.0	100.0

PARAFFIN INDEX 1 1.119
PARAFFIN INDEX 2 26.775

05 AUG 83

72639U AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 995-1010 M.

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	6.5	1.39
ETHANE	0.0		1T2-DMCP	9.5	2.02
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	17.4	3.70	224-TMP	0.0	0.00
NBUTANE	27.4	5.84	NHEPTANE	40.3	8.57
IPENTANE	85.2	18.13	1C2-DMCP	0.0	0.00
NPENTANE	51.7	11.00	MCH	42.3	9.01
22-DMB	0.0	0.00			
CPENTANE	3.0	0.65			
23-DMB	4.2	0.89			
2-MP	33.4	7.12			
3-MP	16.0	3.41			
NHEXANE	36.4	7.75			
MCP	35.7	7.60			
22-DMP	0.0	0.00			
24-DMP	9.3	1.97			
223-TMB	0.0	0.00			
CHEXANE	9.3	1.97			
33-DMP ,	0.0	0.00			
11-DMCP	0.0	0.00			
2-MHEX ,	13.8	2.93			
23-DMP ,	8.3	1.76			
3-MHEX ,	10.6	2.25			
1C3-DMCP	9.6	2.04			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	470.		C1/C2	1.07
GASOLINE	470.		A /D2	7.26
NAPHTHENES	116.	24.68	C1/D2	6.19
C6-7	231.	49.26	CH/MCP	0.26
			PENT/IPENT,	0.61

	PPB	NORM PERCENT
MCP	35.7	40.9
CH	9.3	10.6
MCH	42.3	48.5
TOTAL	87.3	100.0

PARAFFIN INDEX 1 0.950
PARAFFIN INDEX 2 26.836

05 AUG 83

72639W AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 1025-1040 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	0.0	
IBUTANE	14.9	2.78
NBUTANE	21.2	3.96
IPENTANE	92.6	17.30
NPENTANE	52.7	9.85
22-DMB	0.0	0.00
CPENTANE	6.2	1.15
23-DMB	5.4	1.01
2-MP	45.1	8.44
3-MP	21.9	4.09
NHEXANE	45.8	8.55
MCP	51.8	9.67
22-DMP	0.0	0.00
24-DMP	2.1	0.38
223-TMB	0.0	0.00
CHEXANE	8.3	1.55
33-DMP ,	0.0	0.00
11-DMCP	0.0	0.00
2-MHEX ,	15.8	2.95
23-DMP ,	7.9	1.48
3-MHEX ,	17.1	3.20
1C3-DMCP	17.7	3.31
1T3-DMCP	12.3	2.30
1T2-DMCP	12.7	2.37
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	41.0	7.67
1C2-DMCP	0.0	0.00
MCH	42.6	7.97

	TOTALS PPB	NORM PERCENT
ALL COMP	535.	
GASOLINE	535.	
NAPHTHENES	152.	28.33
C6-7	275.	51.41

SIG COMP RATIOS	
C1/C2	0.71
A /D2	5.08
C1/D2	3.90
CH/MCP	0.16
PENT/IPENT,	0.57

	PPB	NORM PERCENT
MCP	51.8	50.4
CH	8.3	8.1
MCH	42.6	41.5
TOTAL	102.7	100.0

PARAFFIN INDEX 1 0.770
PARAFFIN INDEX 2 23.389

05 AUG 83

72639Y AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 1055-1070 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	0.0	
IBUTANE	74.9	5.42
NBUTANE	93.5	6.76
IPENTANE	135.4	9.79
NPENTANE	118.9	8.60
22-DMB	8.5	0.62
CPENTANE	10.1	0.73
23-DMB	20.4	1.48
2-MP	149.1	10.78
3-MP	61.5	4.44
NHEXANE	105.9	7.66
MCP	159.8	11.54
22-DMP	0.0	0.00
24-DMP	6.7	0.48
223-TMB	5.0	0.36
CHEXANE	20.4	1.48
33-DMP ,	0.0	0.00
11-DMCP	0.0	0.00
2-MHEX ,	40.8	2.95
23-DMP ,	22.6	1.64
3-MHEX ,	32.1	2.32
1C3-DMCP	44.3	3.20
1T3-DMCP	42.6	3.08
1T2-DMCP	28.6	2.07
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	89.4	6.46
1C2-DMCP	15.7	1.13
MCH	97.4	7.04

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	1384.		C1/C2	0.55
GASOLINE	1384.		A /D2	6.08
NAPHTHENES	419.	30.27	C1/D2	4.93
C6-7	711.	51.41	CH/MCP	0.13
			PENT/IPENT,	0.88

	PPB	NORM PERCENT
MCP	159.8	57.6
CH	20.4	7.4
MCH	97.4	35.1
TOTAL	277.6	100.0

PARAFFIN INDEX 1 0.632

PARAFFIN INDEX 2 21.366

05 AUG 83

72644A AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 1085-1100 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	11.2	1.29
ETHANE	0.0		1T2-DMCP	11.6	1.33
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	69.4	7.96	224-TMP	0.0	0.00
NBUTANE	55.9	6.42	NHEPTANE	51.8	5.95
IPENTANE	180.7	20.73	1C2-DMCP	4.9	0.57
NPENTANE	75.0	8.61	MCH	46.0	5.28
22-DMB	5.0	0.58			
CPENTANE	4.9	0.57			
23-DMB	10.1	1.16			
2-MP	83.4	9.58			
3-MP	35.0	4.02			
NHEXANE	63.8	7.32			
MCP	71.0	8.15			
22-DMP	0.0	0.00			
24-DMP	4.4	0.51			
223-TMB	0.0	0.00			
CHEXANE	14.4	1.65			
33-DMP ,	0.0	0.00			
11-DMCP	0.0	0.00			
2-MHEX ,	24.2	2.77			
23-DMP ,	12.8	1.47			
3-MHEX ,	17.9	2.06			
1C3-DMCP	17.8	2.04			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	871.		C1/C2	0.72
GASOLINE	871.		A /D2	6.44
NAPHTHENES	182.	20.87	C1/D2	4.71
C6-7	352.	40.38	CH/MCP	0.20
			PENT/IPENT,	0.42

	PPB	NORM PERCENT
MCP	71.0	54.1
CH	14.4	10.9
MCH	46.0	35.0
TOTAL	131.4	100.0

PARAFFIN INDEX 1 1.036

PARAFFIN INDEX 2 24.938

05 AUG 83

72644C AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 1115-1130 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	7.4	1.73
ETHANE	0.0		1T2-DMCP	6.5	1.52
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	0.0	0.00	224-TMP	0.0	0.00
NBUTANE	24.4	5.67	NHEPTANE	41.3	9.58
IPENTANE	50.7	11.77	1C2-DMCP	0.0	0.00
NPENTANE	49.2	11.42	MCH	32.1	7.45
22-DMB	2.0	0.46			
CPENTANE	2.6	0.60			
23-DMB	5.3	1.24			
2-MP	51.8	12.04			
3-MP	23.9	5.54			
NHEXANE	47.2	10.96			
MCP	33.4	7.77			
22-DMP	0.0	0.00			
24-DMP	1.4	0.32			
223-TMB	0.0	0.00			
CHEXANE	8.9	2.06			
33-DMP ,	0.0	0.00			
11-DMCP	0.0	0.00			
2-MHEX ,	16.0	3.72			
23-DMP ,	6.8	1.59			
3-MHEX ,	11.0	2.56			
1C3-DMCP	8.7	2.01			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	431.		C1/C2	1.02
GASOLINE	431.		A /D2	8.03
NAPHTHENES	100.	23.14	C1/D2	5.17
C6-7	221.	51.27	CH/MCP	0.27
			PENT/IPENT,	0.97

	PPB	NORM PERCENT
MCP	33.4	44.9
CH	8.9	12.0
MCH	32.1	43.1
TOTAL	74.4	100.0

PARAFFIN INDEX 1 1.195
PARAFFIN INDEX 2 29.729

05 AUG 83

72644E AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 1145-1160 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	0.0	
IBUTANE	0.0	0.00
NBUTANE	0.0	0.00
IPENTANE	0.0	0.00
NPENTANE	0.0	0.00
22-DMB	0.0	0.00
CPENTANE	0.0	0.00
23-DMB	0.0	0.00
2-MP	0.0	0.00
3-MP	0.0	0.00
NHEXANE	0.0	0.00
MCP	0.0	0.00
22-DMP	0.0	0.00
24-DMP	0.0	0.00
223-TMB	0.0	0.00
CHEXANE	0.0	0.00
33-DMP ,	0.0	0.00
11-DMCP	0.0	0.00
2-MHEX ,	0.0	0.00
23-DMP ,	0.0	0.00
3-MHEX ,	0.0	0.00
1C3-DMCP	0.0	0.00

	TOTAL PPB	NORM PERCENT
1T3-DMCP	0.0	0.00
1T2-DMCP	0.0	0.00
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	0.0	0.00
1C2-DMCP	0.0	0.00
MCH	0.0	0.00

	TOTALS PPB	NORM PERCENT
ALL COMP	0.	
GASOLINE	0.	
NAPHTHENES	0.	0.00
C6-7	0.	0.00

SIG COMP RATIOS

C1/C2	999.99
A /D2	999.99
C1/D2	999.99
CH/MCP	999.99
PENT/IPENT,	999.99

	PPB	NORM PERCENT
MCP	0.0	0.0
CH	0.0	0.0
MCH	0.0	0.0
TOTAL	0.0	0.0

PARAFFIN INDEX 1 0.000
PARAFFIN INDEX 2 0.000

05 AUG 83

72644G AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 1175-1190 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	0.0	0.00
ETHANE	0.0		1T2-DMCP	0.0	0.00
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	0.0	0.00	224-TMP	0.0	0.00
NBUTANE	0.0	0.00	NHEPTANE	0.0	0.00
IPENTANE	0.0	0.00	1C2-DMCP	0.0	0.00
NPENTANE	0.0	0.00	MCH	0.0	0.00
22-DMB	0.0	0.00			
CPENTANE	0.0	0.00			
23-DMB	0.0	0.00			
2-MP	0.0	0.00			
3-MP	0.0	0.00			
NHEXANE	0.0	0.00			
MCP	0.0	0.00			
22-DMP	0.0	0.00			
24-DMP	0.0	0.00			
223-TMB	0.0	0.00			
CHEXANE	0.0	0.00			
33-DMP ,	0.0	0.00			
11-DMCP	0.0	0.00			
2-MHEX ,	0.0	0.00			
23-DMP ,	0.0	0.00			
3-MHEX ,	0.0	0.00			
1C3-DMCP	0.0	0.00			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	0.		C1/C2	999.99
GASOLINE	0.		A /D2	999.99
NAPHTHENES	0.	0.00	C1/D2	999.99
C6-7	0.	0.00	CH/MCP	999.99
			PENT/IPENT,	999.99

	PPB	NORM PERCENT
MCP	0.0	0.0
CH	0.0	0.0
MCH	0.0	0.0
TOTAL	0.0	0.0

PARAFFIN INDEX 1 0.000
PARAFFIN INDEX 2 0.000

05 AUG 83

72644I AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 1205-1220 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	0.0	0.00
ETHANE	0.0		1T2-DMCP	0.0	0.00
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	11.7	4.12	224-TMP	0.0	0.00
NBUTANE	26.2	9.23	NHEPTANE	36.2	12.74
IPENTANE	36.1	12.71	1C2-DMCP	0.0	0.00
NPENTANE	35.8	12.61	MCH	28.9	10.17
22-DMB	0.0	0.00			
CPENTANE	4.3	1.50			
23-DMB	1.9	0.67			
2-MP	20.7	7.28			
3-MP	11.9	4.18			
NHEXANE	33.8	11.91			
MCP	16.0	5.62			
22-DMP	0.0	0.00			
24-DMP	0.0	0.00			
223-TMB	0.0	0.00			
CHEXANE	6.2	2.19			
33-DMP ,	0.0	0.00			
11-DMCP	0.0	0.00			
2-MHEX ,	8.3	2.92			
23-DMP ,	0.0	0.00			
3-MHEX ,	6.1	2.14			
1C3-DMCP	0.0	0.00			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	284.		C1/C2	2.72
GASOLINE	284.		A /D2	11.51
NAPHTHENES	55.	19.49	C1/D2	7.14
C6-7	135.	47.70	CH/MCP	0.39
			PENT/IPENT,	0.99

