TEXT

PEP 107

WRIXONDALE No.1

WELL COMPLETION REPORT

GIPPSLAND BASIN

BEACH PETROLEUM N.L.

A. TABASSI

1986

W919

BEACH PETROLEUM N.L.

(Incorporated in South Australia)

WRIXONDALE NO. 1 WELL COMPLETION REPORT
Vol 1

BY: BEACH PETROLEUM N.L.
A. TABASSI

MARCH 1986

TEXT

WCR vol. 1
Wrixondale-1
(W919)

W919

BEACH PETROLEUM N.L.

WRIXONDALE NO. 1

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PEP 107

GIPPSLAND BASIN, VICTORIA

BY: A. TABASSI,

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CONTENTS

FIGURES

APPENDICES

ENCLOSURES

SUMMARY

Wrixondale No. 1 was drilled as a wildcat exploration well in the PEP 107, Gippsland Basin, Victoria, approximately 40 km north west of Sale.

Drilling commenced on the 12th October 1985 and reached a total depth of 987.3 m (KB) on the 18th October 1985.

Participants in the well were Beach Petroleum N.L. (Operator), Gas and Fuel Exploration N.L., Australian Oil and Gas Corp. Ltd., TCPL Resources Ltd., Pan Pacific Petroleum N.L. and Lasmo Energy Australia Ltd.

The principal target horizon was the sand units within the Latrobe Group sediments.

The objective proved to be porous but water saturated.

Minor hydrocarbon shows were encountered at the top of the principal target where DST No. 2 recovered 19 barrels of slight to moderately gas - cut formation water.

Prior to abandonment one wireline logging run comprising the DLL/MSFL, BHC/GR, LDL/CNL, CST and a WST was completed.

Wrixondale No. 1 was plugged and abandoned as a dry hole on the 19th October 1985.

1. INTRODUCTION

The Wrixondale prospect was identified by interpretation of the GB83A Bengworden Seismic Survey and subsquently confirmed by the BD85 Bengworden Detail Seismic Survey.

The structure was seismically defined as a small closure at the "Near Base Lakes Entrance Formation". The prospect is located to the south of the Lamana Trend; a structural/stratigraphic feature which trends north east to south west. Hydrocarbons were postulated to have been generated and to have migrated from the more deep seated Latrobe Group sediments up into the Lamana Trend via a number of prominent faults.

The prediction of the nature of reservoir and seal rocks was largely based on Duck Bay No. 1, drilled 15 km to the north east by Woodside (Lakes Entrance) Oil Company N.L. and Arco Ltd. in 1964 and Bengworden South No. 6 drilled 10 km to the south west by the Victorian Government in 1976. Reference was also made to the number of Government water bores in the area, in particular Goon Nure No. 9, drilled 12 km to the north east.

The well was designed as a test of the sand bodies within the Tertiary Latrobe Group sediments.

2. WELL HISTORY

2.1 Location (See Figure 1)

Co-ordinates:	Latitude: 37° 59' 42.8" S Longitude: 147° 29' 48.1" E
Geophysical Control:	Line GB 83A-26, Shot Point 230 (Approx. 100 m west), Bengworden Seismic Survey, Beach Petroleum N.L.
Real Description Description:	Parish of Goon Nure Shire of Bairnsdale County of Tangil

2.2 General Data (See Figure 2)

Well Name & Number:	Wrixondale No. 1, PEP 107
Operator:	Beach Petroleum N.L., 685 Burke Road, CAMBERWELL, VIC., 3124.
Participants:	Beach Petroleum N.L., 685 Burke Road, CAMBERWELL, VIC., 3124.
	Gas & Fuel Exploration N.L., 171 Flinders Street, MELBOURNE, VIC., 3000.
	Australian Oil & Gas Corp. Ltd., Suite 1302, 388 George Street, SYDNEY, N.S.W., 2000.

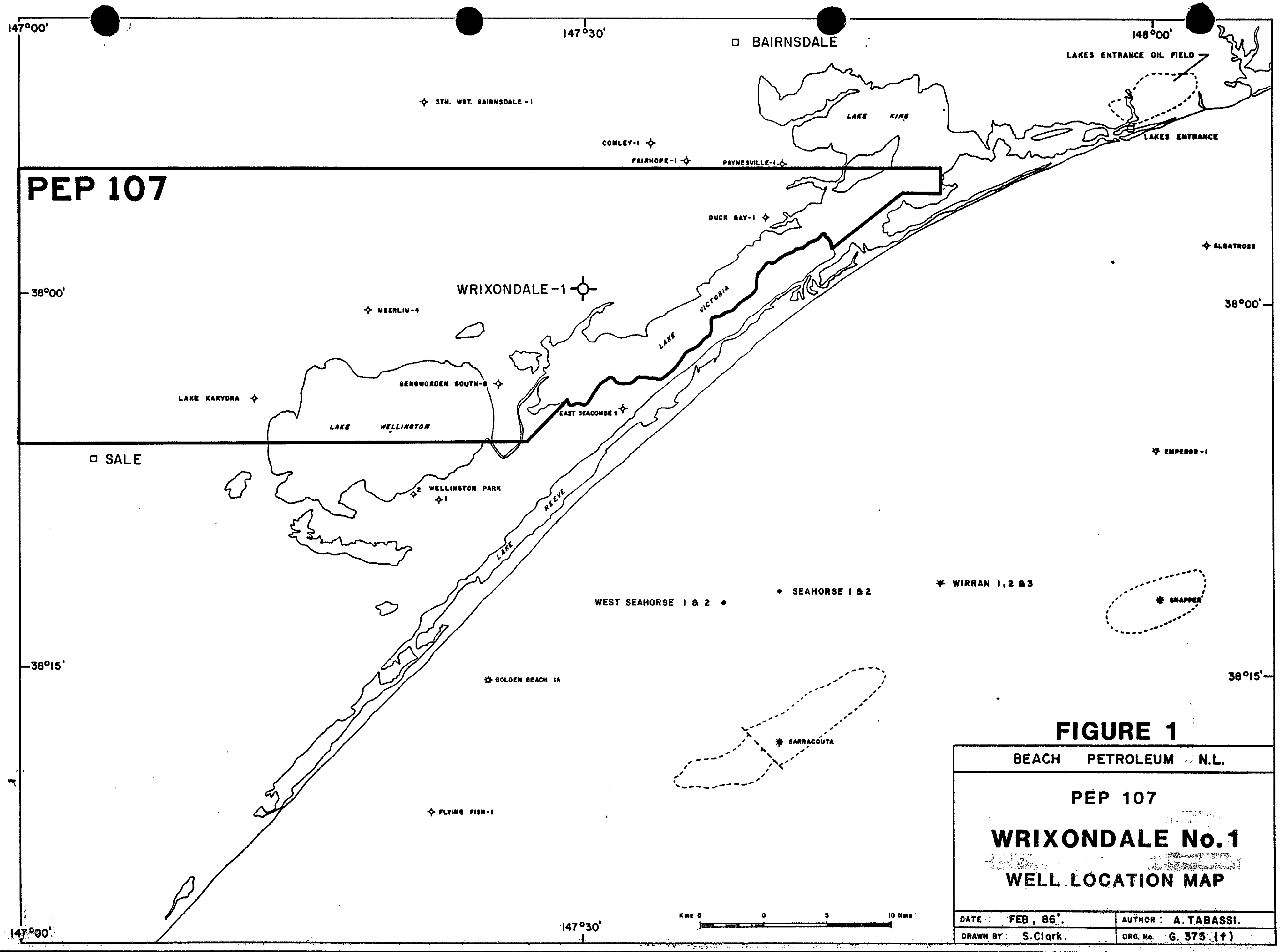
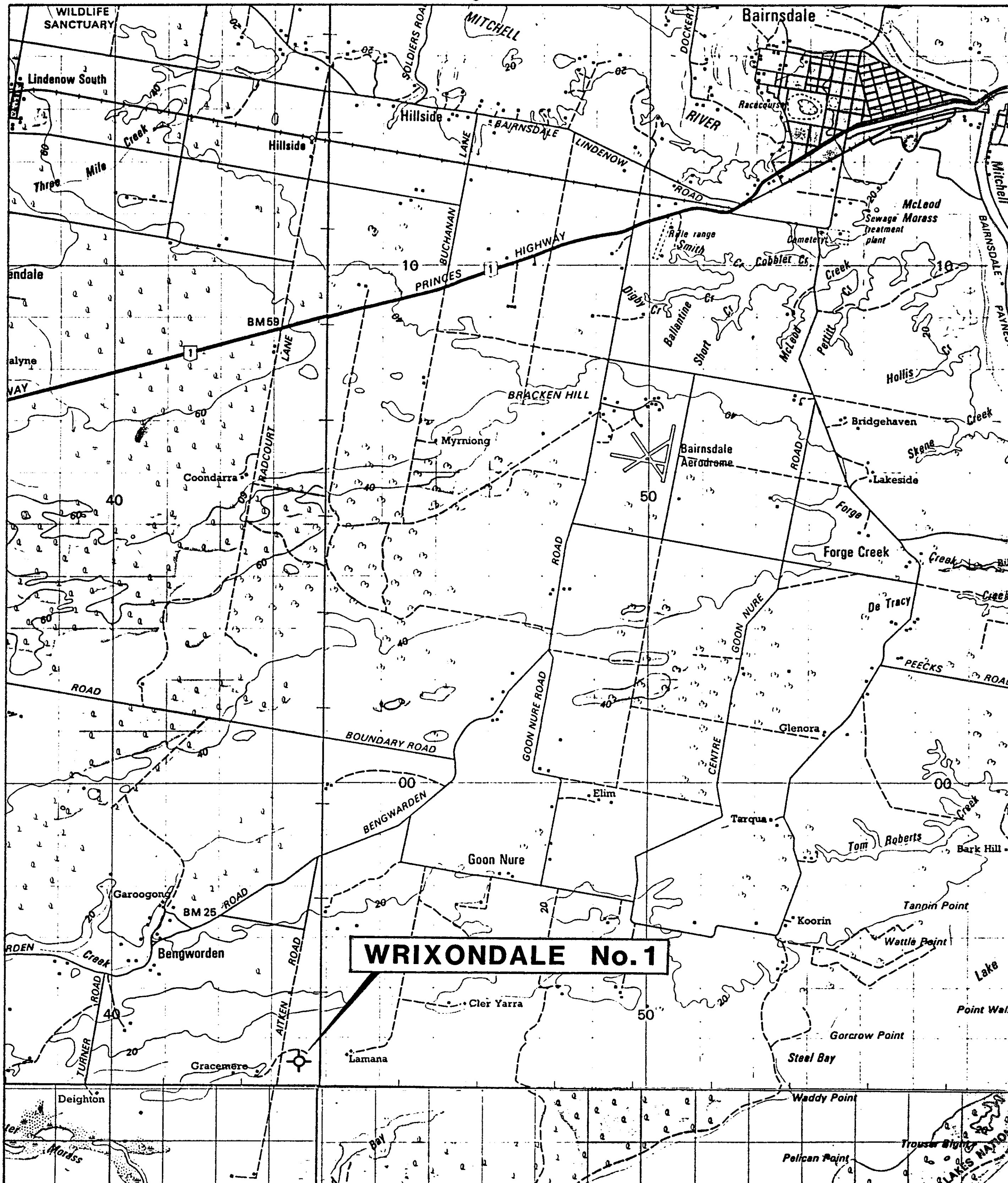
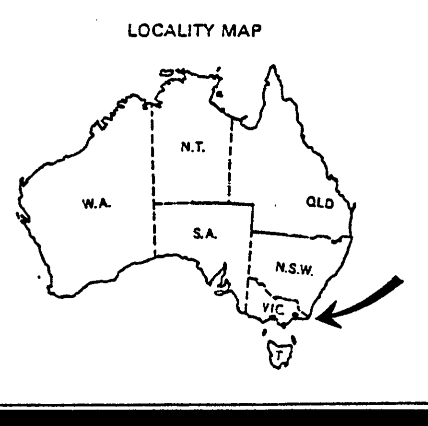


FIGURE 1

BEACH PETROLEUM N.L.	
PEP 107	
WRIXONDALE No. 1	
WELL LOCATION MAP	
DATE: FEB, 86'.	AUTHOR: A. TABASSI.
DRAWN BY: S. Clark.	DRG. No. G. 375 (f)





BEACH PETROLEUM N.L.

PEP 107

GIPPSLAND BASIN, VICTORIA

WRIXONDALE No. 1

WELL LOCATION

km 1 0 1 2 3 4 5 km

FIGURE 2

TCPL Resources Ltd.,
6th Floor, Zurich House,
5 Blue Street,
NORTH SYDNEY, N.S.W., 2060.

Pan Pacific Petroleum N.L.,
5th Floor, 169 Miller Street,
NORTH SYDNEY, N.S.W., 2060.

Lasmo Energy Australia Ltd.,
15th & 16th Floors,
300 Queen Street,
BRISBANE, QLD., 4000.

Elevation:	Ground Level	22.20 m
	Kelly Bushing	26.20 m
	(Unless otherwise stated, all depths refer to K.B.)	
Total Depth:	Driller	987.30 m
	Logger	987.50 m

Date Drilling Commenced: 12th October 1985 @ 0430 hrs.

Date Total Depth Commenced: 18th October 1985 @ 0430 hrs.

Date Rig Released: 19th October 1985 @ 2130 hrs.

Drilling Time to Total Depth: 6 days

Status: Plugged and abandoned.

2.3 Drilling Data (See also Appendix 1 & 2)

2.3.1 Drilling Contractor

Atco - APM Drilling Pty. Ltd.,
33 Barfield Crescent,
ELIZABETH WEST, S.A., 5112.

2.3.2 Drilling Rig

Atco Rig No. 3

2.3.3 Casing Details

Conductor

A 20" conductor pipe was set @ 7 m K.B.

Surface Casing

Size:	$9^5/8$"
Weight:	36 lb/ft
Grade:	J-55
Connection:	STC
Centralizer:	One each @ 293 m, 275 m and 263 m.
Float Collar:	286.6 m
Shoe:	299.0 m
Cement:	Lead Slurry: 200 sacks Blue Circle Class "A" mixed with 2% Prehydrated gel. Tale Slurry: 225 sacks Blue Circle Class "A" neat.
Cemented to:	Surface
Method:	Displacement
Equipment:	Halliburton Skid Mounted Unit.

Cement Plugs

- Plug No. 1

  Interval: 810.0 - 750.0 m
  Cement: 66 sacks Class "A" neat
  Method: Balance
  Tested: No

- Plug No. 2

  Interval: 306.0 - 246.0 m
  Cement: 75 sacks Class "A" neat
  Method: Balance
  Tested: Tagged with 10,000 lb

- Plug No. 3

  Interval: Surface
  Cement: 25 sacks Class "A" neat
  Method: Hand mixed
  Tested: No

2.3.4 Drilling Fluid (See Appendix 3 for details)

- 12¼" Hole, 3.0 m to 302.0 m

  The well was spudded with water. A high viscosity Milgel pill was pumped when very coarse sandstone of the Sale Group was penetrated below 55.0 m. The viscosity was built up from native solids and no further Milgel was used. The following properties were maintained throughout this section:

  Mud Weight: 9.2 - 9.3 ppg
  Viscosity: 36 - 43 seconds

. <u>8½" Hole, 302.0 m to 987.3 m</u>

The 8½" hole was also drilled with water only. Due to the mud making nature of Gippsland Limestone and Lakes Entrance Formation, large diluation rates were required prior to penetrating Latrobe sands. Water loss was controlled below 700 m by adding CMC. The following properties were maintained throughout this section:

Mud Weight:	8.9 - 9.1 ppg
Viscosity:	35 - 44 seconds

2.3.5 Water Supply

Fresh water was obtained from a bore drilled by Beach Petroleum N.L. adjacent to the wellsite.

2.4 Formation Sampling and Testing

2.4.1 Cuttings

Cutting samples were collected at 10 metre intervals to 650 metres and at 5 metre intervals from 650 metres to T.D. Each sample was washed, oven dried, divided into four splits and stored in labelled polythene bags. Three complete sets were distributed as follows: one each for Beach Petroleum N.L., Gas and Fuel Exploration N.L. and the Victorian Government. One spare set was retained by Beach Petroleum N.L.

2.4.2 Cores

(a) No conventional coring operations were performed.

(b) Thirty sidewall cores were attempted prior to plugging and abandoning the well. Twenty-nine were recovered, one was left in the hole. Listed below are the depths and recovery of sidewall cores. (See Appendix 4 for descriptions).

SWC No.	Depth (m)	Recovery (mm)
1 V	980.0	40
2	965.0	35
3 VR	955.0	38
4 P	947.0	30
5	941.0	Nil
6 P	937.5	35
7 P	932.0	40
8 VRB	925.0	45
9 P	922.5	25
10	915.5	45
11	913.0	35
12 VR	910.5	30
13 P	898.0	32
14 P	888.5	34
15 P	886.5	40
16 P	882.5	35
17 RB	875.5	40
18	872.5	40
19 P	685.0	36
20 PB	854.0	52
21 P	834.0	35
22 P	825.0	37
23 PB	815.0	45
24 PD	801.0	40
25 VPB	795.0	50
26 RB	790.0	50
27 B	772.0	50
28 B	768.0	55
29	759.0	30
30 V	751.0	40

Note:

V Vitrinite Reflectance Data available, see Appendix 7.

P Petrological Data available, see Appendix 11.

D Determination of Presence of Hydrocarbons Data available, see Appendix 9.

B Biostratigrahpic Data available, see Appendix 10.

2.4.3 Tests

Two drill stem tests were performed (see Appendix 5 for details).

Drill Stem Test No. 1

Interval Tested:	777.0 m - 795.0 m
Formation Tested:	Latrobe
Test Type:	Open hole.
Packers Set At:	773.5 m and 777.0 m
Cusion:	304.8 m of water
Preflow:	15 minutes with a weak blow from the top of the bucket.
Initial Shut-in:	30 minutes
Second Flow:	45 minutes with a very weak blow decreasing to nil in 15 minutes.
Final Shut-in:	45 minutes

Pressures Recorded:

	Guage At 769 m	Gauge At 793.7 m
Initial Hydrostatic	1190 psi	1262 psi
Initial Flow (First)	368 psi	425 psi
Initial Flow (Final)	368 psi	458 psi
Initial Closed In	993 psi	1051 psi
Second Flow (First)	368 psi	490 psi
Second Flow (Final)	371 psi	490 psi
Final Closed In	993 psi	1034 psi
Final Hydrostatic	1174 psi	1230 psi

Recovery:	Drilling fluid only.
Assessment:	Charts indicate plugging of the anchor pipe perforations during both flow periods.

Drill Stem Test No. 2

Interval Tested:	799.0 m - 807.0 m
Formation Tested:	Latrobe
Test Type:	Open Hole
Packer Set At:	797.4 m and 799.0 m
Cusion:	304.8 m of water
Preflow:	No preflow was carried out.
Initial Shut-in:	-
Second Flow:	60 minutes with strong blow from bottom of bucket, decreased to moderate blow before shut-in.

Pressures Recorded:

	Gauge At 792.2 m	Gauge At 805.6 m
Initial Hydrostatic	1223 psi	1236 psi
Initial Flow (First)	534 psi	1067 psi
Initial Flow (Final)	780 psi	1132 psi
Initial Closed In	1108 psi	1138 psi
Final Hydrostatic	1223 psi	1246 psi

Recovery:	19 barrels (approx.) of slight to moderately gas - cut formation water reverse circulated (see Formation Water Analysis report in Appendix 11).
Assessment:	Charts indicate plugging of the anchor pipe perforation during the flow period. This appears to be due to unconsolidated nature of Latrobe sands.

2.5 Logging and Surveys

2.5.1 Mudlogging

A standard skid-mounted Exlog unit was used to provide penetration rate, continuous mud gas monitoring, intermittent mud and cuttings gas analysis, pump rate and mud volume data. The Masterlog is included as Enclosure 2.

2.5.2 Wireline Logging

Wireline logging was performed by Schlumberger Seaco Inc. using a Cyber Service Unit. One run was performed and details are listed below:

Dual Laterolog (DLL/SP/Cal/GR)	298.5 - 983.0 m
Micro-spherically focused log (MSFL)	650.0 - 983.0
Sonic Log (BHC/GR)	298.5 - 985.8 m
Litho-density/ Compensated Neutron Log (LDL/CNL/GR)	298.5 - 986.8 m

These logs are included as Enclosure 3.

2.5.3 Deviation Surveys

A Totco double recorder was used to measure hole deviation, the results of which are listed below:

Depth (m)	Deviation (o)	Depth (m)	Deviation (o)
32	3/4	303	1/4
66	1	489	0
103	1	671	3/4
158	0	983	3/4
234	3/4		

2.5.4 Velocity Survey

A velocity survey was carried out by Schlumberger Seaco Inc., the results of which are included as Appendix 6 and Enclosure 4.

3. RESULTS OF DRILLING

3.1 Stratigraphy

The following stratigraphic intervals have been delineated using penetration rate, cuttings analysis and wireline log interpretation. All formations were present as predicted, although some formation tops differ marginally from prognosis (see also Figure 3).

Group	Formation	Depth (K.B.)	Depth (Subsea)	Thickness
Sale		Surface	+22.2	116.0
Seaspray	Jemmy's Point	120.0	-93.8	40.0
	Tambo River	160.0	-133.8	20.0
	Gippsland Limestone	180.0	-153.8	449.0
	Lakes Entrance	629.0	-602.8	141.0
	Giffard Member	770.0	-743.8	13.5
Latrobe		783.5	-757.3	165.0
Strzelecki		948.5	-922.3	38.8+
	T.D.	987.3	-961.1	

3.2 Lithological Descriptions

SALE GROUP (Surface - 120.0 m)

Surface to 55.0 m
SANDY CLAYSTONE, light to medium yellowish brown, soft, sticky, dispersive in part, abundant fine to medium quartz sand grains, common multi-coloured lithics.

From 55.0 m - 120.0 m
SANDSTONE, light to medium grey, frosty to off white in part, loose, coarse to

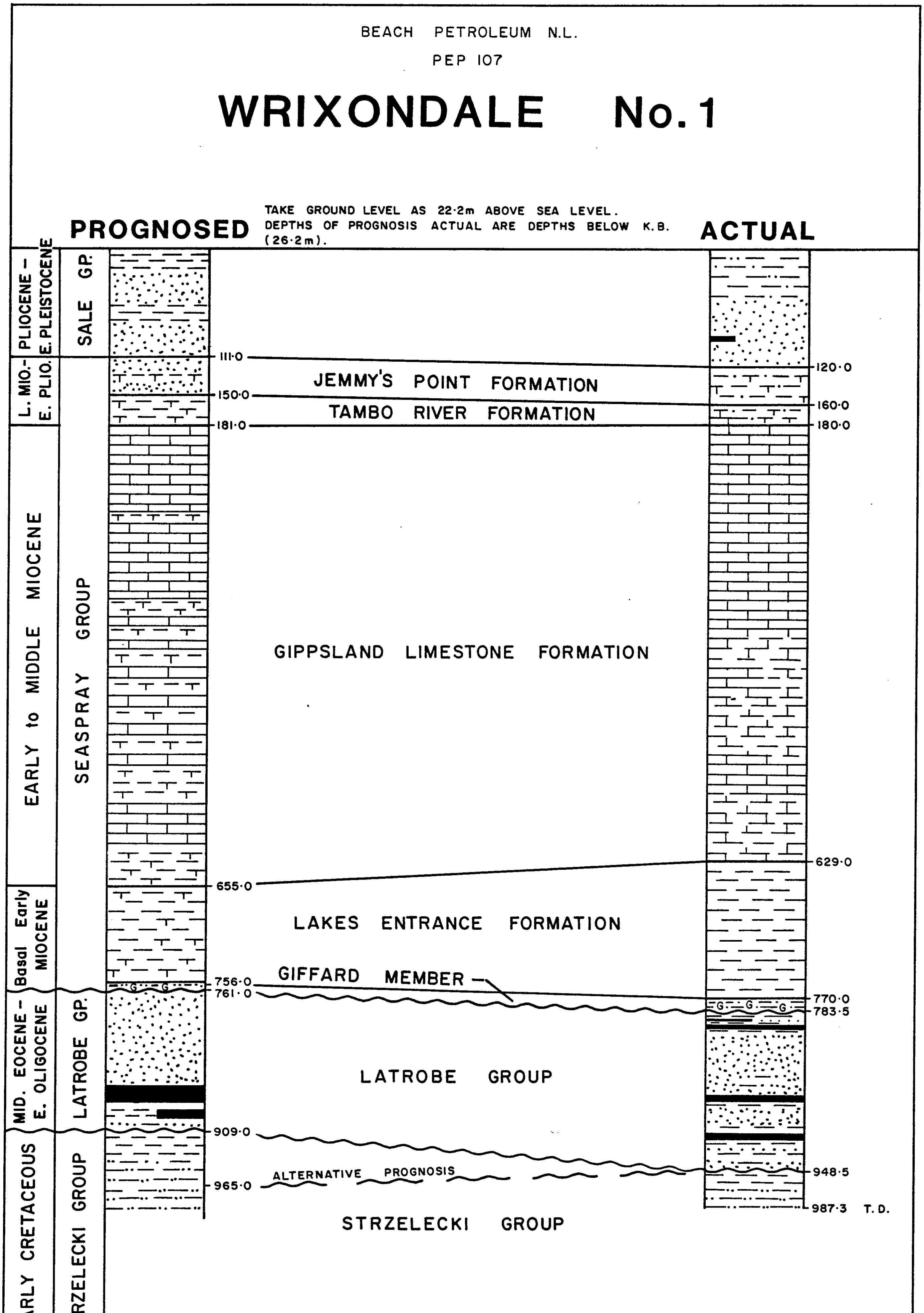

BEACH PETROLEUM N.L.
PEP 107
WRIXONDALE No. 1
TAKE GROUND LEVEL AS 22·2m ABOVE SEA LEVEL. DEPTHS OF PROGNOSIS ACTUAL ARE DEPTHS BELOW K.B. (26·2m).
PROGNOSED
ACTUAL
PLIOCENE - E. PLEISTOCENE
SALE GP.
L. MIO.- E. PLIO.
EARLY to MIDDLE MIOCENE
SEASPRAY GROUP
Basal Early MIOCENE
MID. EOCENE - E. OLIGOCENE
LATROBE GP.
EARLY CRETACEOUS
STRZELECKI GROUP
111·0
120·0
JEMMY'S POINT FORMATION
150·0
160·0
TAMBO RIVER FORMATION
181·0
180·0
GIPPSLAND LIMESTONE FORMATION
629·0
655·0
LAKES ENTRANCE FORMATION
756·0
761·0
GIFFARD MEMBER
770·0
783·5
LATROBE GROUP
909·0
ALTERNATIVE PROGNOSIS
948·5
965·0
987·3 T.D.
STRZELECKI GROUP

FIGURE 3

pebble size becoming conglomeratic at base, dominantly very coarse, subrounded to rounded moderate to well sorted quartz, abundant multi-coloured lithics, trace mica, excellent visual porosity, with minor COAL, black, firm earthy, argillaceous in part.

SEASPRAY GROUP (120.0 m - 783.5 m)

Jemmy's Point Formation

120.0 to 160.0 m
MARL, medium to dark grey, soft, sticky, dispersive, extremely fossiliferous, trace fine carbonaceous detritus, trace fine quartz sand grains.

Tambo River Formation

160.0 - 180.0 m
MARL, light grey, medium grey in part, soft to firm, dispersive in part, extremely fossiliferous, moderately silty to very fine sandy, trace carbonaceous detritus, trace mica and lithic fragment.

Gippsland Limestone Formation

180.0 to 629.0 m
CALCARENITE, light o medium grey, light greyish brown in part, friable to firm, loose in part, very fine to fine becoming fine to medium with depth, trace light grey, dispersive clay matrix in part, common fine quartz sand grains and minor lithics, becoming silty with depth, trace carbonaceous detritus, abundantly fossiliferous, fair visual porosity, in part grading into COQUINA, light to medium grey, loose very coarse fossil fragment, excellent visual porosity. Calcarenite

grading into/interbedded with; MARL, light to medium grey, soft, sticky, very dispersive, trace glauconite, common fossil fragment, trace forams, trace silt and fine quartz sand grains.

Lakes Entrance Formation 629.0 to 770.0 m

CLAYSTONE, medium greyish green, light to medium brownish grey in part, soft to firm, slightly dispersive, subfissile to fissile in part, blocky in part, slightly silty and/or sandy in part, trace glauconite, trace fine multi-coloured lithic fragment, trace fossil fragment and foram, trace pyrite, trace recrystalline dolomite, rare limonite and/or hematite at the top, rare very light yellow, transparent resin towards the base, interbedded/interlaminated with minor MARLY CLAYSTONE, light orange grey, friable to firm, fine to coarse, recrystalline in part, trace brown dolomite, trace light to medium grey dispersive clay matrix.

Giffard Member 770.0 to 783.5 m

GLAUCONITIC CLAYSTONE, light to medium brownish grey, light greenish grey in part, firm, sticky in part, massive, abundant fine to coarse, very coarse in part, light to dark green glauconite pellets, trace to common cryptocrystalline pyrite, trace micromica, trace dark grey lithics, rare medium to coarse well rounded quartz grains.

LATROBE GROUP

783.5 - 948.5 m

From 783.5 to 799.5 m

CLAYSTONE, light olive grey to light brownish grey, firm, soft in part slightly calcareous, subfissile to fissile, trace coal particle and carbonaceous detritus, trace very fine lithics and quartz sand grains, trace micromica, trace pyrite, rare glauconite (?) and/or chlorite interbedded with COAL, dark brown, dark brown to black in part, firm, slightly argillaceous in part, subfissile in part, subconchoidal fracture in part, dull and earthy lustre, trace pyrite.

From 799.5 to 862.0

SANDSTONE, very light grey to off white light to medium greyish brown in part, friable to loose, very fine to very coarse, pebble size in part, dominantly medium, subangular to subrounded, moderately sorted quartz, trace white to light grey clay matrix, trace calcite cement, rare silica cement, trace glauconite (?) at the top, trace disseminated pyrite in glauconite (?) at the top, trace lithic and coal fragment, good visual porosity, interbedded at the base with minor CLAYSTONE, as per 783.5 to 799.5 m.

From 862.0 to 948.5 m

SANDSTONE, as per 779.5 to 868.5 becoming extremely coarse to pebbly at the base, interbedded with COAL, dark brown, very dark brown to black, firm, hard in part, brittle, massive, subfissile in part, earthy luster, subconchoidal fracture in part. The sandstone also interbedded with CLAYSTONE, medium to dark brownish grey, very dark grey in part, firm to hard, subfissile to fissile, moderately micromicaceous, slightly carbonaceous, trace fine lithic and quartz sand grains, grading in part to SILTSTONE, medium to dark brownish grey, in part becoming white to very light grey and light greenish grey towards the base, firm, soft in part, moderately to strongly argillaceous, dispersive in part, trace micromicaceous, trace carbonaceous detritus, trace fine lithic and quartz sand grains, rare pyrite.

STRZELECKI GROUP (948.5 - 987.3+ m)

948.5 to 987.3 m
CLAYSTONE, off white to light grey, pale greenish grey in part, soft, very dispersive, sticky, massive, trace to common disseminated pyrite, trace lithic, interbedded with SILTSTONE, white to light grey, light brownish grey and pale olive grey in part, firm to hard, moderately argillaceous in part, moderately micromicaceous, trace fine lithic and quartz sand grains, trace pyrite, towards the base interbedded with minor, SANDSTONE, light grey to light greenish grey, friable to firm, hard in part, very fine to fine, subangular to subrounded, moderately well sorted quartz and multi-coloured lithic, trace white to light grey clay matrix, trace partially altered feldspar, trace

biotite, rare muscovite, trace pyrite, rare fine carbonaceous detritus, rare hornblende (?), very poor to nil visual porosity.

3.3 Hydrocarbons

3.3.1 Mud Gas Readings

No significant background gas was noted until the first coal seam of the Latrobe group was penetrated at 787.0 m. From this depth a background gas of nil to 300 ppm C_1 was present to the top of the Strzelecki Group. These were associated with either coal seams and/or porous sandstones of the Latrobe Group with a high rate of penetration (maximum up to 500 metres per hour).

The background gas died out completely from the top of the Strzelecki Group to T.D.

