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ESSO EXPLORATION AND PRODUCTION
AUSTRALIA INC.

WELL COMPLETION REPORT
BARRACOUTA-5
VOLUME II

GIPPSLAND BASIN
VICTORIA

ESSO AUSTRALIA LIMITED

Compiled by: M.W.SLOAN

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BARRACOUTA-5

WELL COMPLETION REPORT

VOLUME 2

(Interpretative Data)

CONTENTS

FIGURES

APPENDICES

ENCLOSURES

1.0 GEOLOGICAL AND GEOPHYSICAL ANALYSIS

1.1 Summary Well Prognosis

Formation/Horizon	Pre-Drill (m TVDKB)	Post-Drill (m MDKB)	Post-Drill (m TVDKB) KB 21m	Post-Drill (M TVDSS)
Gippsland Limestone	66	66	66	45
Lakes Entrance Formation	963	1043.5	935.5	914.5
Latrobe Group				
Gurnard Formation	1033	1182.0	1044.5	1023.5
Coarse Clastics (Top N-1)	1049	1204.0	1062.0	1041.0
Lower N. asperus Seismic Marker	1228	1429.0	1241.0	1220.0
N-3 Sand	1308	1525.0	1319.5	1298.5
N-4 Sand	1346	1574.5	1360.0	1339.0
N-5 Sand	1360	1590.5	1373.5	1352.5
N-6 Sand	-	1622.5	1400.5	1379.5
M. diversus Seismic Marker (M-1 Sand)	1395	1631.0	1407.5	1386.5
Total Depth	1521	1770	1530.0	1509.0

Note: Pre-drill depths differ from the depths quoted in the authorization to drill due to a change in well location and the deviated well path.

1.2 INTRODUCTION

Barracouta-5 was spudded on January 22, 1985 and drilled to a T.D. of 1770m MDKB (1530m TVDKB). The well was plugged and abandoned on February 10, 1985 as a successful delineation well. Barracouta-5 was a deviated well due to the close proximity of the well target to the Barracouta oil and gas pipelines.

The well was designed to:

(i) test the fluid content of the N-3 sand and attempt to prove up additional oil reserves in the N-4 and N-5 sands to justify additional development on the Barraccouta Field and,

(ii) obtain "modern" logs through the N-1 gas reservoir to allow accurate determination of water saturation and porosity.

The Barracouta-5 exploration well intersected oil in the N-5 and M-1 reservoirs, with the N-5 OWC intersected 6.5m deep to prediction. A new oil sand, the N-6, which lies directly above the M-1 reservoir, was discovered by Barracouta-5. No oil was encountered in the N-3 and N-4 sands, which were intersected 2.5m and 7m deep to prediction respectively. Valuable information was gained in determining the water saturation of the N-1 gas reservoir from the modern resistivity log suite (as opposed to the existing induction logs), and from core analysis carried out on cores cut in the reservoir.

1.3 DRILLING HISTORY

Barracouta-1 (originally called Gippsland Shelf-1; TD 2652m KB) was drilled in 1964 on a seismically delineated anticline and intersected a 102.5m gross gas column (the N-1 reservoir) in the 'coarse clastics' at the top of the Latrobe Group. A stepout well, Barracouta-2 (TD 1244m KB) was drilled in 1965 and intersected a gross gas column of 119.5m. Based on the results of these two wells, the 10 conductor Barracouta 'A' platform was located near the crest of the structure and development drilling commenced in 1968.

The second well to be drilled from the platform, A-3 (1968; TD 3589m KB) intersected an 8m oil column, the M-1 reservoir, approximately 230m below the N-1 gas water contact. The well also intersected several gas sands below the M-1 reservoir in the intra-Latrobe. The development well A-7 (1968), drilled to the northwest from the platform intersected two new oil sands, the N-4 and N-5 between the N-1 and M-1 reservoirs. Seven platform wells were drilled to intersect the M-1 oil, of which five have now been recompleted in the N-1 gas reservoir due to M-1 oil depletion.

Barracouta-3 (1969; TD 2942m KB) was drilled to test the continuity and communication of the N-1 gas reservoir across the fault to the west of the platform. Although the N-1 reservoir was shown to be in communication and a 4m oil leg was discovered under the N-1 gas cap, no deeper hydrocarbons were found.

In 1977, Barracouta-4 (TD 1458m KB) was drilled to delineate the extent of the M-1 oil reservoir with the possibility of being used as a subsea completion. However, the M-1 top came in 16m low to prediction with insufficient oil to justify the subsea completion.

Barracouta-5 (1985; TD 1770m MDKB) was drilled to test the hydrocarbon potential of the N-3, N-4 and N-5 sands and to obtain a "modern" logging suite across the N-1 gas reservoir. The N-3 and N-4 sands were not oil bearing, but the well intersected a 4m TVT oil column in the N-5 sand, with the OWC intersected 6.5m low to prediction. A new 2m gross oil sand, the N-6 was also discovered between the N-5 and M-1 sands.

1.4 STRUCTURE

The Barracouta structure is a broad, elongate, doubly plunging anticline, approximately 25 km long and 4 km wide with a northeast-southwest fold axial trend. The top of the anticline is defined by the Top of 'coarse clastics' unconformity, with only slight modification of the structure due to erosion occurring at this level. The spill point for the top of 'course clastics' N-1 reservoir has been interpreted at the south western end of the anticlinal structure. The structure is persistent and conformable with depth through the Lower N. asperus, P. asperopolus and M. diversus seismic markers. Little is known at present of the structure below the M. diversus seismic marker because virtually all primary reflections below this level are masked by multiples.

To the west of the Barracouta 'A' platform, the anticline is bisected by a northwest-southeast striking, steeply dipping, down to the west, normal fault. The fault cuts the top of 'coarse clastics' unconformity and is persistant with depth down to at least the M. diversus seismic horizon. The throw on the fault at the top of 'coarse clastics' level increases northwards along its length to 80m. With increasing depth, faulting becomes more intensive across the field. At the M. diversus seismic horizon the field is faulted by numerous impersistent normal faults. The faults are subparallel to the main northwest-southeast trending normal fault, and are steeply dipping either to the east or west. The throw on these faults is generally only of the order of 10m.

1.5 STRATIGRAPHY

The stratigraphy intersected by Barracouta-5 consists of interbedded sandstones, shales and coals of the Latrobe Group which is overlain by the marls and limestones of the Lakes Entrance Formation and Gippsland Limestone of the Seaspray Group (Figure 2). The Latrobe Group consists of the uppermost Gurnard Formation, the top of 'course clastics' and the undifferentiated intra-Latrobe.

1.5.1 Latrobe Group

M-1 and N-6 Reservoirs

Barracouta-5 intersected Latrobe Group sediments from Middle N. asperus to Upper M. diversus zonule age. The M-1 and N-6 reservoirs occur in intra-Latrobe sediments of Upper M. diversus zonule age, and consist of coal/shale units interbedded with stacked fining upward sand units. The sands have sharp erosional bases indicating a braided to meandering stream environment of deposition.

N-3, N-4 and N-5 Reservoirs

The overlying intra-Latrobe N-3, N-4 and N-5 sands were deposited during the P. asperopolus time zone and consist of discrete coal/shale and sand packages similar to the M-1 and N-6 sands. At 1595m MDKB (-1356m TVDSS), within the N-5 sand package, there is a sparse occurrence of dinoflagellates indicating rare marginal marine conditions. Log response indicates braided stream depositional characteristics, possibly with deposition in a coastal plain environment that underwent occasional marginal marine incursions. The 6m coal at 1516m MDKB (-1291m TVDSS) above the N-3 reservoir represents the P. asperopolus seismic marker.

The intra-Latrobe interval above the P. asperopolus seismic marker to the Lower N. asperus seismic marker has similar log characteristics to the N-3, N-4 and N-5 sand/shale/coal sequence, and was probably deposited in a similar coastal plain depositional environment. The Lower N. asperus seismic marker is a 14.0m TVT coal at 1429.0 m KB (-1220.0 m TVDSS).

N-1 Reservoir

The top of 'coarse clastics' sands, shales and coals of the N-1 reservoir above the Lower N. asperus seismic marker have a different log character to the deeper intra-Latrobe sands. Some of the sand packages show coarsening upward sequences while the coal/shale packages have become less abundant within the section. This sequence of sediments is interpreted to have been deposited in a coastal plain environment that was periodically subject to minor marine incursions.

It is not clear whether the 22m measured depth (17.5m TVT) green sands of the Gurnard Formation conformably or unconformably overlies the 'coarse clastics'. In Barracouta-5, the greensand unit is interpreted to have been deposited in the uppermost N. asperus age zone while the highest sample in the 'coarse clastics' at 1218.5m MDKB (-1152.5m TVDSS) is of general N. asperus age zone palynoflora. Therefore deposition of the 'coarse clastics' unit may have ceased during the Lower N. asperus time zone.

1.5.2 Seaspray Group

The Latrobe Group is unconformably overlain by the Oligocene/Miocene marls and limestones of the Lakes Entrance Formation of the Seaspray Group. The diverse dinoflagellate and sparse-pollen assemblages within the base of the formation are consistent with deposition in an offshore, relatively deep water environment. The Lakes Entrance Formation is overlain by the marls and limestone of the Gippsland Limestone to the seafloor.

1.6 RESERVOIRS, HYDROCARBONS AND SEALS

Barracouta-5 intersected gas in the N-1 reservoir and oil in the N-5, N-6 and M-1 reservoirs.

1.6.1 N-1 Reservoir

The N-1 reservoir was intersected 16m deep to prediction, from 1204.0m MDKB (-1041.0m TVDSS) to a gas water contact based on log analysis at 1345.5m MDKB (-1153.0m TVDSS). The reservoir consists of good quality sands and is sealed by the overlying non-net Gurnard Formation. The average porosity of the N-1 reservoir is 27% with a net to gross of 77%.

The water saturation of 6.7% calculated from Barracouta-5 logs is lower than the previously carried water saturation of 20% for the N-1 reservoir. The reason for the difference in water saturations is due to the higher quality resistivity log obtained in Barracouta-5 versus the old induction logs on all other Barracouta wells, and the use of higher salinities (25,000 ppm) of the connate water within the reservoir versus the relatively low salinities (1,000-1,500 ppm.) of the underlying freshwater flushed aquifer system in calculating the water saturation. The lower water saturation based on log analysis is backed up by the average capillary pressure derived water saturation of 7.2% from cores 1 and 2.

An RFT pressure discontinuity of 23 psi was observed across a coal/shale unit at 1332.5m MDKB (-1143.0m TVDSS), 13m (MT) above the gas water contact indicating an intra-reservoir seal. All sands above the coal/shale unit appear to be in communication. No oil leg was observed under the gas cap, as seen in Barracouta-3.

1.6.2 N-3 and N-4 Sands

No hydrocarbons were intersected in the N-3 or N-4 sand. The top of the N-4 sand came in lower than the currently carried fieldwide oil water contact of -1339.0m TVDSS, and the N-3 sand was water wet. Average porosities for the N-3 and N-4 sand are 22% and 23% respectively.

1.6.3 N-5 and N-6 Reservoirs

A 4.5m measured thickness (4.0m TVT) gross oil column was intersected in the N-5 reservoir in good quality sands with an average porosity in the oil column of 22% and a net to gross of 100%. Based on log analysis, the N-5 oil water contact is at 1595.0m MDKB (-1356.5m TVDSS), 6.5m deeper than the average oil water contact observed in Barracouta A-6 and Barracouta A-3.

A new hydrocarbon bearing sand, the N-6, was discovered by Barracouta-5. The well intersected a 2.0m measured thickness gross oil sand with an oil water contact based on log analysis at 1625.0m MDKB (-1381.5m TVDSS). Reservoir quality is good with an average porosity of 26% and a net to gross of 100%. The N-6 sand has not been intersected by any previous Barracouta wells. The N-5 and N-6 reservoirs are sealed by a coal/shale sequence deposited in a floodplain depositional environment.

1.6.4 M-1 Reservoir

Barracouta-5 intersected a 2m measured thickness (2m TVT) gross oil column in the M-1 reservoir in good quality sands and is sealed by a floodplain coal/shale sequence. An observed oil water contact based on log analysis occurs at 1633.0m MDKB (-1388.5m TVDSS). Sidewall cores shot below the oil water contact indicate residual oil down to a depth of 1639.5m MDKB (-1394.0m TVDSS), interpreted to represent a swept zone due to M-1 oil production. The original M-1 reservoir oil water contact is interpreted at -1393.0m TVDSS. The additional one metre of residual oil below the interpreted M-1 original oil water contact represents; a) survey data error, or b) the existence of a one metre residual oil zone beneath the original M-1 oil water contact. Residual oil saturation over the interval -1388.5m TVDSS to -1394.0m TVDSS from the DLL and EPT logs is 8.2% (Appendix 3).

1.7 GEOPHYSICAL ANALYSIS

1.7.1 Pre-Drill vs Post-Drill Analysis

All three of the horizons that were mapped predrill for Barracouta-5 (top of "coarse clastics", lower *N. asperus* and *M. diversus* seismic markers) were deep to prediction by the same amount, 13m.

Prior to drilling, a small, untested culmination was predicted to exist to ther west of the Barracouta platform on all three mapped horizons. Barracouta-5 has shown that this culmination is much lower in relief than predicted and that it does not extend as far to the south and west as was expected.

These errors in depth prediction and mapping are significant, considering the proximity of Barracouta-5 to a number of platform wells. They are due primarily to insufficient seismic control over what is now recognised as a quite irregularly-shaped part of the Barracouta structure. The errors may also be due in part to distortion of the structure as seen in two-way time by local irregularities in velocity distribution, due to channelling in the overlying marls and limestones of the Seaspray Group.

1.7.2 G84A and G85A Seimsic Surveys

Subsequent to the drilling of Barracouta-5, two seismic surveys have been recorded over the Barracouta Field and surrounding areas.

The G84A survey comprised infill grids over both the central Barracouta area and the Whiptail Discovery. At the time of preparation of this report, interpretation of the central Barracouta grid of the G84A survey had not been commenced.

The G85A survey provided a further infill grid over the Whiptail Discovery. No data from this survey was available at the time of preparation of this report.

1.7.3 Generation of Post-Drill Depth Maps

Three structure maps have been enclosed, for the top of Latrobe Group "coarse clastics", the lower N. asperus seismic marker and the lower M. diversus seismic marker.

The post-drill top of "coarse clastics" structure map was generated as follows:

1. The time map was revised to incorporate data from the Whiptail grid of the G84A survey.

2. A top of "coarse clastics" average velocity map was generated. This map was derived primarily from VNMO and conversion factor maps, however where applicable it incorporates the average velocity implied at the intersection of the field GWC DHI with the top of "coarse clastics" seismic event.

3. The time map was gridded, a lag correction of -2 msec was applied and it was multiplied by the gridded average velocity map to generate a machine-contoured depth map.

4. This machine-contoured depth map was then recontoured by hand. Where necessary the contours on the depth map were adjusted to tie the wells.

The post-drill structure maps for the lower N. asperus and M. diversus seismic markers were generated by adjusting the pre-drill structure maps to tie Barracouta-5.

The lower N. asperus structure map also incorporates interpretation from the Whiptail G84A grid.

FIGURES

LOCALITY MAP
BARRACOUTA-5

SCALE 1:250 000

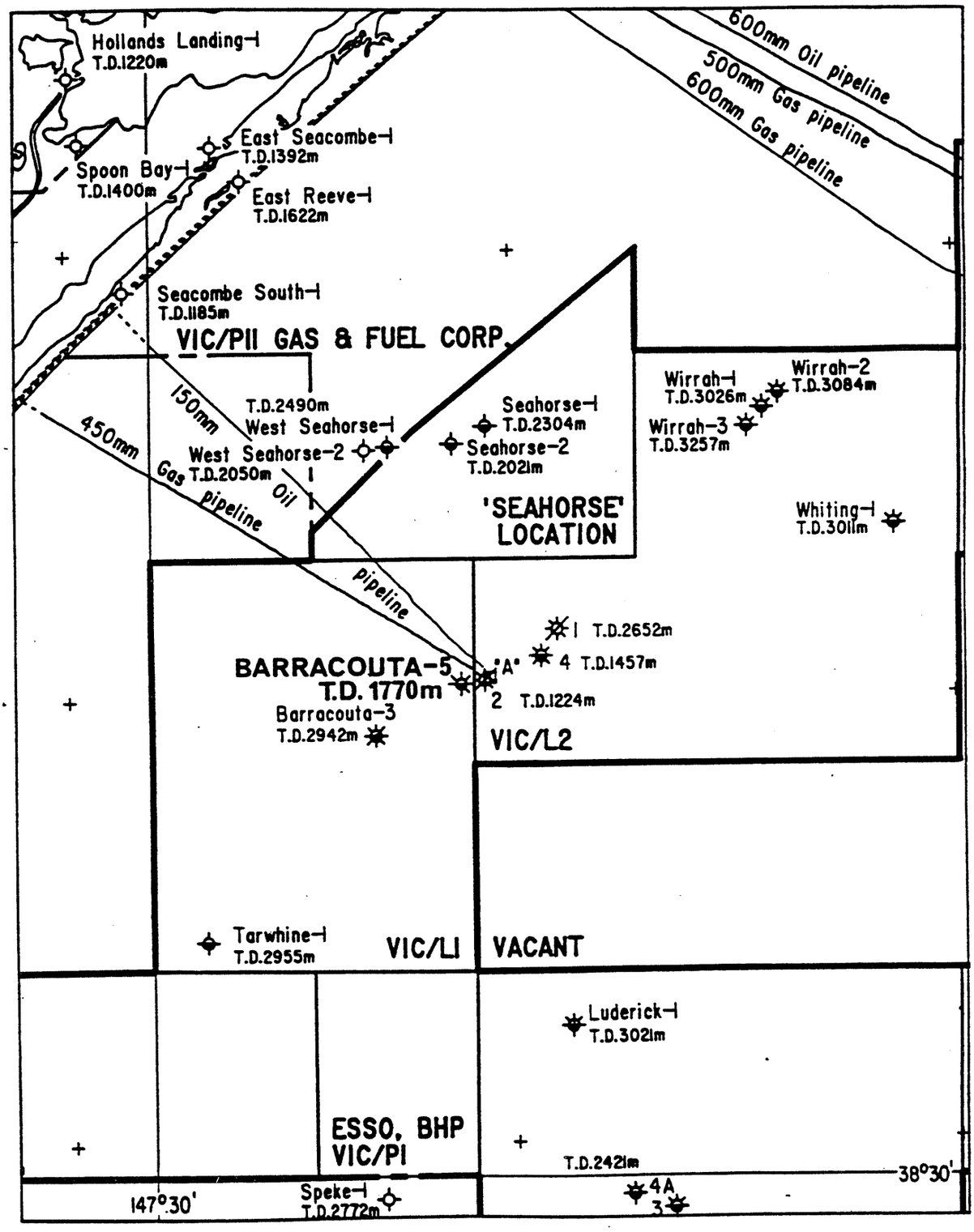
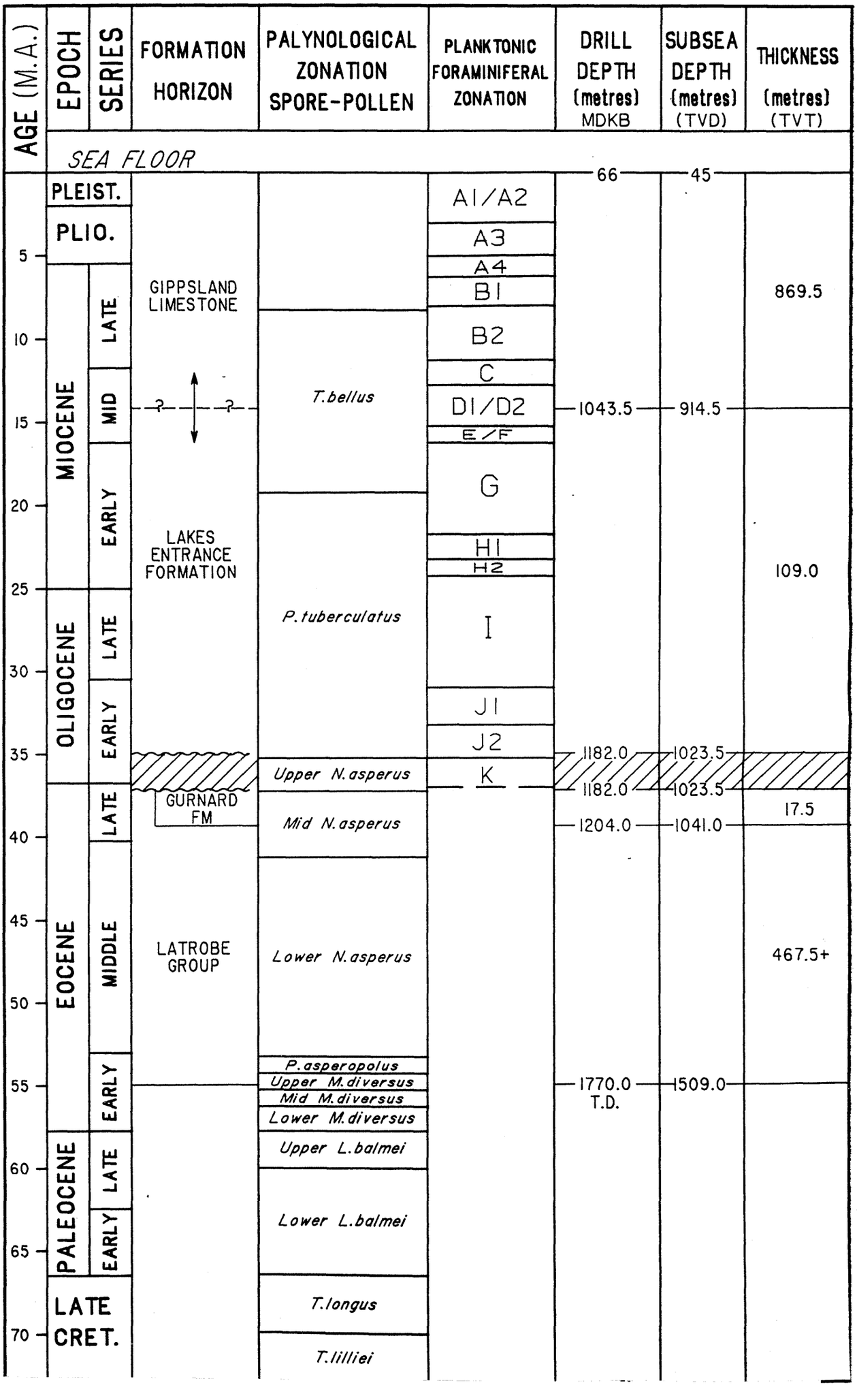


Figure 1

BARRACOUTA-5
STRATIGRAPHIC TABLE

FIGURE 2



APPENDIX 1

FORAMINIFORIAL ANALYSIS OF BARRACOUTA-5, GIPPSLAND BASIN

by

J.P. REXILIUS

Esso Australia Ltd.
Palaeontology Report 1986/11

March 1985

1312L

BIOSTRATIGRAPHIC SUMMARY OF BARRACOUTA-5

DEPTH (mKB vert)	LITHOLOGY *1	UNIT	ZONE	AGE
1150-0-1154.9	calcilutite		I2	Early Oligocene
1159.9-1164.9	calcilutite		J1	Early Oligocene
1170.0	glauconitic marl	Early "Oligocene Wedge"	J1	Early Oligocene
1174.9-1181.0	pyritic & glauconitic marl		Indeterm.	-
1182.0	pyritic & glauconitic marl		J2	Early Oligocene
log break at 1182m				
1183.0-1187.0	greensand	"Gurnard Formation"	Indeterm.	*2 Late Eocene
-	-	-	-	-
log break of 1204 m				
		Latrobe Group (coarse clastics)	-	-
			T.D. 1770m	

*1 lithology based on washed residue and nature of clay-sized residue
*2 age based on Macphail (Palaeontological Report No. 1985/20.

COMMENTS

1. Sidewall core samples examined from the top of the "Gurnard Formation" in Barracouta-5 consist of greensand. The greensand contains abundant dark green pelletal glauconite and rare fish teeth but is barren of calcareous benthonic foraminifera and planktonic foraminifera. The top of the "Gurnard Formation" has been assigned to the uppermost Middle N. asperus spore/pollen Zone (Late Eocene) by Macphail (Palaeontological report 1985/20. The "Gurnard Formation" at 1187 m and above represents a condensed sequence deposited in a neritic environment during a maximum rise in relative sea-level (transgressive phase).

2. The "Gurnard Formation" is conformably (?) overlain by Early Oligocene marls and calcilutite ("Oligocene Wedge") of the Seaspray Group. The basal 8m of the Seaspray Group consists of interbeds of pyritic marl and glauconitic marl. The pyritic beds are expressed as sonic/density spikes. The marls grade into cleaner carbonate (calcilutite) above 1170m. Fish teeth remains were noted in sidewall core samples as high as 1159.9m. The Early "Oligocene Wedge" in Barracouta-5 is at least 32m thick and is interpreted to represent a condensed sequence deposited in a

shelfal environment during a transgressive phase (high relative sea-level). A slow rate of deposition for the interval spanning Zones J2-J1 (approximately 5my) is confirmed by the presence of pelletal glauconite and fish teeth, particularly in the basal portion of the wedge.

3. The "Oligocene Wedge" is thicker in Barracouta-5 (32m +) than Barracouta-4 (approximately 21m). The thickness of the "Gurnard Formation" in both wells is comparable (Barracouta-4: 26.5m, Barracouta-5: 23m).

REFERENCE

MACPHAIL, M.K., 1985, Palynological analysis of Barracouta-5, Gippsland Basin. ESSO AUSTRALIA LTD. PALAEONTOLOGY REPORT 1985/20

APPENDIX 2

APPENDIX

PALYNOLOGICAL ANALYSIS OF BARRACOUTA-5, GIPPSLAND BASIN

by

M.K. Macphail

Esso Australia Ltd.

Palaeontology Report 1985/20 June 1985

1678L

INTERPRETATIVE DATA

INTRODUCTION

SUMMARY TABLE

GEOLOGICAL COMMENTS

DISCUSSION OF AGE ZONES

TABLE-1: INTERPRETATIVE DATA

TABLE-2: ANOMALOUS AND UNUSUAL OCCURRENCES OF SPORE POLLEN

PALYNOLOGY DATA SHEET

TABLE-3: BASIC DATA

INTRODUCTION

Fifty one sidewall cores were processed and examined for spore-pollen and dinoflagellates. Whilst recovery and preservation were usually good, lack of shaley sediments in recovered sidewall cores from the sandy section between 1621 and 1731m limits the age breakdown of the Early Eocene section. Palynological zones and lithological units from the base of the Lakes Entrance to T.D. are summarized below. Drillers depths (m KB) are used throughout. Occurrences of spore-pollen and dinoflagellates are given in the accompanying range chart. Table 2 lists anomalous and unusual occurrences of species; Table 3 provides a summary of the basic data

SUMMARY

AGE	UNIT	ZONE	DEPTH (m)
Early Oligocene	"Oligocene Wedge"	P. tuberculatus	1150.0-1182.0m
	log break at 1182m		
Late Eocene	Gurnard Fm.	Middle N. asperus	1183.0-1203.6m
	log break at 1204m		
Middle Eocene	Latrobe Group (coarse clastics)	Lower N. asperus	1227.5-1492.0m
		P. asperopolus	1522.4-1621.5m
		Upper M. diversus	1731.0m
			T.D.

GEOLOGICAL COMMENTS

1. The Barracouta-5 well contains a continuous sequence of sediments from the Early Eocene Upper M. diversus Zone to the Late Eocene Middle N. asperus Zone. These are (?) conformably overlain by Early Oligocene P. tuberculatus Zone sediments, identified (Rexilius 1985) as the basal member of the Seaspray Group (the "Oligocene Wedge").

2. The diverse dinoflagellate and sparse spore-pollen assemblages in the "Oligocene Wedge" section are consistent with deposition in an offshore, relatively deep water environment as proposed by Rexilius (ibid)

3. The Gurnard Formation (1182.0 to 1203.6m) is likely to be wholly Middle N. asperus Zone in age, as is the equivalent greensand in Barracouta-4. Thicknesses of sediment in both wells are comparable, 22m and 26.5m respectively.

4. It is not clear whether these greensand units conformably overlie the Latrobe Group coarse clastics or not. In Barracouta-5, the greensand unit appears to have been deposited in uppermost Middle N. asperus Zone time whilst the underlying coarse clastics may have ceased accumulating within Lower N. asperus Zone time. The sample closest to the top of the coarse clastics [1218.5m] contains a general N. asperus Zone palynoflora with one reworked Paleocene species. In Barracouta-4, there is no recognizable age break between the greensand and underlying coarse clastics and here at least, the uppermost 14m of the coarse clastics were deposited in uppermost Middle N. asperus Zone time.

5. A similar sequence of coals occurs in the Lower N. asperus and (upper) P. asperopolus Zone sections of both wells [Barracouta-5, 1430-1522m; Barracouta-4, 4040-4300 ft]. The uppermost of these, the thickest coal

encountered in both wells, forms the Lower N. asperus Zone seismic marker. Using this coal as a datum, the undated (Partridge 1977) section between 3482-3642 ft and 4006-4251 ft in Barracouta-4 may be largely Lower N. asperus Zone in age whilst the unsampled coals between ca. 1502-1522m in Barracouta-5 are almost certainly P. asperopolus Zone in age. The fact that the lowest sidewall core sample at 1731.0m in Barracouta-5 is no older than Upper M. diversus Zone in age improves the confidence of the Upper M. diversus Zone date for the section 4739 to 4780 ft in Barracouta-4.

6. The Latrobe Group coarse clastics above the coal at 1431.0m appear to have been deposited in a coastal plain environment that was periodically subject to minor marine incursions. Below this coal, the only evidence for marginal marine conditions, sparse occurrences of dinoflagellates, is at 1595m.

BIOSTRATIGRAPHY

Zone boundaries have been established using the criteria of Stover and Partridge (1973) and subsequent proprietary revisions.

Upper Malvacipollis diversus Zone: 1731.0m

One sample is assigned to this zone on the basis of Myrtaceidites tenuis. This species shows the sample is no older than this zone but a P. asperopolus Zone age cannot be excluded.

Proteacidites asperopolus Zone: 1522.4 to 1621.5m

The base of the zone is provisionally placed at 1621.5m, the first occurrence of frequent to common Proteacidites pachypolus and Myrtaceidites tenuis. Both are frequent to common in abundance. Proteacidites recavus, which usually first appears in this zone, is also present in this sample. The first appearance of the nominate species is at 1595.0m. The upper boundary is placed at 1522.4m, based on the highest occurrences of Myrtaceidites tenuis and Proteacidites tuberculiformis.

Lower Nothofagidites asperus Zone: 1227.5 to 1492.0m

The first appearance of Tricolporites delicatus and T. leuros at 1492.0m in a Nothofagidites-dominated palynoflora provides a confident lower boundary for this zone. Proteacidites asperopolus, which last appears in this zone, appears in low frequency across from the section from 1468.0m to 1327.5m but is only frequent to abundant at 1397.8m and 1380.5m. The latter sample is immediately below the first appearance of the Lower N. asperus Zone indicator dinoflagellate, Areosphaeridium diktyoplokus [1379.2m]. First appearances of other species indicative of a Lower N. asperus Zone or younger age are Proteacidites rugulatus [in the coal at 1431.0m], Nothofagidites falcatus at

1375.5 and Tricolpites simatus at 1354.0m. The upper boundary is placed at 1227.5m, the highest sample lacking Middle N. asperus Zone indicators. Proteacidites asperopolus last appears lower within the section, at 1327.0m.

Middle Nothofagidites asperus Zone: 1183.0 to 1203.6m

A Middle N. asperus Zone age is confirmed by occurrences throughout this interval of the zone indicator species Triorites magnificus and Corrudinium incompositum. The first occurrence of the latter, a dinoflagellate, is at 1203.6m. The presence of Aglaoreidia qualumis in this sample indicates it is no older than uppermost Middle N. asperus Zone. Triorites magnificus first occurs at 1198.9m, in association with Corrudinium incompositum. The dinoflagellate Alisocysta ornatum occurs at 1191.0m. Other occurrences of note are: Aglaoreidia qualumis at 1188.0m, Proteacidites pachypolus at 1187.0m; frequent Nothofagidites falcatus at 1186.0m; and Proteacidites rectomarginis, P tuberculatus, Stereisporites punctatus in association with frequent to common N. falcatus at 1184.0m. The upper boundary of the zone is provisionally picked at 1183.0 m, a sample containing species which first appear in the upper section of the Middle N. asperus zone. It is however possible this sample is Upper N. asperus zone in age. A more reliable upper boundary is at 1184.0 m, the highest occurrence of Triorites Magnificus.

Proteacidites tuberculatus Zone: 1150.0 to 1182.0m

Samples within this interval lack the zone indicator species Cyatheacidites annulatus and accordingly resemble Upper N. asperus Zone palynofloras. The age-determination is based on occurrences of the dinoflagellate Protoellipsodinium simplex at 1174.9m and the similarity of the dinoflagellate assemblages in this with other samples within the section. A P. tuberculatus Zone age is confirmed by the occurrences of Zone Ia to Ja forams [Rexilius 1985]. Cyatheacidites annulatus occurs in Zone J2 sediments at 3412 ft near the base of the "Oligocene Wedge" in Barracouta-4 [cf. Partridge 1977, Taylor 1977, Rexilius 1985].

COMPARISON OF AGE-RANGE DATA FOR SELECTED SPORE-POLLEN SPECIES IN BARRACOUTA-4 AND -5

The good geologic correlation between upper *P. asperopolus* and lower Lower *N. asperus* Zone coals in Barracouta-4 and -5 provides a framework within which it is possible to compare age-ranges and relative abundance of species currently used to zone the Early-Middle Eocene sections in Gippsland wells. Using the Lower *N. asperus* seismic marker coal as datum, a number of general conclusions can be made:

(a) Frequent to abundant occurrences of *Proteacidites pachypolus* are confined to the *P. asperopolus* and (?) Upper *M. diversus* Zone: similarly *Proteacidites ornatus* which, although never attaining levels of abundance reached by *P. asperopolus* and *P. pachypolus*, is nevertheless occasionally frequent;

(b) Frequent to abundant occurrences of *Proteacidites asperopolus* are confined to the Lower *N. asperus* Zone;

(c) In the case of *Proteacidites pachypolus*, peaks in relative abundance appear to occur at approximately the same biostratigraphic position in both wells. This may be true of *P. asperopolus* but is certainly not the case with *P. ornatus* and *P. grandis*;

(d) Whilst the last appearances of *Myrtaceidites tenuis* and *Proteacidites ornatus* provide a reliable upper boundary to the *P. asperopolus* Zone, this is not necessarily with *Intratriporapollenits notabilis*.

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TABLE 1: SUMMARY OF INTERPRETATIVE PALYNOLOGICAL DATA

BARRACOUTA-5

SAMPLE NO.	DEPTH (m)	SPORE-POLLEN ZONE	DINOFLAGELLATE ZONE	AGE	CONFIDENCE RATING	COMMENTS
SWC 51	1150.0	P. tuberculatus	-	Oligocene	2	Age confirmed by foraminiferal data
SWC 50	1154.9	P. tuberculatus	-	Oligocene	2	Age confirmed by foraminiferal data
SWC 49	1159.9	P. tuberculatus	-	Oligocene	2	Age confirmed by foraminiferal data
SWC 48	1164.9	P. tuberculatus	-	Oligocene	2	Age confirmed by foraminiferal data
SWC 47	1170.1	P. tuberculatus	-	Oligocene	2	Age confirmed by foraminiferal data
SWC 46	1174.9	P. tuberculatus	-	Oligocene	2	P. simplex. Age confirmed by foraminiferal data
SWC 45	1175.9	P. tuberculatus	-	Oligocene	2	Age confirmed by foraminiferal data
SWC 41	1180.0	P. tuberculatus	-	Oligocene	2	P. tuberculatus
SWC 40	1181.0	Indeterminate	-	-	-	T. leuros
SWC 39	1182.0	P. tuberculatus	-	Oligocene	2	Age confirmed by foraminiferal data
SWC 38	1183.0	Middle N. asperus	-	Late Eocene	2	P. rectomarginis
SWC 37	1184.0	Middle N. asperus	-	Late Eocene	0	T. magnificus, S. punctatus, P. rectomarginis, P. tuberculatus
SWC 36	1185.0	N. asperus	-	Late Eocene	-	N. falcatus
SWC 35	1186.0	Middle N. asperus	-	Late Eocene	2	
SWC 34	1187.0	Middle N. asperus	-	Late Eocene	2	P. pachypolus
SWC 33	1188.0	Middle N. asperus	-	Late Eocene	1	A. qualumis
SWC 31	1189.0	Middle N. asperus	-	Late Eocene	2	V. extensa
SWC 30	1191.0	Middle N. asperus	C. incompositum	Late Eocene	1	A. ornata
SWC 29	1191.9	Middle N. asperus	-	Late Eocene	2	V. extensa
SWC 27	1196.0	Middle N. asperus	C. incompositum	Late Eocene	0	C. incompositum, V. extensa
SWC 26	1198.9	Middle N. asperus	C. incompositum	Late Eocene	0	T. magnificus, P. incurvatus, C. incompositum, V. extensa

TABLE 1: SUMMARY OF INTERPRETATIVE PALYNOLOGICAL DATA

BARRACOUTA-5

SAMPLE NO.	DEPTH (m)	SPORE-POLLEN ZONE	DINOFLAGELLATE ZONE	AGE	CONFIDENCE RATING	COMMENTS
SWC 25	1202.0	Middle N. asperus	C. incompositum	Late Eocene	0	C. incompositum, V. extensa
SWC 24	1203.6	Middle N. asperus	C. incompositum	Late Eocene	1	A. qualumis, P. recavus V. extensa, C. corrugatum
SWC 23	1218.5	N. asperus	-	Middle-Late Eocene	-	Abundant Nothofagidites
SWC 22	1227.5	Lower N. asperus	-	Middle Eocene	2	N. falcatus
SWC 21	1234.2	Lower N. asperus	-	Middle Eocene	2	N. falcatus, S. punctatus
SWC 20	1239.2	Lower N. asperus	-	Middle Eocene	2	N. falcatus
SWC 19	1284.0	Lower N. asperus	-	Middle Eocene	2	N. falcatus, T. delicatus, freq. P. pachypolus
SWC 18	1300.2	Indeterminate	-	-	-	
SWC 17	1306.2	Lower N. asperus	-	Middle Eocene	2	N. falcatus
SWC 16	1309.3	Lower N. asperus	-	Middle Eocene	2	N. falcatus, S. asymmetricum
SWC 14	1321.1	Lower N. asperus	-	Middle Eocene	2	N. falcatus, S. asymmetricum
SWC 13	1327.0	Lower N. asperus	-	Middle Eocene	0	N. falcatus, P. asperopolus
SWC 12	1332.0	Lower N. asperus	-	Middle Eocene	1	P. asperopolus, common Nothofagidites
SWC 11	1335.1	Lower N. asperus	-	Middle Eocene	1	P. asperopolus, T. leuros
SWC 10	1339.5	Lower N. asperus	-	Middle Eocene	1	P. asperopolus, abund. Nothofagidites
SWC 9	1354.0	Lower N. asperus	-	Middle Eocene	0	N. falcatus, P. asperopolus
SWC 8	1375.5	Lower N. asperus	-	Middle Eocene	0	N. falcatus, P. asperopolus, T. delicatus
SWC 7	1379.2	Lower N. asperus	A. diktyoplokus	Middle Eocene	0	P. asperopolus, A. diktyoplokus, P. recavus

TABLE 1: SUMMARY OF INTERPRETATIVE PALYNOLOGICAL DATA

BARRACOUTA-5

SAMPLE NO.	DEPTH (m)	SPORE-POLLEN ZONE	DINOFLAGELLATE ZONE	AGE	CONFIDENCE RATING	COMMENTS
SWC 6	1380.5	Lower *N. asperus*	-	Middle Eocene	1	*P. asperopolus*, abund. *Nothofagidites*
SWC 5	1394.5	Lower *N. asperus*	-	Middle Eocene	1	Abund. *P. asperopolus* and *Nothofagidites*
SWC 4	1397.8	Lower *N. asperus*	-	Middle Eocene	1	Frequent *P. asperopolus* and *Nothofagidites*
SWC 3	1431.0	Lower *N. asperus*	-	Middle Eocene	2	*T. leuros*, *P. rugulatus*, common *Nothofagidites* [coal palynofloral
SWC 2	1449.0	Lower *N. asperus*	-	Middle Eocene	1	*P. asperopolus*, abund. *Nothofagidites* *P. recavus*
SWC 81	1468.0	Lower *N. asperus*	-	Middle Eocene	1	*P. asperopolus*, *P. rugulatus*, abund. *Nothofagidites*
SWC 80	1492.0	Lower *N. asperus*	-	Middle Eocene	1	*T. delicatus*, *T. leuros*, abund. *Nothofagidites*
SWC 79	1522.4	*P. asperopolus*	-	Early Eocene	0	*P. asperopolus*, *P. tuberculiformis*, *M. tenuis*, freq. *P. pachypolus*
SWC 78	1524.0	*P. asperopolus*	-	Early Eocene	0	*M. tenuis*
SWC 77	1589.0	*P. asperopolus*	-	Early Eocene	2	*M. tenuis*, *P. ornatus*
SWC 75	1595.0	*P. asperopolus*	-	Early Eocene	0	*P. asperopolus*, *S. rotundus*, *M. tenuis*, *P. ornatus*, *I. notabilis*, freq. *P. pachypolus*
SWC 72	1621.5	*P. asperopolus*	-	Early Eocene	2	*M. tenuis* & *P. pachypolus* common, *P. recavus*
SWC 52	1731.0	Upper *M. diversus*	-	Early Eocene	2	*M. tenuis*

TABLE 2

ANOMALOUS AND UNUSUAL OCCURRENCES OF SPORE-POLLEN TAXA IN BARRACOUTA-5

SAMPLE NO.	DEPTH(m)	ZONE	TAXON	COMMENTS
SWC 47	1170.1	P. tuberculatus (2)	Proteacidites isopogoniformis	V. rare sp. [in Oligocene palynofloral
SWC 45	1175.9	P. tuberculatus (2)	Peromonolites bacculatus	Rare sp. [in Oligocene palynofloral
SWC 41	1180.0	P. tuberculatus (2)	Proteacidites tuberculatus	Rare sp. [in Oligocene palynofloral
SWC 41	1180.0	P. tuberculatus (2)	Cunoniaceae 2-p	Modern taxon [in Oligocene palynofloral
SWC 40	1181.0	P. tuberculatus	Tricolporites leuros	Very rare above N.asperus zone
SWC 37	1184.0	Uppermost Middle N. asperus (0)	Proteacidites tuberculatus	Rare sp. [in Late Eocene palynofloral
SWC 37	1184.0	Uppermost Middle N. asperus (0)	cf. Canthiumidites oblatus	Resembles N.Z. species
SWC 37	1184.0	Uppermost Middle N. asperus (0)	Stereisporites punctatus	Close to top of range of sp.
SWC 36	1185.0	(Middle N. asperus)	Cunoniaceae 3-p	Modern taxon
SWC 35	1186.0	(Middle N. asperus)	Quintinia	Modern taxon
SWC 33	1188.0	Middle N. asperus (2)	Agloareidia qualumis	Rare sp.
SWC 27	1196.0	Middle N. asperus (0)	Eucalyptus	Modern taxon
SWC 27	1196.0	Middle N. asperus (0)	Haloragacidites verrucatoharrisii	Rare ms. sp. (MKM)
SWC 26	1198.9	Middle N. asperus (0)	Tetracolpites psilatus	Rare ms. sp. (MKM)
SWC 24	1203.6	Middle N. asperus (0)	Micrantheum spinyspora	V. rare sp.
SWC 24	1203.6	Middle N. asperus (0)	Agloareidia qualumis	Rare sp.
SWC 24	1203.6	Middle N. asperus (0)	Milfordia homeopunctatus	Rare sp.
SWC 21	1234.2	Lower N. asperus (2)	Tricipites scabratus	Resembles Sprengelia
SWC 21	1234.2	Lower N. asperus (2)	Proteacidites canopus	Rare sp.

TABLE 2

ANOMALOUS AND UNUSUAL OCCURRENCES OF SPORE-POLLEN TAXA IN BARRACOUTA-5

SAMPLE NO.	DEPTH(m)	ZONE	TAXON	COMMENTS
SWC 19	1284.0	Lower *N. asperus* (1)	*Tricolporites delicatus*	(= *R. alveolatus*)
SWC 16	1209.3	Lower *N. asperus* (2)	*Tricolporites paeneretequetrus*	Rare ms. sp. (MKM)
SWC 14	1321.1	Lower *N. asperus* (2)	*Proteacidites reflexus*	Rare ms. sp. (ADP)
SWC 11	1335.1	Lower *N. asperus* (1)	*Anisotricolporites triplaxis*	V. rare sp.
SWC 11	1335.1	Lower *N. asperus* (1)	*Beaupreadites trigonalis*	Rare ms. sp.
SWC 11	1335.1	Lower *N. asperus* (1)	*Umbelliferae*	Modern taxon
SWC 9	1354.0	Lower *N. asperus* (0)	*Cunoniaceae* 2-p	Modern taxon
SWC 9	1354.0	Lower *N. asperus* (0)	*Quintinia*	Modern taxon
SWC 9	1354.0	Lower *N. asperus* (0)	*Tricolpites simatus*	Rare var. (lacks polar 'boss')
SWC 8	1375.5	Lower *N. asperus* (0)	*Tricolpites delicatus*	(= *R. alveolatus*)
SWC 7	1379.2	Lower *N. asperus* (0)	*Tricolpites paeneretequetrus*	Rare ms. sp. (MKM)
SWC 7	1379.2	Lower *N. asperus* (0)	*Phyllocladidites paleogenieus*	Uncommon sp.
SWC 7	1379.2	Lower *N. asperus* (0)	*Cupanieidites reticulatus*	Rare sp.
SWC 4	1397.8	(Lower *N. asperus*)	*Haloragacidites verrucatoharrisii*	Rare ms. sp. (MKM)
SWC 3	1431.0	(Lower *N. asperus*)	*Quintinia*	Modern taxon [in coal palynofloral
SWC 3	1431.0	(Lower *N. asperus*)	*Triporopollenites heleosus*	Rare sp. [in coal palynofloral
SWC 3	1431.0	(lower *N. asperus*)	*Proteacidites rugulatus*	Rare sp. [in coal palynofloral
SWC 2	1449.0	Lower *N. asperus* (2)	*Tricolporites adelaidensis*	Frequent in sample
SWC 2	1449.0	Lower *N. asperus* (2)	*Dryptopollenites semilunatus*	V. rare sp.
SWC 81	1468.0	Lower *N. asperus* (2)	*Clavatipollenites glarius*	V. rare sp.
SWC 81	1468.0	Lower *N. asperus* (2)	*Kulisporites waterbolkii*	Rare in this zone

TABLE 2

ANOMALOUS AND UNUSUAL OCCURRENCES OF SPORE-POLLEN TAXA IN BARRACOUTA-5

SAMPLE NO.	DEPTH(m)	ZONE	TAXON	COMMENTS
SWC 80	1492.0	Lower N. asperus (1)	Dryptopollenites semilunatus	V. rare sp.
SWC 80	1492.0	Lower N. asperus (1)	Basopollis nutabilis	Close to top of range?
SWC 80	1492.0	Lower N. asperus (1)	Triporopollenites delicatus	(= R. alveolatus)
SWC 79	1522.4	P. asperopolus (1)	Proteacidites tuberculiformis	Top of range
SWC 79	1522.4	P. asperopolus (1)	Tricolpites reticulatus	Ms. sp. (Stover & Evans 1969)
SWC 79	1522.4	P. asperopolus (1)	Podocarpidites ostentatus	Ms. sp. (ADP)
SWC 79	1522.4	P. asperopolus (1)	Matonisporites ornamentalis	Rare in this zone
SWC 77	1589.0	P. asperopolus (1)	Anacolosidites luteoides	Rare sp.
SWC 77	1589.0	P. asperopolus (1)	Conbaculites apiculatus	Rare ms. sp.
SWC 77	1589.0	P. asperopolus (1)	Gemmatricolporites divaricatus	Rare sp.
SWC 77	1589.0	P. asperopolus (1)	Proteacidites ornatus & P. plemmelus	Frequent
SWC 75	1595.0	P. asperopolus (0)	Anacolosidites rotundus	Rare sp.
SWC 75	1595.0	P. asperopolus (0)	Dryptopollenites semilunatus	V. rare sp.
SWC 75	1595.0	P. asperopolus (0)	Astelia	Modern taxa
SWC 75	1595.0	P. asperopolus (0)	Polypodiaceosporites varus	Rare in this zone
SWC 75	1595.0	P. asperopolus (0)	Kuylisporites waterbolkii	Rare in this zone
SWC 72	1621.5	P. asperopolus (2)	Anacolosidites rotundus	Rare sp.
SWC 72	1621.5	P. asperopolus (2)	Gemmatricolporites gestus	Rare sp.
SWC 72	1621.5	P. asperopolus (2)	Tricolpites reticulatus Stover & Evans	Ms. sp. (Stover & Evans 1969)

PALYNOLOGY DATA SHEET

BASIN: Barracouta-5 ELEVATION: KB: +21.0m GL: -45.5m

WELL NAME: Gippsland TOTAL DEPTH: 1770m

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										
PALEOGENE	*P. tuberculatus*	1150.0	2				1182.0	2			
	Upper *N. asperus*										
	Mid *N. asperus*	1183.0	2	1184.0	0		1203.6	0			
	Lower *N. asperus*	1227.5	2	1327.0	0		1492.0	1			
	P. asperopolus	1522.4	2				1621.5	2	1595.0	0	
	Upper *M. diversus*	1731.0	2				1731.0	2			
	Mid *M. diversus*										
	Lower *M. diversus*										
	Upper *L. balmei*										
	Lower *L. balmei*										
LATE CRETACEOUS	Upper *T. longus*										
	Lower *T. longus*										
	T. lilliei										
	N. senectus										
	T. apoxyexinus										
	P. mawsonii										
	A. distocarinatus										
EARLY CRET.	*P. pannosus*										
	C. paradoxa										
	C. striatus										
	C. hughesi										
	F. wonthaggiensis										
	C. australiensis										

COMMENTS: C. incompositum Zone 1196.0-1203.6m

A. diktyoplokus Zone 1379.2m

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: M.K. Macphail DATE: 14/6/85

DATA REVISED BY: _____ DATE: _____

TABLE 3: SUMMARY OF BASIC PALYNOLOGICAL DATA

BARRACOUTA-5

DIVERSITY - low medium high
S & P less than 10 10-30 greater than 30
D 1-3 3-10 10

SAMPLE NO.	DEPTH (m)	YIELD SPORE-POLLEN	YIELD DINOS	DIVERSITY SPORE-POLLEN	DIVERSITY DINOS	PRESERVATION	LITHOLOGY	PYRIZATION	COMMENTS
SWC 51	1150.0	Low	Fair	Low	Medium	Poor	Calcilut.		"Oligocene Wedge"
SWC 50	1154.9	Low	Fair	Low	Low	Poor	Calcilut.		"Oligocene Wedge"
SWC 49	1159.9	Low	Fair	Medium	High	Fair	Calcilut.		"Oligocene Wedge"
SWC 48	1164.9	Low	Good	Low	Medium	Good	Calcilut.	Minor	"Oligocene Wedge"
SWC 47	1170.1	Low	Low	Low	Medium	Poor	Calcilut.		"Oligocene Wedge"
SWC 46	1174.9	Fair	Low	Medium	Medium	Fair	Calcilut.	Minor	"Oligocene Wedge"
SWC 45	1175.9	Fair	Low	Medium	Low	Fair	Calcilut.		"Oligocene Wedge"
SWC 41	1180.0	Good	Low	Medium	Low	Poor	Calcilut., glau.	Minor	"Oligocene Wedge"
SWC 40	1181.0	Low	Low	Low	Low	Fair	Calcilut., glau		"Oligocene Wedge"
SWC 39	1182.0	Fair	Low	Medium	Medium	Fair	Clyst., glau.		"Oligocene Wedge"
SWC 38	1183.0	Low	Low	Medium	Low	Fair	Slst./Clyst., glau.		Bulk of sample lost during prep
SWC 37	1184.0	Fair	Low	High	Medium	Good	Slst./Clyst., glau.		
SWC 36	1185.0	Good	Good	Medium	Low	Fair	Slst., glau.	Moderate	
SWC 35	1186.0	Fair	Fair	Medium	Medium	Fair	Slst., glau.		
SWC 34	1187.0	Fair	Good	Medium	Medium	Good	Slst., glau.		
SWC 33	1188.0	Low	Fiar	Medium	Medium	Good	Slst./Clyst., glau.		

TABLE 3: SUMMARY OF BASIC PALYNOLOGICAL DATA

BARRACOUTA-5

DIVERSITY - low medium high

S & P less than 10 10-30 greater than 30

D 1-3 3-10 10

SAMPLE NO.	DEPTH (m)	YIELD SPORE-POLLEN	YIELD DINOS	DIVERSITY SPORE-POLLEN	DIVERSITY DINOS	PRESERVATION	LITHOLOGY	PYRIZATION	COMMENTS
SWC 31	1189.9	Good	Low	Low	Low	Good	Slst., glau.		
SWC 30	1191.0	Good	Fair	Medium	High	Fair	Slst., glau.	Moderate	
SWC 29	1191.9	Low	Low	Low	Medium	Fair	Slst., glau.		
SWC 27	1196.0	Low	Fair	Medium	High	Good	Slst., glau.		
SWC 26	1198.9	Fair	Good	High	High	Good	Clyst./Slst., glau.		
SWC 25	1202.0	Fair	Good	Low	High	Good	Clyst./Slst., glau.	Minor	
SWC 23	1218.5	Fair	-	Low	-	Poor			
SWC 22	1227.5	Fair	-	Low	-	Poor	Slst., carb.	Moderate	
SWC 21	1234.2	Low	V. low	Medium	Low	Good	Clyst., carb.	Minor	
SWC 20	1239.2	Low	V. low	Low	Low	Poor	Clyst./Slst., carb. lam.	Moderate	
SWC 19	1284.0	Good	V. low	Medium	Low	Good	Clyst.		Pollen swollen
SWC 18	1300.2	V. low	-	Low	-	V. poor	Ss., carb. lam.		
SWC 17	1306.2	Low	V. low	Low	Low	Poor	Slst., carb.	Minor	
SWC 16	1309.3	V. good	Low	High	Low	Fair	Slst., carb.	Minor	
SWC 14	1321.1	V. good	V. low	High	Low	Good	Ss., carb.		

TABLE 3: SUMMARY OF BASIC PALYNOLOGICAL DATA

BARRACOUTA-5

DIVERSITY - low medium high
S & P less than 10 10-30 greater than 30
D 1-3 3-10 10

SAMPLE NO.	DEPTH (m)	YIELD		DIVERSITY		PRESERVATION	LITHOLOGY	PYRIZATION	COMMENTS
		SPORE-POLLEN	DINOS	SPORE-POLLEN	DINOS				
SWC 13	1327.0	Fair	Low	High	Low	Fair	Ss./Slst., carb.	Moderate	
SWC 12	1332.0	Fair	Low	Medium	Low	Poor	Slst./Ss., carb.	Minor	
SWC 10	1339.5	Fair	Low	High	Low	Poor	Slst., carb., lam.	Moderate	
SWC 9	1354.0	Low	-	High	-	Good	Ss., silty.		
SWC 8	1375.7	V. good	Low	High	Low	Fair	Ss., carb. lam.	Minor	
SWC 7	1379.2	Good	Low	High	Medium	Fair	Slst., lam.	Minor	
SWC 6	1380.5	Good	V. low	Medium	Low	Fair	Slst., ? oxidized		
SWC 5	1394.5	Low	Low	Low	Low	Poor	Slst., carb. lam	Minor	
SWC 4	1397.8	Low	-	Medium	-	Good	Clyst.		
SWC 3	1431.0	Good	-	Medium	-	Good	Coal		
SWC 2	1449.0	Low	-	Medium	-	Fair	Slst.		
SWC 81	1468.0	Good	-	Medium	-	Fair	Slst., carb. lam.		
SWC 80	1492.0	Fair	-	High	-	V. good	Slst.		
SWC 79	1522.4	Low	V. low	Medium	Low	Fair	Slst.		Dinos caved?
SWC 78	1524.0	V. low	-	Medium	-	Good	Slst., carb. lam.		

TABLE 3: SUMMARY OF BASIC PALYNOLOGICAL DATA

BARRACOUTA-5

DIVERSITY -	low	medium	high
S & P	less than 10	10-30	greater than 30
D	1-3	3-10	10

SAMPLE NO.	DEPTH (m)	YIELD		DIVERSITY		PRESERVATION	LITHOLOGY	PYRIZATION	COMMENTS
		SPORE-POLLEN	DINOS	SPORE-POLLEN	DINOS				
SWC 77	1539.0	V. good	-	Medium	-	Fair	Sh.		
SWC 75	1595.0	Fair	V. low	High	Low	Fair	Ss.		
SWC 72	1621.5	Fair	-	Medium	-	Good	Slst.		
SWC 52	1731.0	V. low	-	Low	-	Good	Slst.		

APPENDIX 3

BARRACOUTA 5

QUANTITATIVE LOG ANALYSIS

Interval: 1175 - 1765m KB

Analyst : R.G. Neumann

Date : September, 1985

BARRACOUTA 5 QUANTITATIVE LOG ANALYSIS

Contents — Page No.

1. ROUTINE QUANTITATIVE LOG ANALYSIS

Barracouta 5 wireline logs have been analysed for effective porosity and water saturation over the interval 1175.0 - 1765m KB. Analysis was carried out using a reiterative technique which incorporates hydrocarbon correction to the porosity logs, density neutron crossplot porosities, and a Dual Water relationship with convergence on a preselected grain density window by shale volume adjustment.

Log derived porosities were cross-checked with routine core analysis and log derived water saturations were cross-checked and verified by special core analysis.

The EPT tool, run to substantiate residual oil saturations in the M-1 swept zone, was analysed using standard TPO and A/Aw methods.

Logs Run

Suite 1

BHC-GR	786.5 - 182m

Suite 2 (N-1 gas)

DLTE-MSFL-SP-GR	1462 - 779m (1175 - 1375m used in analysis)
LDTC-CNTH-GR	1462 - 1150m (1175 - 1375m used in analysis)
BHC-GR	1465 - 779m
EPT-GR	1466 - 1150m (Subject to quality control investigations at time of report)
AMS	1466 - 1150m
RFT-GR	Runs 1 - 3 (14 pretests)

Suite 3 (N-3 to N-6 and M-1 oil sands)

DLTE-MSFL-GR	1771 - 1375m (1765 - 1375m used in analysis)
LDTC-CNTH-GR	1759 - 1375m (1759 - 1375m used in analysis)
BHC-GR	1774 - 1380m
EPT-GR	1769 - 1380m (1765 - 1375m used in analysis)
SP-GR	1445 - 1150m (Run with DIT body, 1445 - 1175m used in analysis)
AMS	1757 - 1375m
RFT-GR	Runs 4 - 7 (12 pretests, 3 samples)
CST-GR	1737 - 1468.0m (81 attempted, 81 recovered)
WST	2 levels

Log Quality

All logs are essentially valid except the EPT run in Suite 2 and the poor quality SP's obtained in Suites 2 and 3.

EPT porosity calculated using the TPO method cannot be baselined with PHIT in the Suite 2 water sands without using an unrealistic TPM of 5.2 ns/m. This is outside the most generous published range for the value of quartz, which is 6.8 - 7.5 ns/m.[1] All quality control files are within tolerance and Schlumberger are currently reviewing the problem. Residual gas saturation in the N-1 gas column is 7% using the erroneous TPM of 5.2 ns/m.

Two separate SP runs were made over the N-1 gas sands in Barracouta 5. Both are of poor quality with slowly wandering baselines and only poorly formed deflections across the porous zones. The first SP was run with the DLL-MSFL-GR tool in Suite 2. The second was run with an inoperative DIT body during Suite 3 to see if interference between the DLL-MSFL tool contributed to the poor SP's seen routinely on the Southern Cross. A small improvement in overall form was observed in the second run. In the water sands both SP runs show positive deflections with SP derived Rw's of 600-4000 ppm NaCl equiv. This compares favourably with apparent Rw's of 1200-2200 ppm NaCl equiv. and produced formation waters of 835 ppm NaCl equiv. In the overlying N-1 gas sands both SP curves show zero to slightly negative deflections, indicating a relative increase in salinity to 4000-10,000 ppm NaCl equiv. in the hydrocarbon sands. This lends support to the proposal that salinities in the hydrocarbon sands of the north-western Gippsland reservoirs are much higher than those in the immediately underlying freshwater aquifers. (Refer Rw analysis for further discussion). However, the poor form and overall quality of the SP logs in Barracouta 5 means that SP derived Rw's in absolute terms are of dubious quality.

DLL-MSFL-GR and LDL-CNL-GR logs show good repeatability while calibrations and QC ratio checks are within tolerance. The Pe curve reads higher than expected (2.2 vs 1.6 barns/electron in 30% porosity sand) but this is probably due to a relatively thick mud-cake buildup and/or partial whole mud invasion as is commonly seen in the high quality Latrobe sands.

BHC-GR logs show no cycle skipping and casing checks suggest the logs are valid.

Analysis Parameters

a	1
m	2
n	2
Apparent Shale Density (1175-1765m)	2.5 gm/cc
Apparent Shale Neutron Porosity (1175-1765m)	0.33
Resistivity of Shale (RSH) (1175-1375m)	20 ohm.m
Resistivity of Shale (RSH) (1375-1765m)	15 ohm.m
Rmf @ 63°C (Suite 2, 1175-1375m)	0.4560 ohm.m
Rmf @ 73°C (Suite 3, 1375-1675m)	0.4720 ohm.m
*Grain density - lower limit	2.65 gm/cc
- upper limit	2.67 gm/cc
Mud Filtrate Density (RHOF)	1.005 gm/cc
Hydrocarbon Density (RHOH)	
- (N-1 gas, 1175-1375m)	0.25 gm/cc
- (Oil 1375-1765m)	0.7 gm/cc
Bottom Hole Temperature (Suite 2 1175-1375m)	63°C
Bottom Hole Temperature (Suite 3 1375-1765m)	73°C

Apparent shale density, shale neutron porosity and shale resistivities were read directly from the logs.

* Grain density window of 2.65-2.67 gm/cc cross-checks favourably with absolute grain density measured in routine core analysis. Average absolute grain density for 54 plugs from two cores in the N-1 gas sand is 2.6672 gm/cc.

Shale Volume

An initial estimate of VSH was calculated from density-neutron separation using equation 1. A second estimate of VSH was calculated from the GR using equation 2. Because of the massive gas effect on the density-neutron tools in the N-1 gas sands, the poor contrast between shales and sands in VSHND and the absence of radioactive sands, VSHGR was taken as the initial estimate of shale volume. For water saturation calculations, a reiterative technique incrementally adjusts the initial VSH estimate to converge on a preselected grain density window. VSH thus calculated is output as the final VSH estimate.

$$VSHND = \frac{NPHI - \frac{2.65 - RHOB}{1.65}}{NPHISH - \frac{2.65 - RHOBSH}{1.65}} \quad - 1$$

$$VSHGR = \frac{GR - GR\ max}{GRmax - GRmin} \quad - 2$$

where GRmax = 150, GRmin = 20 API units

Free Formation Water Salinities (Rw)

The relatively complex salinity profile used in this log analysis is listed below and shown in depth profile in Figure 1. It needs some explanation.

An apparent free water salinity log was first calculated using the following relationships:

$$Rwa = \frac{Rt \times PHIT^{m}}{a} \quad - 3$$

$$\text{Salinity (ppm NaCl equiv.)} = \left[\frac{300{,}000}{Rw\ (Ti + 7) - 1}\right]^{1.05} \quad - 4$$

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

A single apparent salinity value or trend was established for every sand and in the water sands these values were used as final Rw's for log analysis. In the hydrocarbon sands (N-1 gas, N-5, N-6 and M-1 oil) a salinity of 25,000 ppm NaCl equiv. was used. This value comes from an understanding of the hydrodynamic history of the Gippsland Basin and a wealth of indirect and direct evidence.

Our understanding of the hydrodynamic history of the basin says that hydrocarbons in the north western Gippsland Basin were probably emplaced during the Oligocene to Mid-Miocene (25 to 14 m.y. ago) when groundwater salinities were of the order of 20,000 to 30,000 ppm NaCl equiv. The relatively recent freshwater flushing event (Pleistocene to Recent; 2 m.y. to 0 m.y. and currently active) appears not to have physically flushed or biodegraded hydrocarbons, or flushed connate waters from the traps. The hydrocarbon traps have remained essentially "isolated" from the underlying hydrodynamic activity and probably still contain their original connate waters of 20,000 to 30,000 ppm.

In support of this concept, SP derived Rw's, although often poorly formed and inconclusive in absolute terms, consistently indicate higher salinities in the hydrocarbon sands than in the immediately underlying aquifers. Barracouta 5 SP's are typical of the SP evidence. Although poor in absolute terms they strongly indicate higher salinities in the hydrocarbon sands than in the underlying freshwater aquifer.

Further indirect evidence comes from independently derived water saturations from capillary pressure data which consistently show log derived water saturations are too high if the fresh water Rw is used. In many cases ridiculously high water saturations of 70% to 90% are calculated in intervals that produce clean oil or gas. (Refer special core analysis section of this report and Figure 3).

Some new and relatively direct evidence has been provided by Barracouta 5. Two RFT samples in the N-5 and N-6 oil sands recovered approximately 20 litres of oil and 1 litre of water which, from tritium, was a 50/50, filtrate/formation water mixture. In a system in which formation salinity was 1200 ppm NaCl equiv, and mud filtrate salinity was 5500 ppm NaCl equiv. the water recovered in the two RFT samples were 18,000 ppm and 14,000 ppm NaCl equiv. It is probable that 5,500 ppm filtrate invaded the formation and through a process of ion diffusion between connate waters of 20,000 ppm to 30,000 ppm and the filtrate, the filtrate was enriched with salts that were subsequently recovered in the RFT sample. It is extremely hard to explain the high salinities in any other way, given the relatively fresh formation water/filtrate system.

The Rw of 25,000 ppm used in this analysis was guided by Rwa calculated below the freshwater wedge in the Barracouta A-3.

Listed below are the Rw values used in this analysis. The values are presented in depth profile in Figure 1.

Depth Interval (m)	Salinity (ppm NaCl equiv.)	
1175.0 - 1345.5	25000	(N-1 gas)
1345.75 - 1391.75	1000 - 1100	
1392.00 - 1396.00	1100 - 1200	
1396.25 - 1440.25	1200	
1440.50 - 1520.00	1300	
1520.25 - 1567.00	1400	
1567.25 - 1590.00	950	
1590.25 - 1594.75	25000	(N-5 oil)
1595.00 - 1621.00	1000	
1621.25 - 1624.75	25000	(N-6 oil)
1625.00 - 1630.00	1100 - 1200	
1630.25 - 1632.75	25000	(N-1 oil)
1633.00 - 1661.00	1400 - 2300	
1661.25 - 1688.00	2300 - 1500	
1688.25 - 1695.00	1500 - 1600	
1695.25 - 1709.00	1600 - 1800	
1709.25 - 1723.00	2000	
1723.25 - 1730.00	2000 - 2100	
1730.25 - 1749.50	1600	
1749.50 - 1765.00	1900 - 1674	

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

Rwb and Swb were calculated using the following relationships:

$$Rwb = \frac{RSH \times PHISH^{m}}{a} \qquad - 5$$

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

$$Swb = \frac{VSH \times PHISH}{PHIT} \qquad - 6$$

Environmental and Hydrocarbon corrections

The MSFL and Neutron porosity logs were corrected for borehole and environmental effects. The borehole corrected MSFL was then used with the LLD and LLS to calculated an invasion corrected Rt.

Whole mud invasion was recognised and manually accounted for in the N-1 gas sands. Extremely high Pe readings flag the occurrence of whole mud invasion. Its effect on the porosity logs is to significantly decrease bulk densities and to slightly increase neutron porosities to give an overall decreased porosity estimate. The affected intervals are listed below. In these intervals, RHOB was manually shifted to an average 2.05 gm/cc and NPHI to an average 0.03. These values were extrapolated from surrounding sands of similar quality. Cores 1 and 2 in the uppermost whole mud affected zones confirm the validity of the manually corrected porosities. Figure 2 shows a comparison of core porosities at NOBP, versus manually corrected and uncorrected log derived porosities.

Whole Mud Invaded Intervals (m)

1204.0 - 1217.5	(Core 1)
1221.0 - 1223.0	(Core 2)
1231.5 - 1237.0	
1242.0 - 1244.75	
1248.5 - 1252.0	
1293.0 - 1299.0	

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

$$RHOBHC = RHOB + 1.07\ PHIT\ (1-SxoT)\ [(1.11-0.15P)\ RHOF - 1.15\ RHOH] \quad - 7$$

$$NPHIHC = NPHI + 1.3\ PHIT\ (1-SxoT)\ \frac{RHOF\ (1-P) - 1.5\ RHOH + 0.2}{RHOF\ (1-P)} \quad - 8$$

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

Total Porosities

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

$$h = 2.71 - RHOBHC + NPHIHC\ (RHOF - 2.71) \quad - 9$$

if h is greater than 0, then

$$\text{apparent matrix density, } RHOMa = 2.71 - h/2 \quad -10$$

if h is less than 0, then

$$\text{apparent matrix density, } RHOMa = 2.71 - 0.6h \quad -11$$

$$PHIT = \frac{RHOMa - RHOBHC}{RHOMa - RHOF} \quad -12$$

where RHOBHC = hydrocarbon corrected bulk density in gms/cc
NPHIHC = environ. and hydrocarbon corrected neutron porosity
RHOF = fluid density (1.005 gms.cc)

Water Saturations

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

$$\frac{1}{Rt} = SwT^{n} * \frac{PHIT^{m}}{aRw} + SwT^{(n-1)} \left[\frac{Swb * PHIT^{m}}{a} \left(\frac{1}{Rwb} - \frac{1}{Rw} \right) \right] \quad -13$$

or

$$\frac{1}{Rxo} = SxoT^{n} * \frac{PHIT^{n}}{aRw} + SxoT^{(n-1)} \left[\frac{Swb * PHIT^{m}}{a} \left(\frac{1}{Rwb} - \frac{1}{Rmf} \right) \right] \quad -14$$

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

Calculated grain densities were derived by removing the shale component of the rock using the following algorithms:

$$RHOBSC = \frac{RHOBHC - VSH * RHOBSH}{1-VSH} \quad -15$$

$$NPHISC = \frac{NPHIHC - VSH * RHOBSH}{1-VSH} \quad -16$$

and equations 10, 11 and 12 were used to calculate RHOG.

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

$$PHIE = PHIT - VSH * PHISH \quad -17$$

$$Swe = 1 - \frac{PHIT}{PHIE} (1-SwT) \quad -16$$

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

If VSH was greater than 0.60 and PHIE less than 0.10, PHIE was set to 0 and Swe was set to 1.

The results of the analysis are summarised in Table 1.