	PPB	NORM PERCENT
MCP	16.0	31.3
CH	6.2	12.2
MCH	28.9	56.5
TOTAL	51.1	100.0

PARAFFIN INDEX 1 0.000
PARAFFIN INDEX 2 42.242

05 AUG 83

72644K AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 1235-1250 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	8.1	0.76
ETHANE	0.0		1T2-DMCP	12.2	1.15
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	33.0	3.09	224-TMP	0.0	0.00
NBUTANE	51.9	4.86	NHEPTANE	133.0	12.46
IPENTANE	81.8	7.66	1C2-DMCP	0.0	0.00
NPENTANE	148.3	13.89	MCH	67.4	6.31
22-DMB	3.6	0.33			
CPENTANE	2.9	0.27			
23-DMB	8.4	0.79			
2-MP	103.1	9.65			
3-MP	44.8	4.19			
NHEXANE	116.1	10.88			
MCP	110.9	10.39			
22-DMP	0.0	0.00			
24-DMP	2.1	0.20			
223-TMB	0.0	0.00			
CHEXANE	64.3	6.02			
33-DMP ,	0.0	0.00			
11-DMCP	0.0	0.00			
2-MHEX ,	27.5	2.58			
23-DMP ,	15.3	1.43			
3-MHEX ,	22.3	2.09			
1C3-DMCP	10.7	1.00			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	1068.		C1/C2	1.12
GASOLINE	1068.		A /D2	11.19
NAPHTHENES	277.	25.90	C1/D2	7.15
C6-7	590.	55.26	CH/MCP	0.58
			PENT/IPENT,	1.81

	PPB	NORM PERCENT
MCP	110.9	45.7
CH	64.3	26.5
MCH	67.4	27.8
TOTAL	242.6	100.0

PARAFFIN INDEX 1 1.601
PARAFFIN INDEX 2 36.858

05 AUG 83

72644M AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 1265-1280 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	0.0	
IBUTANE	16.6	1.21
NBUTANE	27.5	2.01
IPENTANE	33.6	2.46
NPENTANE	77.4	5.66
22-DMB	9.2	0.67
CPENTANE	4.1	0.30
23-DMB	40.1	2.93
2-MP	103.7	7.59
3-MP	187.1	13.68
NHEXANE	146.1	10.69
MCP	90.7	6.63
22-DMP	0.0	0.00
24-DMP	21.1	1.54
223-TMB	0.0	0.00
CHEXANE	58.7	4.30
33-DMP ,	0.0	0.00
11-DMCP	0.0	0.00
2-MHEX ,	45.0	3.29
23-DMP ,	69.1	5.05
3-MHEX ,	64.3	4.70
1C3-DMCP	34.4	2.51

	TOTAL PPB	NORM PERCENT
1T3-DMCP	26.9	1.97
1T2-DMCP	19.8	1.45
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	90.5	6.62
1C2-DMCP	8.1	0.59
MCH	193.5	14.15

	TOTALS PPB	NORM PERCENT
ALL COMP	1367.	
GASOLINE	1367.	
NAPHTHENES	436.	31.90
C6-7	868.	63.49

SIG COMP RATIOS	
C1/C2	1.65
A /D2	3.68
C1/D2	4.62
CH/MCP	0.65
PENT/IPENT,	2.30

	PPB	NORM PERCENT
MCP	90.7	26.4
CH	58.7	17.1
MCH	193.5	56.4
TOTAL	342.9	100.0

PARAFFIN INDEX 1 1.348

PARAFFIN INDEX 2 15.031

05 AUG 83

726440 AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 1295-1310 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	72.4	6.51
ETHANE	0.0		1T2-DMCP	10.8	0.97
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	7.9	0.71	224-TMP	0.0	0.00
NBUTANE	14.4	1.29	NHEPTANE	113.2	10.19
IPENTANE	16.9	1.52	1C2-DMCP	5.4	0.49
NPENTANE	17.3	1.56	MCH	145.0	13.06
22-DMB	0.0	0.00			
CPENTANE	0.0	0.00			
23-DMB	0.0	0.00			
2-MP	53.7	4.83			
3-MP	155.6	14.01			
NHEXANE	100.9	9.09			
MCP	38.5	3.46			
22-DMP	0.0	0.00			
24-DMP	28.7	2.59			
223-TMB	2.6	0.23			
CHEXANE	37.7	3.39			
33-DMP ,	0.0	0.00			
11-DMCP	0.0	0.00			
2-MHEX ,	60.3	5.43			
23-DMP ,	99.0	8.92			
3-MHEX ,	91.9	8.27			
1C3-DMCP	38.5	3.47			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	1111.		C1/C2	1.47
GASOLINE	1111.		A /D2	2.33
NAPHTHENES	348.	31.36	C1/D2	2.65
C6-7	845.	76.08	CH/MCP	0.98
			PENT/IPENT,	1.03

	PPB	NORM PERCENT
MCP	38.5	17.4
CH	37.7	17.0
MCH	145.0	65.6
TOTAL	221.2	100.0

PARAFFIN INDEX 1 1.251
PARAFFIN INDEX 2 16.921

05 AUG 83

726440 AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 1325-1340 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	0.0	
IBUTANE	17.3	1.93
NBUTANE	23.0	2.56
IPENTANE	33.3	3.71
NPENTANE	39.9	4.45
22-DMB	16.4	1.83
CPENTANE	0.0	0.00
23-DMB	54.4	6.07
2-MP	68.4	7.62
3-MP	168.6	18.79
NHEXANE	67.5	7.52
MCP	30.4	3.39
22-DMP	0.0	0.00
24-DMP	15.3	1.70
223-TMB	0.0	0.00
CHEXANE	24.0	2.68
33-DMP ,	0.0	0.00
11-DMCP	0.0	0.00
2-MHEX ,	33.2	3.70
23-DMP ,	54.2	6.04
3-MHEX ,	36.5	4.07
1C3-DMCP	25.1	2.80

	TOTAL PPB	NORM PERCENT
1T3-DMCP	22.5	2.51
1T2-DMCP	9.3	1.04
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	74.3	8.28
1C2-DMCP	2.4	0.27
MCH	81.2	9.06

	TOTALS PPB	NORM PERCENT
ALL COMP	897.	
GASOLINE	897.	
NAPHTHENES	195.	21.74
C6-7	476.	53.05

SIG COMP RATIOS

C1/C2	1.54
A /D2	3.89
C1/D2	3.80
CH/MCP	0.79
PENT/IPENT,	1.20

	PPB	NORM PERCENT
MCP	30.4	22.4
CH	24.0	17.7
MCH	81.2	59.9
TOTAL	135.6	100.0

PARAFFIN INDEX 1 1.224
PARAFFIN INDEX 2 20.611

05 AUG 83

726445 AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 1355-1370 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	4376.1	
PROPANE	21223.4	
IBUTANE	29698.1	15.25
NBUTANE	22071.5	11.33
IPENTANE	43737.6	22.46
NPENTANE	13702.4	7.04
22-DMB	1173.1	0.60
CPENTANE	2540.7	1.30
23-DMB	3342.9	1.72
2-MP	7910.1	4.06
3-MP	6970.7	3.58
NHEXANE	7745.5	3.98
MCP	12658.2	6.50
22-DMP	0.0	0.00
24-DMP	259.2	0.13
223-TMB	103.7	0.05
CHEXANE	11153.0	5.73
33-DMP ,	0.0	0.00
11-DMCP	0.0	0.00
2-MHEX ,	1802.3	0.93
23-DMP ,	1979.0	1.02
3-MHEX ,	2129.1	1.09
1C3-DMCP	3025.6	1.55
1T3-DMCP	2446.4	1.26
1T2-DMCP	2811.6	1.44
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	6220.2	3.19
1C2-DMCP	209.8	0.11
MCH	11077.8	5.69

	TOTALS PPB	NORM PERCENT
ALL COMP	220368.	
GASOLINE	194768.	
NAPHTHENES	45923.	23.58
C6-7	63622.	32.67

SIG COMP RATIOS	
C1/C2	1.14
A /D2	6.56
C1/D2	11.29
CH/MCP	0.88
PENT/IPENT,	0.31

	PPB	NORM PERCENT
MCP	12658.2	36.3
CH	11153.0	32.0
MCH	11077.8	31.8
TOTAL	34889.0	100.0

PARAFFIN INDEX 1 0.475
PARAFFIN INDEX 2 14.586

05 AUG 83

72644X AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 1430-1445 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	2738.1	
PROPANE	11414.1	
IBUTANE	21130.6	11.64
NBUTANE	14458.4	7.97
IPENTANE	2822.4	1.56
NPENTANE	17971.9	9.90
22-DMB	838.6	0.46
CPENTANE	750.3	0.41
23-DMB	2417.3	1.33
2-MP	16236.3	8.95
3-MP	7752.0	4.27
NHEXANE	23870.0	13.15
MCP	11584.9	6.38
22-DMP	0.0	0.00
24-DMP	404.0	0.22
223-TMB	95.3	0.05
CHEXANE	10836.8	5.97
33-DMP ,	0.0	0.00
11-DMCP	0.0	0.00
2-MHEX ,	3057.7	1.68
23-DMP ,	2056.3	1.13
3-MHEX ,	2964.2	1.63
1C3-DMCP	2280.2	1.26
1T3-DMCP	2033.3	1.12
1T2-DMCP	3312.6	1.83
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	8334.5	4.59
1C2-DMCP	294.3	0.16
MCH	25998.4	14.32

	TOTALS PPB	NORM PERCENT
ALL COMP	195652.	
GASOLINE	181500.	
NAPHTHENES	57091.	31.46
C6-7	97123.	53.51

SIG COMP RATIOS	
C1/C2	2.05
A /D2	10.86
C1/D2	13.46
CH/MCP	0.94
PENT/IPENT,	6.37

	PPB	NORM PERCENT
MCP	11584.9	23.9
CH	10836.8	22.4
MCH	25998.4	53.7
TOTAL	48420.1	100.0

PARAFFIN INDEX 1 0.790
PARAFFIN INDEX 2 13.691

05 AUG 83

726520 AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 1535-1550 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	105.5	0.71
ETHANE	0.0		1T2-DMCP	178.8	1.20
PROPANE	523.0		3-EPENT	0.0	0.00
IBUTANE	545.9	3.66	224-TMP	0.0	0.00
NBUTANE	1532.9	10.29	NHEPTANE	625.0	4.20
IPENTANE	1898.6	12.75	1C2-DMCP	9.8	0.07
NPENTANE	2430.6	16.32	MCH	844.4	5.67
22-DMB	61.0	0.41			
CPENTANE	115.3	0.77			
23-DMB	204.0	1.37			
2-MP	1220.2	8.19			
3-MP	613.2	4.12			
NHEXANE	1872.9	12.57			
MCP	972.9	6.53			
22-DMP	0.0	0.00			
24-DMP	34.4	0.23			
223-TMB	9.4	0.06			
CHEXANE	823.3	5.53			
33-DMP ,	0.0	0.00			
11-DMCP	0.0	0.00			
2-MHEX ,	259.5	1.74			
23-DMP ,	151.5	1.02			
3-MHEX ,	276.5	1.86			
1C3-DMCP	111.3	0.75			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	15420.		C1/C2	1.40
GASOLINE	14897.		A /D2	9.03
NAPHTHENES	3161.	21.22	C1/D2	6.97
C6-7	6275.	42.12	CH/MCP	0.85
			PENT/IPENT,	1.28

	PPB	NORM PERCENT
MCP	972.9	36.8
CH	823.3	31.2
MCH	844.4	32.0
TOTAL	2640.6	100.0

PARAFFIN INDEX 1 1.355
PARAFFIN INDEX 2 18.514

05 AUG 83

72652M AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 1625-1640 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	483.0	
IBUTANE	1306.0	10.82
NBUTANE	1632.7	13.53
IPENTANE	1315.3	10.90
NPENTANE	1745.2	14.47
22-DMB	32.8	0.27
CPENTANE	140.8	1.17
23-DMB	135.8	1.13
2-MP	778.9	6.46
3-MP	385.2	3.19
NHEXANE	1193.1	9.89
MCP	719.4	5.96
22-DMP	0.0	0.00
24-DMP	23.5	0.19
223-TMB	4.9	0.04
CHEXANE	676.4	5.61
33-DMP ,	0.0	0.00
11-DMCP	0.0	0.00
2-MHEX ,	182.8	1.52
23-DMP ,	108.3	0.90
3-MHEX ,	193.2	1.60
1C3-DMCP	82.3	0.68

	TOTAL PPB	NORM PERCENT
1T3-DMCP	78.7	0.65
1T2-DMCP	136.4	1.13
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	455.4	3.77
1C2-DMCP	8.9	0.07
MCH	728.6	6.04

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	12548.		C1/C2	1.55
GASOLINE	12065.		A /D2	8.53
NAPHTHENES	2571.	21.31	C1/D2	8.22
C6-7	4592.	38.06	CH/MCP	0.94
			PENT/IPENT,	1.33