3.3.2 Sample Fluorescence

The only oil fluorescence noted in this well was at the top of the major sand unit of the Latrobe Group at 799.6 m. The sandstone had 10% bright to moderate bright yellow calcite fluorescence, as well as 10% dull yellow pinpoint natural fluorescence with no cut or crush cut on wet or dry sample. The background total gas rose to a maximum of 2 units with 210 ppm C_1 only at 779.6 m.

The natural fluorescence gradually decreased to nil at 840.0 m (approximately).

4. GEOLOGY

4.1 Wrixondale Structure

The Wrixondale structure was delineated after intepretating the GB83A Bengworden Seismic Survey and subsequently refined by the BD85 Bengworden Detail Seismic Survey.

Wrixondale No. 1 was designed as a test of the porous sands of the Tertiary Latrobe Group. The structure was mapped as a small time and depth closure at the "Near Base Lakes Entrance Formation" (see Figure 4). The feature is located at the southern end of NE-SW trending, Lamana structural/stratigraphic Trend. The main component of the Wrixondale feature was interpreted to be stratigraphic and consists of a late formed sand body developed along the seismically defined NW trending Lamana Trend.

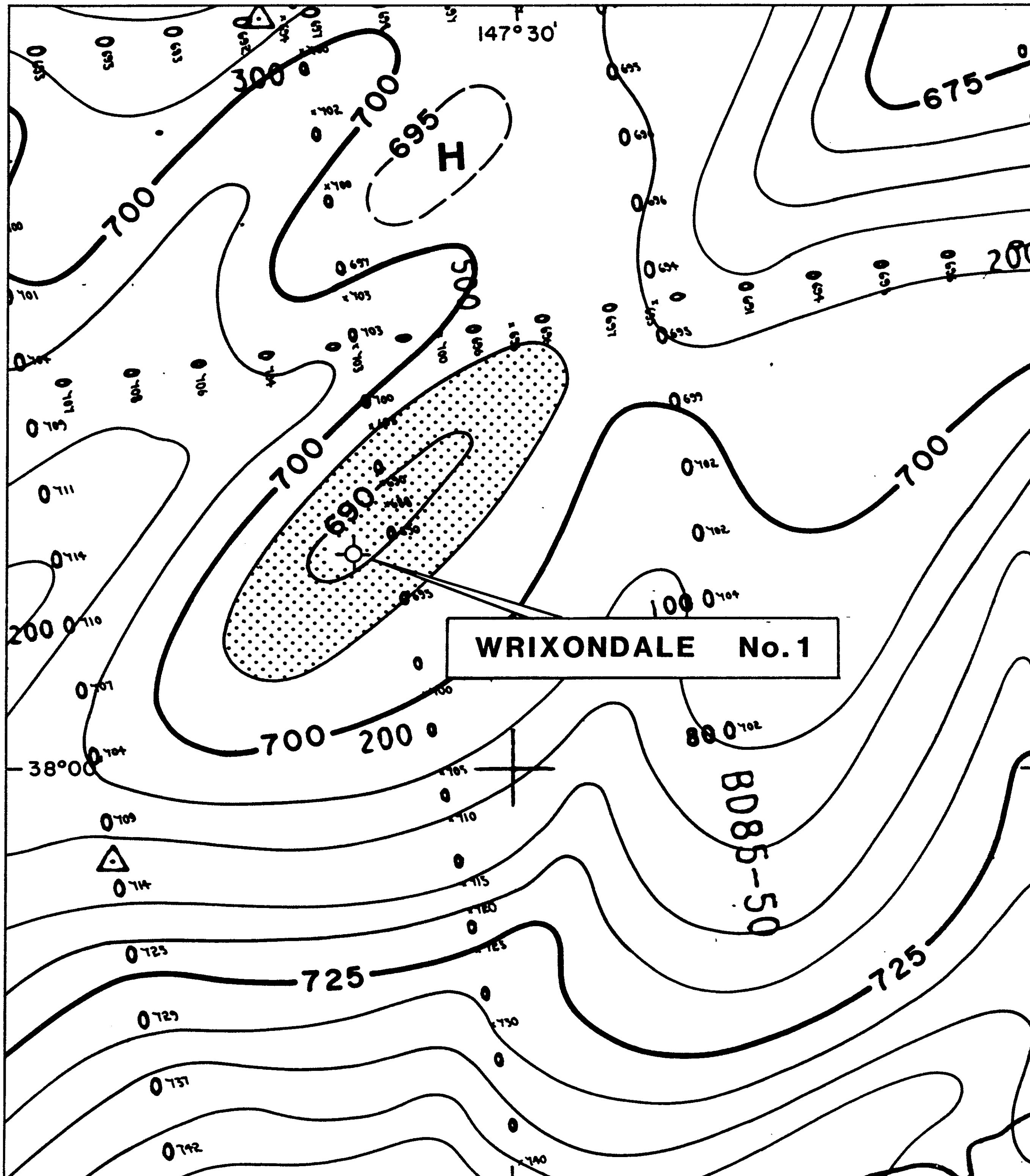
Drilling of Wrixondale No. 1 did not confirm or deny the validity of the structure. However, the lack of hydrocarbons in this well may suggest that the structure was not sealed properly.

Wrixondale No. 1 was drilled at 100 m west of Shot Point 230, Line GB 83A-26 to test the highest point of a depth mapped structure (see Figure 5) with the area of closure of 0.25 km^2 and vertical relief of 8 m.

4.2 Maturation and Source Rock Analysis

Vitrinite reflectance estimates (Rv maximum) and total organic carbon analysis (TOC) were carried out on three cutting and six sidewall core samples. Also six sidewall core samples were analysed using the Rock-Eval pyrolysis technique. Results of these two analysis are in Appendices 7 and 8.

As can be seen from Figure 6, the Rv maximum of the Seaspray Group samples range between 0.29% and 0.35%. This confirms that the



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PEP 107

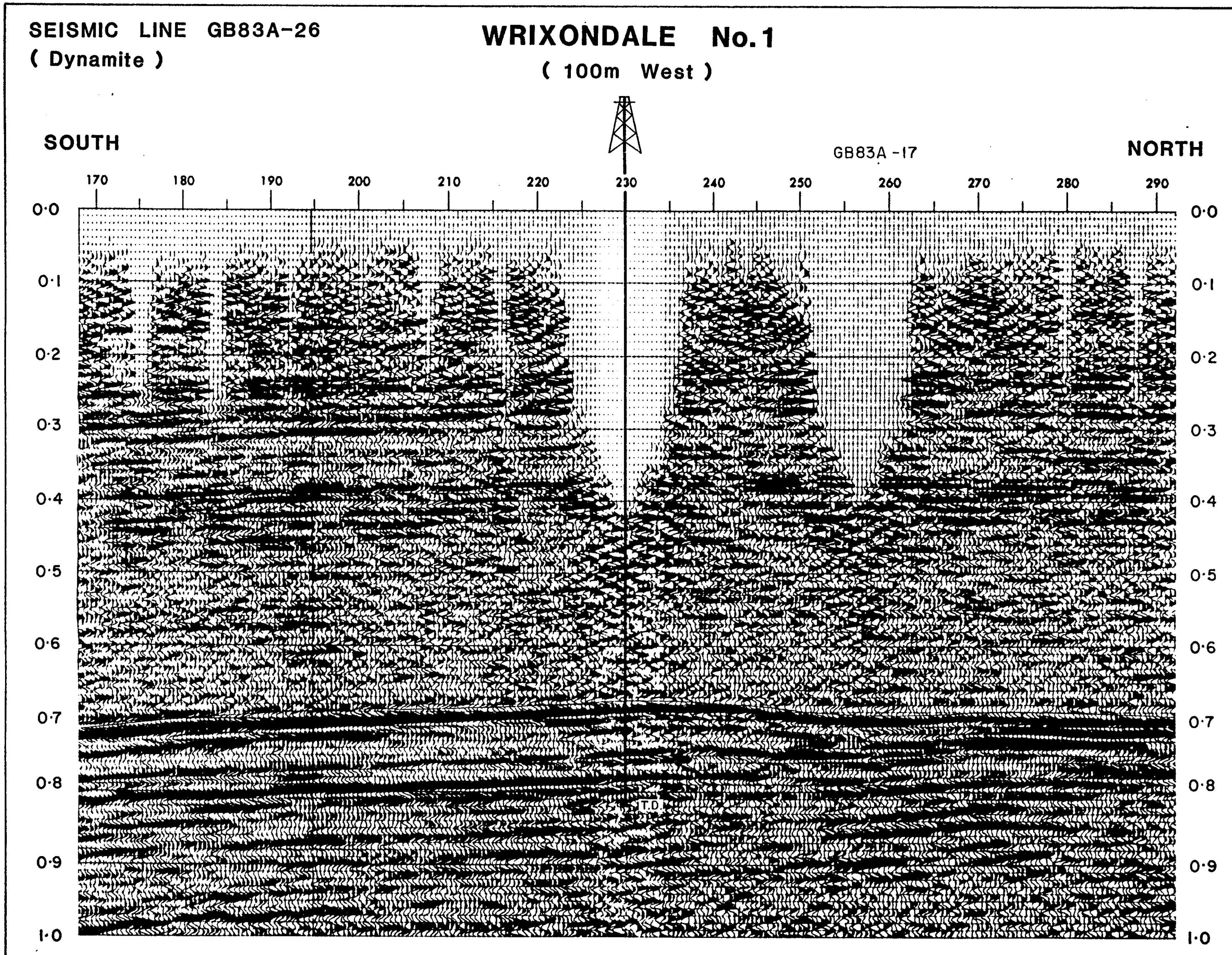
WRIXONDALE No. 1

TIME STRUCTURAL MAP

NEAR BASE LAKES ENTRANCE FORMATION

CONTOUR INTERVAL : 5 msec **SCALE 1 : 12,500**

FIGURE 4



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PEP 107

LOCATION OF WRIXONDALE No.1 ON SEISMIC LINE

FIGURE 5

sediments of the mid-Tertiary sequence at the Wrixondale No. 1 are immature and could not be expected to have generated any hydrocarbons at this depth. Furthermore, the scarcity of the dispersed organic matter and very low total organic carbon in this interval are all indicative of a very poor to non potential source rock.

The Rv maximum of Latrobe Group samples range between 0.31% and 0.38% which indicates that this section is also immature. However its relative high TOC content and the right type of dominant maceral ranks the Latrobe Group sediments as a potential oil and gas prone source rock. By extrapolation, the Rv maximum of 0.9% to 1.0%, ie. the peak of maximum liquid hydrocarbon generation, would be reached at the depth of 1800m to 2000 m. This would certainly be achieved immediately offshore and possibly also in the Lake Wellington Depression, a minimum distance of 12 km to the south west. The presence of natural fluorescence at the top of the upper sand unit in this group (see 3.3.2) and weak brown and brilliant green oil fluorescence observed in the sidewall cores (see Appendix 7 for details) as well as the presence of minor extractable hydrocarbon in SWC No. 24 (see Appendix 9 for details) can all be attributed to the presence of migrated (residual) hydrocarbons.

The limited Strzelecki Group sediments drilled appear to be on the onset of thermal maturation. However, they have a low TOC content and have inertinite as their dominant maceral with exinite and vitrinite being sparse to rare. This sedimentary group as intersected can only be ranked as very poor to poor source rock. The presence of the "rare green fluorescing? oil droplets in setting medium" (see Appendix 7 for details) can only be due to minor in-situ generation within the claystone and/or siltstone of the Strzelecki Group sediments.

The Rv trend indicates that an unconformity exists between Strzelecki and overlying Latrobe Groups.

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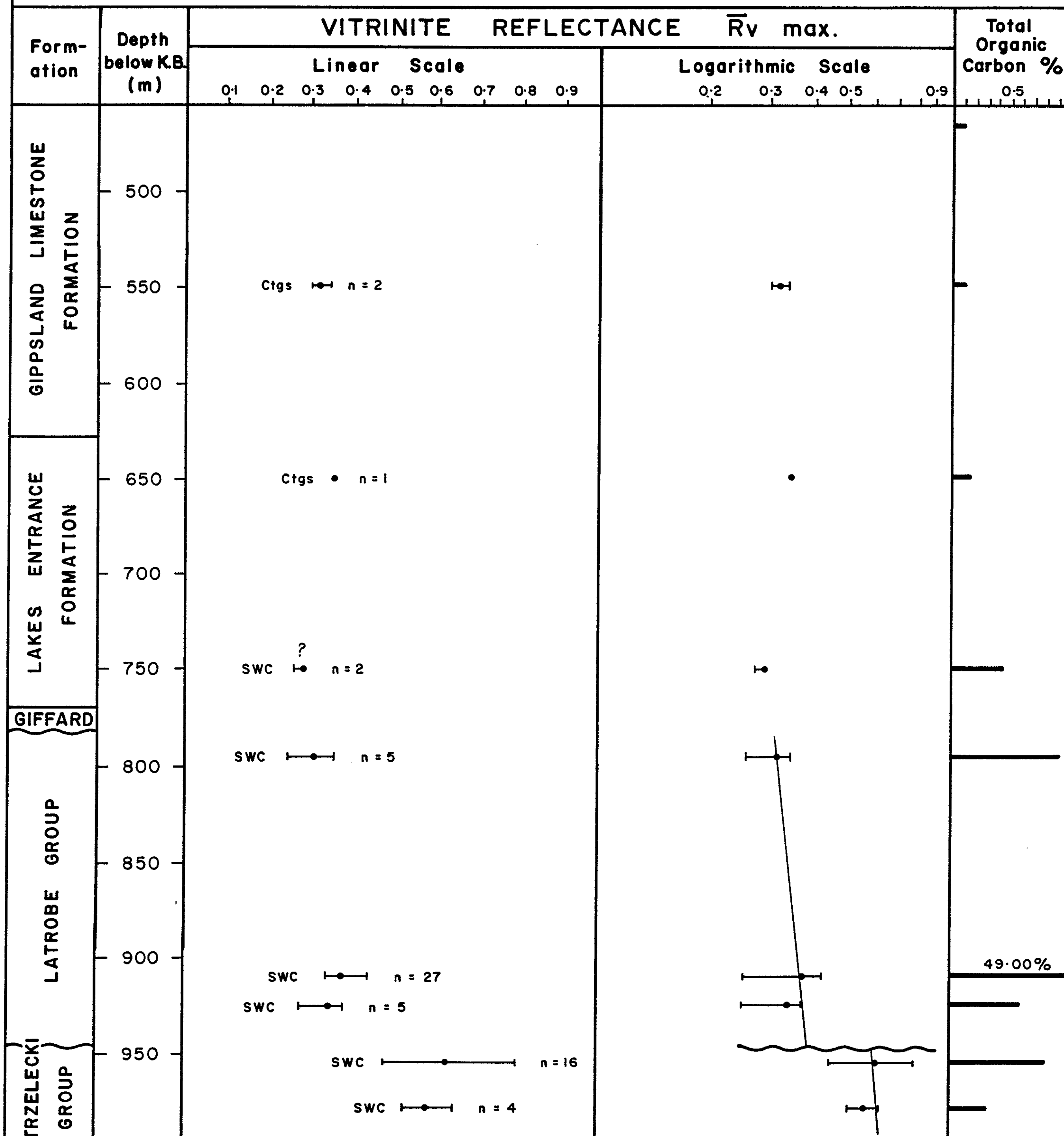
PEP 107

WRIXONDALE No. 1

VITRINITE REFLECTANCE AND TOTAL ORGANIC CARBON PROFILE



n = 5 Rv max. and range.

n = 5 Number of vitrinite particles.

Ctgs Cutting sample.

SWC Sidewall core.

FIGURE 6

G 376

4.3 Relevance to Occurrence of Hydrocarbons

Wrixondale No. 1 was plugged and abandoned as a dry hole. The primary target of the Tertiary Latrobe Group appeared to be water wet although hydrocarbon indications were noted at the top of the sand unit.

DST No. 2 is considered to be a valid test of the top of the sand unit of the Latrobe Group sediments although no significant hydrocarbons were recovered from the test.

Listed below are some considerations for future hydrocarbon exploration in the area:

1. The Giffard Member of the Lakes Entrance Formation appears to be a glauconitic claystone in composition. Visual estimation under binocular microscope revealed that sand grains (quartz and glauconite pellets) constitute less than 50% of the lithology. As a result, the term "Glauconitic Sandy Claystone" for the Giffard Member at Wrixondale No. 1 is considered to be more appropriate than "Glauconitic Sandstone".

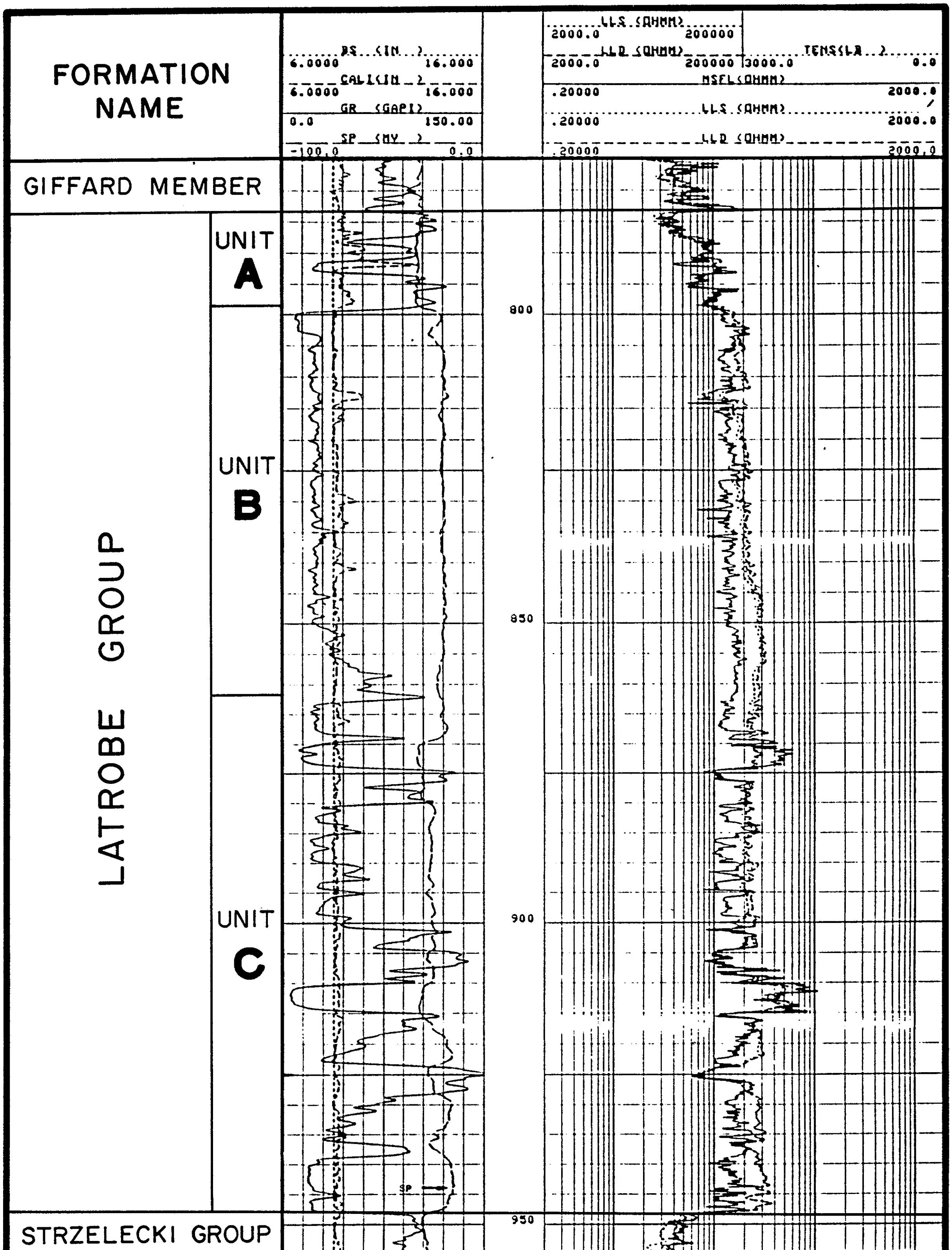
2. The Latrobe Group sediments are tentatively subdivided to three units at Wrixondale No. 1 (see Figure 7). These are:

   Unit A. Top coal measure from 783.5 to 799.5 m and consists of coal and claystone.

   Unit B. Upper sand unit from 799.5 to 862.0 m and consists of an almost uninterrupted porous sand body.

   Unit C. Lower unit from 862.0 to 948.5 m including two more coal measures and a number of individual sand bodies.

3. Provisional wireline log correlation between Wrixondale No. 1 and neighbouring (both exploration and government) wells



BEACH PETROLEUM N.L

PEP 107

WRIXONDALE No. 1

LATROBE GROUP WIRELINE LOG RESPONSE

FIGURE 7

revealed that the upper sand body (Unit B) of the Latrobe Group can be recognised further away from the Wrixondale No. 1 location in both basinwards and basin margin directions. The relatively rapid thinning of this unit towards the basin margin is also recognizable.

4. Due to lateral changes of environment of deposition, hence the change in lithofacies, the top coal measure (Unit A) in Wrixondale No. 1 can not be correlated with other wells on the basis of wireline log response. However biostratigraphic studies suggest that this unit of the Wrixondale No. 1 well can be chronostratigraphically correlated with the uppermost sandstone/claystone section of the Latrobe Group sediments in the Paynesville No. 1 (see Appendix 10 for details).

5. The wireline log response of the upper sand body (Unit B) appears to resemble the "flower pot profile" of a thick section of a barrier bar with its typical transitional base (bar foot) and abrupt top (see Figure 7). It may then be inferred that Unit A could be a lagoonal facies developed behind a seaward continuation of this barrier. These may suggest a barrier bar complex as an environment of deposition for the Latrobe Group sediments represented by Units A and B. The lack of any suggestion of marine conditions does slightly downgrade this inference.

   The environment of deposition of Unit C can be considered as also associated in someway with a basinward barrier development or it could be a typical Latrobe Group non marine coal measure section.

   In the absence of more convincing data, such as conventional core and/or a dipmeter log, it is not possible to elaborate on the environment of deposition any further. On the other hand the "low energy environment" and "non-marine environment" suggested by petrological reports respectively (see Appendices

10 and 11) should not be taken as being against the proposed model of the barrier bar complex. This is because the sediments of the barrier bar complex are so diverse that both marine and non-marine as well as low and high energy environments can exist within the complex.

6. The upper sand body of the Latrobe Group, the target horizons, exhibits excellent reservoir characteristics with the porosity, estimated from the wireline logs, between 20% and 37%. The 37% porosity was encountered in the uppermost section of Unit B which appears to be a reworked very clean sand section. DST No. 2 was conducted across this zone. However although the wireline logs indicate that the reservoir has very little to no clay content (see Cyberlook, Enclosure 3), petrological analysis indicates the presence of 15% - 35% clay matrix (see Appendix 11). It is possible that at least some of this clay content is due to contamination of samples during drilling and coring.

   The reservoir appears to be 100% water saturated.

7. The maturation profile obtained from Wrixondale No. 1 suggests that the only potential source rock is the fine sediments of the Latrobe Group which are thermally immature. This means any expected hydrocarbons have to migrate both laterally and vertically from elsewhere.

8. The presence of natural fluorescence at the top of the sand body and minor condensate-like hydrocarbon extracted from SWC No. 24 (see Appendix 9) can only be indicative of migrated hydrocarbon. Some of its properties can be compared with oil recovered in West Seahorse No. 1 (see Appendix 8).

9. It is not clear why the well was dry. Although the results of drilling did not confirm, or otherwise, the validity of the structure, it is still believed that a small structure

could be present near the base of the Lakes Entrance Formation. If this is the case the following should be considered factors contributing to lack of hydrocarbons in the reservoir:

(a) A block tilting in the area which appears to have happened after initial structuring. In this case the reservoir was depleted and/or flushed. The present feature is therefore a limited remnant of an old structure. The presence of minor hydrocarbon indications and the freshness of the formation water would support this hypothesis.

(b) The large distance between the reservoir and the source rock. If this is true, the presence of natural fluorescence in the cuttings and minor hydrocarbon extracted from the SWC No. 24 cannot, at the present time, be explained.

10. If the validity of structure is in doubt, then presence of minor hydrocarbons can be attributed to the intersection of an old migration path at the top of the upper sand unit of the Latrobe Group.

APPENDICES

APPENDIX 1

DETAILS OF DRILLING PLANT

DETAILS OF DRILLING PLANT

DRILLING RIG:

Trailer mounted Franks Cabot drilling rig
Mounted on a 12'8" wide x 47' long Goose Neck trailer
Tandem Rear Axles: 16 - 11R 22.5 Radial Tyres
Hydraulic support legs: Four Locknut Feature
Dog House and Generator Set are mounted on trailer
Trailer Weight: 20.857 tonnes
Axle Loading: 28.0 tonnes

DRAWWORKS

Franks Cabot, Model 1287 - TD Single Drum Drawworks
Hydromatic: 22" SR Parmac

DRAWWORKS MOTOR

G.E. Series SGE-76101 electric motor, complete with blower driven by a 5 h.p. electric motor.

HYDRAULIC SYSTEM

1¼" x 2" hydraulic pump, driven by a 50 h.p. electric motor 575 volts, ID# 9002764-049, connected to a 270 gallon fluid reservoir.

S.C.R. SYSTEM

Manufactured by Integrated Power Systems Corporation

Ratings:	Input Voltage	:	600 VAC 30-3W
	Output Voltage	:	0-750 VDC
	Input Current	:	600 ADC Cont
			1250 ADC Int

GENERATORS

Generators Nos. 1 and 2
E.M. Bemac Brushless Generator
500 KVA, 400 KW, 600 Volts, 60HZ/110V/220V Rig Supply
Powered by a Caterpillar Model D-353E Diesel engine
S.C.R. generator system fully inter-dependent

Cont'd.

TABLE ROTARY MACHINE

Ideco Model C-175 Rotary Table
Size: 17½" x 44" complete with split master bushings

SUBSTRUCTURE

Two Section Box Style Substructure
Top Section : 11'W x 11'L x 9' high (BOP Rack)
Pony Sub : 11'W x 11'L x 3'8" high
Overall Size : 11'W x 11'L x 12'8" high

LIGHTING

Including: Mast Light Section, Flood Lights, Building Lighting

MAST

96' Two Section Telescoping Type Mast, manufactured by Greco Steel Corp.
Dealing Anchor: Attached to Carrier
Crown Blocks:
Working Sheaves : 4 - 22" dia. - 1" grooving
Fastline Sheaves : 1 - 32" dia. - 1" grooving

BLOCKS AND HOOK

Sowa Hook-Block Assembly, 150 ton capacity, Model 3630-4, S/n: 3896-1 with 4 - 30" sheaves, grooved for 1" drilling line.

SWIVEL

Oilwell Model No. SA-150 Swivel, Job No. 2048
Kelly Spinner, Foster Model 77, S/n: 77-1-412 complete with 2 - 1" x 60' Long Hydraulic Hoses.

KELLY, KELLY BUSHING, KELLY COCK AND STABBING VALVE

1 - 1¼" x 40' long Kelly with 4½" XH pin & 6^5/8" Reg. box
1 - Baash Ross 2RCS4 Kelly Bushings
1 - Griffith Upper Kelly Cock, 5000 psi, S/N: 5139 452U-33
1 - Hydril Stabbing Valve with 4½" XH pin and box
1 - Grey Inside B.O.P. with 4½" XH pin and box

Cont'd.

PUMPS - SLUSH NO. 1 AND 2

1 - TSM-500 Duplex Slush Pump, Size: 7½" x 16"
Maximum Pump Speed: 65 S.P.M.
Maximum Fluid End Test Pressure: 3000 psi
Pumps loaded w/- 5½" liners
Rated at 1902 psi @D 65 S.P.M.
5.31 Gallons (U.S.)/Stroke @ 90% effic.

PUMP NO. 1 PUMP ENGINE

G.E. Electric Motor, Model 5-GE-761-J1

PUMP NO. 2 PUMP ENGINE

Caterpillar Model D-353 Diesel Engine, 435 H.P.

TANKS - MUD AND MUD SYSTEM

Mud Tanks - Total Capacity 650 BBL

Tank 1
265 BBL capacity in 3 compartments with sand trap
Low pressure mud system with 3 subsurface guns
2 Grey Agitators model 72-0-5 powered by 2 x 5 hp electric motors
1 Harrisburg double shale shaker powred by 5 h.p. electric motor
1 x 3 cone Desander complete sq header manifold and -overflow trough
1 Mission 5" x 6" centrifugal pump 1⁷/8 shaft
powered by 50 HP 575 volt electric motor
1 x 16" Poorboy Degasser fed by 3" mud line

Tank 2
385 BBL capacity in two compartments (suction tank 342 BBL's and pill) tanks of 43 BBL's
Connected to tank 1 via 10" suctions and 12" mud trough
Low pressure mud systems with 4 subsurface guns
Fitted with 2 - 4 x 2 standard mud mix hopper
1 Mission 5" x 6" centrifugal powered by 60 HP 575 volts electric motor
1 x 10 Cone Desilter (Swabco) @D 500 GPM

BLOWOUT AND WELL CONTROL EQUIPMENT

1 - Shaffer "Annular" Blowout Preventer 3000 psi, Assembly No. 5820

Trim:	:	Interval H_2S
Top Connection	:	Studded
Btm Connection	:	Flanged
Bore Size:	:	11"

Cont'd.

1 - Cameron 3000 psi Double Gate Blowout Preventer, Type "SS" No. 165. Fitted with 4½" Rams x Blind Rams
Bore Size : 11"
Top and Bottom
Connections : Studded
Outlets: : 2 - 3" 3000 psi Flanged
Extra Rams to Fit $2^3/8$", $2^7/8$", 5½" and 7"

HYDRAULIC FLUID ACCUMULATOR

1 - Wagner Model 5-80=IBN Hydraulic Fluid Accumulator Unit Four Station Control Manifold with 4 - 20 gallon bladder type Accumulator Bottles, hydraulic pump powered by a 5 HP electric motor
2 - 220 cu. ft. Nitrogen Bottle Back-up System
2 - CIW 3000 and 5000 PSI Hydro Poise Readout Gauges, A-B On/Off Switch panel
System is complete with Remote Control Panel, mounted in Dog House

B.O.P. SPOOLS AND VALVES

Including:
1 - 900 Series 11" Adaptor Spool with 2 - 3" Flanged Outlets
1 - 3" 3000 PSI McEvoy Gale Valve with Otis Actuator
2 - 3" McEvoy 3000 PSI Gate Valves
2 - 3" 3000 PSI National Ball Valves
1 - 3" 3000 PSI Check Valve

WELL CONTROL MANIFOLD

McEvoy 3" x 2" Well Control Manifold consisting of:

8 - 2" 3000 PSI Flanged McEvoy Gate Valves
2 - 3" 3000 PSI Falnged McEvoy Gate Valves
2 - 2" Three Way Block Connectors
2 - 3" x 3" x 2" Four Way Block Connectors
2 - Willis Multi-Orifice Chokes
1 - CIW, 300 PSI Pressure Gauge
1 - Marsh 3000 PSI Gauge complete with 100' ½" Hydraulic Hose

DRILL PIPE

90 - Joints (approx. 900M) 4½" 16.60# Grade "E" Range 2 Drill Pipe W/ 6¼" ID 18 Deg. Reed 4½" XH Tool Joints. Drill Pipe is complete with Hardfacing, Series 200 inspected and internall coated with PA-2000.

10 - Joints 4¼" XH Heavi-Wate Drill Pipe Range 2 with 4½" XH Box to pin complete ID Tube cote and Hardfacing Premium No. 1.

Cont'd.

DRILL COLLARS

20 - $6\frac{1}{4}$" OC Drill Collars, Hardbanded with $4\frac{1}{2}$" Xh Connections
3 - 8" O.D. Drill Collars - Hardbanded - W/ $6^5/8$" reg Connections

INSTRUMENTATION

1 - Cameron Type "C" Weight Indicator, 180,000 LB.
2 - 2" Gauges Int. Mud Gauges type "D" (Standpipe)
1 - 2" Cameron Type "F" Pressure Gauge (Pump)

TOOL HOUSE

11'6" wide x 30' long x 8'4" high Broken Panel Steel Construction

DOG HOUSE

Mounted on Rig Carrier - Size: 12'W x 12'L x 7'H
Dog House Contents:
1 - Knowledge Box
2 - NRL Light Fixtures recessed into roof of building

COMBINATION BUILDING

S.C.R. Building/Generator Room/Fuel Tank

Fuel Tank Size: 10'L x 6'6"H x 45" Deep (approx. 1500 gallons) or 6860
Overall Skid Size: 10'W x 38'L x 10'6"H

CATWALK - PIPE RACKS

Catwalk - 8'W x 40'L
2 - Sets Pipe Racks built with 4" Square Tubing

PUMPS CENTRIFUGAL

Water Circulating:
1 - 2" x 2" Centrifugal Pump driven by a 5 HP Lincoln Electric Motor.