Comments

N-1
- A free gas/water contact is present at 1345.5m KB
- 108m of net gas sand is interpreteted from the 140.75m between the top of the N-1 reservoir to the GWC. Resultant net to gross ratio is 0.767
- Thickness weighted average Sw in the gas column is 6.7%
- Thickness weighted average porosity in the gas column is 27.4%
- Average core derived porosity for cores 1 and 2 is 27.87% at NOBP
- Average core derived permeability for cores 1 and 2 is 22.683 darcy at NOBP
- Average capillary pressure derived Sw for cores 1 and 2 is 7.2%

N-3
- Clearly water wet. No indication of residual hydrocarbons
- Average porosity is 22.5%

N-4
- Clearly water wet. No indication of residual hydrocarbons
- Average porosity is 21.5%

N-5
- A free oil/water contact is present at 1594.75mKB
- 4m net oil sand is recognized
- Average porosity in the oil column is 21.8%. Average porosity for the whole N-5 sand is 23%
- Average water saturation in the oil column is 15.4%. This value should be considered a maximum due to the thin (2m) oil column intersected in Barracouta 5. (ie. more a sample of transition zone water saturations that average water saturations for the whole N-5 oil accumulation)

N-6
- A free oil/water contact is present at 1624.75mKB
- Gross sand thickness is 3.5m and 2m net oil sand is present.
- Average porosity in the N-6 sand is 26.3%
- Average Sw in the oil column is 17%. Again the thin oil column intersected means the Sw estimate should be considered a maximum

M-1
- A current free oil/water contact is present at 1632.75mKB
- Gross sand thickness is 12m and 2m of net oil sand is present
- Average porosity in the oil column is 22.6%. Average porosity for the whole M-1 sand is 25.5%
- Average Sw in the oil column is 19.7% and again, owing to the thin oil column present, this figure should be considered a maximum.
- An original OWC is placed at 1639.5mKB from sidewall core shows.
- Both deep resistivity and EPT derived Sw's "see" the M-1 swept zone but are at the quantitative resolution limits of the tools and interpretation techniques. The residual oil saturations trying to be measured are almost within the background "noise" level of DLL and EPT derived Sor's. Average residual oil saturation from the DLL is 5.6%, from the EPT using the A/Aw method is 9.8% and from the EPT using the TPO method is 9.1%. A simple arithmetic average of these three independently derived residual oil saturation estimates provides the best estimate of log derived residual oil saturation. The arithmetic average of the three estimates is Sor = 8.2%

TABLE 1

SUMMARY OF RESULTS

BARRACOUTA 5

Interval Evaluated: 1175m to 1765m m

Depth Interval (m KB)	Gross Thickness (m)	* Net Thickness (m)	*Porosity Average	* Swe Average	Fluid Content
1204.75 - 1217.25	12.75	12.75	0.267 ± 0.007	0.098 ± 0.029	Gas,N-1 (Core 1)
1219.50 - 1224.25	4.75	4.75	0.280 ± 0.011	0.079 ± 0.024	Gas,N-1 (Core 2)
1226.75 - 1228.00	1.25	1.25	0.258 ± 0.023	0.079 ± 0.024	Gas,N-1,shaly
1228.50 - 1228.75	0.25	0.25	0.254	0.110 ± 0.033	Gas,N-1,thin,shaly
1230.50 - 1230.75	0.25	0.25	0.249	0.020 ± 0.006	Gas,N-1,thin,shaly
1231.75 - 1238.75	7.0	7.0	0.267 ± 0.053	0.082 ± 0.025	Gas,N-1
1242.25 - 1244.75	2.5	2.5	0.264 ± 0.002	0.043 ± 0.013	Gas,N-1
1247.00 - 1276.00	29.0	29.0	0.286 ± 0.016	0.051 ± 0.015	Gas,N-1
1278.50 - 1298.75	20.25	20.25	0.283 ± 0.019	0.060 ± 0.018	Gas,N-1
1303.00 - 1303.50	0.5	0.5	0.220 ± 0.002	0.089 ± 0.027	Gas,N-1,thin,shaly
1304.25 - 1305.00	0.75	0.75	0.191 ± 0.011	0.027 ± 0.008	Gas,N-1,thin,shaly
1305.25 - 1306.00	0.75	0.75	0.253 ± 0.015	0.062 ± 0.019	Gas,N-1,thin,shaly
1306.5 - 1309.00	2.5	2.5	0.235 ± 0.049	0.072 ± 0.022	Gas,N-1,carbonaceous
1309.75 - 1318.00	8.25	8.25	0.260 ± 0.036	0.063 ± 0.019	Gas,N-1
1321.50 - 1327.00	5.5	5.5	0.277 ± 0.036	0.076 ± 0.023	Gas,N-1
1327.75 - 1331.00	3.0	3.0	0.251 ± 0.019	0.098 ± 0.294	Gas,N-1,shaly
1335.25 - 1339.00	3.75	3.75	0.287 ± 0.028	0.054 ± 0.016	Gas,N-1,shaly
1340.50 - 1345.50	5.0	5.0	0.262 ± 0.055	0.079 ± 0.024	Gas,N-1
N-1 GWC @ 1345.5m KB (MD)					
1345.50 - 1353.25	7.75	7.75	0.283 ± 0.028	0.944	Water,N-1
1354.50 - 1378.25	23.75	23.75	0.242 ± 0.048	0.998	Water,N-1
1379.00 - 1379.75	0.75	0.75	0.164 ± 0.013	1.114	Water,N-1,thin,shal
1381.00 - 1387.75	6.75	6.75	0.269 ± 0.030	1.081	Water,N-1
1391.50 - 1394.00	2.5	2.5	0.231 ± 0.062	1.041	Water,N-1
1400.00 - 1428.75	28.75	28.75	0.286 ± 0.038	1.005	Water,N-1
Lower N Asp. coal 1428.75 - 1448.50m KB (MD)					
1450.25 - 1459.75	9.5	9.5	0.247 ± 0.048	0.986	Water,N-1
1463.25 - 1464.25	1.0	1.0	0.219 ± 0.088	1.282	Water,N-1,thin,shal
1468.75 - 1483.00	14.25	14.25	0.261 ± 0.045	1.053	Water,N-1
1485.50 - 1490.25	4.75	4.75	0.162 ± 0.072	0.932	Water,N-1
1493.75 - 1495.25	1.5	1.5	0.203 ± 0.062	0.907	Water,N-1
1500.25 - 1502.00	1.75	1.75	0.255 ± 0.011	0.956	Water,N-1
1514.25 - 1515.75	1.5	1.5	0.246 ± 0.037	0.974	Water,N-1
1524.50 - 1558.25	33.75	33.75	0.225 ± 0.041	1.084	Water,N-3

1564.25 - 1565.75	1.5	1.5	0.236 ± 0.018	1.093	Water,N-3
1569.50 - 1570.50	1.0	1.0	0.226 ± 0.063	0.983	Water,N-3
1574.25 - 1584.00	9.75	9.75	0.251 ± 0.021	1.013	Water,N-4
1590.75 - 1594.75	4.0	4.0	0.218 ± 0.084	0.154 ± 0.046	Oil,N-5
		N-5 OWC @ 1594.75 m KB (MD)			
1594.75 - 1599.25	4.5	4.5	0.240 ± 0.049	0.975	Water,N-5
1600.25 - 1602.75	2.5	2.5	0.236 ± 0.042	0.888	Water,N-5
1604.00 - 1605.75	1.75	1.75	0.241 ± 0.033	1.038	Water,N-5
1609.00 - 1611.75	2.75	2.75	0.226 ± 0.018	0.921	Water,N-5
1614.50 - 1615.75	1.25	1.00	0.221 ± 0.021	1.156	Water,N-5
1622.75 - 1624.75	2.00	2.00	0.263 ± 0.015	0.170 ± 0.051	Oil,N-6
		N-6 OWC @ 1624.75m KB (MD)			
1624.75 - 1626.25	1.5	1.5	0.255 ± 0.009	0.952	Water,N-6
1630.75 - 1632.75	2.0	2.0	0.226 ± 0.030	0.197 ± 0.0591	Oil,M-1
		M-1 OWC @ 1632.75m KB (MD) (3/2/85)			
1632.75 - 1639.50	6.75	6.75	0.258 ± 0.030	0.944	Residual oil,M-1 swept zone
		M-1 OOWC @ 1639.5m KB (MD) (From sidewall cores)			
1639.50 - 1642.75	3.25	3.25	0.261 ± 0.021	0.997	Water,M-1
1645.75 - 1666.75	21.0	20.5	0.208 ± 0.069	1.010	Water, dolomite cemented near base
1672.75 - 1675.75	3.0	3.0	0.236 ± 0.049	1.098	Water,shaly
1679.25 - 1680.00	0.75	0.75	0.158 ± 0.038	1.219	Water,thin,shaly
1682.75 - 1693.00	10.75	10.75	0.249 ± 0.024	0.986	Water
1700.75 - 1727.75	27.00	27.00	0.254 ± 0.059	1.013	Water
1732.75 - 1746.25	13.5	13.5	0.188 ± 0.086	1.062	Water
1747.00 - 1749.00	2.0	1.75	0.223 ± 0.037	1.321	Water
1750.00 - 1763.75	13.75	13.75	0.271 ± 0.045	0.977	Water

* Refers to sands with log derived porosity at greater than 10%.

TABLE 2

LISTING OF LOG ANALYSIS

at 0.25m INTERVALS

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1175.000	63.499	*********	2.429	.320	1.977	1.975	*********	*********	*********
1175.250	69.231	*********	2.328	.369	1.591	1.660	*********	*********	*********
1175.500	71.786	*********	2.270	.387	1.499	1.655	*********	*********	*********
1175.750	70.932	*********	2.270	.385	1.527	1.828	*********	*********	*********
1176.000	69.131	*********	2.285	.390	1.719	1.685	*********	*********	*********
1176.250	67.413	*********	2.384	.407	2.001	2.274	*********	*********	*********
1176.500	65.804	*********	2.489	.357	2.008	3.646	*********	*********	*********
1176.750	65.722	*********	2.377	.305	1.732	1.774	*********	*********	*********
1177.000	61.300	*********	2.403	.369	2.333	3.282	*********	*********	*********
1177.250	55.605	*********	2.569	.336	2.912	8.039	*********	*********	*********
1177.500	60.580	*********	2.504	.248	2.578	2.212	*********	*********	*********
1177.750	68.796	*********	2.351	.295	1.734	1.846	*********	*********	*********
1178.000	68.779	*********	2.305	.344	1.793	1.967	*********	*********	*********
1178.250	71.811	*********	2.314	.369	1.892	2.043	*********	*********	*********
1178.500	76.687	*********	2.335	.382	1.886	1.897	*********	*********	*********
1178.750	75.639	*********	2.343	.373	1.881	2.079	*********	*********	*********
1179.000	73.436	*********	2.373	.387	2.275	3.513	*********	*********	*********
1179.250	68.586	*********	2.498	.365	2.701	11.032	*********	*********	*********
1179.500	69.750	*********	2.457	.280	2.676	3.569	*********	*********	*********
1179.750	73.881	*********	2.345	.300	2.042	2.318	*********	*********	*********
1180.000	76.331	*********	2.338	.400	2.127	2.153	*********	*********	*********
1180.250	70.659	*********	2.427	.423	2.441	3.719	*********	*********	*********
1180.500	58.511	*********	2.576	.347	3.538	3.207	*********	*********	*********
1180.750	42.736	*********	2.700	.280	6.355	66.073	*********	*********	*********
1181.000	37.638	*********	2.701	.152	7.187	651.384	*********	*********	*********
1181.250	55.947	*********	2.537	.113	3.910	2.888	*********	*********	*********
1181.500	71.484	*********	2.404	.246	2.358	2.269	*********	*********	*********
1181.750	75.101	*********	2.328	.361	2.147	2.315	*********	*********	*********
1182.000	77.908	*********	2.346	.403	2.190	2.370	*********	*********	*********
1182.250	79.913	*********	2.388	.378	2.408	2.415	*********	*********	*********
1182.500	83.232	*********	2.417	.362	2.322	2.733	*********	*********	*********
1182.750	93.520	*********	2.404	.392	2.149	2.295	*********	*********	*********
1183.000	92.167	*********	2.396	.411	2.128	2.293	*********	*********	*********
1183.250	91.489	*********	2.400	.424	2.155	2.333	*********	*********	*********
1183.500	92.369	*********	2.393	.408	2.139	2.289	*********	*********	*********
1183.750	91.661	*********	2.370	.410	2.091	2.150	*********	*********	*********
1184.000	99.580	*********	2.367	.419	2.076	2.187	*********	*********	*********
1184.250	97.055	*********	2.383	.405	2.019	2.078	*********	*********	*********
1184.500	94.078	*********	2.393	.415	2.031	2.134	*********	*********	*********
1184.750	95.880	*********	2.389	.389	2.055	2.051	*********	*********	*********
1185.000	97.655	*********	2.405	.384	2.115	2.190	*********	*********	*********
1185.250	101.421	*********	2.422	.409	2.168	2.313	*********	*********	*********
1185.500	96.858	*********	2.432	.436	2.149	2.414	*********	*********	*********
1185.750	94.345	*********	2.439	.422	2.176	2.409	*********	*********	*********
1186.000	98.395	*********	2.428	.409	2.183	2.385	*********	*********	*********
1186.250	98.745	*********	2.431	.398	2.201	2.398	*********	*********	*********
1186.500	92.805	*********	2.442	.400	2.189	2.392	*********	*********	*********
1186.750	93.981	*********	2.446	.423	2.146	2.310	*********	*********	*********
1187.000	100.123	*********	2.456	.394	2.158	2.291	*********	*********	*********
1187.250	102.171	*********	2.449	.404	2.173	2.328	*********	*********	*********
1187.500	103.008	*********	2.447	.414	2.174	2.333	*********	*********	*********
1187.750	105.589	*********	2.463	.390	2.175	2.280	*********	*********	*********
1188.000	103.745	*********	2.472	.413	2.173	2.422	*********	*********	*********
1188.250	90.627	*********	2.487	.423	2.169	2.286	*********	*********	*********
1188.500	94.230	*********	2.496	.414	2.145	2.267	*********	*********	*********
[illegible]	[illegible]	*********	2.479	.409	2.174	2.283	*********	*********	*********

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1189.000	100.303	*********	2.489	.426	2.230	2.401	*********	*********	*********
1189.250	101.604	*********	2.532	.415	2.285	2.334	*********	*********	*********
1189.500	100.949	*********	2.534	.383	2.431	2.500	*********	*********	*********
1189.750	101.368	*********	2.488	.412	2.502	2.621	*********	*********	*********
1190.000	102.374	*********	2.461	.432	2.561	2.771	*********	*********	*********
1190.250	109.721	*********	2.475	.410	2.539	2.819	*********	*********	*********
1190.500	109.042	*********	2.486	.388	2.564	2.705	*********	*********	*********
1190.750	101.908	*********	2.475	.384	2.507	2.649	*********	*********	*********
1191.000	101.933	*********	2.457	.406	2.446	2.528	*********	*********	*********
1191.250	95.900	*********	2.469	.410	2.359	2.443	*********	*********	*********
1191.500	90.467	*********	2.467	.385	2.351	2.237	*********	*********	*********
1191.750	88.769	*********	2.469	.380	2.333	2.063	*********	*********	*********
1192.000	89.073	*********	2.433	.428	2.336	2.160	*********	*********	*********
1192.250	95.693	*********	2.387	.440	2.273	2.144	*********	*********	*********
1192.500	99.114	*********	2.382	.408	2.208	2.021	*********	*********	*********
1192.750	93.599	*********	2.414	.391	2.268	2.142	*********	*********	*********
1193.000	91.917	*********	2.421	.425	2.313	2.392	*********	*********	*********
1193.250	91.951	*********	2.385	.429	2.217	2.192	*********	*********	*********
1193.500	88.801	*********	2.344	.443	2.135	2.145	*********	*********	*********
1193.750	88.458	*********	2.350	.412	2.131	2.294	*********	*********	*********
1194.000	87.936	*********	2.364	.438	2.123	2.138	*********	*********	*********
1194.250	86.815	*********	2.330	.480	2.076	1.993	*********	*********	*********
1194.500	85.282	*********	2.307	.471	2.065	2.078	*********	*********	*********
1194.750	86.466	*********	2.350	.431	2.155	2.214	*********	*********	*********
1195.000	90.446	*********	2.381	.398	2.226	2.157	*********	*********	*********
1195.250	88.519	*********	2.348	.417	2.200	2.054	*********	*********	*********
1195.500	84.968	*********	2.357	.436	2.173	2.113	*********	*********	*********
1195.750	86.015	*********	2.403	.386	2.206	2.087	*********	*********	*********
1196.000	90.217	*********	2.424	.373	2.347	2.042	*********	*********	*********
1196.250	91.399	*********	2.419	.388	2.376	2.127	*********	*********	*********
1196.500	84.679	*********	2.408	.434	2.365	2.205	*********	*********	*********
1196.750	78.529	*********	2.372	.467	2.340	2.208	*********	*********	*********
1197.000	83.757	*********	2.344	.457	2.321	2.208	*********	*********	*********
1197.250	85.653	*********	2.336	.417	2.340	2.470	*********	*********	*********
1197.500	75.257	*********	2.345	.417	2.345	2.422	*********	*********	*********
1197.750	72.874	*********	2.360	.428	2.443	2.214	*********	*********	*********
1198.000	75.284	*********	2.370	.402	2.575	2.488	*********	*********	*********
1198.250	77.232	*********	2.377	.376	2.699	2.690	*********	*********	*********
1198.500	77.721	*********	2.378	.366	2.725	2.832	*********	*********	*********
1198.750	78.813	*********	2.404	.372	2.774	2.683	*********	*********	*********
1199.000	77.182	*********	2.393	.377	2.740	2.449	*********	*********	*********
1199.250	71.801	*********	2.381	.362	2.641	2.609	*********	*********	*********
1199.500	71.688	*********	2.387	.349	2.606	2.456	*********	*********	*********
1199.750	76.147	*********	2.374	.357	2.688	2.410	*********	*********	*********
1200.000	78.335	.616	2.371	.387	2.864	2.744	.000	1.000	1.000
1200.250	81.514	.610	2.380	.412	2.914	2.841	.000	1.000	1.000
1200.500	83.502	.625	2.373	.388	2.827	2.787	.000	1.000	1.000
1200.750	78.686	.618	2.335	.371	2.735	2.401	.000	1.000	1.000
1201.000	82.288	.616	2.323	.411	2.569	2.449	.000	1.000	1.000
1201.250	84.156	.600	2.368	.425	2.423	2.374	.000	1.000	1.000
1201.500	85.036	.607	2.390	.407	2.457	2.450	.000	1.000	1.000
1201.750	90.282	.618	2.408	.406	2.473	2.805	.000	1.000	1.000
1202.000	87.927	.629	2.431	.418	2.574	2.803	.000	1.000	1.000
1202.250	87.369	.625	2.459	.400	2.522	2.748	.000	1.000	1.000
1202.500	85.142	.608	2.497	.378	2.524	3.007	.000	1.000	1.000
[illegible]	[illegible]	[illegible]	[illegible]	.379	2.681	3.608	.000	1.000	1.000

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1203.000	74.311	.615	2.487	.358	2.671	4.071	.000	1.000	1.000
1203.250	65.294	.605	2.462	.307	2.622	3.019	.000	1.000	1.000
1203.500	57.245	.603	2.497	.238	2.727	2.860	.000	1.000	1.000
1203.750	62.284	.612	2.611	.224	3.167	1.967	.000	1.000	1.000
1204.000	64.662	.600	2.612	.235	3.944	2.740	.000	1.000	1.000
1204.250	58.812	.465	2.468	.218	4.269	4.604	.077	1.000	1.000
1204.500	52.803	.000	2.279	.149	6.449	10.431	.212	1.000	.725
1204.750	43.341	.000	2.048	.075	9.431	15.631	.277	.648	.452
1205.000	39.862	.000	2.038	.015	18.047	12.374	.257	.796	.357
1205.250	39.436	.000	2.046	.022	24.026	10.489	.257	.870	.312
1205.500	39.498	.000	2.040	.016	31.476	6.478	.257	1.000	.276
1205.750	37.285	.000	2.048	.029	37.728	7.576	.260	1.000	.250
1206.000	35.183	.000	2.045	.019	42.906	6.398	.257	1.000	.237
1206.250	32.807	.000	2.044	.019	52.343	6.033	.257	1.000	.214
1206.500	30.982	.000	2.037	.024	73.425	7.349	.263	1.000	.177
1206.750	33.960	.000	2.044	.025	87.979	7.310	.261	1.000	.163
1207.000	35.911	.000	2.043	.015	106.746	6.588	.258	1.000	.151
1207.250	28.866	.000	2.037	.020	167.629	6.368	.263	1.000	.118
1207.500	23.452	.000	2.039	.028	250.736	6.280	.266	1.000	.096
1207.750	24.197	.000	2.043	.026	282.536	5.171	.263	1.000	.091
1208.000	26.545	.000	2.038	.025	332.627	5.858	.265	1.000	.084
1208.250	28.078	.000	2.046	.027	437.420	6.027	.263	1.000	.074
1208.500	28.203	.000	2.050	.028	583.319	6.865	.262	1.000	.066
1208.750	27.936	.000	2.036	.019	789.055	9.482	.264	.914	.058
1209.000	32.939	.000	2.044	.020	713.364	12.225	.261	.802	.060
1209.250	34.491	.000	2.045	.018	549.416	10.190	.260	.890	.068
1209.500	33.533	.000	2.043	.025	461.653	8.720	.264	.954	.073
1209.750	34.619	.000	2.037	.024	525.610	10.146	.266	.868	.067
1210.000	34.855	.000	2.046	.023	677.525	7.555	.262	1.000	.062
1210.250	36.146	.000	2.045	.031	963.864	5.961	.266	1.000	.053
1210.500	32.546	.000	2.047	.031	1239.218	6.197	.265	1.000	.049
1210.750	28.494	.000	2.048	.027	1442.578	6.287	.263	1.000	.047
1211.000	30.494	.000	2.043	.031	1850.915	6.711	.267	1.000	.043
1211.250	29.638	.000	2.038	.035	2521.799	6.268	.271	1.000	.040
1211.500	28.706	.000	2.038	.042	2683.937	6.258	.274	1.000	.039
1211.750	29.821	.000	2.036	.048	2113.585	6.703	.277	1.000	.041
1212.000	29.144	.000	2.039	.037	1830.782	7.188	.271	1.000	.043
1212.250	31.508	.000	2.042	.021	1999.389	12.612	.263	.784	.043
1212.500	31.855	.000	2.041	.012	2177.066	6.662	.260	1.000	.042
1212.750	27.947	.000	2.036	.020	3296.478	6.146	.266	1.000	.038
1213.000	31.292	.000	2.045	.024	2117.073	7.332	.263	1.000	.042
1213.250	31.382	.000	2.041	.014	1243.081	9.826	.261	.912	.050
1213.500	28.348	.000	2.043	.009	1114.039	15.499	.258	.719	.051
1213.750	27.853	.000	2.039	.019	1149.703	6.841	.264	1.000	.050
1214.000	26.774	.000	2.042	.045	1281.059	5.763	.273	1.000	.047
1214.250	27.708	.000	2.047	.049	1334.701	6.924	.273	1.000	.047
1214.500	29.187	.000	2.042	.050	1430.728	6.840	.275	1.000	.046
1214.750	32.127	.000	2.040	.046	1623.272	6.671	.275	1.000	.044
1215.000	32.153	.000	2.040	.038	1663.691	6.639	.271	1.000	.044
1215.250	30.442	.000	2.044	.043	1602.139	6.660	.272	1.000	.045
1215.500	28.138	.000	2.042	.051	1439.352	6.279	.276	1.000	.046
1215.750	24.064	.000	2.048	.059	1024.892	6.360	.276	1.000	.051
1216.000	27.365	.000	2.040	.070	794.651	6.679	.284	1.000	.054
1216.250	30.651	.000	2.049	.067	605.988	6.155	.279	1.000	.061
1216.500	25.260	.000	2.040	.056	443.811	6.859	.277	1.000	.070
1216.750	24.276	.000	2.048	.045	321.181	7.419	.270	1.000	.084

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1217.000	25.844	.000	2.044	.046	253.580	7.426	.271	.998	.093
1217.250	25.325	.000	2.037	.049	216.998	7.261	.276	.990	.099
1217.500	27.879	.000	1.000	.063	138.808	7.281	.000	1.000	1.000
1217.750	32.954	.000	1.000	.084	21.853	6.924	.000	1.000	1.000
1218.000	58.887	.000	1.000	.151	14.707	2.751	.000	1.000	1.000
1218.250	120.336	.000	1.000	.337	17.135	68.204	.000	1.000	1.000
1218.500	144.601	.000	1.000	.407	22.576	26.254	.000	1.000	1.000
1218.750	135.889	.000	1.000	.314	23.283	13.368	.000	1.000	1.000
1219.000	133.087	.000	1.000	.257	26.880	11.880	.000	1.000	1.000
1219.250	102.399	.000	1.000	.168	49.242	12.714	.000	1.000	1.000
1219.500	57.925	.000	1.000	.070	140.018	12.672	.000	1.000	1.000
1219.750	34.663	.000	2.002	.035	198.284	9.447	.285	.829	.098
1220.000	34.364	.000	2.000	.032	245.476	9.963	.285	.807	.089
1220.250	33.974	.000	2.026	.053	275.390	7.071	.282	.979	.086
1220.500	29.506	.000	2.025	.059	387.830	8.119	.285	.905	.072
1220.750	30.369	.000	2.022	.042	641.964	9.238	.280	.857	.059
1221.000	35.631	.000	2.038	.034	792.419	9.676	.270	.873	.056
1221.250	40.124	.000	2.043	.054	808.256	7.509	.276	.976	.055
1221.500	40.244	.000	2.051	.083	649.764	7.824	.284	.923	.058
1221.750	38.328	.000	2.085	.081	510.299	8.702	.269	.930	.068
1222.000	34.867	.000	2.049	.060	493.913	7.613	.276	.969	.067
1222.250	34.651	.000	2.035	.036	605.647	8.663	.272	.923	.062
1222.500	33.689	.000	2.037	.031	861.559	8.337	.269	.953	.055
1222.750	32.264	.000	2.049	.033	900.559	8.807	.265	.943	.055
1223.000	33.333	.000	2.043	.044	457.645	8.673	.272	.922	.071
1223.250	35.338	.000	2.035	.085	240.163	7.442	.291	.921	.089
1223.500	42.981	.044	2.011	.153	159.103	11.251	.316	.652	.090
1223.750	50.661	.133	2.055	.177	137.842	8.034	.286	.802	.105
1224.000	59.378	.050	2.077	.155	109.995	7.618	.288	.874	.125
1224.250	82.705	.049	2.098	.153	85.066	6.767	.279	.964	.147
1224.500	107.947	.753	2.109	.200	64.292	6.007	.000	1.000	1.000
1224.750	127.599	.905	2.110	.238	53.437	6.121	.000	1.000	1.000
1225.000	141.101	1.000	2.134	.274	41.630	6.169	.000	1.000	1.000
1225.250	149.527	1.000	2.183	.303	37.881	6.576	.000	1.000	1.000
1225.500	137.128	.978	2.251	.302	39.313	9.823	.000	1.000	1.000
1225.750	112.467	.788	2.237	.346	41.681	13.176	.000	1.000	1.000
1226.000	94.982	.654	2.151	.336	38.539	8.880	.000	1.000	1.000
1226.250	86.919	.502	2.119	.305	40.920	11.198	.226	1.000	1.000
1226.500	79.453	.624	2.157	.353	48.286	15.119	.000	1.000	1.000
1226.750	56.633	.539	2.190	.298	60.912	13.475	.191	1.000	1.000
1227.000	40.527	.175	2.186	.171	79.327	12.780	.222	.733	.105
1227.250	37.707	.033	2.153	.137	80.447	10.359	.254	.858	.167
1227.500	49.613	.155	2.057	.200	75.993	16.269	.288	.369	.020
1227.750	63.531	.172	2.074	.203	69.671	13.424	.278	.466	.020
1228.000	63.343	.170	2.139	.189	68.472	11.625	.248	.681	.084
1228.250	56.415	.387	2.176	.262	69.420	15.292	.216	1.000	1.000
1228.500	46.567	.401	2.172	.264	79.984	16.383	.215	1.000	1.000
1228.750	34.392	.068	2.138	.141	107.245	14.752	.254	.672	.110
1229.000	28.933	.000	1.000	.087	148.545	18.489	.000	1.000	1.000
1229.250	32.692	.000	1.000	.107	155.071	13.711	.000	1.000	1.000
1229.500	39.699	.000	1.000	.185	125.767	16.867	.000	1.000	1.000
1229.750	46.258	.000	1.000	.347	160.133	61.021	.000	1.000	1.000
1230.000	44.826	.000	1.000	.558	115.401	1347.860	.000	1.000	1.000
1230.250	41.261	.000	1.000	.537	91.145	184.210	.000	1.000	1.000
1230.500	44.958	.000	1.000	.394	65.977	11.792	.000	1.000	1.000
[illegible]	[illegible]	.479	2.087	.318	58.331	7.243	.249	.598	.020

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1231.000	50.464	.491	2.119	.316	51.868	11.408	.234	1.000	1.000
1231.250	54.484	.492	2.139	.312	51.930	11.532	.225	1.000	1.000
1231.500	62.399	.463	2.042	.329	52.707	23.585	.272	1.000	1.000
1231.750	58.138	.550	2.035	.356	46.763	9.286	.265	1.000	1.000
1232.000	46.857	.344	2.037	.300	41.974	6.245	.290	.733	.074
1232.250	44.079	.232	2.048	.234	47.980	6.641	.286	.809	.139
1232.500	39.335	.166	2.049	.213	53.049	6.437	.293	.853	.161
1232.750	34.068	.125	2.035	.204	60.521	8.021	.304	.747	.127
1233.000	42.237	.098	2.042	.189	71.057	14.609	.303	.482	.051
1233.250	49.775	.156	2.035	.204	93.501	20.726	.298	.129	.020
1233.500	34.931	.132	2.036	.188	114.260	10.972	.298	.606	.040
1233.750	18.362	.004	2.036	.128	225.185	5.912	.306	.972	.086
1234.000	16.846	.023	2.043	.122	341.893	6.160	.296	.970	.072
1234.250	17.411	.000	2.035	.116	476.189	6.202	.303	.963	.062
1234.500	18.186	.033	2.048	.122	420.542	6.516	.292	.949	.066
1234.750	19.197	.071	2.049	.162	333.373	6.993	.297	.867	.070
1235.000	20.047	.077	2.041	.173	358.339	7.802	.303	.800	.066
1235.250	25.837	.062	2.046	.139	485.032	17.307	.293	.515	.020
1235.500	29.209	.000	2.036	.089	611.845	10.833	.293	.747	.057
1235.750	24.417	.000	2.042	.093	604.368	8.068	.291	.876	.058
1236.000	21.445	.000	2.049	.081	523.256	9.428	.284	.830	.063
1236.250	22.361	.000	2.049	.050	389.203	10.604	.271	.821	.075
1236.500	23.460	.000	2.039	.063	368.407	6.838	.281	.997	.075
1236.750	25.294	.000	2.042	.077	402.522	12.560	.285	.710	.070
1237.000	25.517	.029	2.273	.077	468.851	5.083	.186	1.000	.098
1237.250	24.386	.111	2.397	.087	469.150	41.273	.124	.704	.032
1237.500	30.404	.067	2.432	.052	367.695	37.714	.105	1.000	.177
1237.750	40.141	.000	2.270	.070	159.526	22.297	.189	.813	.165
1238.000	50.903	.015	2.105	.139	89.085	14.528	.279	.642	.115
1238.250	60.680	.210	2.084	.210	77.451	13.683	.268	.453	.020
1238.500	56.926	.271	2.150	.219	62.776	10.873	.232	.647	.034
1238.750	48.078	.233	2.200	.193	47.840	9.061	.211	.911	.215
1239.000	46.956	.000	1.000	.182	38.471	9.170	.000	1.000	1.000
1239.250	57.362	.000	1.000	.207	33.622	8.149	.000	1.000	1.000
1239.500	67.527	.000	1.000	.277	32.217	10.512	.000	1.000	1.000
1239.750	76.792	.000	1.000	.360	33.606	15.699	.000	1.000	1.000
1240.000	74.874	.000	1.000	.436	42.978	35.079	.000	1.000	1.000
1240.250	59.568	.000	1.000	.531	82.429	1218.699	.000	1.000	1.000
1240.500	57.659	.000	1.000	.638	102.699	778.681	.000	1.000	1.000
1240.750	67.754	.000	1.000	.595	87.420	20.039	.000	1.000	1.000
1241.000	57.352	.000	1.000	.415	60.824	10.518	.000	1.000	1.000
1241.250	38.388	.000	1.000	.259	74.936	10.224	.000	1.000	1.000
1241.500	39.302	.000	1.000	.288	101.773	35.548	.000	1.000	1.000
1241.750	43.146	.000	1.000	.437	214.659	73.741	.000	1.000	1.000
1242.000	33.547	.000	1.000	.023	549.871	17.997	.000	1.000	1.000
1242.250	24.526	.000	1.000	.026	3015.179	7.151	.000	1.000	1.000
1242.500	20.919	.000	2.036	.020	3627.244	6.327	.266	1.000	.038
1242.750	18.885	.000	2.038	.027	2730.210	6.889	.268	1.000	.040
1243.000	18.091	.000	2.041	.024	2775.752	7.251	.265	1.000	.040
1243.250	16.899	.000	2.048	.025	2697.365	7.392	.263	1.000	.040
1243.500	18.171	.000	2.048	.020	2411.863	7.161	.261	1.000	.041
1243.750	18.860	.000	2.047	.021	2143.783	7.167	.262	1.000	.042
1244.000	18.333	.000	2.048	.020	2270.249	7.167	.261	1.000	.042
1244.250	19.368	.000	2.047	.023	2011.317	6.759	.262	1.000	.043
1244.500	18.807	.000	2.038	.021	1089.358	6.832	.265	1.000	.051
1244.750	19.062	.000	2.038	.018	822.647	6.897	.263	1.000	.057

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1245.000	21.446	.000	1.000	.027	691.992	8.330	.000	1.000	1.000
1245.250	20.701	.000	1.000	.186	523.142	9.003	.000	1.000	1.000
1245.500	21.933	.000	1.000	.239	533.408	13.611	.000	1.000	1.000
1245.750	23.074	.000	1.000	.360	757.201	362.283	.000	1.000	1.000
1246.000	22.674	.000	1.000	.544	1284.875	617.300	.000	1.000	1.000
1246.250	27.713	.000	1.000	.673	374.831	406.723	.000	1.000	1.000
1246.500	33.042	.000	1.000	.509	236.752	12.469	.000	1.000	1.000
1246.750	30.998	.000	1.000	.226	198.744	10.892	.000	1.000	1.000
1247.000	31.470	.000	1.000	.144	196.347	9.991	.000	1.000	1.000
1247.250	34.004	.005	2.040	.128	197.054	11.486	.304	.690	.091
1247.500	33.770	.033	2.050	.134	216.574	11.991	.295	.680	.087
1247.750	31.869	.018	2.037	.131	254.648	10.725	.303	.710	.080
1248.000	26.282	.005	2.039	.118	281.416	12.505	.301	.668	.078
1248.250	24.353	.000	2.036	.113	306.766	11.224	.301	.708	.075
1248.500	26.144	.000	2.047	.100	338.229	13.732	.292	.659	.073
1248.750	26.921	.000	2.037	.077	394.147	14.503	.287	.652	.070
1249.000	24.174	.000	2.037	.060	457.376	16.059	.281	.635	.067
1249.250	21.634	.000	2.037	.047	583.646	18.260	.275	.606	.061
1249.500	18.777	.000	2.037	.049	669.286	7.568	.277	.963	.059
1249.750	15.522	.000	2.048	.069	737.608	6.920	.280	.994	.056
1250.000	12.146	.000	2.035	.071	938.845	7.528	.286	.929	.050
1250.250	11.393	.000	2.043	.063	1276.561	7.126	.280	.979	.046
1250.500	11.128	.000	2.041	.070	2132.090	6.530	.284	1.000	.040
1250.750	12.860	.000	2.038	.072	2430.448	6.651	.286	.991	.039
1251.000	15.100	.000	2.047	.065	2617.530	6.034	.280	1.000	.039
1251.250	12.836	.000	2.043	.053	2955.141	6.409	.276	1.000	.038
1251.500	13.118	.000	2.038	.056	1124.809	7.140	.279	.981	.048
1251.750	15.353	.000	2.036	.087	659.236	6.218	.292	1.000	.056
1252.000	17.051	.024	2.045	.122	558.887	8.995	.296	.793	.058
1252.250	17.134	.000	2.045	.099	772.969	9.132	.293	.813	.053
1252.500	16.551	.000	2.042	.050	806.677	9.926	.275	.837	.054
1252.750	19.311	.000	2.035	.027	969.188	17.136	.269	.644	.051
1253.000	21.373	.000	1.989	.020	1151.382	49.674	.285	.350	.046
1253.250	23.247	.000	2.006	.019	1288.616	17.865	.278	.609	.046
1253.500	26.161	.000	2.011	.036	1306.576	10.235	.283	.798	.046
1253.750	29.917	.000	1.997	.047	2120.133	12.888	.293	.681	.040
1254.000	30.443	.000	2.015	.041	2434.672	11.582	.283	.748	.039
1254.250	27.980	.000	2.045	.050	1623.018	9.810	.274	.845	.044
1254.500	26.037	.000	2.072	.069	823.057	10.028	.270	.848	.055
1254.750	27.587	.000	2.036	.061	781.155	9.738	.282	.821	.054
1255.000	29.153	.000	1.983	.026	1311.403	29.681	.291	.447	.044
1255.250	24.404	.000	1.983	.011	2614.969	35.310	.285	.418	.038
1255.500	23.359	.000	2.004	.011	1884.264	14.591	.275	.683	.042
1255.750	23.715	.000	2.006	.016	1743.074	14.672	.277	.677	.043
1256.000	23.160	.000	1.992	.015	2138.123	20.648	.282	.556	.040
1256.250	25.409	.000	1.991	.014	3269.551	16.855	.282	.617	.037
1256.500	26.988	.000	1.993	.020	2472.530	12.353	.284	.719	.039
1256.750	24.393	.000	1.998	.037	2021.753	10.074	.289	.787	.040
1257.000	24.053	.000	2.012	.049	1567.924	11.974	.287	.722	.043
1257.250	27.276	.000	2.031	.057	1627.182	7.833	.283	.924	.043
1257.500	28.874	.000	2.024	.059	1451.368	9.638	.287	.810	.044
1257.750	26.404	.000	2.023	.045	1398.694	9.679	.281	.827	.045
1258.000	27.819	.000	2.043	.054	1240.091	9.142	.276	.869	.047
1258.250	29.811	.000	2.029	.057	1280.185	8.978	.283	.852	.046
1258.500	31.490	.000	2.027	.063	1377.056	7.186	.287	.948	.045
1258.750	30.712	.000	2.033	.060	1439.186	15.017	.283	.652	.044

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1259.000	27.177	.000	2.029	.037	1575.240	9.348	.276	.861	.044
1259.250	28.745	.000	2.004	.034	1612.118	10.917	.285	.765	.043
1259.500	32.494	.000	1.991	.044	1389.593	10.032	.294	.770	.044
1259.750	31.825	.000	1.998	.056	1098.314	9.891	.296	.771	.046
1260.000	29.515	.000	2.004	.062	1176.555	8.359	.296	.841	.046
1260.250	30.779	.000	2.002	.066	1057.641	9.550	.298	.779	.047
1260.500	32.655	.000	2.002	.072	1204.621	8.487	.300	.820	.045
1260.750	36.008	.000	1.984	.062	1272.280	16.492	.304	.576	.044
1261.000	34.547	.000	1.978	.041	1668.833	12.612	.299	.673	.041
1261.250	26.739	.000	1.991	.043	1572.484	11.417	.294	.720	.042
1261.500	25.564	.000	2.000	.043	1563.379	12.182	.290	.708	.043
1261.750	26.550	.000	2.006	.046	1658.126	9.453	.289	.811	.042
1262.000	29.373	.000	2.004	.055	1276.144	8.479	.293	.844	.045
1262.250	32.175	.000	2.015	.067	1064.016	8.654	.293	.834	.047
1262.500	34.805	.000	2.016	.083	863.034	9.051	.299	.797	.050
1262.750	38.073	.000	2.025	.091	702.585	8.316	.298	.836	.054
1263.000	36.848	.000	2.011	.095	685.633	10.187	.305	.733	.053
1263.250	33.455	.000	1.991	.069	875.320	13.631	.304	.634	.049
1263.500	33.395	.000	1.994	.046	1116.572	10.176	.294	.765	.046
1263.750	34.630	.000	1.987	.042	1720.248	10.414	.295	.751	.041
1264.000	30.200	.000	1.949	.030	2033.591	16.588	.307	.568	.039
1264.250	27.304	.000	1.916	.023	2139.900	14.802	.318	.580	.038
1264.500	28.647	.000	1.934	.027	1497.550	15.528	.312	.577	.041
1264.750	30.463	.000	2.003	.047	1009.377	9.863	.290	.787	.048
1265.000	32.738	.000	2.054	.099	523.501	8.226	.289	.869	.062
1265.250	34.255	.067	2.081	.134	363.017	7.300	.276	.920	.072
1265.500	33.233	.000	2.046	.108	369.938	8.981	.295	.808	.070
1265.750	31.021	.000	1.983	.044	672.482	34.878	.297	.401	.054
1266.000	30.134	.000	1.991	.019	1292.490	26.094	.284	.487	.045
1266.250	29.693	.000	2.008	.023	1657.755	15.959	.279	.641	.043
1266.500	26.305	.000	2.030	.023	709.278	17.126	.269	.641	.057
1266.750	27.069	.000	2.055	.026	494.415	9.686	.259	.910	.071
1267.000	29.067	.000	2.009	.028	612.191	16.475	.280	.627	.059
1267.250	27.314	.000	1.959	.024	1544.804	17.235	.300	.570	.042
1267.500	26.113	.000	1.939	.016	2886.555	21.251	.306	.502	.037
1267.750	23.968	.000	1.945	.010	4348.957	20.569	.301	.519	.035
1268.000	20.244	.000	1.952	.008	4725.512	19.728	.297	.537	.035
1268.250	21.900	.000	1.949	.013	2161.766	25.004	.300	.471	.039
1268.500	25.022	.000	1.980	.019	879.037	15.536	.288	.626	.050
1268.750	24.949	.000	2.003	.021	825.654	13.208	.279	.704	.053
1269.000	27.204	.000	1.998	.015	1905.102	20.671	.280	.558	.041
1269.250	26.699	.000	1.987	.012	3061.553	18.449	.283	.584	.037
1269.500	23.532	.000	1.966	.012	2814.484	21.923	.292	.517	.038
1269.750	22.713	.000	1.945	.015	1722.767	23.492	.302	.482	.041
1270.000	25.265	.000	1.941	.014	1525.621	30.339	.304	.421	.042
1270.250	26.621	.000	1.959	.010	1713.187	24.337	.295	.486	.041
1270.500	25.553	.000	1.966	.011	2237.687	24.971	.292	.484	.039
1270.750	23.945	.000	1.957	.012	1646.124	31.158	.296	.426	.041
1271.000	21.701	.000	1.926	.008	2234.179	32.536	.308	.401	.038
1271.250	22.573	.000	1.902	.004	3783.223	39.818	.317	.352	.035
1271.500	24.059	.000	1.914	.006	3872.669	31.790	.313	.398	.035
1271.750	23.357	.000	1.938	.013	1049.787	25.097	.305	.462	.046
1272.000	28.732	.000	1.953	.021	866.239	19.451	.301	.532	.049
1272.250	32.117	.000	1.966	.023	854.855	20.228	.296	.530	.050
1272.500	32.581	.000	1.996	.030	702.780	16.848	.286	.604	.055
1272.750	35.201	.000	2.014	.061	437.561	10.573	.290	.756	.066

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1273.000	37.475	.000	2.034	.092	371.284	6.952	.294	.930	.071
1273.250	38.638	.010	2.078	.116	319.496	7.341	.283	.935	.078
1273.500	44.911	.119	2.116	.146	261.223	6.744	.254	.990	.087
1273.750	51.479	.139	2.133	.148	269.012	7.261	.243	.975	.088
1274.000	39.231	.000	2.083	.077	428.240	53.376	.268	.211	.020
1274.250	27.537	.000	2.043	.017	823.883	29.407	.261	.498	.055
1274.500	26.119	.000	2.054	.012	842.297	30.562	.254	.503	.056
1274.750	28.536	.000	2.101	.026	562.897	13.281	.240	.830	.071
1275.000	33.643	.000	2.119	.045	421.433	22.170	.240	.628	.079
1275.250	33.725	.000	2.079	.031	494.925	36.716	.251	.461	.070
1275.500	32.262	.000	2.059	.020	482.078	36.448	.255	.456	.070
1275.750	29.315	.000	2.101	.022	394.687	14.620	.238	.794	.084
1276.000	26.976	.000	2.116	.030	371.589	25.214	.235	.600	.085
1276.250	26.382	.000	1.000	.028	420.860	25.762	.000	1.000	1.000
1276.500	23.829	.000	1.000	.033	240.680	20.121	.000	1.000	1.000
1276.750	28.275	.000	1.000	.089	105.872	9.892	.000	1.000	1.000
1277.000	39.332	.000	1.000	.234	74.531	23.527	.000	1.000	1.000
1277.250	41.614	.000	1.000	.438	114.724	52.916	.000	1.000	1.000
1277.500	30.795	.000	1.000	.562	217.627	1473.196	.000	1.000	1.000
1277.750	19.094	.000	1.000	.607	4514.906	925.875	.000	1.000	1.000
1278.000	19.937	.000	1.000	.621	4172.246	406.501	.000	1.000	1.000
1278.250	24.579	.000	1.000	.577	77.519	195.759	.000	1.000	1.000
1278.500	27.330	.613	1.964	.437	52.905	7.724	.000	1.000	1.000
1278.750	25.851	.242	2.039	.255	78.772	8.646	.296	.609	.020
1279.000	22.150	.093	2.061	.183	145.429	10.789	.295	.659	.065
1279.250	23.000	.010	2.066	.118	339.626	20.080	.289	.503	.030
1279.500	23.754	.000	2.047	.044	554.230	25.260	.270	.519	.063
1279.750	24.678	.000	2.019	.026	732.528	19.087	.275	.590	.056
1280.000	26.338	.000	1.992	.026	898.902	21.004	.286	.538	.050
1280.250	30.190	.000	1.980	.015	1382.971	48.705	.287	.349	.044
1280.500	31.201	.000	1.968	.009	1752.958	38.966	.290	.387	.041
1280.750	29.098	.000	1.963	.011	1524.254	35.798	.293	.400	.042
1281.000	34.149	.000	1.993	.016	1430.871	23.261	.282	.519	.044
1281.250	36.736	.000	2.031	.027	1180.825	13.418	.271	.722	.048
1281.500	34.549	.000	2.038	.037	1214.101	12.128	.272	.757	.047
1281.750	32.684	.000	2.017	.039	1293.362	11.116	.281	.763	.046
1282.000	33.323	.000	1.993	.033	1344.020	18.162	.289	.574	.044
1282.250	32.772	.000	1.996	.023	1077.860	14.250	.284	.664	.048
1282.500	30.635	.000	2.015	.035	644.648	11.348	.280	.758	.058
1282.750	32.488	.000	2.039	.073	440.642	7.630	.285	.918	.068
1283.000	36.056	.000	2.056	.111	425.322	7.500	.292	.900	.067
1283.250	38.792	.041	2.049	.124	363.805	7.432	.290	.873	.069
1283.500	40.062	.021	2.050	.131	181.241	7.754	.297	.846	.095
1283.750	52.462	.147	2.151	.165	97.639	7.687	.240	.948	.144
1284.000	75.228	.292	2.193	.208	82.096	11.129	.207	.710	.029
1284.250	76.116	.179	2.071	.194	96.918	10.953	.275	.620	.045
1284.500	53.546	.000	1.999	.088	204.742	37.570	.307	.258	.020
1284.750	38.939	.000	1.979	.021	525.513	37.546	.290	.394	.060
1285.000	36.548	.000	1.953	.014	1058.936	32.289	.299	.414	.046
1285.250	35.525	.000	1.917	.012	1472.395	51.129	.314	.312	.041
1285.500	34.441	.000	1.909	.010	1772.601	51.803	.317	.308	.039
1285.750	35.925	.000	1.929	.010	1639.315	61.374	.308	.290	.041
1286.000	34.383	.000	1.952	.013	1293.700	45.915	.299	.346	.044
1286.250	32.959	.000	1.984	.018	1091.764	22.642	.287	.516	.047
1286.500	33.498	.000	2.007	.022	1045.929	18.292	.279	.594	.049
1286.750	30.021	.000	2.014	.021	1158.529	18.682	.275	.595	.047

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1301.000	173.184	1.000	2.251	.298	54.873	13.310	.000	1.000	1.000
1301.250	177.877	1.000	2.257	.312	55.448	12.140	.000	1.000	1.000
1301.500	185.653	1.000	2.276	.325	59.212	12.603	.000	1.000	1.000
1301.750	163.742	1.000	2.298	.296	68.440	13.647	.000	1.000	1.000
1302.000	144.894	1.000	2.226	.323	83.138	15.424	.000	1.000	1.000
1302.250	135.779	.968	2.141	.300	108.471	18.218	.000	1.000	1.000
1302.500	119.290	.841	2.202	.207	132.994	15.113	.000	1.000	1.000
1302.750	111.421	.780	2.262	.183	158.596	16.122	.000	1.000	1.000
1303.000	95.843	.660	2.202	.196	175.168	12.572	.000	1.000	1.000
1303.250	80.230	.210	2.166	.170	191.624	10.809	.222	.787	.076
1303.500	85.036	.187	2.182	.163	208.521	10.037	.219	.859	.102
1303.750	91.742	.629	2.201	.174	227.861	10.500	.000	1.000	1.000
1304.000	95.035	.654	2.213	.192	239.780	9.989	.000	1.000	1.000
1304.250	91.337	.626	2.202	.210	235.555	9.936	.000	1.000	1.000
1304.500	85.011	.307	2.184	.200	211.996	9.563	.204	.813	.027
1304.750	76.806	.304	2.215	.194	200.399	9.934	.192	.848	.033
1305.000	85.500	.281	2.244	.177	184.567	12.960	.179	.773	.022
1305.250	94.298	.648	2.178	.172	212.085	12.672	.000	1.000	1.000
1305.500	72.440	.090	2.098	.143	312.320	28.798	.267	.193	.020
1305.750	52.994	.000	2.100	.075	243.487	39.420	.260	.342	.024
1306.000	67.065	.000	2.178	.084	142.119	13.065	.231	.855	.141
1306.250	102.879	.714	2.230	.189	105.493	12.798	.000	1.000	1.000
1306.500	106.391	.741	2.223	.279	122.771	20.328	.000	1.000	1.000
1306.750	72.431	.210	2.169	.175	175.186	24.366	.223	.214	.020
1307.000	46.566	.000	2.146	.055	274.059	26.931	.233	.580	.099
1307.250	38.982	.000	2.131	.029	425.047	23.485	.228	.638	.082
1307.500	38.618	.000	2.068	.021	672.541	64.444	.252	.341	.060
1307.750	41.567	.000	1.995	.022	966.247	43.043	.284	.373	.049
1308.000	41.864	.000	1.969	.043	389.512	49.159	.302	.294	.038
1308.250	42.580	.000	2.055	.079	162.320	19.075	.280	.572	.106
1308.500	47.623	.079	2.173	.139	98.092	11.015	.237	.838	.152
1308.750	54.458	.282	2.258	.185	86.005	11.126	.176	.870	.098
1309.000	76.560	.482	2.318	.229	82.210	13.289	.131	.644	.020
1309.250	116.195	.817	2.333	.263	76.577	17.651	.000	1.000	1.000
1309.500	129.242	.917	2.324	.301	76.204	21.310	.000	1.000	1.000
1309.750	105.158	.732	2.301	.282	91.827	18.755	.000	1.000	1.000
1310.000	73.611	.189	2.246	.147	139.517	21.997	.187	.523	.020
1310.250	51.273	.000	2.221	.086	173.221	14.413	.215	.879	.137
1310.500	49.759	.000	2.215	.084	180.362	11.604	.217	.985	.136
1310.750	57.039	.000	2.171	.075	211.179	16.920	.231	.747	.115
1311.000	55.075	.000	2.120	.043	384.181	24.319	.239	.595	.082
1311.250	47.640	.000	2.094	.016	781.051	44.875	.239	.434	.060
1311.500	40.544	.000	2.059	.012	1338.561	31.094	.252	.498	.048
1311.750	38.185	.000	2.018	.011	1648.241	32.921	.269	.452	.043
1312.000	35.128	.000	2.003	.008	2150.874	35.097	.275	.428	.040
1312.250	32.609	.000	2.014	.009	1830.952	40.984	.270	.402	.042
1312.500	30.891	.000	2.027	.012	1862.995	27.166	.266	.506	.042
1312.750	31.660	.000	1.994	.014	1841.874	24.545	.281	.503	.041
1313.000	37.346	.000	1.962	.022	2019.542	18.190	.298	.552	.039
1313.250	42.487	.000	1.955	.033	1994.515	19.675	.305	.517	.039
1313.500	41.534	.000	1.952	.041	1939.945	17.114	.310	.547	.039
1313.750	41.364	.000	1.943	.043	1586.315	13.817	.314	.600	.041
1314.000	44.683	.000	1.927	.048	1552.845	12.502	.323	.614	.040
1314.250	46.373	.000	1.938	.054	1635.599	14.946	.321	.565	.040
1314.500	48.207	.000	1.987	.053	1860.294	11.823	.299	.685	.040
[illegible]	[illegible]	.000	2.031	.050	2155.123	11.332	.280	.753	.040

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1315.000	41.495	.000	1.971	.023	6996.430	37.151	.295	.388	.034
1315.250	35.047	.000	1.962	.004	5006.836	45.009	.291	.357	.035
1315.500	34.418	.000	2.038	.004	1057.599	25.507	.258	.538	.051
1315.750	34.786	.000	2.084	.017	646.934	18.944	.243	.669	.064
1316.000	33.409	.000	2.105	.042	550.271	14.105	.245	.775	.069
1316.250	32.054	.000	2.116	.064	359.852	15.242	.249	.727	.082
1316.500	32.606	.000	2.141	.082	222.540	15.926	.246	.719	.105
1316.750	34.343	.000	2.166	.099	162.196	12.600	.243	.826	.125
1317.000	48.341	.115	2.210	.131	147.250	14.837	.212	.765	.120
1317.250	67.594	.233	2.231	.170	169.978	16.447	.192	.604	.020
1317.500	64.423	.149	2.158	.157	171.595	16.706	.235	.551	.020
1317.750	52.902	.060	2.140	.138	139.302	11.743	.254	.767	.121
1318.000	62.968	.167	2.195	.160	108.810	11.466	.216	.811	.123
1318.250	93.577	.643	2.248	.203	86.303	12.195	.000	1.000	1.000
1318.500	120.998	.854	2.269	.279	82.397	13.745	.000	1.000	1.000
1318.750	127.168	.901	2.267	.366	98.240	31.435	.000	1.000	1.000
1319.000	105.441	.734	2.236	.403	96.654	25.316	.000	1.000	1.000
1319.250	93.054	.639	2.216	.322	57.746	14.439	.000	1.000	1.000
1319.500	106.509	.742	2.248	.270	41.041	9.828	.000	1.000	1.000
1319.750	116.104	.816	2.352	.311	41.356	12.963	.000	1.000	1.000
1320.000	106.571	.743	2.437	.309	63.856	25.615	.000	1.000	1.000
1320.250	99.328	.687	2.418	.277	62.256	41.980	.000	1.000	1.000
1320.500	108.240	.756	2.360	.260	86.846	22.446	.000	1.000	1.000
1320.750	122.757	.867	2.268	.306	70.237	14.489	.000	1.000	1.000
1321.000	127.995	.908	2.192	.352	69.873	16.242	.000	1.000	1.000
1321.250	102.694	.713	2.204	.391	93.205	26.290	.000	1.000	1.000
1321.500	70.144	.613	2.254	.335	108.103	12.212	.000	1.000	1.000
1321.750	51.092	.316	2.236	.209	122.808	10.109	.188	.833	.030
1322.000	41.732	.214	2.174	.175	143.502	9.817	.220	.835	.104
1322.250	36.394	.113	2.116	.149	206.912	13.236	.256	.661	.058
1322.500	32.429	.000	2.037	.087	290.162	19.199	.291	.548	.078
1322.750	29.830	.000	1.991	.043	426.857	17.408	.293	.571	.065
1323.000	27.781	.000	1.975	.038	384.455	36.698	.298	.383	.066
1323.250	30.232	.000	1.998	.044	436.381	11.647	.291	.710	.065
1323.500	31.260	.000	2.034	.062	326.046	12.589	.282	.702	.076
1323.750	33.090	.000	2.041	.083	271.264	8.785	.288	.830	.082
1324.000	36.245	.000	2.057	.088	200.352	13.467	.283	.675	.095
1324.250	42.117	.000	2.094	.087	188.631	12.350	.267	.750	.104
1324.500	42.528	.000	2.066	.083	242.967	17.177	.277	.609	.088
1324.750	37.748	.000	2.041	.050	358.719	15.171	.275	.655	.074
1325.000	35.793	.000	2.029	.043	501.988	12.249	.277	.727	.064
1325.250	34.800	.000	1.990	.034	639.101	18.743	.290	.556	.056
1325.500	32.044	.000	1.936	.017	1137.521	23.378	.307	.469	.044
1325.750	26.155	.000	1.897	.008	1770.863	26.402	.321	.422	.039
1326.000	24.264	.000	1.896	.004	2000.047	26.267	.320	.425	.038
1326.250	24.003	.000	1.897	.008	1372.784	26.227	.321	.424	.041
1326.500	28.380	.000	1.927	.018	237.876	19.466	.311	.507	.080
1326.750	45.874	.000	2.065	.020	145.574	15.240	.251	.718	.126
1327.000	77.657	.000	2.201	.025	100.572	31.569	.195	.632	.192
1327.250	95.385	.657	2.236	.022	91.340	18.514	.000	1.000	1.000
1327.500	93.807	.645	2.234	.023	78.711	11.218	.000	1.000	1.000
1327.750	89.430	.611	2.183	.022	93.583	8.425	.000	1.000	1.000
1328.000	79.834	.000	2.146	.018	115.911	6.182	.215	1.000	.170
1328.250	70.951	.319	2.132	.222	164.392	5.864	.230	.968	.099
1328.500	67.232	.290	2.111	.217	226.025	6.403	.243	.905	.083
1328.750	63.453	.261	2.104	.209	264.715	5.813	.249	.950	.077

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1329.000	58.935	.286	2.110	.216	244.602	5.305	.243	.994	.080
1329.250	60.152	.266	2.095	.210	234.847	5.238	.251	.987	.081
1329.500	67.708	.204	2.091	.189	212.245	5.985	.260	.943	.087
1329.750	72.802	.213	2.111	.192	199.832	5.834	.251	.978	.091
1330.000	79.307	.173	2.097	.176	194.552	8.183	.260	.820	.092
1330.250	74.652	.047	2.055	.134	222.081	11.210	.290	.694	.085
1330.500	63.002	.000	2.080	.106	211.916	13.588	.280	.678	.094
1330.750	63.961	.025	2.147	.110	192.061	8.034	.249	.994	.110
1331.000	67.825	.115	2.141	.152	135.593	6.688	.247	1.000	.122
1331.250	60.740	.000	1.000	.201	84.271	5.812	.000	1.000	1.000
1331.500	63.096	.000	1.000	.234	60.103	7.515	.000	1.000	1.000
1331.750	80.704	.000	1.000	.282	52.406	20.273	.000	1.000	1.000
1332.000	92.519	.000	1.000	.325	46.312	16.191	.000	1.000	1.000
1332.250	87.533	.000	1.000	.322	46.112	22.845	.000	1.000	1.000
1332.500	75.493	.000	1.000	.338	54.224	20.183	.000	1.000	1.000
1332.750	61.638	.000	1.000	.432	74.270	147.591	.000	1.000	1.000
1333.000	52.321	.000	1.000	.506	153.534	89.150	.000	1.000	1.000
1333.250	48.371	.000	1.000	.416	175.083	6.020	.000	1.000	1.000
1333.500	39.481	.000	1.000	.349	242.815	17.263	.000	1.000	1.000
1333.750	21.579	.000	1.000	.463	554.776	1127.594	.000	1.000	1.000
1334.000	13.156	.000	1.000	.556	1247.421	1509.936	.000	1.000	1.000
1334.250	17.764	.000	1.000	.614	2147.530	1632.643	.000	1.000	1.000
1334.500	38.157	.000	1.000	.659	3149.730	1588.350	.000	1.000	1.000
1334.750	63.662	.000	1.000	.646	25442.500	1520.682	.000	1.000	1.000
1335.000	82.997	.000	1.000	.563	230.045	448.116	.000	1.000	1.000
1335.250	82.469	.000	1.000	.393	119.996	20.038	.000	1.000	1.000
1335.500	72.009	.267	2.155	.197	140.677	18.855	.223	.306	.020
1335.750	65.003	.000	2.088	.109	174.543	22.574	.278	.475	.050
1336.000	54.425	.000	2.004	.073	265.713	42.104	.299	.270	.020
1336.250	48.565	.000	2.010	.043	471.812	27.135	.285	.466	.063
1336.500	46.810	.000	2.005	.044	636.523	41.541	.288	.366	.049
1336.750	45.589	.000	1.982	.044	804.450	42.258	.298	.341	.035
1337.000	45.664	.000	2.020	.047	566.502	47.624	.283	.320	.030
1337.250	53.027	.000	2.047	.051	548.507	27.358	.273	.486	.062
1337.500	56.399	.000	1.969	.051	636.847	35.750	.306	.366	.042
1337.750	54.131	.000	1.915	.049	266.487	58.712	.328	.190	.020
1338.000	64.045	.000	2.007	.119	140.418	28.592	.315	.261	.020
1338.250	65.047	.123	2.047	.181	140.576	17.221	.292	.327	.020
1338.500	58.682	.000	2.018	.129	125.338	17.096	.314	.488	.056
1338.750	55.353	.000	2.062	.137	70.210	11.567	.298	.686	.151
1339.000	65.328	.186	2.172	.186	48.581	9.133	.231	.842	.175
1339.250	92.851	.637	2.381	.242	41.371	21.899	.000	1.000	1.000
1339.500	108.030	.000	1.000	.305	38.219	25.743	.000	1.000	1.000
1339.750	109.787	.000	1.000	.356	35.905	28.238	.000	1.000	1.000
1340.000	95.866	.000	1.000	.404	39.303	23.425	.000	1.000	1.000
1340.250	85.081	.000	1.000	.444	45.943	38.736	.000	1.000	1.000
1340.500	79.865	.627	2.133	.398	58.800	20.761	.000	1.000	1.000
1340.750	61.463	.396	2.224	.254	65.397	11.832	.194	.510	.020
1341.000	50.255	.280	2.249	.191	72.949	9.848	.182	.922	.180
1341.250	50.066	.278	2.273	.186	66.370	11.027	.172	.910	.185
1341.500	55.110	.347	2.266	.214	59.644	10.683	.172	.829	.071
1341.750	54.212	.460	2.248	.261	57.963	10.893	.173	.603	.020
1342.000	50.720	.313	2.188	.233	83.960	11.730	.216	.594	.020
1342.250	43.656	.049	2.085	.139	199.766	23.065	.279	.376	.020
1342.500	31.398	.000	2.036	.061	337.242	24.847	.281	.493	.074
				.043	319.053	19.432	.265	.593	.081

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1343.000	37.339	.000	2.051	.040	377.721	23.416	.266	.538	.074
1343.250	40.609	.000	2.030	.034	417.301	28.341	.273	.476	.069
1343.500	41.758	.000	2.035	.034	494.197	19.874	.271	.576	.065
1343.750	37.874	.000	2.012	.036	545.403	25.391	.282	.488	.060
1344.000	30.633	.000	1.970	.028	694.681	26.109	.296	.457	.053
1344.250	30.822	.000	1.941	.023	591.698	23.993	.307	.461	.055
1344.500	31.117	.000	1.927	.027	409.087	16.962	.315	.536	.062
1344.750	30.885	.000	1.916	.047	398.308	21.990	.327	.452	.061
1345.000	30.573	.000	1.905	.049	189.937	26.111	.332	.408	.083
1345.250	29.519	.000	1.937	.070	75.409	20.318	.326	.470	.132
1345.500	34.136	.000	2.030	.160	30.602	10.811	.320	.644	.193
1345.750	37.825	.004	2.091	.278	21.014	4.610	.334	1.000	1.000
1346.000	33.751	.093	2.106	.302	20.140	4.041	.316	1.000	.989
1346.250	29.739	.092	2.137	.279	23.397	4.278	.296	1.000	.966
1346.500	27.867	.077	2.153	.265	24.715	4.456	.288	1.000	.995
1346.750	29.064	.000	2.156	.240	24.962	5.060	.295	1.000	1.000
1347.000	27.081	.000	2.131	.235	23.191	4.843	.303	1.000	1.000
1347.250	32.491	.000	2.119	.261	22.490	4.018	.317	1.000	1.000
1347.500	42.022	.126	2.135	.287	24.618	4.998	.292	.969	.871
1347.750	41.527	.213	2.147	.306	25.614	4.736	.274	.993	.708
1348.000	34.311	.187	2.171	.285	27.370	4.381	.263	1.000	.755
1348.250	31.089	.132	2.195	.259	30.672	5.128	.257	1.000	.838
1348.500	29.489	.120	2.185	.260	32.721	5.074	.264	1.000	.810
1348.750	29.269	.058	2.180	.248	30.461	4.424	.275	1.000	.966
1349.000	32.226	.021	2.186	.229	27.599	4.576	.274	1.000	1.000
1349.250	32.131	.020	2.173	.237	26.250	4.908	.283	1.000	1.000
1349.500	38.830	.000	2.172	.231	27.220	4.830	.285	1.000	1.000
1349.750	57.802	.098	2.181	.254	28.956	5.208	.268	1.000	.920
1350.000	59.551	.351	2.134	.294	29.858	5.117	.246	.946	.733
1350.250	55.211	.318	2.099	.309	27.739	4.191	.271	.991	.776
1350.500	49.688	.305	2.110	.313	27.642	4.125	.272	1.000	.712
1350.750	48.867	.179	2.144	.304	28.936	4.545	.282	1.000	.692
1351.000	51.157	.167	2.150	.294	29.561	4.794	.279	1.000	.714
1351.250	44.496	.085	2.111	.296	27.420	4.363	.314	.999	.840
1351.500	37.975	.065	2.095	.300	25.393	4.351	.326	.976	.890
1351.750	39.071	.134	2.101	.310	24.170	4.467	.311	.960	.810
1352.000	42.625	.191	2.126	.316	25.354	4.663	.290	.961	.718
1352.250	39.991	.201	2.141	.312	26.024	5.126	.281	.933	.706
1352.500	39.525	.197	2.193	.279	19.103	4.660	.250	1.000	1.000
1352.750	47.026	.255	2.274	.249	8.078	5.706	.196	1.000	1.000
1353.000	50.504	.102	2.199	.243	7.493	7.997	.256	1.000	1.000
1353.250	72.961	.000	2.090	.242	13.078	10.416	.322	1.000	1.000
1353.500	101.276	.702	2.282	.326	27.474	8.091	.000	1.000	1.000
1353.750	116.477	.819	2.502	.400	22.828	18.151	.000	1.000	1.000
1354.000	128.587	.912	2.447	.357	37.450	15.646	.000	1.000	1.000
1354.250	122.846	.868	2.342	.326	30.203	8.046	.000	1.000	1.000
1354.500	92.354	.633	2.211	.338	28.647	7.251	.000	1.000	1.000
1354.750	58.674	.554	2.165	.328	30.997	7.178	.207	1.000	1.000
1355.000	43.502	.258	2.184	.302	32.871	6.444	.248	.846	.373
1355.250	39.695	.168	2.195	.264	31.734	6.260	.250	.958	.749
1355.500	38.897	.042	2.180	.243	30.646	5.939	.277	.995	.995
1355.750	40.464	.084	2.182	.248	29.916	6.344	.269	.954	.931
1356.000	40.071	.051	2.199	.233	30.113	6.456	.264	1.000	1.000
1356.250	39.603	.018	2.197	.224	31.135	7.054	.269	1.000	1.000
1356.500	36.020	.020	2.166	.238	32.944	7.658	.286	.836	.662
1356.750	35.610	.000	2.141	.235	33.651	6.112	.299	.979	.979

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1357.000	36.682	.000	2.153	.229	32.995	6.531	.292	1.000	1.000
1357.250	37.302	.000	2.182	.224	30.322	6.275	.279	1.000	1.000
1357.500	37.925	.005	2.183	.228	28.424	6.142	.279	1.000	1.000
1357.750	39.785	.000	2.175	.227	29.827	6.564	.283	1.000	1.000
1358.000	36.522	.024	2.188	.229	32.127	6.455	.273	1.000	1.000
1358.250	33.342	.060	2.206	.226	35.817	7.082	.257	.963	.937
1358.500	31.971	.049	2.209	.228	38.655	7.902	.259	.917	.917
1358.750	30.207	.035	2.200	.230	38.709	7.726	.266	.928	.928
1359.000	33.955	.064	2.193	.238	34.735	7.463	.265	.912	.912
1359.250	36.655	.000	2.178	.223	31.507	6.642	.280	1.000	1.000
1359.500	33.138	.000	2.171	.233	31.013	7.162	.286	1.000	1.000
1359.750	31.479	.105	2.189	.250	31.132	7.594	.262	.861	.769
1360.000	31.056	.012	2.187	.226	30.546	6.535	.275	1.000	1.000
1360.250	27.312	.000	2.182	.210	30.590	7.039	.274	1.000	1.000
1360.500	27.841	.000	2.178	.218	30.783	6.541	.278	1.000	1.000
1360.750	30.540	.158	2.182	.273	32.599	6.183	.261	.933	.727
1361.000	32.558	.174	2.193	.283	35.121	7.417	.257	.796	.342
1361.250	32.813	.145	2.208	.253	33.786	7.873	.247	.855	.665
1361.500	30.275	.036	2.233	.206	27.531	6.236	.244	1.000	1.000
1361.750	31.564	.076	2.275	.190	23.805	5.997	.213	1.000	1.000
1362.000	33.256	.359	2.326	.278	24.191	6.453	.170	1.000	.729
1362.250	32.275	.441	2.402	.253	29.820	9.424	.117	1.000	.480
1362.500	33.258	.209	2.447	.171	28.382	8.772	.116	1.000	1.000
1362.750	37.240	.210	2.431	.169	28.022	7.857	.119	1.000	1.000
1363.000	37.215	.209	2.371	.193	30.085	7.925	.149	1.000	1.000
1363.250	35.194	.164	2.294	.206	32.066	7.106	.192	1.000	.981
1363.500	32.202	.021	2.229	.207	31.503	6.799	.249	1.000	1.000
1363.750	34.380	.068	2.217	.224	30.415	5.737	.250	1.000	1.000
1364.000	36.721	.086	2.253	.210	31.808	6.083	.227	1.000	1.000
1364.250	41.797	.000	2.187	.184	32.690	6.772	.262	1.000	1.000
1364.500	44.809	.000	2.167	.229	29.309	5.207	.287	1.000	1.000
1364.750	45.532	.273	2.239	.274	26.890	3.909	.214	1.000	.711
1365.000	42.858	.253	2.215	.283	26.876	5.470	.231	1.000	.708
1365.250	40.489	.145	2.168	.280	25.712	5.038	.272	1.000	.861
1365.500	36.708	.025	2.137	.262	25.340	4.612	.305	1.000	1.000
1365.750	35.971	.050	2.143	.268	24.032	4.202	.299	1.000	1.000
1366.000	35.779	.138	2.184	.263	21.516	4.514	.261	1.000	1.000
1366.250	31.321	.134	2.224	.239	18.768	4.981	.238	1.000	1.000
1366.500	31.288	.164	2.257	.232	17.661	4.774	.216	1.000	1.000
1366.750	32.224	.171	2.280	.249	20.424	4.994	.212	1.000	1.000
1367.000	33.431	.180	2.315	.231	25.760	6.443	.191	1.000	1.000
1367.250	36.073	.171	2.321	.197	29.702	6.571	.178	1.000	1.000
1367.500	37.039	.088	2.288	.188	35.277	7.398	.205	1.000	1.000
1367.750	38.634	.040	2.273	.182	38.722	7.313	.218	1.000	1.000
1368.000	44.056	.022	2.288	.172	39.126	7.790	.213	1.000	1.000
1368.250	45.998	.007	2.281	.171	38.382	8.309	.219	1.000	1.000
1368.500	38.974	.013	2.231	.203	39.429	8.289	.249	1.000	1.000
1368.750	35.734	.048	2.218	.215	40.772	8.350	.251	.920	.920
1369.000	32.502	.000	2.225	.196	39.759	8.042	.251	1.000	1.000
1369.250	30.392	.000	2.207	.197	37.985	7.962	.259	1.000	1.000
1369.500	34.425	.000	2.197	.202	34.993	7.160	.264	1.000	1.000
1369.750	37.914	.000	2.202	.184	30.751	6.394	.255	1.000	1.000
1370.000	38.662	.000	2.221	.190	26.483	5.844	.250	1.000	1.000
1370.250	38.808	.072	2.217	.223	26.233	6.258	.249	1.000	1.000
1370.500	35.132	.013	2.172	.237	28.833	7.807	.284	.834	.759
1370.750	33.952	.004	2.147	.246	29.185	5.397	.300	1.000	1.000