	PPB	NORM PERCENT
MCP	719.4	33.9
CH	676.4	31.8
MCH	728.6	34.3
TOTAL	2124.4	100.0

PARAFFIN INDEX 1 1.264
PARAFFIN INDEX 2 17.236

05 AUG 83

726520 AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 1670-1685 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	336.6	
IBUTANE	1225.2	10.49
NBUTANE	1468.4	12.57
IPENTANE	1247.5	10.68
NPENTANE	1685.3	14.43
22-DMB	34.0	0.29
CPENTANE	142.0	1.22
23-DMB	132.0	1.13
2-MP	777.2	6.65
3-MP	385.2	3.30
NHEXANE	1207.7	10.34
MCP	727.6	6.23
22-DMP	0.0	0.00
24-DMP	23.9	0.20
223-TMB	6.2	0.05
CHEXANE	625.4	5.35
33-DMP ,	0.0	0.00
11-DMCP	0.0	0.00
2-MHEX ,	207.3	1.77
23-DMP ,	91.9	0.79
3-MHEX ,	184.1	1.58
1C3-DMCP	84.3	0.72
1T3-DMCP	125.2	1.07
1T2-DMCP	99.0	0.85
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	464.4	3.98
1C2-DMCP	8.4	0.07
MCH	728.5	6.24

	TOTALS PPB	NORM PERCENT
ALL COMP	12017.	
GASOLINE	11681.	
NAPHTHENES	2540.	21.75
C6-7	4584.	39.24

SIG COMP RATIOS

C1/C2	1.49
A /D2	9.08
C1/D2	8.48
CH/MCP	0.86
PENT/IPENT,	1.35

	PPB	NORM PERCENT
MCP	727.6	35.0
CH	625.4	30.0
MCH	728.5	35.0
TOTAL	2081.5	100.0

PARAFFIN INDEX 1 1.268
PARAFFIN INDEX 2 17.794

05 AUG 83

726520 AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 1700-1715 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	246.8	
IBUTANE	655.0	7.02
NBUTANE	776.6	8.33
IPENTANE	1054.1	11.30
NPENTANE	1183.0	12.68
22-DMB	45.0	0.48
CPENTANE	79.9	0.86
23-DMB	126.1	1.35
2-MP	794.9	8.52
3-MP	391.2	4.19
NHEXANE	1027.6	11.02
MCP	560.2	6.01
22-DMP	0.0	0.00
24-DMP	35.3	0.38
223-TMB	5.9	0.06
CHEXANE	520.2	5.58
33-DMP ,	0.0	0.00
11-DMCP	0.0	0.00
2-MHEX ,	247.2	2.65
23-DMP ,	100.0	1.07
3-MHEX ,	233.1	2.50
1C3-DMCP	67.3	0.72

	TOTAL PPB	NORM PERCENT
1T3-DMCP	70.3	0.75
1T2-DMCP	126.2	1.35
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	487.8	5.23
1C2-DMCP	8.7	0.09
MCH	731.7	7.84

	TOTALS PPB	NORM PERCENT
ALL COMP	9574.	
GASOLINE	9327.	
NAPHTHENES	2165.	23.21
C6-7	4221.	45.26

SIG COMP RATIOS

C1/C2	1.80
A /D2	6.50
C1/D2	6.43
CH/MCP	0.93
PENT/IPENT,	1.12

	PPB	NORM PERCENT
MCP	560.2	30.9
CH	520.2	28.7
MCH	731.7	40.4
TOTAL	1812.1	100.0

PARAFFIN INDEX 1 1.820
PARAFFIN INDEX 2 18.880

05 AUG 83

72652S AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 1730-1745 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	6936.5	
PROPANE	39430.0	
IBUTANE	70855.8	5.11
NBUTANE	146813.3	10.59
IPENTANE	112425.4	8.11
NPENTANE	121867.4	8.79
22-DMB	4971.2	0.36
CPENTANE	17909.4	1.29
23-DMB	0.0	0.00
2-MP	110865.7	7.99
3-MP	41600.8	3.00
NHEXANE	135121.2	9.74
MCP	75229.5	5.42
22-DMP	0.0	0.00
24-DMP	3271.0	0.24
223-TMB	922.3	0.07
CHEXANE	111871.3	8.07
33-DMP ,	0.0	0.00
11-DMCP	0.0	0.00
2-MHEX ,	40941.5	2.95
23-DMP ,	13861.7	1.00
3-MHEX ,	36807.6	2.65
1C3-DMCP	4830.3	0.35
1T3-DMCP	9588.2	0.69
1T2-DMCP	20283.1	1.46
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	130910.0	9.44
1C2-DMCP	622.4	0.04
MCH	175420.0	12.65

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	1433354.		C1/C2	2.97
GASOLINE	1386987.		A /D2	7.23
NAPHTHENES	415754.	29.98	C1/D2	8.92
C6-7	759680.	54.77	CH/MCP	1.49
			PENT/IPENT,	1.08

	PPB	NORM PERCENT
MCP	75229.5	20.8
CH	111871.3	30.9
MCH	175420.0	48.4
TOTAL	362520.7	100.0

PARAFFIN INDEX 1 2.241

PARAFFIN INDEX 2 24.042

05 AUG 83

72652U AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 1760-1775 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	17745.3	
PROPANE	61062.1	
IBUTANE	82357.7	7.69
NBUTANE	80564.9	7.52
IPENTANE	80564.9	7.52
NPENTANE	107275.0	10.01
22-DMB	3638.8	0.34
CPENTANE	12713.3	1.19
23-DMB	0.0	0.00
2-MP	91817.0	8.57
3-MP	36084.8	3.37
NHEXANE	120408.6	11.24
MCP	63077.7	5.89
22-DMP	0.0	0.00
24-DMP	3234.3	0.30
223-TMB	737.1	0.07
CHEXANE	81061.0	7.57
33-DMP ,	0.0	0.00
11-DMCP	0.0	0.00
2-MHEX ,	28868.5	2.69
23-DMP ,	12738.7	1.19
3-MHEX ,	26234.0	2.45
1C3-DMCP	7423.2	0.69

	TOTAL PPB	NORM PERCENT
1T3-DMCP	8621.4	0.80
1T2-DMCP	16995.9	1.59
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	94247.6	8.80
1C2-DMCP	709.9	0.07
MCH	111871.7	10.44

	TOTALS PPB	NORM PERCENT
ALL COMP	1150052.	
GASOLINE	1071245.	
NAPHTHENES	302474.	28.24
C6-7	576229.	53.79

SIG COMP RATIOS

C1/C2	2.29
A /D2	8.18
C1/D2	8.45
CH/MCP	1.29
PENT/IPENT,	1.33

	PPB	NORM PERCENT
MCP	63077.7	24.6
CH	81061.0	31.7
MCH	111871.7	43.7
TOTAL	256010.4	100.0

PARAFFIN INDEX 1 1.668
PARAFFIN INDEX 2 24.287

05 AUG 83

72652Y AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 1820-1835 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	45130.3	
PROPANE	223791.8	
IBUTANE	162568.2	3.57
NBUTANE	347215.8	7.63
IPENTANE	432439.2	9.50
NPENTANE	440422.2	9.67
22-DMB	19664.6	0.43
CPENTANE	35052.3	0.77
23-DMB	0.0	0.00
2-MP	298121.3	6.55
3-MP	165412.8	3.63
NHEXANE	499242.4	10.97
MCP	230907.7	5.07
22-DMP	0.0	0.00
24-DMP	33912.7	0.74
223-TMB	7298.3	0.16
CHEXANE	344139.2	7.56
33-DMP ,	0.0	0.00
11-DMCP	0.0	0.00
2-MHEX ,	106176.9	2.33
23-DMP ,	62209.8	1.37
3-MHEX ,	102491.3	2.25
1C3-DMCP	29459.5	0.65

	TOTAL PPB	NORM PERCENT
1T3-DMCP	33267.9	0.73
1T2-DMCP	80820.7	1.78
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	367223.6	8.07
1C2-DMCP	3491.1	0.08
MCH	751183.9	16.50

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	4821638.		C1/C2	3.18
GASOLINE	4552717.		A /D2	8.45
NAPHTHENES	1508322.	33.13	C1/D2	11.72
C6-7	2651824.	58.25	CH/MCP	1.49
			PENT/IPENT,	1.02

	PPB	NORM PERCENT
MCP	230907.7	17.4
CH	344139.2	25.9
MCH	751183.9	56.6
TOTAL	1326230.7	100.0

PARAFFIN INDEX 1 1.454
PARAFFIN INDEX 2 19.565

05 AUG 83

72655A AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 1850-1865 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	3284.5	
IBUTANE	852.4	0.28
NBUTANE	1072.6	0.35
IPENTANE	18635.2	6.15
NPENTANE	24263.1	8.00
22-DMB	869.9	0.29
CPENTANE	3134.7	1.03
23-DMB	3016.7	0.99
2-MP	19300.7	6.37
3-MP	9955.1	3.28
NHEXANE	32205.6	10.62
MCP	20127.0	6.64
22-DMP	0.0	0.00
24-DMP	715.8	0.24
223-TMB	197.5	0.07
CHEXANE	31425.1	10.36
33-DMP ,	0.0	0.00
11-DMCP	0.0	0.00
2-MHEX ,	7430.6	2.45
23-DMP ,	4704.6	1.55
3-MHEX ,	7673.4	2.53
1C3-DMCP	3543.5	1.17
1T3-DMCP	3811.5	1.26
1T2-DMCP	7510.3	2.48
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	28786.5	9.49
1C2-DMCP	709.0	0.23
MCH	73276.2	24.17

	TOTALS PPB	NORM PERCENT
ALL COMP	306501.	
GASOLINE	303217.	
NAPHTHENES	143537.	47.34
C6-7	222117.	73.25

SIG COMP RATIOS	
C1/C2	3.14
A /D2	7.95
C1/D2	14.61
CH/MCP	1.56
PENT/IPENT,	1.30

	PPB	NORM PERCENT
MCP	20127.0	16.1
CH	31425.1	25.2
MCH	73276.2	58.7
TOTAL	124828.3	100.0

PARAFFIN INDEX 1 1.016
PARAFFIN INDEX 2 17.118

05 AUG 83

72655E AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 1910-1925 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	969.1	
PROPANE	2844.6	
IBUTANE	2622.5	1.93
NBUTANE	7362.5	5.42
IPENTANE	10171.6	7.49
NPENTANE	12531.3	9.23
22-DMB	437.4	0.32
CPENTANE	1294.2	0.95
23-DMB	1417.2	1.04
2-MP	9142.2	6.73
3-MP	4616.9	3.40
NHEXANE	14926.1	10.99
MCP	8031.6	5.91
22-DMP	0.0	0.00
24-DMP	387.1	0.29
223-TMB	91.0	0.07
CHEXANE	11673.6	8.60
33-DMP ,	0.0	0.00
11-DMCP	0.0	0.00
2-MHEX ,	3429.2	2.53
23-DMP ,	1964.0	1.45
3-MHEX ,	3406.5	2.51
1C3-DMCP	1201.0	0.88

	TOTAL PPB	NORM PERCENT
1T3-DMCP	1374.2	1.01
1T2-DMCP	2672.0	1.97
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	12346.3	9.09
1C2-DMCP	773.3	0.57
MCH	23935.7	17.62

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	139621.		C1/C2	2.78
GASOLINE	135807.		A /D2	8.01
NAPHTHENES	50956.	37.52	C1/D2	11.46
C6-7	86212.	63.48	CH/MCP	1.45
			PENT/IPENT,	1.23

	PPB	NORM PERCENT
MCP	8031.6	18.4
CH	11673.6	26.7
MCH	23935.7	54.8
TOTAL	43640.9	100.0

PARAFFIN INDEX 1 1.303
PARAFFIN INDEX 2 19.913

05 AUG 83

72655G AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 1940-1955 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	178.2	
IBUTANE	236.4	3.93
NBUTANE	576.0	9.59
IPENTANE	614.5	10.23
NPENTANE	709.8	11.81
22-DMB	16.1	0.27
CPENTANE	71.5	1.19
23-DMB	67.9	1.13
2-MP	401.7	6.69
3-MP	214.1	3.56
NHEXANE	669.8	11.15
MCP	396.1	6.59
22-DMP	0.0	0.00
24-DMP	17.6	0.29
223-TMB	2.8	0.05
CHEXANE	400.4	6.66
33-DMP ,	0.0	0.00
11-DMCP	0.0	0.00
2-MHEX ,	161.8	2.69
23-DMP ,	67.9	1.13
3-MHEX ,	144.2	2.40
1C3-DMCP	50.5	0.84

	TOTAL PPB	NORM PERCENT
1T3-DMCP	74.2	1.23
1T2-DMCP	67.6	1.13
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	460.3	7.66
1C2-DMCP	5.1	0.08
MCH	581.9	9.69

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	6187.		C1/C2	1.93
GASOLINE	6008.		A /D2	7.83
NAPHTHENES	1647.	27.42	C1/D2	7.93
C6-7	3100.	51.60	CH/MCP	1.01
			PENT/IPENT,	1.15