Rig Wash Pump:
Magikist Model 32-C Triplex pump driven by a 3HP Brook Electric Motor, 230-460 Volts Type "DP", S/N: X807080.

Fuel Transfer Pump:
1 - 1" x 1" Fuel Transfer Pump drive by $^3/4$ HP Electric Motor.

Cont'd.

MATTING - RIG

4 - 8' Wide x 20' Long x 8" High Rig Mats

WINCHES

Gearmatic Pullmaster Model H-10 powered by a Commercial 1" x 1" Hydraulic motor, Model D230-154-2, S/n: C39-647, complete with approx. 300' - ½" steel cables.

1 - Wireline Survey unit, powered by a Hydrailic motor and complete with 7000' of .092 Wire Line.

FISHING EQUIPMENT

1 - 8 1/8" OD S.H. Series 150 Overshot with 4½" FH Box Connection, complete with 4 3/8", 4½", 5 3/4", 6", 6 1/8", 6¼" Basket Grapples and Mill Control Packers for each.

CAMP AND FACILITIES

1 - Toolpush Shack - fully furnished and airconditioned.
2 - Toyotas - four wheel drive (crewcab, ute).

APPENDIX 2

SUMMARY OF DRILLING OPERATION

SUMMARY OF DRILLING OPERATIONS

The Wrixondale No. 1 drilling site was prepared by the earthmoving contractor Whelans of Swan Reach.

Prior to the rig arriving a 20" conductor pipe had been installed to 7.0 m KB.

The Atco APM Rig A3 was rigged up and Wrixondale No. 1 was spudded at 0430 hours on the 12th October 1985.

A 12¼" hole was drilled to 302 m and $9^5/8$" casing was run and cemented to 299 m.

The BOP's were installed and all functions were tested to 1500 psi.

Drilling resumed with 8½" hole to 307 m and leak-off test established a formation integrity of 19.1 ppg. The 8½" hole was continued to 795.0 m.

DST No. 1 was then performed over the interval 777 m to 795 m and recovered drilling fluid only.

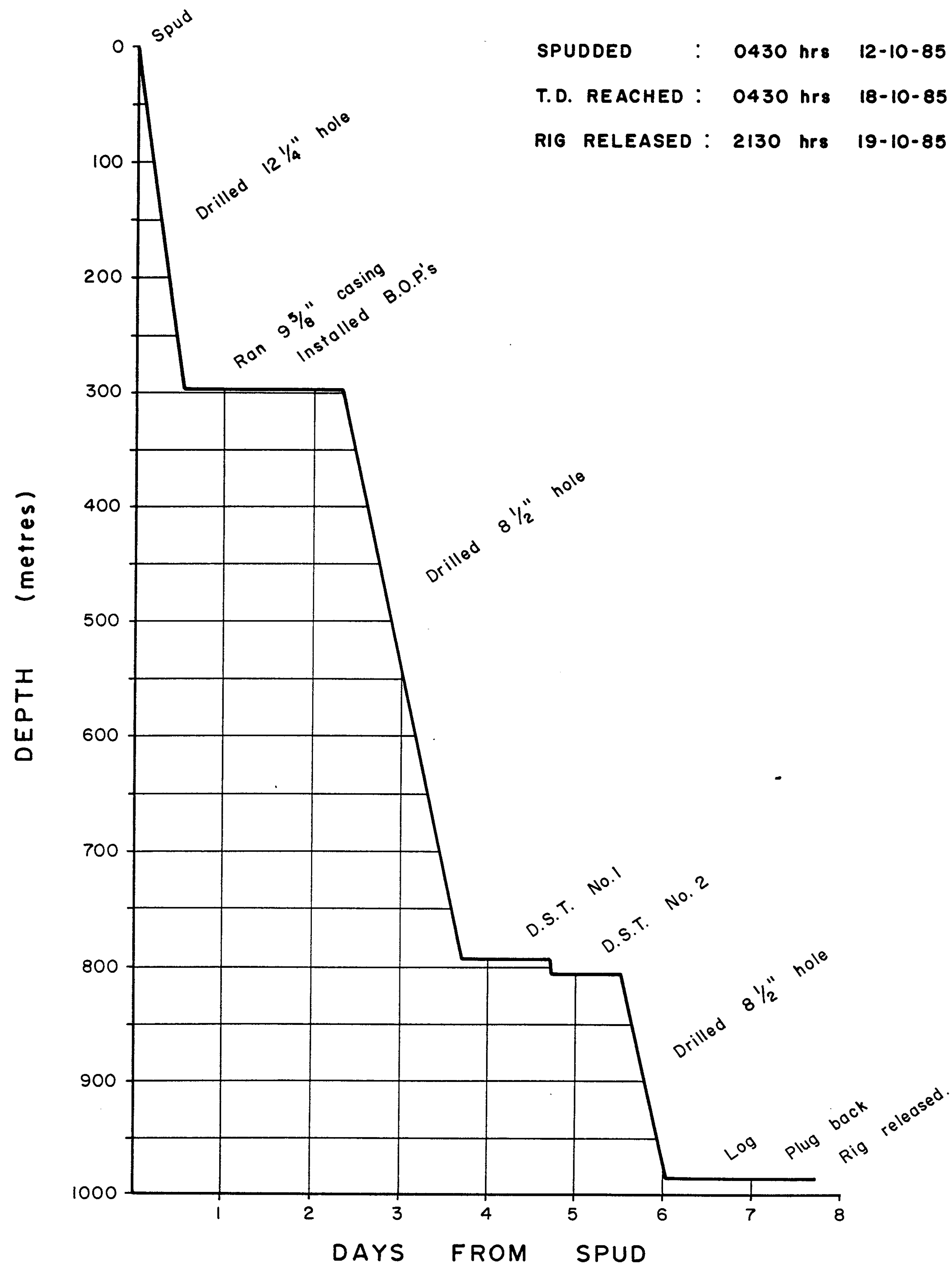
The 8½" hole was continued to 807 m where DST No. 2 was carried out over the interval 795 m to 807 m and 19 bbls (approx.) of slight to moderately gas - cut formation water was recovered.

The 8½" hole was then continued to a total depth of 987.3 m, which was reached at 0430 hours on the 18th October 1985.

The following wireline logs were run prior to abandonment; DLL/MSFL, BHC/GR, LDL/CNL, CST AND a WST.

Cement plugs were then set over the intervals 810 - 750 m, 306-246 m after which a surface cement plug of 25 sacks and welded plate were put in place on the casing stub.

The rig was released at 2130 hours on the 19th October 1985.



BEACH PETROLEUM N.L.

PEP 107

WRIXONDALE No.1

ACTUAL PENETRATION PROFILE

APPENDIX 3

DRILLING FLUID RECAP

Geofluids

DRILLING FLUIDS REPORT

FOR

BEACH PETROLEUM N.L.

WRIXONDALE #1

GIPPSLAND BASIN

VICTORIA

PREPARED BY :

A. SKUJINS
J. DANIELS

DATE :

OCTOBER, 1985

Geofluids Pty Ltd Drilling Fluids
A joint venture company with Milchem in Australia
Milchem

443 Vincent Street, Leederville, Western Australia. Postal Address: Box T1746, G.P.O., Perth, W.A., 6001.
Telephone (09) 382 1766 Telex AA93908

Geofluids

C O N T E N T S

Geofluids

1. SUMMARY OF OPERATIONS

Wrixondale #1 was spudded on 12 October, 1985, and reached a total depth of 987m on 18 October, 1985.

12-1/4" surface hole was drilled initially with water. A high viscosity Milgel pill was pumped when coarse sands were penetrated. The viscosity built up from native solids and no further Milgel was required. At 302m a wiper trip was made. 9-5/8" casing was run and cemented, with good cement returns.

While blow out preventers were installed, the mud settling tanks were dumped and cleaned out, and 300 bbls of mud were salvaged for future use.

The cement was drilled out with water and 5m of open hole was drilled prior to running a leak off test. The water was dumped and the hole displaced with mud. Drilling continued with continuous water additions to lower viscosity through mud making formations.

At approximately 700m, CMC EHV additions were made to the mud to lower the fluid loss. At 795m a wiper trip was made prior to running a drill stem test. DST #1 was conducted with no hole problems.

After drilling a further 11m to 806m, DST #2 was conducted, again with no hole problems. Drilling then continued to a total depth of 987m, where a wiper trip was made. Electric logs were run, and the hole was plugged and abandoned.

2. RECOMMENDATIONS FOR FUTURE WELLS

Wrixondale #1 was drilled quickly and essentially trouble free. Good cement returns were obtained in the surface hole indicating a comparatively low amount of washout compared to some other wells drilled in the area. After spudding in with water a relatively high yield point mud was maintained after drilling the first coarse sand bed. This may have helped in reducing the amount of washout.

In the 8-1/2" hole large dilution rates were required due to very mud making formations. The major mud cost occurred in lowering the water loss before penetrating the Latrobe sands. The mud cost for this well was considerably lower than estimated due to the formations drilled being more mud making than anticipated. Due to the good hole conditions experienced in this well it appears that the fresh water - native solids - polymer mud used is suitable for drilling in this area.

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3. COST ANALYSIS

HOLE SIZE : 12-1/4"   INTERVAL : 0 - 302m

MUD TYPE : FRESH WATER / NATIVE SOLIDS

PRODUCT	PACKAGE	UNIT COST	UNITS	$ COST	% COST
Milgel	45.4 kg	16.01	44 *	704.44	93.4
Caustic Soda	50 kg	49.63	1	49.63	6.6
	TOTAL			754.07	100.0

Cost Per Metre for Interval $ 2.50
% Cost of Well 35.2%

* 4 sacks Milgel used for cement job.

3. COST ANALYSIS CONT'D

HOLE SIZE : 8-1/2"   INTERVAL : 302 - 987m

MUD TYPE : FRESH WATER / NATIVE SOLIDS / CMC

PRODUCT	PACKAGE	UNIT COST	UNITS	$ COST	% COST
Milgel	45.4 kg	16.01	2	32.02	2.3
Caustic Soda	50 kg	49.63	3	148.89	10.8
Soda Ash	40 kg	20.45	1	20.45	1.4
CMC EHV	25 kg	62.17	14	870.38	62.9
Celpol	25 kg	110.00	2	220.00	15.9
Barytes	40 kg	10.38	9	93.42	6.7
	TOTAL			1385.16	100.0

Cost Per Metre for Interval $ 2.02
% Cost of Well 64.8%

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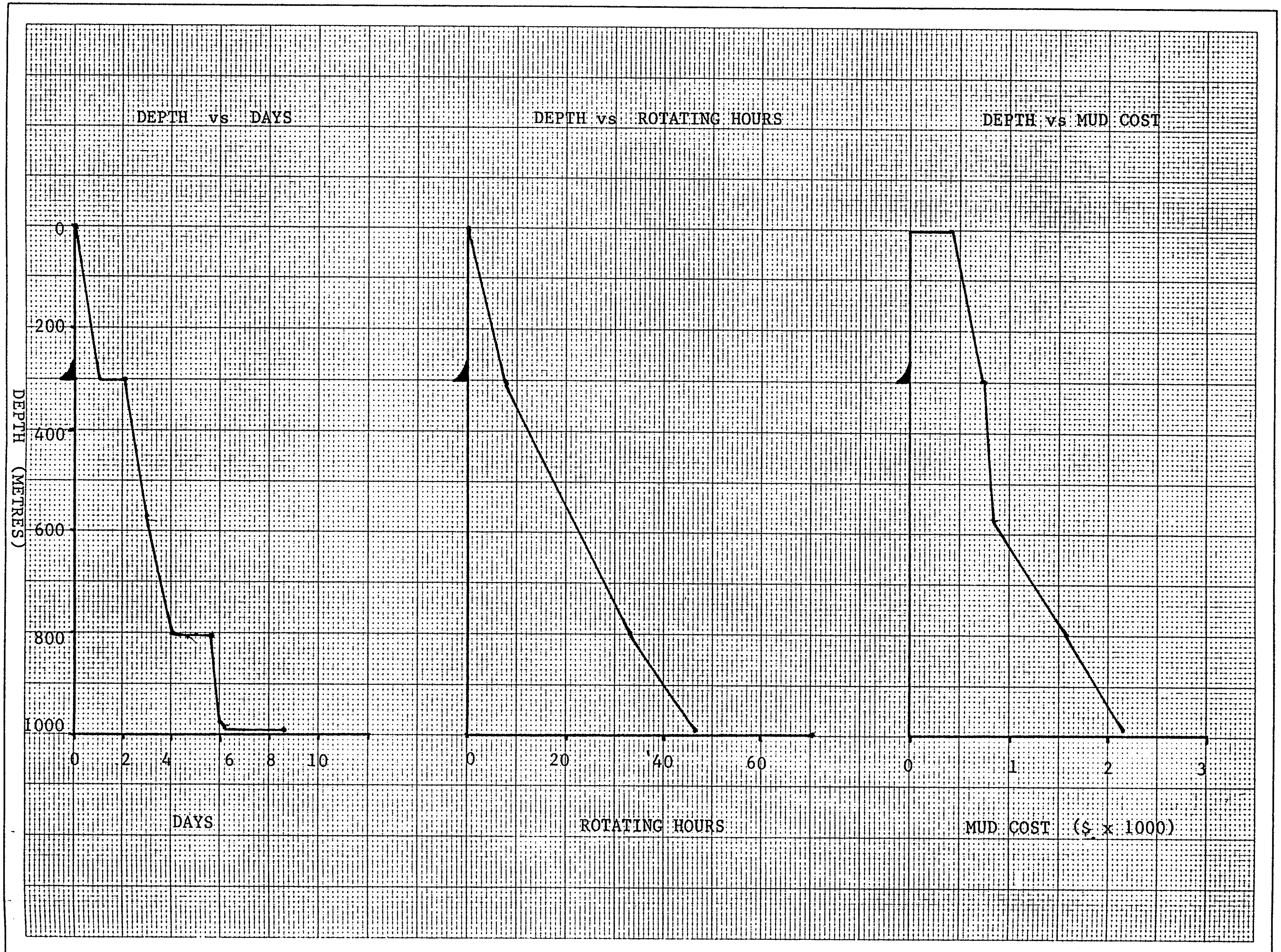
3. COST ANALYSIS CONT'D

TOTAL COST ANALYSIS INTERVAL : 0 - 987m (T.D.)

PRODUCT	PACKAGE	UNIT COST	UNITS	$ COST	% COST
Milgel	45.4 kg	16.01	46	736.46	34.4
Caustic Soda	50 kg	49.63	4	198.52	9.3
Soda Ash	40 kg	20.45	1	20.45	0.9
CMC EHV	25 kg	62.17	14	870.38	40.8
Celpol	25 kg	110.00	2	220.00	10.3
Barytes	40 kg	10.38	9	93.42	4.3
	TOTAL			2139.23	100.0

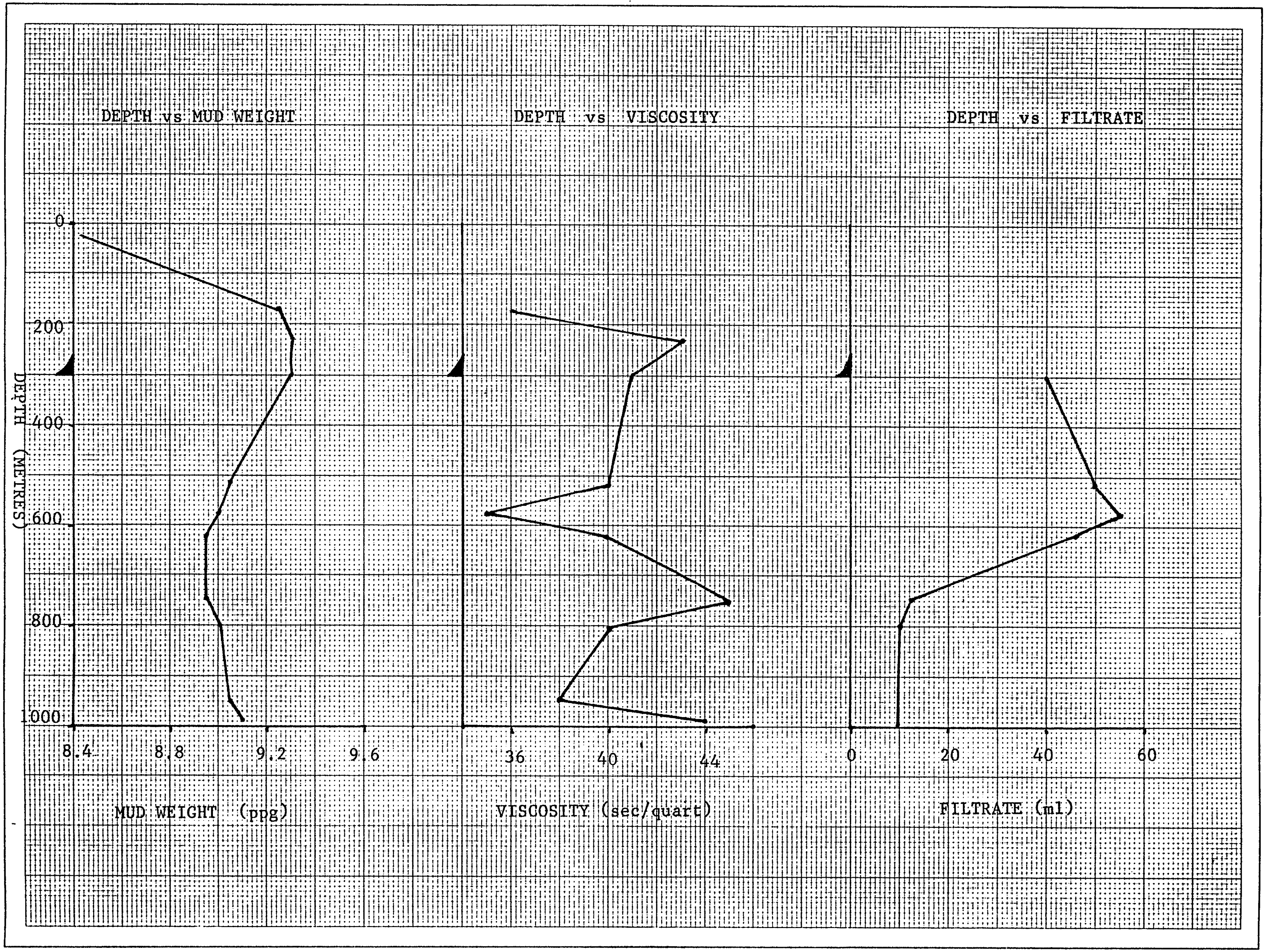
Total Cost of Well $ 2139.23
Total Cost Per Metre for Well $ 2.17

4 (i)



DEPTH vs DAYS
DEPTH vs ROTATING HOURS
DEPTH vs MUD COST
DEPTH (METRES)
0
200
400
600
800
1000
0
2
4
6
8
10
DAYS
0
20
40
60
ROTATING HOURS
0
1
2
3
MUD COST ($ x 1000)

4 (ii)



DEPTH vs MUD WEIGHT
DEPTH vs VISCOSITY
DEPTH vs FILTRATE
DEPTH (METRES)
0
200
400
600
800
1000
8.4
8.8
9.2
9.6
36
40
44
0
20
40
60
MUD WEIGHT (ppg)
VISCOSITY (sec/quart)
FILTRATE (ml)

5. FLUID PROPERTIES SUMMARY

5. FLUID PROPERTIES SUMMARY

MUD TYPE : FRESH WATER / NATIVE SOLIDS — INTERVAL : 0 - 700m
FRESH WATER / NATIVE SOLIDS / CMC — 700 - 987m

DATE 1985 OCT.	DEPTH m	M.W. ppg	ECD ppg	VIS sec	PV cp	YP	GELS lb/100ft	pH	W.L. ml	Cake (mm)	FLT deg C	Pf	Mf	Cl- ppm	Ca/Mg ppm	SAND %	SOL %	SALT %	OIL %	WATER %	MBC lb/bbl
12	170	9.2		36																	
	234	9.3		43																	
	302	9.3		41	8	29	15/20	9.0	40	3	24	TR	.15	750	40	.25	7.0			93.0	
14	515	9.0		40	9	15	9/12	10.1	50	3(S)		.12	.22	900	TR	TR	5.0			95.0	20
15	575	9.0		35	7	11	5/9	9.8	55	3		.08	.18	900	TR	TR	4.5			95.5	15
	620	8.9		40	9	16	12/14	9.4	46	3(S)	29	TR	.14	900	TR	TR	4.5			95.5	22.5
	748	8.9		45	12	13	6/17	9.4	12.8	2(F)		.08	.14	900	40	TR	4.5			95.5	17.5
	800	9.0		40	10	10	5/20	9.1	10.0	1(F)		TR	.14	950	40	TR	4.5			95.5	15
	804	8.9		42	11	13	7/25	9.0	9.6	1(F)	35	TR	.10	900	40	TR	4.0			96.0	
16	806	8.9		41	10	12	6/32	9.0	9.6	1(F)	32	TR	.10	950	40	TR	4.0			96.0	
17	812	9.0		40	10	12	6/29	8.8	10.5	1(F)		TR	.10	1000	40	TR	4.5			95.5	
	955	9.0		38	12	13	7/36	9.9	9.8	1(F)		.12	.24	950	40	.25	5.0			95.0	15
18	987	9.1		44	10	11	5/26	9.8	9.6	1(F)	37	.08	.22	1000	40	TR	5.5			94.5	12.5

6. BIT RECORD

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Bit Record

Operator BEACH PETROLEUM	Well No. 1	Location WRIXONDALE	Supervisors VINCE SANTOSTEFANO
Contractor ATCO APM	Rig No. 3	Mud Pumps TSR 500	Drill Pipe 4½" IF — Drill Collars 6½"
Spud Date 11th Oct 85 — TD Date 18th Oct 85	Surface Csg 9⅝" @ 294m	Inter Csg —	Prod Csg — — Mud Type FW NATIVE SOLIDS - LMC

Run No.	Bit No.	Size	Make	Type	Jets 32nds	Depth Out	Depth Drilled	Hours Drilling	Cumulative Rotating Hours	W.T.	RPM	Vert. Dev.	Pump Press.	Bbl/M ~~Gal/M~~	Ann. Vel.	Mud Weight	Visc.	W.L.	Dull Cond T	Dull Cond B	Dull Cond G	Other	Formation
1	1	12¼"	HTC	OSC3AJ	3x16	302m	302	7½	7½	10-15	80-100	0°	600	13.9	110	9.3	41	40	1	2	I		
2	2	8½"	SEC	S33S	3x10	795m	493	25½	33	20	105	½°	1350	6.3	125	8.9	42	9.6	2	2	I		
3	3	8½"	SEC	S33S	3x10	806m	11	½	33½	20	110		1000	5.3	100	8.9	41	9.6	1	1	I		
4	RR3	8½"	SEC	S33S	3x10	987m	181	13	46½	20	90	¾°	1100	5.3	100	9.1	44	9.6	4	3	I		

Remarks

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7. DAILY DRILLING FLUID REPORTS

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Milchem

Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO. 1	DATE 11TH OCT 85
RIG NO. 3	SPUD DATE
DEPTH 0 m	TO

OPERATOR	BEACH PETROLEUM	CONTRACTOR	ATCO APM
REPORT FOR	VINCE SANTOSTEFANO	REPORT FOR	BRYAN NIEHAUS
WELL NAME AND NO.	WRIXONDALE #1	FIELD OR BLOCK NO. WILDCAT	LOCATION GIPPSLAND BASIN; STATE VIC.

OPERATION		CASING	MUD VOLUME	CIRCULATION DATA	
Present Activity DRILL RAT HOLE		Surface at	Hole / Pits	Pump Size 5½ x 16"	Annular Vel. (/Min). Opposite DP
Bit Size	No.	Intermediate at	Total Circulating Volume	Pump Make TSR Model 500	Opposite Collar; Riser
Drill Pipe Size	Type	Production or Liner at	In Storage 40	BBL/Stroke .1265; Stroke/Min	Circulating Pressure
Drill Collar Size	Length	Mud Type SPUD MUD/WATER		BBL/Min	Bottoms Up (Min.); Systems Total (Min.)

Sample from ☐ Flowline ☐ Pit
Flowline Temperature .... °C

MUD PROPERTIES			
Time Sample Taken			
Depth			
Weight ☐ (S.G.) ☐			
Mud Gradient (psi/ft)			
Funnel Viscosity (sec./qt) API at .... °C			
Plastic Viscosity cps at			
Yield Point (lb/100 sq. ft.)			
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	/	/	/
pH ☐ Strip ☐ Meter			
Filtrate API (ml./30 min.)			
API HP-HT Filtrate (ml./30 min.)			
Cake Thickness (mm) API ☐ HP-HT ☐			
Alkalinity, Mud (Pm)			
Alkalinity, Filtrate (Pf/Mf)	/	/	/
Chloride (mg/l)			
Total Hardness ☐ epm ☐ (mg/l)			
Sand Content (% by Vol.)			
Solids Content (% by Vol.)			
Oil Content (% by Vol.)			
Water Content (% by Vol.)			
Methylene Blue Capacity ☐ (ml/ml mud) ☐ (equiv. #/bbl bent)			
K+ (mg/l)			
Nitrate (mg/l) /Sulphite (mg/l)	/	/	/

EQUIPMENT

	SIZE	Hours		SIZE	Hours
Centrifuge	—	—	Desilter	—	
Degasser	POOR BOY		Shaker	B20/B20	
Desander	3 x 6"				

DAILY COST $416.26 CUMULATIVE COST $416.26

MUD PROPERTIES SPECIFICATIONS

WEIGHT	PV/YP	FILTRATE
SPUD	MUD	

BY AUTHORITY ☐ Operator's Written ☐ Operator's Representative ☐ Drilling Contractor ☐ Other

BIT INFORMATION

TYPE	JETS	W.T.	R.P.M.	JET VEL.	BHHP

RECOMMENDATIONS

40 bbls. Prehydrated Gel in Pill tank for future use.

Make up Water : Chlorides 750 mg/L
Hardness 80 mg/L
Pf/Mf 0/Tr

COST SUMMARY/24 HOURS ENDING 24-00 @ DEPTH

Product/Package	Units	Unit Cost	Cost
MILGEL	26	16.01	416.26

OPERATIONS SUMMARY

Rig up

LIQUID ADDITIONS FOR 24 HOURS (BBL)

Diesel	Drill Water	Sea Water	Prehydrate	

GEOFLUIDS ENGINEER ANDRE SKUJINS HOME ADDRESS ADELAIDE TELEPHONE 08-795102

Geofluids

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Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO. 2	DATE 12th Oct 85
RIG NO. 3	SPUD DATE 12th Oct 85
DEPTH 0m	TO 302m

OPERATOR	BEACH PETROLEUM	CONTRACTOR	ATCO APM
REPORT FOR	VINCE SANTOSTEFANO	REPORT FOR	BRYAN NIEHAUS
WELL NAME AND NO.	WRIXONDALE #1	FIELD OR BLOCK NO.	WILDCAT; LOCATION GIPPSLAND BASIN; STATE VIC

OPERATION
- Present Activity: RUN 9 5/8" CSG.
- Bit Size: 12 1/4"; No. 1
- Drill Pipe Size: 4 1/2"; Type IF
- Drill Collar Size: 2x 8", 15x 6 1/4"; Length 54'/443'

CASING
- Surface at: —
- Intermediate at: —
- Production or Liner at: —
- Mud Type: SPUD MUD

MUD VOLUME
- Hole 145; Pits 270
- Total Circulating Volume 415
- In Storage —

CIRCULATION DATA
- Pump Size 5 1/2" x 16"
- Pump Make/Model TSR 500
- Bbl/Stroke .1265; Stroke/Min 2x55
- Bbl/Min 13.9 @ 90%
- Annular Vel. (ft/Min) Opposite DP 116; Opposite Collar 166/133
- Riser —
- Circulating Pressure 600
- Bottoms Up (Min.) 8
- Systems Total (Min.) 30

Sample from ☐ Flowline ☒ Pit
Flowline Temperature 24 °C

MUD PROPERTIES

Time Sample Taken	12.00	14.00	16.30
Depth	170m	234	302
Weight ☐ (S.G.) ☒ ppg	9.2+	9.3	9.3
Mud Gradient (psi/ft)	.481	.484	.484
Funnel Viscosity (sec./qt) API at °C	36	43	41
Plastic Viscosity cps at			8
Yield Point (lb/100 sq. ft.)			29
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	/	/	15/20
pH ☐ Strip ☒ Meter			9.0
Filtrate API (ml./30 min.)			40
API HP-HT Filtrate (ml./30 min.)			—
Cake Thickness (mm) API ☒ HP-HT ☐			3
Alkalinity, Mud (Pm)			—
Alkalinity, Filtrate (Pf/Mf)	/	/	TR/.15
Chloride (mg/l)			750
Total Hardness ☐ epm ☒ (mg/l)			40
Sand Content (% by Vol.)			.25
Solids Content (% by Vol.)			7.0
Oil Content (% by Vol.)			—
Water Content (% by Vol.)			93.0
Methylene Blue Capacity ☐ (ml/ml mud) ☐ (equiv. #/bbl bent)			—
K+ (mg/l)			
Nitrate (mg/l) /Sulphite (mg/l)	/	/	/

EQUIPMENT

	SIZE	Hours		SIZE	Hours
Centrifuge	—	—	Desilter	—	—
Degasser	POOR BOY	0	Shaker	20/20	14
Desander	3x6"	10			

DAILY COST $273.77 — CUMULATIVE COST $690.03

MUD PROPERTIES SPECIFICATIONS

WEIGHT	PV/YP	FILTRATE
SPUD	MUD	

BY AUTHORITY ☐ Operator's Written ☒ Operator's Representative ☐ Drilling Contractor ☐ Other

BIT INFORMATION

TYPE	JETS	WT.	R.P.M.	JET VEL.	BHHP
HTC OSC3AJ	3x16	10-15	120-140	317	287

RECOMMENDATIONS

COST SUMMARY/24 HOURS ENDING 24.00 **@ DEPTH** 302m

Product/Package	Units	Unit Cost	Cost
MILGEL	14	16.01	224.14
CAUSTIC SODA	1	49.63	49.63
			273.77

OPERATIONS SUMMARY

Rig up to Spud
Drill Rat hole & Mouse hole.
Spud in @ 08.30
Drill 12 1/4" hole to 302m w/ surveys.
Circ. & Cond hole
Wiper trip
Circ.
POH
Rig up and run 9 5/8" csg.

LIQUID ADDITIONS FOR 24 HOURS (BBL)

Diesel	Drill Water	Sea Water	Prehydrate	
	500		40	

GEOFLUIDS ENGINEER ANDRE SKUJINS — HOME ADDRESS ADELAIDE — TELEPHONE 08-795102

Geofluids

Milchem

Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO. 5	DATE 13th Oct 85
RIG NO. 3	SPUD DATE 12th Oct 85
DEPTH 322m	TO

OPERATOR	BEACH PETROLEUM	CONTRACTOR	ATCO APM
REPORT FOR	VINCE SANTOSTEFANO	REPORT FOR	BRYAN NIEHAUS
WELL NAME AND NO.	WAIXONDALE #1	FIELD OR BLOCK NO. WILDCAT	LOCATION GIPPSLAND BASIN — STATE Vic

OPERATION		CASING	MUD VOLUME	CIRCULATION DATA	
Present Activity: NIPPLE UP		9 5/8" Surface at	Hole 75 (Est) Pits	Pump Size 5 3/4" x 16"	Annular Vel. (Ft/Min). Opposite DP —
Bit Size	No.	Intermediate at —	Total Circulating Volume	Pump Make NSC Model 500	Opposite Collar — Riser Csg 183
Drill Pipe Size 4 1/2"	Type IF	Production or Liner at	In Storage 300 (Approx)	BBL/Stroke .1205 Stroke/Min 80	Circulating Pressure
Drill Collar Size 6 1/4"	Length	Mud Type		BBL/Min 10.0	Bottoms Up (Min.) / Systems Total (Min.)