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1371.000	35.080	.013	2.144	.252	28.181	4.899	.301	1.000	1.000
1371.250	33.027	.000	2.130	.240	27.024	4.754	.305	1.000	1.000
1371.500	34.391	.000	2.126	.253	24.242	4.289	.312	1.000	1.000
1371.750	40.544	.000	2.148	.243	24.088	4.434	.299	1.000	1.000
1372.000	45.023	.029	2.156	.246	24.807	5.267	.290	1.000	1.000
1372.250	43.855	.050	2.162	.254	25.276	4.805	.286	1.000	1.000
1372.500	43.281	.136	2.177	.270	26.145	5.164	.267	1.000	.887
1372.750	45.356	.182	2.194	.269	29.025	5.135	.250	1.000	.770
1373.000	47.006	.165	2.218	.255	30.069	6.030	.239	1.000	.824
1373.250	48.675	.087	2.219	.233	28.651	5.744	.248	1.000	1.000
1373.500	63.277	.050	2.226	.215	26.624	5.913	.247	1.000	1.000
1373.750	69.085	.125	2.255	.219	27.153	5.971	.221	1.000	1.000
1374.000	59.279	.169	2.253	.239	31.608	7.831	.219	.957	.855
1374.250	47.085	.105	2.228	.226	36.994	10.338	.238	.754	.507
1374.500	44.235	.000	2.233	.198	36.374	11.160	.249	.778	.658
1374.750	42.389	.039	2.249	.200	30.731	7.699	.235	1.000	1.000
1375.000	45.540	.052	2.261	.212	31.495	4.029	.230	1.000	1.000
1375.250	57.895	.057	2.243	.224	19.900	2.782	.240	1.000	1.000
1375.500	77.102	.096	2.245	.230	21.517	2.378	.231	1.000	1.000
1375.750	78.224	.329	2.313	.238	34.386	4.667	.148	1.000	1.000
1376.000	58.683	.400	2.349	.231	46.104	4.647	.115	.953	.884
1376.250	50.026	.268	2.311	.226	45.461	4.147	.159	.962	.906
1376.500	47.934	.220	2.277	.237	37.990	3.269	.189	.987	.967
1376.750	56.415	.195	2.249	.249	32.731	2.697	.210	1.000	1.000
1377.000	76.359	.135	2.206	.262	31.568	2.239	.247	.986	.965
1377.250	85.291	.188	2.171	.294	31.984	2.785	.258	.943	.862
1377.500	78.034	.290	2.151	.328	28.967	1.835	.250	.927	.824
1377.750	89.690	.183	2.139	.313	25.218	1.584	.278	.983	.959
1378.000	116.990	.251	2.166	.311	26.614	2.053	.249	.982	.957
1378.250	128.636	.533	2.238	.332	34.628	3.347	.054	.951	.886
1378.500	123.218	.903	2.322	.352	44.139	6.236	.000	1.000	1.000
1378.750	102.917	.972	2.361	.343	43.125	6.526	.000	1.000	1.000
1379.000	95.636	.612	2.317	.295	36.444	5.010	.000	1.000	1.000
1379.250	103.528	.292	2.279	.251	32.099	2.958	.174	1.000	1.000
1379.500	109.383	.286	2.284	.246	32.498	2.768	.172	1.000	1.000
1379.750	112.573	.415	2.270	.282	34.387	3.895	.146	.998	.996
1380.000	115.423	.000	1.000	.352	51.461	13.393	.000	1.000	1.000
1380.250	98.890	.000	1.000	.456	38.870	57.340	.000	1.000	1.000
1380.500	70.525	.000	1.000	.484	46.170	18.465	.000	1.000	1.000
1380.750	51.301	.000	1.000	.422	33.248	1.842	.000	1.000	1.000
1381.000	44.301	.000	1.000	.340	28.665	1.952	.000	1.000	1.000
1381.250	48.527	.099	2.134	.298	28.376	1.912	.298	1.000	1.000
1381.500	50.819	.059	2.144	.284	29.942	2.423	.299	1.000	1.000
1381.750	46.305	.141	2.125	.313	31.951	2.246	.295	.967	.920
1382.000	47.267	.231	2.123	.333	30.323	2.223	.278	.951	.881
1382.250	49.504	.225	2.134	.325	30.521	2.131	.273	.959	.899
1382.500	47.943	.115	2.138	.300	30.437	2.152	.292	.992	.981
1382.750	43.029	.044	2.136	.286	33.125	2.309	.307	.989	.973
1383.000	42.344	.057	2.128	.293	30.305	2.198	.309	.997	.993
1383.250	45.972	.169	2.131	.315	28.192	1.782	.286	.987	.967
1383.500	45.657	.220	2.136	.322	27.552	1.957	.273	.982	.955
1383.750	42.932	.139	2.122	.314	30.623	1.998	.297	.965	.915
1384.000	43.471	.141	2.116	.318	29.879	2.105	.301	.965	.914
1384.250	45.397	.201	2.143	.314	31.125	2.041	.273	.959	.899
1384.500	42.263	.167	2.149	.304	31.801	1.967	.276	.967	.919
[illegible]	[illegible]	.144	2.147	.307	32.437	1.869	.279	.957	.896

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1385.000	36.603	.177	2.159	.299	33.273	1.863	.267	.960	.902
1385.250	33.175	.120	2.168	.282	32.339	1.900	.273	.988	.971
1385.500	29.922	.065	2.191	.257	27.424	1.714	.270	1.000	1.000
1385.750	27.212	.057	2.225	.234	25.506	1.829	.250	1.000	1.000
1386.000	25.570	.163	2.248	.243	22.927	2.620	.217	1.000	1.000
1386.250	24.848	.272	2.257	.260	21.477	2.554	.191	1.000	1.000
1386.500	24.044	.171	2.243	.247	22.121	2.419	.218	1.000	1.000
1386.750	23.354	.162	2.227	.255	23.392	2.341	.229	1.000	1.000
1387.000	26.078	.166	2.225	.257	24.932	2.368	.230	1.000	1.000
1387.250	31.777	.078	2.190	.260	23.290	2.710	.268	1.000	1.000
1387.500	41.049	.108	2.198	.262	22.486	2.435	.257	1.000	1.000
1387.750	61.823	.010	2.247	.211	25.459	2.917	.245	1.000	1.000
1388.000	83.817	.000	1.000	.219	33.771	4.986	.000	1.000	1.000
1388.250	73.649	.000	1.000	.320	44.313	9.587	.000	1.000	1.000
1388.500	49.031	.000	1.000	.478	49.445	25.946	.000	1.000	1.000
1388.750	48.893	.000	1.000	.630	166.644	902.640	.000	1.000	1.000
1389.000	53.448	.000	1.000	.643	75.456	585.685	.000	1.000	1.000
1389.250	53.748	.000	1.000	.528	44.584	12.557	.000	1.000	1.000
1389.500	56.674	.000	1.000	.363	30.662	2.810	.000	1.000	1.000
1389.750	62.026	.420	2.278	.278	36.555	2.986	.138	.953	.886
1390.000	59.481	.601	2.347	.274	49.071	7.647	.000	1.000	1.000
1390.250	54.952	.608	2.385	.253	54.468	7.714	.000	1.000	1.000
1390.500	52.019	.412	2.363	.225	50.767	5.438	.098	.962	.907
1390.750	54.936	.414	2.366	.223	49.553	4.937	.096	.976	.941
1391.000	60.814	.459	2.385	.221	59.720	5.832	.059	.918	.803
1391.250	52.730	.692	2.398	.262	59.445	7.537	.000	1.000	1.000
1391.500	43.258	.620	2.351	.276	48.512	4.234	.000	1.000	1.000
1391.750	47.945	.347	2.321	.237	44.137	3.379	.140	.973	.932
1392.000	50.749	.280	2.321	.222	45.168	3.211	.151	.995	.988
1392.250	43.984	.306	2.314	.232	39.131	3.785	.151	1.000	1.000
1392.500	39.434	.235	2.262	.249	34.141	2.332	.195	1.000	1.000
1392.750	32.640	.119	2.223	.248	34.660	1.992	.240	.990	.976
1393.000	25.829	.018	2.187	.249	33.003	2.167	.281	.989	.972
1393.250	26.144	.000	2.168	.250	24.989	1.536	.293	1.000	1.000
1393.500	34.430	.000	2.174	.247	20.066	1.441	.290	1.000	1.000
1393.750	51.017	.000	2.165	.250	22.404	1.671	.294	1.000	1.000
1394.000	73.873	.067	2.174	.268	27.132	2.209	.280	1.000	1.000
1394.250	81.997	.485	2.283	.288	32.085	4.681	.080	.976	.941
1394.500	85.387	.865	2.332	.338	31.289	4.043	.000	1.000	1.000
1394.750	90.869	.848	2.295	.357	34.756	4.553	.000	1.000	1.000
1395.000	92.698	.815	2.264	.369	43.749	10.097	.000	1.000	1.000
1395.250	87.228	.000	1.000	.394	42.088	10.809	.000	1.000	1.000
1395.500	70.682	.000	1.000	.408	42.999	6.087	.000	1.000	1.000
1395.750	46.776	.000	1.000	.439	92.874	21.687	.000	1.000	1.000
1396.000	28.818	.000	1.000	.507	82.451	70.362	.000	1.000	1.000
1396.250	32.322	.000	1.000	.561	137.724	112.775	.000	1.000	1.000
1396.500	49.687	.000	1.000	.552	249.814	226.408	.000	1.000	1.000
1396.750	88.712	.000	1.000	.611	86.394	501.266	.000	1.000	1.000
1397.000	123.174	.000	1.000	.609	37.321	67.277	.000	1.000	1.000
1397.250	130.192	.000	1.000	.554	23.328	24.240	.000	1.000	1.000
1397.500	132.519	.000	1.000	.508	24.706	5.888	.000	1.000	1.000
1397.750	123.215	.000	1.000	.515	17.847	16.044	.000	1.000	1.000
1398.000	106.087	.000	1.000	.489	12.537	3.686	.000	1.000	1.000
1398.250	93.837	.000	1.000	.417	14.230	2.836	.000	1.000	1.000
1398.500	81.246	.000	1.000	.361	22.170	9.552	.000	1.000	1.000
1398.750	71.420	.000	1.000	.303	28.919	13.706	.000	1.000	1.000

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1399.000	70.254	.717	2.391	.271	22.842	5.004	.000	1.000	1.000
1399.250	73.113	.523	2.338	.270	22.588	3.481	.040	1.000	1.000
1399.500	70.998	.563	2.323	.287	20.938	4.089	.020	1.000	1.000
1399.750	70.610	.539	2.318	.285	24.165	3.075	.034	1.000	1.000
1400.000	65.357	.500	2.312	.274	24.448	3.315	.060	1.000	1.000
1400.250	57.107	.450	2.297	.273	27.993	2.437	.103	1.000	1.000
1400.500	51.560	.420	2.254	.292	24.882	2.441	.151	1.000	1.000
1400.750	47.844	.260	2.204	.290	26.423	1.852	.225	.992	.981
1401.000	49.407	.143	2.184	.277	24.775	1.712	.259	1.000	1.000
1401.250	44.094	.346	2.218	.299	27.407	2.276	.201	.974	.935
1401.500	38.417	.315	2.202	.302	23.444	2.041	.215	1.000	1.000
1401.750	43.059	.237	2.185	.296	23.768	1.870	.240	1.000	1.000
1402.000	48.156	.109	2.179	.273	24.047	2.005	.268	1.000	1.000
1402.250	50.148	.090	2.168	.276	24.236	1.787	.279	1.000	1.000
1402.500	50.036	.386	2.194	.322	25.276	1.798	.208	.960	.902
1402.750	37.558	.396	2.188	.327	25.765	2.842	.210	.945	.866
1403.000	26.553	.225	2.132	.326	21.989	1.618	.274	.979	.949
1403.250	23.590	.093	2.113	.310	22.115	1.445	.311	.986	.966
1403.500	22.296	.024	2.130	.285	23.111	1.673	.314	1.000	1.000
1403.750	23.602	.095	2.127	.302	24.775	1.519	.302	.972	.931
1404.000	28.572	.258	2.150	.322	20.929	1.552	.257	1.000	1.000
1404.250	27.951	.131	2.169	.284	22.106	1.741	.271	1.000	1.000
1404.500	26.386	.086	2.155	.283	22.923	1.585	.287	1.000	1.000
1404.750	27.934	.153	2.145	.303	24.554	1.542	.281	.977	.944
1405.000	27.474	.146	2.151	.298	24.803	1.710	.278	.982	.955
1405.250	26.633	.074	2.137	.292	24.718	1.933	.301	.984	.959
1405.500	24.884	.078	2.136	.293	23.547	1.559	.300	.993	.983
1405.750	21.280	.070	2.131	.294	24.109	1.413	.305	.985	.963
1406.000	24.653	.029	2.109	.299	26.372	1.437	.326	.958	.897
1406.250	25.708	.041	2.107	.303	26.933	1.555	.325	.950	.879
1406.500	24.609	.044	2.115	.298	25.666	1.688	.319	.965	.914
1406.750	24.394	.043	2.141	.282	23.398	1.669	.304	1.000	1.000
1407.000	23.463	.039	2.152	.275	23.404	1.831	.298	1.000	1.000
1407.250	21.500	.088	2.152	.285	24.577	1.859	.289	.995	.987
1407.500	20.477	.137	2.167	.286	24.439	2.075	.270	1.000	1.000
1407.750	20.382	.125	2.166	.284	24.154	1.838	.273	1.000	1.000
1408.000	22.546	.160	2.165	.292	24.143	1.892	.267	.997	.993
1408.250	24.551	.125	2.161	.287	23.521	1.782	.276	1.000	1.000
1408.500	24.135	.042	2.149	.277	23.818	1.779	.299	1.000	1.000
1408.750	20.020	.104	2.158	.285	24.482	1.837	.282	.998	.995
1409.000	16.191	.124	2.184	.273	24.965	2.189	.262	1.000	1.000
1409.250	16.487	.205	2.227	.264	24.739	2.471	.221	1.000	1.000
1409.500	16.158	.155	2.246	.242	24.701	2.153	.219	1.000	1.000
1409.750	15.971	.079	2.242	.229	25.374	1.999	.236	1.000	1.000
1410.000	19.380	.000	2.202	.224	24.985	1.933	.270	1.000	1.000
1410.250	18.944	.000	2.176	.240	24.400	2.232	.286	1.000	1.000
1410.500	16.945	.114	2.180	.274	22.947	2.402	.267	1.000	1.000
1410.750	17.000	.190	2.193	.282	22.288	2.119	.245	1.000	1.000
1411.000	18.174	.222	2.187	.292	22.253	1.937	.242	1.000	1.000
1411.250	19.720	.158	2.165	.292	22.537	1.735	.268	1.000	1.000
1411.500	20.037	.044	2.161	.270	20.922	1.728	.292	1.000	1.000
1411.750	21.552	.000	2.151	.257	17.348	1.723	.303	1.000	1.000
1412.000	27.169	.000	2.125	.258	15.224	1.488	.313	1.000	1.000
1412.250	32.146	.000	2.109	.277	16.279	1.338	.326	1.000	1.000
1412.500	31.408	.095	2.136	.296	21.296	1.396	.297	1.000	1.000
1412.750	35.035	.186	2.164	.298	22.896	2.349	.263	1.000	1.000

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1413.000	43.518	.178	2.142	.310	21.529	1.641	.277	1.000	1.000
1413.250	46.688	.182	2.130	.318	22.320	1.668	.284	.981	.954
1413.500	47.623	.155	2.118	.320	23.467	1.670	.296	.965	.914
1413.750	44.268	.151	2.137	.308	23.251	1.414	.286	.982	.957
1414.000	36.409	.191	2.162	.300	23.595	2.002	.267	.994	.985
1414.250	29.094	.189	2.153	.306	23.225	1.526	.269	.990	.974
1414.500	24.403	.190	2.165	.298	22.499	1.828	.261	1.000	1.000
1414.750	25.291	.166	2.147	.304	22.330	1.723	.277	.998	.996
1415.000	24.418	.075	2.148	.285	23.527	1.529	.294	1.000	1.000
1415.250	24.418	.000	2.156	.257	26.152	2.044	.301	1.000	1.000
1415.500	26.256	.000	2.131	.277	26.557	1.529	.318	.978	.945
1415.750	32.330	.058	2.125	.295	26.621	1.469	.311	.961	.905
1416.000	31.106	.076	2.154	.282	26.479	1.772	.290	.981	.954
1416.250	26.191	.149	2.183	.279	24.438	1.968	.258	1.000	1.000
1416.500	24.519	.031	2.170	.263	22.244	1.732	.289	1.000	1.000
1416.750	20.306	.000	2.168	.254	22.752	1.740	.295	1.000	1.000
1417.000	20.968	.059	2.172	.267	24.051	1.713	.282	1.000	1.000
1417.250	21.970	.000	2.155	.264	25.749	1.727	.304	1.000	1.000
1417.500	19.817	.000	2.135	.272	27.997	2.112	.314	.972	.930
1417.750	19.700	.009	2.124	.286	27.161	2.035	.321	.965	.915
1418.000	22.133	.034	2.117	.295	24.110	1.651	.320	.979	.949
1418.250	24.027	.000	2.113	.285	23.258	1.663	.327	.991	.979
1418.500	24.941	.000	2.111	.275	24.671	1.667	.325	.983	.957
1418.750	22.666	.000	2.111	.287	25.086	1.598	.329	.974	.937
1419.000	20.354	.000	2.115	.281	23.799	1.664	.325	.989	.974
1419.250	21.383	.025	2.125	.288	20.380	1.655	.317	1.000	1.000
1419.500	19.882	.000	2.122	.285	20.251	1.633	.324	1.000	1.000
1419.750	20.642	.006	2.099	.300	22.115	1.654	.337	.988	.969
1420.000	20.756	.038	2.098	.308	25.304	1.917	.331	.955	.891
1420.250	19.891	.000	2.101	.290	25.290	1.685	.334	.967	.919
1420.500	19.660	.000	2.091	.282	25.590	1.586	.335	.963	.911
1420.750	21.307	.000	2.097	.286	24.902	1.585	.335	.969	.925
1421.000	25.101	.051	2.113	.301	22.937	1.618	.320	.983	.959
1421.250	25.091	.021	2.124	.288	21.816	1.611	.319	1.000	1.000
1421.500	20.667	.000	2.119	.278	22.608	1.608	.322	1.000	1.000
1421.750	18.277	.003	2.117	.289	24.702	1.716	.326	.979	.948
1422.000	19.803	.000	2.106	.292	25.462	1.710	.333	.967	.919
1422.250	20.840	.000	2.100	.283	25.379	1.710	.332	.968	.922
1422.500	22.255	.000	2.102	.276	24.834	1.614	.329	.976	.942
1422.750	20.705	.000	2.097	.280	25.436	1.637	.333	.967	.920
1423.000	17.801	.000	2.093	.280	26.042	1.667	.334	.961	.906
1423.250	16.910	.000	2.108	.289	26.312	1.678	.331	.963	.909
1423.500	19.032	.000	2.122	.272	23.707	1.567	.319	.997	.993
1423.750	19.465	.000	2.141	.261	23.220	1.577	.308	1.000	1.000
1424.000	18.875	.027	2.148	.275	26.620	2.172	.303	.984	.960
1424.250	17.129	.000	2.142	.271	30.934	2.880	.311	.955	.892
1424.500	16.481	.011	2.163	.263	28.863	2.646	.297	.982	.956
1424.750	17.263	.076	2.194	.257	27.700	2.387	.266	1.000	1.000
1425.000	17.697	.063	2.196	.253	26.928	2.650	.267	1.000	1.000
1425.250	17.917	.128	2.182	.276	27.192	2.708	.263	.989	.972
1425.500	22.142	.131	2.192	.270	29.015	2.028	.257	.982	.956
1425.750	24.123	.025	2.214	.234	29.582	2.410	.263	1.000	1.000
1426.000	24.031	.000	2.211	.227	30.345	2.165	.268	1.000	1.000
1426.250	24.478	.020	2.188	.249	25.816	2.057	.280	1.000	1.000
1426.500	24.048	.062	2.168	.270	24.205	1.609	.284	1.000	1.000
[illegible]	[illegible]	.127	[illegible]	.274	23.219	1.578	.262	1.000	1.000

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1427.000	24.508	.000	2.213	.225	27.609	1.577	.266	1.000	1.000
1427.250	26.286	.000	2.205	.199	29.547	2.641	.260	1.000	1.000
1427.500	27.348	.000	2.165	.250	26.781	2.027	.294	1.000	1.000
1427.750	24.216	.097	2.148	.289	23.347	1.690	.290	.999	.998
1428.000	22.777	.130	2.151	.295	23.603	1.800	.282	.993	.983
1428.250	24.488	.067	2.159	.276	24.052	1.796	.288	1.000	1.000
1428.500	24.472	.013	2.175	.256	24.424	1.711	.289	1.000	1.000
1428.750	25.594	.000	2.170	.249	22.465	1.794	.292	1.000	1.000
1429.000	24.392	.000	1.000	.258	15.814	1.673	.000	1.000	1.000
1429.250	22.126	.000	1.000	.238	13.830	1.842	.000	1.000	1.000
1429.500	17.886	.000	1.000	.248	16.258	1.646	.000	1.000	1.000
1429.750	11.313	.000	1.000	.421	35.871	11.340	.000	1.000	1.000
1430.000	9.957	.000	1.000	.578	49.017	48.385	.000	1.000	1.000
1430.250	10.095	.000	1.000	.624	110.956	56.594	.000	1.000	1.000
1430.500	8.298	.000	1.000	.626	273.429	63.579	.000	1.000	1.000
1430.750	9.243	.000	1.000	.623	190.672	41.983	.000	1.000	1.000
1431.000	10.909	.000	1.000	.589	165.865	15.576	.000	1.000	1.000
1431.250	10.115	.000	1.000	.578	184.461	10.624	.000	1.000	1.000
1431.500	11.627	.000	1.000	.579	214.966	25.123	.000	1.000	1.000
1431.750	12.279	.000	1.000	.594	210.080	28.079	.000	1.000	1.000
1432.000	10.681	.000	1.000	.597	182.301	3.628	.000	1.000	1.000
1432.250	10.360	.000	1.000	.570	199.931	5.839	.000	1.000	1.000
1432.500	11.250	.000	1.000	.604	197.603	7.978	.000	1.000	1.000
1432.750	12.427	.000	1.000	.591	178.367	4.337	.000	1.000	1.000
1433.000	12.100	.000	1.000	.543	191.089	21.188	.000	1.000	1.000
1433.250	11.237	.000	1.000	.527	196.113	22.631	.000	1.000	1.000
1433.500	13.675	.000	1.000	.523	184.458	25.990	.000	1.000	1.000
1433.750	15.104	.000	1.000	.567	140.295	6.066	.000	1.000	1.000
1434.000	13.358	.000	1.000	.617	140.900	4.536	.000	1.000	1.000
1434.250	12.668	.000	1.000	.616	167.963	10.475	.000	1.000	1.000
1434.500	12.059	.000	1.000	.553	170.081	8.194	.000	1.000	1.000
1434.750	13.941	.000	1.000	.552	240.417	25.384	.000	1.000	1.000
1435.000	17.216	.000	1.000	.564	148.807	4.430	.000	1.000	1.000
1435.250	16.229	.000	1.000	.590	130.752	2.584	.000	1.000	1.000
1435.500	15.541	.000	1.000	.571	129.164	3.069	.000	1.000	1.000
1435.750	14.581	.000	1.000	.589	167.113	4.354	.000	1.000	1.000
1436.000	10.191	.000	1.000	.624	261.107	13.384	.000	1.000	1.000
1436.250	10.200	.000	1.000	.546	221.893	8.027	.000	1.000	1.000
1436.500	14.597	.000	1.000	.568	290.556	19.899	.000	1.000	1.000
1436.750	13.827	.000	1.000	.575	163.736	1.551	.000	1.000	1.000
1437.000	11.346	.000	1.000	.506	132.134	1.120	.000	1.000	1.000
1437.250	12.063	.000	1.000	.522	116.299	.716	.000	1.000	1.000
1437.500	11.438	.000	1.000	.537	149.027	.804	.000	1.000	1.000
1437.750	11.855	.000	1.000	.523	169.827	1.305	.000	1.000	1.000
1438.000	14.282	.000	1.000	.545	148.492	.719	.000	1.000	1.000
1438.250	15.447	.000	1.000	.580	119.125	.546	.000	1.000	1.000
1438.500	16.412	.000	1.000	.575	118.561	.592	.000	1.000	1.000
1438.750	18.283	.000	1.000	.545	135.896	.744	.000	1.000	1.000
1439.000	18.409	.000	1.000	.541	156.822	1.133	.000	1.000	1.000
1439.250	16.558	.000	1.000	.558	237.567	5.943	.000	1.000	1.000
1439.500	15.991	.000	1.000	.593	195.461	3.215	.000	1.000	1.000
1439.750	18.119	.000	1.000	.594	140.304	1.023	.000	1.000	1.000
1440.000	16.239	.000	1.000	.639	126.245	3.154	.000	1.000	1.000
1440.250	16.039	.000	1.000	.631	128.953	3.392	.000	1.000	1.000
1440.500	20.275	.000	1.000	.593	119.222	2.217	.000	1.000	1.000
1440.750	22.864	.000	1.000	.640	125.993	3.484	.000	1.000	1.000

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1441.000	24.277	.000	1.000	.567	119.000	4.598	.000	1.000	1.000
1441.250	24.833	.000	1.000	.484	109.604	1.749	.000	1.000	1.000
1441.500	21.966	.000	1.000	.552	166.783	10.932	.000	1.000	1.000
1441.750	22.024	.000	1.000	.582	157.570	4.331	.000	1.000	1.000
1442.000	22.220	.000	1.000	.583	187.704	10.285	.000	1.000	1.000
1442.250	24.680	.000	1.000	.551	239.632	23.976	.000	1.000	1.000
1442.500	31.271	.000	1.000	.513	159.132	4.699	.000	1.000	1.000
1442.750	33.908	.000	1.000	.527	133.826	1.948	.000	1.000	1.000
1443.000	33.372	.000	1.000	.548	119.797	1.429	.000	1.000	1.000
1443.250	31.725	.000	1.000	.560	121.025	1.332	.000	1.000	1.000
1443.500	24.990	.000	1.000	.574	132.481	2.694	.000	1.000	1.000
1443.750	19.800	.000	1.000	.593	176.146	8.523	.000	1.000	1.000
1444.000	18.126	.000	1.000	.605	200.914	15.315	.000	1.000	1.000
1444.250	16.976	.000	1.000	.561	179.296	12.195	.000	1.000	1.000
1444.500	15.107	.000	1.000	.583	173.745	32.545	.000	1.000	1.000
1444.750	16.088	.000	1.000	.606	123.509	9.169	.000	1.000	1.000
1445.000	19.129	.000	1.000	.596	122.148	2.929	.000	1.000	1.000
1445.250	16.047	.000	1.000	.628	146.352	7.780	.000	1.000	1.000
1445.500	15.151	.000	1.000	.621	310.188	47.505	.000	1.000	1.000
1445.750	19.455	.000	1.000	.633	267.755	58.898	.000	1.000	1.000
1446.000	27.345	.000	1.000	.647	32.071	37.588	.000	1.000	1.000
1446.250	40.172	.000	1.000	.432	18.530	3.911	.000	1.000	1.000
1446.500	45.225	.000	1.000	.302	16.294	1.712	.000	1.000	1.000
1446.750	44.954	.000	1.000	.281	15.808	1.833	.000	1.000	1.000
1447.000	48.154	.000	1.000	.265	17.249	1.972	.000	1.000	1.000
1447.250	49.267	.000	1.000	.275	22.192	2.183	.000	1.000	1.000
1447.500	55.270	.000	1.000	.311	21.065	2.232	.000	1.000	1.000
1447.750	68.325	.000	1.000	.375	20.066	4.995	.000	1.000	1.000
1448.000	81.236	.000	1.000	.462	16.971	2.860	.000	1.000	1.000
1448.250	89.273	.000	1.000	.436	26.537	7.816	.000	1.000	1.000
1448.500	94.657	.000	1.000	.350	28.389	7.603	.000	1.000	1.000
1448.750	98.455	1.000	2.418	.327	27.980	5.398	.000	1.000	1.000
1449.000	106.133	.853	2.370	.312	26.950	3.755	.000	1.000	1.000
1449.250	104.875	.759	2.305	.332	24.083	3.682	.000	1.000	1.000
1449.500	85.354	.706	2.253	.353	23.182	2.047	.000	1.000	1.000
1449.750	73.763	.629	2.229	.352	24.230	2.211	.000	1.000	1.000
1450.000	73.983	.647	2.261	.336	28.293	2.199	.000	1.000	1.000
1450.250	69.507	.656	2.298	.315	32.690	4.537	.000	1.000	1.000
1450.500	52.863	.382	2.269	.275	31.646	2.763	.165	.962	.907
1450.750	39.548	.290	2.255	.265	29.387	2.236	.189	.995	.988
1451.000	31.445	.216	2.232	.263	27.263	2.454	.216	1.000	1.000
1451.250	28.204	.077	2.216	.244	26.324	1.916	.252	1.000	1.000
1451.500	31.679	.145	2.213	.260	26.480	2.075	.241	1.000	1.000
1451.750	33.000	.110	2.200	.261	25.947	1.927	.256	1.000	1.000
1452.000	32.407	.000	2.190	.236	27.576	1.769	.279	1.000	1.000
1452.250	33.131	.000	2.198	.227	27.984	1.846	.273	1.000	1.000
1452.500	33.589	.000	2.180	.249	25.532	1.686	.288	1.000	1.000
1452.750	32.552	.093	2.168	.277	23.797	1.554	.278	.995	.988
1453.000	34.821	.151	2.174	.285	23.630	1.592	.263	.993	.983
1453.250	34.704	.112	2.175	.276	24.202	1.640	.271	.995	.987
1453.500	31.476	.123	2.168	.282	25.423	1.581	.272	.976	.941
1453.750	32.907	.130	2.166	.285	25.113	1.761	.272	.976	.940
1454.000	37.220	.051	2.151	.278	24.356	1.949	.296	.983	.958
1454.250	36.276	.000	2.098	.273	21.711	1.834	.330	.984	.961
1454.500	32.387	.159	2.154	.299	20.457	1.652	.274	1.000	1.000
1454.750	31.910	.478	2.262	.300	22.864	2.401	.093	1.000	1.000

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1455.000	30.841	.260	2.244	.265	25.087	2.667	.201	1.000	1.000
1455.250	28.144	.097	2.188	.265	26.912	2.286	.266	.985	.963
1455.500	27.361	.022	2.151	.272	28.611	1.759	.302	.955	.892
1455.750	28.047	.046	2.151	.277	28.543	1.897	.297	.952	.883
1456.000	28.969	.153	2.170	.288	25.293	1.704	.265	.973	.935
1456.250	32.924	.134	2.196	.268	23.005	2.187	.253	1.000	1.000
1456.500	37.561	.015	2.208	.236	22.837	1.681	.269	1.000	1.000
1456.750	40.904	.214	2.213	.275	22.803	1.796	.228	1.000	1.000
1457.000	42.750	.334	2.210	.301	23.306	2.032	.208	.998	.995
1457.250	44.668	.347	2.201	.309	22.883	1.732	.211	.990	.975
1457.500	41.968	.494	2.202	.340	25.795	1.831	.098	.952	.884
1457.750	43.957	.299	2.179	.313	26.111	1.774	.232	.943	.862
1458.000	43.596	.215	2.138	.320	22.678	1.339	.273	.960	.903
1458.250	39.475	.197	2.137	.317	20.267	1.404	.277	.989	.973
1458.500	36.484	.143	2.160	.292	19.881	1.501	.273	1.000	1.000
1458.750	36.949	.329	2.161	.330	21.058	1.690	.237	.977	.943
1459.000	36.877	.339	2.153	.337	24.197	1.621	.240	.929	.830
1459.250	34.596	.255	2.173	.307	23.952	1.632	.244	.969	.924
1459.500	35.914	.169	2.182	.284	20.966	1.818	.255	1.000	1.000
1459.750	32.889	.212	2.203	.280	19.461	1.714	.234	1.000	1.000
1460.000	27.041	.000	1.000	.311	18.861	2.001	.000	1.000	1.000
1460.250	30.589	.000	1.000	.273	19.719	2.350	.000	1.000	1.000
1460.500	33.415	.000	1.000	.261	28.337	4.179	.000	1.000	1.000
1460.750	28.298	.000	1.000	.413	34.236	269.067	.000	1.000	1.000
1461.000	21.472	.000	1.000	.559	61.123	115.731	.000	1.000	1.000
1461.250	22.872	.000	1.000	.585	33.512	100.792	.000	1.000	1.000
1461.500	40.620	.000	1.000	.551	25.845	33.161	.000	1.000	1.000
1461.750	65.454	.000	1.000	.445	29.889	12.167	.000	1.000	1.000
1462.000	79.904	.000	1.000	.393	36.546	17.489	.000	1.000	1.000
1462.250	86.672	1.000	2.358	.358	31.221	10.051	.000	1.000	1.000
1462.500	89.599	1.000	2.364	.353	34.524	17.042	.000	1.000	1.000
1462.750	84.470	1.000	2.368	.345	21.413	13.430	.000	1.000	1.000
1463.000	74.663	.781	2.354	.307	20.176	5.857	.000	1.000	1.000
1463.250	53.663	.464	2.273	.290	18.495	2.398	.101	1.000	1.000
1463.500	31.693	.235	2.185	.296	12.683	1.753	.241	1.000	1.000
1463.750	23.345	.000	2.130	.278	12.606	1.662	.318	1.000	1.000
1464.000	31.648	.000	2.139	.244	17.927	2.067	.302	1.000	1.000
1464.250	59.464	.409	2.301	.262	23.729	14.279	.135	1.000	1.000
1464.500	77.091	.906	2.370	.324	32.965	10.052	.000	1.000	1.000
1464.750	82.593	.000	1.000	.346	29.866	6.425	.000	1.000	1.000
1465.000	75.542	.000	1.000	.390	32.266	6.530	.000	1.000	1.000
1465.250	64.433	.000	1.000	.509	21.055	38.376	.000	1.000	1.000
1465.500	66.169	.000	1.000	.553	14.500	12.075	.000	1.000	1.000
1465.750	77.093	.000	1.000	.501	13.111	11.872	.000	1.000	1.000
1466.000	86.678	1.000	2.329	.417	18.385	19.701	.000	1.000	1.000
1466.250	85.925	.992	2.323	.370	26.325	24.547	.000	1.000	1.000
1466.500	87.959	.955	2.329	.358	25.375	23.592	.000	1.000	1.000
1466.750	89.009	.919	2.327	.353	23.741	20.634	.000	1.000	1.000
1467.000	84.846	.974	2.330	.362	21.464	19.729	.000	1.000	1.000
1467.250	84.727	.935	2.318	.361	27.203	14.401	.000	1.000	1.000
1467.500	87.293	1.000	2.344	.373	29.867	14.439	.000	1.000	1.000
1467.750	93.515	1.000	2.392	.366	33.993	14.242	.000	1.000	1.000
1468.000	93.500	1.000	2.405	.341	29.952	9.808	.000	1.000	1.000
1468.250	76.051	.825	2.390	.294	28.755	6.652	.000	1.000	1.000
1468.500	69.611	.751	2.358	.298	27.012	6.303	.000	1.000	1.000
1468.750	62.306	.666	2.285	.325	22.531	3.953	.000	1.000	1.000

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1469.000	50.569	.433	2.210	.322	20.766	1.897	.159	1.000	1.000
1469.250	46.173	.339	2.196	.311	21.411	2.066	.215	1.000	1.000
1469.500	39.184	.150	2.164	.291	21.733	2.076	.270	1.000	1.000
1469.750	27.537	.127	2.127	.308	19.460	1.314	.297	.999	.998
1470.000	27.645	.154	2.132	.311	19.983	1.426	.288	.994	.984
1470.250	32.855	.118	2.150	.293	21.489	1.732	.284	.997	.994
1470.500	32.277	.141	2.149	.298	22.755	1.705	.280	.980	.950
1470.750	27.096	.112	2.130	.304	23.753	1.540	.298	.960	.902
1471.000	24.826	.113	2.120	.310	22.060	1.444	.303	.968	.921
1471.250	25.657	.123	2.114	.316	20.793	1.395	.305	.974	.937
1471.500	24.305	.210	2.122	.329	20.212	1.432	.283	.974	.936
1471.750	22.907	.255	2.133	.332	19.020	1.559	.268	.991	.978
1472.000	18.696	.128	2.143	.299	18.242	1.535	.287	1.000	1.000
1472.250	17.901	.088	2.141	.292	18.764	1.557	.295	1.000	1.000
1472.500	19.510	.194	2.123	.325	19.941	1.650	.286	.980	.952
1472.750	21.606	.179	2.133	.316	20.807	1.722	.283	.981	.953
1473.000	22.059	.179	2.152	.304	20.603	1.742	.271	1.000	1.000
1473.250	22.123	.187	2.150	.307	20.256	1.833	.271	1.000	1.000
1473.500	24.442	.110	2.141	.297	20.349	1.600	.291	1.000	1.000
1473.750	21.943	.038	2.138	.283	21.016	1.631	.307	1.000	1.000
1474.000	20.857	.012	2.130	.283	21.215	1.561	.317	.998	.995
1474.250	21.730	.000	2.129	.278	20.406	1.599	.319	1.000	1.000
1474.500	19.962	.007	2.134	.280	20.127	1.593	.315	1.000	1.000
1474.750	19.280	.000	2.119	.283	21.006	1.541	.324	.995	.988
1475.000	21.302	.000	2.132	.277	21.913	1.592	.317	.996	.989
1475.250	22.189	.022	2.148	.274	21.936	1.520	.304	1.000	1.000
1475.500	23.479	.005	2.140	.275	21.594	1.520	.312	1.000	1.000
1475.750	22.441	.038	2.121	.294	22.457	1.496	.317	.976	.942
1476.000	20.640	.000	2.105	.295	23.432	1.391	.334	.962	.908
1476.250	23.729	.000	2.150	.266	23.946	1.519	.306	.992	.981
1476.500	30.070	.007	2.192	.244	25.898	1.915	.280	1.000	1.000
1476.750	36.103	.000	2.163	.247	26.562	1.943	.294	.988	.969
1477.000	33.482	.000	2.153	.263	25.665	1.706	.304	.981	.953
1477.250	27.503	.131	2.185	.274	22.107	1.870	.261	1.000	1.000
1477.500	27.022	.222	2.206	.280	21.053	2.120	.230	1.000	1.000
1477.750	29.032	.272	2.215	.285	19.841	2.152	.216	1.000	1.000
1478.000	36.021	.250	2.226	.274	20.087	2.209	.214	1.000	1.000
1478.250	38.741	.298	2.236	.278	21.574	2.026	.199	1.000	1.000
1478.500	35.260	.246	2.233	.269	23.436	2.180	.210	1.000	1.000
1478.750	34.304	.159	2.247	.243	25.943	2.459	.218	1.000	1.000
1479.000	33.008	.150	2.250	.239	27.027	2.596	.218	1.000	1.000
1479.250	31.645	.076	2.227	.237	26.919	2.354	.246	1.000	1.000
1479.500	33.154	.126	2.236	.242	27.478	2.217	.231	1.000	1.000
1479.750	33.409	.146	2.268	.227	27.442	2.344	.208	1.000	1.000
1480.000	34.411	.141	2.293	.211	27.785	2.602	.194	1.000	1.000
1480.250	32.209	.159	2.286	.219	27.265	2.362	.195	1.000	1.000
1480.500	29.210	.128	2.273	.220	27.683	2.175	.208	1.000	1.000
1480.750	32.434	.200	2.281	.230	27.234	2.420	.190	1.000	1.000
1481.000	32.603	.314	2.277	.256	25.613	2.573	.171	1.000	1.000
1481.250	30.550	.251	2.253	.258	23.971	2.089	.197	1.000	1.000
1481.500	32.774	.189	2.259	.242	24.872	2.128	.205	1.000	1.000
1481.750	33.851	.115	2.255	.228	26.217	2.397	.221	1.000	1.000
1482.000	31.723	.000	2.223	.223	26.809	2.233	.262	1.000	1.000
1482.250	29.889	.000	2.217	.224	26.296	2.059	.265	1.000	1.000
1482.500	30.334	.002	2.232	.219	25.422	2.234	.256	1.000	1.000
[illegible]	[illegible]	.038	[illegible]	.211	22.519	2.386	.235	1.000	1.000

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1483.000	33.598	.010	2.269	.198	20.449	2.685	.232	1.000	1.000
1483.250	32.895	.000	1.000	.191	20.672	2.542	.000	1.000	1.000
1483.500	30.858	.000	1.000	.295	26.979	3.964	.000	1.000	1.000
1483.750	25.885	.000	1.000	.501	40.462	1266.633	.000	1.000	1.000
1484.000	17.923	.000	1.000	.569	113.480	790.239	.000	1.000	1.000
1484.250	12.828	.000	1.000	.576	392.390	56.465	.000	1.000	1.000
1484.500	12.470	.000	1.000	.632	335.623	288.444	.000	1.000	1.000
1484.750	20.443	.000	1.000	.639	518.499	129.357	.000	1.000	1.000
1485.000	36.900	.000	1.000	.579	81.443	42.925	.000	1.000	1.000
1485.250	53.963	.000	1.000	.480	28.137	5.399	.000	1.000	1.000
1485.500	54.077	.000	1.000	.323	20.930	2.967	.000	1.000	1.000
1485.750	59.403	.415	2.319	.252	27.356	2.164	.120	1.000	1.000
1486.000	71.515	.495	2.346	.252	31.983	5.861	.053	1.000	1.000
1486.250	70.683	.531	2.310	.288	29.326	4.465	.041	.995	.988
1486.500	49.078	.463	2.244	.308	25.499	1.888	.114	.980	.952
1486.750	40.130	.383	2.261	.281	26.889	2.105	.170	1.000	1.000
1487.000	47.753	.313	2.252	.271	28.305	3.109	.187	.993	.983
1487.250	55.242	.309	2.192	.307	26.887	1.941	.223	.942	.859
1487.500	61.844	.260	2.171	.310	26.061	1.557	.244	.943	.861
1487.750	65.813	.276	2.166	.316	24.270	1.483	.244	.953	.886
1488.000	75.526	.429	2.227	.311	25.420	1.821	.155	.967	.920
1488.250	81.421	.536	2.336	.273	35.600	5.815	.033	.981	.954
1488.500	80.365	.504	2.340	.264	37.943	6.633	.051	.970	.927
1488.750	70.469	.365	2.241	.289	28.622	2.711	.184	.961	.905
1489.000	55.321	.378	2.187	.325	25.809	1.565	.214	.929	.829
1489.250	44.493	.444	2.209	.325	27.283	1.639	.148	.932	.837
1489.500	42.997	.303	2.212	.293	26.109	1.862	.212	.973	.933
1489.750	42.517	.243	2.191	.294	25.680	1.889	.235	.969	.924
1490.000	53.840	.215	2.195	.286	25.156	1.801	.239	.983	.958
1490.250	63.632	.312	2.199	.303	24.948	1.581	.218	.969	.924
1490.500	65.287	.000	1.000	.331	24.929	1.717	.000	1.000	1.000
1490.750	87.672	.000	1.000	.351	32.043	2.290	.000	1.000	1.000
1491.000	95.303	.000	1.000	.434	32.260	6.549	.000	1.000	1.000
1491.250	76.275	.000	1.000	.419	22.151	18.139	.000	1.000	1.000
1491.500	67.173	.000	1.000	.326	21.747	1.928	.000	1.000	1.000
1491.750	72.119	.393	2.235	.298	22.540	2.070	.183	1.000	1.000
1492.000	76.232	.495	2.264	.302	24.064	2.052	.078	1.000	1.000
1492.250	82.773	.607	2.303	.302	27.057	3.355	.000	1.000	1.000
1492.500	92.442	.704	2.348	.295	30.767	4.622	.000	1.000	1.000
1492.750	91.450	.723	2.303	.326	25.859	6.412	.000	1.000	1.000
1493.000	77.802	.602	2.247	.335	23.221	3.830	.000	1.000	1.000
1493.250	81.714	.555	2.272	.316	27.087	4.605	.031	.988	.970
1493.500	97.967	.659	2.316	.305	33.176	5.037	.000	1.000	1.000
1493.750	110.822	.641	2.293	.315	31.380	6.414	.000	1.000	1.000
1494.000	108.967	.483	2.167	.358	27.067	3.916	.121	.919	.810
1494.250	95.472	.509	2.089	.411	24.232	5.398	.112	.921	.819
1494.500	84.991	.377	2.135	.356	21.263	2.583	.244	.936	.845
1494.750	77.822	.271	2.175	.309	19.243	1.772	.240	1.000	1.000
1495.000	71.690	.187	2.164	.299	20.148	1.920	.263	1.000	1.000
1495.250	82.336	.348	2.156	.337	22.224	1.941	.237	.949	.877
1495.500	108.711	.556	2.189	.360	24.018	9.016	.040	.977	.945
1495.750	115.820	.000	1.000	.343	26.024	4.927	.000	1.000	1.000
1496.000	108.287	.000	1.000	.377	37.717	11.723	.000	1.000	1.000
1496.250	96.784	.000	1.000	.451	27.921	30.955	.000	1.000	1.000
1496.500	81.362	.000	1.000	.369	39.711	7.432	.000	1.000	1.000
[illegible]	[illegible]	[illegible]	[illegible]	.217	36.113	51.258	.000	1.000	1.000

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1497.000	60.405	.858	2.603	.172	96.885	162.685	.000	1.000	1.000
1497.250	60.237	.648	2.523	.177	99.113	80.931	.000	1.000	1.000
1497.500	68.301	.555	2.410	.232	62.489	40.441	.013	.943	.865
1497.750	76.865	.831	2.374	.306	32.987	15.970	.000	1.000	1.000
1498.000	81.217	.824	2.371	.306	26.109	7.884	.000	1.000	1.000
1498.250	78.105	.722	2.376	.282	21.688	6.076	.000	1.000	1.000
1498.500	72.321	.000	1.000	.276	23.246	13.914	.000	1.000	1.000
1498.750	68.439	.000	1.000	.306	43.812	12.005	.000	1.000	1.000
1499.000	63.332	.000	1.000	.438	56.963	14.580	.000	1.000	1.000
1499.250	62.031	.000	1.000	.558	42.557	319.676	.000	1.000	1.000
1499.500	64.701	.000	1.000	.431	34.712	8.621	.000	1.000	1.000
1499.750	76.093	.000	1.000	.298	32.623	3.952	.000	1.000	1.000
1500.000	84.788	.000	1.000	.336	47.963	12.400	.000	1.000	1.000
1500.250	66.646	.000	1.000	.352	43.076	20.972	.000	1.000	1.000
1500.500	44.572	.192	2.185	.287	31.053	2.242	.249	.927	.826
1500.750	33.733	.135	2.205	.263	28.598	2.039	.248	.977	.943
1501.000	30.399	.176	2.205	.271	28.929	2.035	.240	.966	.916
1501.250	29.968	.089	2.186	.265	28.041	1.960	.268	.972	.931
1501.500	27.915	.103	2.169	.278	23.809	1.547	.275	.991	.977
1501.750	32.218	.150	2.193	.273	24.398	1.597	.252	.999	.999
1502.000	50.964	.000	2.236	.214	27.419	3.212	.254	1.000	1.000
1502.250	71.432	.000	1.000	.203	32.141	4.053	.000	1.000	1.000
1502.500	67.707	.000	1.000	.305	48.035	5.094	.000	1.000	1.000
1502.750	43.297	.000	1.000	.454	61.235	52.340	.000	1.000	1.000
1503.000	24.693	.000	1.000	.565	108.924	73.551	.000	1.000	1.000
1503.250	16.164	.000	1.000	.637	288.724	58.248	.000	1.000	1.000
1503.500	11.191	.000	1.000	.613	246.876	50.166	.000	1.000	1.000
1503.750	9.897	.000	1.000	.598	194.125	21.772	.000	1.000	1.000
1504.000	10.748	.000	1.000	.609	147.801	223.529	.000	1.000	1.000
1504.250	14.604	.000	1.000	.650	197.681	17.494	.000	1.000	1.000
1504.500	14.485	.000	1.000	.654	223.815	34.115	.000	1.000	1.000
1504.750	13.648	.000	1.000	.658	328.781	71.669	.000	1.000	1.000
1505.000	15.954	.000	1.000	.683	377.973	54.931	.000	1.000	1.000
1505.250	22.668	.000	1.000	.649	445.726	31.625	.000	1.000	1.000
1505.500	42.572	.000	1.000	.584	141.489	42.285	.000	1.000	1.000
1505.750	62.703	.000	1.000	.476	42.163	2.787	.000	1.000	1.000
1506.000	70.395	.000	1.000	.371	26.392	1.811	.000	1.000	1.000
1506.250	70.566	.512	2.231	.325	27.985	2.266	.072	.957	.898
1506.500	75.938	.525	2.257	.319	26.210	2.351	.056	.981	.953
1506.750	91.379	.529	2.258	.319	25.732	1.990	.052	.985	.962
1507.000	110.992	.000	1.000	.319	26.533	2.769	.000	1.000	1.000
1507.250	124.403	.000	1.000	.341	30.494	2.680	.000	1.000	1.000
1507.500	111.915	.000	1.000	.405	46.839	8.420	.000	1.000	1.000
1507.750	79.178	.000	1.000	.503	74.550	88.778	.000	1.000	1.000
1508.000	60.511	.000	1.000	.551	122.549	123.883	.000	1.000	1.000
1508.250	58.638	.000	1.000	.581	105.017	219.972	.000	1.000	1.000
1508.500	70.440	.000	1.000	.592	49.111	94.296	.000	1.000	1.000
1508.750	75.189	.000	1.000	.562	49.230	9.308	.000	1.000	1.000
1509.000	63.745	.000	1.000	.578	31.341	378.107	.000	1.000	1.000
1509.250	64.732	.000	1.000	.559	24.827	97.066	.000	1.000	1.000
1509.500	78.937	.000	1.000	.430	18.866	5.485	.000	1.000	1.000
1509.750	82.255	.942	2.401	.312	25.300	4.358	.000	1.000	1.000
1510.000	78.395	.701	2.395	.266	26.700	5.717	.000	1.000	1.000
1510.250	72.570	.801	2.392	.288	25.849	3.650	.000	1.000	1.000
1510.500	72.596	.705	2.394	.267	30.977	4.623	.000	1.000	1.000
[illegible]	[illegible]	.425	2.404	.245	44.276	15.720	.000	1.000	1.000

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1511.000	82.119	.741	2.387	.279	41.138	8.598	.000	1.000	1.000
1511.250	86.576	.713	2.374	.281	39.046	9.184	.000	1.000	1.000
1511.500	88.917	.725	2.352	.297	37.143	8.008	.000	1.000	1.000
1511.750	70.077	.694	2.293	.326	27.382	4.001	.000	1.000	1.000
1512.000	57.403	.485	2.255	.305	23.779	2.778	.089	1.000	1.000
1512.250	61.385	.285	2.257	.263	24.985	2.408	.189	1.000	1.000
1512.500	78.969	.677	2.351	.287	31.972	6.421	.000	1.000	1.000
1512.750	94.805	.989	2.424	.308	44.339	13.304	.000	1.000	1.000
1513.000	101.660	1.000	2.412	.325	28.642	16.627	.000	1.000	1.000
1513.250	105.079	1.000	2.395	.351	36.617	10.416	.000	1.000	1.000
1513.500	100.258	1.000	2.400	.339	35.588	10.743	.000	1.000	1.000
1513.750	93.244	1.000	2.410	.341	36.375	7.879	.000	1.000	1.000
1514.000	97.250	1.000	2.399	.341	41.167	11.608	.000	1.000	1.000
1514.250	97.793	.854	2.322	.342	27.202	2.286	.000	1.000	1.000
1514.500	68.683	.397	2.209	.315	22.570	2.035	.197	.986	.965
1514.750	46.403	.225	2.175	.300	23.050	1.710	.248	.982	.956
1515.000	45.074	.269	2.217	.283	26.091	2.005	.215	.984	.960
1515.250	44.615	.206	2.209	.275	26.906	2.134	.232	.980	.950
1515.500	40.302	.112	2.169	.280	23.169	1.678	.274	.994	.984
1515.750	30.475	.011	2.146	.272	20.750	1.543	.307	1.000	1.000
1516.000	23.461	.000	1.000	.279	15.842	1.297	.000	1.000	1.000
1516.250	22.828	.000	1.000	.249	18.341	2.030	.000	1.000	1.000
1516.500	23.914	.000	1.000	.333	26.125	79.218	.000	1.000	1.000
1516.750	18.703	.000	1.000	.557	71.077	77.090	.000	1.000	1.000
1517.000	12.099	.000	1.000	.649	189.768	2.721	.000	1.000	1.000
1517.250	11.818	.000	1.000	.615	253.495	1.459	.000	1.000	1.000
1517.500	12.428	.000	1.000	.615	270.283	5.491	.000	1.000	1.000
1517.750	11.119	.000	1.000	.598	244.684	3.228	.000	1.000	1.000
1518.000	11.064	.000	1.000	.603	200.958	3.144	.000	1.000	1.000
1518.250	12.432	.000	1.000	.629	217.552	3.081	.000	1.000	1.000
1518.500	14.078	.000	1.000	.578	200.096	1.055	.000	1.000	1.000
1518.750	13.880	.000	1.000	.523	195.296	1.244	.000	1.000	1.000
1519.000	13.335	.000	1.000	.532	173.464	1.200	.000	1.000	1.000
1519.250	13.342	.000	1.000	.591	187.042	2.853	.000	1.000	1.000
1519.500	13.535	.000	1.000	.605	205.549	9.031	.000	1.000	1.000
1519.750	12.434	.000	1.000	.611	243.056	16.202	.000	1.000	1.000
1520.000	11.573	.000	1.000	.637	251.697	24.042	.000	1.000	1.000
1520.250	11.414	.000	1.000	.631	272.622	75.285	.000	1.000	1.000
1520.500	10.285	.000	1.000	.614	220.176	59.510	.000	1.000	1.000
1520.750	13.207	.000	1.000	.550	158.251	19.067	.000	1.000	1.000
1521.000	17.787	.000	1.000	.558	181.491	6.080	.000	1.000	1.000
1521.250	23.549	.000	1.000	.609	131.934	53.122	.000	1.000	1.000
1521.500	43.156	.000	1.000	.626	27.754	45.703	.000	1.000	1.000
1521.750	78.643	.000	1.000	.601	15.906	3.167	.000	1.000	1.000
1522.000	101.127	.000	1.000	.463	24.443	9.596	.000	1.000	1.000
1522.250	109.438	1.000	2.528	.344	22.768	16.927	.000	1.000	1.000
1522.500	114.649	1.000	2.527	.269	29.556	18.461	.000	1.000	1.000
1522.750	111.177	.912	2.505	.243	22.987	11.624	.000	1.000	1.000
1523.000	105.221	.752	2.431	.254	22.246	5.390	.000	1.000	1.000
1523.250	105.575	.703	2.369	.282	23.479	3.861	.000	1.000	1.000
1523.500	104.729	.623	2.355	.274	24.300	3.622	.000	1.000	1.000
1523.750	106.414	.534	2.350	.265	23.681	3.567	.031	1.000	1.000
1524.000	118.678	.620	2.334	.286	23.027	2.194	.000	1.000	1.000
1524.250	104.942	.728	2.328	.312	24.952	2.931	.000	1.000	1.000
1524.500	81.490	.547	2.292	.302	25.765	2.689	.034	.997	.993
[illegible]	[illegible]	[illegible]	[illegible]	.277	26.606	2.263	.192	.983	.958

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1525.000	50.318	.177	2.213	.267	28.719	2.136	.235	.960	.902
1525.250	35.609	.129	2.209	.259	29.494	1.614	.247	.959	.900
1525.500	26.307	.084	2.212	.248	27.953	1.637	.253	.982	.955
1525.750	25.346	.084	2.225	.240	27.865	1.791	.245	.995	.987
1526.000	29.244	.085	2.226	.239	27.182	1.751	.244	1.000	1.000
1526.250	29.302	.027	2.219	.232	26.546	1.897	.260	1.000	1.000
1526.500	28.762	.047	2.214	.239	27.037	1.782	.259	.996	.991
1526.750	29.227	.116	2.221	.249	26.949	2.044	.242	.993	.983
1527.000	29.216	.136	2.236	.244	27.170	2.189	.229	1.000	1.000
1527.250	30.249	.086	2.233	.236	27.429	1.870	.240	1.000	1.000
1527.500	29.873	.142	2.238	.244	29.973	1.900	.227	.981	.954
1527.750	31.459	.201	2.247	.251	30.000	2.175	.210	.980	.950
1528.000	30.278	.132	2.247	.237	29.908	1.951	.223	.993	.983
1528.250	28.413	.041	2.239	.223	28.731	2.057	.245	1.000	1.000
1528.500	28.630	.000	2.230	.219	26.819	1.929	.258	1.000	1.000
1528.750	29.289	.050	2.216	.238	25.613	1.825	.257	1.000	1.000
1529.000	29.105	.074	2.202	.252	25.456	1.844	.262	.993	.983
1529.250	28.044	.016	2.209	.236	24.885	1.960	.268	1.000	1.000
1529.500	28.933	.036	2.212	.238	22.561	1.859	.262	1.000	1.000
1529.750	30.116	.168	2.234	.252	20.939	2.159	.224	1.000	1.000
1530.000	30.291	.262	2.266	.252	19.235	2.089	.187	1.000	1.000
1530.250	32.522	.318	2.301	.243	19.570	2.264	.157	1.000	1.000
1530.500	34.245	.227	2.292	.229	21.769	2.980	.178	1.000	1.000
1530.750	33.596	.125	2.270	.222	22.691	2.416	.211	1.000	1.000
1531.000	30.805	.221	2.262	.246	21.290	2.206	.197	1.000	1.000
1531.250	30.076	.220	2.275	.238	20.198	2.397	.190	1.000	1.000
1531.500	30.570	.065	2.286	.199	20.243	2.872	.212	1.000	1.000
1531.750	32.023	.000	2.228	.194	22.129	2.372	.249	1.000	1.000
1532.000	29.347	.000	2.172	.232	20.924	1.993	.285	1.000	1.000
1532.250	28.452	.077	2.185	.263	19.944	2.014	.271	1.000	1.000
1532.500	35.359	.113	2.233	.241	22.270	2.313	.235	1.000	1.000
1532.750	41.637	.099	2.252	.227	27.130	2.213	.226	1.000	1.000
1533.000	46.535	.227	2.251	.254	32.353	2.003	.203	.959	.899
1533.250	46.618	.207	2.207	.276	32.711	2.283	.233	.917	.803
1533.500	40.412	.138	2.162	.289	26.641	1.611	.273	.938	.852
1533.750	33.293	.116	2.164	.284	24.242	1.440	.276	.964	.911
1534.000	33.172	.094	2.185	.266	25.836	1.554	.268	.972	.930
1534.250	34.961	.051	2.188	.255	27.843	1.558	.274	.966	.917
1534.500	37.808	.043	2.186	.255	28.826	1.649	.277	.958	.898
1534.750	35.613	.098	2.194	.262	27.027	1.604	.262	.969	.924
1535.000	30.571	.158	2.202	.270	24.998	1.579	.246	.984	.960
1535.250	30.202	.092	2.203	.255	25.681	1.617	.257	.990	.974
1535.500	31.255	.062	2.207	.246	27.722	1.899	.260	.982	.955
1535.750	31.856	.093	2.205	.254	27.382	1.775	.256	.977	.943
1536.000	32.918	.117	2.210	.256	27.453	1.889	.248	.978	.945
1536.250	31.104	.069	2.236	.231	28.005	2.351	.242	1.000	1.000
1536.500	30.127	.110	2.256	.227	25.790	2.359	.222	1.000	1.000
1536.750	33.171	.140	2.256	.233	22.418	2.389	.216	1.000	1.000
1537.000	32.968	.149	2.269	.227	21.410	2.420	.207	1.000	1.000
1537.250	34.495	.172	2.290	.219	22.089	2.473	.190	1.000	1.000
1537.500	33.516	.102	2.306	.195	24.637	2.811	.193	1.000	1.000
1537.750	31.789	.000	2.296	.174	24.867	2.538	.215	1.000	1.000
1538.000	30.937	.000	2.259	.196	24.694	2.203	.238	1.000	1.000
1538.250	28.712	.022	2.231	.223	25.782	1.948	.253	1.000	1.000
1538.500	29.526	.055	2.228	.232	27.129	1.738	.249	1.000	1.000
1538.750	31.489	.079	2.232	.235	28.005	2.014	.242	1.000	1.000

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1539.000	27.607	.084	2.242	.230	27.570	2.006	.235	1.000	1.000
1539.250	27.000	.066	2.244	.225	23.902	2.025	.237	1.000	1.000
1539.500	27.745	.121	2.246	.235	18.610	2.031	.226	1.000	1.000
1539.750	27.325	.218	2.281	.234	17.951	2.092	.187	1.000	1.000
1540.000	30.484	.048	2.281	.198	22.554	4.511	.218	1.000	1.000
1540.250	31.329	.000	2.222	.222	25.063	1.711	.262	1.000	1.000
1540.500	31.137	.139	2.213	.259	24.769	1.623	.242	1.000	.999
1540.750	31.980	.168	2.229	.255	25.849	1.624	.227	1.000	1.000
1541.000	34.491	.155	2.216	.260	28.173	1.721	.237	.970	.927
1541.250	33.929	.092	2.195	.260	29.345	1.602	.262	.953	.887
1541.500	31.688	.068	2.197	.254	27.470	1.597	.265	.973	.933
1541.750	29.750	.090	2.200	.257	27.530	1.626	.259	.971	.930
1542.000	26.935	.112	2.210	.255	28.577	1.667	.249	.968	.922
1542.250	25.683	.057	2.219	.238	26.009	1.724	.254	1.000	1.000
1542.500	26.185	.000	2.224	.219	22.019	1.753	.260	1.000	1.000
1542.750	28.523	.000	2.216	.221	20.424	1.704	.264	1.000	1.000
1543.000	29.904	.096	2.210	.252	23.141	1.560	.252	1.000	1.000
1543.250	29.346	.211	2.233	.262	25.100	1.596	.217	1.000	1.000
1543.500	33.013	.224	2.286	.233	28.216	2.347	.183	1.000	1.000
1543.750	35.276	.164	2.300	.212	27.738	2.199	.185	1.000	1.000
1544.000	37.732	.130	2.300	.204	29.222	2.729	.192	1.000	1.000
1544.250	40.781	.083	2.311	.188	30.943	2.520	.193	1.000	1.000
1544.500	40.733	.110	2.359	.164	36.541	3.896	.159	1.000	1.000
1544.750	38.641	.089	2.373	.151	41.069	5.038	.154	1.000	1.000
1545.000	34.024	.001	2.292	.182	37.771	4.138	.220	1.000	1.000
1545.250	30.669	.037	2.250	.215	35.146	2.626	.239	.976	.942
1545.500	30.677	.000	2.234	.210	32.951	2.106	.253	.985	.963
1545.750	29.734	.000	2.240	.204	31.519	2.057	.248	1.000	1.000
1546.000	30.770	.000	2.273	.190	28.789	2.456	.230	1.000	1.000
1546.250	31.391	.000	2.291	.166	26.416	2.428	.214	1.000	1.000
1546.500	30.797	.000	2.279	.183	24.317	2.070	.225	1.000	1.000
1546.750	31.741	.039	2.284	.195	24.185	2.232	.218	1.000	1.000
1547.000	31.288	.034	2.278	.198	26.844	2.523	.222	1.000	1.000
1547.250	31.666	.023	2.263	.204	27.237	2.133	.233	1.000	1.000
1547.500	30.774	.084	2.285	.204	25.298	2.116	.209	1.000	1.000
1547.750	31.445	.062	2.321	.177	25.307	2.638	.191	1.000	1.000
1548.000	32.500	.000	2.322	.163	29.530	3.005	.201	1.000	1.000
1548.250	29.464	.000	2.303	.173	32.689	2.824	.212	1.000	1.000
1548.500	29.969	.000	2.290	.181	32.880	2.450	.220	1.000	1.000
1548.750	34.093	.000	2.312	.169	31.926	2.804	.207	1.000	1.000
1549.000	38.522	.027	2.332	.163	29.498	3.011	.191	1.000	1.000
1549.250	38.223	.064	2.331	.171	27.410	3.122	.185	1.000	1.000
1549.500	33.610	.000	2.289	.168	27.448	3.140	.215	1.000	1.000
1549.750	29.762	.000	2.213	.198	26.036	2.213	.256	1.000	1.000
1550.000	31.300	.041	2.180	.258	24.359	1.647	.280	.987	.967
1550.250	32.106	.172	2.206	.270	23.274	1.784	.240	1.000	1.000
1550.500	36.291	.171	2.248	.244	23.686	2.855	.215	1.000	1.000
1550.750	43.194	.142	2.255	.234	25.605	2.842	.217	1.000	1.000
1551.000	39.120	.033	2.228	.228	29.011	3.508	.253	.995	.986
1551.250	29.684	.050	2.207	.244	27.875	2.447	.263	.981	.953
1551.500	26.111	.180	2.209	.270	26.462	1.969	.237	.973	.933
1551.750	26.583	.197	2.227	.262	25.652	1.855	.223	.996	.989
1552.000	28.674	.188	2.235	.256	25.909	1.978	.220	1.000	1.000
1552.250	28.647	.076	2.236	.232	26.551	1.921	.240	1.000	1.000
1552.500	28.277	.049	2.236	.226	26.700	1.954	.245	1.000	1.000
[illegible]	[illegible]	.113	[illegible]	.240	26.394	1.937	.234	1.000	1.000

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1553.000	22.680	.065	2.232	.232	26.602	1.936	.244	1.000	1.000
1553.250	21.763	.055	2.223	.235	26.789	1.940	.252	1.000	1.000
1553.500	25.310	.207	2.220	.269	26.588	1.872	.226	.977	.943
1553.750	24.714	.153	2.220	.258	25.759	1.873	.235	.994	.985
1554.000	24.392	.106	2.230	.242	24.282	1.982	.238	1.000	1.000
1554.250	28.015	.209	2.234	.260	20.011	1.987	.216	1.000	1.000
1554.500	40.513	.219	2.275	.238	20.480	2.009	.190	1.000	1.000
1554.750	74.781	.957	2.406	.312	28.475	9.352	.000	1.000	1.000
1555.000	77.707	.880	2.342	.335	32.021	6.695	.000	1.000	1.000
1555.250	48.118	.451	2.272	.288	26.926	3.048	.113	.983	.957
1555.500	29.605	.312	2.279	.255	29.752	2.616	.170	.995	.988
1555.750	26.249	.043	2.260	.210	28.486	2.602	.232	1.000	1.000
1556.000	27.318	.000	2.237	.210	27.022	2.252	.252	1.000	1.000
1556.250	32.293	.042	2.246	.218	24.296	2.054	.240	1.000	1.000
1556.500	40.724	.000	2.256	.199	22.002	2.242	.240	1.000	1.000
1556.750	48.053	.079	2.258	.219	20.748	2.341	.226	1.000	1.000
1557.000	47.538	.227	2.240	.261	21.350	2.087	.209	1.000	1.000
1557.250	49.308	.191	2.186	.286	21.371	2.075	.249	.999	.997
1557.500	54.402	.292	2.195	.302	22.165	1.605	.224	.983	.958
1557.750	55.048	.331	2.278	.260	22.579	3.754	.168	1.000	1.000
1558.000	55.433	.363	2.291	.258	24.492	2.601	.155	1.000	1.000
1558.250	52.244	.316	2.276	.258	22.797	3.074	.172	1.000	1.000
1558.500	57.990	.000	1.000	.283	29.075	2.908	.000	1.000	1.000
1558.750	53.969	.000	1.000	.456	37.415	50.314	.000	1.000	1.000
1559.000	45.206	.000	1.000	.617	95.611	226.782	.000	1.000	1.000
1559.250	58.743	.000	1.000	.584	119.171	31.091	.000	1.000	1.000
1559.500	83.907	.000	1.000	.456	39.821	11.164	.000	1.000	1.000
1559.750	86.923	.000	1.000	.387	21.605	5.488	.000	1.000	1.000
1560.000	70.007	.544	2.231	.332	19.803	1.821	.045	1.000	1.000
1560.250	63.026	.422	2.276	.279	22.684	2.786	.137	1.000	1.000
1560.500	81.049	.496	2.310	.281	28.805	7.456	.065	.994	.985
1560.750	97.160	.653	2.316	.304	23.837	2.792	.000	1.000	1.000
1561.000	104.849	1.000	2.385	.334	33.317	5.532	.000	1.000	1.000
1561.250	103.505	1.000	2.345	.370	34.442	10.938	.000	1.000	1.000
1561.500	83.281	.741	2.253	.360	24.381	3.441	.000	1.000	1.000
1561.750	71.831	.443	2.264	.291	19.882	1.999	.124	1.000	1.000
1562.000	75.141	.499	2.329	.264	24.074	2.383	.056	1.000	1.000
1562.250	76.450	.610	2.363	.266	31.410	3.683	.000	1.000	1.000
1562.500	79.305	.604	2.336	.281	27.382	3.486	.000	1.000	1.000
1562.750	91.723	.655	2.319	.302	24.154	1.992	.000	1.000	1.000
1563.000	103.364	.701	2.334	.303	26.247	2.835	.000	1.000	1.000
1563.250	112.339	1.000	2.253	.414	43.014	9.363	.000	1.000	1.000
1563.500	112.883	1.000	2.252	.473	25.869	21.694	.000	1.000	1.000
1563.750	98.955	1.000	2.292	.466	26.547	3.811	.000	1.000	1.000
1564.000	73.207	1.000	2.228	.444	24.609	2.335	.000	1.000	1.000
1564.250	49.646	.500	2.188	.350	20.491	2.212	.095	.975	.938
1564.500	44.760	.221	2.189	.291	19.435	1.489	.241	1.000	1.000
1564.750	48.020	.105	2.193	.264	19.837	1.745	.261	1.000	1.000
1565.000	46.030	.171	2.184	.283	19.385	1.677	.254	1.000	1.000
1565.250	44.833	.222	2.198	.285	19.640	1.704	.236	1.000	1.000
1565.500	47.513	.282	2.221	.284	19.069	1.886	.210	1.000	1.000
1565.750	55.669	.230	2.228	.269	19.916	1.853	.216	1.000	1.000
1566.000	73.153	.000	1.000	.256	22.329	2.742	.000	1.000	1.000
1566.250	84.888	.000	1.000	.281	25.026	15.408	.000	1.000	1.000
1566.500	73.825	.000	1.000	.374	34.546	52.843	.000	1.000	1.000
1566.750	63.457	.000	1.000	.420	37.052	37.554	.000	1.000	1.000

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1567.000	67.453	.000	1.000	.407	46.636	10.750	.000	1.000	1.000
1567.250	58.190	.000	1.000	.534	63.432	81.877	.000	1.000	1.000
1567.500	32.777	.000	1.000	.629	115.968	266.145	.000	1.000	1.000
1567.750	15.203	.000	1.000	.615	206.472	175.168	.000	1.000	1.000
1568.000	14.134	.000	1.000	.617	287.688	153.898	.000	1.000	1.000
1568.250	18.377	.000	1.000	.633	465.753	129.381	.000	1.000	1.000
1568.500	19.908	.000	1.000	.630	345.022	58.703	.000	1.000	1.000
1568.750	23.377	.000	1.000	.630	266.347	49.640	.000	1.000	1.000
1569.000	35.824	.000	1.000	.613	143.035	29.289	.000	1.000	1.000
1569.250	64.865	.000	1.000	.480	52.117	21.316	.000	1.000	1.000
1569.500	89.302	.000	1.000	.387	27.440	7.860	.000	1.000	1.000
1569.750	83.181	.476	2.180	.349	25.635	3.736	.124	.959	.902
1570.000	58.825	.245	2.115	.340	22.956	1.305	.280	.978	.946
1570.250	64.142	.212	2.136	.321	23.079	1.265	.274	1.000	1.000
1570.500	83.335	.253	2.205	.288	25.655	2.233	.225	1.000	1.000
1570.750	90.928	.611	2.277	.318	26.751	2.780	.000	1.000	1.000
1571.000	93.750	.802	2.334	.324	25.374	3.378	.000	1.000	1.000
1571.250	101.105	.786	2.389	.287	29.395	3.457	.000	1.000	1.000
1571.500	104.221	.851	2.385	.303	33.783	10.451	.000	1.000	1.000
1571.750	99.876	.878	2.286	.369	33.104	2.912	.000	1.000	1.000
1572.000	106.406	1.000	2.278	.410	27.378	3.959	.000	1.000	1.000
1572.250	105.256	1.000	2.399	.380	28.985	6.843	.000	1.000	1.000
1572.500	100.164	1.000	2.434	.357	35.045	9.496	.000	1.000	1.000
1572.750	100.531	1.000	2.407	.375	34.081	8.622	.000	1.000	1.000
1573.000	103.955	1.000	2.403	.376	39.038	14.918	.000	1.000	1.000
1573.250	104.545	1.000	2.421	.343	38.825	16.049	.000	1.000	1.000
1573.500	107.481	1.000	2.397	.336	28.813	15.957	.000	1.000	1.000
1573.750	111.180	1.000	2.396	.366	24.753	5.796	.000	1.000	1.000
1574.000	105.415	1.000	2.399	.369	24.360	3.531	.000	1.000	1.000
1574.250	78.536	.511	2.258	.309	28.337	2.900	.066	.990	.975
1574.500	58.212	.166	2.204	.270	28.920	1.890	.243	1.000	1.000
1574.750	54.621	.177	2.205	.272	31.323	1.797	.240	.997	.991
1575.000	51.152	.163	2.207	.268	34.555	1.889	.241	.978	.945
1575.250	48.063	.128	2.213	.257	36.254	1.929	.244	.982	.955
1575.500	48.520	.075	2.215	.244	32.408	2.046	.253	1.000	1.000
1575.750	53.306	.091	2.261	.220	32.448	2.101	.222	1.000	1.000
1576.000	66.229	.223	2.303	.222	35.960	2.936	.173	1.000	1.000
1576.250	64.594	.170	2.249	.244	39.332	2.436	.215	.987	.968
1576.500	56.079	.000	2.217	.220	39.121	2.148	.263	1.000	1.000
1576.750	54.852	.000	2.229	.218	39.399	2.289	.258	1.000	1.000
1577.000	52.838	.009	2.226	.224	37.155	2.120	.258	1.000	1.000
1577.250	53.566	.000	2.203	.228	36.907	2.078	.271	1.000	1.000
1577.500	51.001	.129	2.211	.258	40.089	2.168	.245	.957	.895
1577.750	50.468	.158	2.219	.259	42.277	2.267	.235	.943	.863
1578.000	47.153	.114	2.211	.255	43.522	2.046	.248	.943	.862
1578.250	40.330	.056	2.194	.253	43.527	2.027	.270	.944	.867
1578.500	38.501	.039	2.195	.249	41.576	2.032	.272	.959	.901
1578.750	36.210	.098	2.226	.242	33.991	1.991	.242	1.000	1.000
1579.000	43.637	.120	2.252	.231	30.139	2.095	.222	1.000	1.000
1579.250	54.497	.061	2.258	.216	33.525	2.672	.230	1.000	1.000
1579.500	50.231	.000	2.232	.215	41.945	3.072	.255	1.000	1.000
1579.750	40.041	.020	2.222	.228	48.346	2.367	.259	.958	.899
1580.000	38.547	.054	2.228	.232	47.962	2.497	.249	.955	.891
1580.250	36.988	.012	2.227	.224	45.156	2.219	.258	.978	.946
1580.500	34.995	.049	2.231	.229	39.319	2.184	.248	1.000	1.000
1580.750	38.189	.050	2.247	.220	36.309	2.157	.238	1.000	1.000