	PPB	NORM PERCENT
MCP	396.1	28.7
CH	400.4	29.0
MCH	581.9	42.2
TOTAL	1378.4	100.0

PARAFFIN INDEX 1 1.592

PARAFFIN INDEX 2 22.912

05 AUG 83

726551 AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 1970-1985 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	212.0	
IBUTANE	180.3	1.26
NBUTANE	438.1	3.05
IPENTANE	630.6	4.39
NPENTANE	1154.7	8.04
22-DMB	30.6	0.21
CPENTANE	99.9	0.70
23-DMB	153.1	1.07
2-MP	1088.2	7.58
3-MP	604.7	4.21
NHEXANE	2352.9	16.39
MCP	1040.5	7.25
22-DMP	0.0	0.00
24-DMP	96.7	0.67
223-TMB	15.7	0.11
CHEXANE	969.8	6.76
33-DMP ,	0.0	0.00
11-DMCP	0.0	0.00
2-MHEX ,	799.0	5.57
23-DMP ,	377.3	2.63
3-MHEX ,	733.9	5.11
1C3-DMCP	172.1	1.20

	TOTAL PPB	NORM. PERCENT
1T3-DMCP	274.1	1.91
1T2-DMCP	188.3	1.31
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	2059.1	14.35
1C2-DMCP	7.5	0.05
MCH	886.8	6.18

	TOTALS PPB	NORM PERCENT
ALL COMP	14566.	
GASOLINE	14354.	
NAPHTHENES	3639.	25.35
C6-7	9974.	69.48

SIG COMP RATIOS	
C1/C2	1.58
A /D2	6.01
C1/D2	3.62
CH/MCP	0.93
PENT/IPENT,	1.83

	PPB	NORM PERCENT
MCP	1040.5	35.9
CH	969.8	33.5
MCH	886.8	30.6
TOTAL	2897.1	100.0

PARAFFIN INDEX 1 2.416
PARAFFIN INDEX 2 31.873

05 AUG 83

72655K AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 2000-2015 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	1315.7	
IBUTANE	1510.6	3.38
NBUTANE	1727.5	3.86
IPENTANE	3326.6	7.44
NPENTANE	4581.0	10.24
22-DMB	121.1	0.27
CPENTANE	288.6	0.65
23-DMB	486.9	1.09
2-MP	3683.7	8.23
3-MP	16618.7	37.15
NHEXANE	6128.9	13.70
MCP	1367.8	3.06
22-DMP	0.0	0.00
24-DMP	130.7	0.29
223-TMB	17.3	0.04
CHEXANE	791.5	1.77
33-DMP ,	0.0	0.00
11-DMCP	0.0	0.00
2-MHEX ,	674.1	1.51
23-DMP ,	281.5	0.63
3-MHEX ,	555.6	1.24
1C3-DMCP	102.8	0.23

	TOTAL PPB	NORM PERCENT
1T3-DMCP	158.0	0.35
1T2-DMCP	108.1	0.24
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	1356.8	3.03
1C2-DMCP	4.9	0.01
MCH	712.9	1.59

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	46051.		C1/C2	1.25
GASOLINE	44736.		A /D2	13.47
NAPHTHENES	3535.	7.90	C1/D2	3.92
C6-7	12391.	27.70	CH/MCP	0.58
			PENT/IPENT,	1.38

	PPB	NORM PERCENT
MCP	1367.8	47.6
CH	791.5	27.6
MCH	712.9	24.8
TOTAL	2872.2	100.0

PARAFFIN INDEX 1 3.333
PARAFFIN INDEX 2 28.616

05 AUG 83

72655M AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 2030-2045 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	46.5	
IBUTANE	74.9	1.68
NBUTANE	106.6	2.39
IPENTANE	285.2	6.38
NPENTANE	354.3	7.93
22-DMB	15.9	0.36
CPENTANE	29.7	0.67
23-DMB	56.7	1.27
2-MP	404.1	9.04
3-MP	218.8	4.90
NHEXANE	638.8	14.30
MCP	318.9	7.14
22-DMP	0.0	0.00
24-DMP	25.5	0.57
223-TMB	3.8	0.09
CHEXANE	277.9	6.22
33-DMP ,	0.0	0.00
11-DMCP	0.0	0.00
2-MHEX ,	203.5	4.55
23-DMP ,	76.1	1.70
3-MHEX ,	185.7	4.16
1C3-DMCP	52.0	1.16
1T3-DMCP	72.5	1.62
1T2-DMCP	63.6	1.42
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	492.0	11.01
1C2-DMCP	4.0	0.09
MCH	507.2	11.35

	TOTALS PPB	NORM PERCENT
ALL COMP	4514.	
GASOLINE	4468.	
NAPHTHENES	1326.	29.67
C6-7	2921.	65.39

SIG COMP RATIOS	
C1/C2	1.93
A /D2	6.09
C1/D2	5.32
CH/MCP	0.87
PENT/IPENT,	1.24

	PPB	NORM PERCENT
MCP	318.9	28.9
CH	277.9	25.2
MCH	507.2	45.9
TOTAL	1104.0	100.0

PARAFFIN INDEX 1 2.069
PARAFFIN INDEX 2 25.487

05 AUG 83

726550 AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 2060-2075 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	84.1	1.45
ETHANE	0.0		1T2-DMCP	69.8	1.21
PROPANE	284.4		3-EPENT	0.0	0.00
IBUTANE	138.4	2.39	224-TMP	0.0	0.00
NBUTANE	745.4	12.87	NHEPTANE	391.9	6.77
IPENTANE	475.1	8.20	1C2-DMCP	5.5	0.09
NPENTANE	784.2	13.54	MCH	657.2	11.34
22-DMB	12.2	0.21			
CPENTANE	47.2	0.81			
23-DMB	56.7	0.98			
2-MP	374.8	6.47			
3-MP	197.1	3.40			
NHEXANE	624.5	10.78			
MCP	334.4	5.77			
22-DMP	0.0	0.00			
24-DMP	19.3	0.33			
223-TMB	3.6	0.06			
CHEXANE	329.5	5.69			
33-DMP ,	0.0	0.00			
11-DMCP	0.0	0.00			
2-MHEX ,	166.9	2.88			
23-DMP ,	67.3	1.16			
3-MHEX ,	154.9	2.67			
1C3-DMCP	53.4	0.92			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	6078.		C1/C2	2.11
GASOLINE	5793.		A /D2	6.56
NAPHTHENES	1581.	27.29	C1/D2	7.45
C6-7	2962.	51.13	CH/MCP	0.99
			PENT/IPENT,	1.65

	PPB	NORM PERCENT
MCP	334.4	25.3
CH	329.5	24.9
MCH	657.2	49.7
TOTAL	1321.1	100.0

PARAFFIN INDEX 1 1.553
PARAFFIN INDEX 2 19.845

05 AUG 83

726550 AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 2090-2105 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	2136.8	
PROPANE	11216.8	
IBUTANE	8723.7	7.36
NBUTANE	16483.0	13.90
IPENTANE	14420.8	12.16
NPENTANE	14333.1	12.09
22-DMB	334.5	0.28
CPENTANE	1167.8	0.98
23-DMB	1316.1	1.11
2-MP	8970.4	7.56
3-MP	3795.2	3.20
NHEXANE	11887.2	10.02
MCP	5394.8	4.55
22-DMP	0.0	0.00
24-DMP	315.1	0.27
223-TMB	58.1	0.05
CHEXANE	6189.9	5.22
33-DMP ,	0.0	0.00
11-DMCP	0.0	0.00
2-MHEX ,	2424.0	2.04
23-DMP ,	1274.9	1.07
3-MHEX ,	2148.6	1.81
1C3-DMCP	723.0	0.61

	TOTAL PPB	NORM PERCENT
1T3-DMCP	817.9	0.69
1T2-DMCP	1322.0	1.11
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	7436.7	6.27
1C2-DMCP	103.4	0.09
MCH	8957.0	7.55

	TOTALS PPB	NORM PERCENT
ALL COMP	131951.	
GASOLINE	118597.	
NAPHTHENES	24676.	20.81
C6-7	49053.	41.36

SIG COMP RATIOS	
C1/C2	2.10
A /D2	8.99
C1/D2	8.18
CH/MCP	1.15
PENT/IPENT,	0.99

	PPB	NORM PERCENT
MCP	5394.8	26.3
CH	6189.9	30.1
MCH	8957.0	43.6
TOTAL	20541.7	100.0

PARAFFIN INDEX 1 1.597
PARAFFIN INDEX 2 23.764

05 AUG 83

72655S AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 2120-2135 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	425.6	
IBUTANE	1215.2	2.47
NBUTANE	2325.6	4.72
IPENTANE	1765.9	3.58
NPENTANE	2712.4	5.50
22-DMB	80.2	0.16
CPENTANE	516.4	1.05
23-DMB	538.1	1.09
2-MP	3630.9	7.37
3-MP	1707.0	3.46
NHEXANE	5685.9	11.54
MCP	3824.3	7.76
22-DMP	0.0	0.00
24-DMP	183.5	0.37
223-TMB	28.9	0.06
CHEXANE	5253.5	10.66
33-DMP ,	0.0	0.00
11-DMCP	0.0	0.00
2-MHEX ,	1624.9	3.30
23-DMP ,	967.9	1.96
3-MHEX ,	1467.2	2.98
1C3-DMCP	584.4	1.19
1T3-DMCP	675.3	1.37
1T2-DMCP	1034.4	2.10
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	4893.3	9.93
1C2-DMCP	107.9	0.22
MCH	8450.8	17.15

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	49699.		C1/C2	2.46
GASOLINE	49274.		A /D2	7.21
NAPHTHENES	20447.	41.50	C1/D2	10.45
C6-7	34782.	70.59	CH/MCP	1.37
			PENT/IPENT,	1.54

	PPB	NORM PERCENT
MCP	3824.3	21.8
CH	5253.5	30.0
MCH	8450.8	48.2
TOTAL	17528.6	100.0

PARAFFIN INDEX 1 1.348
PARAFFIN INDEX 2 19.611

05 AUG 83

72655U AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 2150-2165 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	935.4	
IBUTANE	1079.0	2.66
NBUTANE	3267.0	8.05
IPENTANE	3798.0	9.35
NPENTANE	4692.2	11.56
22-DMB	99.9	0.25
CPENTANE	522.0	1.29
23-DMB	447.4	1.10
2-MP	2641.0	6.50
3-MP	1320.7	3.25
NHEXANE	4182.4	10.30
MCP	2976.8	7.33
22-DMP	0.0	0.00
24-DMP	76.2	0.19
223-TMB	19.1	0.05
CHEXANE	3473.6	8.56
33-DMP ,	0.0	0.00
11-DMCP	0.0	0.00
2-MHEX ,	820.9	2.02
23-DMP ,	479.8	1.18
3-MHEX ,	793.0	1.95
1C3-DMCP	398.4	0.98
1T3-DMCP	389.7	0.96
1T2-DMCP	684.9	1.69
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	2783.3	6.86
1C2-DMCP	64.2	0.16
MCH	5590.3	13.77

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	41535.		C1/C2	2.19
GASOLINE	40600.		A /D2	8.78
NAPHTHENES	14100.	34.73	C1/D2	12.47
C6-7	22733.	55.99	CH/MCP	1.17
			PENT/IPENT,	1.24

	PPB	NORM PERCENT
MCP	2976.8	24.7
CH	3473.6	28.8
MCH	5590.3	46.4
TOTAL	12040.7	100.0

PARAFFIN INDEX 1 1.096
PARAFFIN INDEX 2 18.057

05 AUG 83

72655W AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 2180-2195 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM. PERCENT
METHANE	0.0		1T3-DMCP	150.6	1.22
ETHANE	0.0		1T2-DMCP	262.2	2.12
PROPANE	113.4		3-EPENT	0.0	0.00
IBUTANE	168.0	1.36	224-TMP	0.0	0.00
NBUTANE	413.6	3.35	NHEPTANE	1298.8	10.51
IPENTANE	862.7	6.98	1C2-DMCP	38.2	0.31
NPENTANE	966.4	7.82	MCH	2341.3	18.95
22-DMB	35.2	0.28			
CPENTANE	81.2	0.66			
23-DMB	128.8	1.04			
2-MP	864.1	6.99			
3-MP	430.2	3.48			
NHEXANE	1376.1	11.14			
MCP	797.3	6.45			
22-DMP	0.0	0.00			
24-DMP	41.8	0.34			
223-TMB	11.0	0.09			
CHEXANE	977.4	7.91			
33-DMP ,	0.0	0.00			
11-DMCP	0.0	0.00			
2-MHEX ,	383.6	3.10			
23-DMP ,	219.0	1.77			
3-MHEX ,	372.1	3.01			
1C3-DMCP	136.4	1.10			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	12470.		C1/C2	2.67
GASOLINE	12356.		A /D2	7.19
NAPHTHENES	4785.	38.72	C1/D2	9.95
C6-7	8406.	68.03	CH/MCP	1.23
			PENT/IPENT,	1.12