Sample from ☐ Flowline ☐ Pit
Flowline Temperature .... °C

MUD PROPERTIES			
Time Sample Taken			
Depth	N		
Weight ☐ (S.G.) ☐			
Mud Gradient (psi/ft)	I		
Funnel Viscosity (sec./qt) API at ....°C			
Plastic Viscosity cps at			
Yield Point (lb/100 sq. ft.)	P		
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	/	/	/
pH ☐ Strip ☐ Meter		P	
Filtrate API (ml./30 min.)			
API HP-HT Filtrate (ml./30 min.)		L	
Cake Thickness (mm) API ☐ HP-HT ☐			
Alkalinity, Mud (Pm)		E	
Alkalinity, Filtrate (Pf/Mf)	/	/	/
Chloride (mg/l)			
Total Hardness ☐ epm ☐ (mg/l)			
Sand Content (% by Vol.)			
Solids Content (% by Vol.)			U
Oil Content (% by Vol.)			
Water Content (% by Vol.)			P
Methylene Blue Capacity ☐ (ml/ml mud) ☐ (equiv. #/bbl bent)			
K+ (mg/l)			
Nitrate (mg/l) /Sulphite (mg/l)	/	/	/

EQUIPMENT

	SIZE	Hours		SIZE	Hours
Centrifuge	—	—	Desilter	—	—
Degasser	Poor Boy	0	Shaker	20/20	3
Desander	3x6"	2			
DAILY COST	$64.04		CUMULATIVE COST	$754.07	

MUD PROPERTIES SPECIFICATIONS

WEIGHT	PV/YP	FILTRATE

BY AUTHORITY ☐ Operator's Written ☐ Operator's Representative ☐ Drilling Contractor ☐ Other

BIT INFORMATION

TYPE	JETS	W.T.	R.P.M.	JET VEL	BHHP

RECOMMENDATIONS

1) Saving 300 bbl mud for use in 8 1/2" hole.
2) Changing bottom shaker screen to 80s.
3) Dumping & cleaning sand trap, shaker tank, and desander suction tank.

COST SUMMARY/24 HOURS ENDING 24:00 @ DEPTH 322m

Product/Package	Units	Unit Cost	Cost
* MILGEL	4	16.01	64.04

* Used for cement job

OPERATIONS SUMMARY

Run 9 5/8" casing.
Circulate.
Cement casing. Good cement returns.
WOC.
Nipple up BOPs.

LIQUID ADDITIONS FOR 24 HOURS (BBL)

Diesel	Drill Water	Sea Water	Prehydrate
	5		

GEOFLUIDS ENGINEER ANDRE SKUTINS — HOME ADDRESS ADELAIDE — TELEPHONE 08 - 745102

Geofluids

Milchem

Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO. 4	DATE 14th Oct 85
RIG NO. 3	SPUD DATE [illegible]
DEPTH 322 m	TO 568 m

OPERATOR	BEACH PETROLEUM	CONTRACTOR	ATCO APM
REPORT FOR	VINCE SANTOSTEFANO	REPORT FOR	BRYAN NIEMAS
WELL NAME AND NO.	WRIXONDALE #1	FIELD OR BLOCK NO. WILDCAT	LOCATION GIPPSLAND BASIN · STATE VIC

OPERATION		CASING	MUD VOLUME	CIRCULATION DATA	
Present Activity: DRILLING		9 5/8" Surface at 299m	Hole 140 · Pits 380	Pump Size 5 1/2 x 16"	Annular Vel. (Ft/Min) Opposite DP 135
Bit Size: 8 1/2"	No. 2	Intermediate at —	Total Circulating Volume 520	Pump Make TSP Model 500	Opposite Collar 216 · Riser —
Drill Pipe Size: 4 1/2"	Type IF	Production or Liner at	In Storage —	BBL/Stroke .125 · Stroke/Min 50	Circulating Pressure 1400
Drill Collar Size: 6 1/2"	Length 482	Mud Type: FW NATIVE SOLIDS		BBL/Min 6.3 @ 90%	Bottoms Up (Min.) 15 · Systems Total (Min.) 80

Sample from ☐ Flowline ☒ Pit
Flowline Temperature 29 °C

MUD PROPERTIES	15/10	15/10	15/10
Time Sample Taken	20-00	01-00	06-00
Depth (METRES)	515	575	620
Weight ☐ (S.G.) ☒ PPG	9.0+	9.0	8.9+
Mud Gradient (psi/ft)	.47	[illegible]	.46
Funnel Viscosity (sec./qt) API at °C	40	35	40
Plastic Viscosity cps at	9	7	9
Yield Point (lb/100 sq. ft.)	15	11	16
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	9/12	5/9	12/14
pH ☐ Strip ☒ Meter	10.1	9.8	9.4
Filtrate API (ml./30 min.)	50	55	46
API HP-HT Filtrate (ml./30 min.)	—	—	—
Cake Thickness (mm) API ☒ HP-HT ☐	3(4)	3	3(4)
Alkalinity, Mud (Pm)	—	—	—
Alkalinity, Filtrate (Pf/Mf)	.12/.22	.08/.18	TR/.14
Chloride (mg/l)	900	900	900
Total Hardness ☐ epm ☒ (mg/l)	TR	TR	TR
Sand Content (% by Vol.)	TR	TR	TR
Solids Content (% by Vol.)	5.0	4.5	4.5
Oil Content (% by Vol.)	—	—	—
Water Content (% by Vol.)	95.0	95.5	95.5
Methylene Blue Capacity ☐ (ml/ml mud) ☒ (equiv. #/bbl bent)	20	15	22 1/2
K+ (mg/l)			
Nitrate (mg/l) /Sulphite (mg/l)	/	/	/
n	.46	.47	.44
K	1.45	1.05	1.70

EQUIPMENT

	SIZE	Hours		SIZE	Hours
Centrifuge	—	—	Desilter	—	—
Degasser	POOR BOY	0	Shaker	B20/B60	14
Desander	3x6"	12			

DAILY COST $70.08 · CUMULATIVE COST $824.15

MUD PROPERTIES SPECIFICATIONS

WEIGHT	VIS ~~PV/YP~~	FILTRATE	pH
8.8 – 9.2	35 – 40	N/C	9.0 – 9.5

BY AUTHORITY ☐ Operator's Written ☒ Operator's Representative ☒ Drilling Contractor ☐ Other

BIT INFORMATION

TYPE	JETS	W.T.	R.P.M.	JET VEL.	BHHP
SEC S33S	3x10	10	90	368	169

RECOMMENDATIONS

Continuous Water Additions to control Viscosity

OPERATIONS SUMMARY

Nipple up BOPs.
Pressure test
Work on BOPs.
Pressure Test.
RIH wt Bit
Pressure Test
Drill out Cement.
Drill 5m open hole
Conduct Leak off Test.
Drill Ahead.

COST SUMMARY/24 HOURS ENDING 24.00 @ DEPTH 568

Product/Package	Units	Unit Cost	Cost
CAUSTIC SODA	1	49.63	49.63
SODA ASH	1	20.45	20.45
			70.08

LIQUID ADDITIONS FOR 24 HOURS (BBL)

Diesel	Drill Water	Sea Water	Prehydrate
	300		

GEOFLUIDS ENGINEER ANDRE SKUJINS · HOME ADDRESS ADELAIDE · TELEPHONE 08-795102

Geofluids Pty Ltd Drilling Fluid Report

Geofluids | Milchem

REPORT NO.	5	DATE	15th Oct '85
RIG NO.	3	SPUD DATE	12th Oct '85
DEPTH	568m	TO	804m

OPERATOR	BEACH PETROLEUM	CONTRACTOR	ATCO APM
REPORT FOR	VINCE SANTOSTEFANO	REPORT FOR	BRYAN NIEHAUS
WELL NAME AND NO.	WRIXONDALE #1	FIELD OR BLOCK NO.	WILDCAT
LOCATION	GIPPSLAND BASIN	STATE	VIC

OPERATION		CASING	MUD VOLUME	CIRCULATION DATA	
Present Activity: POH FOR DST		9 5/8" Surface at 299m	Hole 190, Pits 310	Pump Size 5 1/2" x 16"	Annular Vel. (Ft/Min) Opposite DP 105
Bit Size: 8 1/2"	No. 2	Intermediate at —	Total Circulating Volume 500	Pump Make TSR Model 500	Opposite Collar 216, Riser —
Drill Pipe Size: 4 1/2"	Type IF	Production or Liner at —	In Storage —	BBL/Stroke .1265, Stroke/Min 50	Circulating Pressure 1350
Drill Collar Size: 6 1/2"	Length 482'	Mud Type: FW NATIVE SOLIDS - CMC		BBL/Min 6.3	Bottoms Up (Min.) 31, Systems Total (Min.) 90

Sample from ☐ Flowline ☒ Pit
Flowline Temperature 35 °C

MUD PROPERTIES			
Time Sample Taken	14:00	19:00	22:30
Depth (metres)	748	800	804
Weight ☐ (S.G.) ☒ PPG	8.9+	9.0	8.9
Mud Gradient (psi/ft)	.465	.468	.463
Funnel Viscosity (sec./qt) API at °C	45	40	42
Plastic Viscosity cps at	12	10	11
Yield Point (lb/100 sq. ft.)	13	10	13
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	6/17	5/20	7/25
pH ☐ Strip ☒ Meter	9.4	9.1	9.0
Filtrate API (ml./30 min.)	12.8	10.0	9.6
API HP-HT Filtrate (ml./30 min.)	—	—	—
Cake Thickness (mm) API ☒ HP-HT ☐	2(P)	1(P)	1(P)
Alkalinity, Mud (Pm)	—	—	—
Alkalinity, Filtrate (Pf/Mf)	.08/.14	TR/.14	TR/.10
Chloride (mg/l)	900	950	900
Total Hardness ☐ epm ☒ (mg/l)	40	40	40
Sand Content (% by Vol.)	TR	TR	TR
Solids Content (% by Vol.)	4.5	4.5	4.0
Oil Content (% by Vol.)	—	—	—
Water Content (% by Vol.)	95.5	95.5	96.0
Methylene Blue Capacity ☐ (ml/ml mud) ☒ (equiv. #/bbl bent)	17 1/2	15	—
K+ (mg/l)			
Nitrate (mg/l) /Sulphite (mg/l)	/	/	/
n	.57	.58	.57
K	.58	.52	.60

EQUIPMENT

	SIZE	Hours		SIZE	Hours
Centrifuge	—	—	Desilter	10 x 4"	15
Degasser	POOR BOY	0	Shaker	B20/B60	24
Desander	3 x 6"	22			

DAILY COST $746.04 — CUMULATIVE COST $1570.19

MUD PROPERTIES SPECIFICATIONS

WEIGHT	PV	YP	FILTRATE	pH
8.8 - 9.2	10-15	12-18	9 - 15	9.0 - 9.5

BY AUTHORITY ☒ Operator's Written ☒ Operator's Representative ☐ Drilling Contractor ☐ Other

BIT INFORMATION

TYPE	JETS	W.T.	R.P.M.	JET VEL.	BHHP
SEC S33S	3x10	20	105	368	168

RECOMMENDATIONS

OPERATIONS SUMMARY

Drill to 741m
Circ.
Drill to ~~755~~ 750m
Circ and cond mud.
Drill to 802m
POH 1 stand and Circ.
RIH.
Circ.
Drill to 804m
Circ.
POH Wiper trip.
RIH
Circ.
POH

COST SUMMARY/24 HOURS ENDING 24:00 @ DEPTH 804m

Product/Package	Units	Unit Cost	Cost
CMC EHV	12	62.17	746.04

LIQUID ADDITIONS FOR 24 HOURS (BBL)

Diesel	Drill Water	Sea Water	Prehydrate	
	140			

GEOFLUIDS ENGINEER ANDRE SKUJINS — HOME ADDRESS ADELAIDE — TELEPHONE 08 795102

Geofluids Milchem

Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO. 6	DATE 16TH OCT 85	RIG NO. 3	SPUD DATE 12th OCT
DEPTH 795m	TO 806m		

OPERATOR	BEACH PETROLEUM	CONTRACTOR	ATCO APM
REPORT FOR	VINCE SANTOSTEFANO	REPORT FOR	BRYAN NIEHAUS
WELL NAME AND NO.	WRIXONDALE #1	FIELD OR BLOCK NO. WILDCAT / LOCATION GIPPSLAND BASIN	STATE VIC

OPERATION		CASING	MUD VOLUME	CIRCULATION DATA	
Present Activity: MAKE UP TOOLS		9 5/8" Surface at 299m	Hole 190 Pits 370	Pump Size 5 1/2" x 16"	Annular Vel. (Ft/Min) Opposite DP 100
Bit Size 8 1/2"	No. 3	Intermediate at —	Total Circulating Volume 560	Pump Make JSR Model 500	Opposite Collar 173 Riser —
Drill Pipe Size 4 1/2"	Type IF	Production or Liner at —	In Storage —	BBL/Stroke .065 Stroke/Min 90	Circulating Pressure 1000
Drill Collar Size 6 1/2"	Length 480'	Mud Type: FW NATIVE SOLIDS - CMC		BBL/Min 5.8	Bottoms Up (Min.) 26 Systems Total (Min.) 110

Sample from ☐ Flowline ☒ Pit
Flowline Temperature 32 °C

MUD PROPERTIES			
Time Sample Taken		19.00	
Depth (METRES)		806	
Weight ☐ (S.G.) ☒ PPG		8.9	
Mud Gradient (psi/ft)		.463	
Funnel Viscosity (sec./qt) API at °C		41	
Plastic Viscosity cps at		10	
Yield Point (lb/100 sq. ft.)		12	
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	/	6/32	/
pH ☐ Strip ☒ Meter		9.0	
Filtrate API (ml./30 min.)		9.6	
API HP-HT Filtrate (ml./30 min.)		—	
Cake Thickness (mm) API ☒ HP-HT ☐		1(1)	
Alkalinity, Mud (Pm)			
Alkalinity, Filtrate (Pf/Mf)	/	TR/.10	/
Chloride (mg/l)		950	
Total Hardness ☐ epm ☒ (mg/l)		40	
Sand Content (% by Vol.)		TR	
Solids Content (% by Vol.)		4.0	
Oil Content (% by Vol.)		—	
Water Content (% by Vol.)		96.0	
Methylene Blue Capacity ☐ (ml/ml mud) ☒ (equiv. #/bbl bent)		—	
K+ (mg/l)			
Nitrate (mg/l) /Sulphite (mg/l)	/	/	/

EQUIPMENT

	SIZE	Hours		SIZE	Hours
Centrifuge	—	—	Desilter	10 x 4"	0
Degasser	Posi-Flow	0	Shaker	820 / 860	2
Desander	3 x 6"	2			
DAILY COST	—		CUMULATIVE COST	$1570.19	

MUD PROPERTIES SPECIFICATIONS

WEIGHT	PV/YP	FILTRATE	pH
8.8 - 9.2	10-15 / 12-18	≤ 10cc	9.0 - 9.5

BY AUTHORITY ☒ Operator's Written ☒ Operator's Representative ☐ Drilling Contractor ☐ Other

BIT INFORMATION

TYPE	JETS	W.T.	R.P.M.	JET VEL.	BHHP
SEC S33S	3x10	20	110	294	100

RECOMMENDATIONS

Note: Depth Correction = Previous midnight depth 795m.

COST SUMMARY/24 HOURS ENDING 24.00 @ DEPTH 806 m

Product/Package	Units	Unit Cost	Cost
~~CMC EHV~~			
NIL			

OPERATIONS SUMMARY

Wash to btm. 5' fill.
Circ.
POH
Make up Test Tools.
RIH.
Conduct DST #1
POH
Break down Tools.
RIH w/ Bit #3
Drill 795m - 806m.
Circ.
POH.
Make up Test Tools.

LIQUID ADDITIONS FOR 24 HOURS (BBL)

Diesel	Drill Water	Sea Water	Prehydrate	
	0			

GEOFLUIDS ENGINEER	ANDRE SKUJINS	HOME ADDRESS	ADELAIDE	TELEPHONE	08 795102

Geofluids

Milchem

Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO. 7		DATE 11th Oct '85	
RIG NO. 3		SPUD DATE 2nd Oct 8[illegible]	
DEPTH 806m		TO 974	

OPERATOR	BEACH PETROLEUM	CONTRACTOR	ATCO APM
REPORT FOR	VINCE SANTOSTEFANO	REPORT FOR	BRYAN NIEHAUS
WELL NAME AND NO.	WAIXONDALE #1	FIELD OR BLOCK NO. WILDCAT / LOCATION GIPPSLAND BASIN	STATE VIC

OPERATION		CASING	MUD VOLUME	CIRCULATION DATA	
Present Activity: DRILLING		9 5/8" Surface at 299m	Hole 225 / Pits 400	Pump Size 5½" x 16"	Annular Vel. (Ft/Min) Opposite DP 104
Bit Size 8½"	No. RR3	Intermediate at —	Total Circulating Volume 625	Pump Make TSR Model 500	Opposite Collar 173 / Riser —
Drill Pipe Size 4½"	Type IF	Production or Liner at —	In Storage —	BBL/Stroke .1265 / Stroke/Min 40	Circulating Pressure 1100
Drill Collar Size 6½"	Length 482	Mud Type: FW NATIVE SOLIDS - CMC		BBL/Min 5.3	Bottoms Up (Min.) 30 / Systems Total (Min.) 120

Sample from ☐ Flowline ☒ Pit
Flowline Temperature 37 °C

MUD PROPERTIES			18/10
Time Sample Taken	16.00	23.00	04.30
Depth	812	955	987
Weight ☐ (S.G.) ☒	9.0	9.0+	9.1
Mud Gradient (psi/ft)	.468	.471	.473
Funnel Viscosity (sec./qt) API at °C	40	38	44
Plastic Viscosity cps at	10	12	10
Yield Point (lb/100 sq. ft.)	12	13	11
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	6/29	7/36	5/26
pH ☐ Strip ☒ Meter	8.8	9.9	9.8
Filtrate API (ml./30 min.)	10.5	9.8	9.6
API HP-HT Filtrate (ml./30 min.)	—	—	—
Cake Thickness (mm) API ☒ HP-HT ☐	1(F)	1(F)	1(F)
Alkalinity, Mud (Pm)	—	—	—
Alkalinity, Filtrate (Pf/Mf)	TR/.10	.12/.34	.08/.22
Chloride (mg/l)	1000	950	1000
Total Hardness ☐ epm ☒ (mg/l)	40	40	40
Sand Content (% by Vol.)	TR	.25	TR
Solids Content (% by Vol.)	4.5	5.0	5.5
Oil Content (% by Vol.)	—	—	—
Water Content (% by Vol.)	95.5	95.0	94.5
Methylene Blue Capacity ☐ (ml/ml mud) ☒ (equiv. #/bbl bent)	—	15	12½
K+ (mg/l)			
Nitrate (mg/l) /Sulphite (mg/l)	/	/	/
n	.54	.56	.56
K	.82	.81	.70

EQUIPMENT	SIZE	Hours		SIZE	Hours
Centrifuge	—	—	Desilter	10x4"	2
Degasser	POORBOY	0	Shaker	B20/B60	9
Desander	3x6"	9			

DAILY COST $393.97 — CUMULATIVE COST $1964.16

MUD PROPERTIES SPECIFICATIONS

WEIGHT	PV/YP	FILTRATE	pH
8.8 - 9.2	10-15 / 12-18	≤ 10cc	9.0 - 9.5

BY AUTHORITY ☒ Operator's Written ☒ Operator's Representative ☐ Drilling Contractor ☐ Other

BIT INFORMATION

TYPE	JETS	WT.	R.P.M.	JET VEL.	BHHP
SEC S33S	3x10	20	90	294	102

RECOMMENDATIONS

Lost approx 70 bbls mud during DST #2.

COST SUMMARY/24 HOURS ENDING 24.00 **@ DEPTH** 974m

Product/Package	Units	Unit Cost	Cost
CMC EHV	2	62.17	124.34
CELPOL	2	110.00	220.00
CAUSTIC SODA	1	49.63	49.63
			393.97

OPERATIONS SUMMARY

RIH w/ Test tools to shoe.
Wait on Daylight.
RIH
Conduct DST #2
Reverse Circulate
POH
Lay down tools
RIH w/ Bit
Drill Ahead.

LIQUID ADDITIONS FOR 24 HOURS (BBL)

Diesel	Drill Water	Sea Water	Prehydrate
	80		

GEOFLUIDS ENGINEER ANDRE SKUJINS — HOME ADDRESS ADELAIDE — TELEPHONE 08 795102

Geofluids

Milchem

Geofluids Pty Ltd
Drilling Fluid Report

REPORT NO.	8	DATE	18th Oct '85
RIG NO.	3	SPUD DATE	12th Oct 85
DEPTH	974m	TO	987m

OPERATOR	BEACH PETROLEUM	CONTRACTOR	ATCO AFM
REPORT FOR	VINCE SANTOSTEFANO	REPORT FOR	BRYAN NIEHAUS
WELL NAME AND NO.	WRIXONDALE #1	FIELD OR BLOCK NO.	WILDCAT
LOCATION	GIPPSLAND BASIN	STATE	VIC

OPERATION			CASING	MUD VOLUME	CIRCULATION DATA	
Present Activity	LOG		9 5/8" Surface at 299m	Hole / Pits	Pump Size 5½" x 16"	Annular Vel. (Ft/Min). Opposite DP 103
Bit Size	8½"	No. RR3	Intermediate at	Total Circulating Volume	Pump Make TSR Model 500	Opposite Collar 173 Riser —
Drill Pipe Size	4½"	Type IF	Production or Liner at	In Storage	BBL/Stroke .065 Stroke/Min 40	Circulating Pressure 1100
Drill Collar Size	6¼"	Length 480	Mud Type FW NATIVE SOLIDS - CMC		GAL/Min 53	Bottoms Up (Min.) 31 Systems Total (Min.) 135

Sample from ☐ Flowline ☒ Pit

Flowline Temperature .... °C

MUD PROPERTIES			
Time Sample Taken			
Depth			
Weight ☐ (S.G.) ☐			
Mud Gradient (psi/ft)			
Funnel Viscosity (sec./qt) API at ...°C			
Plastic Viscosity cps at			
Yield Point (lb/100 sq. ft.)			
Gel Strength (lb/100 sq.ft.) 10 sec/10 min.	/	/	/
pH ☐ Strip ☐ Meter			
Filtrate API (ml./30 min.)			
API HP-HT Filtrate (ml./30 min.)			
Cake Thickness (mm) API ☐ HP-HT ☐			
Alkalinity, Mud (Pm)			
Alkalinity, Filtrate (Pf/Mf)	/	/	/
Chloride (mg/l)			
Total Hardness ☐ epm ☐ (mg/l)			
Sand Content (% by Vol.)			
Solids Content (% by Vol.)			
Oil Content (% by Vol.)			
Water Content (% by Vol.)			
Methylene Blue Capacity ☐ (ml/ml mud) ☐ (equiv. #/bbl bent)			
K+ (mg/l)			
Nitrate (mg/l) /Sulphite (mg/l)	/	/	/

EQUIPMENT

	SIZE	Hours		SIZE	Hours
Centrifuge	—	—	Desilter	10 x 4"	2
Degasser	POOR BOY	0	Shaker	B20/B60	4
Desander	3x6"	4			

DAILY COST $175-07 CUMULATIVE COST $2139-23

MUD PROPERTIES SPECIFICATIONS

WEIGHT	PV/YP	FILTRATE	pH
8.8 - 9.2	10-15 / 12-18	≤ 10cc	9 - 9.5

BY AUTHORITY ☐ Operator's Written ☐ Operator's Representative ☐ Drilling Contractor ☐ Other

BIT INFORMATION

TYPE	JETS	W.T.	R.P.M.	JET VEL.	BHHP
SEC S33S	3x10	20	90	294	

RECOMMENDATIONS

COST SUMMARY/24 HOURS ENDING 2400 @ DEPTH 987m

Product/Package	Units	Unit Cost	Cost
* MILGEL	2	16-01	32-02
** BARITE	9	10-38	93-42
* CAUSTIC SODA	1	49-63	49-63
			175-07

* Used previously but not recorded.
** Broken.

OPERATIONS SUMMARY

Drill to 987m.
Circ.
Wiper trip to shoe
Circ.
POH
Log.

LIQUID ADDITIONS FOR 24 HOURS (BBL)

Diesel	Drill Water	Sea Water	Prehydrate		

GEOFLUIDS ENGINEER ANDRE SIKUTINS HOME ADDRESS ADELAIDE TELEPHONE 08 795 102

APPENDIX 4

SIDEWALL CORE DESCRIPTIONS

WRIXONDALE NO. 1

SIDEWALL CORES

S.W.C. No.	Depth (m)	Recovery (mm)	Descriptions
1	980.0	40	Silty Claystone, medium to dark grey, med greenish grey in part, firm to hard, massive, trace micromicaceous, trace very fine carbonaceous detritus, trace fine multi-coloured lithics and quartz sand grains, grading to Siltstone in part.
2	965.0	35	Sandstone, light to medium grey, light greenish grey in part, firm to hard, very fine to fine, subangular to subrounded, moderately to well sorted quartz and multi-coloured lithics including some volcanogenic lithics, common white to light grey clay matrix, slightly dispersive, silty in part, trace to common partially altered feldspar, trace very fine carbonaceous detritus, poor to none visual porosity.
3	955.0	38	Silty Claystone, as per S.W.C. No. 1.
4	947.0	30	Sandstone, pale brownish grey, friable, loose in part, very fine to pebble size, dominantly medium to very coarse, subangular to subrounded, dominantly subrounded, poorly sorted quartz, trace to common white to light grey kaolinitic? clay matrix, soft, dispersive, silty in part, trace fine to medium grain multi-coloured lithics, trace very fine carbonaceous material, fair to good visual porosity.
5	941.0	0	No recovery.
6	937.5	35	Siltstone/Sandstone, light brownish grey, light grey in part, firm, massive, common micromica, trace to common light grey clay, trace very fine disseminated and streak of carbonaceous material, trace to common very fine, fine in part, quartz sand grains and minor lithics, grading into very fine Sandstone in part, poor to none visual porosity.

Cont'd.

S.W.C. No.	Depth (m)	Recovery (mm)	Descriptions
7	932.0	40	Sandstone, off white to light grey, friable to loose, fine to very coarse, dominantly medium to coarse, subangular to subrounded poor to moderately sorted quartz, trace light grey to white dispersive clay matrix, trace medium grain dark grey to black lithics, good visual porosity.
8	925.0	45	Claystone, medium brownish grey, firm to hard, blocky, subfissile in part, trace micromica, trace fine multi-coloured lithics, rare carbonaceous detritus.
9	922.5	25	Sandstone, light to medium brownish grey, friable to loose, fine to coarse, dominantly medium, subangular to subrounded, well sorted quartz, trace light grey, dispersive clay matrix, rare very dark grey to black medium to coarse lithics, very good visual porosity.
10	915.5	45	Claystone, light to medium grey, soft to firm, sticky, blocky in part, subfissile in part, slightly calcareous, trace to rare fine quartz grains, trace fine mica flakes, rare fine multi-coloured lithics.
11	913.0	35	Coal, very dark brownish black to black, firm, subfissile in part, earthy luster, trace - rare silt to very fine quartz sand grains.
12	910.5	30	Coal, very dark brown to very dark orange brown, firm, hard in part, subfissile to fissile, earthy luster.
13	898.0	32	Sandstone, as per S.W.C. No. 7.
14	888.5	34	Sandstone, as per S.W.C. No. 7, Pebble size in part, very good visual porosity.
15	886.5	40	Sandstone, as per S.W.C. No. 7, very good visual porosity.
16	882.5	35	Sandstone, as per S.W.C. No. 7

Cont'd.

S.W.C. No.	Depth (m)	Recovery (mm)	Descriptions
17	875.5	40	Claystone, medium grey, medium brownish grey in part, soft to firm, sticky, dispersive in part, subfissile in part, common micromicaceous, rare fine lithics.
18	872.5	40	Coal, very dark brown to black, very dark orange brown in part, firm, subfissile in part, apparently argillaceous (extremely low G - Ray reading), earthy luster.
19	865.0	36	Sandstone, as per S.W.C. No. 7, dom medium to very coarse, very good visual porosity.
20	854.0	52	Sandstone, light to medium grey, firm, hard in part, very fine to coarse, dominantly medium to coarse, subangular to subrounded, poorly sorted quartz, common light grey claystone, extremely silty in part, trace mica, trace medium to dark grey lithics, trace very coarse quartz overgrowth, poor to fair visual porosity.
21	834.0	35	Sandstone, light grey to frosty, light brownish grey in part, loose, friable in part, very fine to very coarse, dominantly fine to coarse, subangular to subrounded, dominantly subrounded, poor to fairly sorted quartz, trace to rare light grey dispersive clay matrix, trace medium to dark grey, medium to coarse grained lithics, rare glauconite, trace frosty, coarse to pebble size, rounded quartz overgrowth, excellent visual porosity.
22	825.0	37	Sandstone, medium brown, medium to dark orange brown, loose to friable, very fine to pebble size, dominantly fine to medium and very coarse to pebble size (bimodal distribution), subangular to rounded, dominantly subrounded, poorly sorted quartz, majority of quartz grains are light to medium brown iron-stained, trace to common medium brown and white kaolinitic clay matrix, very silty in part, trace silica cement in part, trace to common multi-coloured and multi-sourced, medium to pebble size lithics, rare glauconite, pyrite and mica, very rare altered to partially altered feldspar, poor visual porosity.

Cont'd.

S.W.C. No.	Depth (m)	Recovery (mm)	Descriptions
23	815.0	45	Sandstone, medium to dark brownish grey, loose to friable, silt size to pebble size, dominantly very fine to fine and coarse to pebble size (bimodal distribution), subangular to rounded, dominantly subrounded to rounded, very poorly sorted quartz, commonly iron-stained, common medium to dark brown to brownish grey clay matrix, very silty? in part, common multi-coloured and multi-sourced lithics, common fine to medium black coal particles, common pebble size, frosty quartz overgrowth, common dark brown, black and dark grey inclusions in coarse, very coarse, pebble size quartz grains, most of the coarse to pebble size quartz grains are frosty, very poor to poor visual porosity.
24	801.0	40	Sandstone, clear, off-white to frosty (washed sample), medium brown, medium greyish brown in part (unwashed sample), fine to medium, subangular to subrounded, well sorted quartz, trace iron-staining on some quartz grains, common, medium brown, dispersive argillaceous matrix, rare light grey to white clay matrix in part, trace lithics, fair visual porosity. The Sandstone has 5 - 10% dull yellow pinpoint fluorescence with no cut or crush cut.
25	795.0	50	Claystone, medium brownish grey, firm, sticky in part, very slightly calcareous. Subfissile in part, trace coal particles, trace carbonaceous detritus and streaks, trace micromica, rare lithics.
26	790.0	50	Claystone, as per S.W.C. No. 25.
27	772.0	50	Claystone, light to medium brownish grey, light greenish grey in part, firm, sticky in part, massive, abundant fine to coarse, very coarse in part, light to medium green glauconite, trace to common cryptocrystalline pyrite, trace to common micromica, trace lithics, rare medium to coarse well rounded quartz grains.
28	768.0	55	Claystone, medium brownish grey, light brownish grey in part, firm, dispersive in part, trace micromica, trace fine multi-coloured lithics, rare fine quartz sand grains, rare glauconite, rare cryptocrystalline pyrite.

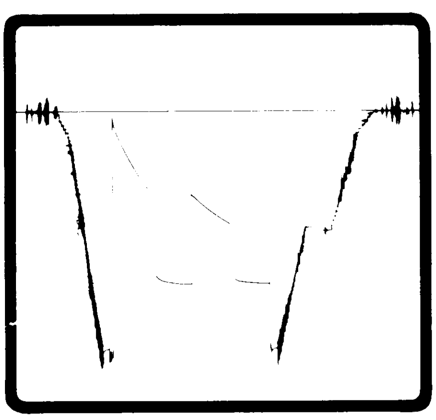
Cont'd.

S.W.C. No.	Depth (m)	Recovery (mm)	Descriptions
29	759.0	30	Claystone, light to medium grey, medium brownish grey in part, soft, firm in part, sticky, massive, slightly calcareous, trace multi-coloured lithics, rare micromica, glauconite and fine quartz sand grains, rare crypocrystalline pyrite and broken shell fragments.
30	751.0	40	Claystone, firm, soft in part as per S.W.C. No. 29.