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1581.000	39.881	.000	2.244	.202	33.452	2.501	.246	1.000	1.000
1581.250	38.046	.000	2.219	.213	31.515	2.206	.260	1.000	1.000
1581.500	40.748	.000	2.224	.207	32.647	2.014	.256	1.000	1.000
1581.750	46.092	.000	2.227	.195	34.389	1.570	.250	1.000	1.000
1582.000	44.313	.082	2.223	.241	35.923	2.140	.247	1.000	1.000
1582.250	41.293	.185	2.216	.267	40.155	2.080	.232	.943	.863
1582.500	39.912	.043	2.198	.248	48.206	2.437	.270	.931	.835
1582.750	36.313	.013	2.191	.246	45.474	1.956	.279	.945	.869
1583.000	38.677	.033	2.192	.249	41.077	2.042	.275	.961	.904
1583.250	41.249	.055	2.202	.248	38.821	1.997	.265	.975	.938
1583.500	42.834	.000	2.207	.231	28.315	1.847	.271	1.000	1.000
1583.750	45.167	.000	2.184	.229	23.528	1.656	.279	1.000	1.000
1584.000	43.892	.002	2.167	.258	22.546	1.598	.296	1.000	1.000
1584.250	47.978	.000	1.000	.242	27.081	2.034	.000	1.000	1.000
1584.500	56.691	.000	1.000	.211	50.262	4.483	.000	1.000	1.000
1584.750	51.936	.000	1.000	.294	66.704	152.703	.000	1.000	1.000
1585.000	36.199	.000	1.000	.482	131.962	174.506	.000	1.000	1.000
1585.250	22.923	.000	1.000	.617	324.702	35.104	.000	1.000	1.000
1585.500	18.084	.000	1.000	.631	334.558	89.574	.000	1.000	1.000
1585.750	20.935	.000	1.000	.632	324.728	115.129	.000	1.000	1.000
1586.000	43.569	.000	1.000	.637	184.410	94.602	.000	1.000	1.000
1586.250	76.490	.000	1.000	.578	41.152	38.582	.000	1.000	1.000
1586.500	103.357	.000	1.000	.508	26.601	9.498	.000	1.000	1.000
1586.750	129.295	.000	1.000	.567	23.013	40.152	.000	1.000	1.000
1587.000	144.650	.000	1.000	.573	15.203	17.770	.000	1.000	1.000
1587.250	139.900	.000	1.000	.499	8.296	2.689	.000	1.000	1.000
1587.500	126.037	.000	1.000	.491	10.010	2.752	.000	1.000	1.000
1587.750	113.053	.000	1.000	.466	10.458	3.054	.000	1.000	1.000
1588.000	108.069	.000	1.000	.410	10.777	2.727	.000	1.000	1.000
1588.250	111.869	1.000	2.353	.395	10.351	2.867	.000	1.000	1.000
1588.500	114.517	1.000	2.383	.414	11.467	3.816	.000	1.000	1.000
1588.750	125.743	1.000	2.445	.438	14.797	6.513	.000	1.000	1.000
1589.000	132.186	1.000	2.426	.430	12.076	9.655	.000	1.000	1.000
1589.250	133.182	1.000	2.404	.433	15.603	4.829	.000	1.000	1.000
1589.500	130.734	1.000	2.391	.427	19.099	7.652	.000	1.000	1.000
1589.750	128.701	1.000	2.344	.426	17.256	12.170	.000	1.000	1.000
1590.000	126.727	1.000	2.325	.440	24.942	20.318	.000	1.000	1.000
1590.250	109.053	1.000	2.347	.428	45.303	14.590	.000	1.000	1.000
1590.500	88.819	.790	2.332	.322	33.412	3.722	.000	1.000	1.000
1590.750	79.339	.509	2.348	.254	39.041	8.683	.044	.820	.604
1591.000	75.001	.457	2.277	.287	38.471	4.328	.105	.692	.360
1591.250	71.145	.417	2.254	.292	38.737	3.878	.151	.598	.185
1591.500	68.790	.457	2.326	.257	37.960	4.568	.084	.711	.382
1591.750	64.443	.461	2.337	.251	34.188	3.119	.077	.731	.417
1592.000	61.264	.388	2.318	.247	36.466	3.199	.134	.596	.157
1592.250	57.278	.369	2.294	.258	44.153	3.615	.151	.566	.119
1592.500	42.425	.295	2.226	.277	54.236	3.553	.200	.522	.094
1592.750	29.384	.090	2.138	.268	80.516	6.281	.278	.454	.103
1593.000	29.148	.030	2.123	.258	93.893	3.644	.295	.434	.112
1593.250	31.077	.060	2.155	.255	92.317	4.201	.275	.446	.108
1593.500	31.149	.030	2.151	.250	93.839	4.535	.282	.442	.117
1593.750	27.985	.000	2.118	.260	90.096	5.189	.305	.434	.124
1594.000	26.731	.000	2.106	.264	61.624	3.848	.312	.464	.147
1594.250	25.659	.000	2.100	.258	52.725	3.911	.313	.478	.158
1594.500	29.564	.030	2.154	.252	42.231	3.156	.283	.515	.181
1594.750	35.692	.096	2.208	.247	37.516	1.667	.245	.545	.188

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1595.000	44.775	.156	2.248	.241	35.099	2.286	.218	1.000	1.000
1595.250	49.507	.283	2.284	.246	36.574	2.520	.173	1.000	1.000
1595.500	50.958	.293	2.291	.244	37.957	3.667	.167	1.000	1.000
1595.750	47.407	.301	2.273	.256	39.161	2.505	.176	.964	.911
1596.000	36.615	.172	2.220	.261	38.784	2.235	.232	.950	.879
1596.250	31.658	.000	2.186	.236	35.886	2.200	.281	.985	.963
1596.500	27.963	.000	2.184	.227	34.624	2.100	.279	.996	.989
1596.750	28.889	.000	2.184	.240	35.657	2.101	.283	.983	.958
1597.000	29.607	.000	2.176	.241	36.992	2.241	.237	.971	.929
1597.250	28.214	.000	2.160	.244	37.650	2.109	.294	.958	.898
1597.500	25.344	.000	2.149	.257	35.934	2.039	.303	.955	.891
1597.750	24.656	.000	2.155	.253	29.585	1.700	.299	.998	.995
1598.000	27.096	.066	2.215	.242	32.359	2.201	.255	1.000	1.000
1598.250	27.667	.036	2.245	.218	40.565	3.598	.242	1.000	1.000
1598.500	27.481	.113	2.257	.227	47.432	2.357	.221	.958	.898
1598.750	28.065	.106	2.259	.224	39.759	2.883	.221	1.000	1.000
1599.000	26.680	.000	2.252	.197	36.992	2.189	.241	1.000	1.000
1599.250	23.619	.188	2.361	.179	56.872	2.439	.144	1.000	1.000
1599.500	23.912	.394	2.566	.098	231.697	83.977	.000	1.000	1.000
1599.750	25.410	.337	2.674	.021	1025.858	166.813	.000	1.000	1.000
1600.000	26.238	.284	2.661	.017	1077.440	140.217	.000	1.000	1.000
1600.250	27.687	.045	2.517	.055	149.399	322.120	.075	1.000	1.000
1600.500	30.710	.000	2.276	.177	82.273	261.476	.224	.914	.798
1600.750	29.739	.000	2.147	.255	45.076	2.803	.303	.912	.795
1601.000	32.922	.030	2.187	.252	39.976	1.810	.279	.952	.884
1601.250	48.722	.258	2.305	.228	40.728	1.819	.165	1.000	1.000
1601.500	47.920	.177	2.329	.197	51.162	4.076	.166	1.000	1.000
1601.750	45.255	.000	2.283	.187	51.997	3.115	.225	.999	.997
1602.000	46.652	.000	2.232	.207	45.016	2.730	.252	.982	.957
1602.250	46.867	.033	2.212	.237	43.087	1.892	.263	.957	.896
1602.500	49.992	.117	2.215	.253	47.728	1.821	.245	.914	.798
1602.750	47.081	.151	2.212	.262	54.667	1.895	.239	.874	.709
1603.000	43.212	.000	1.000	.260	49.213	1.797	.000	1.000	1.000
1603.250	39.435	.000	1.000	.251	52.587	2.095	.000	1.000	1.000
1603.500	34.620	.000	1.000	.184	126.363	3.759	.000	1.000	1.000
1603.750	34.708	.000	1.000	.076	596.478	50.092	.000	1.000	1.000
1604.000	40.339	.000	1.000	.061	101.563	374.761	.000	1.000	1.000
1604.250	45.021	.000	2.364	.121	62.770	4.399	.169	1.000	1.000
1604.500	46.090	.000	2.278	.190	47.572	3.704	.228	1.000	1.000
1604.750	39.770	.067	2.238	.229	47.111	2.613	.241	.954	.888
1605.000	38.918	.000	2.216	.219	44.406	2.368	.263	.968	.922
1605.250	38.095	.000	2.206	.228	35.467	2.063	.270	1.000	1.000
1605.500	38.417	.000	2.222	.220	35.162	2.155	.261	1.000	1.000
1605.750	38.479	.000	2.224	.212	29.013	2.153	.257	1.000	1.000
1606.000	36.615	.000	1.000	.214	28.468	2.158	.000	1.000	1.000
1606.250	36.189	.000	1.000	.106	63.841	14.642	.000	1.000	1.000
1606.500	34.657	.000	1.000	.014	805.450	1487.434	.000	1.000	1.000
1606.750	33.074	.000	1.000	.004	40844.360	1530.932	.000	1.000	1.000
1607.000	31.984	.000	1.000	.003	11580.420	1610.021	.000	1.000	1.000
1607.250	30.338	.000	1.000	.004	3225.859	1526.937	.000	1.000	1.000
1607.500	31.662	.000	1.000	.010	2780.763	820.539	.000	1.000	1.000
1607.750	29.930	.000	1.000	.012	2410.238	1249.241	.000	1.000	1.000
1608.000	27.280	.000	1.000	.014	9432.281	1495.929	.000	1.000	1.000
1608.250	29.485	.000	1.000	.030	15847.950	1261.370	.000	1.000	1.000
1608.500	34.958	.000	1.000	.070	53.457	18.085	.000	1.000	1.000
1608.750	44.139	.000	1.000	.129	46.307	5.288	.000	1.000	1.000

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1609.000	44.163	.000	1.000	.188	55.937	3.347	.000	1.000	1.000
1609.250	38.433	.093	2.276	.211	45.580	2.879	.213	.992	.980
1609.500	42.009	.034	2.252	.213	36.254	2.721	.238	1.000	1.000
1609.750	51.691	.133	2.262	.228	40.233	2.639	.214	.994	.986
1610.000	56.441	.133	2.251	.234	43.824	2.784	.220	.963	.910
1610.250	52.210	.164	2.218	.261	37.735	1.700	.235	.956	.892
1610.500	51.700	.179	2.216	.265	35.096	1.712	.233	.967	.920
1610.750	54.960	.201	2.246	.251	36.312	1.845	.211	.984	.961
1611.000	57.906	.228	2.274	.240	40.725	2.546	.189	.978	.946
1611.250	50.149	.116	2.230	.243	43.824	2.550	.236	.947	.872
1611.500	47.075	.093	2.199	.258	44.208	1.917	.260	.923	.818
1611.750	47.855	.240	2.191	.293	38.476	1.707	.236	.902	.770
1612.000	41.794	.000	1.000	.296	42.862	1.708	.000	1.000	1.000
1612.250	38.609	.000	1.000	.241	62.727	4.455	.000	1.000	1.000
1612.500	44.473	.000	1.000	.126	196.307	28.491	.000	1.000	1.000
1612.750	48.353	.000	1.000	.082	157.722	59.358	.000	1.000	1.000
1613.000	41.100	.000	1.000	.070	275.512	89.951	.000	1.000	1.000
1613.250	37.403	.000	1.000	.047	983.184	78.875	.000	1.000	1.000
1613.500	32.478	.000	1.000	.047	1360.859	138.051	.000	1.000	1.000
1613.750	23.885	.000	1.000	.026	11582.850	1361.637	.000	1.000	1.000
1614.000	21.875	.000	1.000	.013	18682.570	1448.102	.000	1.000	1.000
1614.250	21.105	.000	1.000	.067	82.062	267.929	.000	1.000	1.000
1614.500	23.174	.000	1.000	.168	45.877	2.662	.000	1.000	1.000
1614.750	25.176	.009	2.253	.207	38.090	2.604	.242	1.000	1.000
1615.000	25.549	.000	2.254	.202	39.389	2.561	.242	1.000	1.000
1615.250	30.495	.025	2.269	.201	38.257	3.228	.230	1.000	1.000
1615.500	36.784	.232	2.265	.247	21.716	3.333	.194	1.000	1.000
1615.750	41.945	.295	2.237	.277	15.475	1.884	.198	1.000	1.000
1616.000	52.947	.000	1.000	.258	18.248	2.202	.000	1.000	1.000
1616.250	83.606	.000	1.000	.332	20.955	5.215	.000	1.000	1.000
1616.500	102.832	.000	1.000	.465	21.115	4.062	.000	1.000	1.000
1616.750	69.860	.000	1.000	.280	23.229	76.777	.000	1.000	1.000
1617.000	42.286	.000	1.000	.085	25.293	1065.726	.000	1.000	1.000
1617.250	48.045	.000	1.000	.157	42.467	16.830	.000	1.000	1.000
1617.500	49.591	.000	1.000	.147	38.219	157.510	.000	1.000	1.000
1617.750	40.810	.000	1.000	.037	62.552	106.590	.000	1.000	1.000
1618.000	31.192	.000	1.000	.022	72.898	899.897	.000	1.000	1.000
1618.250	26.072	.000	1.000	.043	128.949	21.250	.000	1.000	1.000
1618.500	23.933	.000	1.000	.064	501.765	143.447	.000	1.000	1.000
1618.750	24.547	.000	1.000	.021	1994.809	1150.942	.000	1.000	1.000
1619.000	26.341	.000	1.000	.004	18438.330	1495.942	.000	1.000	1.000
1619.250	25.238	.000	1.000	.004	1244.326	820.243	.000	1.000	1.000
1619.500	30.295	.000	1.000	.023	85.520	245.360	.000	1.000	1.000
1619.750	34.873	.000	1.000	.151	44.106	3.015	.000	1.000	1.000
1620.000	37.295	.000	1.000	.258	37.457	2.312	.000	1.000	1.000
1620.250	58.586	.000	1.000	.252	48.935	7.236	.000	1.000	1.000
1620.500	94.736	.000	1.000	.362	47.871	65.487	.000	1.000	1.000
1620.750	127.024	.000	1.000	.462	38.251	23.093	.000	1.000	1.000
1621.000	141.903	.000	1.000	.381	40.568	17.392	.000	1.000	1.000
1621.250	145.860	1.000	2.362	.356	28.619	29.451	.000	1.000	1.000
1621.500	145.992	1.000	2.421	.447	35.299	9.494	.000	1.000	1.000
1621.750	144.993	1.000	2.530	.442	48.142	16.128	.000	1.000	1.000
1622.000	138.643	1.000	2.544	.355	49.955	21.970	.000	1.000	1.000
1622.250	127.030	1.000	2.414	.365	54.153	22.142	.000	1.000	1.000
1622.500	89.153	.567	2.227	.340	54.052	4.883	.025	.923	.840
1622.750	51.950	.125	2.138	.283	67.624	4.285	.274	.468	.103

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1623.000	38.526	.133	2.135	.286	64.466	4.138	.274	.471	.104
1623.250	38.459	.111	2.130	.284	51.241	4.049	.281	.487	.128
1623.500	41.258	.104	2.131	.283	41.626	3.525	.283	.506	.149
1623.750	43.183	.127	2.171	.269	36.698	2.599	.258	.532	.166
1624.000	43.594	.090	2.214	.242	29.738	1.853	.243	.572	.221
1624.250	44.985	.069	2.211	.239	30.496	1.689	.248	.568	.223
1624.500	43.135	.071	2.191	.252	28.943	1.726	.260	.564	.219
1624.750	39.871	.143	2.192	.266	25.188	1.754	.246	.578	.216
1625.000	46.113	.107	2.203	.258	25.920	1.947	.255	1.000	1.000
1625.250	49.502	.058	2.199	.250	29.751	1.786	.266	.997	.991
1625.500	46.141	.101	2.193	.263	32.602	2.111	.261	.962	.908
1625.750	46.799	.214	2.195	.285	32.921	1.778	.239	.934	.841
1626.000	47.729	.171	2.186	.282	29.577	1.703	.252	.961	.904
1626.250	49.467	.099	2.200	.258	27.496	1.768	.258	1.000	1.000
1626.500	49.970	.000	1.000	.270	25.446	2.068	.000	1.000	1.000
1626.750	47.842	.000	1.000	.278	26.439	1.782	.000	1.000	1.000
1627.000	39.544	.000	1.000	.328	37.714	6.935	.000	1.000	1.000
1627.250	25.698	.000	1.000	.491	69.860	849.560	.000	1.000	1.000
1627.500	15.505	.000	1.000	.580	273.778	941.739	.000	1.000	1.000
1627.750	12.034	.000	1.000	.614	843.219	1461.145	.000	1.000	1.000
1628.000	15.313	.000	1.000	.658	1272.675	1370.596	.000	1.000	1.000
1628.250	21.768	.000	1.000	.636	218.810	1385.761	.000	1.000	1.000
1628.500	44.387	.000	1.000	.611	209.863	33.610	.000	1.000	1.000
1628.750	87.194	.000	1.000	.580	55.915	199.942	.000	1.000	1.000
1629.000	112.556	.000	1.000	.523	15.329	36.664	.000	1.000	1.000
1629.250	106.355	.000	1.000	.445	11.295	2.510	.000	1.000	1.000
1629.500	104.548	.000	1.000	.392	14.491	7.726	.000	1.000	1.000
1629.750	110.765	1.000	2.526	.331	18.375	13.730	.000	1.000	1.000
1630.000	111.462	1.000	2.512	.283	21.405	15.798	.000	1.000	1.000
1630.250	106.547	.993	2.503	.261	25.630	9.663	.000	1.000	1.000
1630.500	99.418	.862	2.450	.266	29.439	8.714	.000	1.000	1.000
1630.750	85.920	.339	2.305	.245	32.740	4.582	.149	.600	.179
1631.000	66.442	.068	2.237	.223	39.086	4.068	.233	.554	.206
1631.250	60.107	.126	2.240	.233	45.344	3.557	.220	.539	.169
1631.500	57.120	.127	2.244	.231	52.076	3.837	.218	.527	.155
1631.750	55.859	.069	2.226	.230	51.699	4.212	.239	.520	.170
1632.000	57.513	.030	2.225	.222	39.032	3.845	.247	.550	.214
1632.250	53.442	.071	2.235	.225	32.511	3.596	.234	.573	.227
1632.500	45.554	.127	2.219	.246	29.486	2.701	.233	.574	.212
1632.750	42.836	.030	2.195	.237	27.003	2.722	.263	.577	.244
1633.000	44.272	.000	2.181	.233	23.643	2.224	.282	1.000	1.000
1633.250	47.157	.120	2.200	.263	22.122	2.072	.253	1.000	1.000
1633.500	50.264	.214	2.235	.261	22.583	2.378	.215	1.000	1.000
1633.750	56.632	.183	2.258	.241	23.972	3.020	.207	1.000	1.000
1634.000	61.599	.079	2.235	.233	25.435	2.929	.240	1.000	1.000
1634.250	58.369	.046	2.215	.238	28.504	2.455	.258	.972	.932
1634.500	52.884	.031	2.201	.244	28.534	2.468	.270	.961	.904
1634.750	48.260	.083	2.197	.257	24.881	2.084	.262	.977	.943
1635.000	44.314	.084	2.197	.257	22.193	2.106	.262	1.000	1.000
1635.250	43.684	.000	2.182	.243	22.448	2.028	.285	.996	.990
1635.500	47.460	.070	2.176	.267	23.271	1.680	.278	.971	.928
1635.750	49.337	.147	2.173	.285	24.441	2.055	.265	.946	.869
1636.000	42.281	.000	2.159	.260	24.136	1.698	.300	.959	.900
1636.250	37.171	.047	2.146	.280	23.662	1.772	.300	.944	.866
1636.500	38.387	.107	2.156	.287	22.922	1.775	.282	.949	.876
1636.750	41.394	.101	2.188	.266	22.117	1.755	.264	.983	.959

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1637.000	43.567	.075	2.192	.258	21.874	2.154	.267	.991	.977
1637.250	45.803	.000	2.187	.238	23.067	2.338	.281	.988	.970
1637.500	42.284	.000	2.181	.244	24.625	2.218	.286	.968	.921
1637.750	37.875	.044	2.175	.262	26.914	2.282	.283	.936	.847
1638.000	40.147	.101	2.181	.270	24.956	1.800	.268	.947	.872
1638.250	42.856	.019	2.174	.257	23.492	1.959	.288	.964	.912
1638.500	43.531	.000	2.172	.243	22.142	1.980	.289	.980	.952
1638.750	44.499	.000	2.172	.248	20.803	1.730	.291	.989	.973
1639.000	47.650	.052	2.176	.263	20.287	1.793	.281	.987	.969
1639.250	51.808	.301	2.235	.280	21.415	2.239	.199	1.000	1.000
1639.500	55.430	.383	2.282	.268	27.453	5.265	.157	.973	.933
1639.750	44.515	.113	2.218	.250	33.329	6.325	.244	.910	.789
1640.000	35.002	.137	2.202	.265	28.600	2.518	.250	.922	.816
1640.250	34.378	.250	2.216	.280	24.425	2.312	.219	.952	.884
1640.500	34.944	.187	2.206	.273	23.263	2.225	.238	.962	.908
1640.750	33.475	.120	2.199	.263	21.224	2.152	.254	.984	.961
1641.000	31.965	.115	2.197	.264	20.190	2.214	.257	.993	.982
1641.250	33.706	.086	2.193	.260	20.603	2.202	.265	.987	.967
1641.500	35.281	.000	2.184	.246	21.268	2.510	.286	.982	.954
1641.750	36.262	.000	2.190	.237	21.047	2.422	.280	.991	.977
1642.000	37.003	.000	2.205	.224	19.597	2.270	.269	1.000	1.000
1642.250	46.879	.000	2.247	.207	16.927	2.432	.247	1.000	1.000
1642.500	75.687	.018	2.272	.198	16.291	3.047	.229	1.000	1.000
1642.750	103.415	.289	2.290	.244	15.231	3.306	.168	1.000	1.000
1643.000	111.415	1.000	2.461	.350	16.024	6.443	.000	1.000	1.000
1643.250	116.914	1.000	2.568	.379	14.839	7.847	.000	1.000	1.000
1643.500	118.775	1.000	2.514	.385	16.971	5.689	.000	1.000	1.000
1643.750	115.809	1.000	2.481	.376	12.236	12.234	.000	1.000	1.000
1644.000	116.379	1.000	2.479	.375	12.321	4.483	.000	1.000	1.000
1644.250	112.587	1.000	2.550	.410	12.072	4.959	.000	1.000	1.000
1644.500	109.350	1.000	2.578	.416	11.834	9.020	.000	1.000	1.000
1644.750	111.868	1.000	2.539	.346	15.743	15.106	.000	1.000	1.000
1645.000	119.541	1.000	2.520	.275	19.681	16.787	.000	1.000	1.000
1645.250	119.354	.931	2.509	.244	23.829	16.954	.000	1.000	1.000
1645.500	115.577	.918	2.504	.245	36.574	16.628	.000	1.000	1.000
1645.750	115.260	.752	2.375	.288	22.194	22.013	.000	1.000	1.000
1646.000	86.791	.423	2.213	.318	23.534	4.088	.169	.914	.795
1646.250	49.688	.168	2.166	.293	24.185	2.742	.265	.903	.772
1646.500	43.206	.178	2.192	.280	20.932	2.276	.248	.954	.889
1646.750	44.774	.175	2.195	.277	18.569	2.066	.247	.983	.959
1647.000	43.977	.049	2.182	.259	17.899	1.894	.278	.990	.975
1647.250	39.988	.013	2.194	.244	19.356	1.885	.278	.987	.967
1647.500	38.691	.089	2.217	.246	21.391	1.814	.250	.979	.948
1647.750	39.581	.100	2.221	.246	20.485	1.938	.245	.990	.976
1648.000	42.474	.033	2.204	.242	18.964	2.097	.268	.996	.989
1648.250	42.191	.000	2.194	.236	18.333	1.960	.278	.998	.996
1648.500	40.845	.004	2.201	.238	18.307	1.704	.275	1.000	1.000
1648.750	43.488	.034	2.206	.241	18.509	1.809	.267	1.000	.999
1649.000	43.764	.025	2.194	.247	18.863	1.807	.275	.985	.964
1649.250	45.761	.055	2.196	.251	18.564	1.834	.268	.987	.968
1649.500	47.863	.052	2.215	.240	19.021	2.013	.258	.999	.997
1649.750	45.055	.043	2.223	.233	22.052	1.976	.254	.976	.941
1650.000	46.970	.103	2.223	.245	25.751	1.968	.243	.936	.848
1650.250	45.529	.096	2.212	.251	26.911	1.999	.251	.917	.805
1650.500	44.137	.010	2.198	.241	25.848	1.854	.276	.925	.822
1650.750	41.628	.000	2.217	.216	24.578	1.935	.261	.957	.896

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1651.000	39.742	.000	2.231	.208	21.424	2.110	.253	.996	.989
1651.250	40.429	.000	2.240	.199	18.198	2.035	.246	1.000	1.000
1651.500	41.082	.000	2.255	.192	17.935	2.276	.238	1.000	1.000
1651.750	41.278	.000	2.248	.206	22.725	3.123	.246	.993	.983
1652.000	37.201	.042	2.235	.225	23.965	3.399	.247	.964	.912
1652.250	40.063	.062	2.228	.234	21.224	2.684	.248	.979	.947
1652.500	44.447	.082	2.250	.224	18.848	2.118	.230	1.000	1.000
1652.750	47.227	.000	2.279	.188	19.787	2.281	.227	1.000	1.000
1653.000	52.132	.023	2.290	.188	24.161	2.538	.217	1.000	1.000
1653.250	47.243	.153	2.285	.218	27.104	2.483	.197	.973	.935
1653.500	46.699	.073	2.284	.202	22.774	2.455	.212	1.000	1.000
1653.750	48.038	.031	2.286	.192	20.307	2.330	.218	1.000	1.000
1654.000	45.468	.047	2.285	.196	22.730	3.222	.216	1.000	1.000
1654.250	43.142	.000	2.264	.186	25.948	4.029	.232	.982	.956
1654.500	39.297	.000	2.228	.214	26.495	3.337	.257	.939	.854
1654.750	40.870	.000	2.213	.219	25.121	2.193	.264	.938	.851
1655.000	39.664	.000	2.229	.208	25.235	2.176	.254	.951	.883
1655.250	34.405	.016	2.253	.209	25.207	2.286	.241	.964	.912
1655.500	32.912	.064	2.257	.217	24.207	2.459	.230	.970	.928
1655.750	32.274	.090	2.245	.229	23.683	2.681	.232	.960	.902
1656.000	33.482	.175	2.251	.243	22.737	2.801	.213	.965	.914
1656.250	35.024	.101	2.284	.208	20.836	2.845	.206	1.000	1.000
1656.500	37.952	.052	2.302	.186	19.451	3.110	.204	1.000	1.000
1656.750	41.932	.132	2.301	.204	18.514	2.783	.191	1.000	1.000
1657.000	40.233	.038	2.284	.194	19.708	2.984	.218	1.000	1.000
1657.250	39.407	.000	2.270	.192	18.700	2.651	.232	1.000	1.000
1657.500	41.615	.046	2.281	.198	17.836	2.185	.218	1.000	1.000
1657.750	48.047	.112	2.277	.215	18.216	2.885	.209	1.000	1.000
1658.000	50.388	.068	2.245	.225	21.089	2.829	.236	.979	.949
1658.250	44.715	.000	2.235	.193	22.340	3.519	.246	.978	.945
1658.500	44.502	.000	2.303	.153	27.813	3.631	.204	1.000	1.000
1658.750	43.043	.093	2.429	.118	44.141	22.135	.120	1.000	1.000
1659.000	37.975	.194	2.509	.091	67.589	57.449	.054	1.000	1.000
1659.250	38.580	.095	2.475	.091	83.092	16.104	.091	1.000	1.000
1659.500	38.608	.071	2.454	.099	45.394	12.068	.109	1.000	1.000
1659.750	36.275	.035	2.426	.108	49.006	6.747	.132	1.000	1.000
1660.000	38.353	.029	2.416	.113	54.908	5.467	.139	1.000	1.000
1660.250	42.457	.000	2.397	.113	55.630	7.367	.153	.979	.948
1660.500	49.145	.030	2.363	.145	48.616	3.643	.171	.945	.868
1660.750	59.604	.111	2.378	.153	30.589	3.439	.148	1.000	1.000
1661.000	81.370	.000	2.343	.144	28.921	6.392	.186	1.000	1.000
1661.250	114.346	.210	2.345	.193	24.193	2.864	.150	1.000	1.000
1661.500	108.472	.624	2.460	.210	30.419	4.232	.000	1.000	1.000
1661.750	61.214	.434	2.573	.108	29.666	7.180	.000	1.000	1.000
1662.000	41.776	.164	2.588	.037	22.888	77.431	.012	1.000	1.000
1662.250	42.374	.098	2.570	.034	23.832	62.261	.033	1.000	1.000
1662.500	46.793	.000	2.460	.063	25.796	28.115	.109	1.000	1.000
1662.750	47.774	.010	2.405	.115	32.210	4.164	.149	1.000	1.000
1663.000	45.585	.182	2.483	.104	40.537	13.652	.072	1.000	1.000
1663.250	46.139	.000	2.478	.060	31.637	56.590	.102	1.000	1.000
1663.500	47.849	.000	2.356	.119	33.380	4.282	.170	1.000	1.000
1663.750	48.785	.158	2.301	.210	28.409	2.942	.186	.969	.925
1664.000	51.991	.118	2.327	.186	35.699	3.970	.178	.957	.895
1664.250	58.567	.079	2.329	.176	27.944	4.388	.183	1.000	1.000
1664.500	61.148	.123	2.319	.191	26.206	3.149	.181	1.000	1.000
[illegible]	[illegible]	.000	2.340	.202	25.080	4.755	.247	.959	.901

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1665.000	46.580	.000	2.166	.244	26.137	2.596	.290	.894	.755
1665.250	43.338	.000	2.152	.253	19.827	2.517	.301	.931	.837
1665.500	45.335	.000	2.178	.241	13.094	2.039	.286	1.000	1.000
1665.750	47.636	.047	2.217	.237	11.538	2.026	.257	1.000	1.000
1666.000	52.691	.024	2.232	.223	11.053	2.184	.252	1.000	1.000
1666.250	59.556	.013	2.217	.230	13.369	2.474	.263	1.000	1.000
1666.500	63.171	.000	2.172	.248	15.380	3.561	.291	.998	.996
1666.750	94.619	.104	2.244	.233	14.251	2.868	.230	1.000	1.000
1667.000	155.053	.513	2.420	.218	12.914	14.901	.025	1.000	1.000
1667.250	174.168	1.000	2.520	.254	19.355	12.716	.000	1.000	1.000
1667.500	163.085	1.000	2.543	.283	22.925	22.515	.000	1.000	1.000
1667.750	162.778	1.000	2.537	.295	23.327	23.219	.000	1.000	1.000
1668.000	161.339	1.000	2.541	.313	23.070	22.388	.000	1.000	1.000
1668.250	151.179	1.000	2.551	.320	23.062	22.040	.000	1.000	1.000
1668.500	148.934	1.000	2.456	.402	22.737	22.777	.000	1.000	1.000
1668.750	150.277	1.000	2.312	.474	23.411	27.484	.000	1.000	1.000
1669.000	148.862	1.000	2.341	.469	20.935	28.855	.000	1.000	1.000
1669.250	144.585	1.000	2.479	.437	21.619	17.044	.000	1.000	1.000
1669.500	144.139	1.000	2.531	.385	20.728	18.191	.000	1.000	1.000
1669.750	147.906	1.000	2.560	.342	26.137	17.993	.000	1.000	1.000
1670.000	149.318	1.000	2.598	.323	27.636	27.998	.000	1.000	1.000
1670.250	135.733	1.000	2.623	.255	38.916	73.588	.000	1.000	1.000
1670.500	126.429	.970	2.605	.194	60.023	75.172	.000	1.000	1.000
1670.750	128.615	1.000	2.598	.211	76.892	50.932	.000	1.000	1.000
1671.000	126.679	1.000	2.633	.218	71.396	72.715	.000	1.000	1.000
1671.250	124.771	1.000	2.629	.189	85.868	136.215	.000	1.000	1.000
1671.500	129.862	.819	2.608	.161	108.924	160.709	.000	1.000	1.000
1671.750	139.539	.907	2.636	.163	112.494	97.029	.000	1.000	1.000
1672.000	147.266	.903	2.646	.156	129.437	155.635	.000	1.000	1.000
1672.250	156.033	.711	2.627	.127	100.806	449.705	.000	1.000	1.000
1672.500	147.394	.517	2.586	.124	44.184	140.317	.000	1.000	1.000
1672.750	105.430	.263	2.458	.136	24.683	42.313	.073	1.000	1.000
1673.000	75.563	.000	2.262	.194	16.189	2.500	.236	1.000	1.000
1673.250	68.606	.056	2.193	.253	16.000	1.769	.270	1.000	1.000
1673.500	65.867	.098	2.191	.263	15.469	1.758	.263	1.000	1.000
1673.750	61.112	.122	2.191	.269	14.916	1.759	.259	1.000	1.000
1674.000	62.266	.105	2.187	.268	14.362	1.747	.265	1.000	1.000
1674.250	68.770	.000	2.175	.251	14.394	1.743	.291	1.000	1.000
1674.500	77.030	.000	2.155	.251	16.908	1.788	.299	1.000	1.000
1674.750	83.481	.151	2.177	.283	17.921	2.060	.262	.992	.981
1675.000	90.353	.351	2.232	.292	17.176	2.014	.192	1.000	1.000
1675.250	97.407	.418	2.240	.301	16.095	2.118	.160	1.000	1.000
1675.500	104.354	.299	2.234	.280	17.146	1.795	.200	1.000	1.000
1675.750	125.232	.431	2.254	.295	23.528	3.021	.139	.971	.928
1676.000	144.456	.941	2.290	.379	26.063	30.775	.000	1.000	1.000
1676.250	158.777	1.000	2.347	.380	30.227	29.151	.000	1.000	1.000
1676.500	170.014	.962	2.420	.305	32.694	15.445	.000	1.000	1.000
1676.750	174.472	.995	2.422	.310	27.887	7.256	.000	1.000	1.000
1677.000	163.898	.905	2.388	.313	25.396	3.631	.000	1.000	1.000
1677.250	144.814	.679	2.368	.277	25.607	3.900	.000	1.000	1.000
1677.500	133.544	.617	2.366	.266	26.374	3.959	.000	1.000	1.000
1677.750	133.438	.705	2.389	.270	28.949	5.754	.000	1.000	1.000
1678.000	145.188	.798	2.433	.263	33.413	7.767	.000	1.000	1.000
1678.250	156.011	.703	2.437	.241	36.873	12.086	.000	1.000	1.000
1678.500	158.210	.499	2.358	.252	23.721	3.518	.048	1.000	1.000
1678.750	166.803	.439	2.277	.283	16.714	2.150	.122	1.000	1.000

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1679.000	153.778	.521	2.271	.310	19.868	1.932	.056	1.000	1.000
1679.250	130.105	.511	2.301	.283	21.121	2.849	.056	1.000	1.000
1679.500	120.372	.382	2.275	.272	17.503	2.278	.161	1.000	1.000
1679.750	109.687	.366	2.223	.300	15.796	1.991	.195	1.000	1.000
1680.000	95.575	.466	2.226	.319	16.889	1.724	.117	1.000	1.000
1680.250	105.649	.549	2.288	.305	20.893	7.334	.033	1.000	1.000
1680.500	128.970	.607	2.317	.293	23.006	15.226	.000	1.000	1.000
1680.750	129.605	1.000	2.372	.378	27.296	19.149	.000	1.000	1.000
1681.000	118.085	1.000	2.404	.419	23.366	11.582	.000	1.000	1.000
1681.250	107.658	.970	2.399	.319	20.166	7.478	.000	1.000	1.000
1681.500	108.777	.909	2.417	.296	21.685	8.956	.000	1.000	1.000
1681.750	123.971	1.000	2.434	.324	18.604	19.431	.000	1.000	1.000
1682.000	125.417	1.000	2.485	.345	18.118	16.796	.000	1.000	1.000
1682.250	126.895	1.000	2.453	.334	26.400	15.882	.000	1.000	1.000
1682.500	138.293	.729	2.333	.309	25.850	8.833	.000	1.000	1.000
1682.750	130.163	.520	2.266	.306	22.239	3.568	.057	1.000	1.000
1683.000	100.870	.407	2.232	.303	23.491	2.705	.175	.970	.925
1683.250	81.716	.274	2.213	.287	23.998	2.140	.217	.970	.925
1683.500	86.514	.216	2.235	.262	24.121	3.523	.215	1.000	1.000
1683.750	90.158	.231	2.230	.268	23.716	2.476	.215	.997	.992
1684.000	88.186	.269	2.216	.284	22.698	2.846	.216	.986	.966
1684.250	79.275	.232	2.210	.280	21.759	2.497	.226	.996	.991
1684.500	75.459	.199	2.206	.275	22.699	2.059	.235	.986	.966
1684.750	71.417	.157	2.193	.274	24.040	2.277	.251	.966	.917
1685.000	61.522	.148	2.183	.279	26.057	2.158	.259	.940	.856
1685.250	50.624	.127	2.183	.275	27.061	2.887	.263	.935	.844
1685.500	47.832	.011	2.172	.257	26.856	2.205	.291	.946	.870
1685.750	47.078	.000	2.188	.245	26.591	2.178	.283	.962	.908
1686.000	45.411	.000	2.213	.229	27.296	2.329	.268	.978	.945
1686.250	41.121	.056	2.226	.233	27.879	2.635	.250	.977	.944
1686.500	38.869	.087	2.240	.231	27.888	3.422	.235	.986	.965
1686.750	37.602	.049	2.237	.225	26.814	3.312	.245	.996	.989
1687.000	36.603	.000	2.216	.208	23.518	2.499	.259	1.000	1.000
1687.250	38.388	.000	2.198	.203	17.601	2.030	.264	1.000	1.000
1687.500	49.382	.000	2.179	.222	16.333	1.903	.279	1.000	1.000
1687.750	60.691	.000	2.185	.244	19.280	1.881	.284	1.000	1.000
1688.000	61.287	.073	2.173	.269	21.647	1.806	.279	.977	.943
1688.250	55.563	.038	2.173	.262	24.370	1.892	.286	.956	.895
1688.500	51.414	.038	2.204	.243	23.008	2.212	.267	.994	.985
1688.750	50.618	.090	2.231	.238	23.731	2.355	.241	1.000	1.000
1689.000	48.884	.063	2.239	.227	24.460	2.225	.241	1.000	1.000
1689.250	46.784	.060	2.233	.230	25.554	2.076	.245	.996	.990
1689.500	48.712	.074	2.225	.238	26.090	1.939	.247	.981	.953
1689.750	48.556	.094	2.219	.246	27.777	1.955	.247	.959	.900
1690.000	44.694	.035	2.205	.242	27.695	2.005	.247	.955	.892
1690.250	40.463	.040	2.206	.243	24.529	2.286	.265	.979	.949
1690.500	41.041	.080	2.222	.241	19.946	2.291	.248	1.000	1.000
1690.750	43.688	.092	2.226	.241	19.269	2.139	.243	1.000	1.000
1691.000	46.237	.038	2.220	.234	23.007	3.449	.257	1.000	1.000
1691.250	48.955	.005	2.229	.221	24.963	2.634	.257	1.000	1.000
1691.500	58.992	.033	2.263	.207	21.963	2.602	.232	1.000	1.000
1691.750	76.168	.169	2.271	.230	24.084	2.438	.202	1.000	1.000
1692.000	69.438	.198	2.251	.248	28.700	2.535	.208	.963	.910
1692.250	47.855	.026	2.221	.231	25.522	2.187	.259	.983	.958
1692.500	39.518	.002	2.210	.232	23.713	2.419	.270	.991	.977
1692.750	36.265	.022	2.219	.231	23.371	2.118	.261	.999	.997

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1693.000	32.599	.000	2.225	.222	26.295	2.585	.261	.983	.959
1693.250	34.709	.000	2.224	.211	24.051	2.755	.257	1.000	1.000
1693.500	36.903	.000	2.232	.217	22.697	2.674	.256	1.000	1.000
1693.750	37.014	.181	2.236	.253	21.559	2.477	.220	1.000	1.000
1694.000	37.129	.000	1.000	.250	20.836	2.746	.000	1.000	1.000
1694.250	38.390	.000	1.000	.220	21.874	3.001	.000	1.000	1.000
1694.500	36.623	.000	1.000	.201	24.021	3.936	.000	1.000	1.000
1694.750	37.838	.000	1.000	.192	25.061	5.133	.000	1.000	1.000
1695.000	43.761	.000	1.000	.177	24.283	3.884	.000	1.000	1.000
1695.250	52.676	.000	1.000	.161	23.977	3.301	.000	1.000	1.000
1695.500	50.870	.000	1.000	.161	27.078	4.087	.000	1.000	1.000
1695.750	50.671	.000	1.000	.168	37.253	3.303	.000	1.000	1.000
1696.000	71.892	.000	1.000	.230	40.421	26.405	.000	1.000	1.000
1696.250	73.938	.000	1.000	.283	54.304	9.022	.000	1.000	1.000
1696.500	65.407	.000	1.000	.271	36.519	10.012	.000	1.000	1.000
1696.750	57.195	.000	1.000	.295	30.999	7.338	.000	1.000	1.000
1697.000	53.047	.000	1.000	.242	31.237	3.423	.000	1.000	1.000
1697.250	53.346	.159	2.288	.218	31.686	3.667	.194	.979	.948
1697.500	47.985	.000	1.000	.223	28.986	3.300	.000	1.000	1.000
1697.750	47.511	.000	1.000	.208	24.654	2.980	.000	1.000	1.000
1698.000	44.898	.000	1.000	.207	30.278	3.369	.000	1.000	1.000
1698.250	44.917	.000	1.000	.284	39.718	10.450	.000	1.000	1.000
1698.500	48.571	.000	1.000	.406	62.774	15.996	.000	1.000	1.000
1698.750	57.599	.000	1.000	.479	43.847	48.428	.000	1.000	1.000
1699.000	71.327	.000	1.000	.420	45.438	14.091	.000	1.000	1.000
1699.250	86.887	.000	1.000	.344	25.672	11.292	.000	1.000	1.000
1699.500	102.928	1.000	2.395	.364	17.494	7.294	.000	1.000	1.000
1699.750	107.557	1.000	2.397	.394	11.065	2.533	.000	1.000	1.000
1700.000	95.923	.882	2.300	.361	11.086	1.756	.000	1.000	1.000
1700.250	85.868	.492	2.291	.285	14.016	2.362	.072	1.000	1.000
1700.500	80.200	.474	2.332	.256	17.985	2.756	.071	1.000	1.000
1700.750	90.700	.438	2.360	.232	18.784	7.813	.083	1.000	1.000
1701.000	98.454	.415	2.310	.257	18.883	2.878	.125	1.000	1.000
1701.250	80.759	.408	2.240	.298	17.317	2.685	.170	1.000	1.000
1701.500	53.599	.168	2.187	.281	17.674	2.024	.252	1.000	1.000
1701.750	39.006	.000	2.149	.246	16.618	1.704	.299	1.000	1.000
1702.000	34.530	.000	2.144	.250	15.652	1.658	.303	1.000	1.000
1702.250	37.395	.080	2.152	.284	17.054	2.449	.290	.984	.959
1702.500	38.778	.092	2.149	.288	17.114	2.924	.290	.979	.949
1702.750	42.592	.059	2.146	.283	16.200	2.723	.298	.991	.977
1703.000	42.344	.151	2.154	.297	15.585	3.088	.276	.997	.993
1703.250	39.317	.058	2.154	.278	17.869	2.298	.294	.975	.940
1703.500	37.988	.000	2.149	.263	19.575	3.971	.306	.962	.907
1703.750	32.557	.000	2.152	.249	18.640	2.363	.299	.979	.947
1704.000	31.475	.000	2.148	.249	14.670	1.634	.301	1.000	1.000
1704.250	34.077	.000	2.140	.265	15.836	1.518	.310	.996	.990
1704.500	35.488	.030	2.139	.281	18.418	1.769	.308	.959	.899
1704.750	32.026	.025	2.150	.273	17.260	1.607	.302	.980	.952
1705.000	31.214	.000	2.161	.247	16.055	1.562	.295	1.000	1.000
1705.250	32.745	.024	2.168	.262	17.493	1.678	.292	.991	.978
1705.500	33.259	.123	2.172	.280	20.092	1.553	.270	.956	.893
1705.750	33.018	.025	2.159	.267	19.592	1.643	.296	.961	.905
1706.000	35.221	.009	2.164	.261	15.924	1.573	.296	1.000	1.000
1706.250	40.760	.018	2.179	.254	16.125	1.697	.286	1.000	1.000
1706.500	41.271	.000	2.180	.248	17.866	1.855	.288	.998	.994
1706.750	38.927	.000	2.186	.240	18.879	1.796	.283	.994	.984

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1707.000	36.526	.026	2.192	.248	18.485	1.597	.276	.998	.994
1707.250	37.139	.072	2.197	.255	18.970	2.005	.265	.992	.981
1707.500	36.358	.006	2.181	.250	18.762	1.761	.287	.986	.966
1707.750	37.813	.000	2.178	.249	20.132	1.818	.289	.971	.928
1708.000	36.625	.000	2.178	.235	20.269	2.601	.284	.977	.942
1708.250	30.882	.000	2.174	.246	18.724	1.901	.289	.984	.960
1708.500	29.291	.084	2.172	.272	15.114	1.425	.277	1.000	1.000
1708.750	30.327	.034	2.177	.258	16.326	1.699	.284	1.000	1.000
1709.000	29.934	.000	2.176	.246	17.671	1.746	.289	.995	.988
1709.250	27.392	.000	2.162	.258	16.755	1.700	.299	.992	.979
1709.500	29.609	.031	2.159	.269	15.150	1.774	.296	1.000	1.000
1709.750	31.573	.059	2.170	.268	15.407	1.770	.283	1.000	1.000
1710.000	32.257	.000	2.180	.250	15.743	1.802	.288	1.000	1.000
1710.250	33.471	.000	2.186	.231	16.523	1.895	.279	1.000	1.000
1710.500	37.049	.000	2.190	.234	17.896	1.734	.279	1.000	1.000
1710.750	36.284	.000	2.199	.227	19.321	1.826	.273	.997	.992
1711.000	36.295	.018	2.219	.230	19.163	1.880	.261	1.000	1.000
1711.250	37.637	.158	2.234	.250	18.821	1.901	.226	1.000	1.000
1711.500	39.276	.070	2.233	.232	18.553	1.982	.243	1.000	1.000
1711.750	39.170	.004	2.208	.234	20.302	1.860	.271	.987	.969
1712.000	36.452	.020	2.190	.248	20.996	2.230	.279	.963	.911
1712.250	32.630	.000	2.179	.244	19.643	1.769	.287	.972	.931
1712.500	31.953	.023	2.163	.265	16.968	1.694	.294	.982	.956
1712.750	30.858	.032	2.147	.276	16.525	1.566	.302	.974	.936
1713.000	32.639	.000	2.139	.271	16.436	1.460	.313	.972	.931
1713.250	29.774	.043	2.142	.282	17.303	1.582	.304	.959	.900
1713.500	29.067	.118	2.153	.291	17.911	1.805	.282	.953	.886
1713.750	27.251	.068	2.154	.280	18.078	2.020	.292	.956	.893
1714.000	25.808	.000	2.143	.264	17.754	2.017	.308	.961	.905
1714.250	26.357	.081	2.158	.280	13.974	1.721	.287	1.000	1.000
1714.500	25.545	.234	2.191	.292	10.801	1.452	.237	1.000	1.000
1714.750	25.429	.264	2.193	.297	9.798	1.424	.231	1.000	1.000
1715.000	29.770	.194	2.206	.274	11.433	1.781	.236	1.000	1.000
1715.250	34.053	.014	2.206	.237	15.435	1.999	.270	1.000	1.000
1715.500	36.434	.151	2.212	.262	18.276	1.799	.240	.996	.989
1715.750	35.732	.218	2.221	.270	19.240	2.299	.222	.987	.967
1716.000	33.384	.059	2.194	.253	20.018	3.973	.269	.967	.918
1716.250	31.613	.000	2.183	.248	19.561	3.912	.287	.967	.919
1716.500	31.680	.000	2.193	.229	17.016	2.464	.276	1.000	1.000
1716.750	31.057	.000	2.191	.239	15.126	2.126	.280	1.000	1.000
1717.000	27.667	.159	2.174	.286	14.998	1.643	.262	1.000	1.000
1717.250	28.879	.144	2.164	.289	15.129	1.576	.271	.991	.978
1717.500	28.522	.023	2.177	.257	13.735	1.800	.286	1.000	1.000
1717.750	31.472	.054	2.191	.254	14.224	1.732	.271	1.000	1.000
1718.000	38.657	.040	2.209	.241	17.099	1.810	.264	1.000	1.000
1718.250	38.046	.000	2.222	.217	22.381	1.770	.260	.976	.940
1718.500	34.733	.034	2.239	.221	21.048	1.768	.246	.997	.991
1718.750	32.229	.174	2.252	.243	14.247	1.677	.213	1.000	1.000
1719.000	33.645	.137	2.251	.235	13.910	1.561	.220	1.000	1.000
1719.250	43.725	.272	2.289	.240	15.368	2.170	.172	1.000	1.000
1719.500	48.457	.428	2.293	.271	20.027	2.812	.123	1.000	1.000
1719.750	39.814	.264	2.206	.289	19.545	1.620	.222	.957	.894
1720.000	34.695	.152	2.181	.281	19.181	1.497	.259	.949	.878
1720.250	33.135	.149	2.180	.281	19.592	1.701	.260	.943	.864
1720.500	31.800	.037	2.160	.270	19.883	1.618	.294	.936	.847
1720.750	32.696	.000	2.150	.259	19.905	1.593	.304	.935	.846

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1721.000	32.765	.043	2.162	.270	18.869	1.562	.291	.946	.871
1721.250	35.009	.050	2.175	.263	17.725	1.595	.282	.968	.922
1721.500	34.623	.064	2.185	.260	15.096	1.653	.273	1.000	1.000
1721.750	37.599	.132	2.175	.280	16.861	1.570	.266	.971	.930
1722.000	50.357	.218	2.238	.260	16.883	2.491	.213	1.000	1.000
1722.250	53.141	.423	2.306	.262	18.463	2.212	.121	1.000	1.000
1722.500	48.218	.445	2.291	.275	14.393	2.143	.109	1.000	1.000
1722.750	64.962	.493	2.351	.255	15.869	2.675	.054	1.000	1.000
1723.000	87.265	.871	2.417	.288	13.756	10.612	.000	1.000	1.000
1723.250	68.564	.522	2.278	.305	19.431	5.375	.054	1.000	1.000
1723.500	40.644	.231	2.168	.305	17.727	3.739	.252	.942	.861
1723.750	30.688	.053	2.131	.290	17.438	2.546	.308	.934	.842
1724.000	22.620	.072	2.145	.286	13.536	1.578	.296	.994	.984
1724.250	18.384	.143	2.175	.282	12.753	1.687	.264	1.000	1.000
1724.500	20.365	.000	2.180	.243	12.678	1.912	.286	1.000	1.000
1724.750	23.601	.000	2.190	.230	14.960	2.209	.277	1.000	1.000
1725.000	27.820	.095	2.204	.255	16.781	2.207	.256	.996	.991
1725.250	27.496	.166	2.238	.249	19.217	2.614	.222	.995	.989
1725.500	27.587	.083	2.275	.210	19.500	3.462	.215	1.000	1.000
1725.750	31.240	.076	2.278	.206	18.671	3.254	.215	1.000	1.000
1726.000	36.786	.154	2.258	.234	18.870	2.944	.212	1.000	1.000
1726.250	44.286	.221	2.259	.248	20.448	1.909	.199	.998	.994
1726.500	52.809	.354	2.314	.243	23.733	2.549	.143	1.000	1.000
1726.750	59.972	.323	2.339	.221	25.537	3.315	.133	1.000	1.000
1727.000	61.480	.267	2.317	.222	22.204	4.159	.156	1.000	1.000
1727.250	45.033	.268	2.255	.261	18.077	2.969	.193	1.000	1.000
1727.500	36.363	.227	2.237	.263	17.862	2.109	.212	1.000	1.000
1727.750	39.632	.170	2.248	.244	17.279	2.336	.216	1.000	1.000
1728.000	41.016	.000	1.000	.245	10.849	2.022	.000	1.000	1.000
1728.250	44.085	.000	1.000	.288	5.370	2.079	.000	1.000	1.000
1728.500	44.891	.000	1.000	.457	6.799	1.997	.000	1.000	1.000
1728.750	62.734	.000	1.000	.547	14.100	14.355	.000	1.000	1.000
1729.000	88.920	.000	1.000	.454	12.249	8.415	.000	1.000	1.000
1729.250	98.908	.000	1.000	.374	12.811	9.616	.000	1.000	1.000
1729.500	104.455	1.000	2.533	.346	14.747	9.823	.000	1.000	1.000
1729.750	114.893	1.000	2.517	.341	13.142	14.996	.000	1.000	1.000
1730.000	124.828	1.000	2.520	.356	12.345	11.707	.000	1.000	1.000
1730.250	126.641	1.000	2.539	.360	13.388	12.846	.000	1.000	1.000
1730.500	133.644	1.000	2.545	.301	15.295	19.226	.000	1.000	1.000
1730.750	134.620	1.000	2.533	.274	16.115	16.116	.000	1.000	1.000
1731.000	129.511	1.000	2.546	.288	16.691	18.004	.000	1.000	1.000
1731.250	121.026	1.000	2.532	.264	17.077	20.442	.000	1.000	1.000
1731.500	122.325	1.000	2.526	.276	17.234	16.481	.000	1.000	1.000
1731.750	127.937	1.000	2.544	.296	17.740	18.950	.000	1.000	1.000
1732.000	132.474	1.000	2.549	.300	18.560	18.088	.000	1.000	1.000
1732.250	133.519	1.000	2.544	.273	19.158	17.077	.000	1.000	1.000
1732.500	131.705	.989	2.523	.248	19.924	19.346	.000	1.000	1.000
1732.750	121.897	.934	2.497	.253	23.888	15.489	.000	1.000	1.000
1733.000	110.940	.775	2.458	.243	20.482	7.295	.000	1.000	1.000
1733.250	112.627	.754	2.443	.247	21.821	4.935	.000	1.000	1.000
1733.500	111.071	.848	2.437	.271	22.416	6.854	.000	1.000	1.000
1733.750	104.174	.731	2.393	.273	20.683	4.777	.000	1.000	1.000
1734.000	95.801	.613	2.339	.281	20.742	3.611	.000	1.000	1.000
1734.250	87.677	.643	2.339	.288	21.226	3.039	.000	1.000	1.000
1734.500	87.005	.696	2.353	.290	20.578	4.011	.000	1.000	1.000
[illegible]	[illegible]	[illegible]	[illegible]	.294	20.209	3.112	.037	1.000	1.000

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1735.000	65.822	.331	2.266	.267	20.566	2.580	.175	1.000	1.000
1735.250	62.751	.225	2.261	.248	21.141	2.627	.197	1.000	1.000
1735.500	54.340	.152	2.213	.262	19.292	2.037	.240	1.000	1.000
1735.750	50.072	.201	2.212	.273	18.415	1.678	.231	1.000	1.000
1736.000	52.851	.268	2.221	.281	18.116	2.451	.213	1.000	1.000
1736.250	49.030	.197	2.215	.269	19.214	1.724	.230	1.000	1.000
1736.500	47.208	.199	2.230	.261	19.358	1.982	.221	1.000	1.000
1736.750	46.563	.068	2.201	.251	20.159	1.890	.263	1.000	1.000
1737.000	53.285	.074	2.209	.248	19.262	2.177	.257	1.000	1.000
1737.250	60.346	.184	2.230	.258	20.010	2.064	.224	1.000	1.000
1737.500	59.722	.193	2.236	.256	20.472	2.153	.218	1.000	1.000
1737.750	56.101	.113	2.230	.243	20.675	2.243	.237	1.000	1.000
1738.000	54.356	.120	2.221	.250	21.014	2.197	.241	1.000	1.000
1738.250	55.727	.245	2.229	.271	20.086	2.141	.213	1.000	1.000
1738.500	60.894	.249	2.238	.266	20.634	2.374	.206	1.000	1.000
1738.750	63.395	.235	2.226	.271	20.245	2.012	.217	1.000	1.000
1739.000	58.371	.294	2.225	.284	21.281	1.964	.206	.986	.966
1739.250	55.535	.230	2.231	.267	20.462	2.193	.214	1.000	1.000
1739.500	55.116	.238	2.221	.274	20.534	2.065	.219	.999	.997
1739.750	54.488	.270	2.236	.272	20.260	2.206	.203	1.000	1.000
1740.000	60.407	.250	2.231	.271	20.120	2.235	.210	1.000	1.000
1740.250	63.879	.265	2.229	.276	20.871	2.090	.209	.999	.999
1740.500	62.590	.260	2.236	.270	20.409	2.641	.205	1.000	1.000
1740.750	63.351	.395	2.232	.301	20.059	2.284	.184	.994	.985
1741.000	62.744	.365	2.227	.297	21.647	2.561	.192	.971	.928
1741.250	61.644	.332	2.253	.275	20.231	2.140	.183	1.000	1.000
1741.500	60.693	.304	2.264	.262	22.368	2.396	.181	1.000	1.000
1741.750	53.995	.191	2.208	.273	18.228	2.011	.236	1.000	1.000
1742.000	45.044	.097	2.169	.277	16.547	1.652	.276	1.000	1.000
1742.250	44.238	.057	2.158	.275	16.664	1.877	.291	1.000	1.000
1742.500	47.177	.116	2.165	.283	19.621	2.014	.276	.969	.925
1742.750	44.817	.158	2.179	.284	19.454	1.770	.259	.979	.947
1743.000	45.871	.125	2.180	.276	16.704	1.570	.265	1.000	1.000
1743.250	44.462	.036	2.194	.249	16.915	1.702	.273	1.000	1.000
1743.500	40.777	.075	2.203	.252	17.871	1.649	.260	1.000	1.000
1743.750	40.330	.133	2.201	.265	17.123	1.633	.251	1.000	1.000
1744.000	43.853	.115	2.234	.241	18.706	1.665	.234	1.000	1.000
1744.250	52.353	.134	2.283	.215	21.018	1.866	.201	1.000	1.000
1744.500	60.257	.264	2.294	.236	24.066	2.463	.171	1.000	1.000
1744.750	65.021	.383	2.313	.249	24.102	2.659	.139	1.000	1.000
1745.000	70.198	.505	2.344	.256	22.541	4.205	.048	1.000	1.000
1745.250	66.493	.370	2.295	.257	20.489	2.325	.151	1.000	1.000
1745.500	58.366	.119	2.207	.258	19.567	2.323	.250	1.000	1.000
1745.750	50.163	.095	2.178	.271	16.858	1.708	.272	1.000	1.000
1746.000	50.670	.131	2.205	.262	12.084	1.695	.249	1.000	1.000
1746.250	77.358	.277	2.199	.296	10.411	2.179	.225	1.000	1.000
1746.500	110.660	1.000	2.276	.421	6.982	19.184	.000	1.000	1.000
1746.750	103.947	1.000	2.483	.411	5.778	3.013	.000	1.000	1.000
1747.000	68.808	1.000	2.398	.348	6.483	1.526	.000	1.000	1.000
1747.250	51.990	.326	2.238	.283	11.582	1.793	.193	1.000	1.000
1747.500	48.001	.109	2.217	.250	14.659	2.162	.245	1.000	1.000
1747.750	45.757	.171	2.224	.259	13.977	1.928	.230	1.000	1.000
1748.000	46.586	.139	2.219	.255	14.849	2.119	.239	1.000	1.000
1748.250	44.094	.038	2.223	.232	13.419	2.039	.255	1.000	1.000
1748.500	44.274	.016	2.228	.224	11.880	2.261	.256	1.000	1.000
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	10.471	2.115	.224	1.000	1.000

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1749.000	80.732	.284	2.341	.212	9.111	2.441	.139	1.000	1.000
1749.250	113.557	1.000	2.502	.273	9.737	3.620	.000	1.000	1.000
1749.500	117.520	1.000	2.583	.294	12.488	7.075	.000	1.000	1.000
1749.750	110.047	.815	2.487	.234	18.025	5.494	.000	1.000	1.000
1750.000	81.749	.497	2.395	.229	20.138	4.357	.038	1.000	1.000
1750.250	58.640	.389	2.326	.242	22.894	4.693	.130	1.000	1.000
1750.500	53.981	.085	2.239	.232	22.378	3.765	.237	.981	.953
1750.750	52.080	.099	2.235	.237	17.928	1.709	.236	1.000	1.000
1751.000	50.637	.155	2.237	.247	17.739	1.662	.225	1.000	1.000
1751.250	49.853	.135	2.214	.257	18.323	1.707	.242	.997	.992
1751.500	50.430	.057	2.203	.248	17.719	2.236	.264	.999	.999
1751.750	53.522	.055	2.222	.236	19.017	3.348	.253	1.000	1.000
1752.000	51.263	.139	2.247	.238	18.768	2.363	.222	1.000	1.000
1752.250	50.168	.121	2.233	.243	20.534	1.963	.233	.993	.983
1752.500	55.429	.068	2.232	.233	18.828	2.249	.244	1.000	1.000
1752.750	55.069	.037	2.221	.233	19.640	4.097	.257	.998	.995
1753.000	51.707	.115	2.227	.245	20.695	2.842	.238	.987	.968
1753.250	51.972	.144	2.237	.245	22.447	2.408	.227	.976	.941
1753.500	53.662	.124	2.247	.235	22.380	1.987	.225	.990	.975
1753.750	50.055	.032	2.226	.229	18.780	2.514	.255	1.000	1.000
1754.000	53.635	.000	2.201	.229	20.860	2.088	.273	.977	.944
1754.250	53.155	.000	2.206	.232	21.232	3.127	.272	.975	.940
1754.500	51.625	.027	2.214	.235	19.691	3.047	.263	.994	.985
1754.750	289.120	.069	2.243	.226	17.915	1.948	.237	1.000	1.000
1755.000	638.283	.104	2.250	.229	20.655	2.153	.226	1.000	1.000
1755.250	692.000	.047	2.243	.221	22.475	2.434	.241	.995	.987
1755.500	692.000	.000	2.214	.226	24.229	2.194	.267	.959	.901
1755.750	692.000	.000	2.177	.232	19.308	2.363	.283	.981	.952
1756.000	692.000	.000	2.179	.238	15.773	1.808	.285	1.000	1.000
1756.250	692.000	.108	2.231	.241	17.123	1.761	.237	1.000	1.000
1756.500	692.000	.063	2.217	.241	20.538	2.739	.254	.988	.971
1756.750	692.000	.000	2.180	.239	22.061	2.113	.285	.954	.888
1757.000	692.000	.000	2.169	.229	18.584	1.794	.285	.987	.967
1757.250	692.000	.000	2.150	.220	19.867	3.425	.289	.969	.924
1757.500	692.000	.000	2.155	.228	19.451	2.121	.290	.972	.931
1757.750	692.000	.000	2.167	.247	17.375	1.520	.292	.991	.979
1758.000	692.000	.000	2.164	.248	16.840	1.589	.294	.995	.989
1758.250	692.000	.000	2.164	.248	16.957	1.524	.294	.994	.986
1758.500	692.000	.000	2.153	.248	17.835	1.692	.299	.979	.949
1758.750	692.000	.000	2.157	.248	19.465	2.086	.297	.965	.914
1759.000	692.000	.000	2.180	.248	18.685	1.531	.288	.985	.962
1759.250	692.000	.000	2.173	.248	15.891	1.503	.291	1.000	1.000
1759.500	692.000	.000	2.171	.248	15.634	1.579	.292	1.000	1.000
1759.750	692.000	.000	2.168	.248	17.225	1.699	.293	.996	.989
1760.000	692.000	.000	2.174	.248	18.875	1.771	.290	.981	.954
1760.250	692.000	.000	2.177	.248	19.566	1.726	.289	.976	.941
1760.500	692.000	.020	2.189	.248	19.406	1.882	.279	.985	.962
1760.750	692.000	.016	2.188	.248	18.449	1.647	.281	.995	.986
1761.000	692.000	.000	2.179	.248	16.457	1.544	.289	1.000	1.000
1761.250	692.000	.014	2.187	.248	15.640	1.492	.282	1.000	1.000
1761.500	692.000	.007	2.185	.248	17.206	1.744	.284	1.000	1.000
1761.750	692.000	.000	2.168	.248	22.420	2.898	.293	.947	.874
1762.000	692.000	.000	2.171	.249	21.572	3.392	.292	.956	.895
1762.250	692.000	.000	2.168	.249	20.844	1.854	.293	.962	.908
1762.500	692.000	.000	2.158	.249	19.361	5.237	.297	.972	.931
1762.750	692.000	.000	2.167	.249	21.918	2.580	.293	.953	.886

BARRACOUTA 5 LOG ANALYSIS

DEPTH	.GR	.VSH	.RHOBC	.NPHIC	.RT	.RXO	.PHIE	.SXOE	.SWEC
1763.000	692.000	.012	2.186	.249	22.588	2.072	.282	.957	.896
1763.250	692.000	.048	2.199	.249	19.050	1.741	.268	.999	.997
1763.500	692.000	.050	2.199	.249	17.498	1.712	.268	1.000	1.000
1763.750	692.000	.000	1.660	.270	18.185	1.687	.521	.788	.551
1764.000	692.000	1.000	3.215	.353	18.674	2.007	.000	1.000	1.000
1764.250	692.000	1.000	3.742	.353	20.913	1.858	.000	1.000	1.000
1764.500	692.000	1.000	3.742	.353	18.624	1.929	.000	1.000	1.000
1764.750	692.000	1.000	3.742	.353	17.885	1.752	.000	1.000	1.000
1765.000	692.000	1.000	3.742	.353	18.646	1.811	.000	1.000	1.000

2. EPT ANALYSIS

EPT's were run in logging suites 2 and 3 in Barracouta 5. Suite 2 EPT was run to determine residual gas saturations in the invaded zone in the N-1 gas column. Suite 2 EPT appears faulty (refer log quality section) and the average EPT derived residual gas saturation of 7% in the N-1 gas column cannot be trusted.

The EPT in Suite 3 was run to determine residual oil saturations in the M-1 swept zone. Residual saturations of 9.1% and 9.8% were obtained from the TPO and the A/Aw methods respectively. These saturations are subject to considerable uncertainty because the small residual oil saturations attempting to be measured are at the quantitative resolution limits of the tool and analysis techniques. In general, it has been found that the EPT tool cannot adequately quantify residual hydrocarbon saturations in Gippsland reservoirs [2,3]. A review of the TPO and A/Aw methods is presented below.

TPO Method

This method assumes that microwave propagation time is relatively insensitive to formation water salinity. (Approx. 1400 ppm in the M-1 swept zone). The method allows for temperature correction of fluid propagation time and an attenuation correction for log measured propagation time. The technique is as follows:

(i) Measured microwave attenuation was corrected for geometric spreading loss:

$$A = EATT - 45 - TPL\,(1.3 + 0.18\,TPL)$$

where: EATT is log measured attenuation and TPL is log measured propagation time.

(ii) "Lossless" formation propagation time was calculated using:

$$TPO = [TPL^2 - (A/60)^2]^{1/2}$$

(iii) EPT propagation time of fresh water at formation temperature was calculated using:

$$TPWO = 20\left[\frac{710 - T/3}{444 + T/3}\right]$$

where: T is formation temperature in degrees Fahrenheit.

(iv) Apparent matrix propagation time was calculated using:

$$TPM = \frac{TPO - \phi t \times TPWO}{1 - \phi t}$$

where: ϕt is total porosity calculated using the density and neutron logs.

(v) EPT porosity was calculated using:

$$EPHI = \frac{TPO - TPM}{TPWO - TPM}$$

where: the matrix was assumed to consist of quartz and shale.

$$TPM = TPM_Q + V_{Shale}\,(TPM_{Shale} - TPM_Q)$$

A plot of the results, EPHI vs PHIT is present in Enclosure 2.

(vi) EPT water saturation was calculated using:

$$ESXO = \frac{TPO - TPM + \emptyset t\ (TPM - TPH)}{\emptyset t\ (TPWO - TPH)}$$

where: TPH (hydrocarbon propagation time) was assumed to be 5.0 nsec/m.

A/Aw Method

This method assumes that attenuation of microwaves is proportional to the amount of saline water in the formation and to the shaliness of the formation. The analysis technique is as follows:

(i) Total attenuation of the EPT signal is expressed by:

$$A = Ot\ \ Aw + (1 - \emptyset)\ As$$

where: Aw is attenuation of mud filtrate which is a function of salinity and temperature and, As is matrix attenuation. Most sedimentary rock components are considered to be "lossless" medium is As = 0. However, some shale minerals have As>0.

(ii) Measured microwave attenuation was corrected for geometric spreading loss as in TPO method (i).

(iii) Apparent attenuation of mud filtrate was calculated using;

$$Aw = A/\emptyset t$$

(iv) EPT porosity was calculated using;

$$EPHI = A/[Aw + Vshale\ (Awshale - Aw)]$$

where; Vshale is shale fraction and Awshale is attenuation in shale zones.

A plot of EPHI vs PHIT is shown in Enclosure 3.