	PPB	NORM PERCENT
MCP	797.3	19.4
CH	977.4	23.7
MCH	2341.3	56.9
TOTAL	4116.0	100.0

PARAFFIN INDEX 1 1.376
PARAFFIN INDEX 2 21.149

05 AUG 83

72655Y AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 2210-2225 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	1436.2	
IBUTANE	7501.0	2.56
NBUTANE	12010.8	4.11
IPENTANE	12813.2	4.38
NPENTANE	17191.7	5.88
22-DMB	695.9	0.24
CPENTANE	0.0	0.00
23-DMB	1142.7	0.39
2-MP	23275.8	7.96
3-MP	9406.7	3.22
NHEXANE	33800.9	11.56
MCP	16010.7	5.47
22-DMP	0.0	0.00
24-DMP	355.1	0.12
223-TMB	165.7	0.06
CHEXANE	24915.8	8.52
33-DMP ,	0.0	0.00
11-DMCP	0.0	0.00
2-MHEX ,	9563.2	3.27
23-DMP ,	4377.7	1.50
3-MHEX ,	8991.9	3.07
1C3-DMCP	1893.1	0.65

	TOTAL PPB	NORM PERCENT
1T3-DMCP	2660.8	0.91
1T2-DMCP	5809.1	1.99
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	37326.2	12.76
1C2-DMCP	0.0	0.00
MCH	62554.5	21.39

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	293898.		C1/C2	3.68
GASOLINE	292462.		A /D2	7.91
NAPHTHENES	113844.	38.93	C1/D2	10.79
C6-7	208424.	71.27	CH/MCP	1.56
			PENT/IPENT,	1.34

	PPB	NORM PERCENT
MCP	16010.7	15.5
CH	24915.8	24.1
MCH	62554.5	60.5
TOTAL	103481.0	100.0

PARAFFIN INDEX 1 1.791
PARAFFIN INDEX 2 23.610

11 AUG 83

72656A AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 2240-2255 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	52.8	1.20
ETHANE	208.5		1T2-DMCP	52.7	1.20
PROPANE	144.7		3-EPENT	0.0	0.00
IBUTANE	244.6	5.56	224-TMP	0.0	0.00
NBUTANE	465.5	10.58	NHEPTANE	240.2	5.46
IPENTANE	608.9	13.84	1C2-DMCP	0.0	0.00
NPENTANE	514.5	11.70	MCH	288.6	6.56
22-DMB	8.1	0.18			
CPENTANE	39.8	0.91			
23-DMB	55.6	1.26			
2-MP	392.3	8.92			
3-MP	172.4	3.92			
NHEXANE	404.5	9.20			
MCP	322.8	7.34			
22-DMP	0.0	0.00			
24-DMP	10.4	0.24			
223-TMB	0.0	0.00			
CHEXANE	183.8	4.18			
33-DMP ,	0.0	0.00			
11-DMCP	0.0	0.00			
2-MHEX ,	145.5	3.31			
23-DMP ,	47.7	1.08			
3-MHEX ,	100.9	2.29			
1C3-DMCP	47.4	1.08			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	4752.		C1/C2	1.30
GASOLINE	4399.		A /D2	6.39
NAPHTHENES	988.	22.46	C1/D2	6.12
C6-7	1897.	43.13	CH/MCP	0.57
			PENT/IPENT,	0.84

	PPB	NORM PERCENT
MCP	322.8	40.6
CH	183.8	23.1
MCH	288.6	36.3
TOTAL	795.2	100.0

PARAFFIN INDEX 1 1.612
PARAFFIN INDEX 2 20.716

11 AUG 83

72656C AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 2270-2285 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	62.8	
PROPANE	161.4	
IBUTANE	89.1	4.21
NBUTANE	283.4	13.39
IPENTANE	234.3	11.07
NPENTANE	302.7	14.30
22-DMB	4.0	0.19
CPENTANE	32.8	1.55
23-DMB	23.0	1.09
2-MP	154.5	7.30
3-MP	73.0	3.45
NHEXANE	209.2	9.89
MCP	159.2	7.52
22-DMP	0.0	0.00
24-DMP	110.6	5.22
223-TMB	0.0	0.00
CHEXANE	110.6	5.22
33-DMP ,	0.0	0.00
11-DMCP	0.0	0.00
2-MHEX ,	34.2	1.62
23-DMP ,	17.5	0.83
3-MHEX ,	30.7	1.45
1C3-DMCP	17.2	0.81

	TOTAL PPB	NORM PERCENT
1T3-DMCP	13.6	0.64
1T2-DMCP	21.1	1.00
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	93.6	4.42
1C2-DMCP	0.0	0.00
MCH	101.9	4.82

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	2341.		C1/C2	1.17
GASOLINE	2116.		A /D2	9.86
NAPHTHENES	456.	21.57	C1/D2	8.03
C6-7	919.	43.44	CH/MCP	0.69
			PENT/IPENT,	1.29

	PPB	NORM PERCENT
MCP	159.2	42.8
CH	110.6	29.7
MCH	101.9	27.4
TOTAL	371.7	100.0

PARAFFIN INDEX 1 1.250
PARAFFIN INDEX 2 21.260

11 AUG 83

72656E AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 2300-2315 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	16.6	1.02
ETHANE	0.0		1T2-DMCP	19.1	1.18
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	0.0	0.00	224-TMP	0.0	0.00
NBUTANE	76.6	4.72	NHEPTANE	146.5	9.03
IPENTANE	100.1	6.17	1C2-DMCP	0.0	0.00
NPENTANE	183.5	11.31	MCH	135.4	8.34
22-DMB	4.0	0.24			
CPENTANE	12.8	0.79			
23-DMB	23.2	1.43			
2-MP	169.1	10.42			
3-MP	88.2	5.44			
NHEXANE	231.2	14.24			
MCP	127.2	7.84			
22-DMP	0.0	0.00			
24-DMP	6.3	0.39			
223-TMB	0.0	0.00			
CHEXANE	101.5	6.26			
33-DMP ,	0.0	0.00			
11-DMCP	0.0	0.00			
2-MHEX ,	78.7	4.85			
23-DMP ,	27.8	1.71			
3-MHEX ,	54.0	3.33			
1C3-DMCP	21.1	1.30			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	1623.		C1/C2	1.72
GASOLINE	1623.		A /D2	6.99
NAPHTHENES	434.	26.72	C1/D2	5.84
C6-7	965.	59.49	CH/MCP	0.80
			PENT/IPENT,	1.83

	PPB	NORM PERCENT
MCP	127.2	34.9
CH	101.5	27.9
MCH	135.4	37.2
TOTAL	364.1	100.0

PARAFFIN INDEX 1 2.342
PARAFFIN INDEX 2 24.392

11 AUG 83

726566 AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 2330-2345 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	78.1	
PROPANE	43.9	
IBUTANE	11.6	0.96
NBUTANE	78.3	6.46
IPENTANE	35.2	2.90
NPENTANE	130.9	10.79
22-DMB	1.4	0.11
CPENTANE	5.9	0.49
23-DMB	6.5	0.54
2-MP	55.9	4.61
3-MP	29.9	2.47
NHEXANE	145.9	12.03
MCP	44.5	3.67
22-DMP	0.0	0.00
24-DMP	7.7	0.63
223-TMB	0.0	0.00
CHEXANE	31.9	2.63
33-DMP ,	0.0	0.00
11-DMCP	0.0	0.00
2-MHEX ,	82.1	6.77
23-DMP ,	14.7	1.22
3-MHEX ,	70.8	5.84
1C3-DMCP	6.5	0.54

	TOTAL PPB	NORM PERCENT
1T3-DMCP	0.0	0.00
1T2-DMCP	8.4	0.70
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	336.5	27.75
1C2-DMCP	6.8	0.56
MCH	100.9	8.32

	TOTALS PPB	NORM PERCENT
ALL COMP	1334.	
GASOLINE	1213.	
NAPHTHENES	205.	16.90
C6-7	857.	70.67

SIG COMP RATIOS

C1/C2	3.25
A /D2	6.81
C1/D2	3.03
CH/MCP	0.72
PENT/IPENT,	3.72

	PPB	NORM PERCENT
MCP	44.5	25.1
CH	31.9	18.0
MCH	100.9	56.9
TOTAL	177.3	100.0

PARAFFIN INDEX 1 10.213
PARAFFIN INDEX 2 51.618

11 AUG 83

726561 AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 2360-2375 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	2017.2	
PROPANE	13645.5	
IBUTANE	18329.1	8.29
NBUTANE	28592.4	12.94
IPENTANE	32256.0	14.59
NPENTANE	23808.0	10.77
22-DMB	316.5	0.14
CPENTANE	3256.2	1.47
23-DMB	2104.4	0.95
2-MP	21387.2	9.68
3-MP	7659.0	3.47
NHEXANE	15547.0	7.03
MCP	14806.8	6.70
22-DMP	0.0	0.00
24-DMP	466.1	0.21
223-TMB	57.5	0.03
CHEXANE	9289.5	4.20
33-DMP ,	0.0	0.00
11-DMCP	0.0	0.00
2-MHEX ,	4484.8	2.03
23-DMP ,	2716.5	1.23
3-MHEX ,	3633.9	1.64
1C3-DMCP	2556.0	1.16

	TOTAL PPB	NORM PERCENT
1T3-DMCP	2371.2	1.07
1T2-DMCP	3551.1	1.61
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	9624.5	4.35
1C2-DMCP	321.6	0.15
MCH	13874.9	6.28

	TOTALS PPB	NORM PERCENT
ALL COMP	236673.	
GASOLINE	221010.	
NAPHTHENES	50027.	22.64
C6-7	83301.	37.69

SIG COMP RATIOS	
C1/C2	1.17
A /D2	6.93
C1/D2	7.61
CH/MCP	0.63
PENT/IPENT,	0.74

	PPB	NORM PERCENT
MCP	14806.8	39.0
CH	9289.5	24.5
MCH	13874.9	36.5
TOTAL	37971.2	100.0

PARAFFIN INDEX 1 0.958
PARAFFIN INDEX 2 18.472

11 AUG 83

72656K AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 2390-2405 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	210.7	1.17
ETHANE	193.0		1T2-DMCP	378.7	2.10
PROPANE	258.6		3-EPENT	0.0	0.00
IBUTANE	315.9	1.75	224-TMP	0.0	0.00
NBUTANE	1111.0	6.17	NHEPTANE	1428.4	7.93
IPENTANE	1419.2	7.88	1C2-DMCP	36.9	0.20
NPENTANE	1882.2	10.45	MCH	2784.2	15.46
22-DMB	42.2	0.23			
CPENTANE	173.4	0.96			
23-DMB	198.4	1.10			
2-MP	1226.1	6.81			
3-MP	619.2	3.44			
NHEXANE	1860.9	10.33			
MCP	1292.0	7.18			
22-DMP	0.0	0.00			
24-DMP	46.0	0.26			
223-TMB	10.3	0.06			
CHEXANE	1618.9	8.99			
33-DMP ,	0.0	0.00			
11-DMCP	0.0	0.00			
2-MHEX ,	440.6	2.45			
23-DMP ,	274.8	1.53			
3-MHEX ,	431.6	2.40			
1C3-DMCP	204.5	1.14			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	18458.		C1/C2	2.28
GASOLINE	18006.		A /D2	7.62
NAPHTHENES	6699.	37.21	C1/D2	11.22
C6-7	11019.	61.19	CH/MCP	1.25
			PENT/IPENT,	1.33

	PPB	NORM PERCENT
MCP	1292.0	22.7
CH	1618.9	28.4
MCH	2784.2	48.9
TOTAL	5695.1	100.0

PARAFFIN INDEX 1 1.099
PARAFFIN INDEX 2 18.378

11 AUG 83

72656M AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 2420-2435 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	148.0	
PROPANE	59.4	
IBUTANE	32.5	2.36
NBUTANE	120.8	8.80
IPENTANE	105.9	7.71
NPENTANE	182.7	13.31
22-DMB	3.1	0.23
CPENTANE	9.0	0.65
23-DMB	15.0	1.10
2-MP	115.1	8.38
3-MP	59.9	4.36
NHEXANE	165.1	12.03
MCP	80.1	5.83
22-DMP	0.0	0.00
24-DMP	6.7	0.49
223-TMB	0.0	0.00
CHEXANE	63.2	4.60
33-DMP ,	0.0	0.00
11-DMCP	0.0	0.00
2-MHEX ,	41.8	3.04
23-DMP ,	17.3	1.26
3-MHEX ,	42.1	3.07
1C3-DMCP	16.5	1.20

	TOTAL PPB	NORM PERCENT
1T3-DMCP	9.9	0.72
1T2-DMCP	18.1	1.32
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	113.0	8.23
1C2-DMCP	0.0	0.00
MCH	155.3	11.31