APPENDIX 5

D.S.T. REPORTS

FORMATION TESTING SERVICE REPORT



HALLIBURTON SERVICES

Duncan, Oklahoma 73536

A Halliburton Company

1296-R5 ⓛ—Southwestern

NOMENCLATURE

B	= Formation Volume Factor (Res Vol / Std Vol)	——
c_t	= System Total Compressibility	(Vol / Vol) / psi
DR	= Damage Ratio	——
h	= Estimated Net Pay Thickness	Ft
k	= Permeability	md
m	= (Liquid) Slope Extrapolated Pressure Plot	psi / cycle
	(Gas) Slope Extrapolated m(P) Plot	MM psi^2 / cp / cycle
$m(P^*)$	= Real Gas Potential at P^*	MM psi^2 / cp
$m(P_f)$	= Real Gas Potential at P_f	MM psi^2 / cp
AOF_1	= Maximum Indicated Absolute Open Flow at Test Conditions	MCFD
AOF_2	= Minimum Indicated Absolute Open Flow at Test Conditions	MCFD
P^*	= Extrapolated Static Pressure	Psig
P_f	= Final Flow Pressure	Psig
Q	= Liquid Production Rate During Test	BPD
Q_1	= Theoretical Liquid Production w / Damage Removed	BPD
Q_g	= Measured Gas Production Rate	MCFD
r_i	= Approximate Radius of Investigation	Ft
r_w	= Radius of Well Bore	Ft
S	= Skin Factor	
t	= Total Flow Time Previous to Closed-in	Minutes
Δt	= Closed-in Time at Data Point	Minutes
T	= Temperature Rankine	°R
ϕ	= Porosity	——
μ	= Viscosity of Gas or Liquid	cp
Log	= Common Log	

PE906539

This is an enclosure indicator page.
The enclosure PE906539 is enclosed within the container PE902366 at this location in this document.

The enclosure PE906539 has the following characteristics:

ITEM_BARCODE = PE906539
CONTAINER_BARCODE = PE902366
NAME = DST 1 Photo, 1 of 2
BASIN = GIPPSLAND
PERMIT = PEP107
TYPE = WELL
SUBTYPE = DST
DESCRIPTION = DST 1 Photo, 1 of 2, Wrixondale-1
REMARKS =
DATE_CREATED = 13/12/85
DATE_RECEIVED =
W_NO = W919
WELL_NAME = WRIXONDALE-1
CONTRACTOR = HALLIBURTON ENERGY SERVICES
CLIENT_OP_CO = BEACH PETROLEUM NL

(Inserted by DNRE - Vic Govt Mines Dept)

PE906540

This is an enclosure indicator page.
The enclosure PE906540 is enclosed within the container PE902366 at this location in this document.

The enclosure PE906540 has the following characteristics:

ITEM_BARCODE = PE906540
CONTAINER_BARCODE = PE902366
NAME = DST 1 Photo, 2 of 2
BASIN = GIPPSLAND
PERMIT = PEP107
TYPE = WELL
SUBTYPE = DST
DESCRIPTION = DST 1 Photo, 2 of 2, Wrixondale-1
REMARKS =
DATE_CREATED = 13/12/85
DATE_RECEIVED =
W_NO = W919
WELL_NAME = WRIXONDALE-1
CONTRACTOR = HALLIBURTON ENERGY SERVICES
CLIENT_OP_CO = BEACH PETROLEUM NL

(Inserted by DNRE - Vic Govt Mines Dept)

GAUGE NO: 7979 DEPTH: 2523.5 BLANKED OFF: NO HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	1190	1185.1			
B	INITIAL FIRST FLOW	368	364.4	15.0	15.1	F
C	FINAL FIRST FLOW	368	368.9			
C	INITIAL FIRST CLOSED-IN	368	368.9	30.0	28.5	C
D	FINAL FIRST CLOSED-IN	993	1012.0			
E	INITIAL SECOND FLOW	368	371.6	45.0	46.8	F
F	FINAL SECOND FLOW	371	380.1			
F	INITIAL SECOND CLOSED-IN	371	380.1	45.0	44.6	C
G	FINAL SECOND CLOSED-IN	993	997.5			
H	FINAL HYDROSTATIC	1174	1183.4			

HALLIBURTON
SERVICES

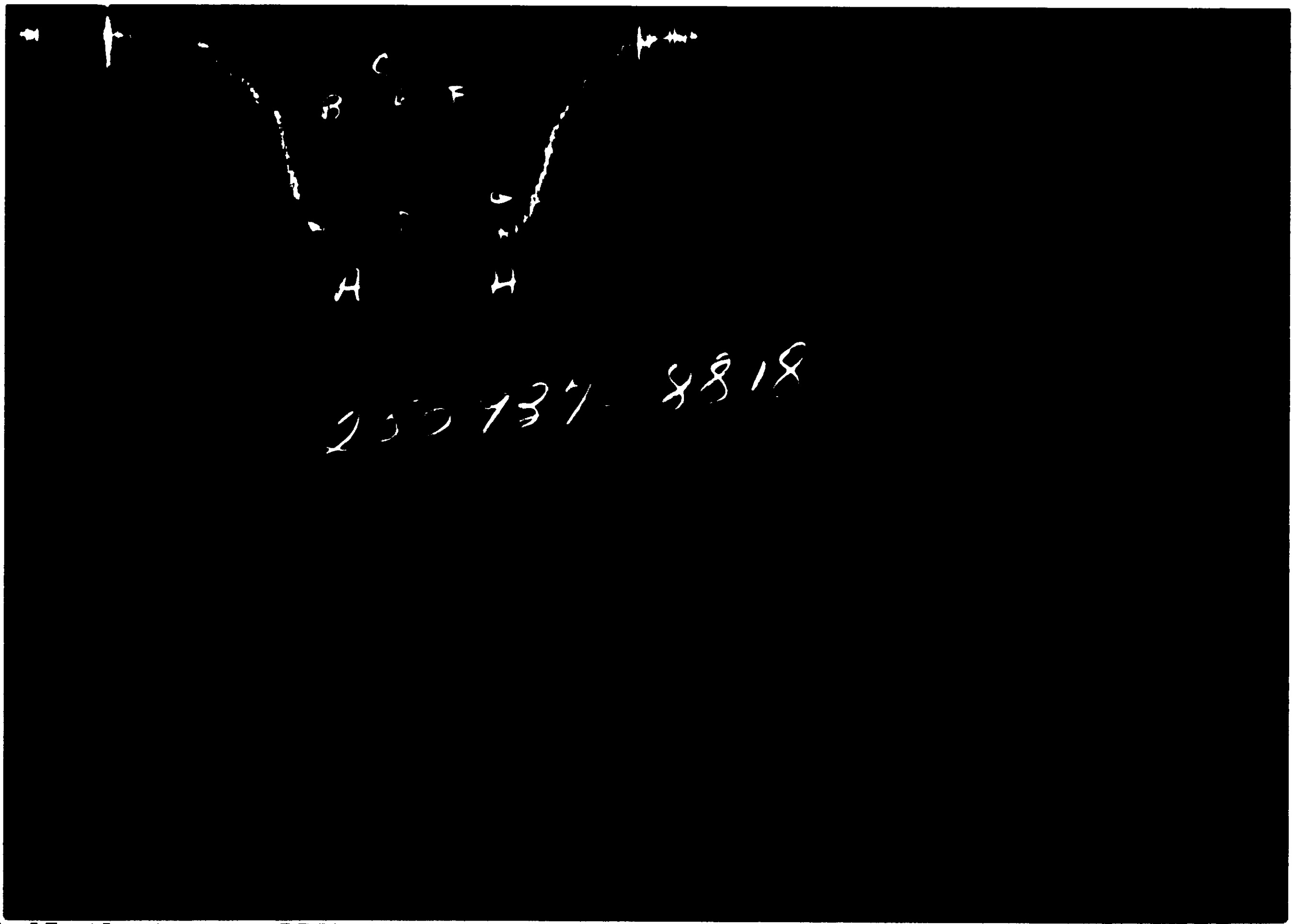
TICKET NO. 25093700

13-DEC-85

SALE

LEASE NAME	WRIXONDALE
WELL NO.	1
TEST NO.	1
TESTED INTERVAL	2546.3 - 2607.0
LEASE OWNER/COMPANY NAME	BEACH PETROLEUM N.L.
LEGAL LOCATION SEC. - TWP. - RNG.	SEE REMARKS
FIELD AREA	GIPPSLAND
COUNTY	VICTORIA
STATE	AUSTRALIA IC

FORMATION TESTING SERVICE REPORT



GAUGE NO: 8818 DEPTH: 2604.0 BLANKED OFF: YES HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE REPORTED	PRESSURE CALCULATED	TIME REPORTED	TIME CALCULATED	TYPE
A	INITIAL HYDROSTATIC	1262	1241.5			
B	INITIAL FIRST FLOW	425	434.3	15.0	15.1	F
C	FINAL FIRST FLOW	458	436.3			
C	INITIAL FIRST CLOSED-IN	458	436.3	30.0	28.5	C
D	FINAL FIRST CLOSED-IN	1051	1042.7			
E	INITIAL SECOND FLOW	490	489.5	45.0	46.8	F
F	FINAL SECOND FLOW	490	479.2			
F	INITIAL SECOND CLOSED-IN	490	479.2	45.0	44.6	C
G	FINAL SECOND CLOSED-IN	1034	1036.2			
H	FINAL HYDROSTATIC	1230	1240.2			

EQUIPMENT & HOLE DATA

FORMATION TESTED: LA TROBE
NET PAY (ft):
GROSS TESTED FOOTAGE: 60.7
ALL DEPTHS MEASURED FROM: KELLY BUSHING
CASING PERFS. (ft):
HOLE OR CASING SIZE (in): 8.500
ELEVATION (ft):
TOTAL DEPTH (ft): 2607.0
PACKER DEPTH(S) (ft): 2539, 2546
FINAL SURFACE CHOKE (in):
BOTTOM HOLE CHOKE (in): 0.750
MUD WEIGHT (lb/gal): 8.90
MUD VISCOSITY (sec): 42
ESTIMATED HOLE TEMP. (°F):
ACTUAL HOLE TEMP. (°F): 152 @ 2603.0 ft

TICKET NUMBER: 25093700

DATE: 10-16-85 TEST NO: 1

TYPE DST: OPEN HOLE

HALLIBURTON CAMP: SALE

TESTER: R. W. BLANTON
B. TAPLIN

WITNESS: V. SANTOSTEFANO

DRILLING CONTRACTOR: ATCO #3

FLUID PROPERTIES FOR RECOVERED MUD & WATER

SOURCE	RESISTIVITY	CHLORIDES
	@ °F	ppm
	@ °F	ppm
	@ °F	ppm
	@ °F	ppm
	@ °F	ppm
	@ °F	ppm

SAMPLER DATA

Psig AT SURFACE:
cu.ft. OF GAS:
cc OF OIL:
cc OF WATER:
cc OF MUD:
TOTAL LIQUID cc:

HYDROCARBON PROPERTIES

OIL GRAVITY (°API): @ °F
GAS/OIL RATIO (cu.ft. per bbl):
GAS GRAVITY:

CUSHION DATA

TYPE	AMOUNT	WEIGHT
WATER (FEET)	1000.0	8.40

RECOVERED:

NO REPORTED RECOVERY

MEASURED FROM TESTER VALVE

REMARKS:

LEGAL LOCATION: LAT. 37 DEG., 59', 42.8"S; LONG. 147 DEG., 29', 48.1"E.

CHARTS INDICATE PLUGGING OF THE ANCHOR PIPE PERFORATIONS DURING BOTH FLOW PERIODS.

YPE & SIZE MEASURING DEVICE: 6" CERAMIC CHOKE | TICKET NO: 25093700

TIME	CHOKE SIZE	SURFACE PRESSURE PSI	GAS RATE MCF	LIQUID RATE BPD	REMARKS
10-16-85					
0415					MADE UP TOOLS
0530					RAN IN HOLE
0830					HEAD UP
0858					SET PACKERS WITH 30000#
0905	0	0			OPENED TOOL WITH WEAK BLOW
0907					WEAK BLOW
0909	.50				OPENED TO .50" CHOKE WITH WEAK
					BLOW
0915					VERY WEAK BLOW
320					CLOSED TOOL
0950	0	0			OPENED TOOL WITH SLIGHT BLOW
0955					SLIGHT BLOW
1000					SLIGHT BLOW
1005					DEAD
1015					DEAD
1030					DEAD
1035					CLOSED TOOL
1120					PULLED FREE
1123					BROKE DOWN HEAD
1150					PULLED OUT OF HOLE
1415					BROKE DOWN TEST HEAD
500					TOOLS OUT OF HOLE

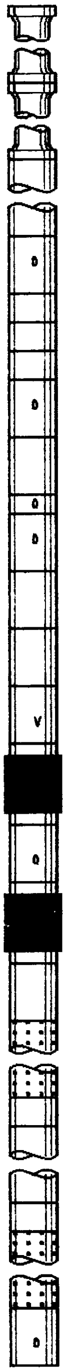
TICKET NO: 25093700		GAUGE NO: 7979
CLOCK NO: 28189 HOUR: 24	HALLIBURTON SERVICES	DEPTH: 2523.5

REF		MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$
			FIRST FLOW			
B	1	0.0	364.4			
C	2	15.1	368.9	4.5		
			FIRST CLOSED-IN			
C	1	0.0	368.9			
	2	2.0	581.0	212.1	1.8	0.925
	3	4.0	692.5	323.6	3.1	0.681
	4	6.0	769.5	400.6	4.3	0.546
	5	8.0	825.9	457.0	5.2	0.460
	6	10.0	862.6	493.7	6.0	0.398
	7	12.0	897.4	528.5	6.7	0.353
	8	14.0	924.4	555.5	7.3	0.317
	9	16.0	945.1	576.2	7.8	0.288
	10	18.0	959.3	590.4	8.2	0.264
	11	20.0	973.9	605.0	8.6	0.243
	12	22.0	984.1	615.2	8.9	0.227
	13	24.0	994.8	625.9	9.3	0.212
	14	26.0	1003.0	634.1	9.5	0.199
D	15	28.5	1012.0	643.1	9.9	0.184
			SECOND FLOW			
E	1	0.0	371.6			
F	2	46.8	380.1	8.5		
			SECOND CLOSED-IN			
F	1	0.0	380.1			
	2	3.0	669.3	289.2	2.9	1.328
	3	6.0	756.1	376.0	5.5	1.053
	4	9.0	807.4	427.3	7.8	0.898
	5	12.0	848.2	468.1	10.1	0.789
	6	15.0	879.0	498.9	12.1	0.710
	7	18.0	901.3	521.2	14.0	0.646
	8	21.0	918.7	538.6	15.7	0.597
	9	24.0	934.8	554.7	17.3	0.554
	10	27.0	948.7	568.6	18.8	0.517
	11	30.0	960.3	580.2	20.2	0.485
	12	33.0	969.8	589.7	21.5	0.458
	13	36.0	978.9	598.8	22.7	0.434
	14	39.0	985.6	605.5	23.9	0.412
	15	42.0	992.5	612.4	25.0	0.393
G	16	44.6	997.5	617.4	25.9	0.378

REF	MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$

REMARKS:

TICKET NO. 25093700



		O.D.	I.D.	LENGTH	DEPTH
1	DRILL PIPE......................	4.500	3.826	1866.8	
4	FLEX WEIGHT.....................	4.500	2.875	184.4	
3	DRILL COLLARS...................	6.250	2.875	422.3	
50	IMPACT REVERSING SUB............	6.000	3.000	1.0	2474.0
5	CROSSOVER.......................	6.250	2.875	29.9	
5	CROSSOVER.......................	5.750	2.250	1.0	
5	CROSSOVER.......................	5.000	2.200	1.0	
12	DUAL CIP VALVE..................	5.000	0.870	4.9	
97	SAMPLE CHAMBER..................	5.000	2.500	4.9	8512.4
33	DRAIN VALVE.....................	5.000	2.200	1.0	
60	HYDROSPRING TESTER..............	5.000	0.750	5.3	2521.4
80	AP RUNNING CASE.................	5.000	2.250	4.1	2523.5
15	JAR.............................	5.000	1.750	5.0	
16	VR SAFETY JOINT.................	5.000	1.000	2.8	
70	OPEN HOLE PACKER................	5.000	1.530	5.8	2538.5
18	DISTRIBUTOR VALVE...............	5.000	1.580	2.0	
70	OPEN HOLE PACKER................	5.000	1.530	5.8	2546.3
19	ANCHOR PIPE SAFETY JOINT........	5.000	1.500	4.3	
20	FLUSH JOINT ANCHOR..............	5.000	2.370	5.0	
5	CROSSOVER.......................	6.250	2.250	1.0	
3	DRILL COLLARS...................	6.250	2.875	30.7	
5	CROSSOVER.......................	6.250	2.250	1.0	
20	FLUSH JOINT ANCHOR..............	5.000	2.370	13.0	
81	BLANKED-OFF RUNNING CASE........	5.000		4.1	2604.0
	TOTAL DEPTH				2607.0

EQUIPMENT DATA

ICKET NO: 25093700 | CLOCK NO: 30343 HOUR: 24

HALLIBURTON SERVICES

GAUGE NO: 8818 | DEPTH: 2604.0

REF		MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t+\Delta t}$	$\log \frac{t+\Delta t}{\Delta t}$
			FIRST FLOW			
B	1	0.0	434.3			
C	2	15.1	436.3	2.0		
			FIRST CLOSED-IN			
C	1	0.0	436.3			
	2	2.0	623.6	187.4	1.8	0.934
	3	4.0	729.9	293.6	3.2	0.678
	4	6.0	796.0	359.7	4.3	0.548
	5	8.0	849.7	413.4	5.2	0.460
	6	10.0	891.5	455.3	6.0	0.399
	7	12.0	924.0	487.7	6.7	0.353
	8	14.0	949.7	513.4	7.3	0.318
	9	16.0	970.0	533.7	7.8	0.288
	10	18.0	986.9	550.6	8.2	0.264
	11	20.0	1002.9	566.7	8.6	0.244
	12	22.0	1014.3	578.1	8.9	0.226
	13	24.0	1024.8	588.5	9.3	0.211
	14	26.0	1035.0	598.7	9.5	0.199
D	15	28.5	1042.7	606.4	9.9	0.184
			SECOND FLOW			
E	1	0.0	489.5			
F	2	46.8	479.2	-10.3		
			SECOND CLOSED-IN			
F	1	0.0	479.2			
	2	3.0	706.9	227.6	2.8	1.338
	3	6.0	792.3	313.1	5.4	1.056
	4	9.0	845.8	366.6	7.9	0.896
	5	12.0	885.5	406.2	10.0	0.789
	6	15.0	915.0	435.8	12.1	0.709
	7	18.0	937.7	458.5	13.9	0.647
	8	21.0	956.1	476.8	15.7	0.596
	9	24.0	972.8	493.6	17.3	0.553
	10	27.0	986.1	506.9	18.8	0.517
	11	30.0	997.1	517.9	20.2	0.486
	12	33.0	1006.2	526.9	21.5	0.459
	13	36.0	1015.1	535.9	22.8	0.434
	14	39.0	1023.0	543.7	23.9	0.413
	15	42.0	1030.6	551.4	25.0	0.393
G	16	44.6	1036.2	556.9	25.9	0.378

REF	MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t+\Delta t}$	$\log \frac{t+\Delta t}{\Delta t}$

REMARKS:

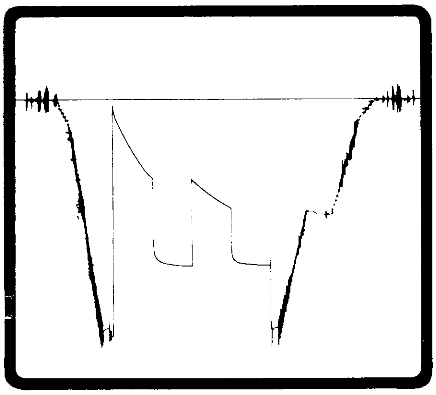
EQUATIONS FOR DST LIQUID WELL ANALYSIS

Transmissibility	$\frac{kh}{\mu} = \frac{162.6\ QB}{m}$	$\frac{\text{md-ft}}{\text{cp}}$
Indicated Flow Capacity	$kh = \frac{kh}{\mu}\mu$	md-ft
Average Effective Permeability	$k = \frac{kh}{h}$	md
Skin Factor	$S = 1.151\left[\frac{P^* - P_f}{m} - \text{LOG}\left(\frac{k(t/60)}{\phi\ \mu\ c_t r_w^2}\right) + 3.23\right]$	—
Damage Ratio	$DR = \frac{P^* - P_f}{P^* - P_f - 0.87\ mS}$	—
Theoretical Potential w Damage Removed	$Q_1 = Q\ DR$	BPD
Approx. Radius of Investigation	$r_i = 0.032\sqrt{\frac{k(t/60)}{\phi \mu c_t}}$	ft

EQUATIONS FOR DST GAS WELL ANALYSIS

Indicated Flow Capacity	$kh = \frac{1637\ Q_g\ T}{m}$	md-ft
Average Effective Permeability	$k = \frac{kh}{h}$	md
Skin Factor	$S = 1.151\left[\frac{m(P^*) - m(P_f)}{m} - \text{LOG}\left(\frac{k(t/60)}{\phi\ \mu\ c_t r_w^2}\right) + 3.23\right]$	—
Damage Ratio	$DR = \frac{m(P^*) - m(P_f)}{m(P^*) - m(P_f) - 0.87\ mS}$	—
Indicated Flow Rate (Maximum)	$AOF_1 = \frac{Q_g\ m(P^*)}{m(P^*) - m(P_f)}$	MCFD
Indicated Flow Rate (Minimum)	$AOF_2 = Q_g\sqrt{\frac{m(P^*)}{m(P^*) - m(P_f)}}$	MCFD
Approx. Radius of Investigation	$r_i = 0.032\sqrt{\frac{k(t/60)}{\phi \mu c_t}}$	ft

FORMATION TESTING SERVICE REPORT



HALLIBURTON SERVICES

Duncan, Oklahoma 73536

A Halliburton Company

1296-R5 Southwestern

NOMENCLATURE

B	=	Formation Volume Factor (Res Vol Std Vol)	___
c_t	=	System Total Compressibility	(Vol Vol) psi
DR	=	Damage Ratio	___
h	=	Estimated Net Pay Thickness	Ft
k	=	Permeability	md
m	=	(Liquid) Slope Extrapolated Pressure Plot	psi cycle
		(Gas) Slope Extrapolated m(P) Plot	MM psi^2 cp cycle
m(P*)	=	Real Gas Potential at P*	MM psi^2 cp
$m(P_f)$	=	Real Gas Potential at P_f	MM psi^2 cp
AOF_1	=	Maximum Indicated Absolute Open Flow at Test Conditions	MCFD
AOF_2	=	Minimum Indicated Absolute Open Flow at Test Conditions	MCFD
P*	=	Extrapolated Static Pressure	Psig
P_f	=	Final Flow Pressure	Psig
Q	=	Liquid Production Rate During Test	BPD
Q_1	=	Theoretical Liquid Production w Damage Removed	BPD
Q_g	=	Measured Gas Production Rate	MCFD
r_i	=	Approximate Radius of Investigation	Ft
r_w	=	Radius of Well Bore	Ft
S	=	Skin Factor	
t	=	Total Flow Time Previous to Closed-in	Minutes
Δt	=	Closed-in Time at Data Point	Minutes
T	=	Temperature Rankine	R
ϕ	=	Porosity	___
μ	=	Viscosity of Gas or Liquid	cp
Log	=	Common Log	

PE906541

This is an enclosure indicator page.
The enclosure PE906541 is enclosed within the container PE902366 at this location in this document.

The enclosure PE906541 has the following characteristics:

ITEM_BARCODE = PE906541
CONTAINER_BARCODE = PE902366
NAME = DST 2 Photo, 1 of 2
BASIN = GIPPSLAND
PERMIT = PEP107
TYPE = WELL
SUBTYPE = DST
DESCRIPTION = DST 2 Photo, 1 of 2, Wrixondale-1
REMARKS =
DATE_CREATED = 13/12/85
DATE_RECEIVED =
W_NO = W919
WELL_NAME = WRIXONDALE-1
CONTRACTOR = HALLIBURTON ENERGY SERVICES
CLIENT_OP_CO = BEACH PETROLEUM NL

(Inserted by DNRE - Vic Govt Mines Dept)

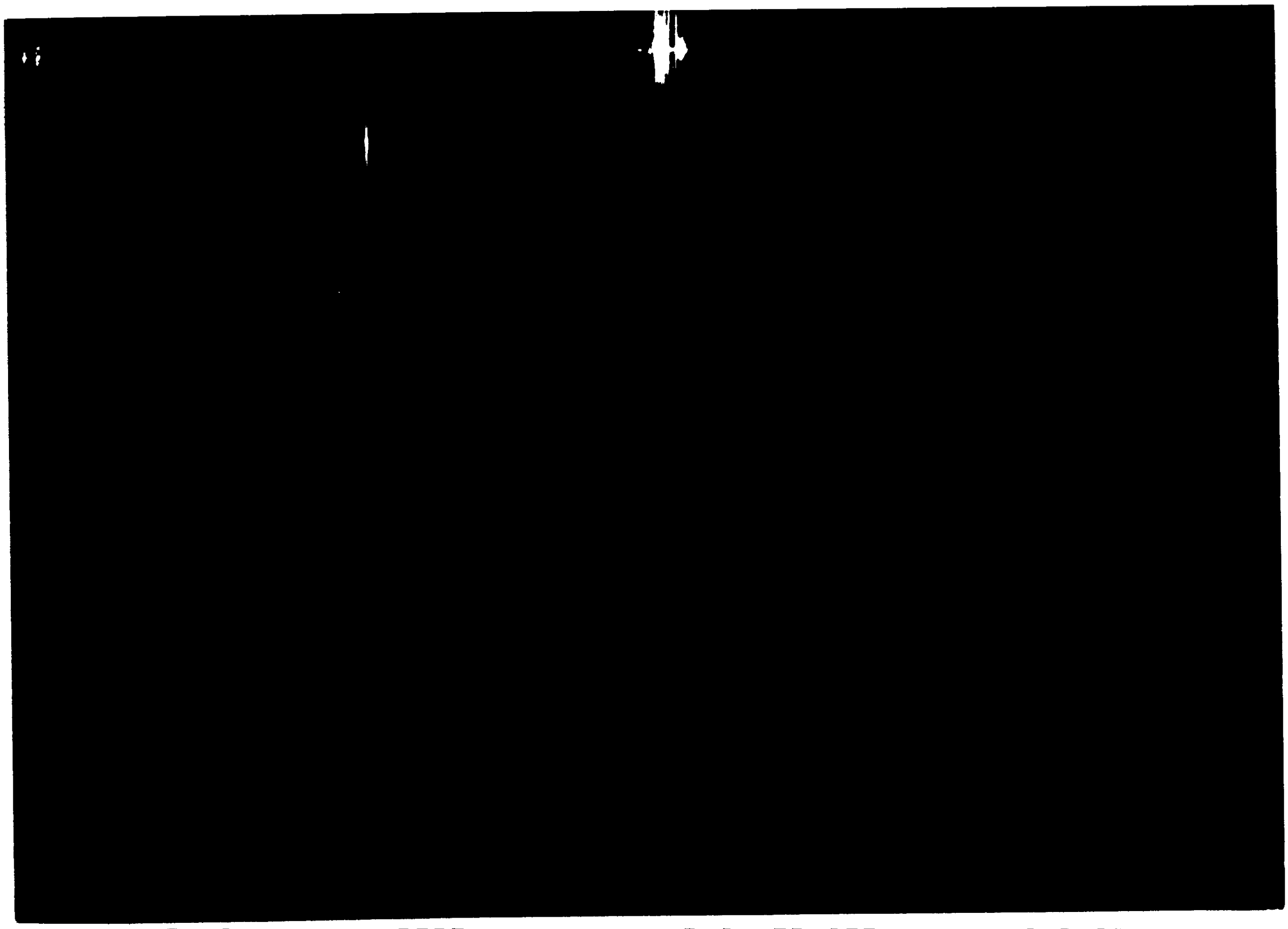
PE906542

This is an enclosure indicator page.
The enclosure PE906542 is enclosed within the container PE902366 at this location in this document.

The enclosure PE906542 has the following characteristics:

ITEM_BARCODE = PE906542
CONTAINER_BARCODE = PE902366
NAME = DST 2 Photo, 2 of 2
BASIN = GIPPSLAND
PERMIT = PEP107
TYPE = WELL
SUBTYPE = DST
DESCRIPTION = DST 2 Photo, 2 of 2, Wrixondale-1
REMARKS =
DATE_CREATED = 13/12/85
DATE_RECEIVED =
W_NO = W919
WELL_NAME = WRIXONDALE-1
CONTRACTOR = HALLIBURTON ENERGY SERVICES
CLIENT_OP_CO = BEACH PETROLEUM NL

(Inserted by DNRE - Vic Govt Mines Dept)



GAUGE NO: 7979 DEPTH: 2599.2 BLANKED OFF: NO HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	1223	1241.5			
B	INITIAL FIRST FLOW	534	554.8	60.0	59.4	F
C	FINAL FIRST FLOW	780	795.7			
C	INITIAL FIRST CLOSED-IN	780	795.7	60.0	60.6	C
D	FINAL FIRST CLOSED-IN	1108	1113.8			
E	FINAL HYDROSTATIC	1223	1211.6			

WRIXONDALE	1	2	2622.0 - 2646.0	BEACH PETROLEUM N.L.
LEASE NAME	WELL NO.	TEST NO.	TESTED INTERVAL	LEASE OWNER/COMPANY NAME
LEGAL LOCATION SEC. - TWP. - RNG. SEE REMARKS		FIELD AREA GAPPSLAND	COUNTY VICTORIA	STATE AUSTRALIA PW

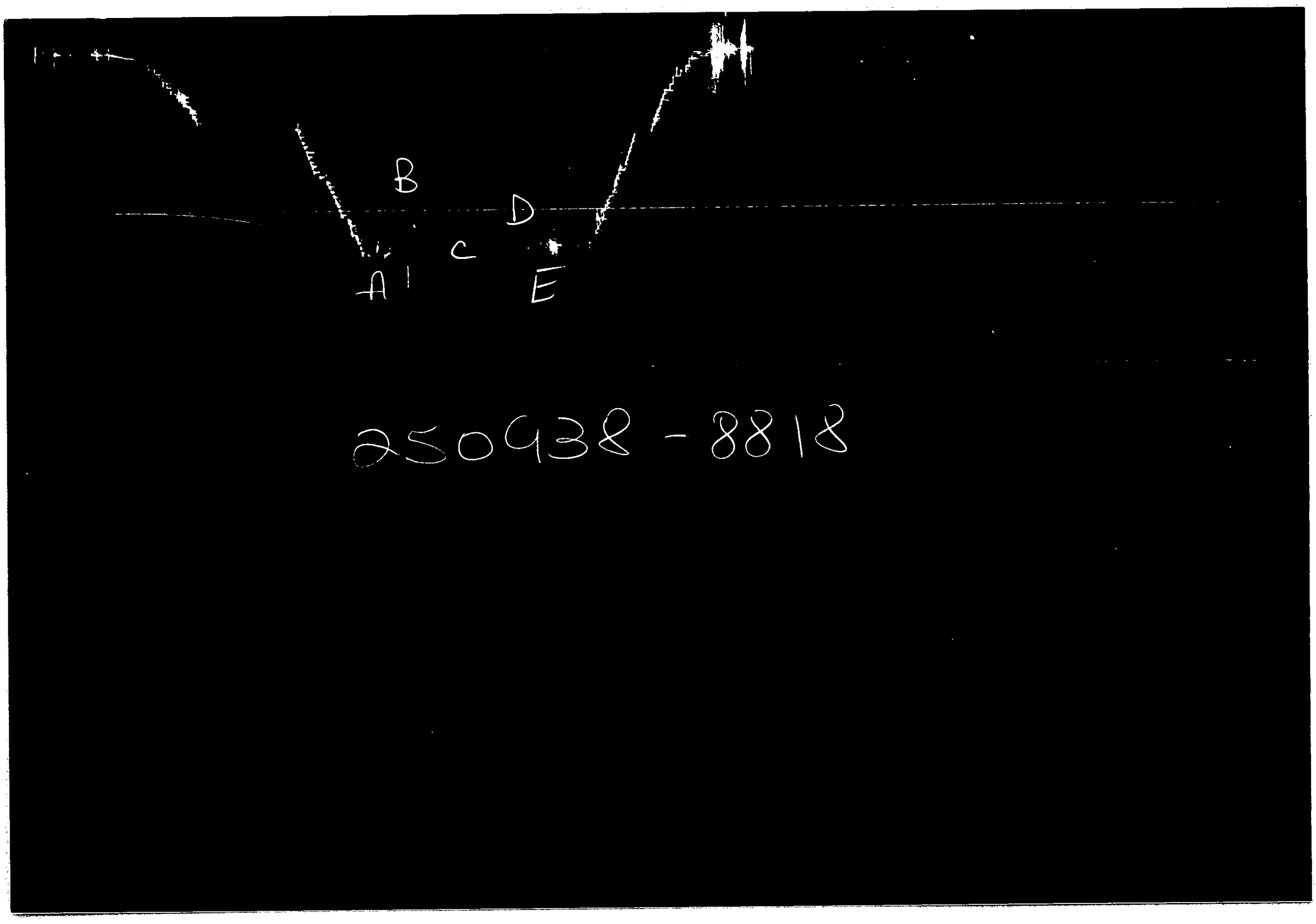
HALLIBURTON SERVICES

TICKET NO. 25093800

13-DEC-85

SALE

FORMATION TESTING SERVICE REPORT



GAUGE NO: 8818 DEPTH: 2643.0 BLANKED OFF: YES HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	1236	1259.4			
B	INITIAL FIRST FLOW	1067	1087.1	60.0	59.4	F
C	FINAL FIRST FLOW	1132	1141.5			
C	INITIAL FIRST CLOSED-IN	1132	1141.5	60.0	60.6	C
D	FINAL FIRST CLOSED-IN	1138	1141.5			
E	FINAL HYDROSTATIC	1246	1243.6			

EQUIPMENT & HOLE DATA

FORMATION TESTED: LATROBE
NET PAY (ft):
GROSS TESTED FOOTAGE: 24.0
ALL DEPTHS MEASURED FROM: KB
CASING PERFS. (ft):
HOLE OR CASING SIZE (in): 8.500
ELEVATION (ft):
TOTAL DEPTH (ft): 2646.0
PACKER DEPTH(S) (ft): 2614, 2622
FINAL SURFACE CHOKE (in):
BOTTOM HOLE CHOKE (in): 0.750
MUD WEIGHT (lb/gal): 8.90
MUD VISCOSITY (sec): 41
ESTIMATED HOLE TEMP. (°F): 152
ACTUAL HOLE TEMP. (°F): 130 @ 2642.0 ft

TICKET NUMBER: 25093800
DATE: 10-17-85 TEST NO: 2
TYPE DST: OPEN HOLE
HALLIBURTON CAMP: SALE
TESTER: R.W. BLANTON
B. TAPLIN
WITNESS: V. SANTOSTEFANO
DRILLING CONTRACTOR: ATCO #3

FLUID PROPERTIES FOR RECOVERED MUD & WATER

SOURCE	RESISTIVITY	CHLORIDES
	@ °F	ppm
	@ °F	ppm
	@ °F	ppm
	@ °F	ppm
	@ °F	ppm
	@ °F	ppm

SAMPLER DATA

Psig AT SURFACE:
cu.ft. OF GAS:
cc OF OIL:
cc OF WATER:
cc OF MUD:
TOTAL LIQUID cc:

HYDROCARBON PROPERTIES

OIL GRAVITY (°API): @ °F
GAS/OIL RATIO (cu.ft. per bbl):
GAS GRAVITY:

CUSHION DATA

TYPE	AMOUNT	WEIGHT
WATER (FT)	1000.0	8.40

RECOVERED:

19 BBLS. OF FORMATION WATER
1000 FEET OF WATER CUSHION

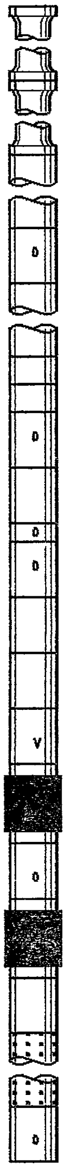
MEASURED FROM TESTER VALVE

REMARKS:

CHARTS INDICATE PLUGGING OF THE ANCHOR PIPE PERFORATIONS DURING THE FLOW PERIOD.