(v) EPT saturation was calculated using;

$$ESXO \approx EPHI/\emptyset t$$

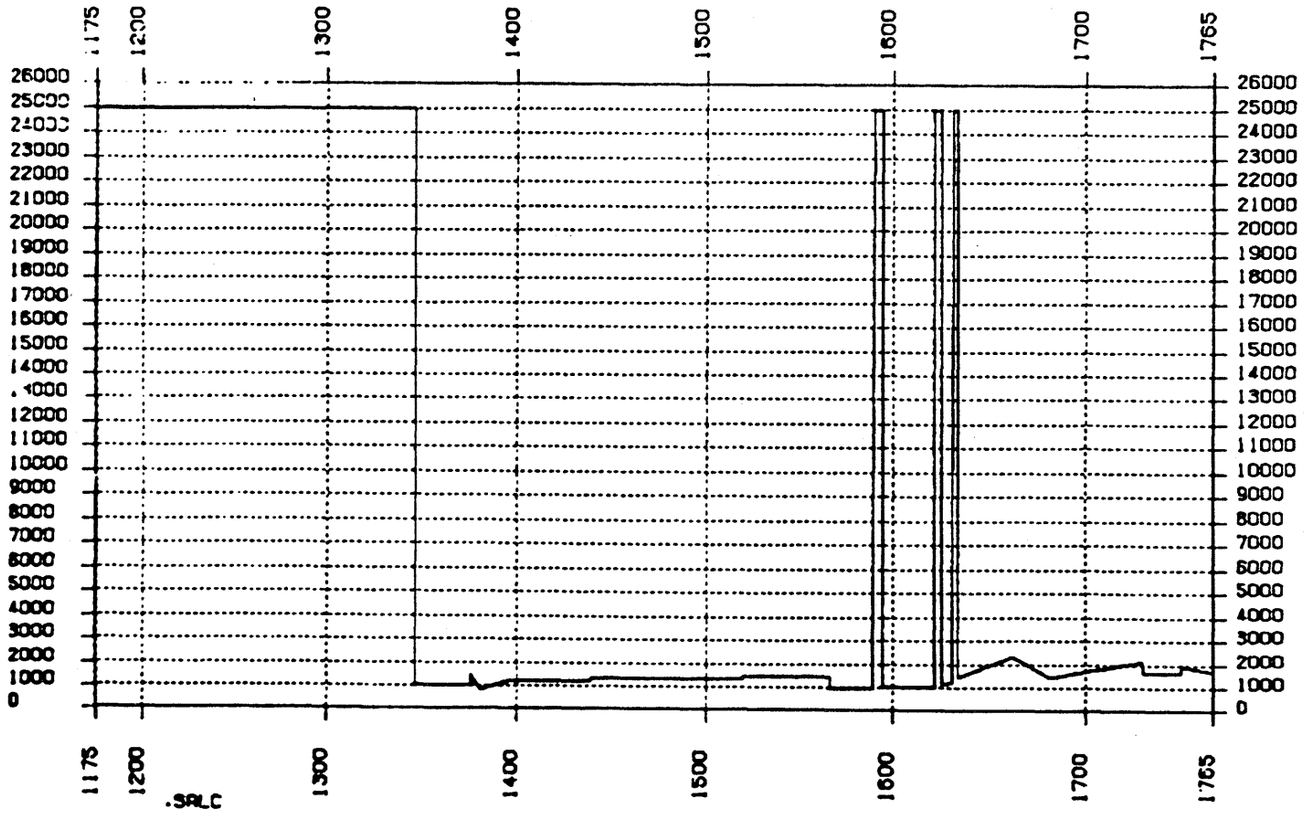
REFERENCES

1. Dahlberg, Kenneth E.; "Evaluation of Schlumbergers Electromagnetic Propagation (EPT) log, EPR Research Report EPR 49PR831983

2. EPT Interpretation and Accuracy Determination - West Kingfish 12 and 16, Schlumberger report to Esso Australia.

3. EPT Analysis, West Kingfish W-12, W-15, W-16, W-18. Esso Australia Log Analysis Report, May 1985.

0=EXIT 1=NEXT PLOT 2=SECONDARY PLOT 3=DIG DEPTHS



SALINITY PROFILE USED IN BARRACOUTA-5 LOG ANALYSIS

Figure 1 Salinity Proffile

0=EXIT 1=NEXT PLOT 2=SECONDARY PLOT 3=DIG DEPTHS
2

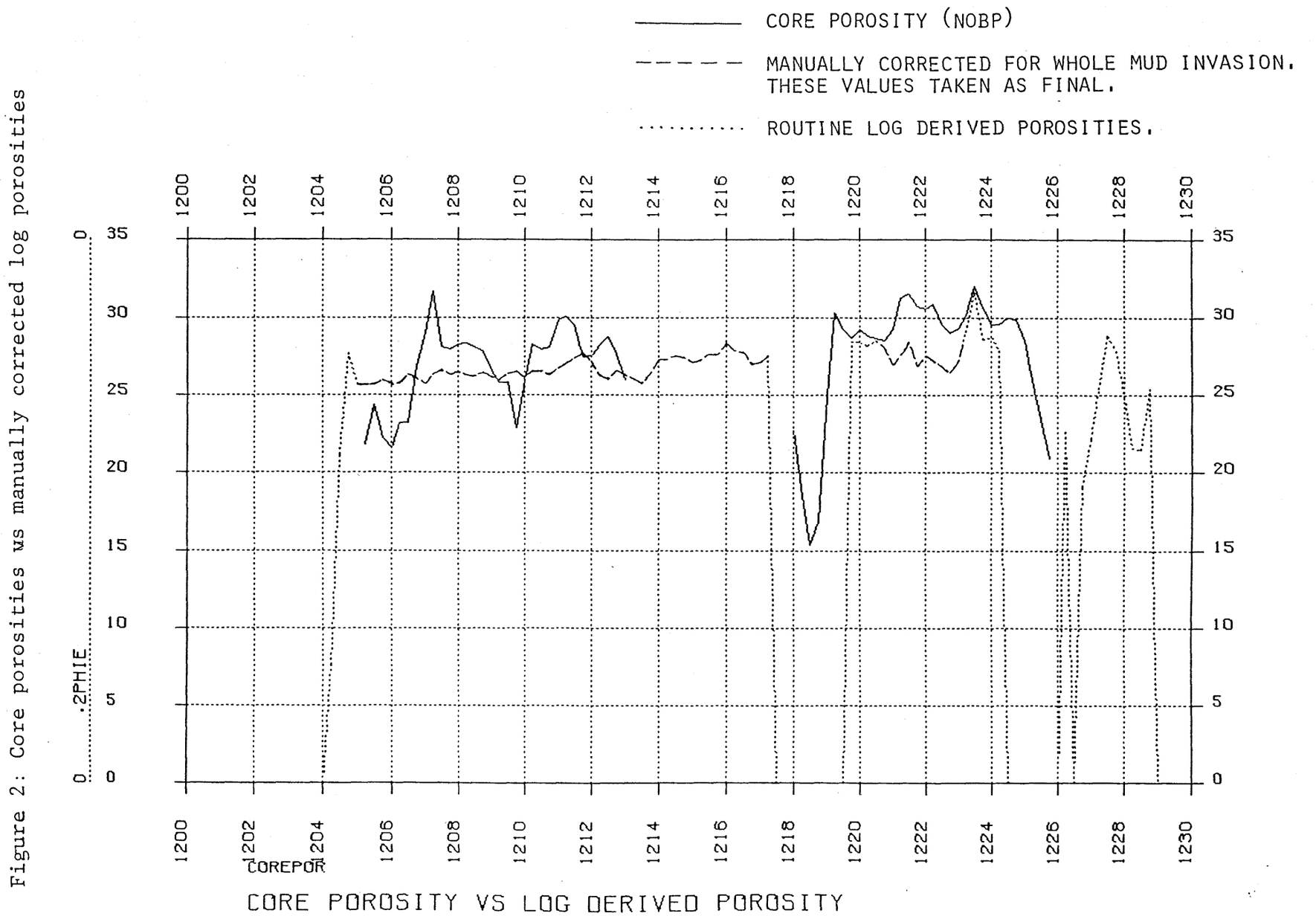


Figure 2: Core porosities vs manually corrected log porosities

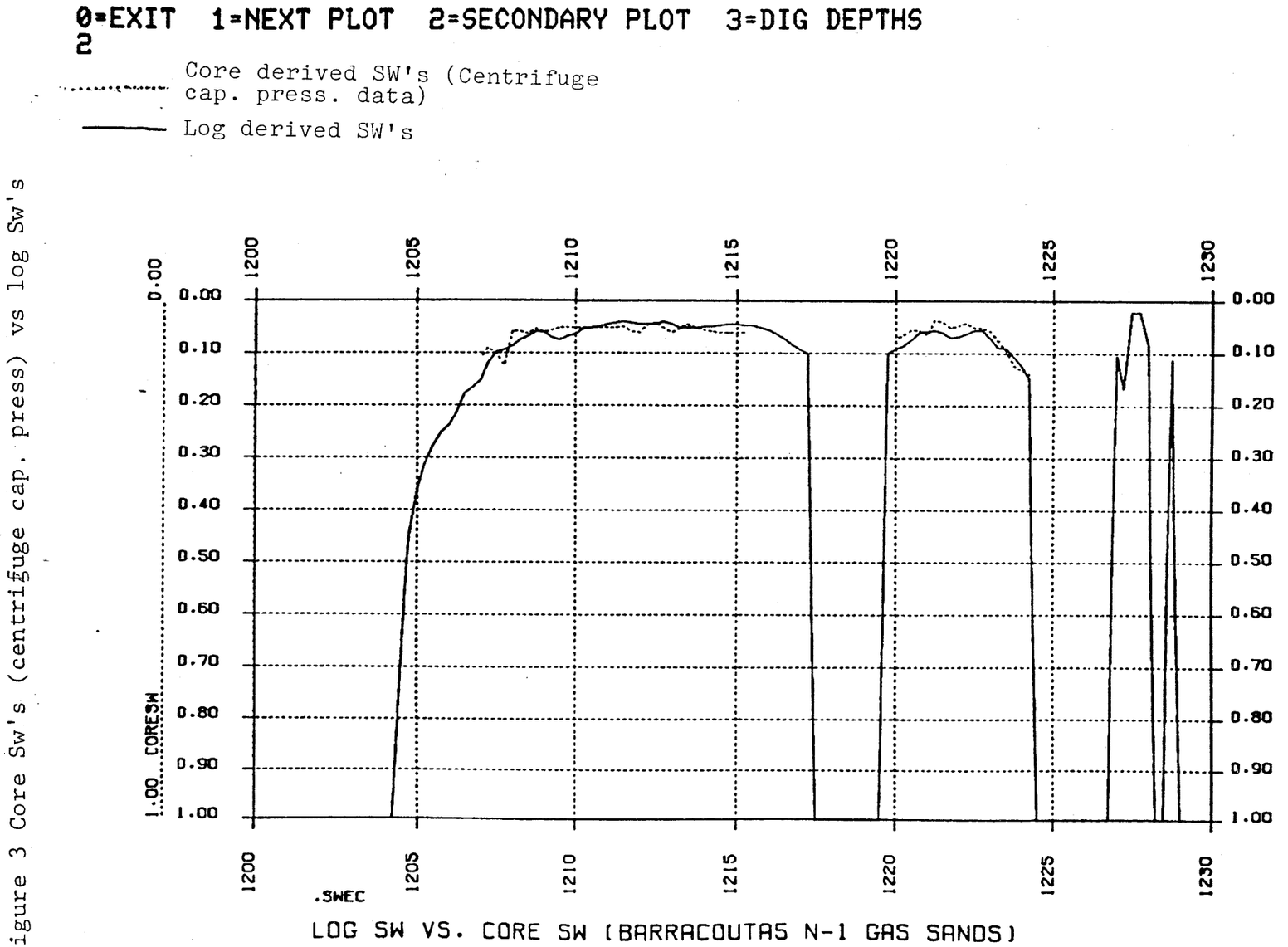
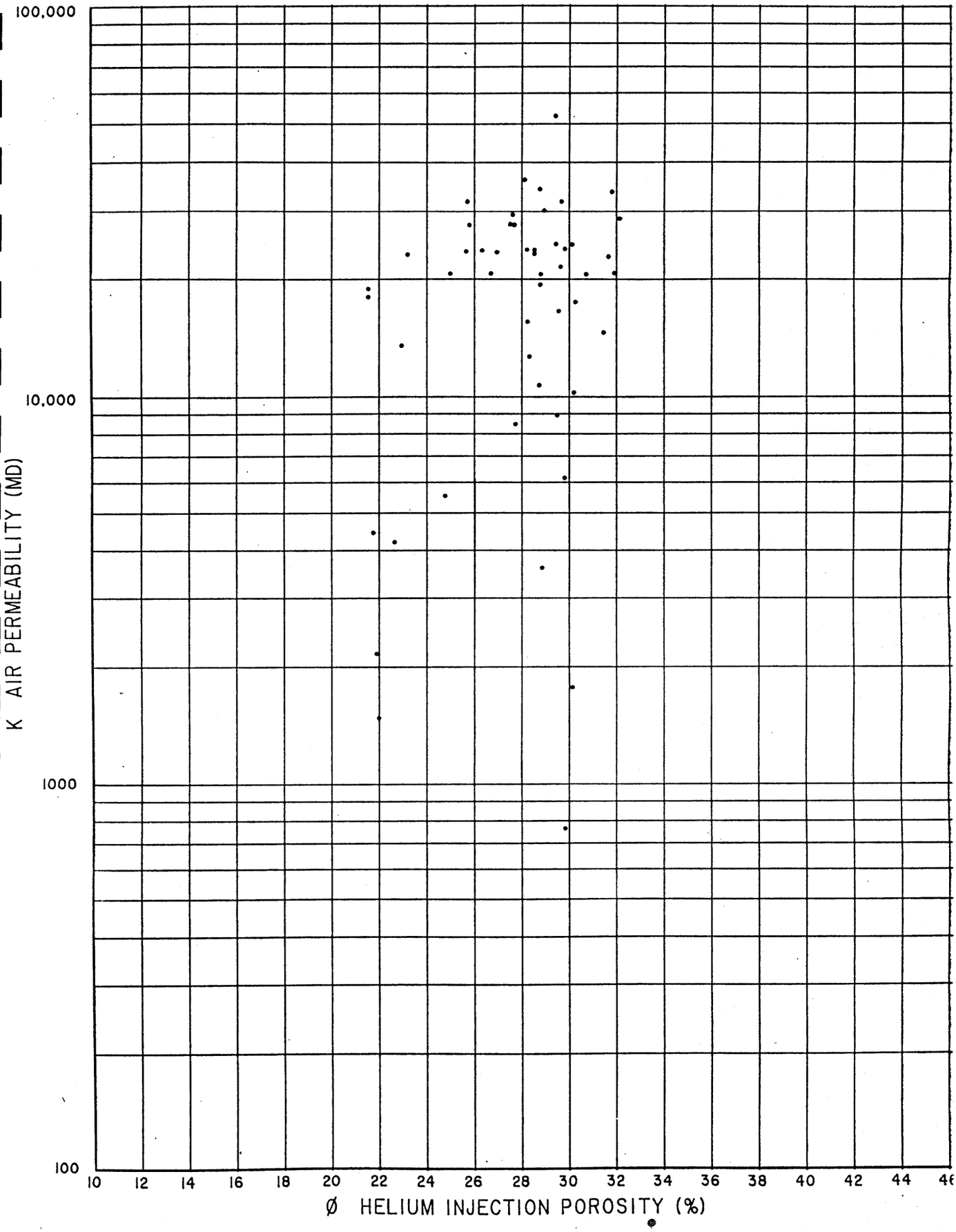


Figure 3 Core Sw's (centrifuge cap. press) vs log Sw's

BARRACOUTA-5

CORE Ø VS K
CORES 1 AND 2
(N-1 GAS RESERVOIR)

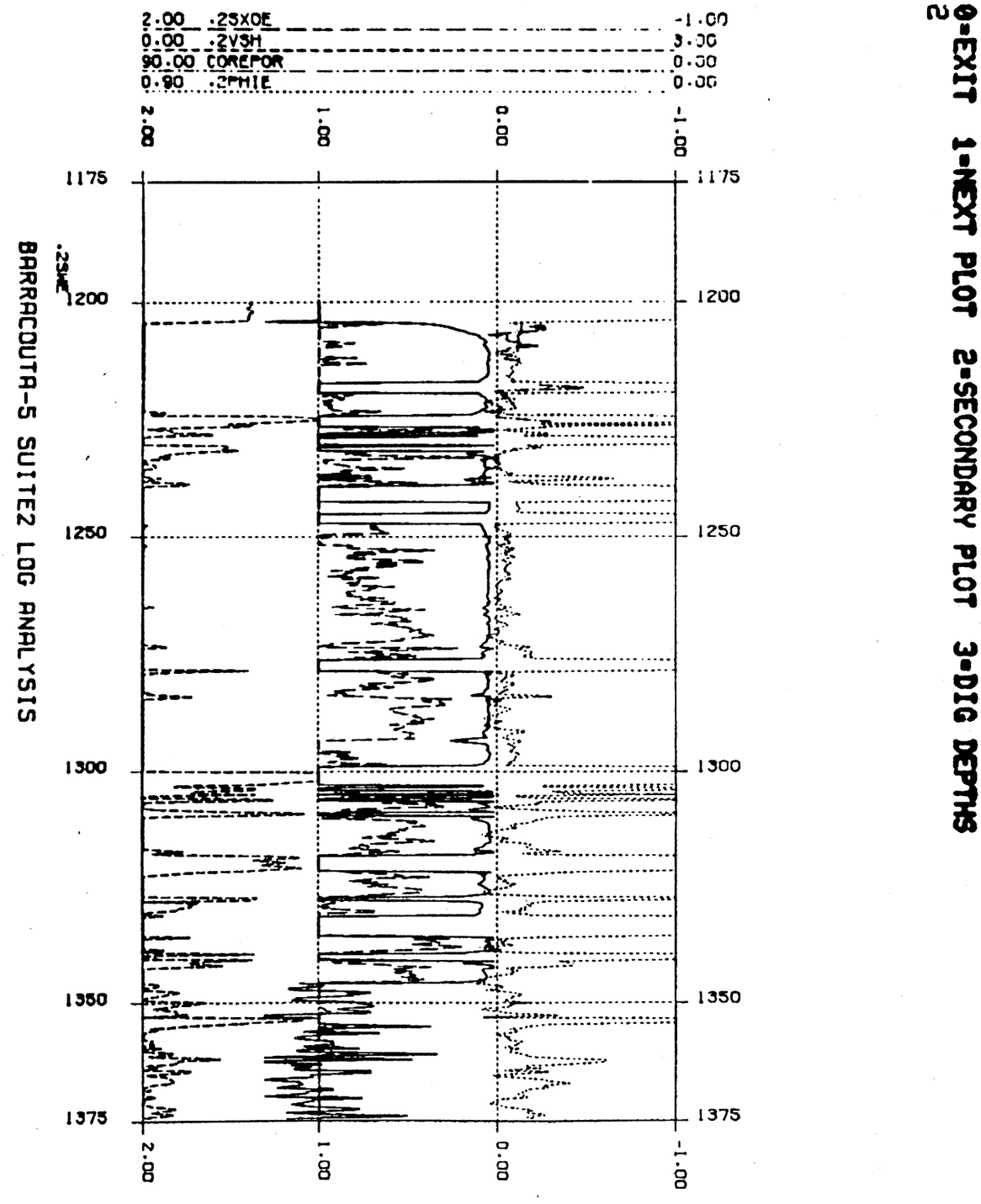


DFT.CORE.BARRA-5

FIGURE 4

Dwg.1117/OP/152

Figure 5 Log analysis summary diagram Suite 2



0=EXIT 1=NEXT PLOT 2=SECONDARY PLOT 3=DIG DEPTHS
2

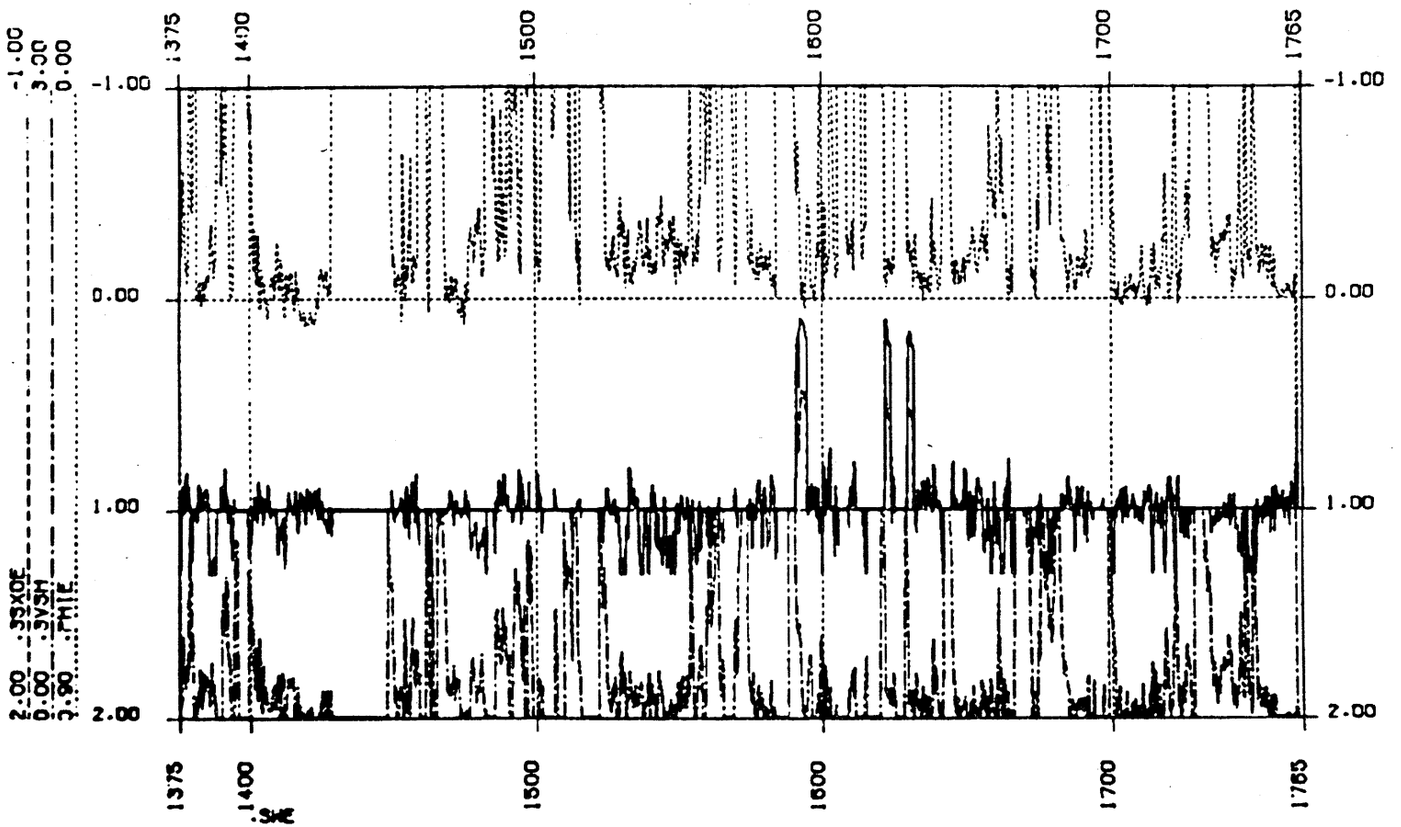


Figure 6 Log Analysis summary diagram Suite 3

ROUTINE CORE ANALYSIS

Two cores were cut in the uppermost N-1 gas sands in Barracouta 5. Core 1 (88.9% recovery) was in the interval 1205 - 1215mKB(MD) and Core 2 (100% recovery) was in the interval 1215 - 1224.6m.

54 one inch core plugs, taken at 20cm intervals were analysed at AMDEL's Adelaide laboratory for air permeabilities and helium injection porosities at both ambient and normal overburden pressure (NOBP). AMDEL's report is attached.

There is a significant difference between porosities and permeabilities measured at ambient conditions and those measured on the relatively unconsolidated plugs at NOBP.

Average permeability of 40.46 darcy at ambient conditions is reduced to 22.683 darcy at NOBP. Average porosity of 30.6% at ambient conditions is reduced to 27.87% at NOBP. Obviously NOBP measurements are more representative of true formation porosities and permeabilities.

Average log derived porosity over the cored interval is 27.48% and for the whole N-1 gas reservoir is 27.4%. These figures compare well with an average core porosity of 27.87% at NOBP. (Refer Figure 2) This independent cross-check provides confidence in the porosity analysis carried out in this report.

Average absolute grain density measured on plug off cuts during routine core analysis is 2.6672 gm/cc. This is consistent with the selection of a grain density window of 2.65 - 2.67 gm/cc as used in routine log analysis.

The porosity vs. permeability plot for the two cores (Figure 4) shows the scatter which is usually observed in the high porosity, high permeability Top Latrobe reservoirs. A line of best fit through the points is meaningless and potentially misleading.

SPECIAL CORE ANALYSIS

7 lead sleeved core plugs from Cores 1 and 2 were analysed at AMDEL's Adelaide laboratory using the centrifuge drainage capillary pressure technique. The analysis of the results was performed by Don Henderson and his report is attached.

Figure 3 shows a comparison plot of log derived water saturations with core derived water saturations that were determined with the centrifuge capillary pressure data. The excellent cross-correlation between log derived water saturations and core derived water saturations is remarkable. It provides significant confidence in the water saturations calculated from logs in this report as the core derived water saturations provide a totally independant cross-check of water saturations.

27381/1-16

1. INTRODUCTION

Fifty-four core plugs were received from Barracouta No. 5, cores 1 and 2 for analysis of porosity, permeability and densities at both ambient and net overburden pressures.

2. PROCEDURE AND RESULTS

All plugs were stored at 50°C/50° relative humidity for three days prior to testing. Porosity by helium injection and air permeability were measured at an ambient pressure of 1,000 kPa and a net overburden pressure of 15,730 kPa (2,280 psi). Apparent grain density was measured in conjunction with porosity determinations. Absolute grain density was measured by pycnometry of the ground off-cuts. Tables 1 to 8 give results of all determinations. The precision of permeability values greater than 10,000 md is likely to be less than for lower permeabilities since the differential pressure between the inlet and outlet faces of the core (on which the results depend) is extremely small.

TABLE 1

AMDEL CORE ANALYSIS

Barracouta No.5 Core 1 - Ambient Pressure.

SAMPLE		PERMEABILITY (md)	POROSITY (%)
1	1205.10	3300	24.7
3	1205.30	7210	23.9
5	1205.50	7530	26.6
7	1205.83	7470	25.0
9	1206.06	38480	24.2
11	1206.25	46540	26.5
13	1206.54	35630	27.3
15	1206.74	48100	29.4
18	1207.12	47140	32.7
20	1207.33	39680	35.2
22	1207.58	47760	30.4
27	1208.20	47590	31.9
32	1208.86	39070	30.9
34	1209.20	47020	28.8
36	1209.36	79200	29.3
38	1209.56	47530	28.9
40	1209.90	31660	24.7
42	1210.13	31550	31.4
44	1210.44	96380	30.9
46	1210.66	94660	30.4
48	1210.87	48070	30.6
50	1211.11	31930	32.3
54	1211.53	95220	32.2
55	1211.64	97310	31.2
57	1211.85	47150	29.6
61	1212.61	47530	31.5
64	1213.20	47800	28.1

TABLE 2

AMDEL CORE ANALYSIS

Barracouta No.5 Core 1 - 15730 kPa.

SAMPLE		PERMEABILITY (md)	POROSITY (%)
1	1205.10	2170	21.9
3	1205.30	4460	21.8
5	1205.50	5580	24.8
7	1205.83	1490	22.0
9	1206.06	18160	21.6
11	1206.25	22970	23.3
13	1206.54	13280	23.0
15	1206.74	23750	26.4
18	1207.12	16520	29.6
20	1207.33	20440	32.0
22	1207.58	23590	27.6
27	1208.20	23500	28.5
32	1208.86	27410	27.7
34	1209.20	23230	25.7
36	1209.36	27590	25.9
38	1209.56	31480	25.8
40	1209.90	18760	21.7
42	1210.13	15480	28.3
44	1210.44	36710	28.2
46	1210.66	29200	27.7
48	1210.87	23740	28.3
50	1211.11	17470	30.3
54	1211.53	31370	29.7
55	1211.64	30010	28.5
57	1211.85	23280	27.1
61	1212.61	20330	28.9
64	1213.20	20500	25.0

TABLE 3

AMDEL CORE ANALYSIS

Barracouta No.5 Core 1 - Ambient Pressure.

SAMPLE		BULK VOL	BULK DRY DENS	APPARENT GN DENS	ABSOLUTE GN DENS
1	1205.10	19.31	2.00	2.66	2.64
3	1205.30	19.72	1.97	2.59	2.64
5	1205.50	19.33	1.95	2.66	2.65
7	1205.83	19.05	2.02	2.70	2.69
9	1206.06	19.31	2.04	2.69	2.67
11	1206.25	18.82	1.97	2.68	2.67
13	1206.54	17.85	1.94	2.66	2.67
15	1206.74	19.09	1.88	2.67	2.65
18	1207.12	18.97	1.80	2.67	2.64
20	1207.33	18.99	1.74	2.68	2.64
22	1207.58	19.00	1.87	2.69	2.68
27	1208.20	19.14	1.85	2.72	2.68
32	1208.86	19.38	1.87	2.71	2.68
34	1209.20	19.16	1.93	2.71	2.68
36	1209.36	19.32	1.92	2.71	2.69
38	1209.56	19.30	1.93	2.72	2.68
40	1209.90	19.55	2.07	2.75	2.71
42	1210.13	19.40	1.82	2.65	2.67
44	1210.44	19.38	1.88	2.72	2.68
46	1210.66	18.86	1.88	2.69	2.68
48	1210.87	19.55	1.88	2.70	2.69
50	1211.11	19.66	1.81	2.68	2.67
54	1211.53	19.10	1.80	2.65	2.65
55	1211.64	19.57	1.87	2.71	2.68
57	1211.85	19.39	1.89	2.69	2.68
61	1212.61	19.03	1.84	2.69	2.68
64	1213.20	19.24	1.95	2.71	2.67

TABLE 4

AMDEL CORE ANALYSIS

Barracouta No.5 Core 1 - 15730 kPa.

SAMPLE		BULK VOL	BULK DRY DENS	APPARENT GN DENS
1	1205.10	18.62	2.08	2.66
3	1205.30	19.19	2.02	2.59
5	1205.50	18.86	2.00	2.66
7	1205.83	18.31	2.10	2.70
9	1206.06	18.67	2.11	2.69
11	1206.25	18.02	2.06	2.68
13	1206.54	16.84	2.05	2.66
15	1206.74	18.30	1.96	2.67
18	1207.12	18.12	1.88	2.67
20	1207.33	18.09	1.82	2.68
22	1207.58	18.26	1.95	2.69
27	1208.20	18.24	1.95	2.72
32	1208.86	18.53	1.96	2.71
34	1209.20	18.36	2.01	2.71
36	1209.36	18.42	2.01	2.71
38	1209.56	18.50	2.02	2.72
40	1209.90	18.80	2.15	2.75
42	1210.13	18.55	1.90	2.65
44	1210.44	18.64	1.95	2.72
46	1210.66	18.17	1.95	2.69
48	1210.87	18.92	1.94	2.70
50	1211.11	19.08	1.87	2.68
54	1211.53	18.41	1.86	2.65
55	1211.64	18.83	1.94	2.71
57	1211.85	18.75	1.96	2.69
61	1212.61	18.34	1.91	2.69
64	1213.20	18.44	2.04	2.71

TABLE 5

AMDEL CORE ANALYSIS

Barracouta No.5 Core 2 - Ambient Pressure.

SAMPLE		PERMEABILITY (md)	POROSITY (%)
1	1215.20	47660	29.6
3	1215.50	7410	24.8
6	1216.14	0.232	15.5
10	1216.65	15450	32.6
12	1216.89	39140	34.0
15	1217.10	14810	30.5
16	1217.39	17070	31.8
18	1217.70	34840	31.5
20	1217.96	18580	31.5
21	1218.14	27130	30.8
23	1218.39	51660	31.3
25	1218.61	52670	32.4
27	1218.79	88160	34.5
29	1218.97	53910	34.1
30	1219.13	34950	33.8
32	1219.39	104470	32.1
34	1219.65	50010	34.5
36	1219.85	37320	32.2
40	1220.35	42240	31.7
42	1220.56	41050	32.4
44	1220.77	32610	33.6
46	1220.96	40550	35.0
49	1221.34	23030	32.5
52	1221.67	9700	31.7
54	1221.82	2210	32.1
58	1222.37	888	31.8
65	1223.38	3.5	20.5

TABLE 6

AMDEL CORE ANALYSIS

Barracouta No.5 Core 2 - 15730 kPa.

SAMPLE		PERMEABILITY (md)	POROSITY (%)
1	1215.20	20470	26.8
3	1215.50	4210	22.7
6	1216.14	0.073	13.3
10	1216.65	6120	29.9
12	1216.89	20190	30.8
15	1217.10	8510	27.8
16	1217.39	8900	29.5
18	1217.70	19090	28.9
20	1217.96	10590	28.8
21	1218.14	12590	28.4
23	1218.39	20320	28.6
25	1218.61	20720	29.9
27	1218.79	22870	31.7
29	1218.97	14130	31.5
30	1219.13	12730	31.6
32	1219.39	51910	29.6
34	1219.65	33140	31.9
36	1219.85	24040	29.9
40	1220.35	33720	28.8
42	1220.56	24410	29.5
44	1220.77	24310	30.2
46	1220.96	28460	32.2
49	1221.34	10060	30.2
52	1221.67	3630	28.9
54	1221.82	1760	30.1
58	1222.37	759	29.8
65	1223.38	0.929	19.6

TABLE 7

AMDEL CORE ANALYSIS

Barracouta No.5 Core 2 - Ambient Pressure.

SAMPLE		BULK VOL	BULK DRY DENS	APPARENT GN DENS	ABSOLUTE GN DENS
1	1215.20	18.97	1.90	2.70	2.70
3	1215.50	19.00	2.13	2.83	3.03
6	1216.14	18.66	2.23	2.63	2.61
10	1216.65	18.62	1.80	2.67	2.63
12	1216.89	16.49	1.76	2.66	2.64
15	1217.10	16.55	1.88	2.70	2.66
16	1217.39	19.42	1.83	2.68	2.66
18	1217.70	18.90	1.82	2.67	2.67
20	1217.96	19.28	1.81	2.65	2.67
21	1218.14	19.16	1.84	2.67	2.66
23	1218.39	18.71	1.82	2.65	2.66
25	1218.61	19.07	1.80	2.67	2.67
27	1218.79	15.92	1.72	2.63	2.65
29	1218.97	18.97	1.73	2.63	2.65
30	1219.13	18.86	1.75	2.65	2.68
32	1219.39	18.71	1.81	2.67	2.70
34	1219.65	18.75	1.76	2.68	2.72
36	1219.85	18.51	1.80	2.66	2.65
40	1220.35	19.15	1.83	2.68	2.65
42	1220.56	18.39	1.79	2.65	2.67
44	1220.77	18.07	1.77	2.67	2.69
46	1220.96	18.32	1.74	2.69	2.67
49	1221.34	14.28	1.80	2.67	2.69
52	1221.67	17.84	1.81	2.65	2.66
54	1221.82	18.59	1.81	2.66	2.66
58	1222.37	19.58	1.81	2.66	2.66
65	1223.38	19.60	1.98	2.49	2.42

TABLE 8

AMDEL CORE ANALYSIS

Barracouta No.5 Core 2 - 15730 kPa.

SAMPLE		BULK VOL	BULK DRY DENS	APPARENT GN DENS
1	1215.20	18.23	1.97	2.70
3	1215.50	18.47	2.19	2.83
6	1216.14	18.19	2.28	2.63
10	1216.65	17.90	1.87	2.67
12	1216.89	15.72	1.84	2.66
15	1217.10	15.94	1.95	2.70
16	1217.39	18.80	1.89	2.68
18	1217.70	18.19	1.90	2.67
20	1217.96	18.56	1.88	2.65
21	1218.14	18.50	1.91	2.67
23	1218.39	18.00	1.89	2.65
25	1218.61	18.40	1.87	2.67
27	1218.79	15.26	1.80	2.63
29	1218.97	18.26	1.80	2.63
30	1219.13	18.25	1.81	2.65
32	1219.39	18.05	1.88	2.67
34	1219.65	18.04	1.82	2.68
36	1219.85	17.90	1.86	2.66
40	1220.35	18.38	1.91	2.68
42	1220.56	17.63	1.87	2.65
44	1220.77	17.20	1.86	2.67
46	1220.96	17.56	1.82	2.69
49	1221.34	13.82	1.86	2.67
52	1221.67	17.12	1.88	2.65
54	1221.82	18.08	1.86	2.66
58	1222.37	19.02	1.87	2.66
65	1223.38	19.39	2.00	2.49

BARRACOUTA-5

INTERPRETATION OF DRAINAGE

CAPILLARY PRESSURE DATA

Analyst : D.J. Henderson

Date : July, 1985

CONTENTS PAGE

FIGURES

ENCLOSURES

BARRACOUTA-5

INTERPRETATION OF DRAINAGE CAPILLARY PRESSURE DATA

A. INTRODUCTION

AMDEL Laboratories in Adelaide, S.A. performed drainage capillary pressure tests using the centrifuge method on 7 core plug samples from Barracouta-5 cores 1 and 2. The samples have exceptionally high porosity and permeability although these values are considered to be representative of Barracouta producing reservoirs. This is the first time we have obtained reliable drainage capillary pressure data from very high quality Latrobe Group Sandstones.

Prior to centrifuging, porosity and permeability were measured at ambient pressure. Core-plug samples were saturated under vacuum with kerosene. Capillary pressure was induced on the samples by spinning in a centrifuge. At progressively increasing speeds of rotation, the total volume of wetting fluid (kerosene) expelled from the samples was measured using a stroboscopic light. After centrifuging, the samples were weighed to determine the residual kerosene content. The total volume of kerosene expelled from the samples at each centrifuge speed was used to calculate average wetting phase saturation as a function of induced capillary pressure.

The capillary pressure induced on the upper, inlet-face of the core plug is calculated from the expression;

$$Pc = 1/2\,\Delta\rho\omega^2\,(r_2^{\,2} - r_1)^2 \qquad - 1$$

where; Pc = capillary pressure at the inlet-face of the core in dynes/cm,

$\Delta\rho$ = density difference in the two fluids ie. kerosene and air,

ω = angular velocity in radians/sec.,

$= 2\pi\,RPM/60$,

r_1 = distance from the centre of the centrifuge to the top of the core plug, and

r_2 = distance from the centre of the centrifuge to the bottom of the core plug.

Average wetting phase saturation (S) can be calculated directly from centrifuge data;

$$S = (V_p - V_o)/V_p \qquad - 2$$

where; V_p = pore volume
V_o = volume of expelled fluid

The centrifuge determination of average wetting phase saturation as a function of induced capillary pressure cannot be used directly to describe the distribution of fluids in a reservoir. The capillary force induced on a sample by centrifuging results in a wetting phase saturation gradient along the length of the sample. The saturation at the outlet-face of the sample remains at 100 percent while fluids are being expelled. Laboratory data must be interpreted to determine the wetting phase saturation at the top, inlet-face of the sample. The inlet-face saturation at each capillary pressure is given by the expression;

$$S(Pc)ri = S + Pcri\ [dS/dPcri] \qquad (3)$$

where;

S(Pc)ri = saturation at the top, inlet-face of the sample,

S = average saturation as a fraction of pore volume,

Pcri = capillary pressure at the inlet-face of the sample, and

dS/dPcri = slope of the average saturation-capillary pressure curve.

The small volumes of fluids expelled during centrifuging and the error in measurement of this fluid can result in erratic values of [dS/dPcri] and therefore calculated inlet-face saturation. This report describes a convenient method of determining inlet-face saturation.

Calculated inlet-face saturation has been used to construct a set of normalised capillary pressure curves for permeability ranging from 1 darcy to 50 darcies.

A method is described for converting laboratory capillary pressure data to reservoir conditions and height above a free-water level.

B. ANALYSIS METHOD

1) The weight of kerosene expelled during centrifuging was used to correct calculated average saturation.

   a) Corrected final average saturation was calculated using;

$$S_1 = \frac{\text{Final plug weight - dry weight}}{\text{Kerosene density x pore volume}}$$

   b) Corrected total expelled fluid was calculated using;

$$Vo_1 = (1 - S_1) \times \text{pore volume}$$

c) Corrected average saturation was calculated using;

$$Sc = 1 - \frac{[\text{Volume out} + \triangle \text{volume}]}{[\quad \text{Pore volume} \quad]}$$

where; $\triangle$ Volume = corrected total expelled fluid - measured total expelled fluid

2) Capillary pressure induced on the inlet-face of the sample was calculated for each centrifuge speed using equation (1).

3) For each sample, plots were constructed of:

$\log_{10}$ [dS/dPcri] vs. $\log_{10}$ Pcri

4) The smoothed curve through the points from (B 3) were used to calculate inlet-face saturation as a function of induced capillary pressure using equation (3).

5) Calculated inlet-face saturation was used to construct a normalised set of capillary curves:

a) For induced inlet-face capillary pressure of 1, 2, 5, 10, 15, 20, 30, 40, 60 and 75 psi, inlet-face wetting phase saturation was plotted as a function of log (10) permeability (figures 4a-4j).

b) The smoothed curves from (5a) were used to construct normalised capillary pressure curves for 1,000, 5,000, 10,000 and 50,000 millidarcy permeability (figure 1).

6) Laboratory capillary pressure may be converted to height above a free-fluid level;

a) First convert laboratory capillary pressure (Pc_1) to reservoir capillary pressure (Pc_2).

$$Pc_2 = \frac{Pc_1 \times (\alpha \cos\theta)_1}{(\alpha \cos\theta)_2}$$

where; α = interfacial tension, and
θ = contact angle between fluid phases and reservoir matrix material.

Little information is available for α and θ as functions of temperature and pressure, but;

$Pc_2 \approx 1.08\ Pc_1$

b) Convert capillary pressure at reservoir conditions to height above the free-fluid level (zero capillary pressure).

$$h \text{ (metres)} = \frac{Pc \text{ (psi)}}{(\rho w - \rho h) \times 1.421}$$

where; ρw = water density (g/cm^3)
ρh = hydrocarbon density (g/cm^3)

C. DISCUSSION OF RESULTS

1) The porosity and permeability determined from Barracouta core 1 and 2 are remarkable but these values are believed to be representative of Barracouta N-1 producing reservoirs.

2) The Barracouta-5 drainage capillary pressure data is unique in that this is the first time that reliable laboratory saturation determinations have been performed on exceptional quality Latrobe Group reservoirs.

3) The relationship between induced capillary pressure and wetting phase saturation is well defined for permeability of 1 to 50 darcies.

4) The relationship between capillary pressure and wetting phase saturation for $Pc < 5$ psi is not well defined. It is probable that multi darcy reservoirs typical of the Barracouta N-1 reservoirs have very thin transition zones.

5) Table 2 in AMDEL report F5270/85 is believed to be incorrect. Calculation of initial saturation is complicated by the retention of kerosene on the screens used in lead sleeving the core plugs. Initial kerosene saturation was assumed to be 100 percent in this analysis. The AMDEL calculation of final saturation is not correct.

D.J. HENDERSON
PETROPHYSICS GROUP.

26551/27-32

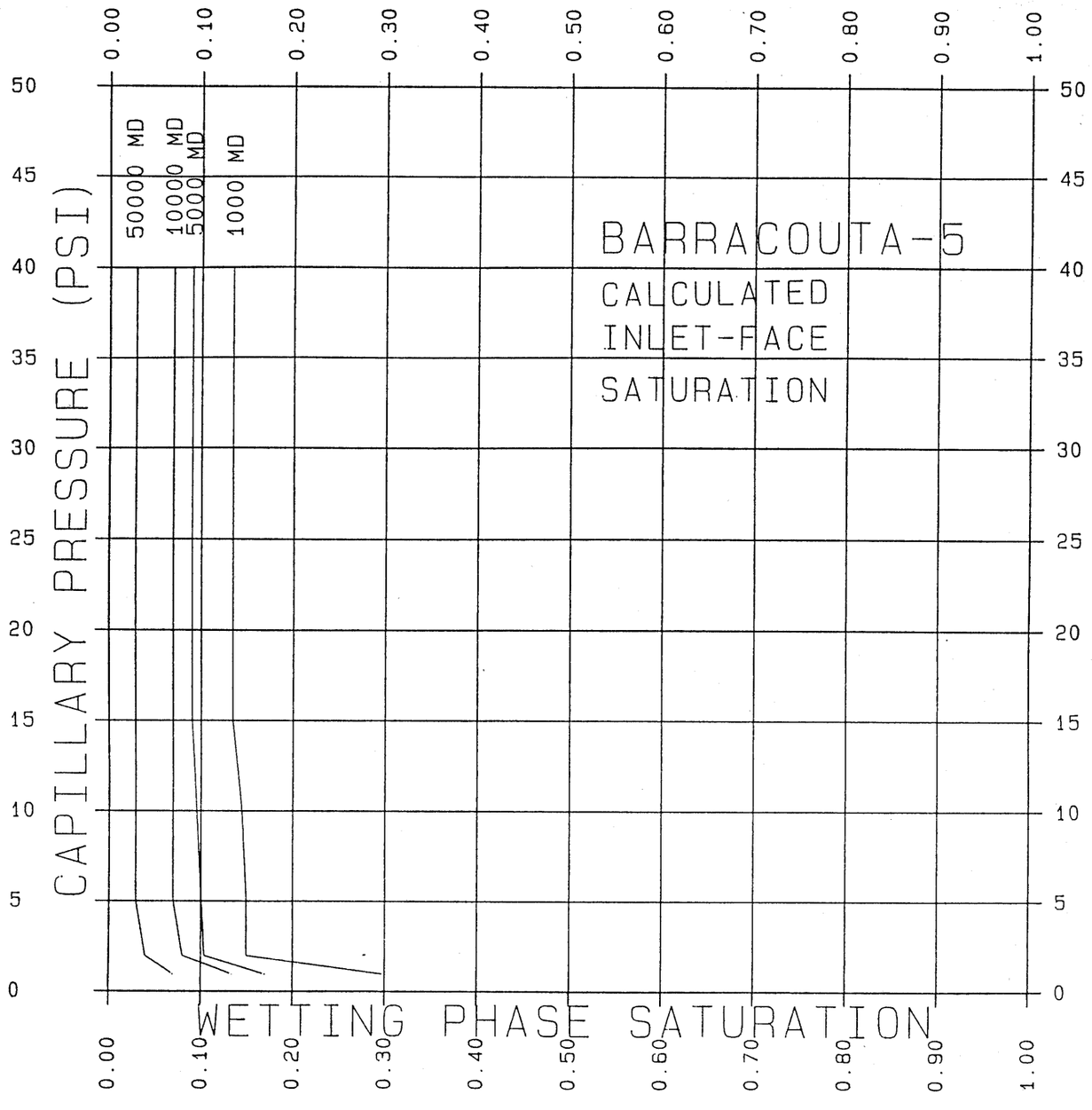

BARRACOUTA-5
CALCULATED
INLET-FACE
SATURATION
50000 MD
10000 MD
5000 MD
1000 MD
CAPILLARY PRESSURE (PSI)
WETTING PHASE SATURATION
0.00
0.10
0.20
0.30
0.40
0.50
0.60
0.70
0.80
0.90
1.00
0
5
10
15
20
25
30
35
40
45
50

FIGURE 1

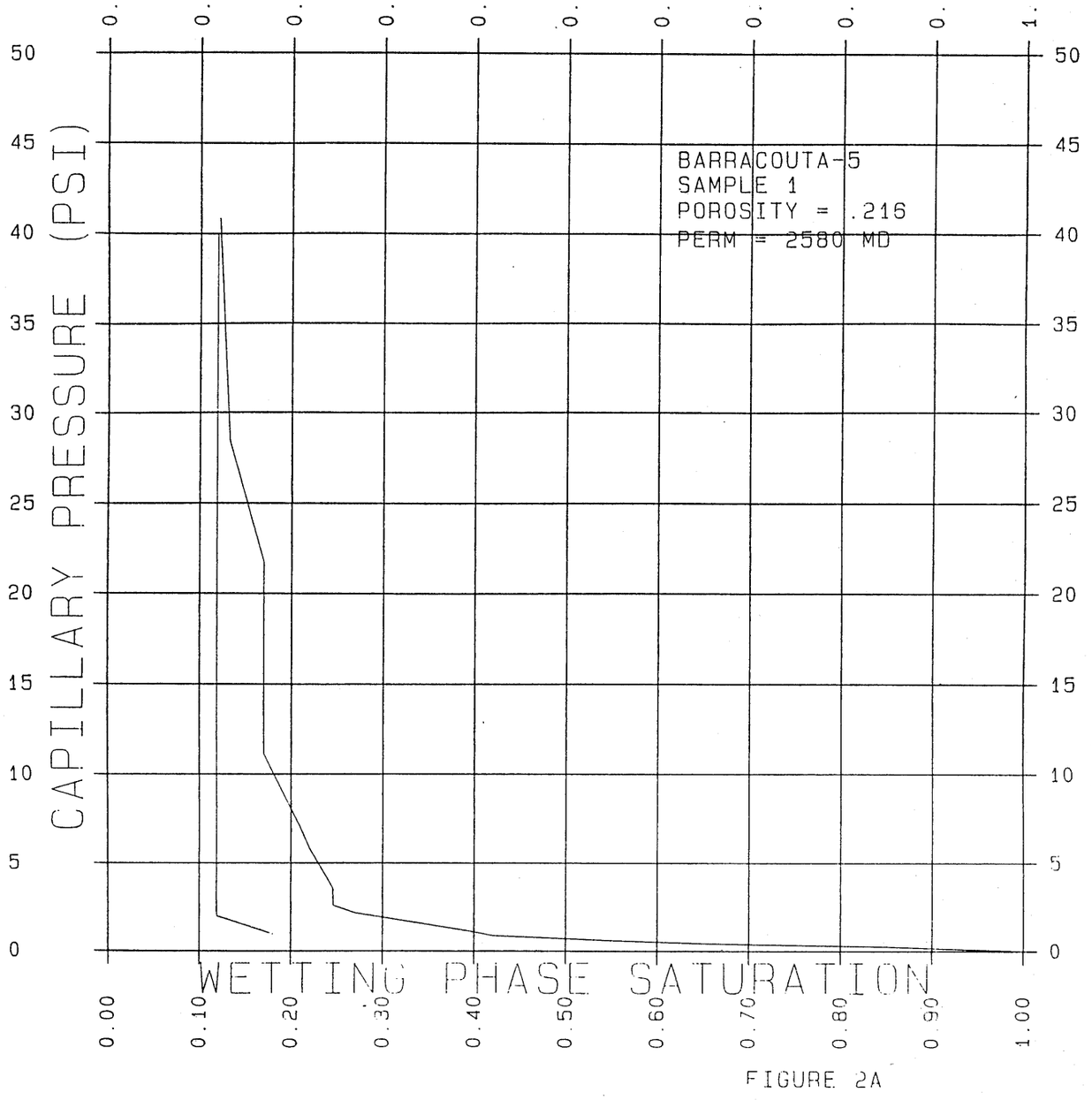

BARRACOUTA-5
SAMPLE 1
POROSITY = .216
PERM = 2580 MD
CAPILLARY PRESSURE (PSI)
WETTING PHASE SATURATION
0
5
10
15
20
25
30
35
40
45
50
0.00
0.10
0.20
0.30
0.40
0.50
0.60
0.70
0.80
0.90
1.00

FIGURE 2A

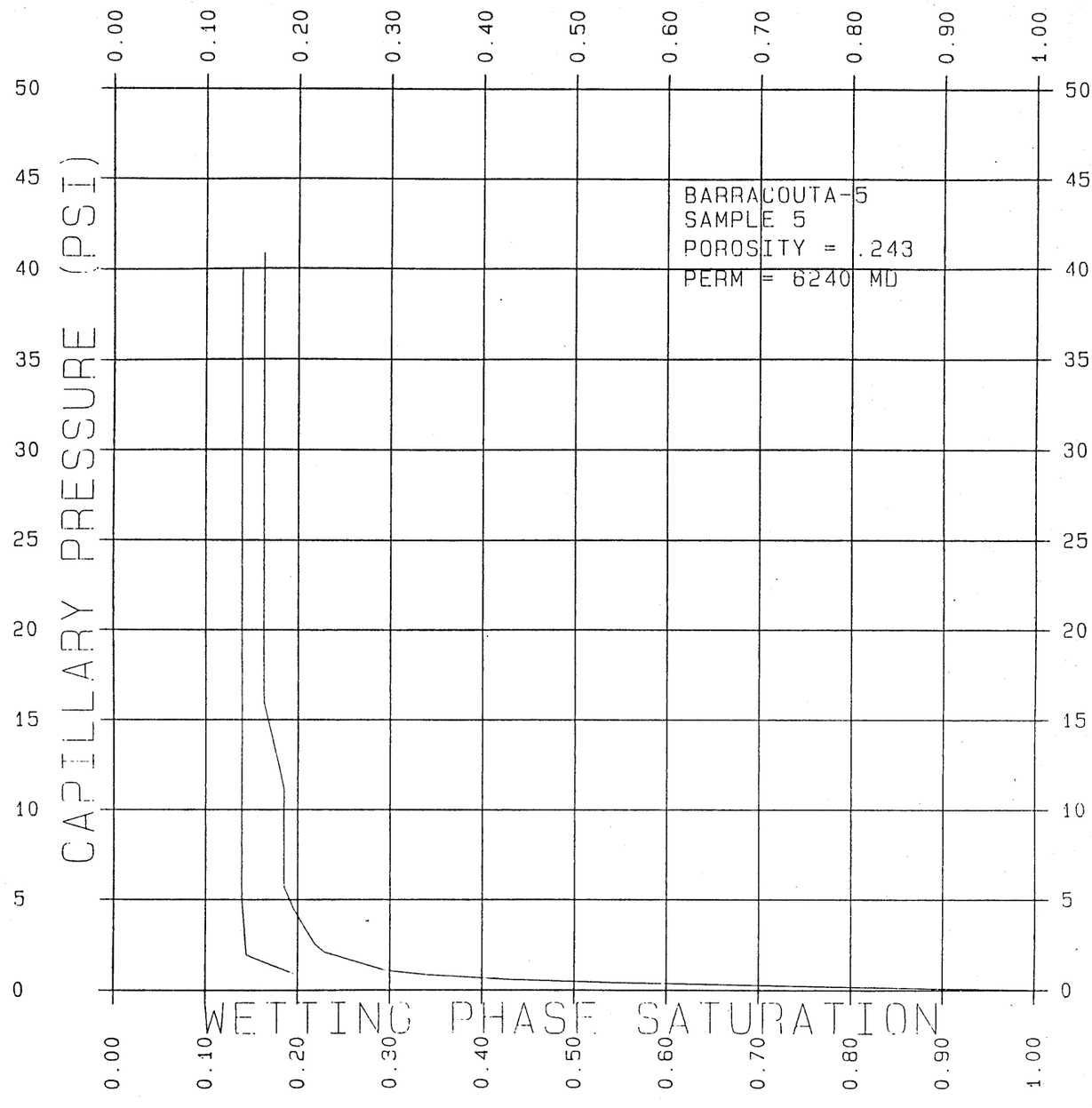

BARRACOUTA-5
SAMPLE 5
POROSITY = .243
PERM = 6240 MD
CAPILLARY PRESSURE (PSI)
WETTING PHASE SATURATION
0.00
0.10
0.20
0.30
0.40
0.50
0.60
0.70
0.80
0.90
1.00
0
5
10
15
20
25
30
35
40
45
50

FIGURE 28

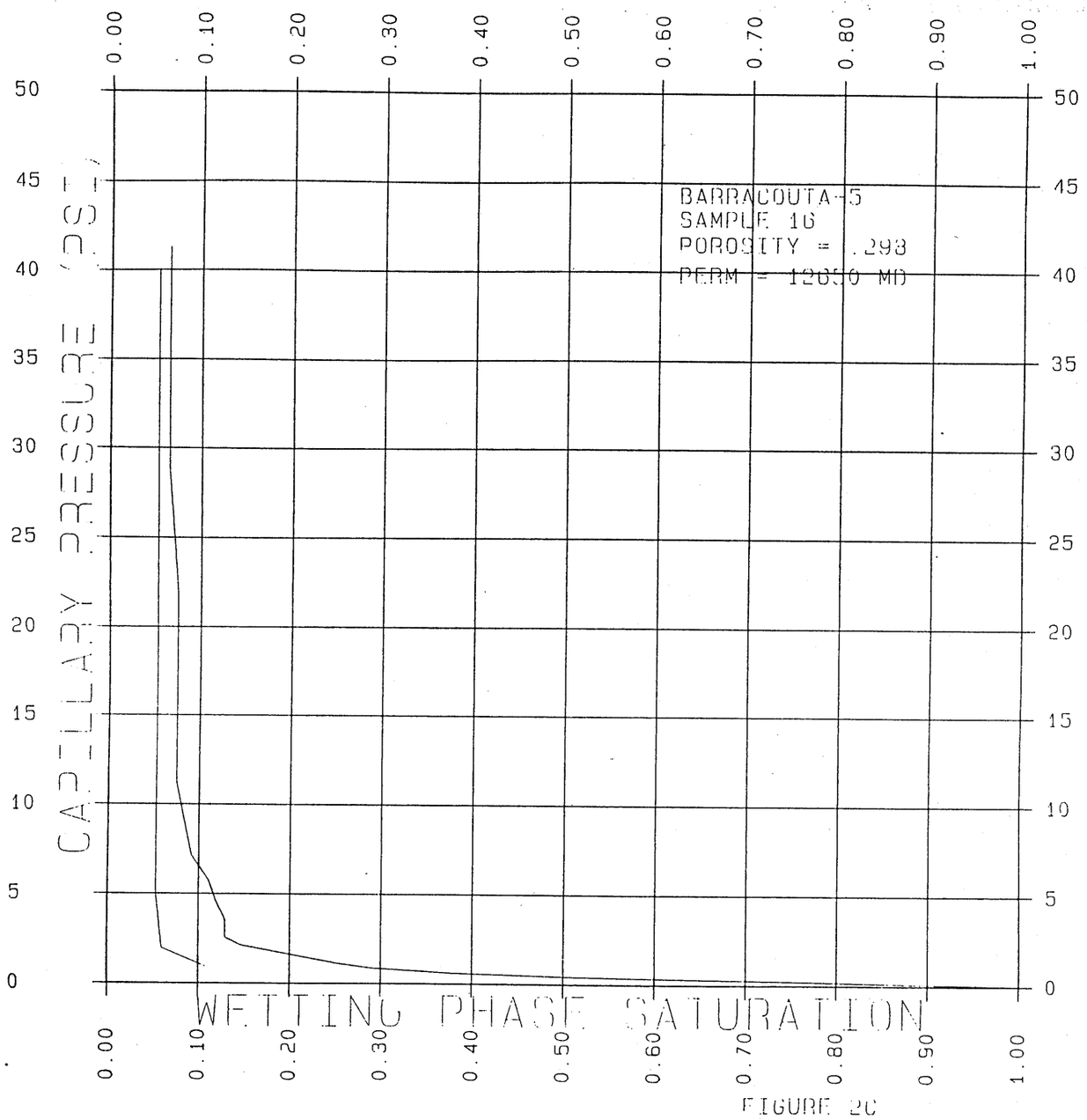

BARRACOUTA-5
SAMPLE 16
POROSITY = .298
PERM = 12050 MD
CAPILLARY PRESSURE (PSI)
WETTING PHASE SATURATION
0.00
0.10
0.20
0.30
0.40
0.50
0.60
0.70
0.80
0.90
1.00
0
5
10
15
20
25
30
35
40
45
50

FIGURE 20

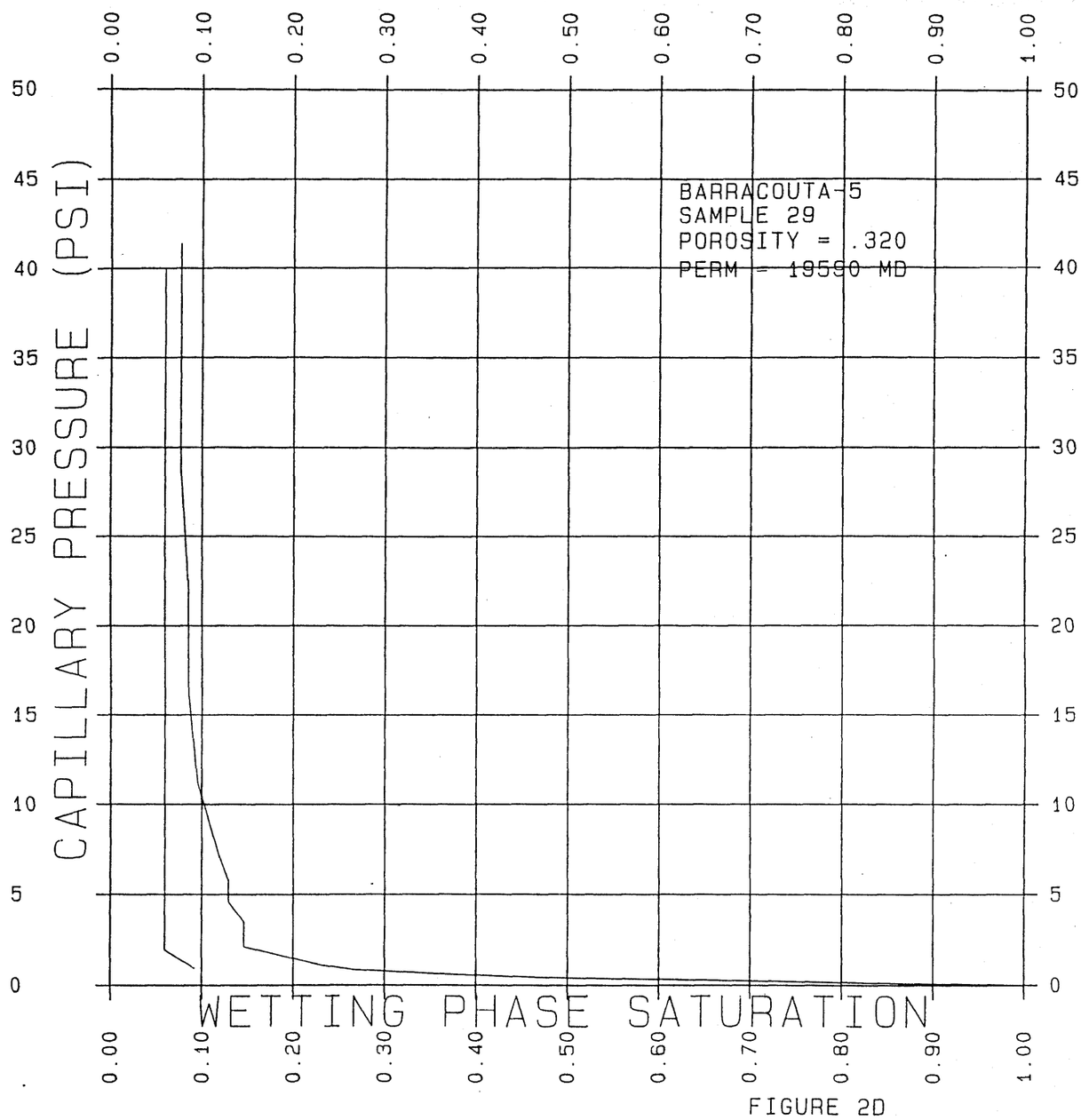

BARRACOUTA-5
SAMPLE 29
POROSITY = .320
PERM = 19590 MD
CAPILLARY PRESSURE (PSI)
WETTING PHASE SATURATION
0.00
0.10
0.20
0.30
0.40
0.50
0.60
0.70
0.80
0.90
1.00
0
5
10
15
20
25
30
35
40
45
50

FIGURE 2D

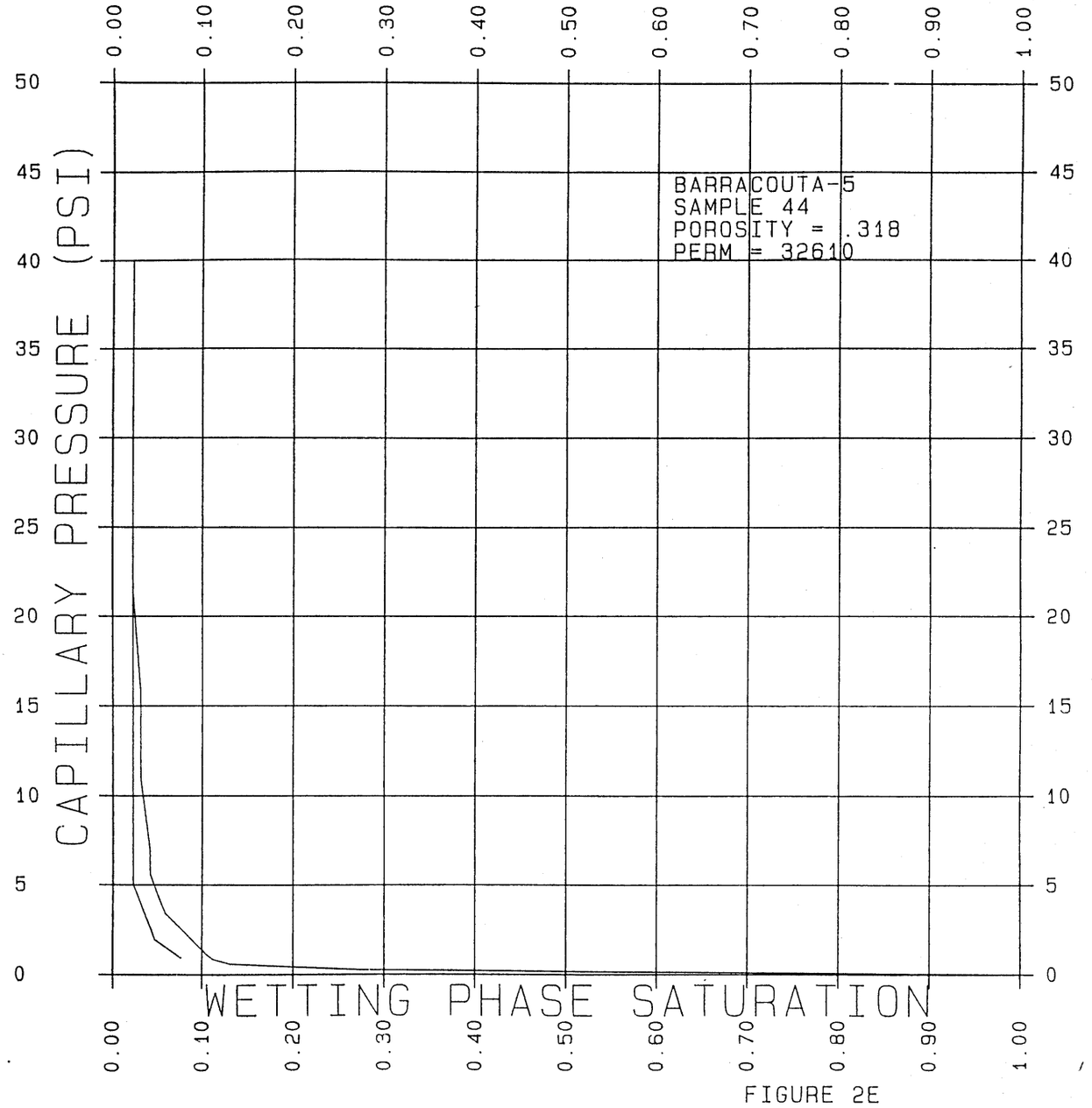

BARRACOUTA-5
SAMPLE 44
POROSITY = .318
PERM = 32610
CAPILLARY PRESSURE (PSI)
WETTING PHASE SATURATION
0.00
0.10
0.20
0.30
0.40
0.50
0.60
0.70
0.80
0.90
1.00
0
5
10
15
20
25
30
35
40
45
50

FIGURE 2E

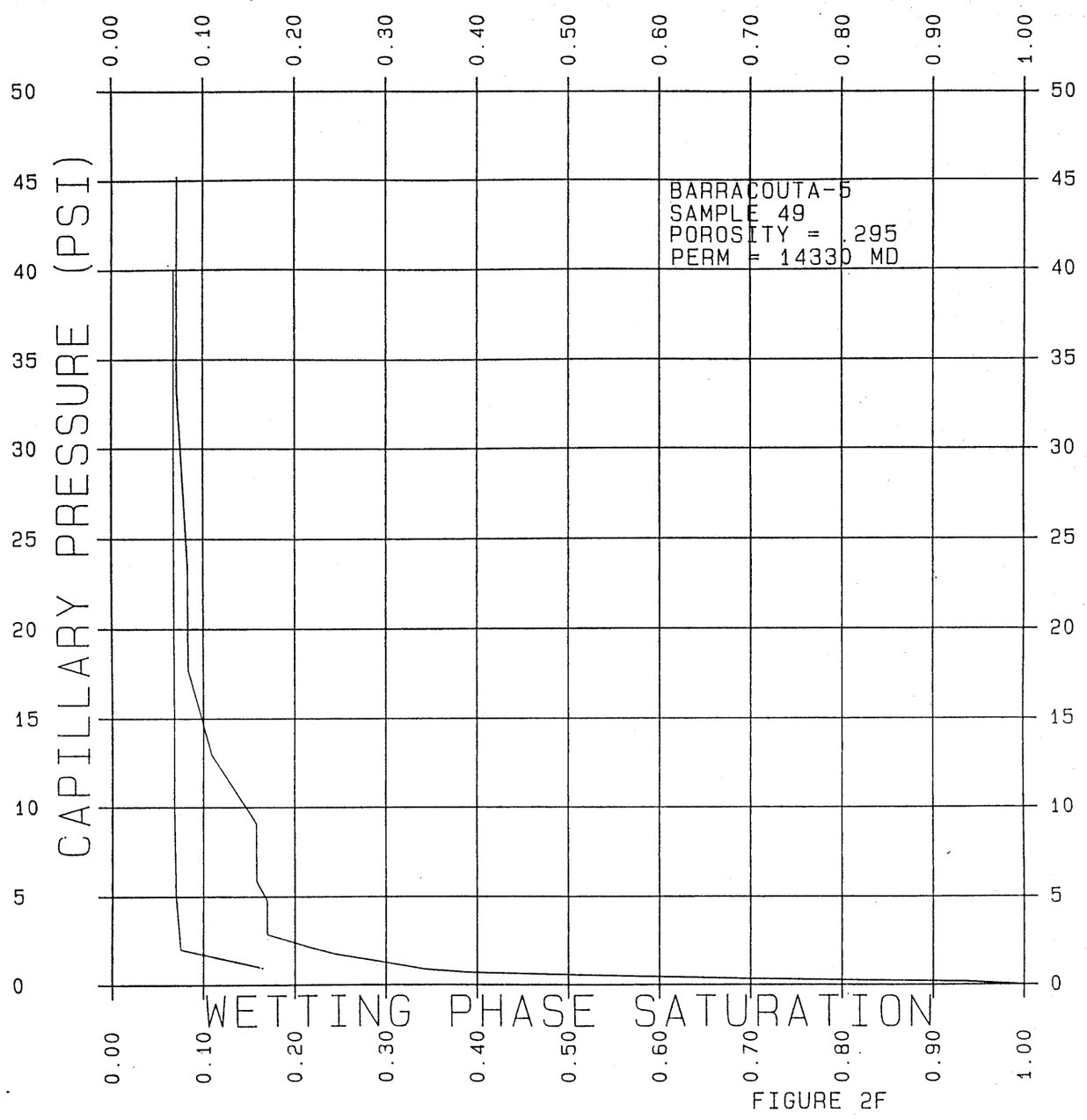

BARRACOUTA-5
SAMPLE 49
POROSITY = .295
PERM = 14330 MD
CAPILLARY PRESSURE (PSI)
WETTING PHASE SATURATION
0.00
0.10
0.20
0.30
0.40
0.50
0.60
0.70
0.80
0.90
1.00
0
5
10
15
20
25
30
35
40
45
50

FIGURE 2F

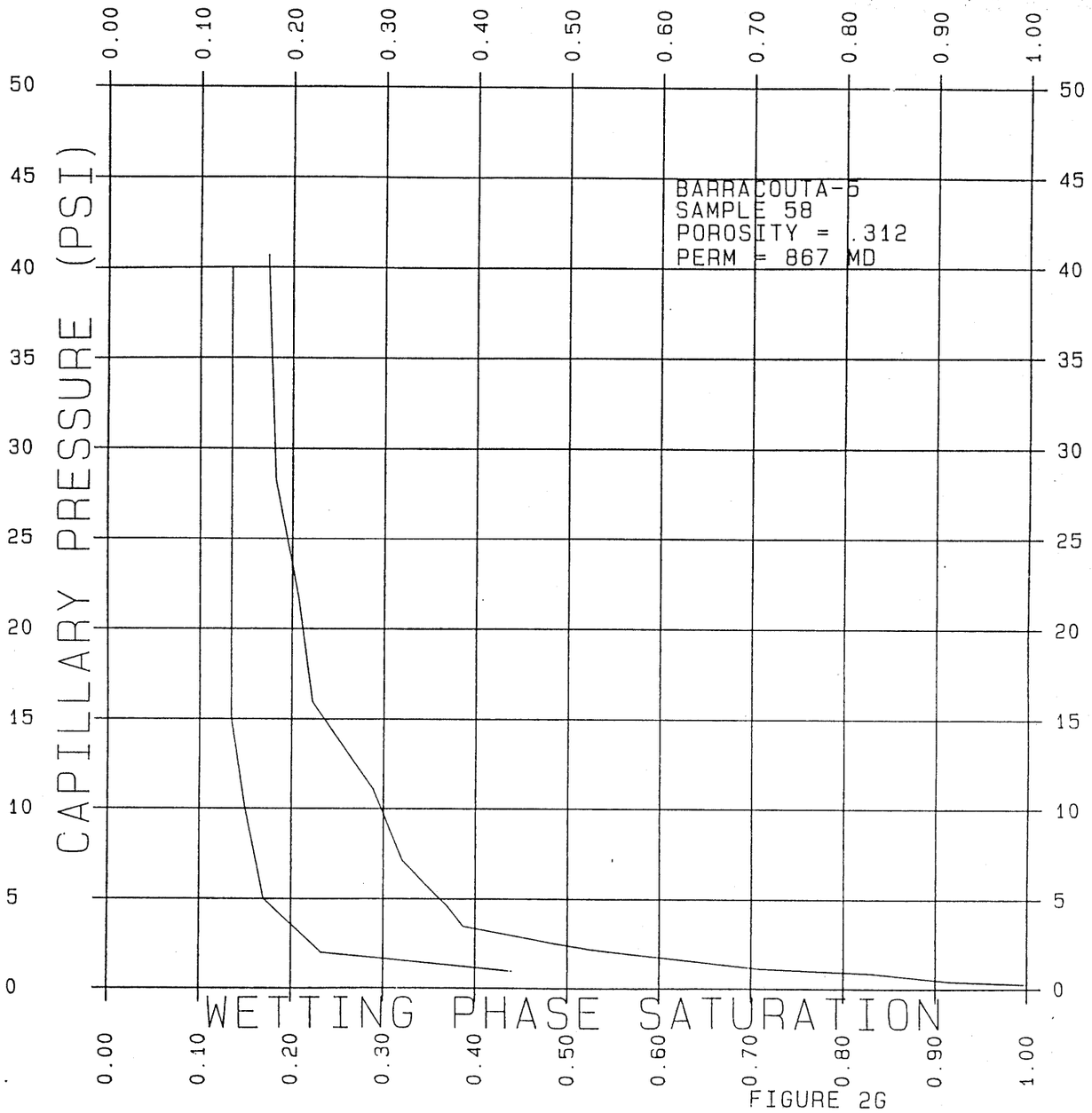

BARRACOUTA-5
SAMPLE 58
POROSITY = .312
PERM = 867 MD
CAPILLARY PRESSURE (PSI)
WETTING PHASE SATURATION
0.00
0.10
0.20
0.30
0.40
0.50
0.60
0.70
0.80
0.90
1.00
0
5
10
15
20
25
30
35
40
45
50