	TOTALS PPB	NORM PERCENT
ALL COMP	1580.	
GASOLINE	1373.	
NAPHTHENES	352.	25.64
C6-7	729.	53.10

SIG COMP RATIOS	
C1/C2	2.09
A /D2	6.61
C1/D2	6.18
CH/MCP	0.79
PENT/IPENT,	1.73

	PPB	NORM PERCENT
MCP	80.1	26.8
CH	63.2	21.2
MCH	155.3	52.0
TOTAL	298.6	100.0

PARAFFIN INDEX 1 1.887
PARAFFIN INDEX 2 23.686

11 AUG 83

726560 AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 2480-2495 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	262.3	
PROPANE	100.3	
IBUTANE	63.4	1.02
NBUTANE	306.2	4.93
IPENTANE	261.6	4.21
NPENTANE	529.1	8.51
22-DMB	4.9	0.08
CPENTANE	26.1	0.42
23-DMB	32.4	0.52
2-MP	291.4	4.69
3-MP	144.1	2.32
NHEXANE	752.8	12.11
MCP	218.5	3.51
22-DMP	0.0	0.00
24-DMP	41.3	0.67
223-TMB	2.3	0.04
CHEXANE	195.2	3.14
33-DMP ,	7.8	0.13
11-DMCP	0.0	0.00
2-MHEX ,	459.9	7.40
23-DMP ,	83.1	1.34
3-MHEX ,	371.0	5.97
1C3-DMCP	54.2	0.87

	TOTAL PPB	NORM PERCENT
1T3-DMCP	91.0	1.46
1T2-DMCP	61.9	1.00
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	1472.6	23.69
1C2-DMCP	5.6	0.09
MCH	740.4	11.91

	TOTALS PPB	NORM PERCENT
ALL COMP	6579.	
GASOLINE	6217.	
NAPHTHENES	1393.	22.41
C6-7	4558.	73.31

SIG COMP RATIOS	
C1/C2	3.25
A /D2	6.00
C1/D2	3.78
CH/MCP	0.89
PENT/IPENT,	2.02

	PPB	NORM PERCENT
MCP	218.5	18.9
CH	195.2	16.9
MCH	740.4	64.2
TOTAL	1154.1	100.0

PARAFFIN INDEX 1 4.012
PARAFFIN INDEX 2 41.632

11 AUG 83

726565 AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 2510-2525 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	35.1	1.29
ETHANE	24.9		1T2-DMCP	36.8	1.35
PROPANE	103.4		3-EPENT	0.0	0.00
IBUTANE	68.9	2.53	224-TMP	0.0	0.00
NBUTANE	270.6	9.95	NHEPTANE	218.4	8.03
IPENTANE	264.4	9.72	1C2-DMCP	4.1	0.15
NPENTANE	322.8	11.87	MCH	401.5	14.76
22-DMB	3.8	0.14			
CPENTANE	16.8	0.62			
23-DMB	24.5	0.90			
2-MP	185.2	6.81			
3-MP	95.2	3.50			
NHEXANE	268.7	9.88			
MCP	146.5	5.38			
22-DMP	0.0	0.00			
24-DMP	9.0	0.33			
223-TMB	0.0	0.00			
CHEXANE	128.1	4.71			
33-DMP ,	0.0	0.00			
11-DMCP	0.0	0.00			
2-MHEX ,	89.9	3.31			
23-DMP ,	32.8	1.21			
3-MHEX ,	69.0	2.54			
1C3-DMCP	28.1	1.03			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	2848.		C1/C2	2.47
GASOLINE	2720.		A /D2	7.06
NAPHTHENES	797.	29.30	C1/D2	8.98
C6-7	1468.	53.97	CH/MCP	0.87
			PENT/IPENT,	1.22

	PPB	NORM PERCENT
MCP	146.5	21.7
CH	128.1	18.9
MCH	401.5	59.4
TOTAL	676.1	100.0

PARAFFIN INDEX 1 1.589
PARAFFIN INDEX 2 21.007

11 AUG 83

72656U AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 2540-2555 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	111.7	
PROPANE	460.4	
IBUTANE	643.7	4.06
NBUTANE	1657.1	10.45
IPENTANE	2041.7	12.88
NPENTANE	1865.2	11.77
22-DMB	23.6	0.15
CPENTANE	173.4	1.09
23-DMB	155.0	0.98
2-MP	1358.0	8.57
3-MP	560.1	3.53
NHEXANE	1306.1	8.24
MCP	1035.4	6.53
22-DMP	0.0	0.00
24-DMP	23.4	0.15
223-TMB	3.5	0.02
CHEXANE	886.6	5.59
33-DMP ,	0.0	0.00
11-DMCP	0.0	0.00
2-MHEX ,	368.2	2.32
23-DMP ,	194.9	1.23
3-MHEX ,	316.5	2.00
1C3-DMCP	196.2	1.24

	TOTAL PPB	NORM PERCENT
1T3-DMCP	185.1	1.17
1T2-DMCP	293.8	1.85
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	835.0	5.27
1C2-DMCP	29.5	0.19
MCH	1698.9	10.72

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	16423.		C1/C2	1.70
GASOLINE	15851.		A /D2	6.77
NAPHTHENES	4499.	28.38	C1/D2	9.33
C6-7	7373.	46.52	CH/MCP	0.86
			PENT/IPENT,	0.91

	PPB	NORM PERCENT
MCP	1035.4	28.6
CH	886.6	24.5
MCH	1698.9	46.9
TOTAL	3620.9	100.0

PARAFFIN INDEX 1 1.014
PARAFFIN INDEX 2 16.784

11 AUG 83

72656W AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 2570-2585 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	120.7	1.78
ETHANE	38.6		1T2-DMCP	191.2	2.82
PROPANE	14.4		3-EPENT	0.0	0.00
IBUTANE	26.8	0.40	224-TMP	0.0	0.00
NBUTANE	80.6	1.19	NHEPTANE	656.7	9.69
IPENTANE	321.3	4.74	1C2-DMCP	12.4	0.18
NPENTANE	493.2	7.28	MCH	865.8	12.78
22-DMB	8.5	0.13			
CPENTANE	82.5	1.22			
23-DMB	72.7	1.07			
2-MP	627.0	9.25			
3-MP	285.4	4.21			
NHEXANE	813.5	12.00			
MCP	673.7	9.94			
22-DMP	0.0	0.00			
24-DMP	20.3	0.30			
223-TMB	2.1	0.03			
CHEXANE	587.6	8.67			
33-DMP ,	0.0	0.00			
11-DMCP	0.0	0.00			
2-MHEX ,	316.0	4.66			
23-DMP ,	113.4	1.67			
3-MHEX ,	285.1	4.21			
1C3-DMCP	120.3	1.78			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	6830.		C1/C2	1.58
GASOLINE	6777.		A /D2	5.16
NAPHTHENES	2654.	39.17	C1/D2	6.21
C6-7	4779.	70.52	CH/MCP	0.87
			PENT/IPENT,	1.53

	PPB	NORM PERCENT
MCP	673.7	31.7
CH	587.6	27.6
MCH	865.8	40.7
TOTAL	2127.1	100.0

PARAFFIN INDEX 1 1.391
PARAFFIN INDEX 2 20.164

11 AUG 83

72657A AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 2630-2645 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	393.5	
IBUTANE	1897.4	0.22
NBUTANE	7526.4	0.88
IPENTANE	24906.0	2.92
NPENTANE	38799.5	4.54
22-DMB	1624.0	0.19
CPENTANE	6467.4	0.76
23-DMB	0.0	0.00
2-MP	52771.9	6.18
3-MP	223011.8	26.12
NHEXANE	81580.7	9.55
MCP	52442.3	6.14
22-DMP	0.0	0.00
24-DMP	1902.6	0.22
223-TMB	551.5	0.06
CHEXANE	69390.0	8.13
33-DMP ,	0.0	0.00
11-DMCP	0.0	0.00
2-MHEX ,	24109.2	2.82
23-DMP ,	12010.0	1.41
3-MHEX ,	23105.1	2.71
1C3-DMCP	7423.2	0.87

	TOTAL PPB	NORM PERCENT
1T3-DMCP	8849.1	1.04
1T2-DMCP	17715.7	2.07
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	83524.0	9.78
1C2-DMCP	700.0	0.08
MCH	113585.6	13.30

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	854286.		C1/C2	2.38
GASOLINE	853893.		A /D2	7.15
NAPHTHENES	276573.	32.39	C1/D2	8.96
C6-7	496889.	58.19	CH/MCP	1.32
			PENT/IPENT,	1.56

	PPB	NORM PERCENT
MCP	52442.3	22.3
CH	69390.0	29.5
MCH	113585.6	48.2
TOTAL	235417.9	100.0

PARAFFIN INDEX 1 1.389
PARAFFIN INDEX 2 23.220

11 AUG 83

72657C AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 2660-2675 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	41.1	1.93
ETHANE	0.0		1T2-DMCP	27.8	1.30
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	0.0	0.00	224-TMP	0.0	0.00
NBUTANE	0.0	0.00	NHEPTANE	350.1	16.39
IPENTANE	65.3	3.06	1C2-DMCP	0.0	0.00
NPENTANE	142.3	6.66	MCH	336.2	15.74
22-DMB	3.0	0.14			
CPENTANE	18.8	0.88			
23-DMB	22.4	1.05			
2-MP	141.1	6.61			
3-MP	90.3	4.23			
NHEXANE	320.1	14.99			
MCP	163.6	7.66			
22-DMP	0.0	0.00			
24-DMP	8.1	0.38			
223-TMB	0.0	0.00			
CHEXANE	173.2	8.11			
33-DMP ,	0.0	0.00			
11-DMCP	0.0	0.00			
2-MHEX ,	93.9	4.39			
23-DMP ,	38.0	1.78			
3-MHEX ,	76.8	3.59			
1C3-DMCP	23.7	1.11			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	2136.		C1/C2	2.35
GASOLINE	2136.		A /D2	8.73
NAPHTHENES	784.	36.73	C1/D2	7.86
C6-7	1653.	77.37	CH/MCP	1.06
			PENT/IPENT,	2.18

	PPB	NORM PERCENT
MCP	163.6	24.3
CH	173.2	25.7
MCH	336.2	50.0
TOTAL	673.0	100.0

PARAFFIN INDEX 1 1.842
PARAFFIN INDEX 2 30.159

11 AUG 83

72657E AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 2690-2705 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	0.0	
IBUTANE	0.0	0.00
NBUTANE	16.7	0.47
IPENTANE	31.1	0.87
NPENTANE	81.2	2.28
22-DMB	2.2	0.06
CPENTANE	19.9	0.56
23-DMB	26.1	0.74
2-MP	200.2	5.63
3-MP	118.2	3.32
NHEXANE	424.8	11.95
MCP	327.1	9.20
22-DMP	0.0	0.00
24-DMP	12.5	0.35
223-TMB	0.0	0.00
CHEXANE	419.2	11.79
33-DMP ,	0.0	0.00
11-DMCP	0.0	0.00
2-MHEX ,	110.7	3.11
23-DMP ,	87.2	2.45
3-MHEX ,	138.5	3.89
1C3-DMCP	70.2	1.98

	TOTAL PPB	NORM PERCENT
1T3-DMCP	108.1	3.04
1T2-DMCP	78.1	2.20
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	483.4	13.59
1C2-DMCP	9.1	0.26
MCH	790.9	22.25

	TOTALS PPB	NORM PERCENT
ALL COMP	3555.	
GASOLINE	3555.	
NAPHTHENES	1823.	51.27
C6-7	3060.	86.06

SIG COMP RATIOS	
C1/C2	2.23
A /D2	6.56
C1/D2	9.54
CH/MCP	1.28
PENT/IPENT,	2.61

	PPB	NORM PERCENT
MCP	327.1	21.3
CH	419.2	27.3
MCH	790.9	51.5
TOTAL	1537.2	100.0

PARAFFIN INDEX 1 0.972
PARAFFIN INDEX 2 21.141

11 AUG 83

726571 AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 2750-2765 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	70.8	
PROPANE	38.4	
IBUTANE	23.3	0.06
NBUTANE	195.3	0.51
IPENTANE	799.1	2.08
NPENTANE	1769.4	4.60
22-DMB	38.1	0.10
CPENTANE	457.1	1.19
23-DMB	300.4	0.78
2-MP	2713.6	7.06
3-MP	1282.0	3.33
NHEXANE	4860.6	12.64
MCP	3508.2	9.12
22-DMP	0.0	0.00
24-DMP	94.3	0.25
223-TMB	15.9	0.04
CHEXANE	4167.2	10.83
33-DMP ,	0.0	0.00
11-DMCP	0.0	0.00
2-MHEX ,	1329.1	3.46
23-DMP ,	833.2	2.17
3-MHEX ,	1265.6	3.29
1C3-DMCP	604.3	1.57
1T3-DMCP	631.9	1.64
1T2-DMCP	1133.4	2.95
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	5147.7	13.38
1C2-DMCP	116.0	0.30
MCH	7175.6	18.66