LEGAL LOCATION: LAT. 37 DEGREES - 59' - 42.8" SOUTH
LONG. 147 DEGREES - 29' - 48.1" EAST

TICKET NO. 25093800



		O.D.	I.D.	LENGTH	DEPTH
1	DRILL PIPE......................	4.500	3.826	1912.5	
4	FLEX WEIGHT.....................	4.500	2.875	184.4	
3	DRILL COLLARS...................	6.250	2.875	451.5	
50	IMPACT REVERSING SUB............	6.000	3.000	1.0	2548.9
3	DRILL COLLARS...................	6.250	2.875	30.7	
5	CROSSOVER.......................	5.750	2.250	1.0	
5	CROSSOVER.......................	5.000	2.500	1.0	
12	DUAL CIP VALVE..................	5.000	0.870	4.9	
97	SAMPLE CHAMBER..................	5.000	2.200	4.9	2587.1
33	DRAIN VALVE.....................	5.000	2.500	1.0	
60	HYDROSPRING TESTER..............	5.000	0.750	5.3	2597.1
80	AP RUNNING CASE.................	5.000	2.250	4.1	2599.2
15	JAR.............................	5.000	1.750	5.0	
16	VR SAFETY JOINT.................	5.000	1.000	2.8	
70	OPEN HOLE PACKER................	5.000	1.530	5.8	2614.2
18	DISTRIBUTOR VALVE...............	5.000	1.580	2.0	
70	OPEN HOLE PACKER................	5.000	1.530	5.8	2622.0
19	ANCHOR PIPE SAFETY JOINT........	5.000	1.500	4.3	
20	FLUSH JOINT ANCHOR..............	5.000	2.370	14.0	
81	BLANKED-OFF RUNNING CASE........	5.000		4.1	2643.0
	TOTAL DEPTH				2646.0

EQUIPMENT DATA

TICKET NO: 25093800
CLOCK NO: 28189 HOUR: 24

HALLIBURTON SERVICES

GAUGE NO: 7979
DEPTH: 2599.2

FIRST FLOW

REF	MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t+\Delta t}$	$\log\frac{t+\Delta t}{\Delta t}$
B 1	0.0	554.8			
2	10.0	621.1	66.4		
3	20.0	694.8	73.6		
4	30.0	738.2	43.4		
5	40.0	767.4	29.2		
6	50.0	785.1	17.7		
C 7	59.4	795.7	10.7		

FIRST CLOSED-IN

REF	MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t+\Delta t}$	$\log\frac{t+\Delta t}{\Delta t}$
C 1	0.0	795.7			
2	1.0	1110.0	314.3	1.0	1.794
3	2.0	1111.6	315.9	2.0	1.481
4	3.0	1112.8	317.0	2.9	1.314
5	4.0	1113.4	317.7	3.8	1.197
6	5.0	1113.4	317.7	4.6	1.108
7	6.0	1113.4	317.7	5.4	1.038
8	7.0	1113.4	317.7	6.3	0.977
9	8.0	1113.4	317.7	7.0	0.926
10	9.0	1113.4	317.7	7.8	0.880
11	10.0	1113.4	317.7	8.6	0.840
12	20.0	1113.4	317.7	15.0	0.599
13	30.0	1113.4	317.7	19.9	0.475
14	40.0	1113.4	317.7	23.9	0.395
15	50.0	1113.4	317.7	27.1	0.340
D 16	60.6	1113.8	318.0	30.0	0.297

REMARKS:

TICKET NO: 25093800	GAUGE NO: 8818
CLOCK NO: 30343 HOUR: 24	DEPTH: 2643.0

HALLIBURTON SERVICES

REF		MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$
			FIRST FLOW			
B	1	0.0	1087.1			
	2	10.0	1127.2	40.1		
	3	20.0	1136.0	8.8		
	4	30.0	1138.6	2.6		
	5	40.0	1140.4	1.8		
	6	50.0	1141.0	0.7		
C	7	59.4	1141.5	0.5		
			FIRST CLOSED-IN			
C	1	0.0	1141.5			
D	2	60.6	1141.5	0.0	30.0	0.297

REF	MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$

REMARKS:

TYPE & SIZE MEASURING DEVICE: 6" CERAMIC CHOKE | TICKET NO: 25093800

TIME	CHOKE SIZE	SURFACE PRESSURE PSI	GAS RATE MCF	LIQUID RATE BPD	REMARKS
10-16-85					
2350					MADE-UP TOOLS
10-17-85					
0000					RUN IN HOLE
0445					HEAD UP
0512					SET PACKERS WITH 25,000#
0518					OPENED TOOL - STRONG BLOW
0520	.50"				OPENED MANIFOLD - DECREASING
					TO WEAK BLOW.
0525	.50"				VERY WEAK BLOW
0528	5/16"				CHANGED TO 5/16" CHOKE
0530	"				WEAK BLOW
0540	"				"
0545	"				"
0548					CLOSED MANIFOLD - INCREASING
					TO STRONG BLOW.
0550					STRONG BLOW
0555					"
0600					STRONG BLOW DECREASING
0605					"
0610					"
0615					MODERATE BLOW
0618					CLOSED TOOL - WEAK BLOW
0718					PULLED FREE
0725					DROPPED BAR TO REVERSE
					CIRCULATE.
0730					NO SIGN
0735					LAID DOWN HEAD AND PULLED 1
					STAND.
0745					RELOADED HEAD AND HEAD UP
0753					DROPPED BAR
0755					SHEARED PIN AND BEGAN TO
					REVERSE CIRCULATE.
0820					STOPPED CIRCULATING AND BREAK
					OUT HEAD.
0830					PULLED OUT OF HOLE
1100					BREAK DOWN TOOLS

TYPE & SIZE MEASURING DEVICE: 6" CERAMIC CHOKE					TICKET NO: 25093800
TIME	CHOKE SIZE	SURFACE PRESSURE PSI	GAS RATE MCF	LIQUID RATE BPD	REMARKS
1130					TOOLS OUT OF HOLE

EQUATIONS FOR DST LIQUID WELL ANALYSIS

Transmissibility	$\frac{kh}{\mu} = \frac{162.6\ QB}{m}$	$\frac{\text{md-ft}}{\text{cp}}$
Indicated Flow Capacity	$kh = \frac{kh}{\mu}\mu$	md-ft
Average Effective Permeability	$k = \frac{kh}{h}$	md
Skin Factor	$S = 1.151\left[\frac{P^* - P_f}{m} - \text{LOG}\left(\frac{k(t/60)}{\phi\ \mu\ c_t r_w^2}\right) + 3.23\right]$	—
Damage Ratio	$DR = \frac{P^* - P_f}{P^* - P_f - 0.87\ mS}$	—
Theoretical Potential w/ Damage Removed	$Q_t = Q\ DR$	BPD
Approx. Radius of Investigation	$r_i = 0.032\sqrt{\frac{k(t/60)}{\phi\mu c_t}}$	ft

EQUATIONS FOR DST GAS WELL ANALYSIS

Indicated Flow Capacity	$kh = \frac{1637\ Q_g\ T}{m}$	md-ft
Average Effective Permeability	$k = \frac{kh}{h}$	md
Skin Factor	$S = 1.151\left[\frac{m(P^*) - m(P_f)}{m} - \text{LOG}\left(\frac{k(t/60)}{\phi\ \mu\ c_t r_w^2}\right) + 3.23\right]$	—
Damage Ratio	$DR = \frac{m(P^*) - m(P_f)}{m(P^*) - m(P_f) - 0.87\ mS}$	—
Indicated Flow Rate (Maximum)	$AOF_1 = \frac{Q_g\ m(P^*)}{m(P^*) - m(P_f)}$	MCFD
Indicated Flow Rate (Minimum)	$AOF_2 = Q_g\sqrt{\frac{m(P^*)}{m(P^*) - m(P_f)}}$	MCFD
Approx. Radius of Investigation	$r_i = 0.032\sqrt{\frac{k(t/60)}{\phi\mu c_t}}$	ft

APPENDIX 6

VELOCITY SURVEY

Schlumberger

BEACH PETROLEUM N.L.

GEOGRAM PROCESSING REPORT

WRIXONDALE - 1

FIELD	:	WILDCAT
COUNTRY	:	AUSTRALIA
COORDINATES	:	037° 59' 42.8" S
	:	147° 29' 48.1" E
PERMIT	:	PEP - 107
DATE OF SURVEY	:	19-OCTOBER-1985
REFERENCE NO.	:	540421

CONTENTS

1.0 INTRODUCTION

A velocity check shot survey was conducted in the WRIXONDALE - 1 well on 19-October-1985. Twenty two levels from 26.2 metres (SRD) to 965 metres below KB were shot using an airgun source. Seventeen of these levels have been used in the calibration of the sonic log.

The shot times and calibrated sonic times have been corrected to a nominal Mean Sea Level Datum.

2.0 DATA ACQUISITION

Table 1 : Field Equipment and Survey Parameters

Elevation SRD	Mean Sea Level
Elevation KB	26.2 metres AMSL
Elevation DF	26.0 metres AMSL
Elevation GL	22.2 metres AMSL
No. of Levels	22
Well Deviation	Nil
Total Depth	987.5 metres below KB
Energy Source	Bolt airgun, 200 cu.in.
Source Offset	40 metres
Source Depth	1.8 metres below GL
Source Azimuth	245°
Reference Sensor	Accelerometer
Sensor Offset	40 metres
Sensor Depth	1.8 metres below GL
Sensor Azimuth	245°
Downhole Geophone	Geospace HS-1
(WST Tool)	High Temp. (350°F)
	Coil Resist. 225Ω ±10 %
	Natural Freq. 8-12 Hz
	Sensitivity 0.45 V/in/sec
	Maximum tilt angle 60°

Recording was made on the Schlumberger Computerized Service Unit (CSU) using LIS format.

2.1 Survey Details

The survey was shot as a standard onshore velocity survey. A weathering survey was conducted near the wellhead in order to esitmate the near surface velocity. No major problems were noted during the survey.

3.0 CHECK SHOT DATA

A total of 22 check levels were shot during the survey. The transit times picked for the levels above 100 metres give unacceptable values for the corresponding interval velocities. The offset-depth ratio is high and hence because of refraction effects a linear ray path model is not valid.

The first breaks are breaking upwards for the top two shots. An explanation is that the seismic energy has a high horizontal component and the tool is responding predominantly to these components. The data quality of all levels below and including 65 metres is good. No shots above 165 metres have being included in the seismic calibration.

The levels at 185 and 633 were shot going into the well and were repeated coming out. There is good correlation with the repeated shots and all good shots have been included in the final stack. A plot of the stacked check shot data is displayed in figure 2.

Table 2

Level Depth (m below KB)	Stacked Shots	Rejected Shots	Quality	Comments
26.2	5	0	Poor	Omitted (SRD)
28	6	0	Poor	Omitted
35	2	0	Poor	Omitted
45	4	0	Poor	Omitted
65	10	0	Good	Omitted
105	3	0	Good	Omitted
125	3	0	Good	Omitted
165	3	0	Good	
185	6	0	Good	Shot going down
185	2	1	Good	
405	2	0	Good	
450	7	0	Good	
510	4	0	Good	
633	4	1	Good	Shot going down
633	3	0	Good	
770	8	0	Good	
788.5	3	0	Good	
805	2	0	Good	
865	3	1	Good	
880	3	0	Good	
905	2	0	Good	
930	3	0	Good	
953	6	1	Good	
965	5	1	Good	

Eleven shots were recorded on the surface at offsets of 3 metres to 33 metres to estimate the surface velocity (see figures 3 and 4).

4.0 SONIC CALIBRATION

A 'drift' curve is obtained using the sonic log and the vertical check level times. The term 'drift' is defined as the seismic time (from check shots) minus the sonic time (from integration of edited sonic). Commonly the word 'drift' is used to identify the above difference, or to identify the gradient of drift verses increasing depth, or to identify a difference of drift between two levels.

The gradient of drift, that is the slope of the drift curve, can be negative or positive.

For a negative drift $\frac{\Delta drift}{\Delta depth} < 0$, the sonic time is greater than the seismic time over a certain section of the log.

For a positive drift $\frac{\Delta drift}{\Delta depth} > 0$, the sonic time is less than the seismic time over a certain section of the log.

The drift curve, between two levels, is then an indication of the error on the integrated sonic or an indication of the amount of correction required on the sonic to have the TTI of the corrected sonic match the check shot times.

Two methods of correction to the sonic log are used.

1. **Uniform or block shift** This method applies a uniform correction to all the sonic values over the interval. This uniform correction is applied in the case of positive drift and is the average correction represented by the drift curve gradient

   expressed in $\mu sec/ft$.

2. **ΔT Minimum** In the case of negative drift a second method is used, called Δt minimum. This applies a differential correction to the sonic log, where it is assumed that the greatest amount of transit time error is caused by the lower velocity sections of the log. Over a given interval the method will correct only Δt values which are higher than a threshold, the Δt_{min}. Values of Δt which are lower than the threshold are not corrected. The correction is a reduction of the excess of Δt over Δt_{min}, $\Delta t - \Delta t_{min}$.

   $\Delta t - \Delta t_{min}$ is reduced through multiplication by a reduction coefficient which remains constant over the interval. This reduction coefficient, named G, can be be defined as:

$$G = 1 + \frac{drift}{\int (\Delta t - \Delta t_{min}) dZ}$$

   Where drift is the drift over the interval to be corrected and the value $\int (\Delta t - \Delta t_{min}) dZ$ is the time difference between the integrals of the two curves Δt and Δt_{min}, only over the intervals where $\Delta t > \Delta t_{min}$.

   Hence the corrected sonic: $\Delta t = G(\Delta t - \Delta t_{min}) + \Delta t_{min}$.

5.0 SONIC CALIBRATION PROCESSING

5.1 Open Hole Logs

Both the sonic and density logs used have been edited prior to input into the WSC chain. The log quality was generally good. An anomalous peak in the density log at 912 metres has been removed.

Density log interval	:	300 to 987 metres below KB
Sonic log interval	:	300 to 987 metres below KB

5.2 Weathered Zone Survey

A weathered zone survey was run near the wellhead using the airgun and a surface geophone placed at offsets of 3 to 33 metres from the gun. Results from this survey are displayed at figures 3 and 4 and indicate a near surface velocity of 660 metres/sec.

A shot was recorded in the well at SRD with a transit time of 55 millisecs. Using a direct raypath length of 44.9 metres from gun to geophone a velocity of 816 metres/sec can be calculated. A linear raypath model, however, is not valid in the surface layers at high angles of incidence. The seismic energy may be refracted through deeper higher velocity layers to arrive at the downhole geophone earlier than the direct ray. Subsequently, this shot has not been used to determine the surface velocity.

5.3 Correction to Datum

Seismic Reference Datum (SRD) is at Mean Sea Level. The airgun was positioned 1.8 metres below GL. The transit time of the shot at SRD (26.2 metres) has not been used and a value of 68 millisecs has been calculated by assuming a surface velocity of 660 metres/sec.

The final transit times are the vertical transit times to SRD and are corrected for source offset.

5.4 Imposed Shots

Two imposed shots were used in addition to the checkshot data to calibrate the sonic log.

1. SRD : depth 26.2 below KB, surface velocity 660 metres/sec
2. Top sonic : depth 300 metres below KB. The velocities above and below this level were chosen to maintain a linear sonic drift curve from this level down to lower check levels.

5.5 Sonic Calibration Results

The top of the sonic log (300 metres below KB)is chosen as the origin for the calibration drift curve. The drift curve indicates a number of corrections to be made to the sonic log. A list of shifts used on the sonic data is given below.

Depth Interval (m below KB)	Block Shift $\mu sec/ft$	Δt_{min} $\mu sec/ft$	Equiv Block Shift $\mu sec/ft$
300-490	5.61	-	5.61
490-660	7.57	-	7.57
660-799	3.68	-	3.68
799-990	0.08	-	0.08

The adjusted sonic curve is considered to be the best result using the available data.

6.0 GEOGRAM PROCESSING

GEOGRAMS were generated using 50 and 100 hertz ricker wavelets. A time variant butterworth filter with the following parameters has been applied after convolution.

0-500 msec	22,28 - 95,105 hertz
500-1000 msec	18,24 - 95,105 hertz
1000-3000 msec	18,24 - 95,105 hertz

The GEOGRAM processing produces synthetic seismic traces based on reflection coefficients generated from sonic and density measurements in the well-bore. The steps in the processing chain are the following:

Time to depth conversion
Generate reflection coefficients
Generate attenuation coefficients
Choose a suitable wavelet
Convolution
Output.

6.1 Time to Depth Conversion

Open hole logs are recorded from the bottom to top with a depth index. This data is converted to a two-way time index and flipped to read from the top to bottom in order to match the seismic section.

6.2 Primary Reflection Coefficients

Sonic and density data are averaged over chosen time intervals (normally 2 or 4 *millisecs*). Reflection coefficients are then computed using:

$$R = \frac{\rho_2.\nu_2 - \rho_1.\nu_1}{\rho_2.\nu_2 + \rho_1.\nu_1}$$

where
ρ_1 = density of the layer above the reflection interface
ρ_2 = density of the layer below the reflection interface
ν_1 = compressional wave velocity of the layer above the reflection interface
ν_2 = compressional wave velocity of the layer below the reflection interface

This computation is done for each time interval to generate a set of primary reflection coefficients without transmission losses.

6.3 Primaries with Transmission Loss

Transmission loss on two-way attenuation coefficients are computed using:

$$A_n = (1 - R_1^2).(1 - R_2^2).(1 - R_3^2)...(1 - R_n^2)$$

A set of primary reflection coefficients with transmission loss is generated using:

$$Primary_n = R_n.A_{n-1}$$

6.4 Primaries plus Multiples

Multiples are computed from these input reflection coefficients using the transform technique from the top of the well to obtain the impulse response of the earth. The transform outputs primaries plus multiples.

6.5 Multiples Only

By subtracting previously calculated primaries from the above result we obtain multiples only.

6.6 Wavelet

A theoretical wavelet is chosen to use for convolution with the reflection coefficients previously generated. Choices available include:

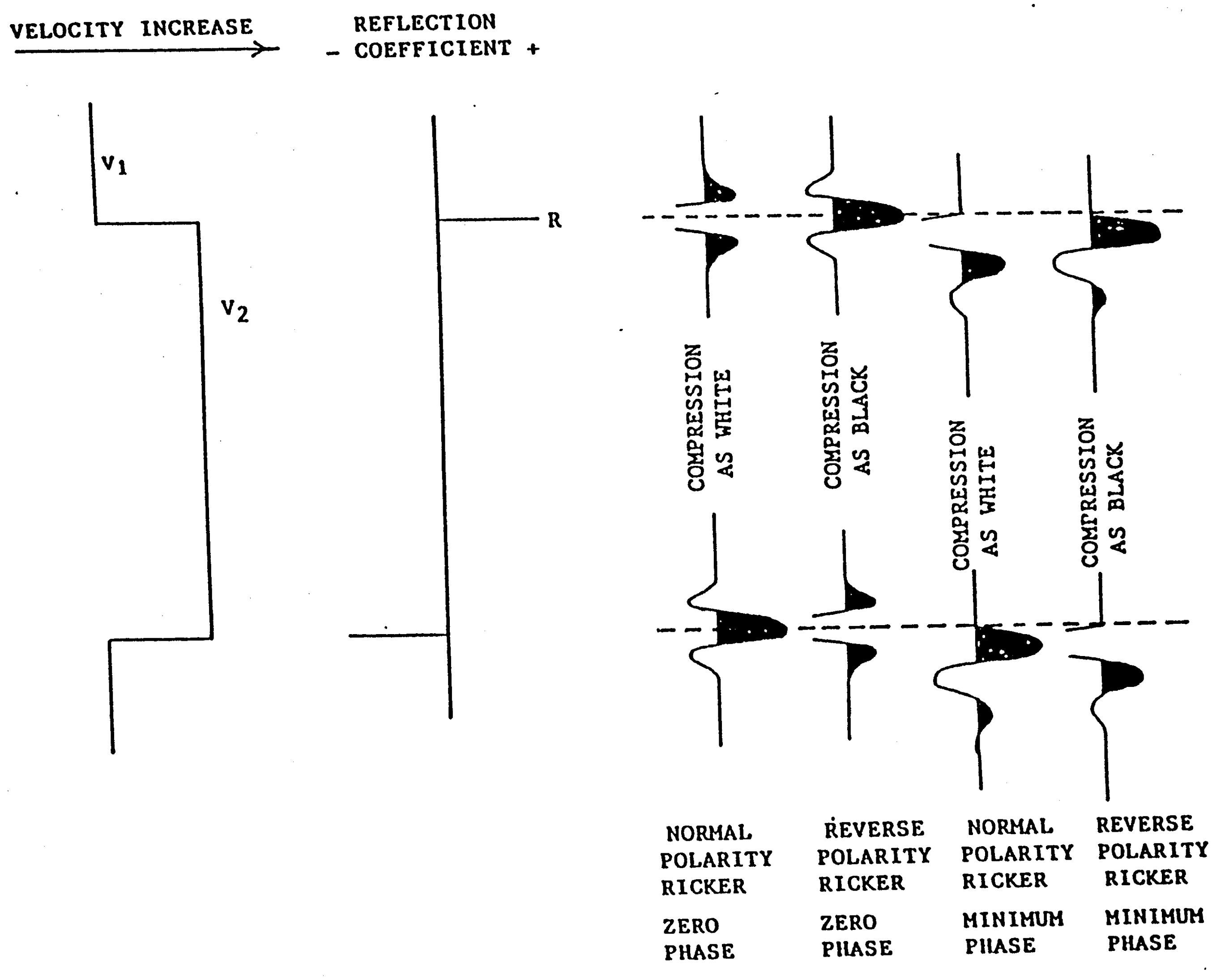
Klauder wavelet
Ricker zero phase wavelet
Ricker minimum phase wavelet
User defined wavelet.

All wavelets can be chosen with or without butterworth filtering and with user defined centre frequencies. Polarity conventions are shown in Figure 1. These GEOGRAMS were generated using zero and minimum phase ricker wavelets followed by a butterworth filter.

6.7 Convolution

Standard procedure of convolution of wavelet with reflection coefficients. The output is the synthetic seismogram.

SCHLUMBERGER WAVELET POLARITY CONVENTION



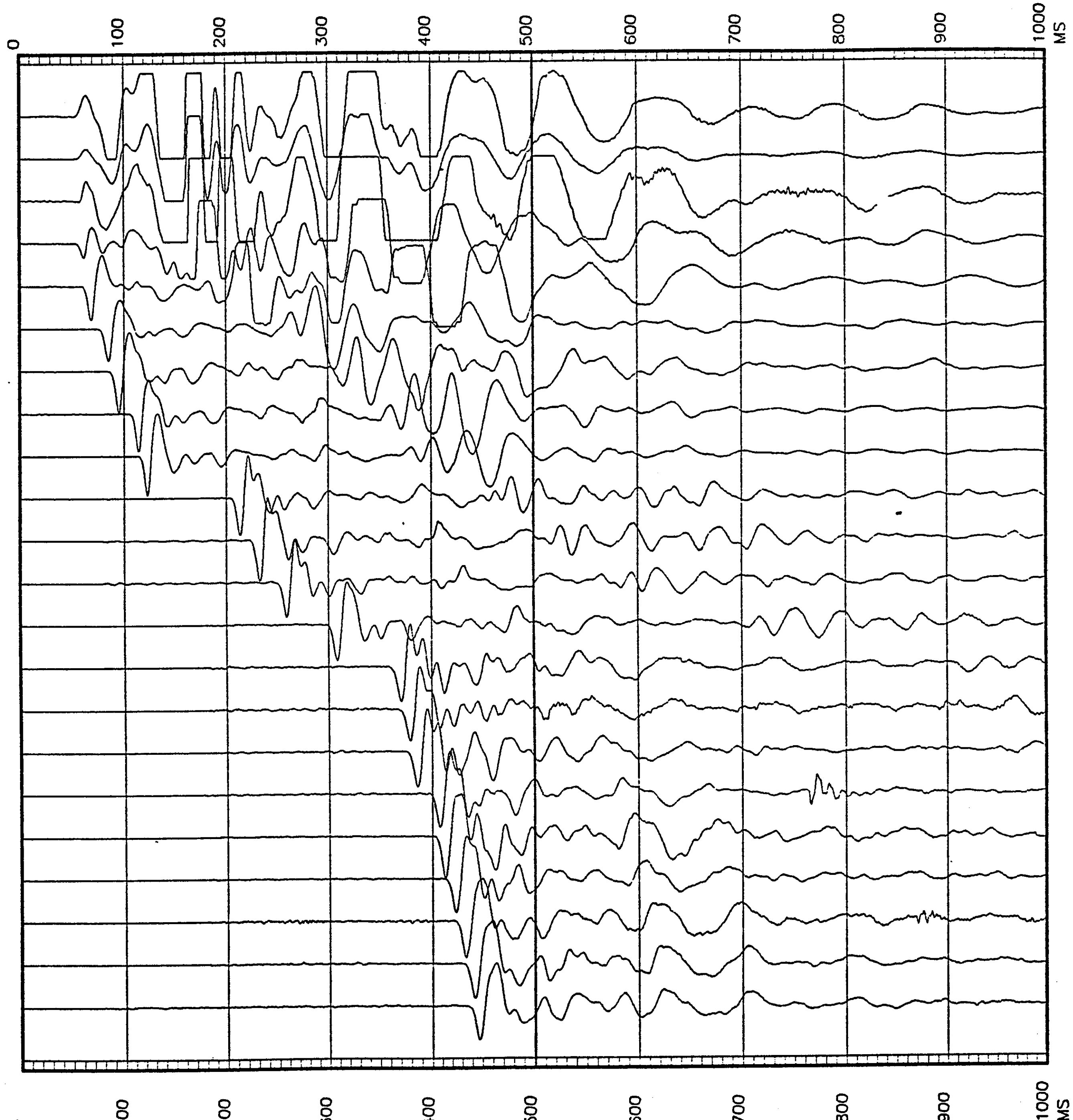
NOTE: WAVELET DISPLAYED UNDER GEOGRAMS ARE FOR A REFLECTION COEFFICIENT OF -0.5

FIGURE 1

WRIXONDALE - 1 STACKED CHECKSHOT DATA

FIGURE 2

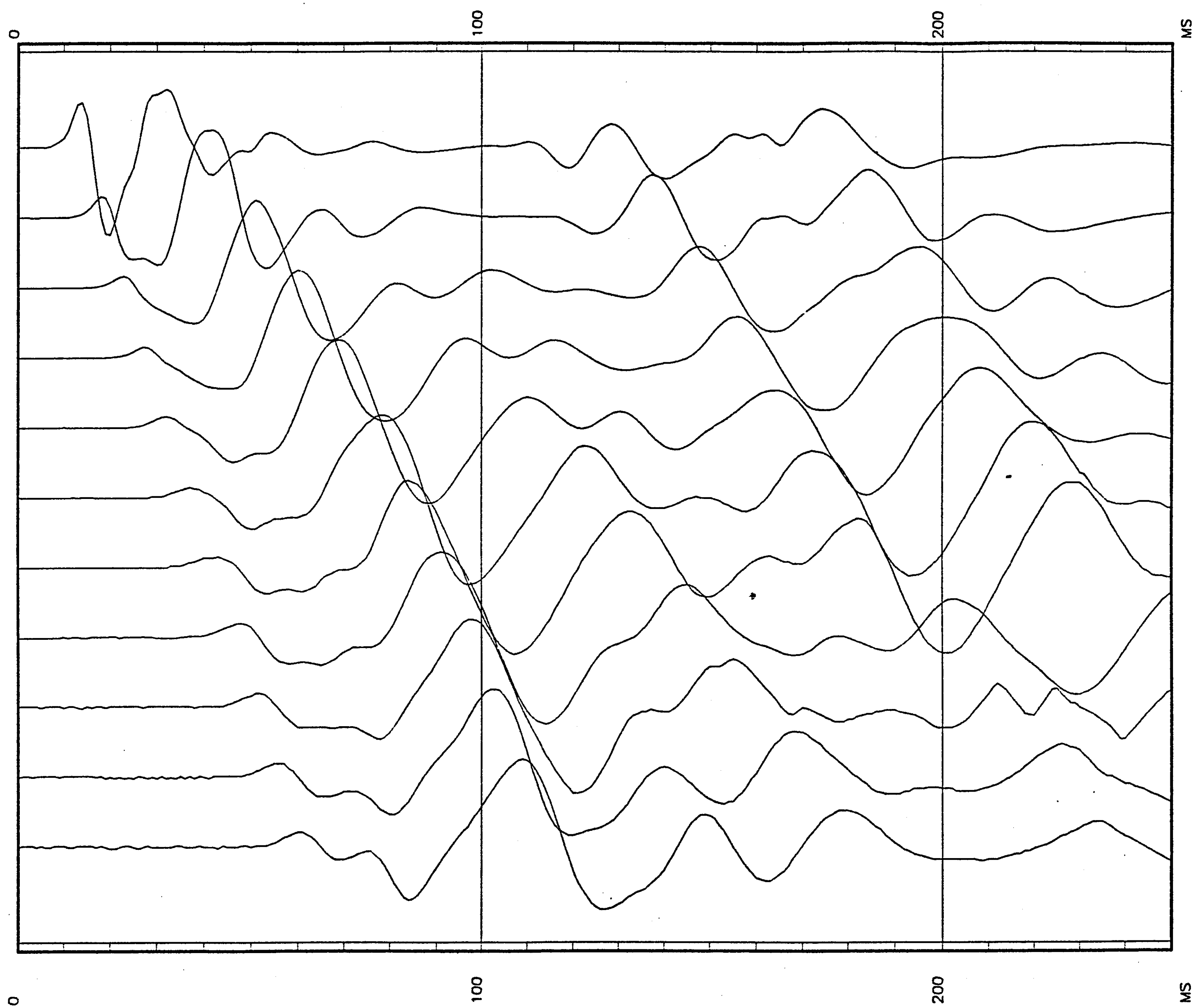
LEVEL	DEPTH M	TIME S	PEAK/PEAK
25	26.2	0.055	32516.10
23	28.0	0.056	65367.17
20	35.0	0.058	16380.00
19	45.0	0.055	18818.85
18	65.0	0.062	18293.90
17	105.0	0.078	27963.66
16	125.0	0.088	18320.00
15	165.0	0.108	18332.09
14	185.0	0.117	24702.38
13	405.0	0.207	6128.00
12	450.0	0.225	4335.63
11	510.0	0.252	3521.90
10	633.0	0.302	2098.66
9	770.0	0.363	1626.68
8	788.5	0.371	1507.27
7	805.0	0.378	1627.50
6	865.0	0.401	1653.08
5	880.0	0.406	962.49
4	905.0	0.416	1509.50
3	930.0	0.426	951.05
2	953.0	0.435	983.34
1	965.0	0.439	1006.35