FIGURE 2G

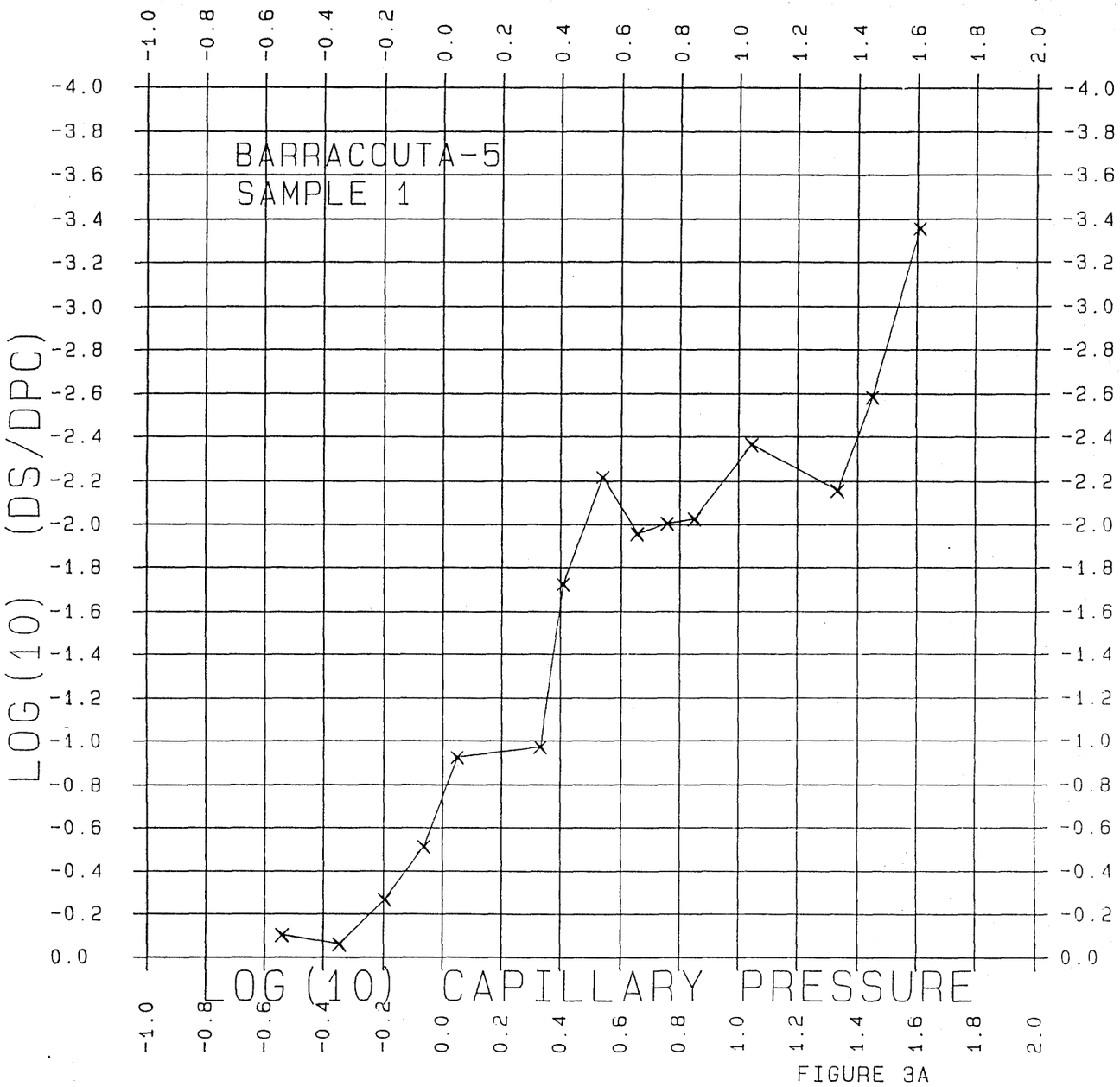

BARRACCUTA-5
SAMPLE 1
LOG (10) (DS/DPC)
LOG (10) CAPILLARY PRESSURE
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0
-4.0
-3.8
-3.6
-3.4
-3.2
-3.0
-2.8
-2.6
-2.4
-2.2
-2.0
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0

FIGURE 3A

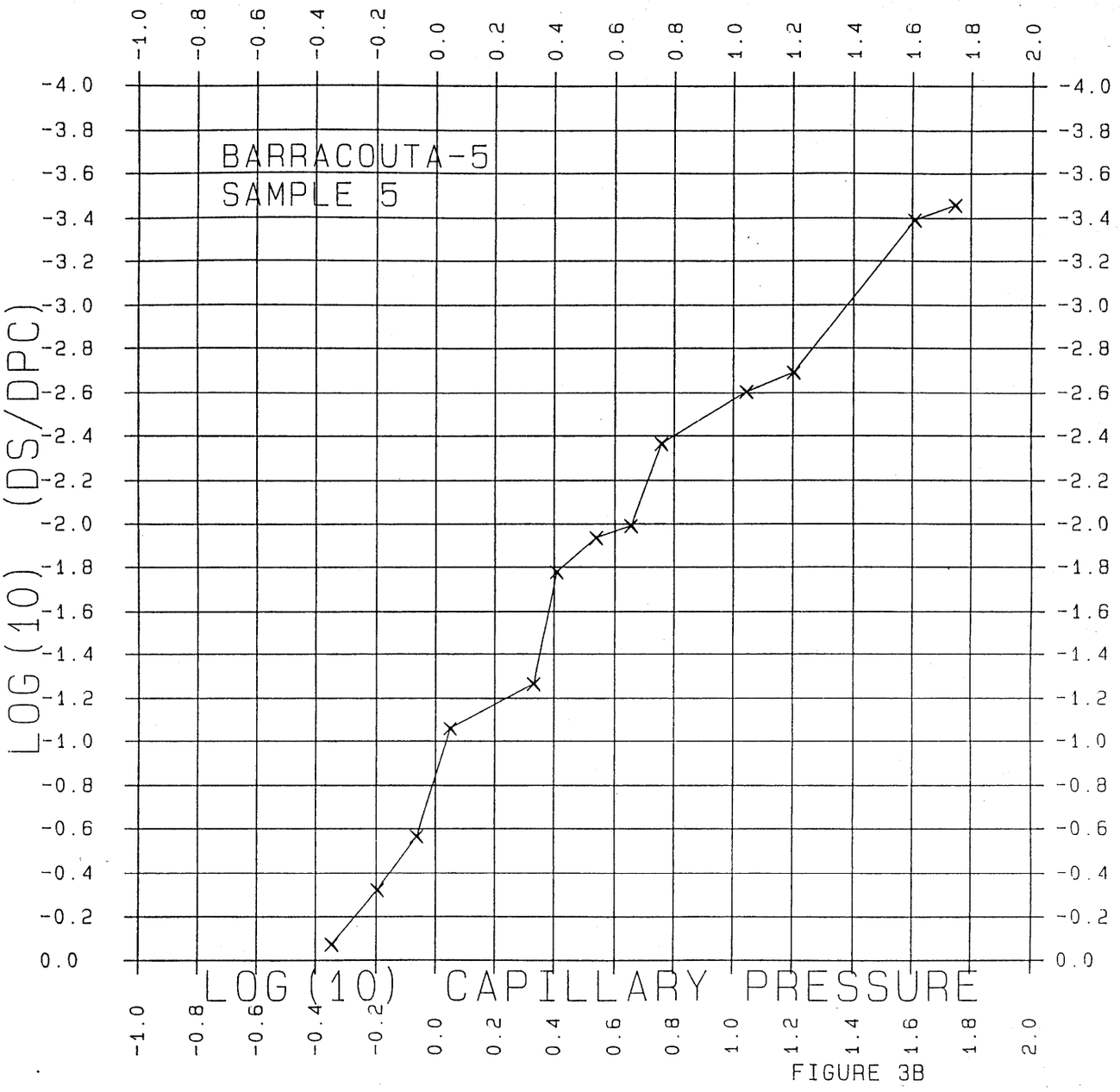

BARRACOUTA-5
SAMPLE 5
LOG (10) (DS/DPC)
LOG (10) CAPILLARY PRESSURE
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0
-4.0
-3.8
-3.6
-3.4
-3.2
-3.0
-2.8
-2.6
-2.4
-2.2
-2.0
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0

FIGURE 3B

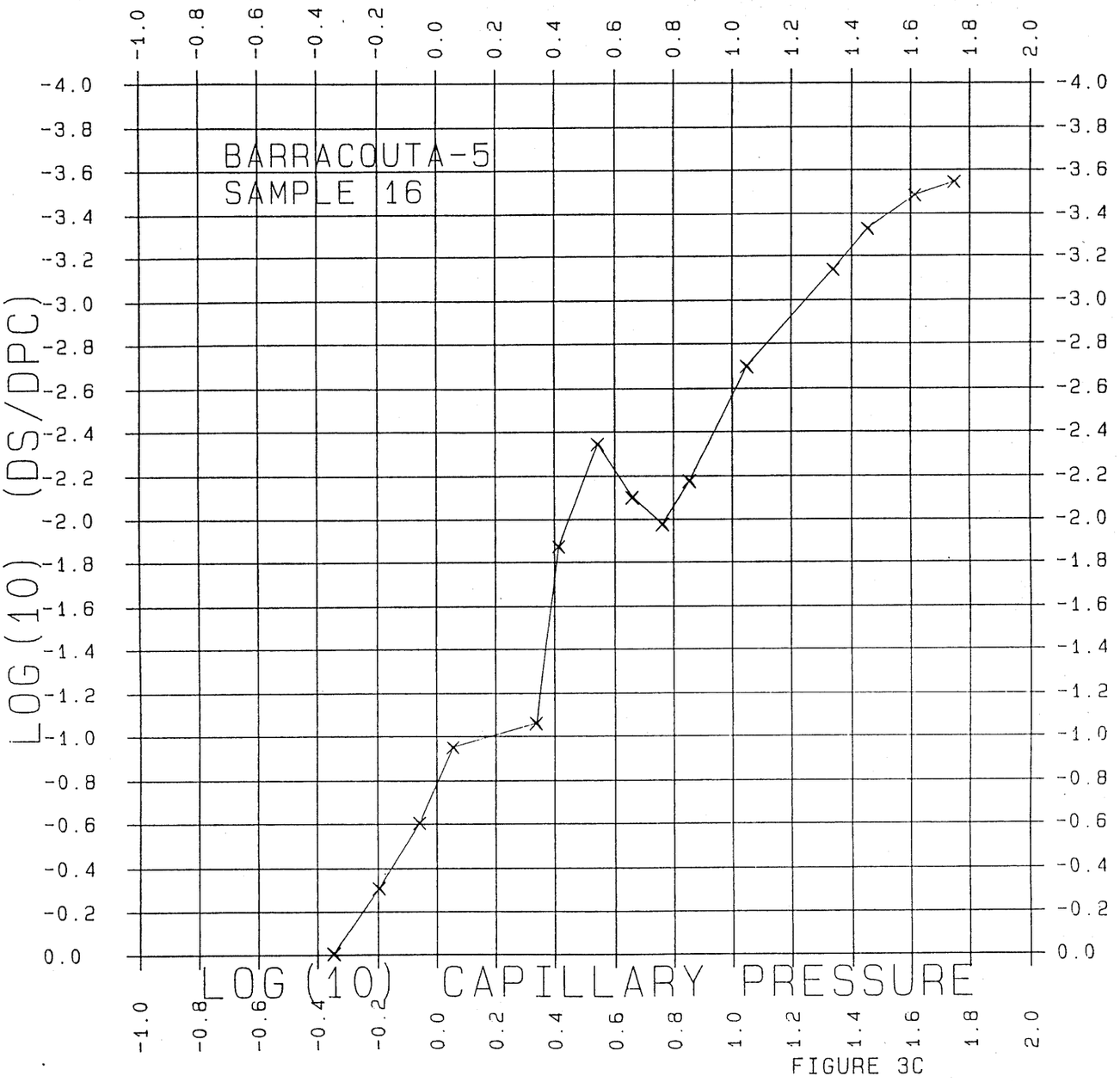

BARRACOUTA-5
SAMPLE 16
LOG (10) (DS/DPC)
LOG (10) CAPILLARY PRESSURE
-4.0
-3.8
-3.6
-3.4
-3.2
-3.0
-2.8
-2.6
-2.4
-2.2
-2.0
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0

FIGURE 3C

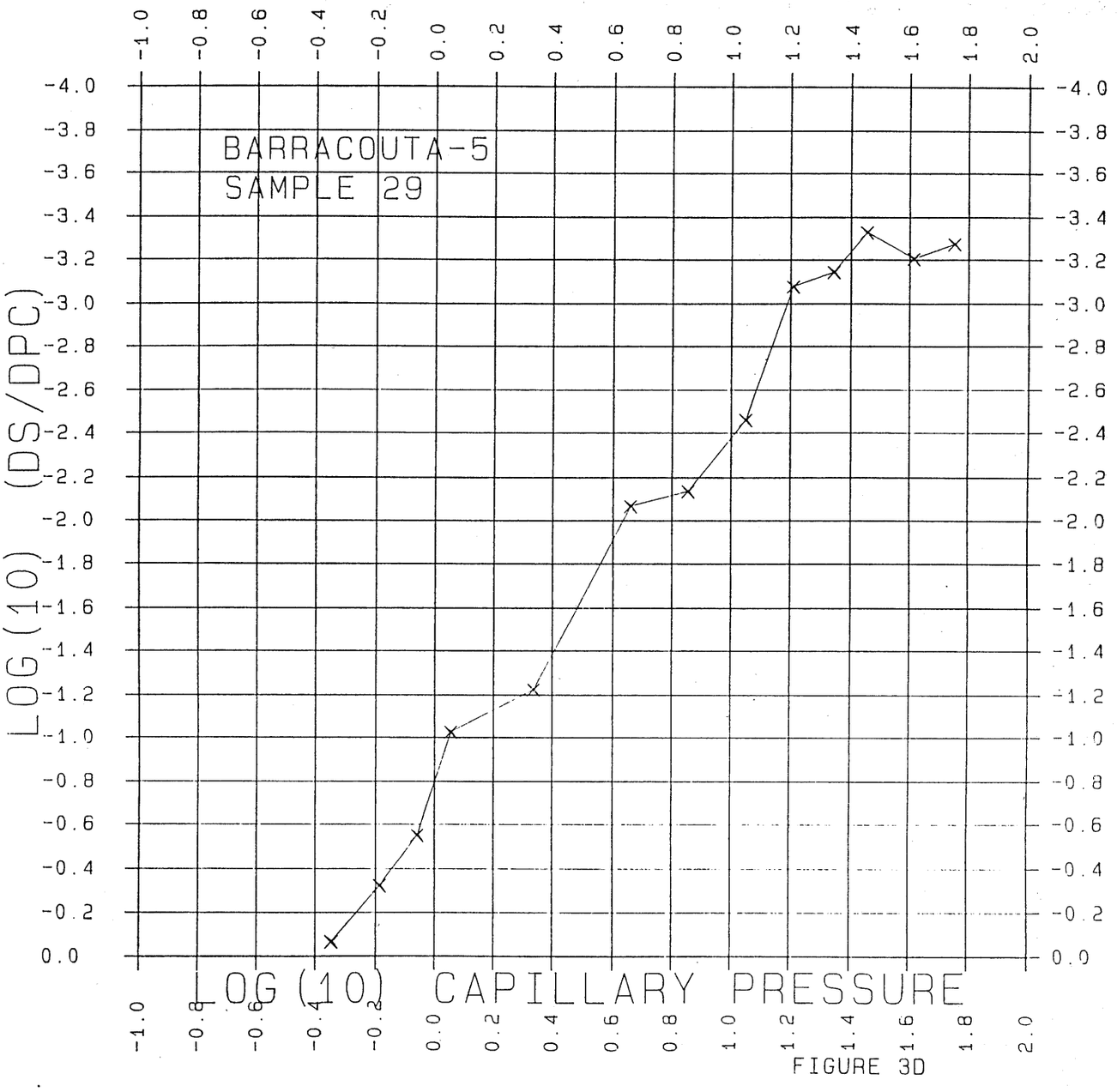

BARRACOUTA-5
SAMPLE 29
LOG (10) (DS/DPC)
LOG (10) CAPILLARY PRESSURE
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0
-4.0
-3.8
-3.6
-3.4
-3.2
-3.0
-2.8
-2.6
-2.4
-2.2
-2.0
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0

FIGURE 3D

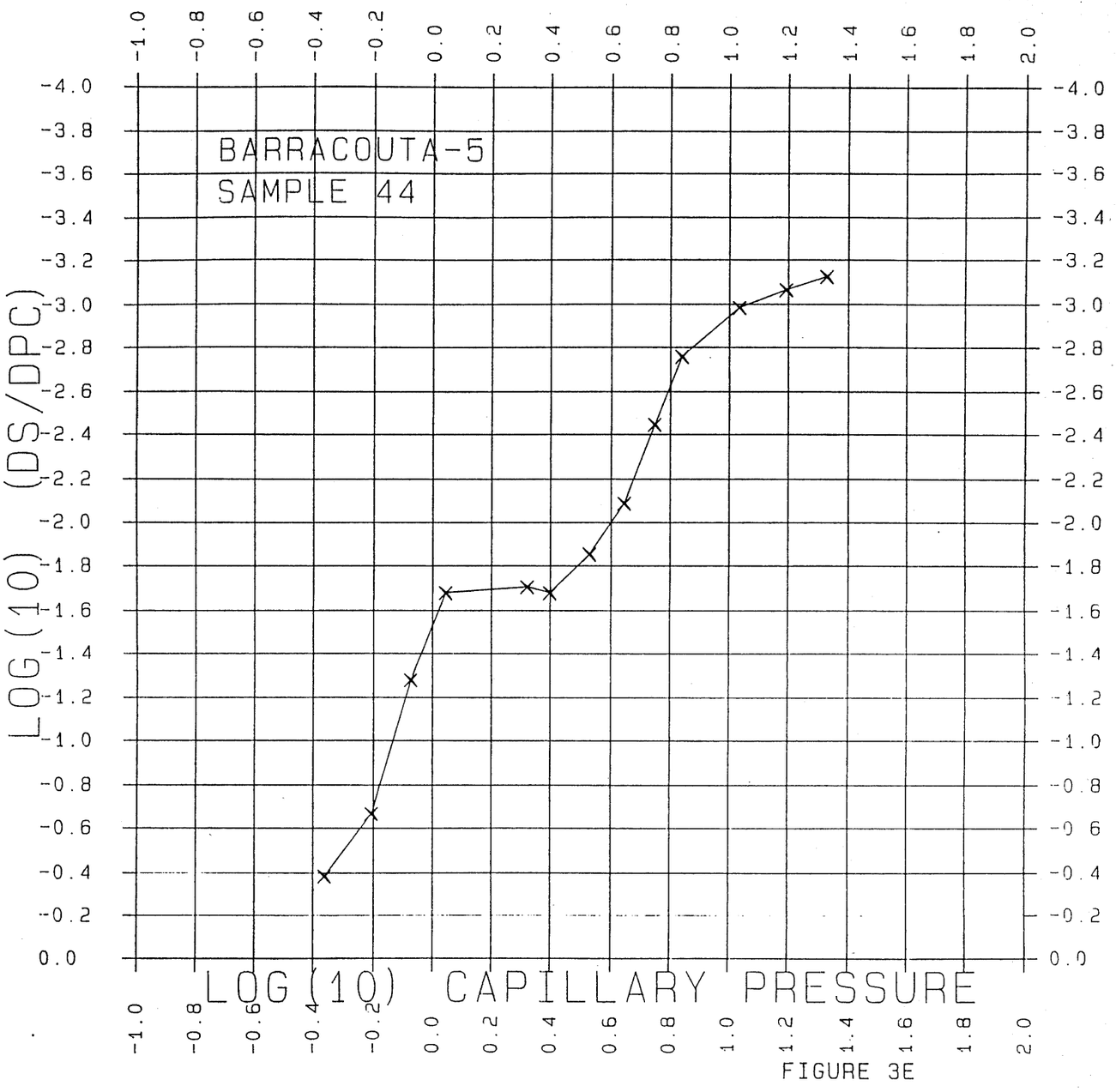

BARRACOUTA-5
SAMPLE 44
LOG (10) (DS/DPC)
LOG (10) CAPILLARY PRESSURE
-4.0
-3.8
-3.6
-3.4
-3.2
-3.0
-2.8
-2.6
-2.4
-2.2
-2.0
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0

FIGURE 3E

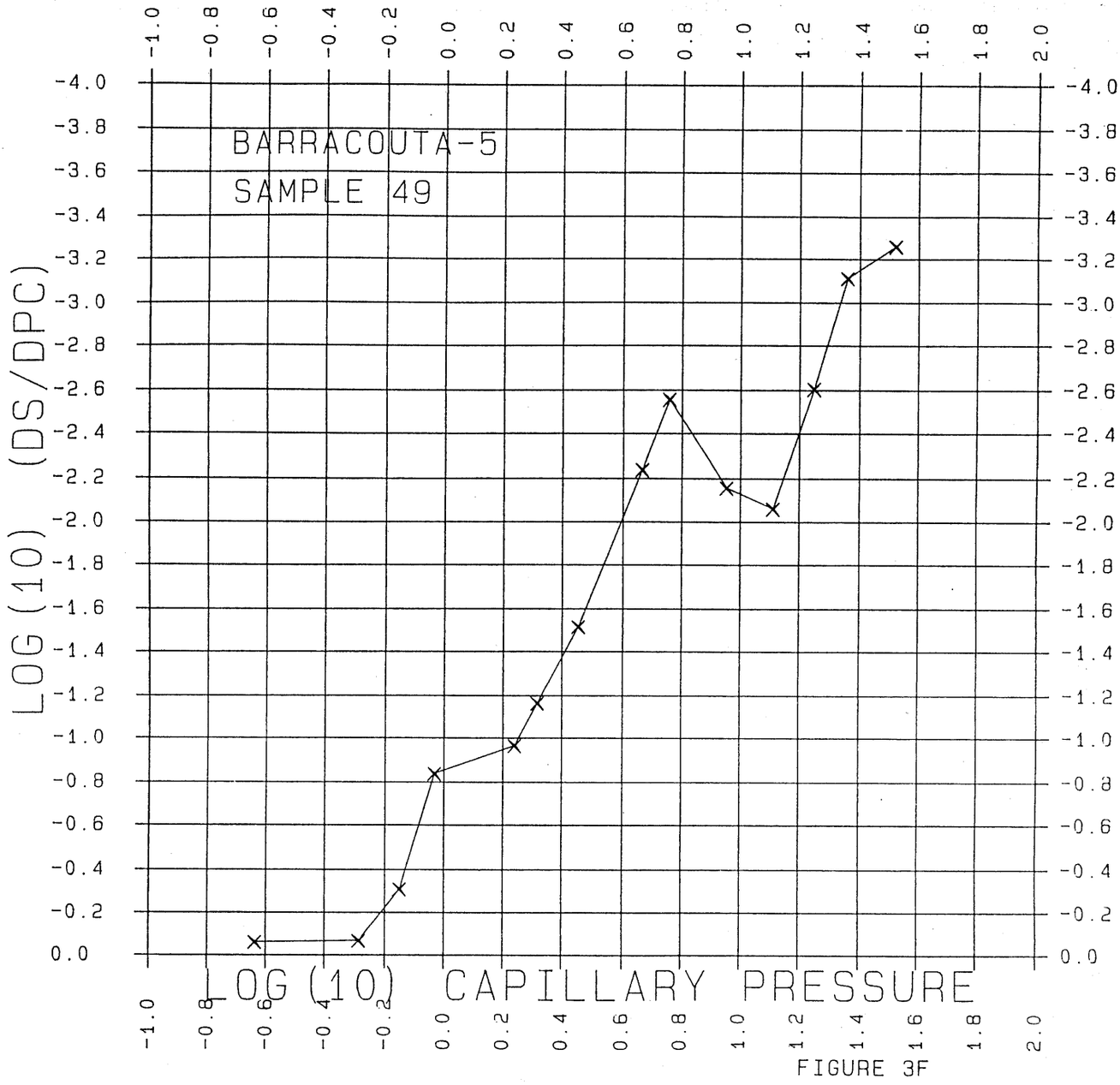

BARRACOUTA-5
SAMPLE 49
LOG (10) (DS/DPC)
LOG (10) CAPILLARY PRESSURE
-4.0
-3.8
-3.6
-3.4
-3.2
-3.0
-2.8
-2.6
-2.4
-2.2
-2.0
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0

FIGURE 3F

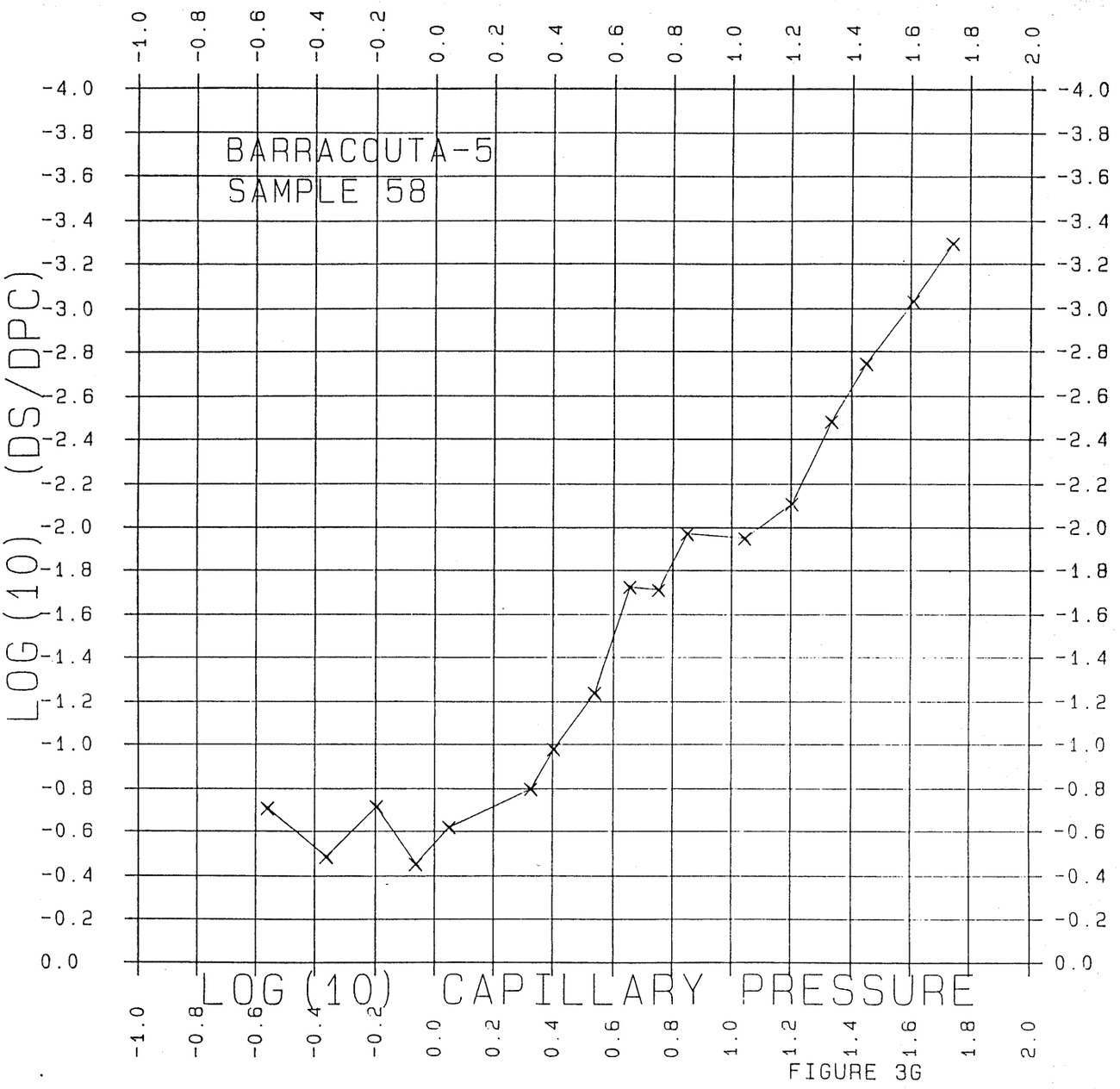

BARRACCUTA-5
SAMPLE 58
LOG (10) (DS/DPC)
LOG (10) CAPILLARY PRESSURE
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0
-4.0
-3.8
-3.6
-3.4
-3.2
-3.0
-2.8
-2.6
-2.4
-2.2
-2.0
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0

FIGURE 3G

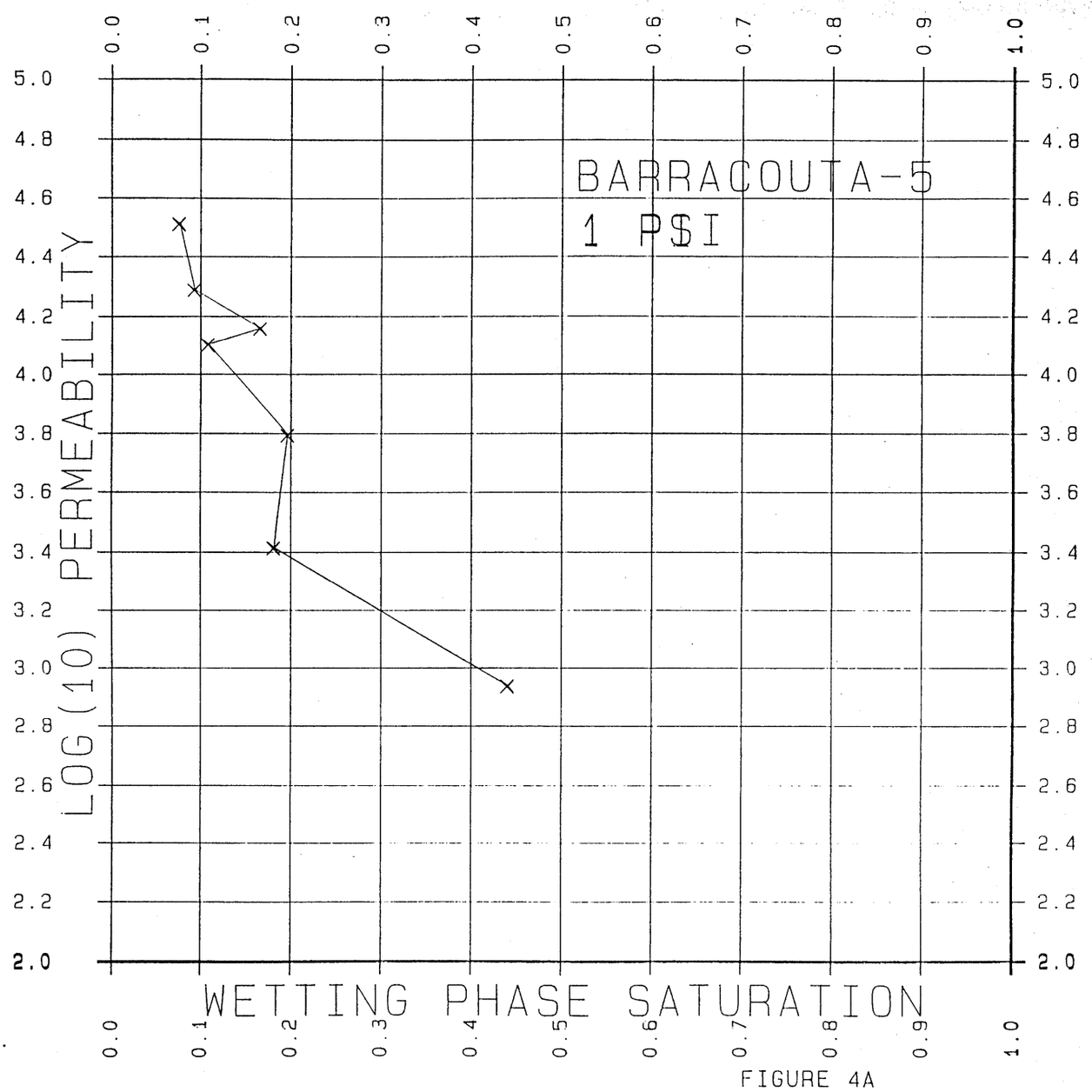

BARRACOUTA-5
1 PSI
LOG(10) PERMEABILITY
WETTING PHASE SATURATION
5.0
4.8
4.6
4.4
4.2
4.0
3.8
3.6
3.4
3.2
3.0
2.8
2.6
2.4
2.2
2.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0

FIGURE 4A

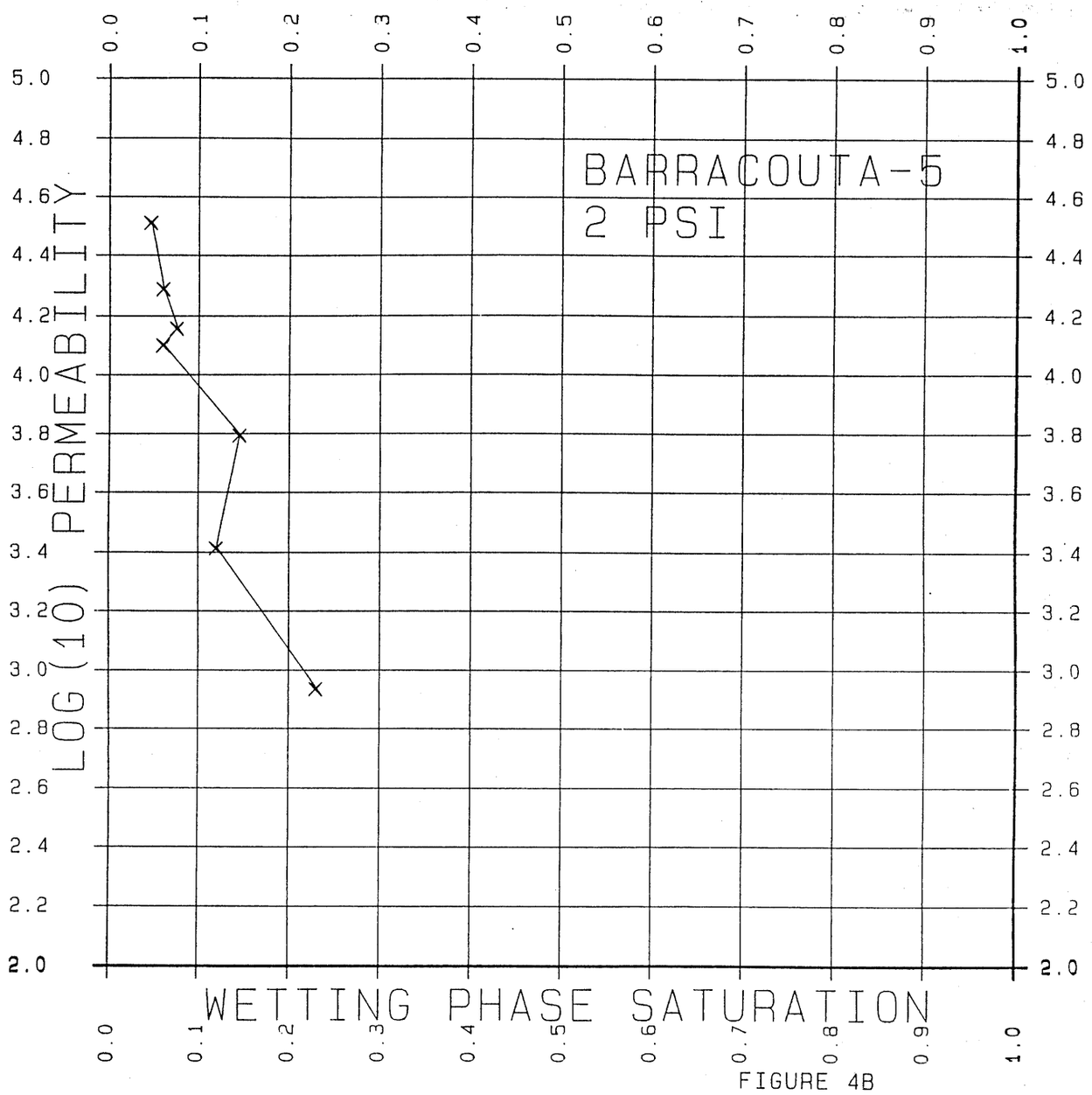

BARRACOUTA-5
2 PSI
LOG(10) PERMEABILITY
WETTING PHASE SATURATION
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
5.0
4.8
4.6
4.4
4.2
4.0
3.8
3.6
3.4
3.2
3.0
2.8
2.6
2.4
2.2
2.0

FIGURE 4B

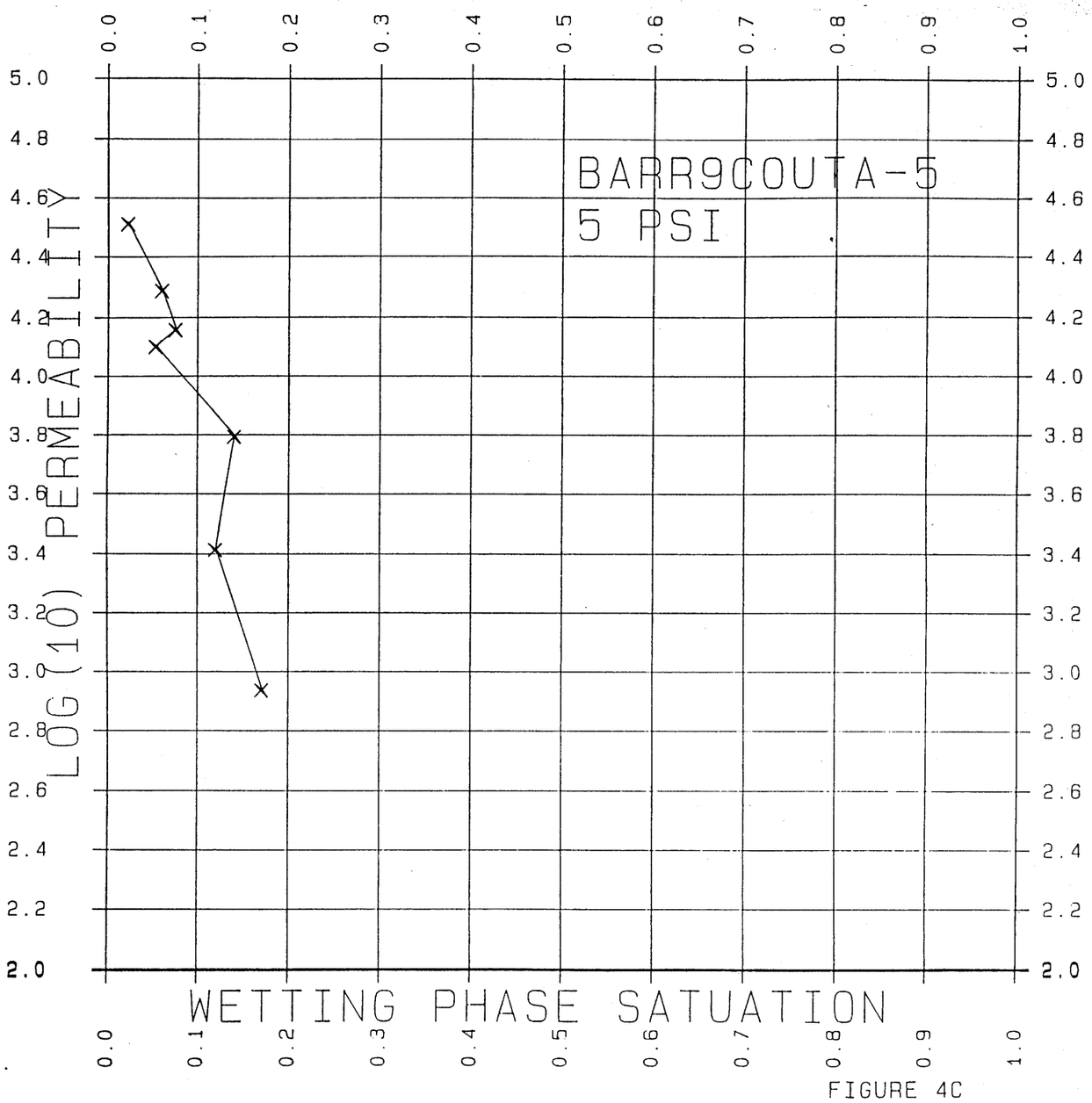

BARR9COUTA-5
5 PSI
LOG(10) PERMEABILITY
WETTING PHASE SATUATION
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
5.0
4.8
4.6
4.4
4.2
4.0
3.8
3.6
3.4
3.2
3.0
2.8
2.6
2.4
2.2
2.0

FIGURE 4C

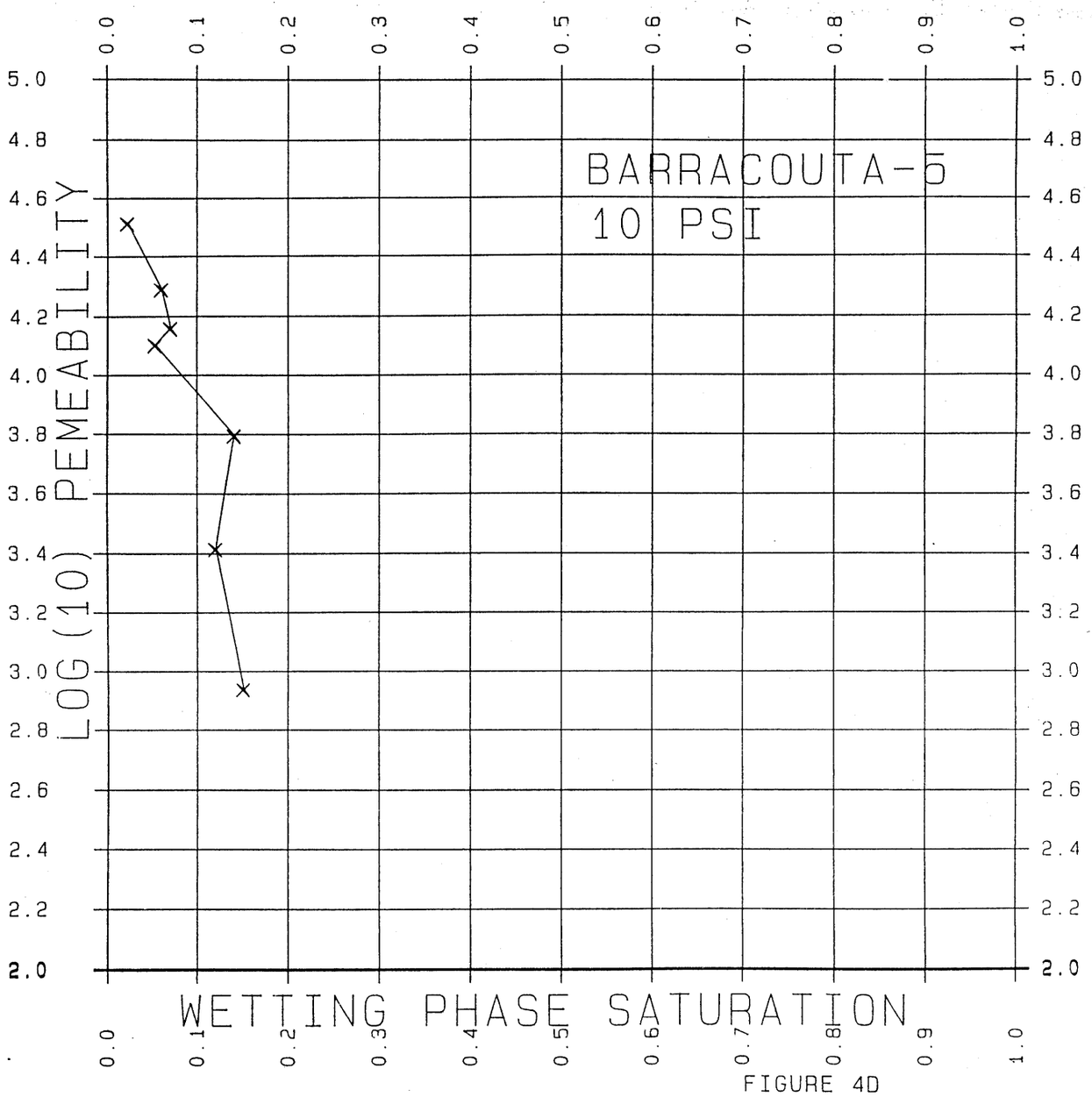

BARRACOUTA-5
10 PSI
LOG(10) PEMEABILITY
WETTING PHASE SATURATION
5.0
4.8
4.6
4.4
4.2
4.0
3.8
3.6
3.4
3.2
3.0
2.8
2.6
2.4
2.2
2.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0

FIGURE 4D

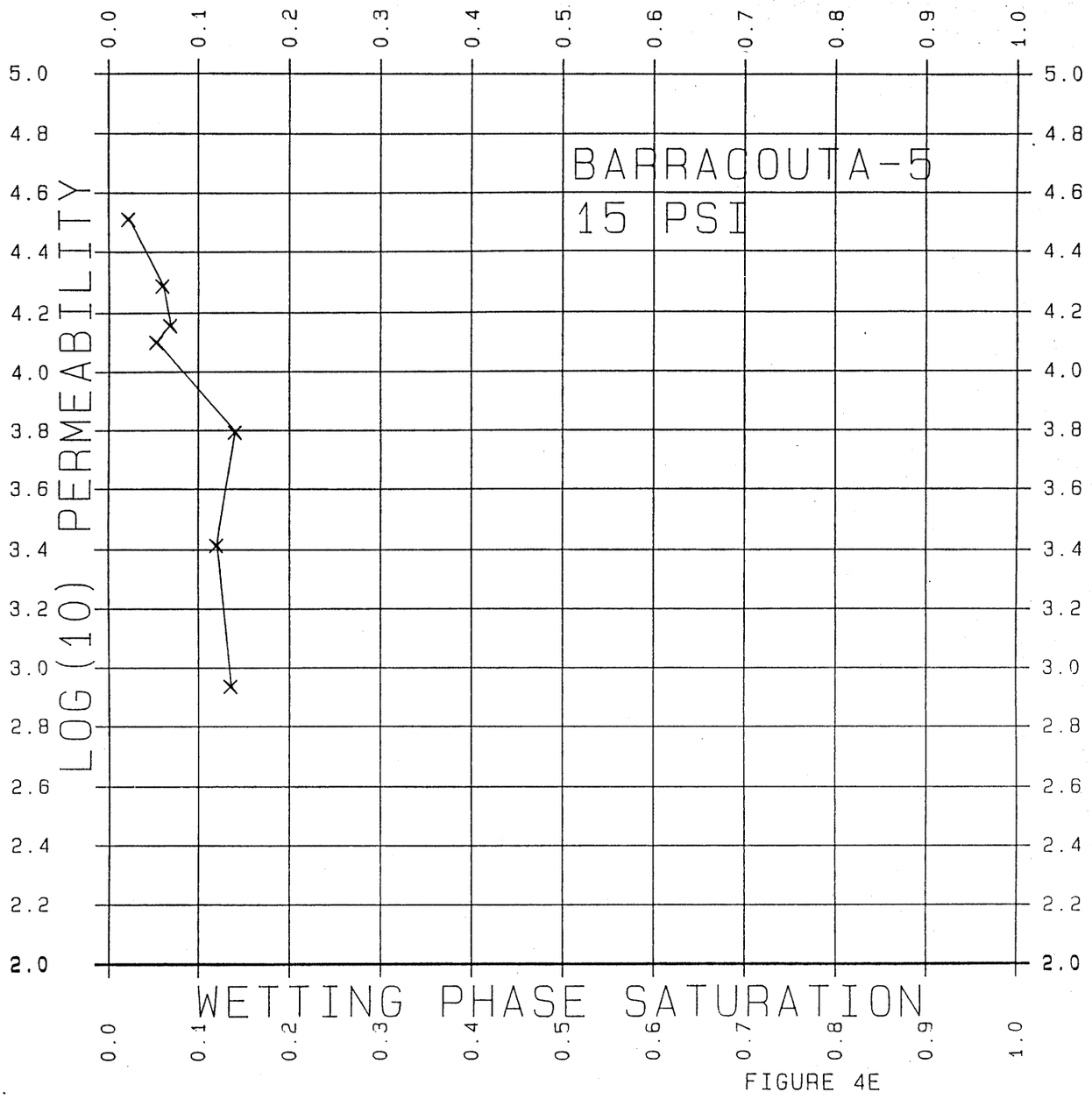

BARRACOUTA-5
15 PSI
LOG(10) PERMEABILITY
WETTING PHASE SATURATION
5.0
4.8
4.6
4.4
4.2
4.0
3.8
3.6
3.4
3.2
3.0
2.8
2.6
2.4
2.2
2.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0

FIGURE 4E

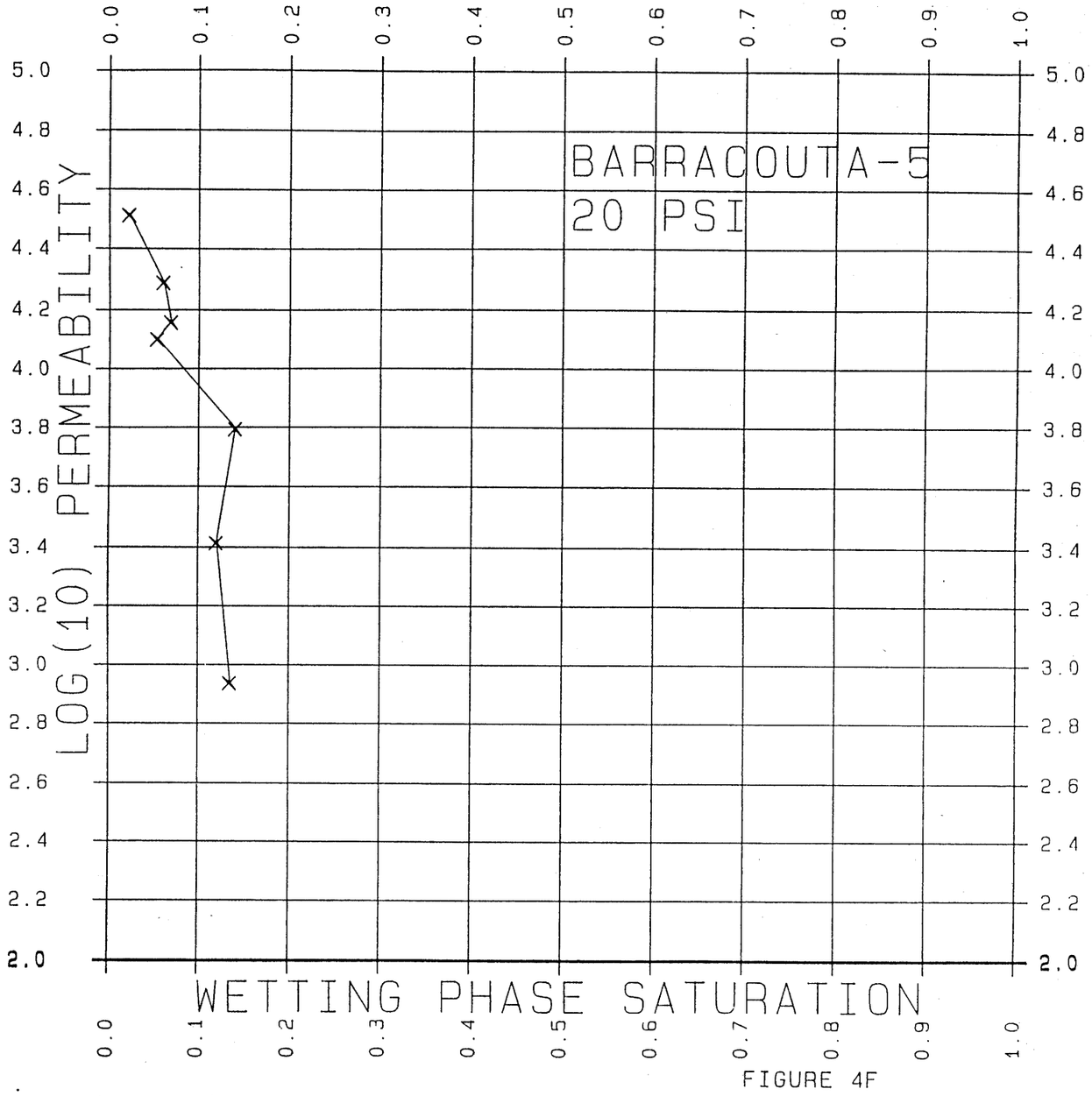

BARRACOUTA-5
20 PSI
LOG(10) PERMEABILITY
WETTING PHASE SATURATION
5.0
4.8
4.6
4.4
4.2
4.0
3.8
3.6
3.4
3.2
3.0
2.8
2.6
2.4
2.2
2.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0

FIGURE 4F

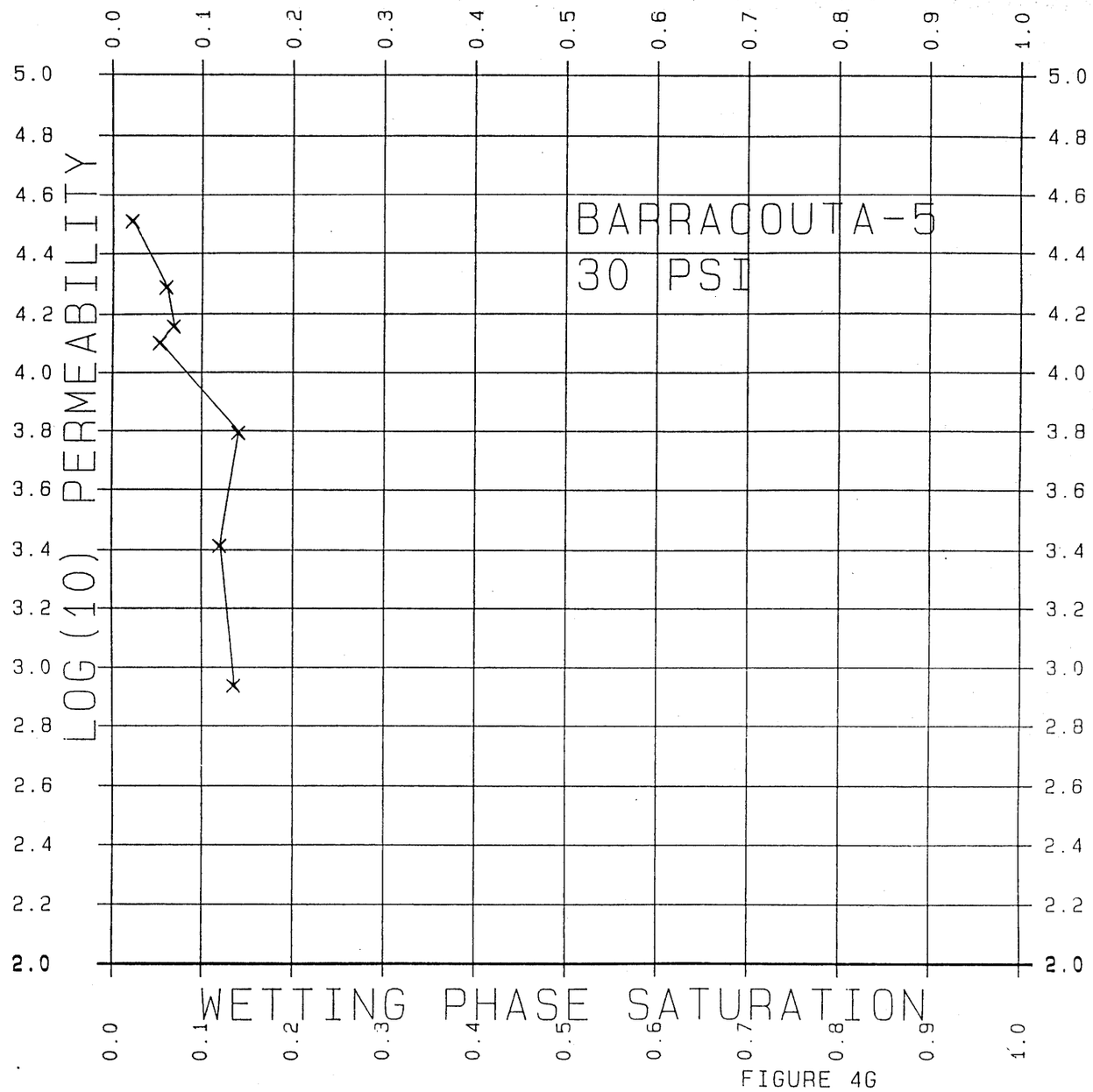

BARRACOUTA-5
30 PSI
LOG(10) PERMEABILITY
WETTING PHASE SATURATION
5.0
4.8
4.6
4.4
4.2
4.0
3.8
3.6
3.4
3.2
3.0
2.8
2.6
2.4
2.2
2.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0

FIGURE 4G

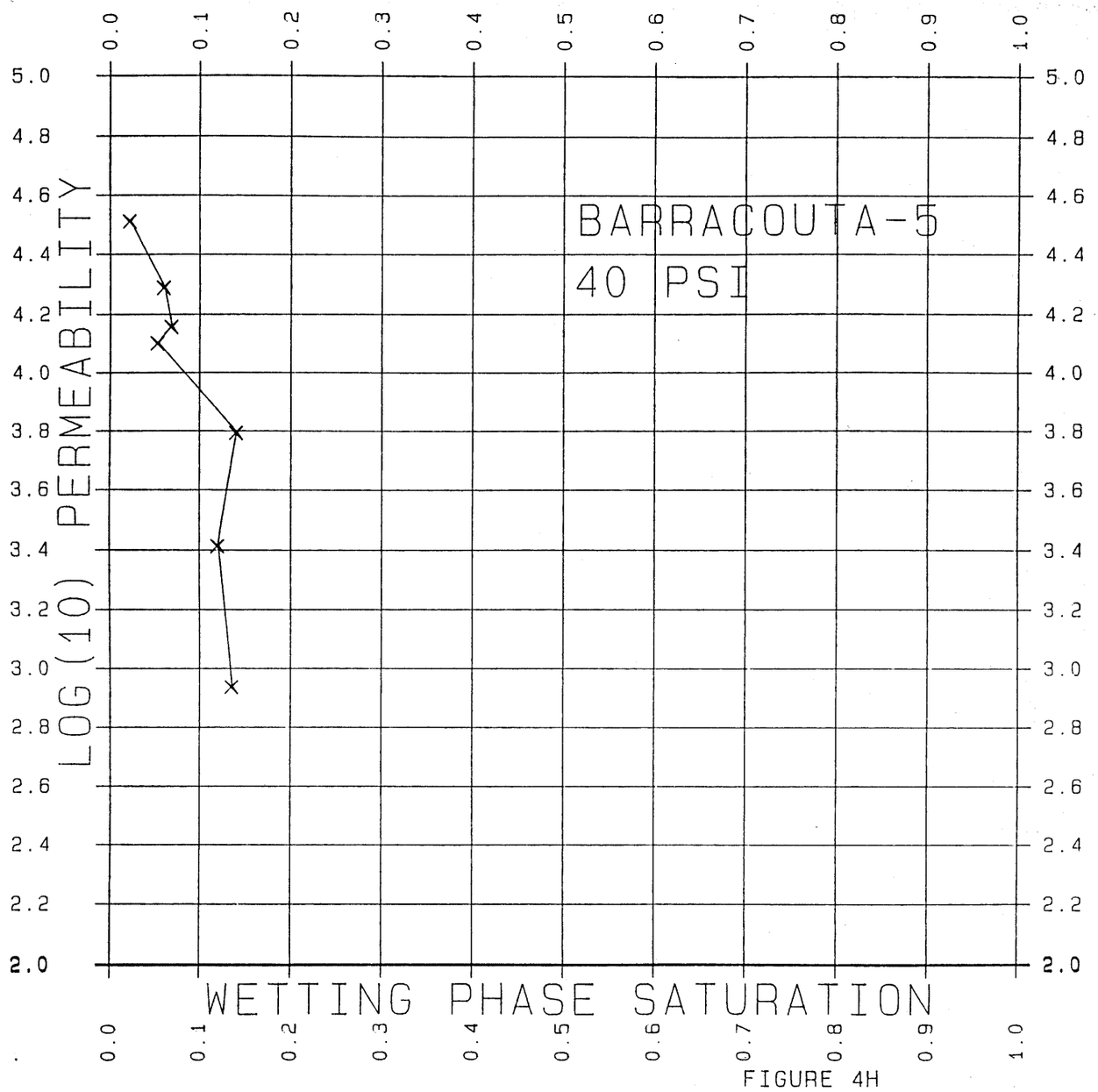

BARRACOUTA-5
40 PSI
LOG(10) PERMEABILITY
WETTING PHASE SATURATION
5.0
4.8
4.6
4.4
4.2
4.0
3.8
3.6
3.4
3.2
3.0
2.8
2.6
2.4
2.2
2.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0

FIGURE 4H

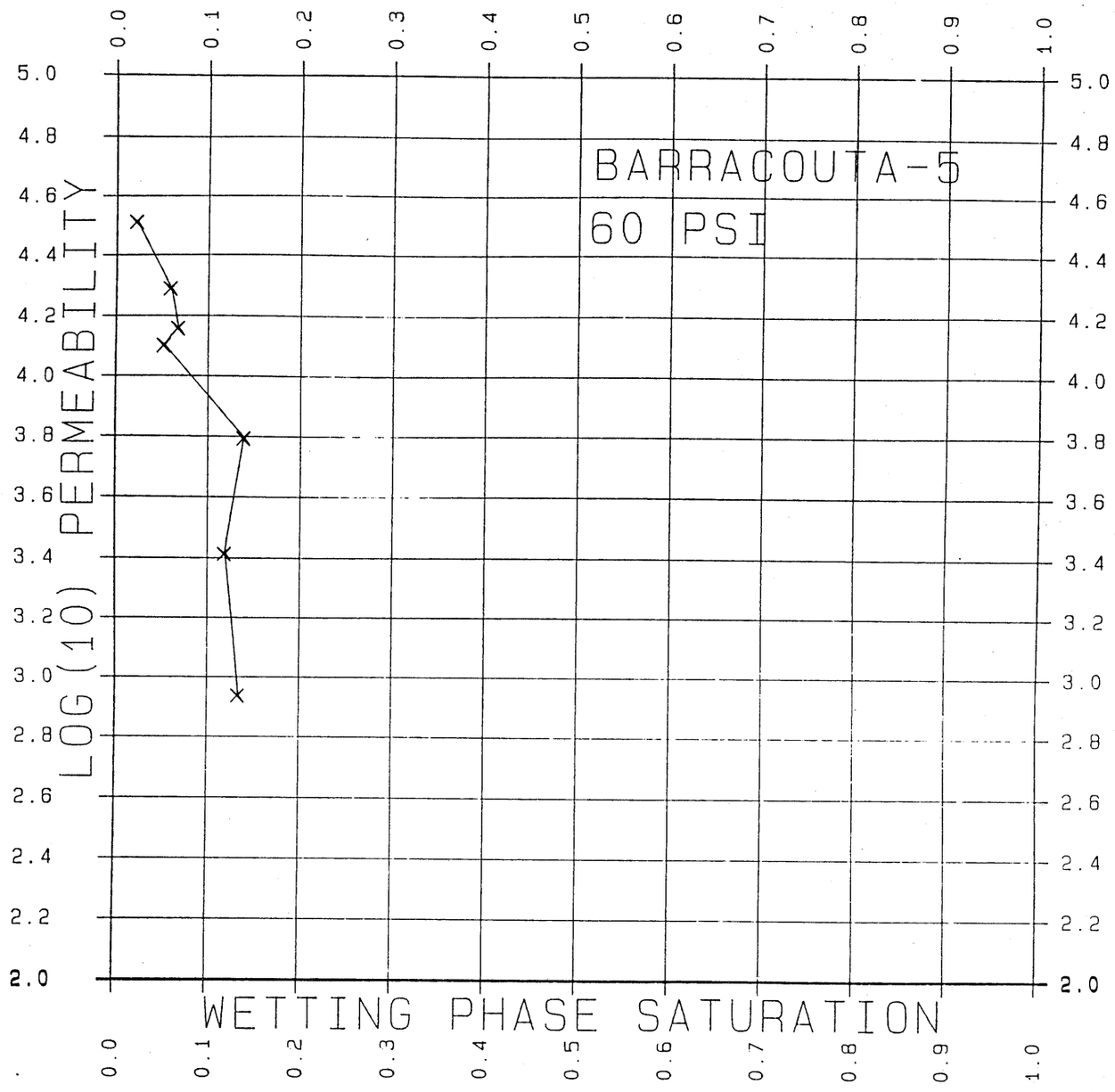

BARRACOUTA-5
60 PSI
LOG(10) PERMEABILITY
WETTING PHASE SATURATION
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
5.0
4.8
4.6
4.4
4.2
4.0
3.8
3.6
3.4
3.2
3.0
2.8
2.6
2.4
2.2
2.0

FIGURE 4I

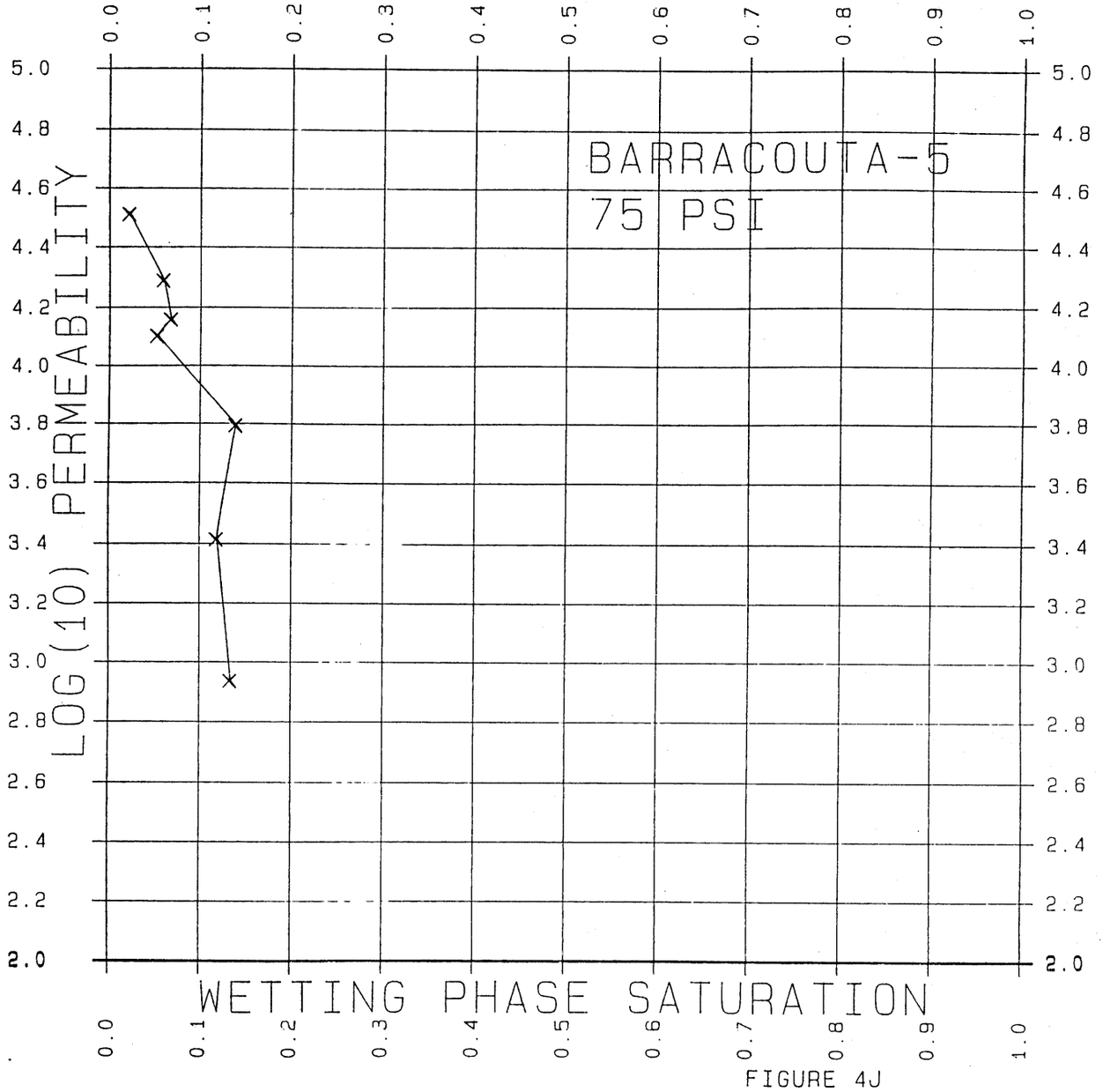

BARRACOUTA-5
75 PSI
LOG(10) PERMEABILITY
WETTING PHASE SATURATION
5.0
4.8
4.6
4.4
4.2
4.0
3.8
3.6
3.4
3.2
3.0
2.8
2.6
2.4
2.2
2.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0

FIGURE 4J

PE601189

This is an enclosure indicator page.
The enclosure PE601189 is enclosed within the container PE902441 at this location in this document.

The enclosure PE601189 has the following characteristics:

ITEM_BARCODE	= PE601189
CONTAINER_BARCODE	= PE902441
NAME	= Log Analysis
BASIN	= GIPPSLAND
PERMIT	=
TYPE	= WELL
SUBTYPE	= WELL_LOG
DESCRIPTION	= Log Analysis
REMARKS	=
DATE_CREATED	= 24/07/1985
DATE_RECEIVED	= 19/01/1987
W_NO	= W895
WELL_NAME	= Barracouta-5
CONTRACTOR	= ESSO
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE601190

This is an enclosure indicator page.
The enclosure PE601190 is enclosed within the container PE902441 at this location in this document.

The enclosure PE601190 has the following characteristics:

ITEM_BARCODE	= PE601190
CONTAINER_BARCODE	= PE902441
NAME	= EPT Analysis by TPO method
BASIN	= GIPPSLAND
PERMIT	=
TYPE	= WELL
SUBTYPE	= WELL_LOG
DESCRIPTION	= EPT Analysis by TPO method
REMARKS	=
DATE_CREATED	= 24/07/1985
DATE_RECEIVED	= 19/01/1987
W_NO	= W895
WELL_NAME	= Barracouta-5
CONTRACTOR	= ESSO
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE601191

This is an enclosure indicator page.
The enclosure PE601191 is enclosed within the container PE902441 at this location in this document.

The enclosure PE601191 has the following characteristics:

ITEM_BARCODE	= PE601191
CONTAINER_BARCODE	= PE902441
NAME	= EPT Analysis by A/AW Method
BASIN	= GIPPSLAND
PERMIT	=
TYPE	= WELL
SUBTYPE	= WELL_LOG
DESCRIPTION	= EPT Analysis by A/AW Method
REMARKS	=
DATE_CREATED	= 24/07/1985
DATE_RECEIVED	= 19/01/1987
W_NO	= W895
WELL_NAME	= Barracouta-5
CONTRACTOR	= ESSO
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

APPENDIX 4

APPENDIX 4

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GEOCHEMICAL REPORT

BARRACOUTA-5 WELL, GIPPSLAND BASIN

VICTORIA

by

T.R. BOSTWICK

Sample Handling and Analysis by:

- D.M. Hill)
- D.M. Ford)
- J. McCardle) ESSO Australia Ltd
- H. Schiller)
- M.A. Sparke)
- Exxon Production Research Company
- Geochem Laboratories
- A.C. Cook University of Wollongong

Esso Australia Ltd.
Geochemical Report.

1984L/1

December, 1985

CONTENTS

List of Tables

List of Figures

Appendices

BARRACOUTA-5

INTRODUCTION

Canned cuttings and sidewall core collected during the drilling of the Barracouta-5 well, Gippsland Basin, have been analyzed to determine the hydrocarbon source characteristics of the section penetrated. Cuttings samples, composited over 15-metre intervals, were collected from 245 mKB to 1775 mKB (Total Depth). Alternate cuttings samples were analyzed for C_{1-4} headspace gases. Succeeding alternate 15-metre intervals between 800 mKB and 1760 mKB were analyzed for light gasoline (C_{4-7}) hydrocarbons. Selected sidewall core samples were analyzed for total organic carbon (TOC), Rock-Eval pyrolysis, kerogen isolation and elemental analysis, and vitrinite reflectance.

Two heterogeneous cuttings samples were analyzed for C_{15+} compounds.

Three liquid hydrocarbon samples (RFT 7/33 at 1593.3 mKB, RFT 6/29 at 1623 m KB, RFT 5/28 at 1631.5 mKB) were analyzed by 'whole oil' gas chromatography and for API gravity.

The results of these analyses are recorded in Tables 1 through 7 and Figures 1 through 10.

Summary of Interpretations

The hydrocarbon source potential of the drilled section is summarized as follows:

DEPTH INTERVAL (M.D.K.B.)	UNIT	SOURCE POTENTIAL	MATURITY	INDIGENOUS HYDROCARBONS EXPECTED WHEN MATURE
245.0 - 1043.5	Gippsland Lmst.	V. Poor	Immature	-
1043.5 - 1150	Lakes Entrance	V. Poor	Immature	-
1150.0 - 1182	"Oligocene Wedge"	V. Poor	Immature	-
1182.0 - 1204	Gurnard Fm.	V. Poor	Immature	-
1204.0 - 1731	Latrobe Group	Fair - Good	Immature	Gas and Condensate

The liquid hydrocarbons recovered from RFT 7/33 at 1593.3 mKB, RFT 6/29 at 1623 mKB and RFT 5/28 at 1631.5 mKB are condensates with API gravities of 56.5° 57.2° and 60.4° respectively. They originate from a very mature terrestrial source and hence are not indigenous to the drilled section.