	TOTALS PPB	NORM PERCENT
ALL COMP	38570.	
GASOLINE	38461.	
NAPHTHENES	17794.	46.26
C6-7	30883.	80.30

SIG COMP RATIOS	
C1/C2	2.11
A /D2	7.91
C1/D2	10.01
CH/MCP	1.19
PENT/IPENT,	2.21

	PPB	NORM PERCENT
MCP	3508.2	23.6
CH	4167.2	28.1
MCH	7175.6	48.3
TOTAL	14851.0	100.0

PARAFFIN INDEX 1 1.095
PARAFFIN INDEX 2 23.096

11 AUG 83

72657K AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 2780-2795 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	0.0	
IBUTANE	0.0	0.00
NBUTANE	0.0	0.00
IPENTANE	111.0	1.69
NPENTANE	400.4	6.09
22-DMB	7.6	0.12
CPENTANE	61.3	0.93
23-DMB	57.2	0.87
2-MP	483.7	7.36
3-MP	255.0	3.88
NHEXANE	1309.3	19.92
MCP	503.3	7.66
22-DMP	0.0	0.00
24-DMP	31.0	0.47
223-TMB	3.0	0.05
CHEXANE	469.8	7.15
33-DMP ,	0.0	0.00
11-DMCP	0.0	0.00
2-MHEX ,	348.8	5.31
23-DMP ,	97.3	1.48
3-MHEX ,	320.0	4.87
1C3-DMCP	72.0	1.10

	TOTAL PPB	NORM PERCENT
1T3-DMCP	73.7	1.12
1T2-DMCP	133.7	2.03
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	1130.8	17.20
1C2-DMCP	7.1	0.11
MCH	696.6	10.60

	TOTALS PPB	NORM PERCENT
ALL COMP	6573.	
GASOLINE	6573.	
NAPHTHENES	2017.	30.69
C6-7	5196.	79.06

SIG COMP RATIOS

C1/C2	1.92
A /D2	7.63
C1/D2	4.74
CH/MCP	0.93
PENT/IPENT,	3.61

	PPB	NORM PERCENT
MCP	503.3	30.1
CH	469.8	28.1
MCH	696.6	41.7
TOTAL	1669.7	100.0

PARAFFIN INDEX 1 2.394
PARAFFIN INDEX 2 33.829

11 AUG 83

72657M AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 2810-2825 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	0.0	
IBUTANE	0.0	0.00
NBUTANE	65.5	0.14
IPENTANE	210.8	0.45
NPENTANE	599.0	1.29
22-DMB	8.1	0.02
CPENTANE	272.4	0.59
23-DMB	183.8	0.40
2-MP	1803.6	3.89
3-MP	990.1	2.13
NHEXANE	4552.4	9.81
MCP	3479.3	7.50
22-DMP	0.0	0.00
24-DMP	93.2	0.20
223-TMB	9.7	0.02
CHEXANE	4753.8	10.25
33-DMP ,	0.0	0.00
11-DMCP	0.0	0.00
2-MHEX ,	1886.5	4.07
23-DMP ,	1191.2	2.57
3-MHEX ,	1854.2	4.00
1C3-DMCP	877.3	1.89

	TOTAL PPB	NORM PERCENT
1T3-DMCP	942.7	2.03
1T2-DMCP	1726.0	3.72
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	8945.7	19.28
1C2-DMCP	198.8	0.43
MCH	11747.8	25.32

	TOTALS PPB	NORM PERCENT
ALL COMP	46392.	
GASOLINE	46392.	
NAPHTHENES	23998.	51.73
C6-7	42259.	91.09

SIG COMP RATIOS	
C1/C2	2.55
A /D2	7.28
C1/D2	9.92
CH/MCP	1.37
PENT/IPENT,	2.84

	PPB	NORM PERCENT
MCP	3479.3	17.4
CH	4753.8	23.8
MCH	11747.8	58.8
TOTAL	19980.9	100.0

PARAFFIN INDEX 1 1.055

PARAFFIN INDEX 2 26.369

11 AUG 83

726570 AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 2840-2855 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	0.0	
IBUTANE	22.0	0.64
NBUTANE	108.4	3.15
IPENTANE	146.9	4.27
NPENTANE	233.1	6.77
22-DMB	3.1	0.09
CPENTANE	23.3	0.68
23-DMB	30.0	0.87
2-MP	216.8	6.30
3-MP	117.0	3.40
NHEXANE	345.5	10.04
MCP	223.0	6.48
22-DMP	0.0	0.00
24-DMP	11.0	0.32
223-TMB	0.0	0.00
CHEXANE	260.1	7.56
33-DMP ,	0.0	0.00
11-DMCP	0.0	0.00
2-MHEX ,	137.6	4.00
23-DMP ,	63.5	1.85
3-MHEX ,	121.7	3.53
1C3-DMCP	48.4	1.41

	TOTAL PPB	NORM PERCENT
1T3-DMCP	74.6	2.17
1T2-DMCP	64.4	1.87
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	380.8	11.06
1C2-DMCP	8.4	0.24
MCH	802.6	23.32

	TOTALS PPB	NORM PERCENT
ALL COMP	3442.	
GASOLINE	3442.	
NAPHTHENES	1505.	43.72
C6-7	2542.	73.84

SIG COMP RATIOS

C1/C2	2.87
A /D2	5.97
C1/D2	9.86
CH/MCP	1.17
PENT/IPENT,	1.59

	PPB	NORM PERCENT
MCP	223.0	17.3
CH	260.1	20.2
MCH	802.6	62.4
TOTAL	1285.7	100.0

PARAFFIN INDEX 1 1.383
PARAFFIN INDEX 2 19.490

11 AUG 83

726570 AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 2870-2885 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	185.9	
PROPANE	362.0	
IBUTANE	919.2	0.31
NBUTANE	5845.2	1.95
IPENTANE	16872.0	5.63
NPENTANE	27448.6	9.17
22-DMB	326.6	0.11
CPENTANE	3944.6	1.32
23-DMB	2476.4	0.83
2-MP	26769.8	8.94
3-MP	11604.8	3.88
NHEXANE	42340.8	14.14
MCP	18754.9	6.26
22-DMP	0.0	0.00
24-DMP	529.9	0.18
223-TMB	67.3	0.02
CHEXANE	23490.5	7.84
33-DMP ,	0.0	0.00
11-DMCP	0.0	0.00
2-MHEX ,	8357.5	2.79
23-DMP ,	5593.6	1.87
3-MHEX ,	7667.8	2.56
1C3-DMCP	2893.7	0.97

	TOTAL PPB	NORM PERCENT
1T3-DMCP	3446.2	1.15
1T2-DMCP	6309.6	2.11
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	40526.2	13.53
1C2-DMCP	711.8	0.24
MCH	42561.0	14.21

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	300006.		C1/C2	2.32
GASOLINE	299458.		A /D2	10.81
NAPHTHENES	102112.	34.10	C1/D2	9.70
C6-7	203251.	67.87	CH/MCP	1.25
			PENT/IPENT,	1.63

	PPB	NORM PERCENT
MCP	18754.9	22.1
CH	23490.5	27.7
MCH	42561.0	50.2
TOTAL	84806.4	100.0

PARAFFIN INDEX 1 1.267
PARAFFIN INDEX 2 28.773

11 AUG 83

726578 AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 2900-2915 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	0.0	
IBUTANE	0.0	0.00
NBUTANE	0.0	0.00
IPENTANE	47.3	0.58
NPENTANE	220.0	2.70
22-DMB	3.2	0.04
CPENTANE	73.6	0.90
23-DMB	59.6	0.73
2-MP	521.0	6.39
3-MP	295.0	3.62
NHEXANE	1241.1	15.21
MCP	709.5	8.70
22-DMP	0.0	0.00
24-DMP	31.2	0.38
223-TMB	3.0	0.04
CHEXANE	865.0	10.60
33-DMP ,	0.0	0.00
11-DMCP	0.0	0.00
2-MHEX ,	365.3	4.48
23-DMP ,	212.4	2.60
3-MHEX ,	348.4	4.27
1C3-DMCP	106.4	1.30

	TOTAL PPB	NORM PERCENT
1T3-DMCP	132.5	1.62
1T2-DMCP	224.2	2.75
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	1334.8	16.36
1C2-DMCP	17.3	0.21
MCH	1348.2	16.52

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	8159.		C1/C2	2.17
GASOLINE	8159.		A /D2	7.39
NAPHTHENES	3477.	42.61	C1/D2	7.40
C6-7	6939.	85.05	CH/MCP	1.22
			PENT/IPENT,	4.65

	PPB	NORM PERCENT
MCP	709.5	24.3
CH	865.0	29.6
MCH	1348.2	46.1
TOTAL	2922.7	100.0

PARAFFIN INDEX 1 1.541
PARAFFIN INDEX 2 27.036

11 AUG 83

72657U AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 2930-2945 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	0.0	
IBUTANE	0.0	0.00
NBUTANE	0.0	0.00
IPENTANE	37.0	0.69
NPENTANE	144.2	2.69
22-DMB	3.1	0.06
CPENTANE	48.2	0.90
23-DMB	31.6	0.59
2-MP	265.8	4.96
3-MP	159.1	2.97
NHEXANE	751.7	14.02
MCP	409.9	7.64
22-DMP	0.0	0.00
24-DMP	18.6	0.35
223-TMB	0.0	0.00
CHEXANE	465.7	8.69
33-DMP ,	0.0	0.00
11-DMCP	0.0	0.00
2-MHEX ,	244.0	4.55
23-DMP ,	114.4	2.13
3-MHEX ,	240.5	4.49
1C3-DMCP	80.0	1.49
1T3-DMCP	85.4	1.59
1T2-DMCP	153.7	2.87
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	1040.9	19.41
1C2-DMCP	13.0	0.24
MCH	1055.0	19.68

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	5362.		C1/C2	2.38
GASOLINE	5362.		A /D2	7.45
NAPHTHENES	2311.	43.10	C1/D2	7.34
C6-7	4673.	87.15	CH/MCP	1.14
			PENT/IPENT,	3.90

	PPB	NORM PERCENT
MCP	409.9	21.2
CH	465.7	24.1
MCH	1055.0	54.6
TOTAL	1930.6	100.0

PARAFFIN INDEX 1 1.519
PARAFFIN INDEX 2 29.915

11 AUG 83

72657W AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 2960-2975 M

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	0.0	
IBUTANE	100.8	0.33
NBUTANE	234.2	0.76
IPENTANE	985.3	3.19
NPENTANE	2066.2	6.70
22-DMB	53.3	0.17
CPENTANE	311.8	1.01
23-DMB	303.2	0.98
2-MP	2278.8	7.39
3-MP	1185.0	3.84
NHEXANE	4305.6	13.96
MCP	2067.7	6.70
22-DMP	0.0	0.00
24-DMP	121.3	0.39
223-TMB	21.0	0.07
CHEXANE	3097.8	10.04
33-DMP ,	0.0	0.00
11-DMCP	0.0	0.00
2-MHEX ,	1048.3	3.40
23-DMP ,	697.5	2.26
3-MHEX ,	1021.1	3.31
1C3-DMCP	308.5	1.00

	TOTAL PPB	NORM PERCENT
1T3-DMCP	386.8	1.25
1T2-DMCP	698.3	2.26
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	4043.3	13.11
1C2-DMCP	68.9	0.22
MCH	5446.5	17.65

	TOTALS PPB	NORM PERCENT
ALL COMP	30851.	
GASOLINE	30851.	
NAPHTHENES	12386.	40.15
C6-7	23332.	75.63

SIG COMP RATIOS

C1/C2	2.72
A /D2	8.18
C1/D2	9.39
CH/MCP	1.50
PENT/IPENT,	2.10

	PPB	NORM PERCENT
MCP	2067.7	19.5
CH	3097.8	29.2
MCH	5446.5	51.3
TOTAL	10612.0	100.0

PARAFFIN INDEX 1 1.485
PARAFFIN INDEX 2 24.142

11 AUG 83

72657Y AUSTRALIA, WHITING-1, GIPPSLAND BASIN, 2990-3005 M

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	49.1	1.56
ETHANE	0.0		1T2-DMCP	37.9	1.20
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	55.6	1.76	224-TMP	0.0	0.00
NBUTANE	72.5	2.30	NHEPTANE	375.5	11.90
IPENTANE	124.0	3.93	1C2-DMCP	4.1	0.13
NPENTANE	306.7	9.72	MCH	589.1	18.67
22-DMB	4.4	0.14			
CPENTANE	32.4	1.03			
23-DMB	25.8	0.82			
2-MP	189.7	6.01			
3-MP	110.0	3.49			
NHEXANE	435.7	13.81			
MCP	200.3	6.35			
22-DMP	0.0	0.00			
24-DMP	9.3	0.29			
223-TMB	0.0	0.00			
CHEXANE	259.2	8.22			
33-DMP ,	0.0	0.00			
11-DMCP	0.0	0.00			
2-MHEX ,	96.0	3.04			
23-DMP ,	41.6	1.32			
3-MHEX ,	105.2	3.33			
1C3-DMCP	30.2	0.96			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	3155.		C1/C2	2.94
GASOLINE	3155.		A /D2	7.71
NAPHTHENES	1202.	38.12	C1/D2	8.98
C6-7	2233.	70.80	CH/MCP	1.29
			PENT/IPENT,	2.47

	PPB	NORM PERCENT
MCP	200.3	19.1
CH	259.2	24.7
MCH	589.1	56.2
TOTAL	1048.6	100.0

PARAFFIN INDEX 1 1.715
PARAFFIN INDEX 2 23.709

APPENDIX-2

Detailed Vitrinite Reflectance and Exinite Fluorescence Data

by A.C. Cook.