WRIXONDALE - 1 WEATHERED ZONE SURVEY

FIGURE 3

OFFSET M	TIME S	PEAK/PEAK
3.0	0.007	648.50
6.0	0.013	463.16
9.0	0.017	352.50
12.0	0.022	248.50
15.0	0.026	168.50
18.0	0.030	113.97
21.0	0.034	89.55
24.0	0.040	93.46
27.0	0.044	79.61
30.0	0.048	57.24
33.0	0.053	55.50



WEATHERED ZONE SURVEY
WRIXONDALE – 1
Velocity Analysis

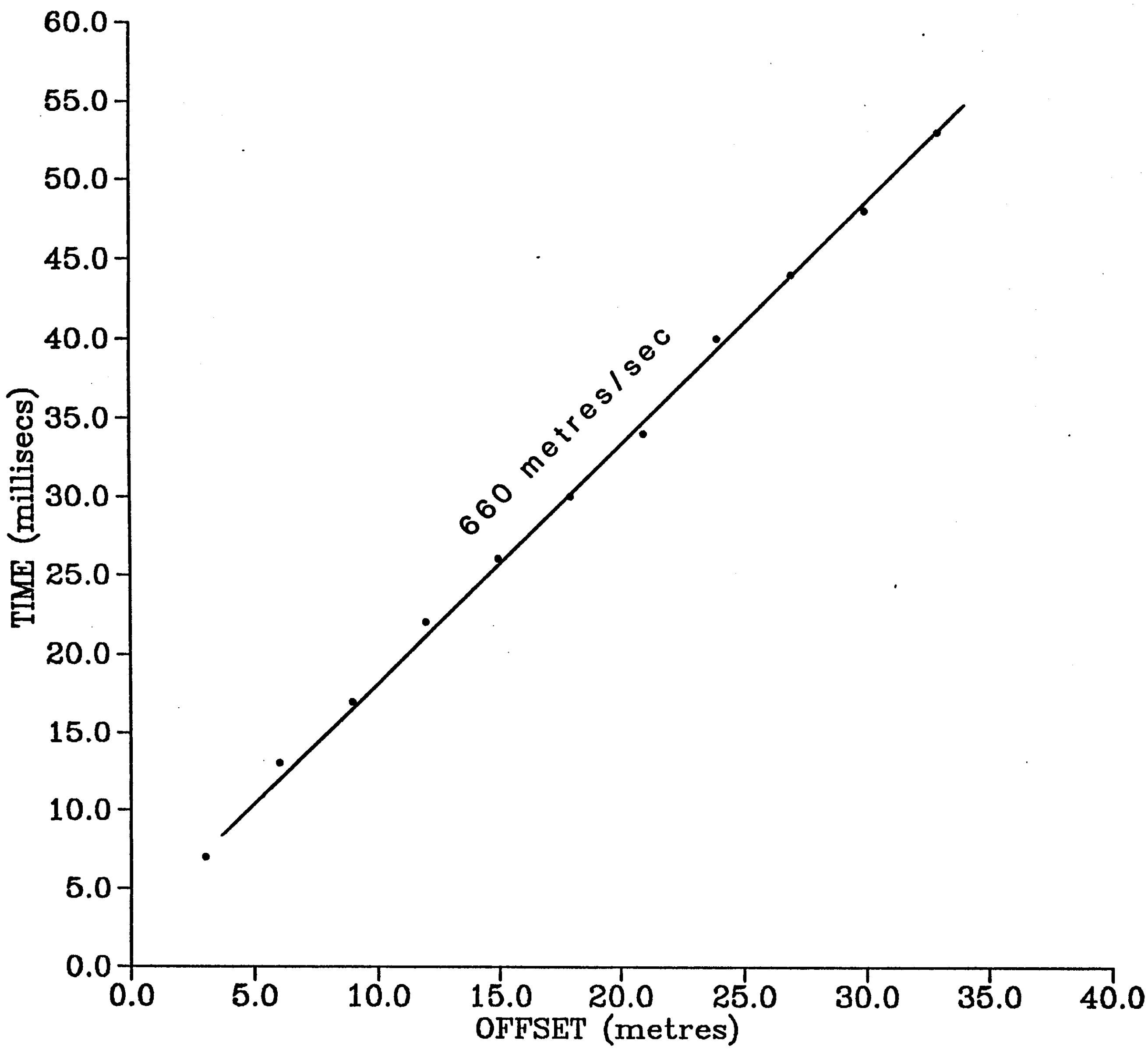


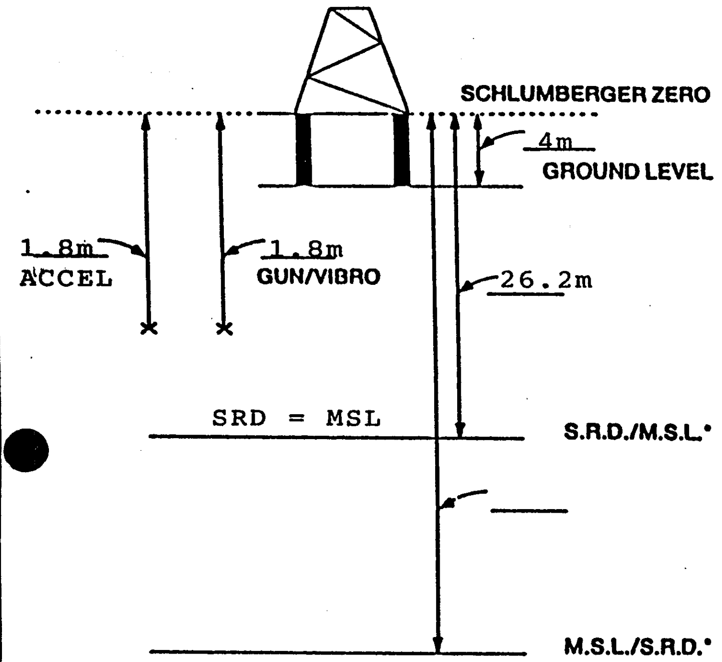
FIGURE 4

Schlumberger

GUN GEOMETRY SKETCH

CLIENT: BEACH PETROLEUM **WELL:** WRIXONDALE #1 **DATE:** 17-10-85

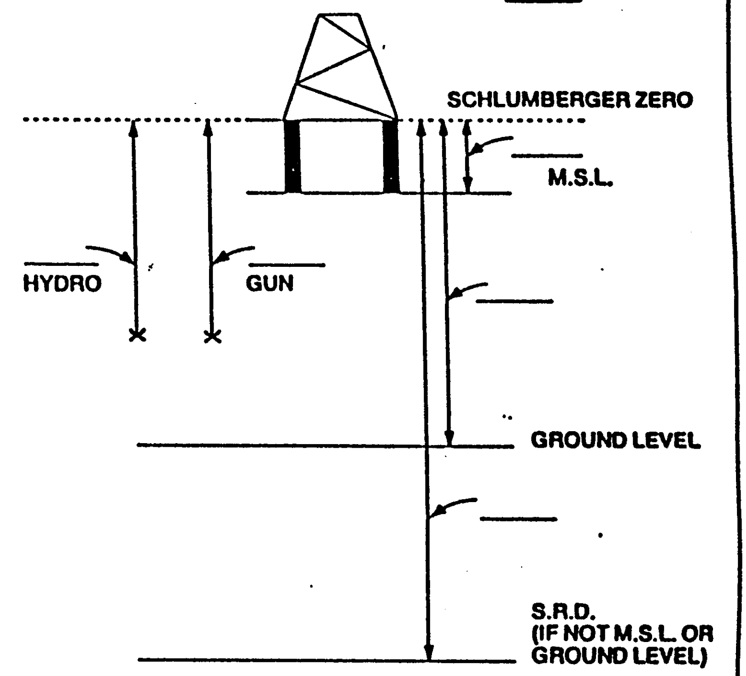
LAND [x]



INDICATE ALL DISTANCES RELATIVE TO SCHLUMBERGER ZERO

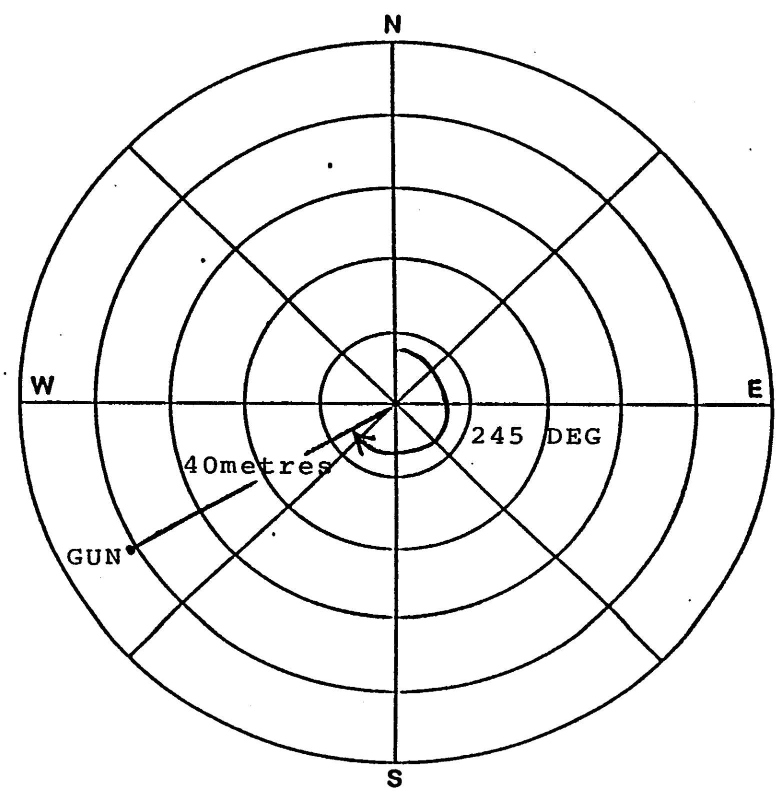
* DELETE AS APPLICABLE

OFFSHORE [ ]



INDICATE ALL DISTANCES RELATIVE TO SCHLUMBERGER ZERO

SHOT POS'N	GUN OFFSET	ACCEL OFFSET	GUN DEPTH	ACCEL DEPTH
	40m	40m	1.8m	1.8m
2				
3				
4				
5				
6				
7				



INDICATE GUN/VIBRO AND HYDROPHONE OFFSET AND AZIMUTH RELATIVE TO NORTH

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GEOPHYSICAL AIRGUN REPORT

COMPANY : BEACH PETROLEUM N.L.

WELL : WRIXONDALE - 1

FIELD : WILDCAT

PERMIT : PEP-107

STATE : VICTORIA

COUNTRY : AUSTRALIA

REFERENCE: 640,421

LONG DEFINITIONS

GLOBAL

.B	- ELEVATION OF THE KELLY-BUSHING ABOVE MSL OR MWL
SRD	- ELEVATION OF THE SEISMIC REFERENCE DATUM ABOVE MSL OR MWL
EKB	- Elevation of Kelly Bushing
GL	- ELEVATION OF USER'S REFERENCE (GENERALLY GROUND LEVEL) ABOVE SRD
VELHYD	- VELOCITY OF THE MEDIUM BETWEEN THE SOURCE AND THE HYDROPHONE
VELSUR	- VELOCITY OF THE MEDIUM BETWEEN THE SOURCE AND THE SRD

MATRIX

GUNELZ	- SOURCE ELEVATION ABOVE SRD (ONE FOR THE WHOLE JOB; OR ONE PER SHOT)
GUNEWZ	- SOURCE DISTANCE FROM THE BOREHOLE AXIS IN EW DIRECTION (CF. GUNELZ)
GUNNSZ	- SOURCE DISTANCE FROM THE BOREHOLE AXIS IN NS DIRECTION (CF. GUNELZ)
HYDELZ	- HYDROPHONE ELEVATION ABOVE SRD (CF. GUNELZ)
HYDEWZ	- HYDROPHONE DISTANCE FROM THE BOREH AXIS IN EW DIRECTION (CF GUNELZ)
HYDNSZ	- HYDROPHONE DISTANCE FROM THE BOREH AXIS IN NS DIRECTION (CF GUNELZ)
TRTHYD	- TRAVEL TIME FROM THE HYDROPHONE TO THE SOURCE
TRTSRD	- TRAVEL TIME FROM THE SOURCE TO THE SRD
DEVWEL	- DEVIATED WELL DATA PER SHOT : MEAS. DEPTH, VERT. DEPTH, EW, NS

SAMPLED

SHOT.GSH	- Shot number
DK .GSH	- MEASURED DEPTH FROM KELLY-BUSHING
DSR .GSH	- Depth from SRD
DGL.GSH	- VERTICAL DEPTH RELATIVE TO GROUND LEVEL (USER'S REFERENCE)
TIMO.GSH	- MEASURED TRAVEL TIME FROM HYDROPHONE TO GEOPHONE
TIMV.GSH	- VERTICAL TRAVEL TIME FROM THE SOURCE TO THE GEOPHONE
SHTM.GSH	- Shot time (WST)
AVGV.GSH	- Average seismic velocity
DELZ.GSH	- DEPTH INTERVAL BETWEEN SUCCESSIVE SHOTS
DELT.GSH	- TRAVEL TIME INTERVAL BETWEEN SUCCESSIVE SHOTS
INTV.GSH	- Internal velocity, average

(GLOBAL PARAMETERS)			(VALUE)	
ELEV OF KB AB. MSL (WST)	KB	:	26.2000	M
ELEV OF SRD AB. MSL(WST)	SRD	:	0	M
Elevation of Kelly Bushi	EKB	:	26.2000	M
ELEV OF GL AB. SRD(WST)	GL	:	22.2000	M
VEL SOURCE-HYDRO(WST)	VELHYD	:	1500.00	M/S
VEL SOURCE-SRD (WST)	VELSUR	:	660.319	M/S

(MATRIX PARAMETERS)

	SOURCE ELV M	SOURCE EW M	SOURCE NS M	HYDRO ELEV M	HYDRO EW M	HYDRO NS M
1	20.40	-36.25	-16.90	20.40	-36.25	-16.90

	TRT HYD-SC MS	TRT SC-SRD MS
1	0	-30.89

	MD @ KB M	VD @ KB M	VD @ SRD M	E-W COORD M	N-S COORD M
1	26.20	26.20	0	0	0
2	165.00	165.00	138.80	0	0
3	185.00	185.00	158.80	0	0
4	300.00	300.00	273.80	0	0
5	405.00	405.00	378.80	0	0
6	450.00	450.00	423.80	0	0
7	510.00	510.00	483.80	0	0
8	633.00	633.00	606.80	0	0
9	770.00	770.00	743.80	0	0
10	788.50	788.50	762.30	0	0
11	805.00	805.00	778.80	0	0
12	865.00	865.00	838.80	0	0
13	880.00	880.00	853.80	0	0
14	905.00	905.00	878.80	0	0
15	930.00	930.00	903.80	0	0
16	953.00	953.00	926.80	0	0
17	965.00	965.00	938.80	0	0

LEVEL NUMBER	MEASUR DEPTH FROM KB M	VERTIC DEPTH FROM SRD M	VERTIC DEPTH FROM GL M	OBSERV TRAVEL TIME HYD/GEO MS	VERTIC TRAVEL TIME SRC/GEO MS	VERTIC TRAVEL TIME SRD/GEO MS	AVERAGE VELOC SRD/GEO M/S	DELTA DEPTH BETWEEN SHOTS M	DELTA TIME BETWEEN SHOTS MS	INTERV VELOC BETWEEN SHOTS M/S
1	26.20	0	22.20	68.00	30.89	0				
2	165.00	138.80	161.00	108.00	104.74	73.85	1879	138.80	73.85	1879
3	185.00	158.80	181.00	117.00	114.19	83.30	1906	20.00	9.45	2117
4	300.00	273.80	296.00	163.70	162.21	131.31	2085	115.00	48.02	2395
5	405.00	378.80	401.00	207.00	205.97	175.07	2164	105.00	43.76	2399
6	450.00	423.80	446.00	225.00	224.09	193.20	2194	45.00	18.12	2483
7	510.00	483.80	506.00	252.00	251.21	220.32	2196	60.00	27.12	2213
8	633.00	606.80	629.00	302.00	301.39	270.49	2243	123.00	50.18	2451
9	770.00	743.80	766.00	363.00	362.50	331.61	2243	137.00	61.12	2242
10	788.50	762.30	784.50	371.00	370.52	339.62	2245	18.50	8.01	2309
11	805.00	778.80	801.00	378.00	377.53	346.63	2247	16.50	7.01	2353
12	865.00	838.80	861.00	401.00	400.57	369.67	2269	60.00	23.04	2604
13	880.00	853.80	876.00	406.00	405.58	374.68	2279	15.00	5.01	2994
14	905.00	878.80	901.00	416.00	415.59	384.69	2284	25.00	10.01	2497
15	930.00	903.80	926.00	426.00	425.60	394.71	2290	25.00	10.01	2497
16	953.00	926.80	949.00	435.00	434.61	403.72	2296	23.00	9.01	2552
17	965.00	938.80	961.00	439.00	438.62	407.72	2303	12.00	4.01	2995

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*  SCHLUMBERGER    *
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DRIFT COMPUTATION REPORT

COMPANY : BEACH PETROLEUM N.L.

WELL : WRIXONDALE - 1

FIELD : WILDCAT

PERMIT : PEP-107

STATE : VICTORIA

COUNTRY : AUSTRALIA

REFERENCE: 540,421

LONG DEFINITIONS

GLOBAL

.B - ELEVATION OF THE KELLY-BUSHING ABOVE MSL OR MWL
SRD - ELEVATION OF THE SEISMIC REFERENCE DATUM ABOVE MSL OR MWL
EKB - Elevation of Kelly Bushing
GL - ELEVATION OF USER'S REFERENCE (GENERALLY GROUND LEVEL) ABOVE SRD
XSTART - TOP OF ZONE PROCESSED BY WST
XSTOP - BOTTOM OF ZONE PROCESSED BY WST
GADØØ1 - RAW SONIC CHANNEL NAME USED FOR WST SONIC ADJUSTMENT
UNFDEN - UNIFORM DENSITY VALUE

ZONE

LOFDEN - LAYER OPTION FLAG FOR DENSITY : -1=NONE; Ø=UNIFORM; 1=UNIFORM+LAYER
LAYDEN - USER SUPPLIED DENSITY DATA

SAMPLED

SHOT - Shot number
DKB - MEASURED DEPTH FROM KELLY-BUSHING
DSRD - Depth from SRD
DGL - VERTICAL DEPTH RELATIVE TO GROUND LEVEL (USER'S REFERENCE)
SHTM - Shot time (WST)
RAWS - Raw Sonic (WST)
SH - DRIFT AT SHOT OR KNEE
BL - BLOCK SHIFT BETWEEN SHOTS OR KNEE

(GLOBAL PARAMETERS)			(VALUE)	
ELEV OF KB AB. MSL (WST)	KB	:	26.2000	M
ELEV OF SRD AB. MSL(WST)	SRD	:	Ø	M
Elevation of Kelly Bushi	EKB	:	26.2000	M
ELEV OF GL AB. SRD(WST)	GL	:	22.2000	M
TOP OF ZONE PROCD (WST)	XSTART	:	Ø	M
)OT OF ZONE PROCD (WST)	XSTOP	:	Ø	M
RAW SONIC CH NAME (WST)	GADØØ1	:	DT.ØØ3.FUN.FLP.*	
UNIFORM DENSITY VALUE	UNFDEN	:	2.30000	G/C3

(ZONED PARAMETERS)			(VALUE)		(LIMITS)		
LAYER OPTION FLAG DENS	LOFDEN	:	1.000000		30479.7	-	Ø
USER SUPPLIED DENSITY DA	LAYDEN	:	-999.2500	G/C3	30479.7	-	Ø

LEVEL NUMBER	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	VERTICAL DEPTH FROM GL M	VERTICAL TRAVEL TIME SRD/GEO MS	INTEGRATED RAW SONIC TIME MS	COMPUTED DRIFT AT LEVEL MS	COMPUTED BLK-SHFT CORRECTION US/F
1	26.20	0	22.20	0	0	0	0
2	166.00	138.80	161.00	73.86	73.86	0	0
3	186.00	158.80	181.00	83.30	83.30	0	0
4	300.00	273.80	296.00	131.31	131.31	0	0
5	405.00	378.80	401.00	176.07	173.31	1.76	6.12
6	450.00	423.80	446.00	193.20	191.77	1.43	-2.29
7	510.00	483.80	506.00	220.32	216.82	4.49	16.69
8	633.00	606.80	629.00	270.49	263.06	7.44	7.29
9	770.00	743.80	766.00	331.61	323.67	7.94	1.11
10	788.50	762.30	784.50	339.62	330.84	8.79	13.98
11	805.00	778.80	801.00	346.63	337.61	9.03	4.46
12	865.00	838.80	861.00	369.67	359.73	9.94	4.63
13	880.00	853.80	876.00	374.68	365.97	8.71	-24.98
14	905.00	878.80	901.00	384.69	375.18	9.51	9.77
15	930.00	903.80	926.00	394.71	385.49	9.22	-3.56
16	953.00	926.80	949.00	403.72	393.83	9.89	8.92
17	965.00	938.80	961.00	407.72	398.33	9.40	-12.53
18	989.99	963.79	985.99	415.90	406.50	9.40	0

ANALYST: M. SANDERS 18-DEC-85 14:42:36 PROGRAM: GADJST ØØ8.EØ7

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SONIC ADJUSTMENT PARAMETER REPORT

COMPANY : BEACH PETROLEUM N.L.

WELL : WRIXONDALE - 1

FIELD : WILDCAT

PERMIT : PEP-1Ø7

STATE : VICTORIA

COUNTRY : AUSTRALIA

REFERENCE: 64Ø,421

LONG DEFINITIONS

GLOBAL

SRCDRF - ORIGIN OF ADJUSTMENT DATA
CONADJ - CONSTANT ADJUSTMENT TO AUTOMATIC DELTA-T MINIMUM = 7.6 US/F
UNERTH - UNIFORM EARTH VELOCITY (GTRFRM)

ZONE

ZDRIFT - USER DRIFT AT BOTTOM OF THE ZONE
ADJOPZ - TYPE OF ADJUSTMNENT IN THE DRIFT ZONE : Ø=DELTA-T MIN, 1=BLOCKSHIFT
ADJUSZ - DELTA-T MINIMUM USED FOR ADJUSTMENT IN THE DRIFT ZONE
LOFVEL - LAYER OPTION FLAG FOR VELOCITY: -1=NONE; Ø=UNIFORM; 1=UNIFORM+LAYER
LAYVEL - USER SUPPLIED VELOCITY DATA

SAMPLED

SHOT - Shot number
VDKB - VERTICAL DEPTH RELATIVE TO KB
DSRD - Depth from SRD
DGL - VERTICAL DEPTH RELATIVE TO GROUND LEVEL (USER'S REFERENCE)
KNEE - Knee
BLSH - BLOCK SHIFT BETWEEN SHOTS OR KNEE
DTMI - VALUE OF DELTA-T MINIMUM USED
CO[illegible] - DELTA-T MIN COEFFICIENT USED IN THE DRIFT ZONE
DR[illegible] - GRADIENT OF DRIFT CURVE

(GLOBAL PARAMETERS)			(VALUE)	
ORIG OF ADJ DATA (WST)	SRCDRF	:	2.ØØØØØ	
CONS SONIC ADJST (WST)	CONADJ	:	7.5ØØØØ	US/F
UNIFORM EARTH VELOCITY	UNERTH	:	2133.6Ø	M/S

(ZONED PARAMETERS)		(VALUE)		(LIMITS)		
USER DRIFT ZONE (WST)	ZDRIFT	: 9.45ØØØØ	MS	99Ø.ØØØ	-	799.ØØØ
		9.4ØØØØØ		799.ØØØ		66Ø.ØØØ
		7.72ØØØØ		66Ø.ØØØ		49Ø.ØØØ
		3.5ØØØØØ		49Ø.ØØØ		3ØØ.ØØØ
		Ø		3ØØ.ØØØ		Ø
ADJUSMNT MODE (WST)	ADJOPZ	:-999.25ØØ		3Ø479.7	-	Ø
USER DELTA-T MIN (WST)	ADJUSZ	:-999.25ØØ	US/F	3Ø479.7	-	Ø
LAYER OPTION FLAG VELOC	LOFVEL	: 1.ØØØØØØ		3Ø479.7	-	Ø
USER VELOC (WST)	LAYVEL	: 2395.ØØØ	M/S	3ØØ.ØØØ	-	185.ØØØ
		2117.ØØØ		185.ØØØ		165.ØØØ
		1879.ØØØ		165.ØØØ		26.2ØØØ

COMPANY : BEACH PETROLEUM N.L. WELL : WRIXONDALE - 1

KNEE NUMBER	VERTICAL DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	VERTICAL DEPTH FROM GL M	DRIFT AT KNEE MS	BLOCKSHIFT USED US/F	DELTA-T MINIMUM USED US/F	REDUCTION FACTOR G	EQUIVALENT BLOCKSHIFT US/F
					Ø			Ø
2	3ØØ.ØØ	273.8Ø	296.ØØ	Ø				
					5.61			5.61
3	49Ø.ØØ	463.8Ø	486.ØØ	3.5Ø				
					7.57			7.57
4	66Ø.ØØ	633.8Ø	656.ØØ	7.72				
					3.68			3.68
5	799.ØØ	772.8Ø	795.ØØ	9.4Ø				
					.Ø8			.Ø8
6	99Ø.ØØ	963.8Ø	986.ØØ	9.45				

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VELOCITY REPORT

COMPANY : BEACH PETROLEUM N.L.