DISCUSSIONS OF RESULTS AND INTERPRETATIONS

Richness

The detailed headspace cuttings gas (C_{1-4}) data are listed in Table 1 and graphically displayed in Figure 1. Cuttings gas yields are negligible in the Gippsland Limestone Formation, marginal in the Lakes Entrance and Gurnard Formations, and fair to good in the Latrobe Group sediments. The highest C_{1-4} yields were observed at the 1265 - 1340 mKB and 1520 - 35 mKB intervals of the Latrobe Group. These data indicate that the best source potential most likely occurs in the Latrobe Group sediments and that the hydrocarbon source potential in the shallower Gippsland Limestone, Lakes Entrance, "Oligocene Wedge" and Gurnard Formations is poor.

Total organic carbon (TOC) contents (Table 2) and Rock-Eval pyrolysis yields (Table 3a) from the sidewall cores of the "Oligocene Wedge" and Gurnard Formations are poor confirming the lack of source potential in these formations. Corresponding yields in the Latrobe sediments are much higher indicating fair to good hydrocarbon source potential.

The two cuttings samples extracted for their $C_{15}+$ hydrocarbons (Table 4) illustrate the contrasting potentials of the "Oligocene Wedge" (poor) and Latrobe (good) Formations.

Organic Matter Types

Hydrogen Indices (HI) for the "Oligocene Wedge" and Gurnard Formations are extremely low (Table 3b) and contrast markedly with those from the Latrobe samples. The low HIs are a consequence of the poor quality organic matter in the "Oligocene Wedge" and Gurnard sediments. The HIs for the Latrobe sediments when plotted on the Rock-Eval Maturation plot (Figure 2) indicate the presence of Type III, land-derived, gas-prone kerogen in these sediments. It is likely that some waxy oil potential is present in the more hydrogen-rich (higher HIs) portions of these Latrobe Group sediments.

The elemental analysis of selected kerogen samples isolated from sidewall cores are listed in Table 5a. "Approximate" hydrogen:carbon (H/C), oxygen:carbon(O/C), and nitrogen:carbon (N/C) atomic ratios are given in Table 5b. These ratios are "approximate" since the oxygen value is calculated

by difference and the naturally occurring sulphur %, which may be up to a few percent, was not determined. The atomic ratios of H/C when plotted against O/C atomic ratios on the modified Van Krevelen diagram (Figure 3) confirm the Type III, terrestrial character of the Latrobe Group kerogens inferred from the hydrogen indices. One sample at 1380 mKB appears to be a mixture of Types II and III kerogen suggestive of possible condensate or waxy oil potential. Waxy oil potential may be inferred for the more hydrogen-rich (higher H/C ratios), terrestrial kerogens.

High C_{4-7} yields (Table 7) from coals encountered below 1340 mKB indicate the presence of coal macerals capable of generating wet gas and/or condensate. The C_{15+} saturate chromatogram (Figure 5) of the extract from the Latrobe Group sample at 1460 mKB shows a pattern typical of land-derived organic material. Due to the richness of the extract, some waxy oil potential should be realized on maturity. At 1160 mKB ("Oligocene Wedge") the corresponding chromatogram (Figure 4) suggests a mixture of marine and land-derived material.

Maturity

Vitrinite reflectance data (Table 6) when plotted against depth (Figure 6) indicate that the drilled section is immature to T.D. The Rock-Eval Maturation and Kerogen Type plots (Figures 2, 3) appear to confirm immaturity to 1589 mKB, and the chromatogram of the asphaltic rich sample at 1460 mKB (Figure 4) exhibits a typical immature pattern.

The C_{4-7} yields in non-coaly sediments are less than 1 ppm to 1295 mKB (Table 7, Figure 7) which is consistent with an immature section to this depth. Below 1295 mKB, only coals were analysed and these yielded appreciable quantities of the light C_{4-7} hydrocarbons. Although an increase with depth in the concentration of C_{4-7} hydrocarbons is usually considered another indication of increasing maturity, coals have typically yielded appreciable C_{4-7} hydrocarbons in immature sections. We believe that these high C_{4-7} yields are more a reflection of the hydrocarbon-generating capacity of the coal macerals present, and their occurrence in a relatively immature section may be an indication of the role specific coal macerals play in the early generation of wet gas and condensate. Consequently, the 1445-1760 mKB interval where these high yields were encountered is still rated as immature.

Hydrocarbons

"Whole oil" chromatograms of the liquid hydrocarbons recovered from 1593.3 mKB, 1623 mKB and 1631.5 mKB are shown in Figures 8-10. The three liquids with API gravities of 56.5°, 57.2° and 60.4° respectively (Table 7)

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C1-C4 HYDROCARBON ANALYSIS

REPORT A - HEADSPACE GAS

BASIN - GIPPSLAND
WELL - BARRACOUTA 5

GAS CONCENTRATION (VOLUME GAS PER MILLION VOLUME CUTTINGS)

GAS COMPOSITION (PERCENT)

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
77734 B	260.00	0	0	0	0	0	0	0	.00	0.	0.	0.	0.	0.	0.	0.	0.	0.
77734 D	320.00	4	0	0	0	0	0	4	.00	100.	0.	0.	0.	0.	0.	0.	0.	0.
77734 F	380.00	6	0	0	0	0	0	6	.00	100.	0.	0.	0.	0.	0.	0.	0.	0.
77734 H	440.00	7	3	1	1	0	5	12	41.67	58.	25.	8.	8.	0.	60.	20.	20.	0.
77734 J	500.00	4	0	0	0	0	0	4	.00	100.	0.	0.	0.	0.	0.	0.	0.	0.
77734 L	560.00	7	3	0	0	0	3	10	30.00	70.	30.	0.	0.	0.	100.	0.	0.	0.
77734 N	620.00	3	0	0	0	0	0	3	.00	100.	0.	0.	0.	0.	0.	0.	0.	0.
77734 P	680.00	0	0	0	0	0	0	0	.00	0.	0.	0.	0.	0.	0.	0.	0.	0.
77734 R	740.00	11	1	0	1	0	2	13	15.38	85.	8.	0.	8.	0.	50.	0.	50.	0.
77734 T	800.00	13	3	0	0	0	3	16	18.75	81.	19.	0.	0.	0.	100.	0.	0.	0.
77734 V	830.00	8	0	0	3	0	3	11	27.27	73.	0.	0.	27.	0.	0.	0.	100.	0.
77734 X	875.00	0	0	16	0	0	16	16	100.00	0.	0.	100.	0.	0.	0.	100.	0.	0.
77734 Z	920.00	0	0	0	0	0	0	0	.00	0.	0.	0.	0.	0.	0.	0.	0.	0.
77735 B	950.00	17	0	0	0	0	0	17	.00	100.	0.	0.	0.	0.	0.	0.	0.	0.
77735 D	980.00	104	9	3	0	0	12	116	10.34	90.	8.	3.	0.	0.	75.	25.	0.	0.
77735 F	1010.00	171	15	8	0	0	23	194	11.86	88.	8.	4.	0.	0.	65.	35.	0.	0.
77735 H	1040.00	574	46	27	4	7	84	658	12.77	87.	7.	4.	1.	1.	55.	32.	5.	8.
77735 J	1115.00	305	26	18	4	7	55	360	15.28	85.	7.	5.	1.	2.	47.	33.	7.	13.
77735 L	1145.00	1245	89	55	16	30	190	1435	13.24	87.	6.	4.	1.	2.	47.	29.	8.	16.
77735 N	1205.00	843	78	82	41	52	253	1096	23.08	77.	7.	7.	4.	5.	31.	32.	16.	21.
77735 P	1250.00	941	2059	1739	277	132	4207	5148	81.72	18.	40.	34.	5.	3.	49.	41.	7.	3.
77735 R	1280.00	22366	36716	36445	8286	4374	85821	108187	79.33	21.	34.	34.	8.	4.	43.	42.	10.	5.
77735 T	1310.00	8992	2059	1199	400	184	3842	12834	29.94	70.	16.	9.	3.	1.	54.	31.	10.	5.
77735 V	1340.00	11530	5833	4615	1410	639	12497	24027	52.01	48.	24.	19.	6.	3.	47.	37.	11.	5.
77735 Z	1415.00	1502	143	77	14	13	247	1749	14.12	86.	8.	4.	1.	1.	58.	31.	6.	5.
77736 B	1445.00	6721	1046	557	77	67	1747	8468	20.63	79.	12.	7.	1.	1.	60.	32.	4.	4.
77736 D	1475.00	3210	575	381	64	69	1089	4299	25.33	75.	13.	9.	1.	2.	53.	35.	6.	6.
77736 F	1505.00	6884	1049	482	59	44	1634	8518	19.18	81.	12.	6.	1.	1.	64.	29.	4.	3.
77736 H	1535.00	15872	2632	1350	143	128	4253	20125	21.13	79.	13.	7.	1.	1.	62.	32.	3.	3.
77736 J	1565.00	8147	898	429	58	62	1447	9594	15.08	85.	9.	4.	1.	1.	62.	30.	4.	4.
77736 L	1595.00	2606	557	473	131	147	1308	3914	33.42	67.	14.	12.	3.	4.	43.	36.	10.	11.
77736 N	1625.00	3653	1018	1244	217	284	2763	6416	43.06	57.	16.	19.	3.	4.	37.	45.	8.	10.
77736 P	1655.00	3994	1297	1912	344	456	4009	8003	50.09	50.	16.	24.	4.	6.	32.	48.	9.	11.
77736 R	1685.00	1147	291	343	54	78	766	1913	40.04	60.	15.	18.	3.	4.	38.	45.	7.	10.
77736 T	1715.00	3449	418	378	82	151	1029	4478	22.98	77.	9.	8.	2.	3.	41.	37.	8.	15.
77736 V	1745.00	5183	682	539	113	162	1496	6679	22.40	78.	10.	8.	2.	2.	46.	36.	8.	11.
77736 X	1775.00	749	323	289	50	85	747	1496	49.93	50.	22.	19.	3.	6.	43.	39.	7.	11.

[redacted]

TOTAL ORGANIC CARBON REPORT

BASIN -- GIPPSLAND
WELL -- BARRACOUTA 5

SAMPLE NO.	DEPTH	AGE	FORMATION	AN	TOC%	AN	TOC%	AN	TOC%	DESCRIPTION
77734 U	830.00	PLEIST-MID MIOCENE	GIPPSLAND LMST	2	.02 *					60% GRN YEL LMST, SAND
77734 W	860.00	PLEIST-MID MIOCENE	GIPPSLAND LMST	2	.01 *					QTZ SAND, GRN YEL LMST
77734 Y	890.00	PLEIST-MID MIOCENE	GIPPSLAND LMST	2	.01 *					QTZ SAND, GRN YEL LMST
77735 A	930.00	PLEIST-MID MIOCENE	GIPPSLAND LMST	2	.02 *					QTZ SAND, GRN YEL LMST
77735 C	965.00	PLEIST-MID MIOCENE	GIPPSLAND LMST	2	.03 *					QTZ SAND, GRN YEL LMST
77735 E	995.00	PLEIST-MID MIOCENE	GIPPSLAND LMST	2	.15 *					GY GRN CLYST, CALC
77735 G	1025.00	PLEIST-MID MIOCENE	GIPPSLAND LMST	2	.19 *					GRN GY CLYST, CALC
77735 I	1055.00	MID-EARLY MIOCENE	LAKES ENTRANCE	2	.16 *					PALE GRN CLYST, CALC
77735 K	1130.00	MID-EARLY MIOCENE	LAKES ENTRANCE	2	.25 *					GRN GY CLYST, CALC
77716 X	1150.00	EARLY OLIGOCENE	"OLIGOCENE WEDGE"	1	.40					M GY SLTST, MICA
77716 V	1159.90	EARLY OLIGOCENE	"OLIGOCENE WEDGE"	1	.25					M GY SLTST
77735 M	1160.00	EARLY OLIGOCENE	"OLIGOCENE WEDGE"	2	.21 *					GRN GY CLYST, CALC
77716 R	1175.90	EARLY OLIGOCENE	"OLIGOCENE WEDGE"	1	.79					DK GY-GRN SLTST, GLAUC
77716 K	1183.00	LATE EOCENE	GURNARD	1	1.03					DK GY-GRN CLYST/SLTST
77716 I	1185.00	LATE EOCENE	GURNARD	1	1.92					DK GY-GRN SLTST, CARB
77716 B	1191.90	LATE EOCENE	GURNARD	1	3.70					LT GY-GRN SLTST, GLAUC
77716 A	1193.00	LATE EOCENE	GURNARD	1	1.79					DK GY-GRN SLTST, GLAUC
77715 Z	1196.00	LATE EOCENE	GURNARD	1	1.40					DK GRN SLTST, CARB, GLAUC
77715 Y	1198.90	LATE EOCENE	GURNARD	1	1.41					DK GY CLYST/SLTST, CARB
77715 W	1203.60	LATE EOCENE	GURNARD	1	.57					M-DK GY SLTY SST, CARB
77715 U	1227.50	MID EOCENE	LATROBE GROUP	1	1.54					M GY SLTST, F SST, CARB
77715 T	1234.20	MID EOCENE	LATROBE GROUP	1	1.04					M-DK GY CLYST, CARB
77715 S	1239.20	MID EOCENE	LATROBE GROUP	1	1.93					DK GY SLTST/CLYST, CARB
77735 S	1295.00	MID EOCENE	LATROBE GROUP	2	.05 *					QTZ SAND
77715 O	1309.30	MID EOCENE	LATROBE GROUP	1	3.61					DK GY-BLK SLTST, V CARB
77715 M	1327.00	MID EOCENE	LATROBE GROUP	1	2.25					DK GY SLTST/SST, V CARB
77715 L	1332.00	MID EOCENE	LATROBE GROUP	1	2.98					DK GY SLTST/SST, V CARB
77735 W	1355.00	MID EOCENE	LATROBE GROUP	2	46.40 *					COAL
77715 G	1379.20	MID EOCENE	LATROBE GROUP	1	2.49					LT GY SLTST, SDY LAMINAE
77736 C	1460.00	MID EOCENE	LATROBE GROUP	2	54.60 *					COAL
77717 Y	1468.00	MID EOCENE	LATROBE GROUP	1	1.52					BRN-GY SLTST, CARB LAMINA
77717 X	1492.00	MID EOCENE	LATROBE GROUP	1	.73					M-LT GY SLTST, SL MICA
77736 G	1520.00	MID EOCENE	LATROBE GROUP	2	62.11 *					COAL
77717 W	1522.40	MID EOCENE	LATROBE GROUP	1	.24					M-LT GY SLTST, ARGILLITIC
77717 V	1524.00	MID EOCENE	LATROBE GROUP	1	2.02					M-LT GY SLTST, CARB LAM
77736 K	1580.00	MID EOCENE	LATROBE GROUP	2	56.60 *					COAL
77717 U	1589.00	MID EOCENE	LATROBE GROUP	1	.68					LT BRN SH
77736 O	1640.00	MID EOCENE	LATROBE GROUP	2	55.20 *					COAL
77736 S	1700.00	MID EOCENE	LATROBE GROUP	2	50.00 *					COAL
77716 Y	1731.00	MID EOCENE	LATROBE GROUP	1	.32					M-LT GY SLTST, MICA

AN = Analyst Code
1 = Esso Australia
2 = Exxon Production Research Co.

* = Analysed for light C_{4-7} gasolines

ROCK EVAL ANALYSES

BASIN - GIPPSLAND
WELL - BARRACOUTA 5

REPORT A - SULPHUR & PYROLYZABLE CARBON

SAMPLE NO.	DEPTH	SAMPLE TYPE	AGE	TMAX	S1	S2	S3	PI	S2/S3	PC	COMMENTS
77716 R	1175.9	SWC	EARLY OLIGOCENE	408.	.03	.08	.16	.30	.50	.00	
77716 K	1183.0	SWC	LATE EOCENE	405.	.02	.10	.15	.17	.66	.01	
77716 I	1185.0	SWC	LATE EOCENE	409.	.03	.13	.21	.19	.61	.01	
77716 B	1191.9	SWC	LATE EOCENE	408.	.05	.23	.16	.18	1.43	.02	
77716 A	1193.0	SWC	LATE EOCENE	402.	.03	.11	.26	.21	.42	.01	
77715 Z	1196.0	SWC	LATE EOCENE	400.	.03	.12	.15	.21	.80	.01	
77715 Y	1198.9	SWC	LATE EOCENE	410.	.05	.35	.27	.12	1.29	.03	
77715 W	1203.6	SWC	LATE EOCENE	363.	.00	.07	.07	.00	.28	.00	
77715 U	1227.5	SWC	MID EOCENE	412.	.56	2.50	.25	.18	10.00	.25	
77715 T	1234.2	SWC	MID EOCENE	415.	.29	.57	.29	.34	1.96	.07	
77715 S	1239.2	SWC	MID EOCENE	414.	.98	2.75	.33	.26	8.33	.31	
77715 O	1309.3	SWC	MID EOCENE	413.	1.26	8.11	.52	.13	15.59	.78	
77715 M	1327.0	SWC	MID EOCENE	411.	.63	3.36	.40	.16	8.40	.33	
77715 L	1332.0	SWC	MID EOCENE	412.	.61	4.75	.50	.11	9.90	.46	
77715 G	1379.2	SWC	MID EOCENE	414.	.70	4.56	.49	.13	9.30	.43	
77717 Y	1468.0	SWC	MID EOCENE	423.	.27	2.88	.41	.09	7.02	.26	
77717 X	1492.0	SWC	MID EOCENE	429.	.11	.34	.25	.25	1.36	.03	
77717 V	1524.0	SWC	MID EOCENE	422.	.26	3.67	.32	.07	11.53	.32	
77717 U	1589.0	SWC	MID EOCENE	422.	.22	.83	.22	.21	3.77	.08	

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

ROCK EVAL ANALYSES

BASIN - GIPPSLAND
WELL - BARRACOUTA 5

REPORT B - TOTAL CARBON, H/O INDICES

SAMPLE NO.	DEPTH	SAMPLE TYPE	FORMATION	TC	HI	OI	HI/OI	COMMENTS
77716 R	1175.9	SWC	"OLIGOCENE WEDGE"	.79	10.	20.	.50	
77716 K	1183.0	SWC	GURNARD	1.83	5.	8.	.63	
77716 I	1185.0	SWC	GURNARD	1.92	6.	10.	.60	
77716 B	1191.9	SWC	GURNARD	3.70	6.	4.	1.50	
77716 A	1193.0	SWC	GURNARD	1.79	6.	14.	.43	
77715 Z	1196.0	SWC	GURNARD	1.40	8.	10.	.80	
77715 Y	1198.9	SWC	GURNARD	1.41	24.	19.	1.26	
77715 W	1203.6	SWC	GURNARD	.57	3.	12.	.25	
77715 U	1227.5	SWC	LATROBE GROUP	1.54	169.	16.	10.13	
77715 T	1234.2	SWC	LATROBE GROUP	1.04	54.	27.	2.00	
77715 S	1239.2	SWC	LATROBE GROUP	1.93	142.	17.	8.35	
77715 O	1309.3	SWC	LATROBE GROUP	3.61	274.	14.	16.00	
77715 M	1327.0	SWC	LATROBE GROUP	2.25	149.	17.	8.76	
77715 L	1332.0	SWC	LATROBE GROUP	2.98	166.	16.	10.38	
77715 G	1379.2	SWC	LATROBE GROUP	2.49	184.	19.	9.63	
77717 Y	1468.0	SWC	LATROBE GROUP	1.52	189.	26.	7.27	
77717 X	1492.0	SWC	LATROBE GROUP	.73	46.	34.	1.35	
77717 V	1524.0	SWC	LATROBE GROUP	2.02	186.	15.	12.13	
77717 U	1589.0	SWC	LATROBE GROUP	.68	122.	32.	3.81	

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

Table 4

ESSO AUSTRALIA LTD.

C15+ EXTRACT ANALYSES

BASIN - GIPPSLAND
WELL - BARRACOUTA 5

REPORT A - EXTRACT DATA - PPM (OIL=%)

SAMPLE NO.	DEPTH	TYPE	AN	AGE	TOTAL EXTRACT	HYDROCARBONS SATS.	HYDROCARBONS AROMS.	HYDROCARBONS TOTAL H/CARBS	NON-HYDROCARBONS ASPH.	NON-HYDROCARBONS ELUTED NSO	NON-HYDROCARBONS NON-ELT NSO	NON-HYDROCARBONS TOTAL NSO	SULPHUR	TOTAL NON/HCS
77735 M	1160.00	CTS	2	EARLY OLIGOCENE	127.	0.	0.	0.	106.	0.	0.	0.	0.	106.
77736 C	1460.00	CTS	2	MID EOCENE	93420.	906.	7641.	8547.	79393.	3608.	1872.	5480.	0.	84873.

C15+ EXTRACT ANALYSES

BASIN - GIPPSLAND
WELL - BARRACOUTA 5

REPORT B - EXTRACTS % OF TOTAL

SAMPLE NO.	DEPTH	FORMATION	HYDROCARBONS SAT. %	HYDROCARBONS AROM. %	NON-HYDROCARBONS NSO. %	NON-HYDROCARBONS ASPH. %	NON-HYDROCARBONS SULPH%	SAT/AR	HC/NHC	COMMENTS
77735 M	1160.00	"OLIGOCENE WEDGE"	.0	.0	.0	83.5	.0	.0	.0	
77736 C	1460.00	LATROBE GROUP	1.0	8.2	5.7	85.0	.0	.1	.1	

ESSO AUSTRALIA LTD.

KEROGEN ELEMENTAL ANALYSIS REPORT

BASIN - GIPPSLAND
WELL - BARRACOUTA 5

SAMPLE NO.	DEPTH	SAMPLE TYPE	--- ELEMENTAL % (ASH FREE) ---						COMMENTS
			N%	C%	H%	S%	O%	ASH%	
77716 J	1184.00	SWC	2.36	64.46	5.20	.00	27.97	14.12	HIGH ASH
77715 X	1202.00	SWC	1.06	65.63	5.13	.00	28.18	15.19	HIGH ASH
77715 V	1218.50	SWC	.45	68.68	5.61	.00	25.26	10.69	HIGH ASH
77715 U	1227.50	SWC	.40	67.69	5.28	.00	26.63	4.94	
77715 S	1239.20	SWC	.54	65.97	5.33	.00	28.15	13.76	HIGH ASH
77715 R	1284.00	SWC	.52	69.72	5.42	.00	24.34	8.33	
77715 Q	1300.20	SWC	.62	65.93	5.25	.00	28.20	11.98	HIGH ASH
77715 P	1306.20	SWC	.54	67.78	5.22	.00	26.45	8.13	
77715 O	1309.30	SWC	.52	64.49	4.97	.00	30.03	6.18	
77715 M	1327.00	SWC	.46	67.78	5.35	.00	26.41	8.57	
77715 L	1332.00	SWC	.48	66.04	5.04	.00	28.44	10.33	HIGH ASH
77715 J	1339.50	SWC	.52	63.86	4.73	.00	30.90	10.77	HIGH ASH
77715 I	1354.00	SWC	.45	68.02	6.20	.00	25.33	10.86	HIGH ASH
77715 H	1375.50	SWC	.57	67.94	6.10	.00	25.39	17.37	HIGH ASH
77715 G	1379.20	SWC	.53	65.22	5.00	.00	29.24	4.29	
77715 F	1380.00	SWC	.39	73.18	6.61	.00	19.82	7.28	
77715 E	1394.50	SWC	1.04	67.61	5.16	.00	26.19	13.34	HIGH ASH
77717 S	1395.00	SWC	1.01	74.00	5.71	.00	19.27	6.37	
77717 Y	1468.00	SWC	.63	72.37	5.87	.00	21.13	8.19	
77717 X	1492.00	SWC	.85	72.29	5.43	.00	21.43	7.78	
77717 V	1524.00	SWC	.82	72.76	5.57	.00	20.84	4.18	
77717 U	1589.00	SWC	.88	76.16	7.78	.00	15.18	16.20	HIGH ASH

KEROGEN ELEMENTAL ANALYSIS REPORT

BASIN -- GIPPSLAND
WELL -- BARRACOUTA 5

SAMPLE NO.	DEPTH	SAMPLE TYPE	AGE	FORMATION	ATOMIC RATIOS			COMMENTS
					H/C	O/C	N/C	
77716 J	1184.00	SWC	LATE EOCENE	GURNARD	.97	.33	.03	HIGH ASH
77715 X	1202.00	SWC	LATE EOCENE	GURNARD	.94	.32	.01	HIGH ASH
77715 V	1218.50	SWC	MID EOCENE	LATROBE GROUP	.98	.28	.01	HIGH ASH
77715 U	1227.50	SWC	MID EOCENE	LATROBE GROUP	.94	.29	.01	
77715 S	1239.20	SWC	MID EOCENE	LATROBE GROUP	.97	.32	.01	HIGH ASH
77715 R	1284.00	SWC	MID EOCENE	LATROBE GROUP	.93	.26	.01	
77715 Q	1300.20	SWC	MID EOCENE	LATROBE GROUP	.96	.32	.01	HIGH ASH
77715 P	1306.20	SWC	MID EOCENE	LATROBE GROUP	.93	.29	.01	
77715 O	1309.30	SWC	MID EOCENE	LATROBE GROUP	.92	.35	.01	
77715 M	1327.00	SWC	MID EOCENE	LATROBE GROUP	.95	.29	.01	
77715 L	1332.00	SWC	MID EOCENE	LATROBE GROUP	.92	.32	.01	HIGH ASH
77715 J	1339.50	SWC	MID EOCENE	LATROBE GROUP	.89	.36	.01	HIGH ASH
77715 I	1354.00	SWC	MID EOCENE	LATROBE GROUP	1.09	.28	.01	HIGH ASH
77715 H	1375.50	SWC	MID EOCENE	LATROBE GROUP	1.08	.28	.01	HIGH ASH
77715 G	1379.20	SWC	MID EOCENE	LATROBE GROUP	.92	.34	.01	
77715 F	1380.00	SWC	MID EOCENE	LATROBE GROUP	1.08	.20	.00	
77715 E	1394.50	SWC	MID EOCENE	LATROBE GROUP	.92	.29	.01	HIGH ASH
77717 S	1395.00	SWC	MID EOCENE	LATROBE GROUP	.93	.20	.01	
77717 Y	1468.00	SWC	MID EOCENE	LATROBE GROUP	.97	.22	.01	
77717 X	1492.00	SWC	MID EOCENE	LATROBE GROUP	.90	.22	.01	
77717 V	1524.00	SWC	MID EOCENE	LATROBE GROUP	.92	.21	.01	
77717 U	1589.00	SWC	MID EOCENE	LATROBE GROUP	1.23	.15	.01	HIGH ASH

VITRINITE REFLECTANCE REPORT

BASIN - GIPPSLAND
WELL - BARRACOUTA 5

SAMPLE NO.	DEPTH	AGE	FORMATION	AN	MAX. RO	FLUOR. COLOUR	NO. CNTS.	MACERAL TYPE
77716 X	1150.00	EARLY OLIGOCENE	"OLIGOCENE WEDGE"	5	.00	YEL	0	E>I, NO V, DOM RARE
77715 S	1239.20	MID EOCENE	LATROBE GROUP	5	.43	YEL-YEL OR	25	V>E>I, DOM COMMON
77715 C	1431.00	MID EOCENE	LATROBE GROUP	5	.45	YEL-OR	32	COAL
77717 U	1589.00	MID EOCENE	LATROBE GROUP	5	.48	YEL-YEL OR	3	E>V=I, DOM COMMON
77716 Y	1731.00	MID EOCENE	LATROBE GROUP	5	.61	YEL OR-OR	9	E>V>I, DOM RARE

LIGHT GASOLINES (C4-C7) SUMMARY

WELL - BARRACOUTA 5
BASIN - GIPPSLAND

SAMPLE NO.	DEPTH	FORMATION	AGE	TOC%	TOTAL C4-C7 (PPM)	C1/C2	A/B2	C1/B2	CH/MCP	N-PENT/ I-PENT
77734 U	930.00	GIPPSLAND [illegible]	PLEIST-[illegible]	0.03	[illegible]	[illegible]			0.00	8.09
77734 V	960.00	GIPPSLAND [illegible]	PLEIST-[illegible]	0.01	[illegible]	[illegible]	0.00	0.00	0.00	15.6
77734 Y	990.00	GIPPSLAND [illegible]	PLEIST-[illegible]	0.01	[illegible]	[illegible]				7.74
77735 A	930.00	GIPPSLAND [illegible]	PLEIST-[illegible]	0.03	[illegible]	[illegible]	0.00	0.00	0.00	4.84
77735 C	965.00	GIPPSLAND [illegible]	PLEIST-[illegible]	0.02	[illegible]	[illegible]	0.00	0.00	0.00	0.00
77735 F	985.00	GIPPSLAND [illegible]	PLEIST-[illegible]	0.15	[illegible]	[illegible]			0.00	5.64
77735 G	1025.00	GIPPSLAND [illegible]	PLEIST-[illegible]	0.19	[illegible]	[illegible]				1.89
77735 I	1095.00	LATE [illegible]	MID-EARLY [illegible]	0.15	[illegible]	[illegible]	8.80	1.30	0.00	1.09
77735 K	1130.00	LATE [illegible]	MID-EARLY [illegible]	0.25	[illegible]	1.67	1.21	0.17	0.00	1.62
77735 M	1160.00	"OLIGOCENE UNCONFORMITY"	EARLY OLIGOCENE	0.21	[illegible]	1.00			1.00	1.00
77735 S	1295.00	LATE [illegible]	MID EOCENE	0.65	[illegible]	1.56	1.86	2.24	1.22	0.58
77735 U	1355.00	LATE [illegible]	MID EOCENE	36.40	[illegible]	0.75	0.80	1.65	1.63	0.07
77736 C	1463.00	LATE [illegible]	MID EOCENE	54.69	356.14	1.20	8.79	10.44	0.70	0.99
77736 G	1523.00	LATE [illegible]	MID EOCENE	62.11	[illegible]					
77736 K	1580.00	LATE [illegible]	MID EOCENE	56.69	[illegible]	1.44	11.58	10.21	0.86	1.47
77736 O	1648.00	LATE [illegible]	MID EOCENE	55.29	[illegible]	1.98	12.73	7.94	1.19	1.21
77736 S	1700.00	LATE [illegible]	MID EOCENE	50.00	1471.23	2.38	8.19	10.15	1.07	4.37
77736 U	1760.00	LATE [illegible]	MID EOCENE	.	[illegible]	1.98	6.68	7.63	1.07	5.81

ESSO AUSTRALIA LTD.

OIL - API GRAVITY, POUR POINT & SULPHUR %

BASIN - GIPPSLAND
WELL - BARRACOUTA 5

SAMPLE NO.	DEPTH	AGE	FORMATION	API GRAVITY	POUR PT. (DF)	SULPHUR %	COMMENTS
77717 Z	1593.30	MID EOCENE	LATROBE GROUP	56.47	.00	.00	
77736 Y	1623.00	MID EOCENE	LATROBE GROUP	57.19	.00	.00	
77736 Z	1631.50	MID EOCENE	LATROBE GROUP	60.42	.00	.00	

Figure 1a

C_{1-4} CUTTINGS GAS LOG

BARRACOUTA 5

GIPPSLAND BASIN

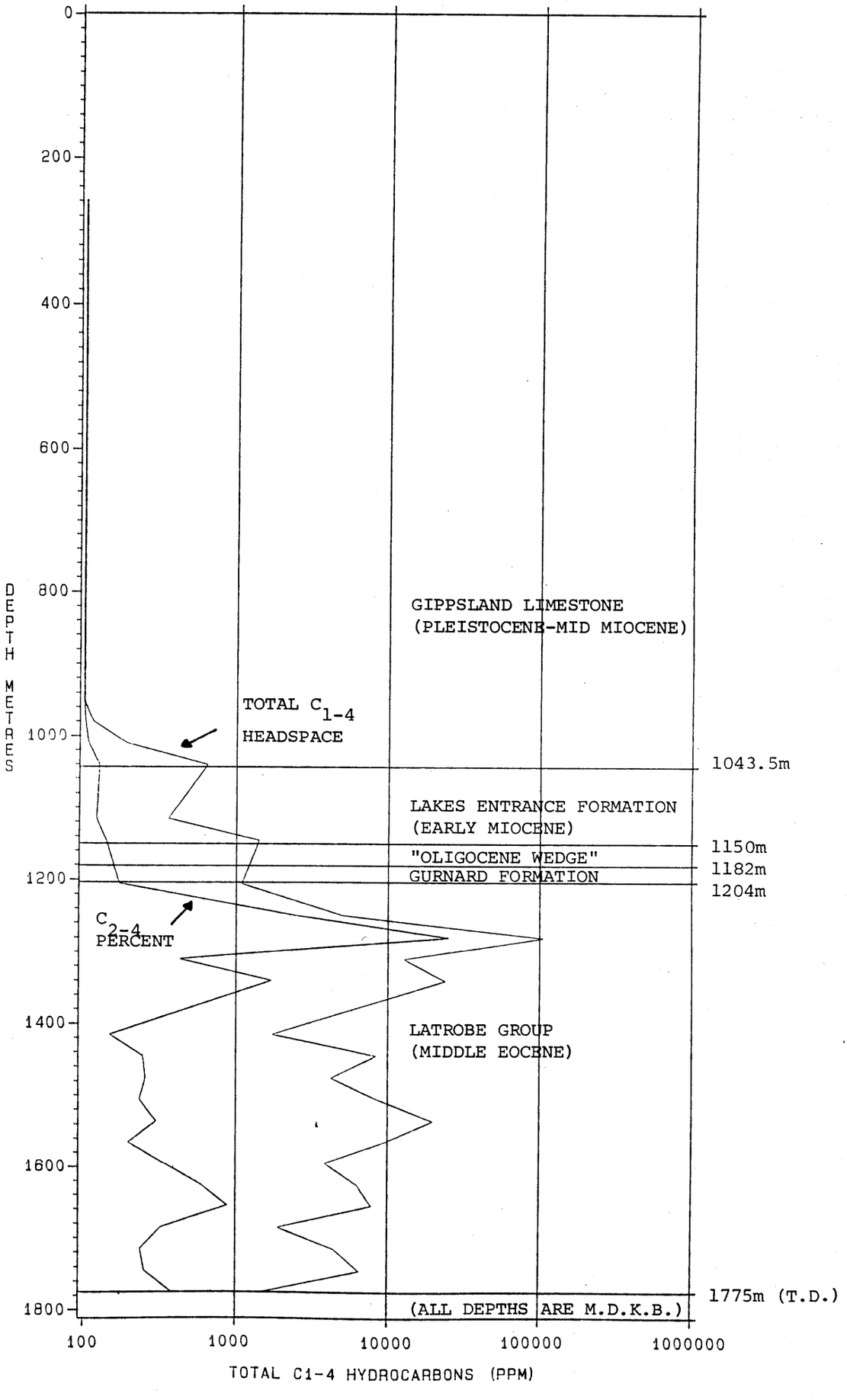
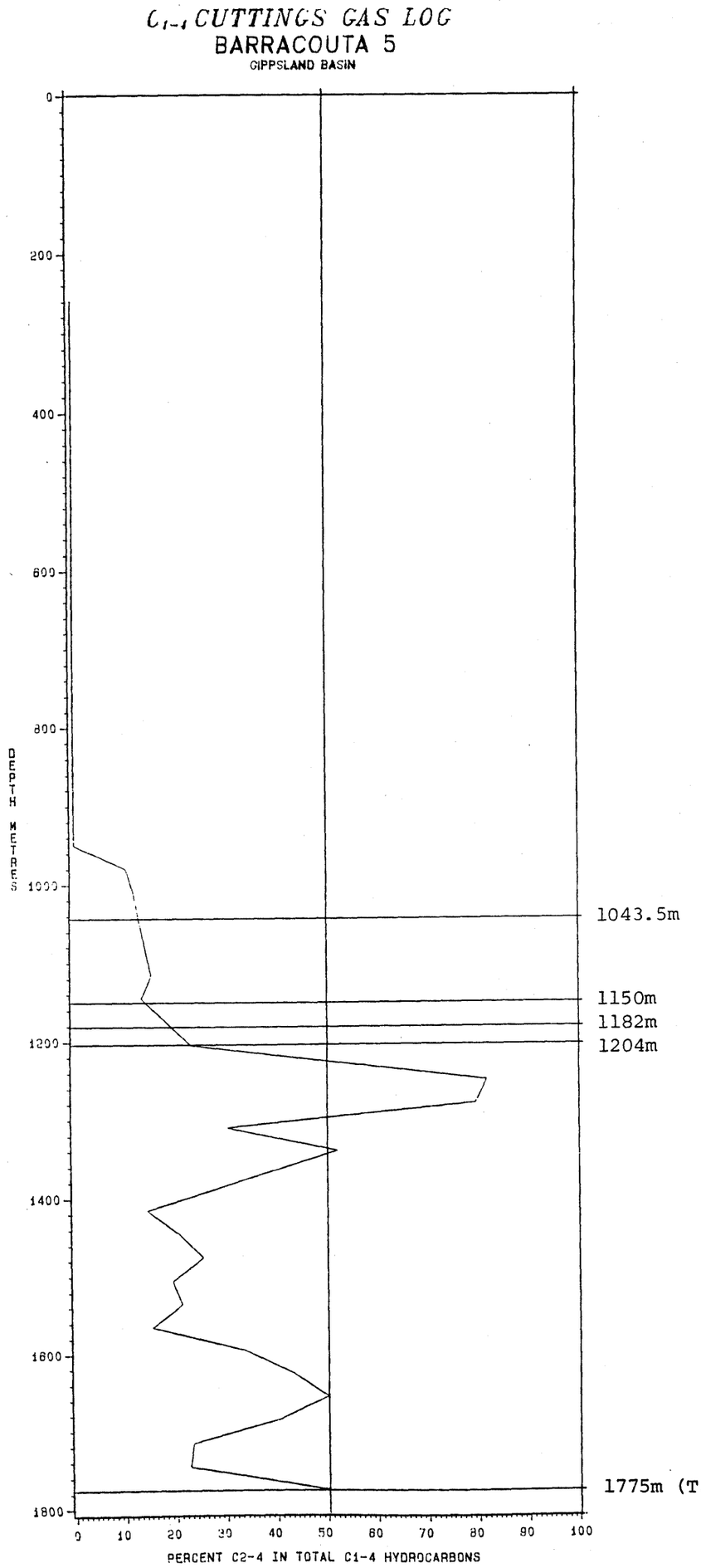


Figure 1b



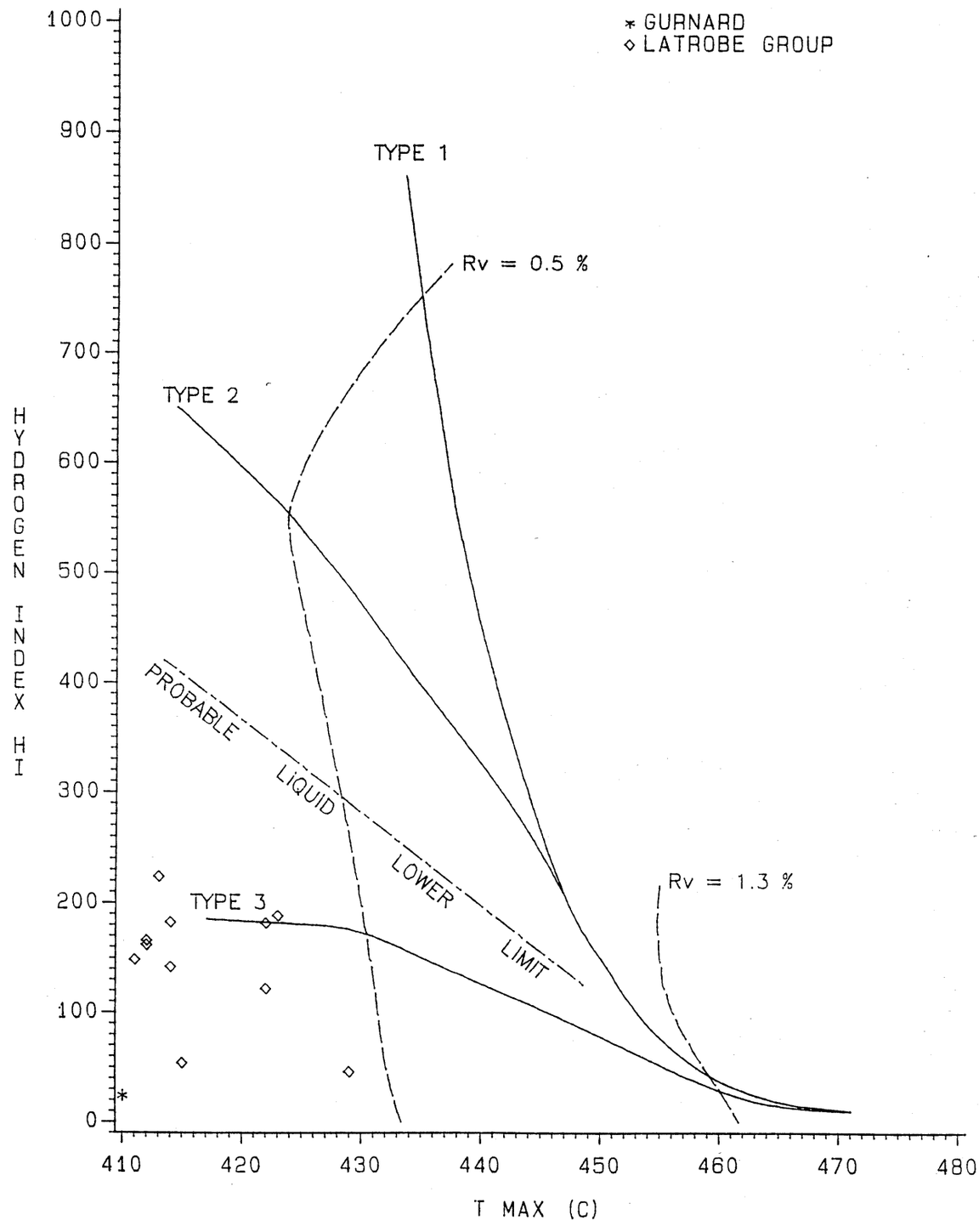
(ALL DEPTHS ARE M.D.K.B.)

ROCKEVAL MATURATION PLOT

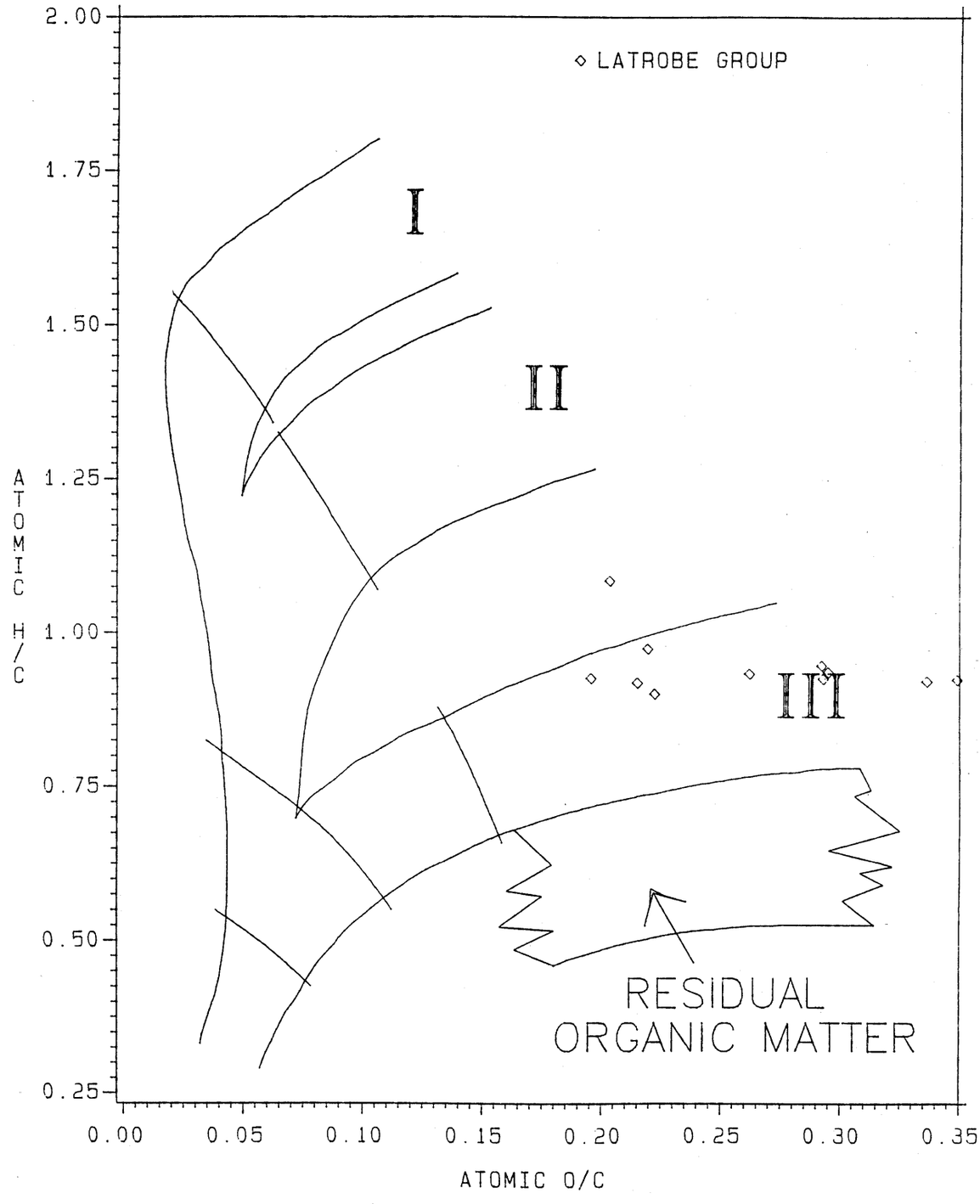
Tmax vs HYDROGEN INDEX

BARRACOUTA 5

GIPPSLAND BASIN



KEROGEN TYPE
BARRACOUTA 5
GIPPSLAND BASIN



C_{15+} Paraffin-Naphthene (P-N) Hydrocarbon

GeoChem Sample No. E675-012

Exxon Identification No. 77735-M

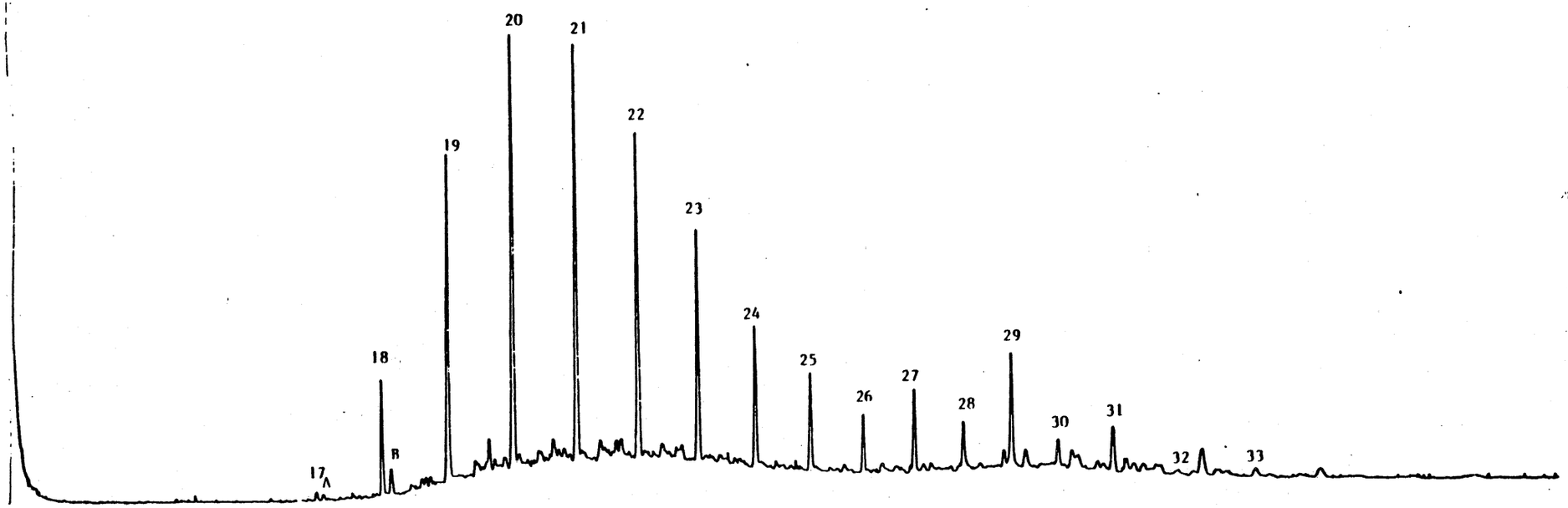


Figure 4: C_{15}+ Saturate Chromatogram - Barracouta-5, Cuttings Extract from 1145-60 m KB.

C_{15+} Paraffin-Naphthene (P-N) Hydrocarbon

GeoChem Sample No. E675-013

Exxon Identification No. 77736-C

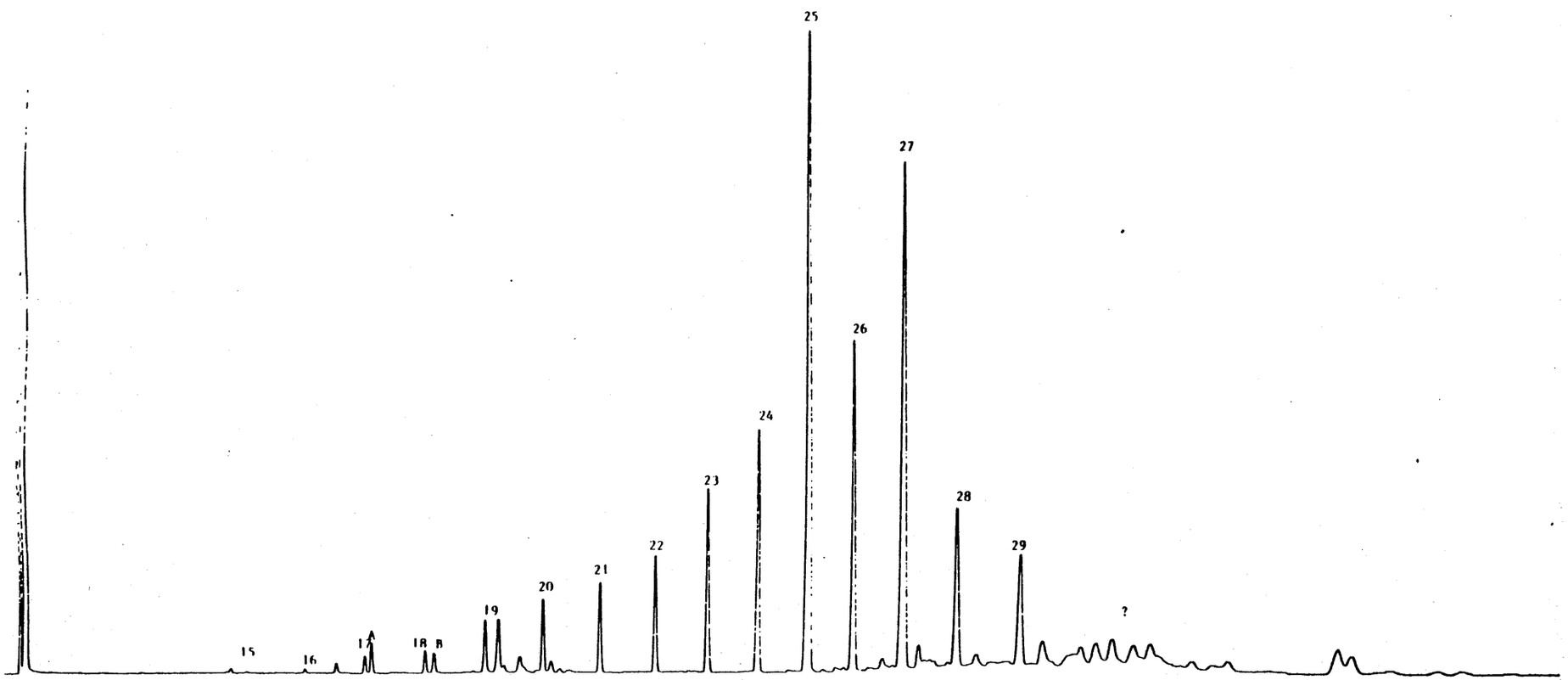


Figure 5: C_{15+} Saturate Chromatogram - Barracouta-5, Cuttings Extract from 1445-60 m KB.

VITRINITE REFLECTANCE vs. DEPTH

BARRACOUTA 5

GIPPSLAND BASIN

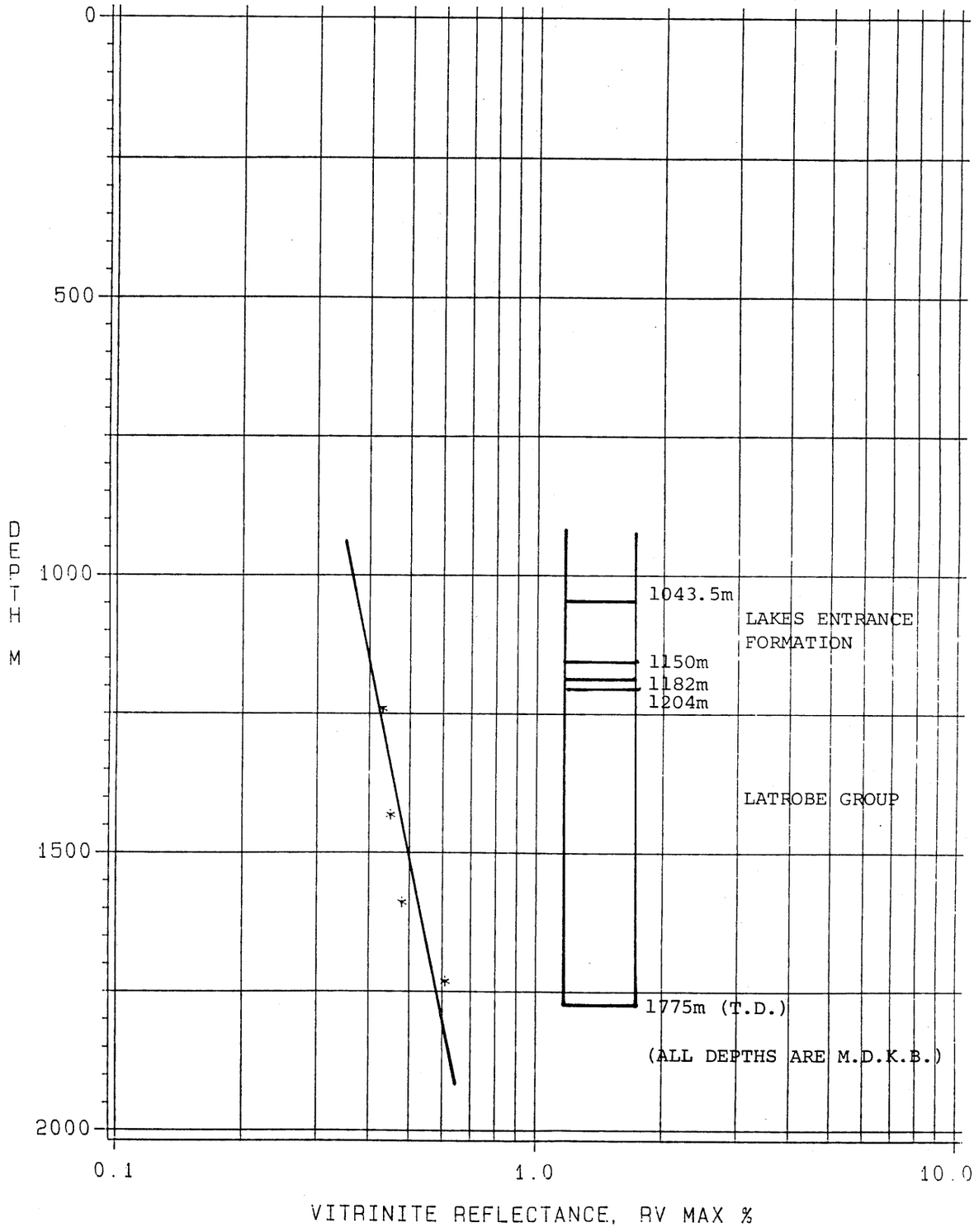
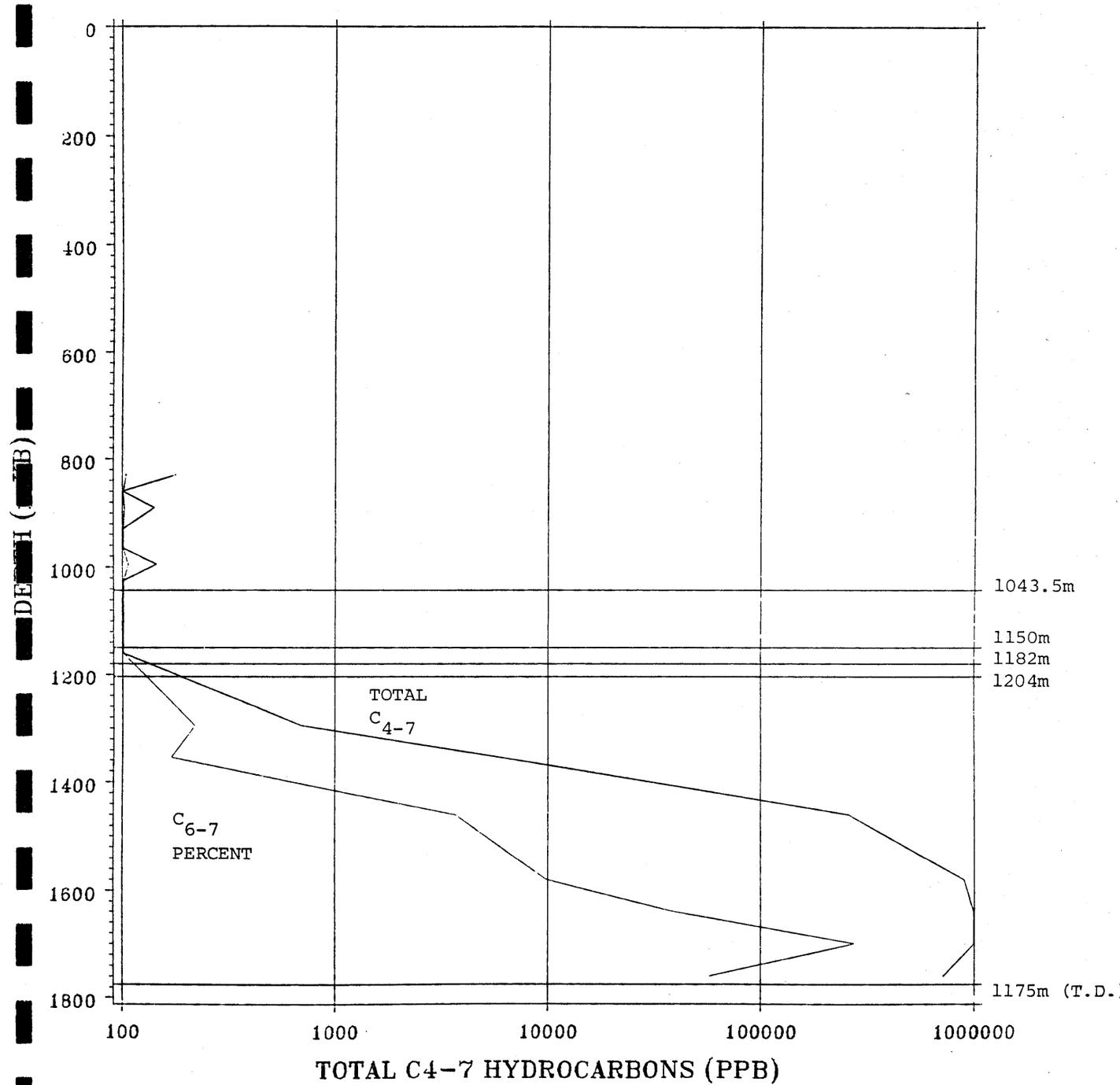


FIGURE 7.

C_{4-7} HYDROCARBON LOG
BARRACOUTA 5
GIPPSLAND BASIN



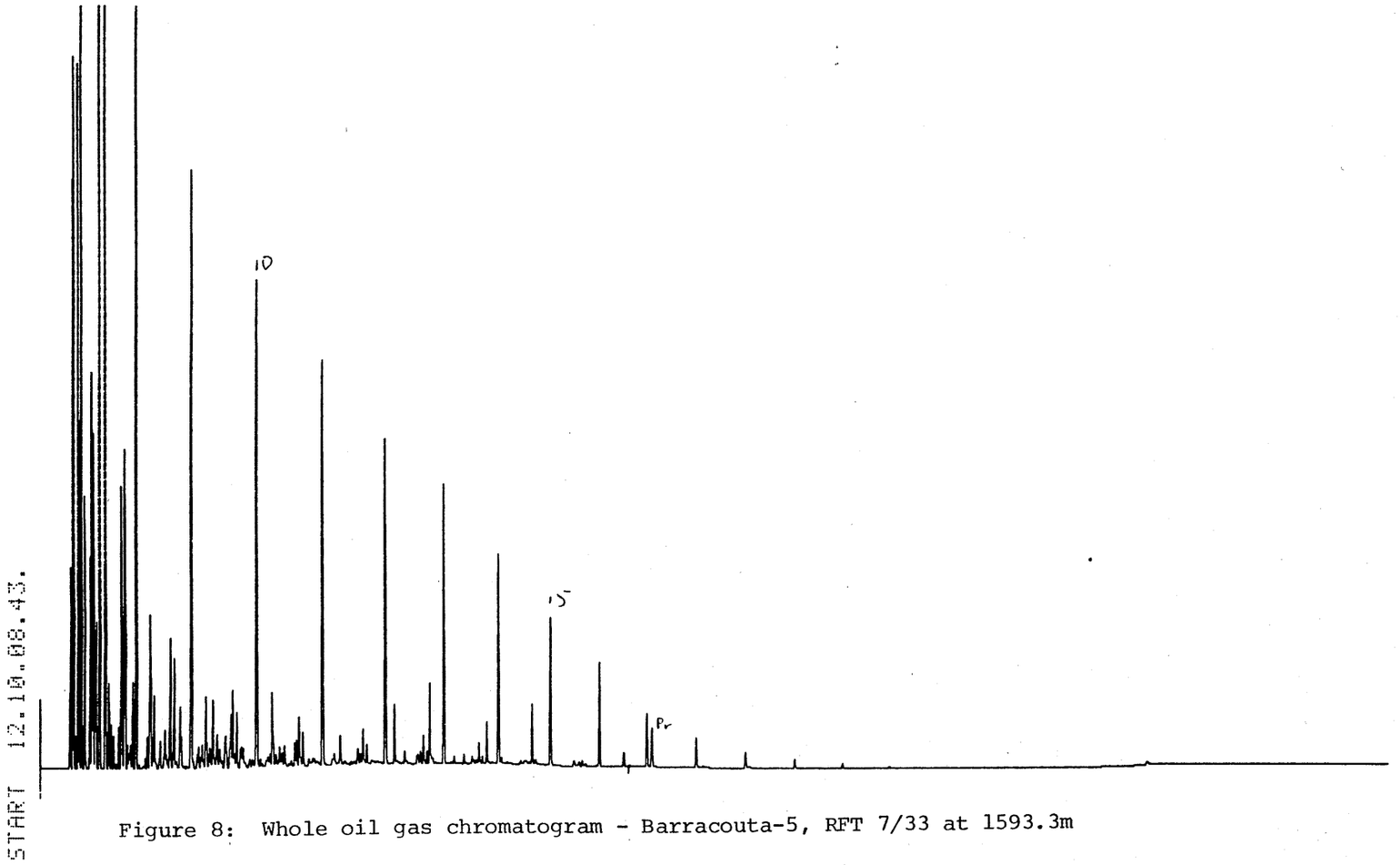


Figure 8: Whole oil gas chromatogram - Barracouta-5, RFT 7/33 at 1593.3m

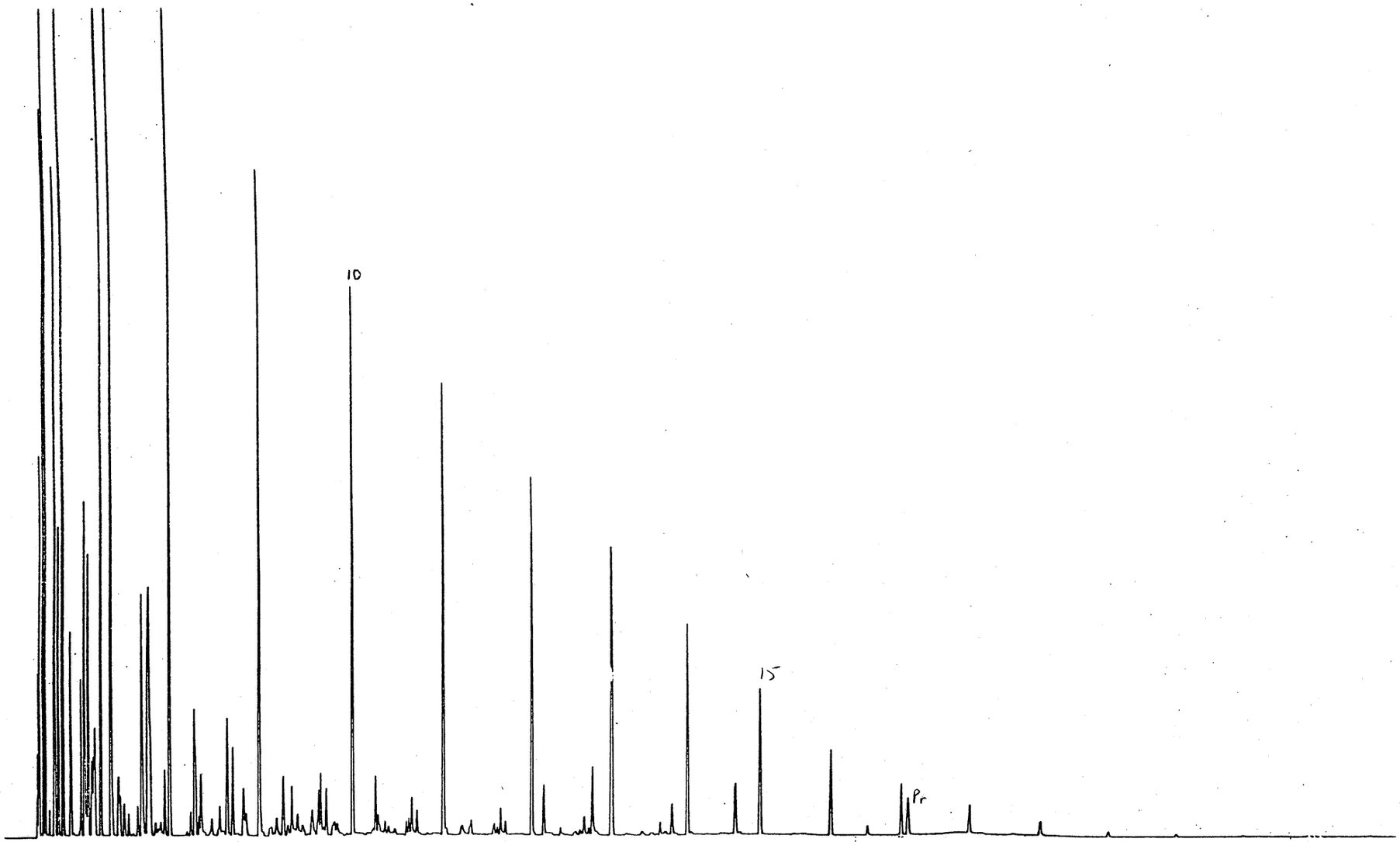


Figure 9: Whole oil gas chromatogram - Barracouta-5, RFT 6/29 at 1623m KB

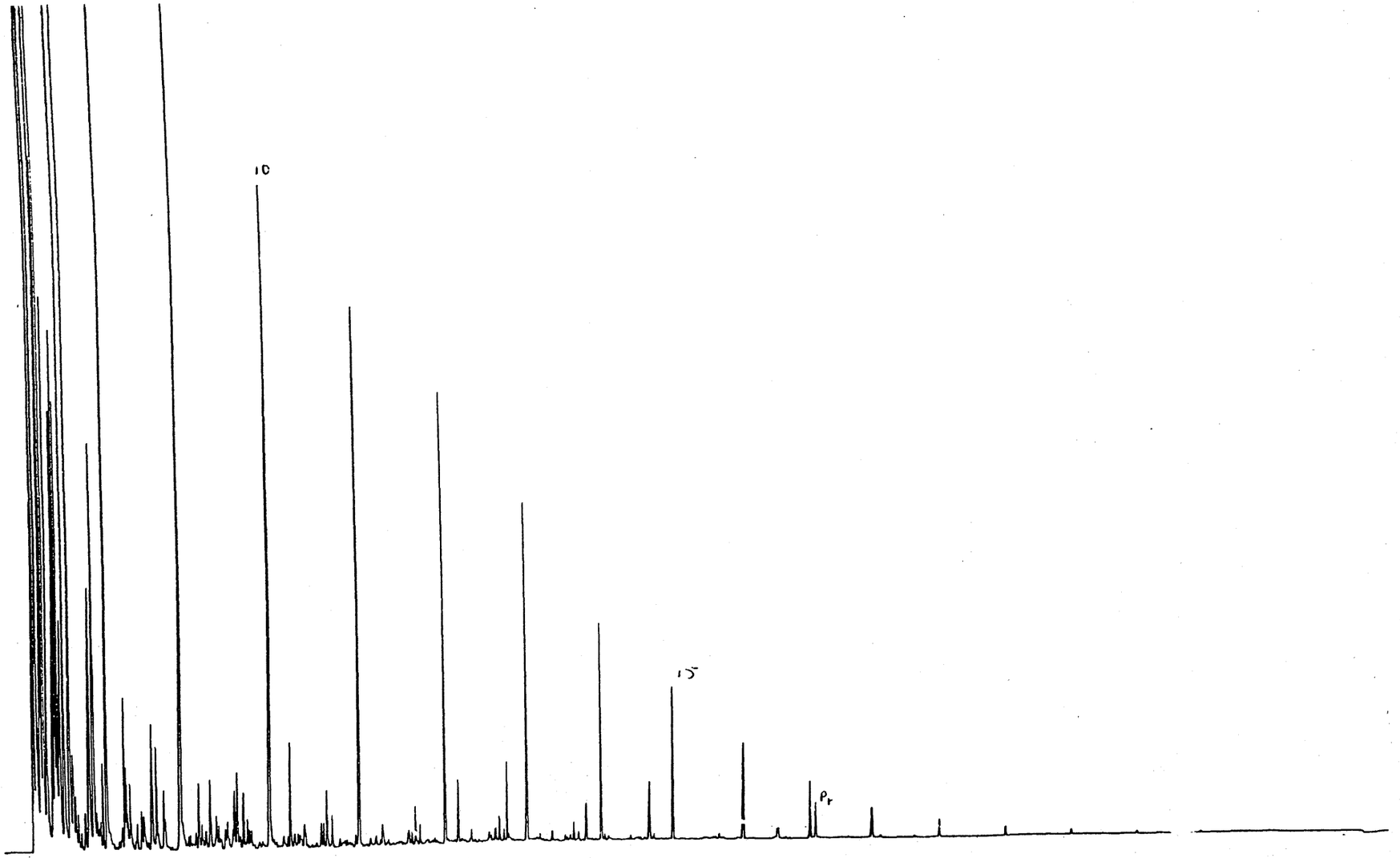


Figure 10: Whole oil gas chromatogram - Barracouta-5, RFT 5/28 at 1631.5m KB

APPENDIX 1

Detailed C_{4-7} Data Sheets

ESSO AUSTRALIA LTD.

C4-C7 HYDROCARBON ANALYSES

REPORT = DISPEC. ANALYSIS

BASIN - GIPPSLAND
WELL - BARRACOUTA 5 SAMPLE NO. = 77734.0 DEPTH(M) = 830.0

	TOTAL PPM	GAS PERCENT		TOTAL PPM	GAS PERCENT
METHANE	.0		1T3-DMCP	.0	.00
ETHANE	.0		1T2-DMCP	.0	.00
PROPANE	32.2	16.11	3-EPENT	.0	.00
IBUTANE	5.3	2.66	224-TMP	.0	.00
NBUTANE	52.5	26.25	HEPTANE	.0	.00
IPENTANE	11.3	5.63	1T2-DMCP	.0	.00
NPENTANE	91.4	45.69	MCH	.0	.00
22-DMP	.0	.00			
CPENTANE	.0	.00			
23-DMP	.0	.00			
2-MP	3.5	1.73			
3-MP	3.0	1.49			
NHEXANE	5.5	2.73			
MCP	3.0	1.47			
22-DMP	.0	.00			
24-DMP	.0	.00			
223-TMB	.0	.00			
CHEXANE	.0	.00			
33-DMP	.0	.00			
11-DMCP	.0	.00			
2-MHEX	.0	.00			
23-DMP	.0	.00			
3-MHEX	.0	.00			
1C3-DMCP	.0	.00			

	TOTALS PPM	GAS PERCENT	GAS C1/C2 RATIOS	
ALL COMP	217.		C1/C2	.00
GASOLINE	177.		C1/C3	5.00
NAPTHENES	4.	2.20	C1/NC4	.00
C6-7	10.	5.53	C1/IC4	.00
			C1/TOTAL	5.00

	PPM	GAS PERCENT
MCP	3.0	100.0
CH	.0	.00
MCH	.0	.00
TOTAL	3.0	100.0

ESSO AUSTRALIA LTD.