Appendix 2.

A1/1

WHITING No.1

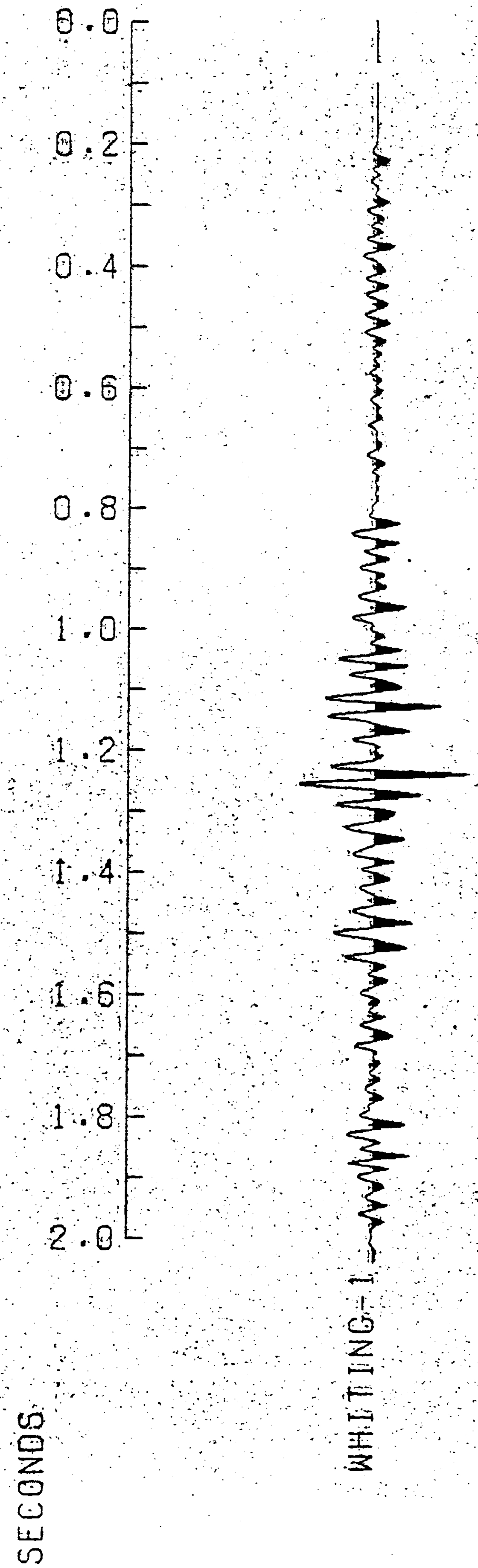
KK No.	Esso No.	Depth m	$\bar{R}_v$ max %	Range R_v max %	N	Exinite fluorescence (Remarks)
17751	BS/726 36-P	1478.5 SWC	0.49	0.43-0.55	20	Abundant liptodetrinite, common sporinite, yellow to orange, common resinite, green to dull orange, abundant ?bituminite dull brown. (Coal, clarite consisting of densinite/desmocollinite with abundant ?bituminite. V>E>>I, fungal sclerotinite the only form of I. E 20%-40%, 5%-10% excluding bituminite. ?Marcasite common.)
17752	BS/726 38-X	2141.2 SWC	0.49	0.41-0.56	13	Common sporinite and cutinite, yellow to orange. Siltstone and claystone, d.o.m. common, I>E>V. Inertinite common, exinite common, vitrinite sparse. Sparse pyrite, some iron oxides.)
17686	726 28-A	2682.28 Core	0.76	0.58-0.86	25	Abundant resinite, yellow to orange, common cutinite, orange. (Coaly sandstone, sandy coal. Coal vitrite, clarite and inertite. D.o.m. abundant, V>I>E, all macerals abundant. Most of the inertinite is semifusinite or fusinite. Moderate green oil cut from some of the inertinite. Some of the vitrinite shows moderately strong greenish brown fluorescence, but only a very weak oil cut. Some carbonate present in the sandstone.)
17753	BS/726 35-F	2767 SWC	0.84	0.79-0.89	21	Common sporinite, cutinite, yellow to orange, sparse resinite, orange to brown. (Coal and sparse claystone. Coal consists of massive telocollinite with minor micrinite and no other macerals present. Claystone contains abundant d.o.m., V=E, no I. Vitrinite and exinite abundant. The reflectance of the telocollinite spans a restricted range, is likely to be above the trend for a normal coal seam, and markedly above the trend for d.o.m. Sparse siderite present in the coal.)
17754	BS/726 35-B	2958 SWC	0.69	0.58-0.87	20	Rare sporinite and cutinite, yellow orange to brown, rare resinite, orange. (Siltstone, d.o.m. abundant to dominant, I>V>E. Inertinite abundant, vitrinite sparse to common, exinite rare. Much of the vitrinite of low reflectance has weak but distinct fluorescence and may contain butuminite or suberinite or contain absorbed bitumens.)

APPENDIX 8

APPENDIX 8

WHITING -1

PULSE NO.1
TYPE = 2
FREQ. = 25.00
CYCLE BREADTH = 31.19
TIME OVERLAY 1

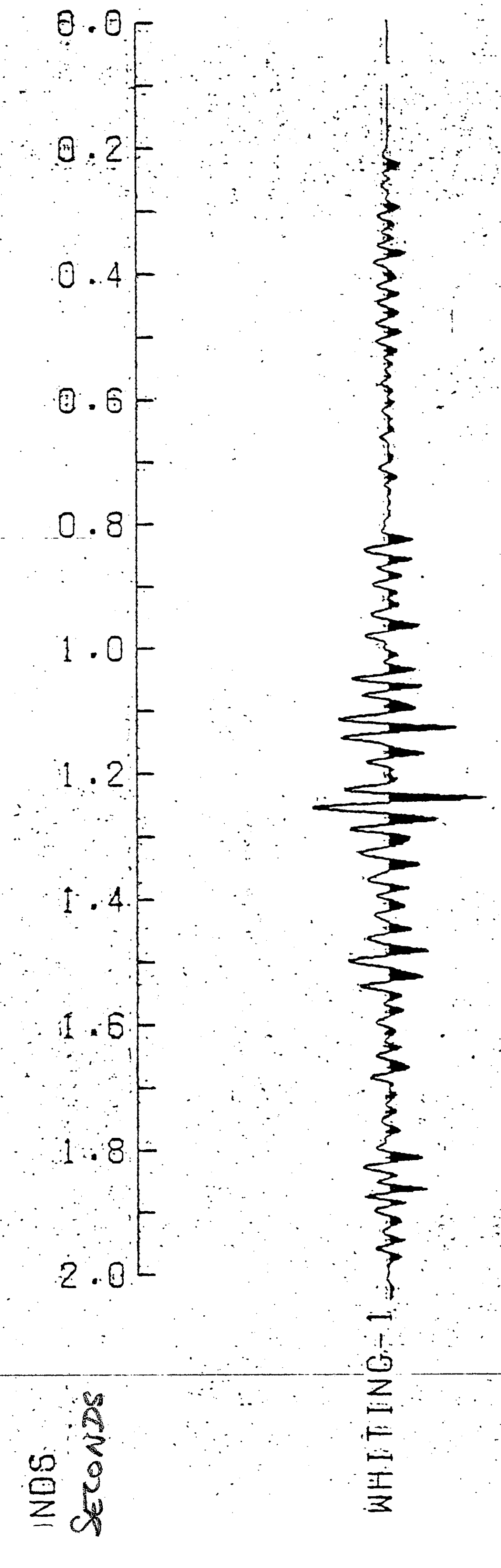


Dwg.2174/OP/10

WHITING -1

Copy

BULSE NO.1
TYBE = 2
FREQ. = 25.00
CYCLE BREADTH = 31.19
TIME OVERLAY 1



ENCLOSURES

PE902574

This is an enclosure indicator page.
The enclosure PE902574 is enclosed within the container PE902572 at this location in this document.

The enclosure PE902574 has the following characteristics:

ITEM_BARCODE =	PE902574
CONTAINER_BARCODE =	PE902572
NAME =	Structure Map Top of Coarse Clastics
BASIN =	GIPPSLAND
PERMIT =	VIC/L2
TYPE =	WELL
SUBTYPE =	HRZN_CNTR_MAP
DESCRIPTION =	Structure Map Top of Coarse Clastics (most likely case) for vol.2 of WCR Whiting-1
REMARKS =	
DATE_CREATED =	31/12/84
DATE_RECEIVED =	13/11/85
W_NO =	W807
WELL_NAME =	Whiting-1
CONTRACTOR =	ESSO
CLIENT_OP_CO =	ESSO

PE902573

This is an enclosure indicator page.
The enclosure PE902573 is enclosed within the container PE902566 at this location in this document.

The enclosure PE902573 has the following characteristics:

ITEM_BARCODE =	PE902573
CONTAINER_BARCODE =	PE902572
NAME =	Structure Map - Upper Lbalmei Seismic Marker
BASIN =	GIPPSLAND
PERMIT =	VIC/L2
TYPE =	WELL
SUBTYPE =	HRZN_CNTR_MAP
DESCRIPTION =	Structure Map - Upper Lbalmei Seismic Marker
REMARKS =	
DATE_CREATED =	1/12/84
DATE_RECEIVED =	13/11/85
W_NO =	W807
WELL_NAME =	Whiting-1
CONTRACTOR =	ESSO
CLIENT_OP_CO =	ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE902575

This is an enclosure indicator page.
The enclosure PE902575 is enclosed within the container PE902572 at this location in this document.

The enclosure PE902575 has the following characteristics:

```
     ITEM_BARCODE = PE902575
CONTAINER_BARCODE = PE902572
             NAME = Structure Map - Lower Lbalmei
            BASIN = GIPPSLAND
           PERMIT = VIC/L2
             TYPE = WELL
          SUBTYPE = HRZN_CNTR_MAP
      DESCRIPTION = Structure Map - Lower Lbalmei
                    (enclosure from WCR vol.2) for
                    Whiting-1
          REMARKS =
     DATE_CREATED = 31/12/84
    DATE_RECEIVED = 13/11/85
             W_NO = W807
        WELL_NAME = Whiting-1
       CONTRACTOR = ESSO
     CLIENT_OP_CO = ESSO
```

(Inserted by DNRE - Vic Govt Mines Dept)

PE902576

This is an enclosure indicator page.
The enclosure PE902576 is enclosed within the container PE902572 at this location in this document.

The enclosure PE902576 has the following characteristics:

ITEM_BARCODE =	PE902576
CONTAINER_BARCODE =	PE902572
NAME =	Geological Cross section
BASIN =	GIPPSLAND
PERMIT =	VIC/L2
TYPE =	WELL
SUBTYPE =	CROSS_SECTION
DESCRIPTION =	Geological Cross section A-A' (enclosure from WCR vol.2) for Whiting-1
REMARKS =	
DATE_CREATED =	31/01/85
DATE_RECEIVED =	13/11/85
W_NO =	W807
WELL_NAME =	Whiting-1
CONTRACTOR =	ESSO
CLIENT_OP_CO =	ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE601298

This is an enclosure indicator page.
The enclosure PE601298 is enclosed within the container PE902572 at this location in this document.

The enclosure PE601298 has the following characteristics:

ITEM_BARCODE =	PE601298
CONTAINER_BARCODE =	PE902572
NAME =	Well Completion Log
BASIN =	GIPPSLAND
PERMIT =	VIC/L2
TYPE =	WELL
SUBTYPE =	COMPLETION_LOG
DESCRIPTION =	Well Completion Log (enclosure from WCR vol.2) for Whiting-1
REMARKS =	
DATE_CREATED =	28/04/83
DATE_RECEIVED =	13/11/85
W_NO =	W807
WELL_NAME =	Whiting-1
CONTRACTOR =	ESSO
CLIENT_OP_CO =	ESSO

(Inserted by DNRE - Vic Govt Mines Dept)