C4-C7 HYDROCARBON ANALYSES

BASIN - GIPPSLAND
WELL - GARFISH A3 SAMPLE NO. = 77736 DEPTH(S) = 460.00

	TOTAL PPM	NORM PERCENT		TOTAL PPM	NORM PERCENT
METHANE	.0		1T3-DMCP	.1	.05
ETHANE	.0		1T2-DMCP	.0	.00
PROPANE	45.4	36.05	3-EPENT	.1	.05
IBUTANE	1.7	1.37	22M-THEX	.1	.05
NBUTANE	47.7	38.23	23M-THEX	.1	.05
IPENTANE	1.7	1.37	1C2-DMCP	.0	.00
NPENTANE	26.6	21.43	UCH	.0	.00
22-DMP	.0	.00			
CPENTANE	.1	.05			
23-DMP	.1	.05			
2-MP	.0	.00			
3-MP	.0	.00			
NHEXANE	.0	.00			
MCP	.0	.00			
22-DMP	.0	.00			
24-DMP	.0	.00			
223-TMB	.0	.00			
CHEXANE	.0	.00			
33-DMP	.0	.00			
11-DMCP	.0	.00			
2-MHEX	.0	.00			
23-DMP	.0	.00			
3-MHEX	.0	.00			
1C3-DMCP	.0	.00			

	TOTALS PPM	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	123.		C1/C2	.00
GASOLINE	73.		A /B2	.00
NAPTHENES	0.	.00	C1/C3	.00
C6-7	0.	.00	C4/C5	.00
			PENT/IPENT	15.65

	PPM	PERCENT
UCP	.0	.00
CH	.0	.00
UCH	.0	.00
TOTAL	.0	.00

ESSO AUSTRALIA LTD.

C4-C7 HYDROCARBON ANALYSES

REPORT = DESORB. ANALYSIS

BASIN - GIPPSLAND
WELL - BARRACOUTA 5 SAMPLE NO. = 77734 Y DEPTH( ) = 890.0

	TOTAL ppm	NORM PERCENT		TOTAL ppm	NORM PERCENT
METHANE	.0		IT3-DMCP	.0	.0
ETHANE	.0		IT2-DMCP	.0	.0
PROPANE	44.1	23.32	3-MHEPT	.0	.0
IBUTANE	2.7	1.43	224-TMP	.0	.0
NBUTANE	77.1	41.65	MHEPTANE	.0	.0
IPENTANE	6.2	3.34	1T2-DMCP	.0	.0
NPENTANE	49.0	25.93	MCH	.0	.0
22-DMB	.0	.0			
CPENTANE	.0	.0			
23-DMB	.0	.0			
2-MP	.0	.0			
3-MP	.0	.0			
MHEXANE	7.0	3.7			
MCP	.0	.0			
22-DMP	.0	.0			
24-DMP	.0	.0			
223-TMB	.0	.0			
CHEXANE	.0	.0			
33-DMP	.0	.0			
11-DMCP	.0	.0			
2-MHEX	.0	.0			
23-DMP	.0	.0			
3-MHEX	.0	.0			
1C3-DMCP	.0	.0			

	TOTALS ppm	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	185.		C1/C2	.00
GASOLINE	141.		A /C2	7.00
NAPTHENES	0.	.00	C1/C3	.00
C6-7	17.	9.36	C2/ C3	.00
			NBUT/IPENT	7.74

	ppm	NORM PERCENT
NCP	.0	.0
CH	.0	.0
MCH	.0	.0
TOTAL	.0	.0

ESSO AUSTRALIA LTD.

C4-C7 HYDROCARBON ANALYSES

BASIN - GIPPSLAND REPORT = DISPEC. ANALYSIS
WELL - GARFACCITA 5 SAMPLE NO. = 7773S A DEPTH(') = 930.0

	TOTAL PPM	WGT PERCENT		TOTAL PPM	WGT PERCENT
METHANE	.0		1T3-DMCP	.0	.00
ETHANE	.0		1T2-DMCP	.0	.00
PROPANE	21.7	19.64	3-EPENT	.0	.00
IBUTANE	22.0	19.91	224-TMP	.0	.00
NBUTANE	20.7	18.73	HEPTANE	.0	.00
IPENTANE	7.9	7.15	1C2-DMCP	.0	.00
NPENTANE	33.2	30.07	MCH	.0	.00
22-DMP	.0	.00			
CPENTANE	.0	.00			
23-DMB	.0	.00			
2-MP	.0	.00			
3-MP	.0	.00			
NHEXANE	.0	.00			
MCP	.0	.00			
22-DMP	.0	.00			
24-DMP	.0	.00			
223-TMB	.0	.00			
CHEXANE	.0	.00			
33-DMP	.0	.00			
11-DMCP	.0	.00			
2-MHEX	.0	.00			
23-DMP	.0	.00			
3-MHEX	.0	.00			
1C3-DMCP	.0	.00			

	TOTALS PPM	WGT PERCENT	STG COMP RATIOS	
ALL COMP	111.		C1/C2	.00
GASOLINE	83.		A /B2	.00
NAPTHENES	0.	.00	C1/C3	.00
C6-7	0.	.00	C1/ CP	.00
			ISOT/NORMAL	.00

	PPM	CONCENTRATION
MCP	.0	.0
CH	.0	.0
MCH	.0	.0
TOTAL	.0	.0

C4-C7 HYDROCARBON ANALYSES

BASIN - GIPPSLAND
WELL - BARRACOUTA 5 SAMPLE NO. = 77735 C REPT( ) = 965.0

REPORT = WSPEC. ANALYSIS

	TOTAL PPB	WORK PERCENT		TOTAL PPB	WORK PERCENT
METHANE	.0		1T3-DMCP	.0	.0
ETHANE	.0		1T2-DMCP	.0	.0
PROPANE	.0	.0	3-EPENT	.0	.0
IBUTANE	.0	.0	224-TMP	.0	.0
NBUTANE	.0	.0	HEPTANE	.0	.0
IPENTANE	.0	.0	1T2-DMCP	.0	.0
NPENTANE	.0	.0	MCH	.0	.0
22-DMB	.0	.0			
CPENTANE	.0	.0			
23-DMP	.0	.0			
2-MP	.0	.0			
3-MP	.0	.0			
NHEXANE	.0	.0			
MCP	.0	.0			
22-DMP	.0	.0			
24-DMP	.0	.0			
223-TMB	.0	.0			
CHEXANE	.0	.0			
33-DMP	.0	.0			
11-DMCP	.0	.0			
2-MHEX	.0	.0			
23-DMP	.0	.0			
3-MHEX	.0	.0			
1C3-DMCP	.0	.0			

	TOTALS PPB	WORK PERCENT	SIG COMP RATIOS	
ALL COMP	0.		C1/C2	.00
GASOLINE	0.		C2/C3	.00
NAPTHENES	0.	.00	C1/C3	.00
C6-7	0.	.00	C1/C4	.00
			HEPT/TOTAL	.00

	PPB	PERCENT
MCP	.0	.0
CH	.0	.0
MCH	.0	.0
TOTAL	.0	.0

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C4-C7 HYDROCARBON ANALYSES

REPORT = HOUSTON ANALYSIS

BASIN - GIPPSLAND
WELL - BARRACOUTA 5 SAMPLE NO. = 77735 E DEPTH(') = 995.00

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	.0		1T3-DMCP	.0	.0
ETHANE	.0		1T2-DMCP	.0	.0
PROPANE	29.3	17.43	3-MPENT	.0	.0
IBUTANE	7.4	4.40	224-TMP	.0	.0
NBUTACE	40.1	23.85	HPENTANE	3.0	1.78
IPENTANE	14.7	8.74	1C2-DMCP	.0	.0
NPENTANE	53.5	31.83	MCH	.1	.0
22-DMP	.0	.00			
CPENTANE	.0	.00			
23-DMB	.0	.00			
2-MP	1.6	.95			
3-MP	3.4	2.02			
NHEXANE	7.6	4.52			
MCP	1.4	.83			
22-DMP	.0	.00			
24-DMP	.0	.00			
223-TMB	.0	.00			
CHEXANE	.0	.00			
33-DMP	.0	.00			
11-DMCP	.0	.00			
2-MHEX	6.1	3.63			
23-DMP	.0	.00			
3-MHEX	.0	.00			
1C3-DMCP	.0	.00			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	168.		C1/C2	4.36
GASOLINE	139.		A-/02	10.60
NAPTHENES	1.	1.01	C1/02	6.19
C6-7	15.	15.04	C6/MCP	.00
			PENT/IPENT	3.64

	PPB	NORM PERCENT
MCP	1.4	100.0
CH	.0	.0
MCH	.1	.0
TOTAL	1.3	100.0

C4-C7 HYDROCARBON ANALYSES

REPORT = DESPEC. ANALYSIS

BASIN = GIPPSLAND
WELL = GARFACOUTA 5 SAMPLE NO. = 77735.0 FEET(M) = 1025.00

	TOTAL PPM	NORM PERCENT		TOTAL PPM	NORM PERCENT
METHANE	.0		IT3-DMCP	.0	.0
ETHANE	.0		IT2-DMCP	.0	.0
PROPANE	31.2	32.13	3-MCPNT	.0	.0
IBUTANE	4.5	4.63	224-TMP	.0	.0
NBUTANE	30.8	31.72	DMEPTANE	.0	.0
IPENTANE	9.4	9.68	1C2-DMCP	.0	.0
NPENTANE	17.8	18.33	MCH	.0	.0
22-DMP	.0	.00			
CPENTANE	.0	.00			
23-DMP	.0	.00			
2-MP	.0	.00			
3-MP	.0	.00			
MHEXANE	3.7	3.81			
MCP	.0	.00			
22-DMP	.0	.00			
24-DMP	.0	.00			
223-TMB	.0	.00			
CHEXANE	.0	.00			
33-DMP	.0	.00			
11-DMCP	.0	.00			
2-MHEX	.0	.00			
23-DMP	.0	.00			
3-MHEX	.0	.00			
1C3-DMCP	.0	.00			

	TOTALS PPM	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	97.		C1/C2	.00
GASOLINE	56.		A /BP	3.70
NAPTHENES	0.	.00	C1/C4	.00
C6-7	4.	4.61	C6/MCP	.00
			PENT/HEXT	1.99

	PPM	PPM PENTANE
MCP	.0	.0
CH	.0	.0
DCH	.0	.0
TOTAL	.0	.0

13/05/86

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C4-C7 HYDROCARBON ANALYSES

REPORT = DESPEC. ANALYSIS

BASIN - GIPPSLAND
WELL - BARRACOUTA 5 SAMPLE NO. = 77785 I DEPTH(M) = 1655.0?

	TOTAL ppm	NORM PERCENT
METHANE	.0	
ETHANE	.0	
PROPANE	24.5	21.4?
IBUTANE	7.1	6.2?
NBUTANE	30.?	26.3?
IPENTANE	14.?	13.01
NPENTANE	16.2	14.1?
22-DMP	.?	.0?
CPENTANE	.?	.7?
23-DMP	.?	.4?
2-MP	4.5	3.??
3-MP	?.7	4.??
NHEXANE	?.5	4.??
MCP	?.4	?.1?
22-DMP	.?	.0?
24-DMP	.?	.??
223-TMB	.?	.??
CHEXANE	.?	.??
33-DMP	.?	.??
11-DMCP	.?	.??
2-MHEX	1.?	1.1?
23-DMP	.?	.1?
3-MHEX	1.?	.??
1C3-DMCP	.?	.??
1T3-DMCP	.?	.??
1T2-DMCP	.?	.??
3-EPENT	.?	.??
224-TMP	.?	.??
HEPTANE	?.?	?.??
1C2-DMCP	.?	.??
DCH	.?	.??

	TOTALS ppm	NORM PERCENT
ALL COMP	114.	
GASOLINE	99.	
NAPTHENES	?.	?.??
C6-7	14.	??.??

STG COMP RATIOS	
C1/C2	.54
A /DC	?.??
C1/DC	1.??
DC/?C	.??
HEPT/IPENT	1.??

	ppm	PERCENT
MCP	?.4	1??.?
CH	.?	.?
DCH	.?	.?
TOTAL	?.?	1??.?

C4-C7 HYDROCARBON ANALYSES

REPORT = DESPEC. ANALYSIS

BASIN - GIPPSLAND
WELL - BARRACOUTA 5 SAMPLE NO. = 77735 R DEPTH( ) = 1130.00

	TOTAL PPM	NORM PERCENT		TOTAL PPM	NORM PERCENT
METHANE	.6		1T3-DMCP	.5	.02
ETHANE	.9		1T2-DMCP	.6	.03
PROPANE	29.2	29.48	3-EPENT	.6	.03
IBUTANE	4.4	4.44	224-TMP	.5	.02
NBUTANE	29.2	29.48	NHEPTANE	3.4	5.97
IPENTANE	4.3	4.34	1C2-DMCP	.5	.03
NPENTANE	6.3	7.97	MCP	.5	.03
22-DMB	.9	.09			
CPENTANE	.5	.05			
23-DMB	.9	.09			
2-MP	1.1	1.20			
3-MP	2.1	2.16			
NHEXANE	4.2	4.24			
MCP	.4	.43			
22-DMP	.0	.00			
24-DMP	.0	.00			
223-TMB	.0	.00			
CHEXANE	.0	.00			
33-DMP	.0	.00			
11-DMCP	.5	.05			
2-MHEX	1.1	1.20			
23-DMP	.0	.00			
3-MHEX	6.3	7.56			
1C3-DMCP	.0	.00			

	TOTALS PPM	NORM PERCENT
ALL COMP	99.	
GASOLINE	69.	
NAPTHENES	2.	2.65
C6-7	14.	20.15

STD GROUP RATIOS

C1/C2	1.37
A /02	1.21
C1/02	.17
CH2/CH	.10
PENT/IPENT	1.62

	PPM	NORM PL CENT
MCP	.5	100.0
CH	.2	.0
MCH	.0	.0
TOTAL	.5	100.0

C4-C7 HYDROCARBON ANALYSES

BASIN - GIPPSLAND REPORT = DESPEC. ANALYSIS
WELL - BARRACOUTA 5 SAMPLE NO. = 77735 DEPTH(M) = 1160.00

	TOTAL PPM	WORK PERCENT		TOTAL PPM	WORK PERCENT
METHANE	.0		1T3-DMCP	.0	.00
ETHANE	.0		1T2-DMCP	.0	.00
PROPANE	21.0	30.65	3-EPENT	.0	.00
IBUTANE	4.2	5.97	224-TMP	.0	.00
NBUTANE	21.2	29.56	NHEPTANE	3.6	5.07
IPENTANE	4.3	5.96	1C2-DMCP	.0	.00
NPENTANE	4.3	6.06	MCH	.0	.00
22-DMP	.0	.00			
CPENTANE	.0	.00			
23-DMP	.0	.00			
2-MP	1.4	1.97			
3-MP	3.1	4.37			
NHEXANE	4.6	6.46			
MCP	1.2	1.66			
22-DMP	.0	.00			
24-DMP	.0	.00			
223-TMB	.0	.00			
CHEXANE	1.2	1.66			
33-DMP	.0	.00			
11-DMCP	.0	.00			
2-MHEX	.0	.00			
23-DMP	.0	.00			
3-MHEX	.0	.00			
1C3-DMCP	.0	.00			

	TOTALS PPM	WORK PERCENT		SIG COMP RATIOS	
ALL COMP	71.		C1/C2	1.30	
GASOLINE	49.		C2/C3	6.26	
NAPTHENES	2.	4.39	C1/C3	1.29	
C6-7	11.	21.59	C2/ CL	1.29	
			PENT/IPENT	1.00	

	PPM	WORK PERCENT
MCP	1.2	50.0
CH	1.2	50.0
MCH	.0	.0
TOTAL	2.4	100.0

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C4-C7 HYDROCARBON ANALYSES

REPORT = GASPEC. ANALYSIS

BASIN - GIPPSLAND
WELL - BARRACOUTA 5 SAMPLE NO. = 77735 S DEPTH(M) = 1295.00

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	.0		1T3-DMCP	20.2	2.73
ETHANE	.0		1T2-DMCP	.0	.00
PROPANE	75.2	10.17	3-EPCPT	.0	.00
IBUTANE	121.2	16.39	224-TMP	.0	.00
NBUTANE	8.1	1.10	NPENTANE	23.5	3.04
IPENTANE	96.6	13.07	1C2-DMCP	.0	.00
NPENTANE	55.9	7.56	MCH	20.2	2.73
22-DMB	9.3	1.26			
CPENTANE	2.1	.28			
23-DMB	23.7	3.20			
2-MP	23.8	3.22			
3-MP	75.0	10.14			
NHEXANE	34.7	4.69			
MCP	12.5	1.69			
22-DMP	.0	.00			
24-DMP	12.4	1.68			
223-TMB	.0	.00			
CHEXANE	15.3	2.07			
33-DMP	.0	.00			
11-DMCP	.0	.00			
2-MHEX	33.4	4.52			
23-DMP	36.0	4.87			
3-MHEX	30.7	4.15			
1C3-DMCP	10.8	1.46			

	TOTALS PPB	NORM PERCENT	STD COMP RATIOS	
ALL COMP	740.		C1/C2	1.58
GASOLINE	664.		A /B2	1.56
NAPTHENES	81.	12.21	C1/B2	2.24
C6-7	249.	37.43	B2/CP	1.22
			PENT/IBUT	.58

	PPB	LOW PERCENT
MCP	12.5	29.9
CH	17.3	41.3
MCH	20.2	48.1
TOTAL	49.9	119.3

C4-C7 HYDROCARBON ANALYSES

BASIN - GIPPSLAND REPORT = HYDROCARBON ANALYSIS
WELL - BARRACOUTA 6 SAMPLE NO. = 77735 R DEPTH(M) = 1355.00

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	.0		1T3-DMCP	99.6	1.61
ETHANE	.0		1T2-DMCP	.0	.00
PROPANE	141.9	2.27	3-EPENT	.0	.00
ISOBUTANE	433.1	7.00	224-TMP	.0	.00
NBUTANE	1325.6	21.42	HEPTANE	26.3	.43
IPENTANE	2270.3	36.69	1C2-DMCP	5.9	.09
NPENTANE	171.7	2.77	MCH	46.4	.75
22-DMB	75.2	1.22			
CPENTANE	.0	.00			
23-DMB	204.6	3.31			
2-MP	178.1	2.88			
3-MP	335.1	5.42			
NHEXANE	50.5	.82			
MCP	56.3	.91			
22-DMP	.0	.00			
24-DMP	48.9	.79			
223-TMB	5.7	.14			
CHEXANE	81.9	1.32			
33-DMP	.0	.00			
11-DMCP	.0	.00			
2-MHEX	34.3	.55			
23-DMP	125.3	2.03			
3-MHEX	98.3	1.59			
1C3-DMCP	63.5	1.02			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	6188.		C1/C2	.75
GASOLINE	6047.		A/B	.70
NAPTHENES	345.	5.70	C1/C3	1.65
C6-7	739.	12.23	C2/IC4	1.63
			PENT/IPENT	.77

	PPB	NORM PERCENT
MCP	56.3	29.2
CH	81.9	42.5
MCH	46.4	24.0
TOTAL	192.5	100.0

C4-C7 HYDROCARBON ANALYSES

BASIN - GIPPSLAND REPT = DESPEC. ANALYSIS
WELL - BARRACOUTA 5 SAMPLE NO. = 77746 C DEPTH(M) = 1460.00

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	.0		1T3-DMCP	2740.5	1.97
ETHANE	.0		1T2-DMCP	4467.9	1.75
PROPANE	.0	.00	3-EPENT	.0	.00
IBUTANE	3461.2	1.39	224-TMP	.0	.00
NBUTANE	16773.5	6.75	HEPTANE	11435.9	4.46
IPENTANE	40292.8	15.73	1C2-DMCP	576.1	.22
NPENTANE	39246.5	15.32	MCH	20413.9	7.97
22-DMB	.0	.00			
CPENTANE	5497.2	2.15			
23-DMP	3265.0	1.27			
2-MP	20346.1	7.94			
3-MP	9291.5	3.63			
NHEXANE	22946.2	8.96			
MCP	23994.1	9.37			
22-DMP	.0	.00			
24-DMP	677.3	.26			
223-TMB	90.7	.03			
CHEXANE	16349.4	6.38			
33-DMP	.0	.00			
11-DMCP	.0	.00			
2-MHEX	3609.7	1.41			
23-DMP	3325.8	1.30			
3-MHEX	3915.5	1.53			
1C3-DMCP	2296.7	.90			

	TOTALS PPB	NORM PERCENT	STD COMP RATIOS	
ALL COMP	256141.		C1/C2	1.20
GASOLINE	256141.		C1/C3	6.76
NAPTHENES	76655.	29.93	C1/NC4	10.14
C6-7	117367.	45.82	C1/C5	.70
			IBUT/IPENT	.09

	PPB	NORM PERCENT
MCP	23994.1	59.2
CH	16349.4	27.
DCH	20413.9	33.3
TOTAL	61249.4	100.

C4-C7 HYDROCARBON ANALYSES

REPORT = UNSPEC. ANALYSIS

BASIN - GIPPSLAND
WELL - BARRACOUTA 6 SAMPLE NO. = 77736 6 DEPTH(M) = 1520.00

	TOTAL PPM	NORM PERCENT		TOTAL PPM	NORM PERCENT
METHANE	.0		113-DMCP	.1	.01
ETHANE	.0		112-DMCP	.0	.00
PROPANE	.0	.00	3-MPENT	.0	.00
IBUTANE	.0	.00	224-TMP	.0	.00
NBUTANE	.0	.00	HEPTANE	.0	.00
IPENTANE	.0	.00	1C2-DMCP	.0	.00
NPENTANE	.0	.01	MCH	.0	.00
22-DMB	.0	.00			
CPENTANE	.0	.00			
23-DMB	.0	.00			
2-MP	.0	.00			
3-MP	.0	.00			
NHEXANE	.0	.00			
MCP	.0	.00			
22-DMP	.0	.00			
24-DMP	.0	.00			
223-TMB	.0	.00			
CHEXANE	.0	.00			
33-DMP	.0	.00			
11-DMCP	.0	.00			
2-MHEX	.0	.00			
23-DMP	.0	.00			
3-MHEX	.0	.00			
1C3-DMCP	.0	.00			

	TOTALS PPM	NORM PERCENT	STD. COMP. RATIOS	
ALL COMP	0.		C1/C2	.00
GASOLINE	0.		A /B2	.00
NAPTHENES	0.	.00	C1/B2	.00
C6-7	0.	.00	B2/C3	.00
			P5OT/TPENT	.00

	PPM	NORM PERCENT
MCP	.0	.0
CH	.0	.0
MCH	.0	.0
TOTAL	.0	.0

C4-C7 HYDROCARBON ANALYSIS

REPORT = 01 SPEC. ANALYSIS

BASIN = GIPPSLAND
WELL = BARRACOUTA C SAMPLE NO. = 77736 R DEPTH(M) = 1580.0

	TOTAL PPM	PPM PERCENT
METHANE	.0	
ETHANE	.0	
PROPANE	.0	.00
IBUTANE	261.4	.03
NBUTANE	2002.1	.20
IPENTANE	119586.0	13.37
NPENTANE	176204.7	19.71
22-DMP	.0	.00
CPENTANE	7763.6	.87
23-DMP	10643.3	1.19
2-MP	37223.1	4.17
3-MP	86617.3	9.69
NHEXANE	132360.5	14.80
MCP	67506.7	7.55
22-DMP	.0	.00
24-DMP	1677.5	.19
223-TMP	163.6	.02
CHEXANE	58188.3	6.51
33-DMP	.0	.00
11-DMCP	.0	.00
2-MPEX	15366.3	1.72
23-DMP	10082.2	1.13
3-MHEX	14642.8	1.64
1C3-DMCP	9533.4	1.07

	TOTAL PPM	PPM PERCENT
1T3-DMCP	9414.9	1.05
1T2-DMCP	15559.3	1.74
3-EPENT	.0	.00
224-TMP	.0	.00
HEPTANE	37241.5	4.17
1C2-DMCP	1569.3	.18
MCH	75279.7	8.42

	TOTALS PPM	PPM PERCENT
ALL COMP	893823.	
GASOLINE	893823.	
NAPTHENES	245031.	27.40
C6-7	449513.	50.28

STG COMP RATIOS	
C1/C2	1.44
C1/C3	11.58
C1/C4	19.21
C2/C3	.56
IPENT/NPENT	1.47

	PPM	PPM PERCENT
MCP	67506.7	33.5
CH	58163.3	28.8
MCH	75279.7	37.4
TOTAL	201779.8	100.0

C1-C7 HYDROCARBON ANALYSES

REPORT = UNSPEC. ANALYSIS

BASIN - GIPPSLAND
WELL - BARRACOUTA 5 SAMPLE NO. = 77736.0 DEPTH(') = 1640.00

	TOTAL PPM	WGHT PERCENT
METHANE	.0	
ETHANE	.0	
PROPANE	.0	.00
IBUTANE	6127.4	.09
NBUTANE	55278.1	.82
IPENTANE	888037.5	13.25
NPENTANE	1076267.0	16.06
22-DMB	.0	.00
CPENTANE	74034.7	1.10
23-DMB	48642.4	.73
2-MP	640830.1	9.56
3-MP	332886.6	4.96
NHEXANE	1176966.0	17.56
MCP	541755.0	8.08
22-DMP	.0	.00
24-DMP	51386.9	.77
223-TMB	11196.9	.17
CHEXANE	594614.2	8.87
33-DMP	.0	.00
11-DMCP	.0	.00
2-MHEX	135509.7	2.02
23-DMP	67099.1	1.01
3-MHEX	110656.6	1.77
1C3-DMCP	56333.6	.84

	TOTAL PPM	WGHT PERCENT
1T3-DMCP	106213.2	1.53
1T2-DMCP	122745.4	1.83
3-EPENT	.0	.00
224-TMP	.0	.00
HEPTANE	333873.4	4.98
1C2-DMCP	53570.0	.80
MCH	212392.6	3.17

	TOTALS PPM	WGHT PERCENT	STG COMP RATIOS	
ALL COMP	6701427.		C1/C2	1.08
GASOLINE	6701427.		A/P2	12.75
NAPTHENES	1758557.	26.24	C1/C2	7.64
C6-7	3579226.	53.41	C6/CP	1.10
			PENT/IPENT	1.21

	PPM	WGHT PERCENT
MCP	541755.0	40.3
CH	594614.2	44.1
DCH	212392.6	15.7
TOTAL	1348762.0	100.0

ESSO AUSTRALIA LTD.

C4-C7 HYDROCARBON ANALYSES

REPORT = DESPEC. ANALYSIS

BASIN = GIPPSLAND
WELL = BARRACOUTA 5 SAMPLE NO. = 77736.5 DEPTH( ) = 1790.06

	TOTAL PPB	NON PERCENT
METHANE	.0	
ETHANE	.0	
PROPANE	.0	.00
IBUTANE	613.5	.04
NBUTANE	1330.3	.09
IPENTANE	14272.5	.97
NPENTANE	62437.3	4.23
22-DMB	.0	.00
CPENTANE	7756.3	.53
23-DMB	12611.2	.87
2-MP	103960.7	7.01
3-HP	56304.4	3.83
MHEXANE	213957.0	14.54
MCP	117810.2	8.01
22-DMP	.0	.00
24-DMP	4837.0	.33
223-TMB	939.4	.06
CHEXANE	125536.7	8.53
33-DMP	.0	.00
11-DMCP	.0	.00
2-MHEX	50922.4	3.46
23-DMP	27307.7	1.86
3-MHEX	49965.5	3.40
1C3-DMCP	23104.6	1.57

	TOTAL PPB	NON PERCENT
1T3-DMCP	24040.0	1.63
1T2-DMCP	44510.5	3.03
3-EPENT	.0	.00
224-TMP	.0	.00
HEPTANE	195247.6	13.27
1C2-DMCP	3962.6	.27
MCH	339601.1	22.97

	TOTALS PPB	NON PERCENT
ALL COMP	1471232.	
GASOLINE	1471232.	
NAPTHENES	677220.	46.03
C6-7	1212646.	82.42

SIG COMP RATIOS

C1/C2	2.36
A /B2	2.19
C1/C3	10.15
C1/ CP	1.87
PENT/HEPT	0.47

	PPB	PERCENT
MCP	117810.2	20.5
CH	125536.7	21.9
MCH	339601.1	57.6
TOTAL	573947.9	100.0

ESSO AUSTRALIA LTD.

C4-C7 HYDROCARBON ANALYSES

REPORT = DESPEC. ANALYSIS

BASIN - GIPPSLAND
WELL - BARRACOUTA 5 SAMPLE NO. = 77736 : DEPTH(') = 1760.0

	TOTAL PPM	NORM PERCENT
METHANE	.0	
ETHANE	.0	
PROPANE	.0	.0
IBUTANE	62.3	.0
NBUTANE	627.2	.1
IPENTANE	12764.0	2.0
NPENTANE	748.0	.1
22-DMB	.0	.0
CPENTANE	4825.7	.7
23-DMB	7502.4	1.1
2-MP	69664.6	10.9
3-MP	33793.9	5.3
MHEXANE	100739.4	15.8
MCP	52930.4	8.3
22-DMP	.0	.0
24-DMP	3182.3	.5
223-TMB	614.6	.1
CHEXANE	52404.4	8.2
33-DMP	.0	.0
11-DMCP	.0	.0
2-MHEX	25605.0	4.0
23-DMP	14595.0	2.3
3-MHEX	25529.0	4.0
1C3-DMCP	8152.4	1.3
1T3-DMCP	11301.2	1.7
1T2-DMCP	21958.5	3.4
3-EPENT	.0	.0
224-TMP	.0	.0
HEPTANE	69911.4	10.9
1C2-DMCP	4118.6	.6
MCH	116666.0	18.3

TOTALS	PPM	NORM PERCENT
ALL COMP	637192.	
GASOLINE	637192.	
NAPTHENES	271934.	42.6
C6-7	507603.	79.6

SIG COMP RATIOS	
C1/C2	1.9
C2/C3	6.6
C1/C3	7.6
C2/C4	.9
ETHT/IPENT	.6

	PPM	NORM PERCENT
MCP	52930.4	23.8
CH	52404.4	23.6
MCH	116666.0	52.6
TOTAL	221998.7	100.0

APPENDIX 2

Detailed Vitrinite Reflectance and Exinite Fluorescence Data

- Report by A.C. Cook.

BARRACOUTA NO. 5

KK No.	Esso No.	Depth m	$\bar{R}_v$ max %	Range R_v max %	N	Exinite fluorescence (Remarks)
x1865	77716-X	1150 SWC 51	-	-	-	Rare phytoplankton, yellow. (Clay siltstone. Dom rare, E>I. Exinite and inertinite rare, vitrinite absent. Weak mineral matter fluorescence. Forams present. Pyrite common to abundant. Iron oxides present.)
		$\bar{R}_I$	0.93	-	1	
x1866	77715-S	1239.2 SWC 20	0.43	0.33-0.50	25	Sparse sporinite, yellow to yellow orange, rare cutinite, yellow, rare resinite, yellow. (Siltstone. Dom common, V>E>I. Vitrinite common, exinite sparse, inertinite rare. Pyrite abundant.)
x1867	77715-C	1431 SWC 3	0.45	0.40-0.50	32	Abundant to major liptodetrinite, yellow to orange, abundant sporinite, yellow orange, sparse cutinite, orange, sparse resinite, yellow, sparse fluorinite, greenish yellow. (Coal. Clarite>duroclarite>vitrite. Sclerotinite present in coal. Some vitrinite fluorescence, brown. Micrinite abundant. Pyrite rare.)
x1868	77717-U	1589 SWC 77	0.48	0.46-0.51	3	Common liptodetrinite and sporinite, yellow to yellow orange, rare cutinite, yellow orange, rare fluorinite, green. (Claystone. Dom common, E>V=I. Exinite common, vitrinite and inertinite rare. Pyrite sparse.)
x1869	77716-Y	1731 SWC 52	0.61	0.52-0.67	9	Rare liptodetrinite and sporinite, yellow orange to orange, rare fluorinite, green to greenish yellow. (Siltstone. Dom rare, E>V>I. All macerals rare. Iron oxides present. Pyrite sparse.)

APPENDIX 5

BARRACOUTA-5

RFT TEST PROGRAM

D.J. Wright
June, 1985

(2654f1)

Results and Discussion

A total of seven RFT runs were conducted over the interval 1050.4m-1433.0m SS in January and February 1985 as follows:

Run Number	Pretests	Interval (m TVDSS)
1	3	1154.4 - 1199.2
2	11	1050.4 - 1154.4
3	Hole conditions caused inability to reach target depth	
4	12	1342.5 - 1433.9
5	1	1387.1
6	1	1379.9
7	4	1354.9 - 1379.9

Of the 32 pretests attempted, 25 were successful in providing formation pressures and 7 were seal failures. Note that the cable became stuck at the end of run 4 and had to be stripped over. Uncertainties in the RFT strain gauge pressures on the sampling runs 5, 6 and 7 are apparent as the pressures at the end of the pretest did not correspond to the pressure after sampling. The HP gauge was not used on these runs. Pressure data from the Hewlett-Packard gauge from the other runs are used for all analyses. Run numbers 5, 6 and 7 were sampling runs with a 6 gallon (22.7 litre) and a 2 3/4 gallon (10.4 litre) chamber set at 1631.5m MDKB (-1387.1m SS), 1623m MDKB (-1379.9m SS) and 1593.3m MDKB (-1354.9m SS) respectively.

All three sampling runs 5, 6 and 7 recovered oil with very small amounts of water/filtrate in the N-5, N-6 and M-1 reservoirs respectively. Full details of pretest and sample data are given in Tables 1 and 2.

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

1) The gas-water contact in the N-1 reservoir was confirmed at -1153.2m SS, giving a gross gas column of 112.3m true vertical thickness. A pressure discontinuity of 23 psi was observed across the coal 13m above the gas water contact (between seats 2/5 and 2/6). The gas gradient measured was 0.132 psi/m corresponding to the accepted reservoir density of .093 g/cc and all sands above the coal appear to be in communication. The results of the N-1 pressure tests are plotted in the attached Figure 1.

2) Below the N-1 reservoir, there is a 10 psi pressure discontinuity between 1347m TVDKB (-1154.4m SS) and 1403m TVDKB (-1199.2m SS), based on the extrapolation of a line of slope 1.42 psi/m from the higher point. This indicates an extensive sealing unit in this interval.

3) All pressures below the discontinuity mentioned in 2 above, including points in the N-5, N-6 and M-1 reservoirs, indicate communication with a common aquifer as they are close to a line of slope 1.414 psi/m. The results are shown in detail in Figure 2. No contacts can be identified from the RFT data, but the results are consistent with the log derived contact positions at -1355m.9m SS (1594.5m MDKB), -1380.7m SS (1624m MDKB) and -1387.9m SS (1632.5m MDKB).

4) The pressures relative to previous Barracouta pressure tests are as follows:

N-1	Original pressure	1705 psia at 1128m SS
	August 1983	1634.8 psia
	February 1985	1633.3 psia
M-1	Original pressure	2047 psia at 1387m SS
	August 1983	2003.0 psia
	February 1985	1997.0 psia

RFT PRESSURE DATA

WELL: BARRACOUTA-5 RUN #1 and #2

DATE: 31/1/85, 1/1/85

ENGINEER: P. PRIEST, P. FELL

GAUGE: HP 974 RFT 80622 (2654f4)

PROBE TYPE: LONG NOSE

RFT NO. Run/Seat	DEPTH m MDKB	DEPTH m TVDSS	Initial Hydrostatic HP psia	Initial Hydrostatic RFT Gauge psig	Time Set	Minimum Flowing Pressure psia	Formation Pressure HP psia	Formation Pressure RFT Gauge psig	Temp. °C	Time Retract	Final Hydrostatic HP psia	Final Hydrostatic RFT Gauge psig	Comments
1/1	1403.0	1199.2	2313.9	2362	14:32:45	1727.0	1731.5	1783	69.1	14:38:53	2312.8	2363	Valid Pretest
1/2	1347.0	1154.4	2227.4	2278	14:52:19	-	1657.4	1712	68.6	15:00:50	-	-	Valid Pretest Bad RFT gauge readings Incorrect calibration data entered in 1/1 and 1/2
1/3	1403.0	1199.2	2312.5	2292	15:10:59	1703.0	1731.9	1712	69.3	15:13:42	2311.3	2289	Valid
2/4	1347.0	1154.4	2214.3	2199	00:24:03	1659.4	1660.0	1646	51.3	00:28:07	2215.7	2199	Valid
2/5	1337.0	1146.5	2203.0	2187	00:36:27	1589.3	1657.6	1644	51.9	00:40:49	2200.6	2184	Valid
2/6	1329.0	1140.1	2189.4	2177	00:48:30	1601.1	1635.1	1624	51.6	00:54:50	2187.6	2173	Valid
2/7	1326.0	1137.7	2183.0	2171	01:03:24	1632.8	1634.5	1625	51.9	01:06:57	2182.0	2169	Valid
2/8	1314.0	1128.1	2163.0	2154	01:16:48	1630.1	1632.5	1623	52.8	01:20:06	2163.0	2150	Valid
2/9	1303.3	1119.7	2145.9	2137	01:30:44	1425.0	1631.3	1622	53.6	01:34:35	2146.0	2136	Valid
2/10	1288.0	1107.4	2123.0	2115	01:44:06	1627.1	1629.8	1623	53.8	01:49:48	2123.5	2115	Valid
2/11	1255.0	1081.3	2074.0	2067	02:01:23	1625.5	1626.4	1620	53.7	02:05:48	2073.0	2066	Valid
2/12	1233.0	1063.8	2040.0	2034	02:15:59	374.0	1634.6	1626	53.6	02:38:36	2040.0	2028	Valid
2/13	1222.5	1055.5	2025.0	2014	02:48:28	1435.0	1622.1	1614	53.9	02:52:09	2026.0	2014	Valid
2/14	1216.0	1050.4	2015.0	2003	02:58:08	945.0	1621.6	1614	53.8	03:07:43	2013.0	2004	Valid

RFT PRESSURE DATA

(2654f5)

WELL: BARRACOUTA-5 RUN #4

DATE: 05/02/85

ENGINEER: P. PRIEST, D.J. WRIGHT

GAUGE: HP 974 RFT 80622

PROBE TYPE: LONG NOSE

RFT NO. Run/Seat	DEPTH m MDKB	DEPTH m TVDSS	Initial Hydrostatic HP psia	Initial Hydrostatic RFT/gauge psig	Time Set	Minimum Flowing Pressure psia	Minimum Flowing Pressure psig	Formation Pressure HP psia	Formation Pressure RFT Gauge psig	Temp. °F	Time Retract	Final Hydrostatic HP psia	Final Hydrostatic RFT Gauge psig	Comments
4/16	1686.0	1433.90	2560.0	2541	03:15	2551.0	2534	-	-	-	03:18	-	-	No seal-cable sticking.
4/17	1687.0	1434.78	2559.0	2540	03:25	2547.0	2525	-	-	-	03:28	-	-	No seal.
4/18	1690.0	1437.40	2566.0	2550	03:35	2571.0	2552	-	-	-	03:38	-	-	No seal.
4/19	1684.0	1432.15	2554.8	2537	03:43	1950.0	-	2060.9	2045.0	68.0	03:47	2554.6	2538	Seal. Hydrostatic mud pressure varying ± 2 psi.
4/20	1686.0	1433.90	2556.0	2537	03:54	1983.8	2000	2063.1	2048.0	68.4	03:57	2558.5	2540	Seal.
4/21	1650.0	1402.79	2505.2	2487	04:04	1985.0	2004	2020.1	2004.0	68.2	04:08	2505.4	2489	Seal.
4/22	1635.0	1390.04	2483.6	2467	04:14	1982.7	1966	2002.6	1987.0	68.0	04:18	2483.8	2463	Seal.
4/23	1631.2	1386.81	2477.0	2460	04:24	1991.5	1973	1998.7	1983.0	67.7	04:28	2478.4	2460	Seal.
4/24	1597.0	1357.98	2429.1	2412	04:34	1947.6	1930	1955.7	1940.0	68.4	04:39	2429.1	2412	Seal.
4/25	1593.0	1354.62	2422.9	2408	04:44	1924.4	1911	1951.2	1936.0	68.2	04:49	2422.7	2401	Seal.
4/26	1578.5	1342.54	2403.7	2387	04:54	1852.9	1880	-	-	-	04:59	2406.0	2388	No seal.
4/27	1578.5	1342.54	2406.0	2388	05:05	1656.1	1752	1933.8	1919.0	68.2	05:09	2406.7	2389	Seal. Cable stuck

RFT PRESSURE DATA

(2654f6)

WELL: BARRACOUTA-5 RUNS 5 - 7

DATE: 06/02/85

ENGINEER: P. PRIEST, D.J. WRIGHT

GAUGE: RFT 80622

PROBE TYPE: MARTINEAU

RFT NO. Run/Seat	DEPTH m MDKB	DEPTH m TVDSS	Initial HP psia	Hydrostatic RFT/gauge psig	Time Set	Minimum Flowing Pressure psig	Formation Pressure HP psia	Formation Pressure RFT Gauge psig	Temp. °F	Time Retract	Final HP psia	Hydrostatic RFT Gauge psig	Comments
5/28*	1631.5	1387.07	-	2530	06:18	1829.0	-	1988(1)	68.4	06:45	-	2536	Seal
6/29*	1623.0	1379.86	-	2516	10:11	1954.0	-	1997(2)	71.4	10:40	-	2522	Seal, then slight leak.
7/30	1623.0	1379.86	-	2511	19:45	1945.0	-	-	-	13:50	-	2515	No seal.
7/31	1623.0	1379.86	-	2510	13:52	2055.0	-	-	-	13:53	-	2511	No seal. Went to sample.
7/32	1593.0	1354.62	-	2465	13:57	1898.0	-	-	-	13:58	-	2465	No seal.
7/33*	1593.3	1354.87	-	2465	14:01	1911.0	-	1936(3)	73.9	14:27	-	2466	Seal.

(1) Final buildup pressure after sampling 1992 psig
(2) Final buildup pressure after sampling 1976 psig
(2) Final buildup pressure after sampling 1936 psig

RFT SAMPLE TEST REPORT

WELL: BARRACOUTA-5 (2654f7)

OBSERVER: D.J. WRIGHT DATE: 06/02/85 RUN: 5/28

	CHAMBER 1 (6 gal.)		CHAMBER 2 (2 3/4 gal.)	
SEAT NO.	5/28			
DEPTH	1631.5m MDKB			
A. RECORDING TIMES				
Tool Set	0618		-	
Pretest Open	0619		-	
Time Open	3 mins		-	
Chamber Open	0623		0635	
Chamber Full	0631		0640	
Fill Time	8	min.	5	min.
Start Build-up	0631		0640	
Finish Build-up	0631		0641	
Build-Up Time	30	sec.	30	sec.
Seal Chamber	0634		0643	
Tool Retract	-		0645	
Total Time	-	min.	27	min.
B. SAMPLE PRESSURES				
IHP	2530	psig	-	psig
ISIP	2988		-	
Initial Flowing Press.	1280		1797	
Final Flowing Press.	1457		1751	
Sampling Press. Range	1280 - 1993		1751 - 1992	
FSIP	1993		1992	
FHP	-		2536	
Form.Press.(Horner)	-		-	
C. TEMPERATURE				
Depth Tool Reached	1675	m MDKB	-	m MDKB
Max. Rec. Temp.	70.4	°C	70.4	°C
Time Circ. Stopped	0015	(hrs)	-	(hrs)
Time since Circ.	6 hrs. 3 mins.		-	
D. SAMPLE RECOVERY				
Surface Pressure	40	psig	20	psig
Amt Gas	6.50	ft.³	2.51	ft.³
Amt Oil	19.9	lit.	8.8	lit.
Amt mud, filtrate	1.1	lit.	0	lit.
E. SAMPLE PROPERTIES				
Gas Composition				
C1	41933	ppm	209664	ppm
C2	10778	ppm	66821	ppm
C3	22016	ppm	105677	ppm
IC4/nC4	14157	ppm	46919	ppm
C5+	1270	ppm	8317	ppm
C6+	trace	ppm	674	ppm
CO2/H2S	10	%/Trace	12	%/Trace
Oil Properties	59.8	°API @ 60°F	55.3	°API @ 60°F
Colour	Light brown		Light brown	
Fluorescence	Bright white		Bright white	
GOR				
Water Properties/Filtrate				
Resistivity	1.054 @ 20.6°C		No water	
NaCl Equivalent		ppm		ppm
Cl-titrated	7500	ppm		ppm
Tritium	603	DPM		ppm
Est. Water Type	pH 8.1			
Mud Properties				
Resistivity	1.052 @ 21.1°C			@°C
Na Cl Equivalent		ppm		ppm
Cl - titrated/Tritium	9600ppm/1132 (av)DPM			ppm
Calibration				
Calibration Press.	N/A	psig	-	psig
Calibration Temp.	N/A	°C	-	°C
Hewlett Packard No.	N/A			
Mud Weight	10.5			
Calc. Hydrostatic	2518 psig(from mudweight)			
RFT Chokesize	1 x 30/1000		1 x 20/1000	
Remarks				

RFT SAMPLE TEST REPORT

WELL: BARRACOUTA-5 (2654f8)

OBSERVER: D.J. WRIGHT DATE: 06/02/85 RUN: 6/29

	CHAMBER 1 (6 gal.)	CHAMBER 2 (2 3/4 gal.)
SEAT NO.	6/29	6/29
DEPTH	1623.0m MDKB	1623.0m MDKB
A. RECORDING TIMES		
Tool Set	1011	-
Pretest Open	1011	-
Time Open	8 mins	-
Chamber Open 1020 (1st time)	1022 (2nd time)	1030
Chamber Full	1028	1036
Fill Time	6 min.	6 min.
Start Build-up	1028	1036
Finish Build-up	1029	1037
Build-Up Time	30 sec.	30 sec.
Seal Chamber	1030	1038
Tool Retract	-	1040
Total Time	- min.	29 min.
B. SAMPLE PRESSURES		
IHP	2516 psig	- psig
ISIP	1971	-
Initial Flowing Press.	1955	1972
Final Flowing Press.	1955	1968
Sampling Press. Range	1954 - 1976	1967 - 1972
FSIP	1976	1976
FHP	-	2522
Form.Press.(Horner)	-	-
C. TEMPERATURE		
Depth Tool Reached	1675 m MDKB	- m MDKB
Max. Rec. Temp.	71.4 °C	71.7 °C
Time Circ. Stopped	0015 (hrs)	- (hrs)
Time since Circ.	9 hrs. 56 mins.	-
D. SAMPLE RECOVERY		
Surface Pressure	50 psig	- psig
Amt Gas	2.06 ft.^{3}	- lit.
Amt Oil	20.8 lit.	- lit.
Amt mud, filtrate	1.0 lit.	- lit.
E. SAMPLE PROPERTIES		
Gas Composition		
C1	176117 ppm	- ppm
C2	49577 ppm	- ppm
C3	110960 ppm	- ppm
IC4/nC4	77660 ppm	- ppm
C5+	9869 ppm	- ppm
C6+	1026 ppm	- ppm
CO2/H2S	11 %/Trace	- %/Trace
Oil Properties	59.1 °API @ 60°F	- °API @ °F
Colour	Light brown	
Fluorescence	Bright blue white	
GOR		
Water Properties/Filtrate		
Resistivity	0.365 @ 21.5°C	-
NaCl Equivalent	ppm	ppm
Cl-titrated	7500 ppm	ppm
Tritium	282* DPM	ppm
Est. Water Type	pH 7.3	
Mud Properties		
Resistivity	1.052 @ 21.1°C	@°C
Na Cl Equivalent	ppm	ppm
Cl - titrated/tritium	9600ppm1132 (av)	ppm
Calibration		
Calibration Press.	N/A psig	- psig
Calibration Temp.	N/A °C	- °C
Hewlett Packard No.	N/A	
Mud Weight	8.5 lb/gallon	8.5 lb/gallon
Calc. Hydrostatic		
RFT Chokesize	1 x 30/1000	1 x 20/1000
Remarks	* Readings affected (lowered) by oil in sample.	Preserved RFSAE1220

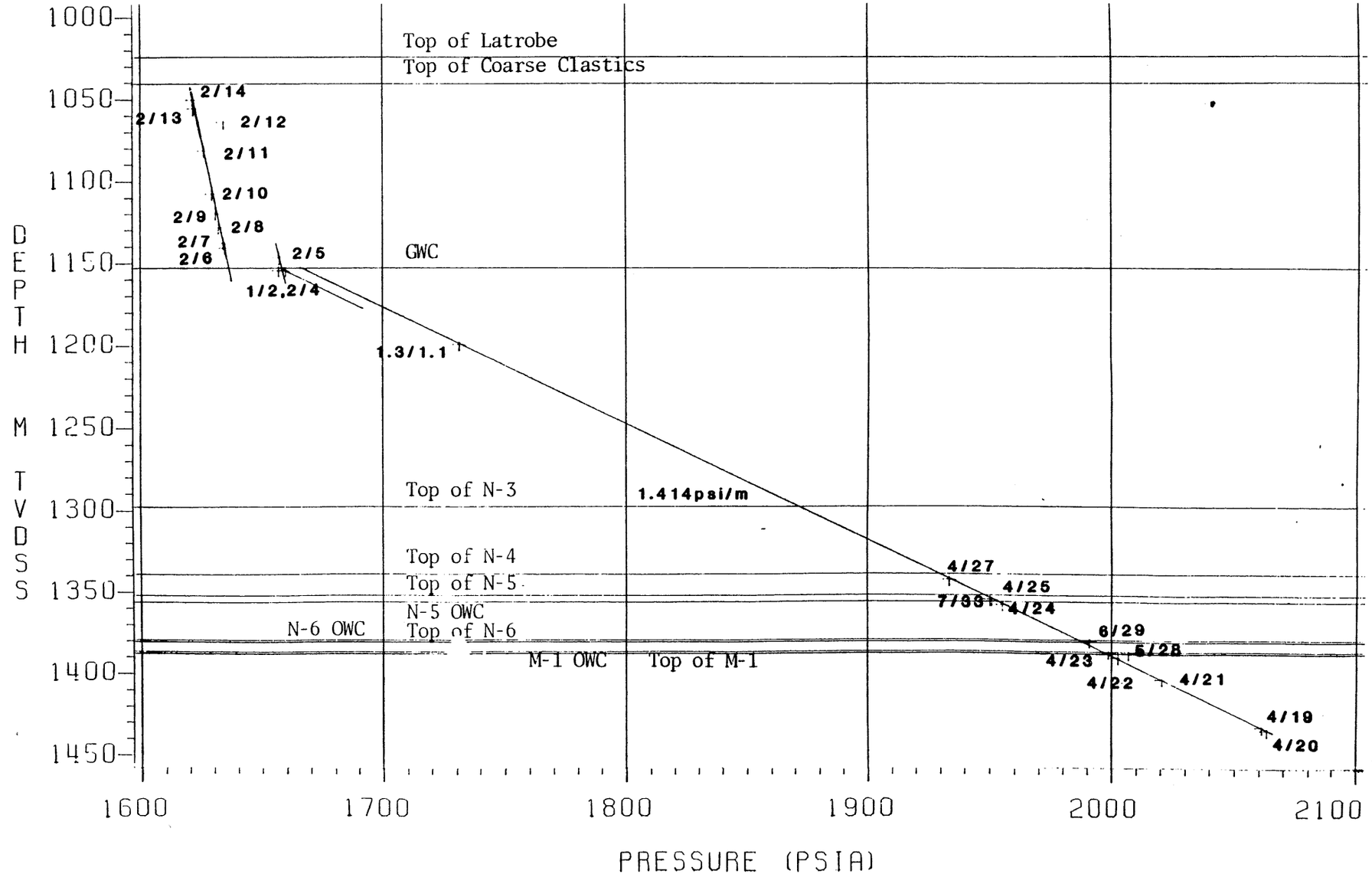
RFT SAMPLE TEST REPORT

WELL: BARRACOUTA-5 (2654f9)

OBSERVER: D.J. WRIGHT DATE: 06/02/85 RUN: 7/33

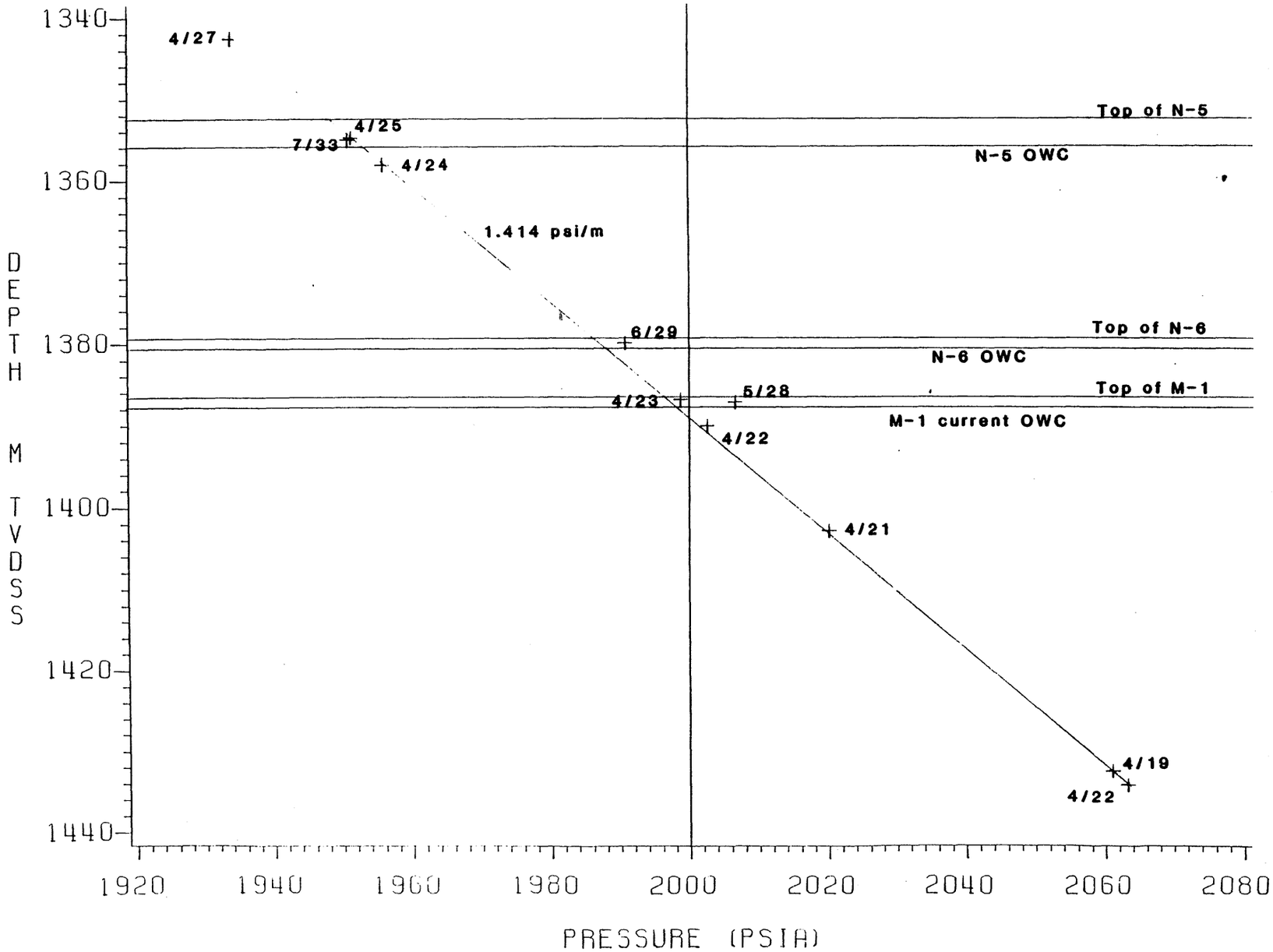
	CHAMBER 1 (6 gal.)	CHAMBER 2 (2 3/4 gal.)
SEAT NO.	7/33	7/33
DEPTH	1593.3m MDKB	1593.3m MDKB
A. RECORDING TIMES		
Tool Set	1401	-
Pretest Open	1401	-
Time Open	3 mins	-
Chamber Open	1405	1416
Chamber Full	1412	1423
Fill Time	7 min.	7 min.
Start Build-up	14/2	1420
Finish Build-up	14/3	1420
Build-Up Time	30 sec.	30 sec.
Seal Chamber	1415	1425
Tool Retract	-	1427
Total Time	- min.	26 min.
B. SAMPLE PRESSURES		
IHP	2465 psig	- psig
ISIP	1936	-
Initial Flowing Press.	370	1807
Final Flowing Press.	1397	1700
Sampling Press. Range	370 - 1937	1700 - 1937
FSIP	1937	1936
FHP	-	2466
Form.Press.(Horner)	-	-
C. TEMPERATURE		
Depth Tool Reached	1675 m MDKB	- m MDKB
Max. Rec. Temp.	73.9 °C	75.6 °C
Time Circ. Stopped	0015 (hrs)	- (hrs)
Time since Circ.	6 hrs. 3 mins.	-
D. SAMPLE RECOVERY		
Surface Pressure	40 psig	- psig
Amt Gas	1.33 cu.ft.	- lit.
Amt Oil	20.75 lit.	- lit.
Amt mud	1.25 lit.	- lit.
E. SAMPLE PROPERTIES		
Gas Composition		
C1	251596 ppm	- ppm
C2	51732 ppm	- ppm
C3	72217 ppm	- ppm
IC4/nC4	22650 ppm	- ppm
C5+	18945 ppm	- ppm
C6+	3744 ppm	- ppm
C02/H2S	trace %/Trace	- %/Trace
Oil Properties	57.5 °API @ 60°F	- °API @ °F
Colour	Light brown	
Fluorescence	Bright milky white	
GOR		
Water Properties/Filtrate		
Resistivity	0.459 @ 22°C	-
NaCl Equivalent	ppm	ppm
Cl-titrated	7500 ppm	ppm
Tritium	32 DPM	ppm
Est. Water Type	pH 8.3	
Mud Properties		
Resistivity	1.052 @ 21.1°C	@°C
Na Cl Equivalent	ppm	ppm
Cl - titrated/tritium	9600ppm/1132 DPM	
Calibration		
Calibration Press.	N/A psig	- psig
Calibration Temp.	N/A °C	- °C
Hewlett Packard No.	N/A	
Mud Weight		
Calc. Hydrostatic		
RFT Chokesize	1 x 30/1000	1 x 20/1000
Remarks		Sample preserved. RSFAE1222

BARRACOUTA–5 RFT PRESSURES



BARRACOUTA-5 RFT PRESSURES

BTA-5 OIL RESERVOIR RFTS



APPENDIX 6

APPENDIX 6

Sii DATADRIL

Division of Smith International, Inc.

ESSO EXPLORATION
BARRACOUTA 5

BASS STRAIT
RIG: SOUTHERN CROSS

MEASURED DEPTH (M)	INCL ANGLE (DEG)	DRIFT AZIMUTH (DEG)	SUBSEA DEPTH (M)	TOTAL VERTICAL DEPTH	TOTAL RECTANGULAR COORDINATES (M)		VERTICAL SECTION (M)	CLOSURE DISTANCE (M)	CLOSURE AZIMUTH (DEG)	DOGLEG SEVERITY (DEG/30
750.81	37.25	28.00	684.66	705.66	165.78 N	80.94 E	184.04	184.49	26.02	1.00
763.81	38.00	27.50	694.95	715.95	172.81 N	84.64 E	191.97	192.42	26.09	1.87
809.16	38.25	29.00	730.63	751.63	197.47 N	97.89 E	219.96	220.40	26.37	.83
838.01	38.25	29.00	753.28	774.28	213.09 N	106.55 E	237.81	238.24	26.57	0.00
866.85	38.25	29.50	775.93	796.93	228.67 N	115.27 E	255.67	256.08	26.75	.32
895.70	38.00	28.50	798.63	819.63	244.25 N	123.91 E	273.48	273.88	26.90	.69
924.55	38.50	28.50	821.28	842.28	259.94 N	132.43 E	291.33	291.73	27.00	.52
953.40	38.25	28.50	843.90	864.90	275.68 N	140.97 E	309.24	309.64	27.08	.26
982.25	38.50	28.50	866.52	887.52	291.42 N	149.52 E	327.14	327.54	27.16	.26
1011.10	38.25	29.00	889.14	910.14	307.12 N	158.14 E	345.05	345.44	27.24	.41
1039.94	38.25	29.00	911.78	932.78	322.74 N	166.79 E	362.90	363.29	27.33	0.00
1068.79	38.25	28.50	934.44	955.44	338.40 N	175.38 E	380.75	381.15	27.40	.32
1097.64	38.25	28.50	957.10	978.10	354.10 N	183.91 E	398.61	399.00	27.45	0.00
1126.49	38.00	29.00	979.79	1000.79	369.71 N	192.47 E	416.42	416.81	27.50	.41
1155.34	38.00	29.50	1002.53	1023.53	385.21 N	201.15 E	434.18	434.57	27.57	.32
1184.19	38.00	28.50	1025.26	1046.26	400.74 N	209.76 E	451.93	452.32	27.63	.64
1213.03	37.75	30.00	1048.03	1069.03	416.19 N	218.41 E	469.64	470.02	27.69	.77
1241.88	37.50	29.00	1070.38	1091.88	431.52 N	227.09 E	487.25	487.62	27.76	.69
1270.73	37.75	29.50	1093.73	1114.73	446.89 N	235.69 E	504.86	505.23	27.81	.41
1299.58	37.25	29.00	1116.61	1137.61	462.21 N	244.27 E	522.42	522.79	27.86	.61
1328.43	37.00	29.00	1139.62	1160.62	477.44 N	252.72 E	539.83	540.20	27.89	.26
1357.28	37.25	29.00	1162.62	1183.62	492.67 N	261.16 E	557.24	557.61	27.93	.26
1386.12	36.50	29.00	1185.69	1206.69	507.81 N	269.55 E	574.55	574.91	27.96	.78
1414.97	36.25	29.00	1208.92	1229.92	522.77 N	277.84 E	591.65	592.02	27.99	.26
1443.82	36.50	29.00	1232.15	1253.15	537.73 N	286.14 E	608.76	609.12	28.02	.26
1453.67	36.00	28.50	1240.09	1261.09	542.84 N	288.94 E	614.58	614.95	28.03	1.77
1473.47	35.25	28.50	1256.18	1277.18	552.98 N	294.44 E	626.11	626.48	28.03	1.14
1502.34	35.00	27.50	1279.80	1300.80	567.64 N	302.24 E	642.71	643.09	28.03	.65
1531.21	34.75	26.00	1303.48	1324.48	582.38 N	309.67 E	659.19	659.59	28.00	.93
1560.08	34.50	23.50	1327.24	1348.24	597.28 N	316.54 E	675.53	675.97	27.92	1.50
1588.94	33.25	23.50	1351.20	1372.20	612.03 N	322.75 E	691.51	692.01	27.82	1.30
1617.81	32.50	23.50	1375.45	1396.45	626.40 N	329.20 E	707.08	707.64	27.72	.78
1646.68	31.50	23.50	1399.93	1420.93	640.43 N	335.30 E	722.28	722.90	27.63	1.04

Sii DATADRIL
Division of Smith International, Inc.

ESSO EXPLORATION
BARRACOUTA 5

BASS STRAIT
RIG: SOUTHERN CROSS

MEASURED DEPTH (M)	INCL ANGLE (DEG)	DRIFT AZIMUTH (DEG)	SUBSEA DEPTH (M)	TOTAL VERTICAL DEPTH	TOTAL RECTANGULAR COORDINATES (M)		VERTICAL SECTION (M)	CLOSURE DISTANCE (M)	CLOSURE AZIMUTH (DEG)	DOGLEG SEVERITY (DEG/30 M
1675.55	30.00	23.50	1424.74	1445.74	653.97 N	341.19 E	736.95	737.62	27.55	1.56
1704.42	28.50	23.00	1449.93	1470.93	666.93 N	346.75 E	750.95	751.69	27.47	1.58
1723.66	27.50	22.50	1466.92	1487.92	675.26 N	350.25 E	759.91	760.69	27.42	1.60
1752.53	25.75	23.00	1492.72	1513.72	687.19 N	355.25 E	772.75	773.58	27.34	1.83
1758.67	25.75	22.50	1498.25	1519.25	689.65 N	356.28 E	775.39	776.24	27.32	1.06
PROJECTED TO T.D.										
1770.00	25.75	22.50	1508.46	1529.46	694.20 N	358.17 E	780.27	781.15	27.29	0.00

BOTTOM HOLE CLOSURE: 781.15 Meters at 27 Degrees 17 Minutes 27 Seconds

SERVCO
Division of Smith International, Inc.

COMPANY : ESSO EXPLORATION LIMITED
LOCATION: BASS STRAIT
WELL NO : BARRACOUTA NO: 5
DATE : 11th FEBRUARY, 1985

Sii DATADRIL
Division of Smith International, Inc.

ESSO EXPLORATION
BARRACOUTA 5
BASS STRAIT
RIG: SOUTHERN CROSS
11TH FEB 1985

MAGNETIC MULTISHOT
13.5 DEG EAST TO GRID N.
PROPOSAL 030 DEG GRID.
R.K.B.E. 21M.

File Name: BARRA_5

*** RECORD OF SURVEY ***
Calculated by Sii DATADRIL's C.A.D.D.S. System

Radius of Curvature Method
All Angles are Decimal
Vertical Section Plane: 30.00 Degs

MEASURED DEPTH (M)	INCL ANGLE (DEG)	DRIFT AZIMUTH (DEG)	SUBSEA DEPTH (M)	TOTAL VERTICAL DEPTH	TOTAL RECTANGULAR COORDINATES (M)		VERTICAL SECTION (M)	CLOSURE DISTANCE (M)	CLOSURE AZIMUTH (DEG)	DOGLEG SEVERITY (DEG/30 M
0.00	0.00	0.00	-21.00	0.00	0.00 N	0.00 E	0.00	0.00	0.00	0.00
201.00	0.00	0.00	180.00	201.00	0.00 N	0.00 E	0.00	0.00	0.00	0.00
225.37	.50	263.00	204.37	225.37	.01 S	.11 W	-.06	.11	263.00	.62
253.13	2.00	13.50	232.12	253.12	.57 N	.45 W	.10	.58	309.63	2.40
280.89	4.00	35.00	259.84	280.84	1.69 N	.14 E	1.53	1.69	4.38	2.44
308.64	6.50	33.00	287.47	308.47	3.79 N	1.56 E	4.07	4.10	22.40	2.71
318.26	7.50	31.00	297.02	318.02	4.79 N	2.18 E	5.24	5.26	24.53	3.21
347.09	10.00	27.50	325.51	346.51	8.61 N	4.33 E	9.62	9.64	26.68	2.66
375.93	12.50	24.50	353.80	374.80	13.67 N	6.79 E	15.23	15.26	26.43	2.67
404.77	15.50	25.00	381.78	402.78	20.00 N	9.71 E	22.18	22.24	25.90	3.12
433.60	17.75	27.50	409.40	430.40	27.40 N	13.36 E	30.41	30.49	26.00	2.46
462.44	20.00	28.00	436.69	457.69	35.66 N	17.71 E	39.73	39.81	26.41	2.35
491.28	22.50	26.50	463.57	484.57	44.95 N	22.49 E	50.17	50.26	26.58	2.66
520.11	24.00	24.00	490.05	511.05	55.24 N	27.35 E	61.51	61.64	26.34	1.37
548.95	26.50	26.00	516.14	537.14	66.39 N	32.54 E	73.77	73.94	26.11	2.75
577.79	28.75	25.50	541.69	562.69	78.43 N	38.35 E	87.10	87.31	26.06	2.33
606.63	31.50	26.00	566.63	587.63	91.47 N	44.64 E	101.54	101.78	26.01	2.87
635.46	33.75	24.00	590.91	611.91	105.55 N	51.21 E	117.02	117.32	25.88	2.63
664.30	34.75	25.50	614.75	635.75	120.29 N	58.00 E	133.18	133.55	25.74	1.36
693.14	35.75	26.50	638.30	659.30	135.25 N	65.30 E	149.78	150.19	25.77	1.23
721.97	36.50	27.00	661.59	682.59	150.43 N	72.95 E	166.75	167.19	25.87	.84

ENCLOSURES

PE903929

This is an enclosure indicator page.
The enclosure PE903929 is enclosed within the container PE902441 at this location in this document.

The enclosure PE903929 has the following characteristics:

ITEM_BARCODE	= PE903929
CONTAINER_BARCODE	= PE902441
NAME	= Barracouta-5 Structural Cross Section A-A'
BASIN	= GIPPSLAND
PERMIT	= VIC/L1
TYPE	= WELL
SUBTYPE	= CROSS_SECTION
DESCRIPTION	= Barracouta-5 Structural Cross Section A-A' (Enclosure 1 from Volume 2 of Well Completion Report)
REMARKS	=
DATE_CREATED	= 31/08/86
DATE_RECEIVED	= 19/01/87
W_NO	= W895
WELL_NAME	= Barracouta-5
CONTRACTOR	=
CLIENT_OP_CO	= Esso Exploration and Production Australia Inc

(Inserted by DNRE - Vic Govt Mines Dept)

PE902442

This is an enclosure indicator page.
The enclosure PE902442 is enclosed within the container PE902441 at this location in this document.

The enclosure PE902442 has the following characteristics:

ITEM_BARCODE	= PE902442
CONTAINER_BARCODE	= PE902441
NAME	= Structure Map top of Latrobe Group Coarse Clastics
BASIN	= GIPPSLAND
PERMIT	=
TYPE	= SEISMIC
SUBTYPE	= HRZN_CONTR_MAP
DESCRIPTION	= Structure Map top of Latrobe Group Coarse Clastics
REMARKS	=
DATE_CREATED	= 31/01/1986
DATE_RECEIVED	= 31/10/1986
W_NO	= W895
WELL_NAME	= Barracouta-5
CONTRACTOR	= ESSO
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE902443

This is an enclosure indicator page.
The enclosure PE902443 is enclosed within the container PE902441 at this location in this document.

The enclosure PE902443 has the following characteristics:

ITEM_BARCODE	= PE902443
CONTAINER_BARCODE	= PE902441
NAME	= Structure Map top of Latrobe Group Coarse Clastics
BASIN	= GIPPSLAND
PERMIT	=
TYPE	= SEISMIC
SUBTYPE	= HRZN_CONTR_MAP
DESCRIPTION	= Structure Map top of Latrobe Group Coarse Clastics
REMARKS	=
DATE_CREATED	= 31/01/1986
DATE_RECEIVED	= 31/10/1986
W_NO	= W895
WELL_NAME	= Barracouta-5
CONTRACTOR	= ESSO
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE902444

This is an enclosure indicator page.
The enclosure PE902444 is enclosed within the container PE902441 at this location in this document.

The enclosure PE902444 has the following characteristics:

ITEM_BARCODE	= PE902444
CONTAINER_BARCODE	= PE902441
NAME	= Structure Map Lower Naserus Seismic Marker
BASIN	= GIPPSLAND
PERMIT	=
TYPE	= SEISMIC
SUBTYPE	= HRZN_CONTR_MAP
DESCRIPTION	= Structure Map Lower Naserus Seismic Marker
REMARKS	=
DATE_CREATED	= 31/01/1986
DATE_RECEIVED	= 19/01/1987
W_NO	= W895
WELL_NAME	= Barracouta-5
CONTRACTOR	= ESSO
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE902445

This is an enclosure indicator page.
The enclosure PE902445 is enclosed within the container PE902441 at this location in this document.

The enclosure PE902445 has the following characteristics:

ITEM_BARCODE	= PE902445
CONTAINER_BARCODE	= PE902441
NAME	= Structure Map M.diversus Seismic Marker
BASIN	= GIPPSLAND
PERMIT	=
TYPE	= SEISMIC
SUBTYPE	= HRZN_CONTR_MAP
DESCRIPTION	= Structure Map M.diversus Seismic Marker
REMARKS	=
DATE_CREATED	= 31/01/1986
DATE_RECEIVED	= 19/01/1987
W_NO	= W895
WELL_NAME	= Barracouta-5
CONTRACTOR	= ESSO
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE601192

This is an enclosure indicator page.
The enclosure PE601192 is enclosed within the container PE902441 at this location in this document.

The enclosure PE601192 has the following characteristics:

ITEM_BARCODE	= PE601192
CONTAINER_BARCODE	= PE902441
NAME	= Grapholog Mudlog
BASIN	= GIPPSLAND
PERMIT	=
TYPE	= WELL
SUBTYPE	= MUD_LOG
DESCRIPTION	= Grapholog Mudlog
REMARKS	=
DATE_CREATED	= 04/02/1985
DATE_RECEIVED	= 19/01/1987
W_NO	= W895
WELL_NAME	= Barracouta-5
CONTRACTOR	= ESSO
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE601194

This is an enclosure indicator page.
The enclosure PE601194 is enclosed within the container PE902441 at this location in this document.

The enclosure PE601194 has the following characteristics:

ITEM_BARCODE	= PE601194
CONTAINER_BARCODE	= PE902441
NAME	= Well Completion Log
BASIN	= GIPPSLAND
PERMIT	=
TYPE	= WELL
SUBTYPE	= COMPOSITE_LOG
DESCRIPTION	= Well Completion Log
REMARKS	=
DATE_CREATED	= 10/02/1985
DATE_RECEIVED	= 19/01/1987
W_NO	= W895
WELL_NAME	= Barracouta-5
CONTRACTOR	= ESSO
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)