WELL : WRIXONDALE - 1

FIELD : WILDCAT

PERMIT : PEP-1Ø7

STATE : VICTORIA

COUNTRY : AUSTRALIA

REFERENCE: 54Ø,421

LONG DEFINITIONS

GLOBAL

KB - ELEVATION OF THE KELLY-BUSHING ABOVE MSL OR MWL
SRD - ELEVATION OF THE SEISMIC REFERENCE DATUM ABOVE MSL OR MWL
EKB - Elevation of Kelly Bushing
GL - ELEVATION OF USER'S REFERENCE (GENERALLY GROUND LEVEL) ABOVE SRD
UNERTH - UNIFORM EARTH VELOCITY (GTRFRM)

ZONE

LOFVEL - LAYER OPTION FLAG FOR VELOCITY: -1=NONE; Ø=UNIFORM; 1=UNIFORM+LAYER
LAYVEL - USER SUPPLIED VELOCITY DATA

SAMPLED

SHOT - Shot number
DKB - MEASURED DEPTH FROM KELLY-BUSHING
DSRD - Depth from SRD
DGL - VERTICAL DEPTH RELATIVE TO GROUND LEVEL (USER'S REFERENCE)
SHTM - Shot time (WST)
ADJS - ADJUSTED SONIC TRAVEL TIME
SHDR - DRIFT AT SHOT OR KNEE
REST - RESIDUAL TRAVEL TIME AT KNEE
INTV - Internal velocity, average

(GLOBAL PARAMETERS)			(VALUE)	
ELEV OF KB AB. MSL (WST)	KB	:	26.2ØØØ	M
ELEV OF SRD AB. MSL(WST)	SRD	:	Ø	M
Elevation of Kelly Bushi	EKB	:	26.2ØØØ	M
ELEV OF GL AB. SRD(WST)	GL	:	22.2ØØØ	M
UNIFORM EARTH VELOCITY	UNERTH	:	2133.6Ø	M/S

(ZONED PARAMETERS)			(VALUE)		(LIMITS)		
LAYER OPTION FLAG VELOC	LOFVEL	:	1.ØØØØØØ		3Ø479.7	-	Ø
USER VELOC (WST)	LAYVEL	:	2395.ØØØ	M/S	3ØØ.ØØØ	-	185.ØØØ
			2117.ØØØ		185.ØØØ		165.ØØØ
			1879.ØØØ		165.ØØØ		26.2ØØØ

LEVEL NUMBER	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	VERTICAL DEPTH FROM GL M	VERTICAL TRAVEL TIME SRD/GEOPH MS.	INTEGRATED ADJUSTED SONIC TIME MS	DRIFT = SHOT TIME - RAW SON MS	RESIDUAL = SHOT TIME - ADJ SON MS	ADJUSTED INTERVAL VELOCITY M/S
1	26.20	0	22.20	0	0	0	0	
2	165.00	138.80	161.00	73.85	73.84	0	.01	1880
3	185.00	158.80	181.00	83.30	83.28	0	.02	2119
4	300.00	273.80	296.00	131.31	131.30	0	.01	2395
5	405.00	378.80	401.00	175.07	175.23	1.76	-.16	2390
6	450.00	423.80	446.00	193.20	194.52	1.43	-1.32	2333
7	510.00	483.80	506.00	220.32	219.80	4.49	.51	2373
8	633.00	606.80	629.00	270.49	270.09	7.44	.40	2446
9	770.00	743.80	766.00	331.61	332.71	7.94	-1.10	2188
10	788.50	762.30	784.50	339.62	340.10	8.79	-.47	2504
11	805.00	778.80	801.00	346.63	346.99	9.03	-.36	2392
12	865.00	838.80	861.00	369.67	369.14	9.94	.54	2710
13	880.00	853.80	876.00	374.68	375.38	8.71	-.70	2403
14	905.00	878.80	901.00	384.69	384.60	9.51	.10	2712
15	930.00	903.80	926.00	394.71	394.91	9.22	-.20	2425
16	953.00	926.80	949.00	403.72	403.25	9.89	.47	2757
17	965.00	938.80	961.00	407.72	407.76	9.40	-.03	2665
18	989.99	963.79	985.99	415.90	415.93	9.40	-.03	3057

ANALYST: M. SANDERS   18-DEC-85 14:49:51   PROGRAM: GTRFRM 007.E08

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TIME CONVERTED VELOCITY REPORT

COMPANY   : BEACH PETROLEUM N.L.
WELL   : WRIXONDALE - 1
FIELD   : WILDCAT
PERMIT   : PEP-107
STATE   : VICTORIA
COUNTRY   : AUSTRALIA
REFERENCE: 540,421

LONG DEFINITIONS

GLOBAL

KB	-	ELEVATION OF THE KELLY-BUSHING ABOVE MSL OR MWL
SRD	-	ELEVATION OF THE SEISMIC REFERENCE DATUM ABOVE MSL OR MWL
GL	-	ELEVATION OF USER'S REFERENCE (GENERALLY GROUND LEVEL) ABOVE SRD
UNERTH	-	UNIFORM EARTH VELOCITY (GTRFRM)
UNFDEN	-	UNIFORM DENSITY VALUE

MATRIX

MVODIS	-	MOVE-OUT DISTANCE FROM BOREHOLE

ZONE

LOFVEL	-	LAYER OPTION FLAG FOR VELOCITY: -1=NONE; 0=UNIFORM; 1=UNIFORM+LAYER
LAYVEL	-	USER SUPPLIED VELOCITY DATA
LOFDEN	-	LAYER OPTION FLAG FOR DENSITY : -1=NONE; 0=UNIFORM; 1=UNIFORM+LAYER
LAYDEN	-	USER SUPPLIED DENSITY DATA

SAMPLED

TWOT	-	TWO WAY TRAVEL TIME (RELATIVE TO THE SEISMIC REFERENCE
DKB	-	MEASURED DEPTH FROM KELLY-BUSHING
DSRD	-	DEPTH FROM SRD
AVGV	-	AVERAGE SEISMIC VELOCITY
RMSV	-	ROOT MEAN SQUARE VELOCITY (SEISMIC)
MVOT	-	NORMAL MOVE-OUT
MVOT	-	NORMAL MOVE-OUT
MVOT	-	NORMAL MOVE-OUT
INTV	-	INTERNAL VELOCITY, AVERAGE

(GLOBAL PARAMETERS)			(VALUE)	
ELEV OF KB AB. MSL (WST)	KB	:	26.2000	M
ELEV OF SRD AB. MSL(WST)	SRD	:	0	M
ELEV OF GL AB. SRD(WST)	GL	:	22.2000	M
UNIFORM EARTH VELOCITY	UNERTH	:	2133.60	M/S
UNIFORM DENSITY VALUE	UNFDEN	:	2.30000	G/C3

(MATRIX PARAMETERS)

	MVOUT DIST M
1	914.4
2	1371.6
3	1828.8

(ZONED PARAMETERS)		(VALUE)		(LIMITS)		
LAYER OPTION FLAG VELOC	LOFVEL	: 1.000000		30479.7	-	0
USER VELOC (WST)	LAYVEL	: 2395.000	M/S	300.000	-	185.000
		2117.000		185.000		165.000
		1879.000		165.000		26.2000
LAYER OPTION FLAG DENS	LOFDEN	:-1.000000		30479.7	-	0
USER SUPPLIED DENSITY DA	LAYDEN	:-999.2500	G/C3	30479.7	-	0

COMPANY : BEACH PETROLEUM N.L. WELL : WRIXONDALE - 1

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
0	26.22	.02						2134
2.00	28.08	1.88	1879	1859	489.93	735.89	981.85	1859
4.00	29.96	3.76	1879	1869	485.21	729.81	974.40	1879
6.00	31.84	5.64	1879	1873	482.34	726.47	970.62	1879
8.00	33.72	7.52	1879	1874	479.92	723.82	967.74	1879
10.00	35.60	9.40	1879	1875	477.69	721.44	965.22	1879
12.00	37.48	11.28	1879	1876	475.55	719.21	962.89	1879
14.00	39.36	13.16	1879	1877	473.48	717.05	960.66	1879
16.00	41.24	15.04	1879	1877	471.45	714.95	958.50	1879
18.00	43.12	16.92	1879	1877	469.44	712.89	956.38	1879
20.00	44.99	18.79	1879	1877	467.46	710.85	954.31	1879
22.00	46.87	20.67	1879	1878	465.50	708.83	952.25	1879
24.00	48.75	22.55	1879	1878	463.55	706.84	950.22	1879
26.00	50.63	24.43	1879	1878	461.62	704.85	948.20	1879
28.00	52.51	26.31	1879	1878	459.70	702.88	946.20	1879
30.00	54.39	28.19	1879	1878	457.80	700.92	944.21	1879
32.00	56.27	30.07	1879	1878	455.90	698.98	942.23	1879
34.00	58.15	31.95	1879	1878	454.02	697.04	940.25	1879
36.00	60.03	33.83	1879	1878	452.14	695.11	938.29	1879
38.00	61.91	35.71	1879	1878	450.28	693.18	936.34	1879
40.00	63.79	37.59	1879	1878	448.42	691.27	934.39	1879
42.00	65.67	39.47	1879	1879	446.58	689.36	932.45	1879
44.00	67.55	41.35	1879	1879	444.74	687.46	930.51	1879
46.00	69.43	43.23	1879	1879	442.92	685.57	928.58	1879

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
48.00	71.31	45.11	1879	1879	441.10	683.68	926.66	1879
50.00	73.19	46.99	1879	1879	439.29	681.81	924.74	1879
52.00	75.07	48.87	1879	1879	437.49	679.93	922.83	1879
54.00	76.95	50.75	1879	1879	435.70	678.07	920.93	1879
56.00	78.83	52.63	1879	1879	433.92	676.21	919.02	1879
58.00	80.70	54.50	1879	1879	432.14	674.35	917.13	1879
60.00	82.58	56.38	1879	1879	430.38	672.50	915.24	1879
62.00	84.46	58.26	1879	1879	428.62	670.66	913.35	1879
64.00	86.34	60.14	1879	1879	426.87	668.83	911.47	1879
66.00	88.22	62.02	1879	1879	425.13	667.00	909.59	1879
68.00	90.10	63.90	1879	1879	423.40	665.17	907.72	1879
70.00	91.98	65.78	1879	1879	421.68	663.35	905.85	1879
72.00	93.86	67.66	1879	1879	419.96	661.54	903.99	1879
74.00	95.74	69.54	1879	1879	418.26	659.73	902.13	1879
76.00	97.62	71.42	1879	1879	416.56	657.93	900.28	1879
78.00	99.50	73.30	1879	1879	414.86	656.14	898.43	1879
80.00	101.38	75.18	1879	1879	413.18	654.35	896.58	1879
82.00	103.26	77.06	1879	1879	411.51	652.56	894.74	1879
84.00	105.14	78.94	1879	1879	409.84	650.78	892.91	1879
86.00	107.02	80.82	1879	1879	408.18	649.01	891.07	1879
88.00	108.90	82.70	1879	1879	406.53	647.24	889.25	1879
90.00	110.78	84.58	1879	1879	404.89	645.48	887.42	1879
92.00	112.66	86.46	1879	1879	403.25	643.72	885.60	1879
94.00	114.54	88.34	1879	1879	401.63	641.97	883.79	1879

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
96.00	116.42	90.22	1879	1879	400.01	640.23	881.98	1879
98.00	118.29	92.09	1879	1879	398.40	638.49	880.17	1879
100.00	120.17	93.97	1879	1879	396.79	636.75	878.37	1879
102.00	122.05	95.85	1879	1879	395.20	635.02	876.57	1879
104.00	123.93	97.73	1879	1879	393.61	633.30	874.78	1879
106.00	125.81	99.61	1879	1879	392.03	631.58	872.99	1879
108.00	127.69	101.49	1879	1879	390.46	629.87	871.21	1879
110.00	129.57	103.37	1879	1879	388.89	628.16	869.42	1879
112.00	131.45	105.25	1879	1879	387.34	626.46	867.65	1879
114.00	133.33	107.13	1879	1879	385.79	624.76	865.88	1879
116.00	135.21	109.01	1879	1879	384.24	623.07	864.11	1879
118.00	137.09	110.89	1879	1879	382.71	621.39	862.34	1879
120.00	138.97	112.77	1879	1879	381.18	619.71	860.58	1879
122.00	140.85	114.65	1879	1879	379.67	618.03	858.83	1879
124.00	142.73	116.53	1879	1879	378.15	616.36	857.07	1879
126.00	144.61	118.41	1879	1879	376.65	614.70	855.33	1879
128.00	146.49	120.29	1879	1879	375.15	613.04	853.58	1879
130.00	148.37	122.17	1879	1879	373.67	611.39	851.84	1879
132.00	150.25	124.05	1879	1879	372.18	609.74	850.11	1879
134.00	152.13	125.93	1879	1879	370.71	608.09	848.38	1879
136.00	154.00	127.80	1879	1879	369.24	606.46	846.65	1879
138.00	155.88	129.68	1879	1879	367.78	604.82	844.92	1879
140.00	157.76	131.56	1879	1879	366.33	603.20	843.21	1879
142.00	159.64	133.44	1879	1879	364.89	601.57	841.49	1879

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
144.00	161.52	135.32	1879	1879	363.45	599.96	839.78	1879
146.00	163.40	137.20	1879	1879	362.02	598.34	838.07	1879
148.00	165.33	139.13	1880	1880	360.43	596.48	836.02	1930
150.00	167.45	141.25	1883	1883	358.18	593.60	832.60	2117
152.00	169.57	143.37	1886	1887	355.97	590.77	829.25	2117
154.00	171.68	145.48	1889	1890	353.80	587.98	825.95	2117
156.00	173.80	147.60	1892	1893	351.66	585.24	822.70	2117
158.00	175.92	149.72	1895	1896	349.55	582.54	819.51	2117
160.00	178.04	151.84	1898	1899	347.47	579.88	816.37	2117
162.00	180.15	153.95	1901	1902	345.42	577.26	813.27	2117
164.00	182.27	156.07	1903	1904	343.39	574.67	810.22	2117
166.00	184.39	158.19	1906	1907	341.40	572.12	807.22	2117
168.00	186.72	160.52	1911	1913	338.72	568.51	802.77	2335
170.00	189.12	162.92	1917	1919	335.89	564.65	797.99	2395
172.00	191.51	165.31	1922	1925	333.12	560.87	793.32	2395
174.00	193.91	167.71	1928	1931	330.41	557.18	788.75	2395
176.00	196.30	170.10	1933	1937	327.75	553.56	784.28	2395
178.00	198.70	172.50	1938	1943	325.15	550.02	779.91	2395
180.00	201.09	174.89	1943	1949	322.60	546.54	775.63	2395
182.00	203.49	177.29	1948	1954	320.10	543.14	771.43	2395
184.00	205.88	179.68	1953	1959	317.64	539.80	767.32	2395
186.00	208.28	182.08	1958	1965	315.23	536.52	763.29	2395
188.00	210.67	184.47	1962	1970	312.87	533.30	759.33	2395
190.00	213.07	186.87	1967	1975	310.54	530.14	755.45	2395

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
192.00	215.46	189.26	1971	1979	308.26	527.03	751.64	2395
194.00	217.86	191.66	1976	1984	306.02	523.98	747.89	2395
196.00	220.25	194.05	1980	1989	303.81	520.98	744.21	2395
198.00	222.65	196.45	1984	1993	301.64	518.02	740.59	2395
200.00	225.04	198.84	1988	1998	299.51	515.12	737.04	2395
202.00	227.44	201.24	1992	2002	297.41	512.26	733.54	2395
204.00	229.83	203.63	1996	2006	295.34	509.44	730.09	2395
206.00	232.23	206.03	2000	2010	293.31	506.67	726.70	2395
208.00	234.62	208.42	2004	2014	291.31	503.94	723.36	2395
210.00	237.02	210.82	2008	2018	289.34	501.25	720.08	2395
212.00	239.41	213.21	2011	2022	287.39	498.60	716.84	2395
214.00	241.81	215.61	2015	2026	285.48	495.99	713.65	2395
216.00	244.20	218.00	2019	2030	283.59	493.41	710.50	2395
218.00	246.60	220.40	2022	2033	281.73	490.87	707.40	2395
220.00	248.99	222.79	2025	2037	279.90	488.36	704.34	2395
222.00	251.39	225.19	2029	2041	278.09	485.89	701.32	2395
224.00	253.78	227.58	2032	2044	276.31	483.44	698.34	2395
226.00	256.18	229.98	2035	2047	274.55	481.03	695.40	2395
228.00	258.57	232.37	2038	2051	272.82	478.65	692.50	2395
230.00	260.97	234.77	2041	2054	271.10	476.30	689.63	2395
232.00	263.36	237.16	2044	2057	269.41	473.98	686.80	2395
234.00	265.76	239.56	2047	2060	267.75	471.69	684.00	2395
236.00	268.15	241.95	2050	2063	266.10	469.42	681.24	2395
238.00	270.55	244.35	2053	2066	264.48	467.18	678.51	2395

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
240.00	272.94	246.74	2056	2069	262.87	464.97	675.81	2395
242.00	275.34	249.14	2059	2072	261.29	462.78	673.15	2395
244.00	277.73	251.53	2062	2075	259.72	460.61	670.51	2395
246.00	280.13	253.93	2064	2078	258.17	458.47	667.90	2395
248.00	282.52	256.32	2067	2081	256.65	456.36	665.32	2395
250.00	284.92	258.72	2070	2083	255.14	454.26	662.77	2395
252.00	287.31	261.11	2072	2086	253.64	452.19	660.24	2395
254.00	289.71	263.51	2075	2089	252.17	450.15	657.75	2395
256.00	292.10	265.90	2077	2091	250.71	448.12	655.27	2395
258.00	294.50	268.30	2080	2094	249.27	446.11	652.82	2395
260.00	296.89	270.69	2082	2096	247.85	444.12	650.40	2395
262.00	299.29	273.09	2085	2099	246.44	442.16	648.00	2395
264.00	301.63	275.43	2087	2100	245.13	440.35	645.81	2341
266.00	303.98	277.78	2089	2102	243.81	438.51	643.59	2355
268.00	306.31	280.11	2090	2104	242.55	436.77	641.48	2325
270.00	308.60	282.40	2092	2106	241.34	435.11	639.50	2293
272.00	310.88	284.68	2093	2107	240.16	433.49	637.56	2284
274.00	313.13	286.93	2094	2108	239.05	431.97	635.75	2244
276.00	315.34	289.14	2095	2109	237.99	430.54	634.06	2210
278.00	317.56	291.36	2096	2110	236.92	429.08	632.33	2225
280.00	319.86	293.66	2098	2111	235.76	427.48	630.41	2294
282.00	322.15	295.95	2099	2112	234.63	425.90	628.52	2288
284.00	324.50	298.30	2101	2114	233.41	424.19	626.43	2355
286.00	326.95	300.75	2103	2117	232.08	422.29	624.09	2447

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
								2401
288,00	329,35	303,15	2105	2119	230,83	420,52	621,90	
								2374
290,00	331,72	305,52	2107	2121	229,63	418,81	619,82	
								2446
292,00	334,17	307,97	2109	2123	228,35	416,97	617,54	
								2412
294,00	336,58	310,38	2111	2125	227,12	415,21	615,38	
								2397
296,00	338,98	312,78	2113	2127	225,93	413,51	613,28	
								2413
298,00	341,39	315,19	2115	2129	224,72	411,78	611,15	
								2435
300,00	343,82	317,62	2117	2131	223,51	410,02	608,98	
								2420
302,00	346,24	320,04	2120	2133	222,32	408,31	606,87	
								2502
304,00	348,75	322,55	2122	2136	221,04	406,45	604,54	
								2470
306,00	351,22	325,02	2124	2138	219,82	404,67	602,32	
								2488
308,00	353,70	327,50	2127	2141	218,59	402,87	600,07	
								2476
310,00	356,18	329,98	2129	2143	217,39	401,11	597,88	
								2479
312,00	358,66	332,46	2131	2145	216,19	399,37	595,70	
								2551
314,00	361,21	335,01	2134	2148	214,93	397,49	593,34	
								2575
316,00	363,79	337,59	2137	2151	213,64	395,59	590,93	
								2492
318,00	366,28	340,08	2139	2154	212,48	393,87	588,78	
								2377
320,00	368,65	342,45	2140	2155	211,45	392,37	586,94	
								2498
322,00	371,15	344,95	2143	2157	210,29	390,67	584,80	
								2397
324,00	373,55	347,35	2144	2159	209,26	389,17	582,94	
								2422
326,00	375,97	349,77	2146	2161	208,21	387,63	581,03	
								2481
328,00	378,45	352,25	2148	2163	207,11	386,00	578,99	
								2489
330,00	380,94	354,74	2150	2165	206,01	384,37	576,94	
								2424
332,00	383,37	357,17	2152	2167	204,99	382,86	575,07	
								2356
334,00	385,72	359,52	2153	2168	204,05	381,49	573,37	

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
								2408
336.00	388.13	361.93	2154	2169	203.06	380.04	571.57	
								2312
338.00	390.44	364.24	2155	2170	202.18	378.75	569.99	
								2263
340.00	392.70	366.50	2156	2171	201.35	377.56	568.54	
								2356
342.00	395.06	368.86	2157	2172	200.44	376.22	566.86	
								2328
344.00	397.39	371.19	2158	2173	199.56	374.93	565.30	
								2311
346.00	399.70	373.50	2159	2174	198.71	373.68	563.76	
								2378
348.00	402.08	375.88	2160	2175	197.79	372.33	562.09	
								2351
350.00	404.43	378.23	2161	2176	196.92	371.03	560.48	
								2285
352.00	406.71	380.51	2162	2176	196.10	369.85	559.02	
								2289
354.00	409.00	382.80	2163	2177	195.29	368.66	557.56	
								2437
356.00	411.44	385.24	2164	2179	194.36	367.25	555.79	
								2372
358.00	413.81	387.61	2165	2180	193.49	365.95	554.18	
								2390
360.00	416.20	390.00	2167	2181	192.61	364.64	552.53	
								2210
362.00	418.41	392.21	2167	2181	191.89	363.60	551.27	
								2549
364.00	420.96	394.76	2169	2183	190.88	362.05	549.29	
								2343
366.00	423.30	397.10	2170	2184	190.07	360.83	547.77	
								2294
368.00	425.60	399.40	2171	2185	189.30	359.69	546.36	
								2277
370.00	427.87	401.67	2171	2185	188.55	358.57	544.99	
								2253
372.00	430.13	403.93	2172	2186	187.82	357.50	543.67	
								2448
374.00	432.57	406.37	2173	2187	186.94	356.16	541.96	
								2361
376.00	434.94	408.74	2174	2188	186.14	354.95	540.45	
								2208
378.00	437.14	410.94	2174	2188	185.46	353.95	539.23	
								2393
380.00	439.54	413.34	2175	2189	184.65	352.71	537.67	
								2419
382.00	441.96	415.76	2177	2191	183.82	351.44	536.06	

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
384.00	444.30	418.10	2178	2192	183.05	350.28	534.60	2347
386.00	446.68	420.48	2179	2193	182.27	349.09	533.10	2374
388.00	448.87	422.67	2179	2192	181.63	348.14	531.95	2188
390.00	451.11	424.91	2179	2193	180.96	347.13	530.69	2247
392.00	453.53	427.33	2180	2194	180.16	345.90	529.14	2414
394.00	455.90	429.70	2181	2195	179.40	344.74	527.66	2373
396.00	458.38	432.18	2183	2196	178.57	343.44	525.99	2483
398.00	460.84	434.64	2184	2198	177.76	342.18	524.38	2457
400.00	463.18	436.98	2185	2199	177.05	341.09	523.00	2335
402.00	465.44	439.24	2185	2199	176.39	340.09	521.76	2263
404.00	467.87	441.67	2187	2200	175.61	338.88	520.21	2436
406.00	470.27	444.07	2188	2201	174.88	337.74	518.75	2392
408.00	472.73	446.53	2189	2202	174.10	336.51	517.17	2461
410.00	475.15	448.95	2190	2204	173.34	335.34	515.67	2427
412.00	477.63	451.43	2191	2205	172.57	334.11	514.09	2473
414.00	480.05	453.85	2193	2206	171.83	332.96	512.60	2427
416.00	482.29	456.09	2193	2206	171.23	332.04	511.45	2232
418.00	484.54	458.34	2193	2206	170.62	331.10	510.28	2252
420.00	486.63	460.43	2193	2206	170.11	330.34	509.36	2090
422.00	488.91	462.71	2193	2206	169.49	329.38	508.15	2279
424.00	491.07	464.87	2193	2206	168.94	328.55	507.12	2165
426.00	493.36	467.16	2193	2206	168.32	327.59	505.90	2291
428.00	495.78	469.58	2194	2208	167.62	326.48	504.47	2418
430.00	498.18	471.98	2195	2208	166.94	325.40	503.09	2396

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
432.00	500.63	474.43	2196	2210	166.23	324.27	501.62	2450
434.00	503.07	476.87	2198	2211	165.53	323.15	500.17	2446
436.00	505.55	479.35	2199	2212	164.81	322.01	498.67	2474
438.00	508.00	481.80	2200	2213	164.12	320.89	497.22	2454
440.00	510.47	484.27	2201	2214	163.41	319.76	495.75	2473
442.00	513.09	486.89	2203	2216	162.62	318.47	494.04	2619
444.00	515.54	489.34	2204	2218	161.94	317.38	492.62	2452
446.00	517.95	491.75	2205	2218	161.30	316.35	491.28	2406
448.00	520.36	494.16	2206	2219	160.66	315.32	489.94	2408
450.00	522.87	496.67	2207	2221	159.96	314.19	488.45	2509
452.00	525.32	499.12	2209	2222	159.30	313.12	487.06	2456
454.00	527.68	501.48	2209	2222	158.70	312.17	485.83	2353
456.00	530.18	503.98	2210	2224	158.03	311.07	484.38	2501
458.00	532.49	506.29	2211	2224	157.47	310.17	483.22	2312
460.00	534.80	508.60	2211	2224	156.91	309.29	482.08	2307
462.00	537.20	511.00	2212	2225	156.31	308.31	480.80	2402
464.00	539.57	513.37	2213	2226	155.72	307.36	479.57	2372
466.00	541.93	515.73	2213	2226	155.15	306.44	478.37	2359
468.00	544.17	517.97	2214	2227	154.64	305.63	477.33	2244
470.00	546.47	520.27	2214	2227	154.11	304.78	476.23	2295
472.00	548.77	522.57	2214	2227	153.58	303.92	475.12	2301
474.00	551.28	525.08	2216	2228	152.94	302.87	473.72	2506
476.00	553.82	527.62	2217	2230	152.28	301.78	472.28	2540
478.00	556.28	530.08	2218	2231	151.67	300.78	470.95	2468

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
480.00	558.83	532.63	2219	2232	151.03	299.70	469.51	2547
482.00	561.29	535.09	2220	2233	150.43	298.72	468.21	2460
484.00	563.85	537.65	2222	2235	149.79	297.65	466.78	2556
486.00	566.14	539.94	2222	2235	149.29	296.84	465.72	2292
488.00	568.53	542.33	2223	2236	148.74	295.93	464.53	2394
490.00	571.02	544.82	2224	2237	148.15	294.95	463.22	2483
492.00	573.40	547.20	2224	2237	147.61	294.07	462.05	2387
494.00	575.77	549.57	2225	2238	147.09	293.20	460.92	2367
496.00	578.14	551.94	2226	2238	146.57	292.34	459.78	2371
498.00	580.59	554.39	2226	2239	146.01	291.41	458.54	2453
500.00	582.99	556.79	2227	2240	145.48	290.54	457.38	2399
502.00	585.38	559.18	2228	2241	144.96	289.67	456.23	2390
504.00	587.80	561.60	2229	2241	144.43	288.79	455.06	2413
506.00	590.25	564.05	2229	2242	143.88	287.87	453.83	2459
508.00	592.63	566.43	2230	2243	143.38	287.04	452.72	2378
510.00	595.33	569.13	2232	2245	142.72	285.90	451.17	2698
512.00	597.86	571.66	2233	2246	142.15	284.94	449.87	2531
514.00	600.36	574.16	2234	2247	141.60	284.01	448.62	2500
516.00	602.81	576.61	2235	2248	141.07	283.13	447.44	2451
518.00	605.32	579.12	2236	2249	140.52	282.20	446.18	2514
520.00	608.02	581.82	2238	2251	139.89	281.10	444.68	2694
522.00	610.64	584.44	2239	2252	139.30	280.09	443.30	2619
524.00	613.16	586.96	2240	2253	138.76	279.17	442.05	2518
526.00	615.62	589.42	2241	2254	138.25	278.31	440.89	2464

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
528.00	618.18	591.98	2242	2255	137.70	277.37	439.61	2557
530.00	620.84	594.64	2244	2257	137.10	276.34	438.20	2663
532.00	623.39	597.19	2245	2258	136.56	275.42	436.94	2554
534.00	625.93	599.73	2246	2259	136.04	274.51	435.70	2539
536.00	628.18	601.98	2246	2259	135.64	273.84	434.82	2247
538.00	630.46	604.26	2246	2259	135.22	273.15	433.90	2284
540.00	632.76	606.56	2247	2260	134.81	272.44	432.96	2301
542.00	635.28	609.08	2248	2261	134.30	271.57	431.77	2518
544.00	637.96	611.76	2249	2262	133.73	270.57	430.39	2675
546.00	640.53	614.32	2250	2263	133.21	269.67	429.16	2568
548.00	643.07	616.87	2251	2265	132.70	268.79	427.95	2549
550.00	645.53	619.33	2252	2265	132.23	267.99	426.86	2457
552.00	647.97	621.77	2253	2266	131.78	267.21	425.80	2438
554.00	650.32	624.12	2253	2266	131.36	266.50	424.83	2354
556.00	652.64	626.44	2253	2266	130.96	265.82	423.92	2312
558.00	654.96	628.76	2254	2267	130.55	265.13	422.99	2327
560.00	657.33	631.13	2254	2267	130.14	264.41	422.01	2372
562.00	659.63	633.43	2254	2267	129.75	263.74	421.12	2300
564.00	661.86	635.66	2254	2267	129.39	263.14	420.31	2225
566.00	664.08	637.88	2254	2267	129.03	262.53	419.51	2218
568.00	666.49	640.29	2255	2267	128.61	261.80	418.50	2416
570.00	668.91	642.71	2255	2268	128.18	261.06	417.49	2419
572.00	671.18	644.98	2255	2268	127.82	260.44	416.65	2263
574.00	673.42	647.22	2255	2268	127.46	259.83	415.84	2241

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
576.00	675.70	649.50	2255	2268	127.10	259.20	414.99	2280
578.00	677.92	651.72	2255	2268	126.75	258.61	414.20	2217
580.00	680.08	653.88	2255	2267	126.43	258.06	413.47	2166
582.00	682.18	655.98	2254	2267	126.13	257.56	412.80	2097
584.00	684.33	658.13	2254	2266	125.81	257.02	412.08	2150
586.00	686.56	660.36	2254	2266	125.47	256.43	411.28	2236
588.00	688.62	662.42	2253	2266	125.19	255.95	410.66	2054
590.00	690.73	664.53	2253	2265	124.89	255.44	409.98	2111
592.00	692.81	666.61	2252	2264	124.60	254.96	409.34	2076
594.00	695.04	668.84	2252	2264	124.26	254.37	408.55	2237
596.00	697.23	671.03	2252	2264	123.95	253.83	407.81	2186
598.00	699.35	673.15	2251	2264	123.65	253.32	407.14	2119
600.00	701.54	675.34	2251	2263	123.33	252.77	406.40	2188
602.00	703.67	677.47	2251	2263	123.03	252.26	405.71	2134
604.00	705.79	679.59	2250	2263	122.74	251.76	405.04	2121
606.00	707.95	681.75	2250	2262	122.43	251.23	404.33	2164
608.00	710.10	683.90	2250	2262	122.14	250.72	403.64	2143
610.00	712.15	685.95	2249	2261	121.87	250.26	403.03	2050
612.00	714.16	687.96	2248	2260	121.61	249.83	402.46	2009
614.00	716.24	690.04	2248	2260	121.34	249.35	401.82	2083
616.00	718.28	692.08	2247	2259	121.07	248.90	401.22	2044
618.00	720.34	694.14	2246	2259	120.81	248.45	400.62	2054
620.00	722.53	696.33	2246	2258	120.50	247.91	399.89	2192
622.00	724.59	698.39	2246	2258	120.24	247.46	399.28	2058

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
624,00	726,57	700,37	2245	2257	120,00	247,05	398,74	1983
626,00	728,62	702,42	2244	2256	119,73	246,60	398,13	2056
628,00	730,70	704,50	2244	2256	119,47	246,14	397,52	2071
630,00	732,84	706,64	2243	2255	119,18	245,64	396,84	2142
632,00	734,97	708,77	2243	2255	118,90	245,15	396,18	2137
634,00	737,04	710,84	2242	2254	118,64	244,70	395,57	2069
636,00	739,23	713,03	2242	2254	118,35	244,18	394,86	2184
638,00	741,41	715,21	2242	2254	118,06	243,67	394,16	2184
640,00	743,53	717,33	2242	2254	117,78	243,20	393,51	2115
642,00	745,56	719,36	2241	2253	117,54	242,77	392,94	2035
644,00	747,66	721,46	2241	2252	117,27	242,30	392,31	2100
646,00	749,85	723,65	2240	2252	116,98	241,80	391,61	2187
648,00	751,89	725,69	2240	2252	116,74	241,37	391,03	2039
650,00	753,94	727,74	2239	2251	116,49	240,93	390,44	2054
652,00	755,99	729,79	2239	2250	116,24	240,50	389,86	2048
654,00	758,06	731,86	2238	2250	115,99	240,06	389,26	2072
656,00	760,17	733,97	2238	2250	115,73	239,60	388,64	2108
658,00	762,28	736,08	2237	2249	115,47	239,15	388,01	2112
660,00	764,33	738,13	2237	2249	115,23	238,72	387,43	2053
662,00	766,45	740,25	2236	2248	114,97	238,26	386,79	2120
664,00	768,51	742,31	2236	2248	114,72	237,83	386,21	2056
666,00	770,71	744,51	2236	2247	114,44	237,33	385,52	2196
668,00	773,04	746,84	2236	2248	114,12	236,76	384,71	2335
670,00	775,51	749,31	2237	2248	113,77	236,11	383,79	2467

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672.00	778.22	752.02	2238	2250	113.34	235.31	382.64	2717
674.00	780.74	754.54	2239	2251	112.97	234.64	381.68	2512
676.00	783.71	757.51	2241	2253	112.45	233.68	380.27	2973
678.00	786.12	759.92	2242	2254	112.13	233.08	379.42	2411
680.00	788.30	762.10	2241	2254	111.86	232.61	378.77	2174
682.00	790.80	764.60	2242	2254	111.51	231.96	377.84	2505
684.00	792.75	766.55	2241	2253	111.31	231.60	377.36	1951
686.00	794.78	768.58	2241	2253	111.08	231.21	376.81	2033
688.00	797.21	771.01	2241	2253	110.76	230.61	375.97	2423
690.00	799.56	773.36	2242	2254	110.45	230.06	375.18	2354
692.00	802.25	776.05	2243	2255	110.05	229.31	374.10	2689
694.00	805.02	778.82	2244	2257	109.63	228.52	372.95	2769
696.00	807.65	781.45	2246	2258	109.25	227.83	371.93	2627
698.00	810.21	784.01	2246	2259	108.90	227.17	370.98	2565
700.00	812.85	786.65	2248	2260	108.52	226.47	369.97	2638
702.00	815.55	789.35	2249	2261	108.13	225.74	368.91	2699
704.00	818.27	792.07	2250	2263	107.74	225.01	367.84	2721
706.00	820.85	794.65	2251	2264	107.39	224.35	366.89	2580
708.00	823.60	797.40	2253	2265	106.99	223.60	365.80	2757
710.00	826.40	800.20	2254	2267	106.58	222.84	364.67	2794
712.00	829.01	802.81	2255	2268	106.23	222.18	363.72	2611
714.00	831.72	805.52	2256	2269	105.85	221.47	362.68	2713
716.00	834.40	808.20	2258	2271	105.48	220.78	361.67	2677
718.00	837.16	810.96	2259	2272	105.10	220.05	360.60	2760

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
								2684
720.00	839.84	813.64	2260	2273	104.74	219.37	359.61	
								2782
722.00	842.63	816.43	2262	2275	104.35	218.64	358.53	
								2741
724.00	845.37	819.17	2263	2276	103.97	217.94	357.50	
								2765
726.00	848.13	821.93	2264	2278	103.60	217.22	356.45	
								2769
728.00	850.90	824.70	2266	2279	103.22	216.51	355.40	
								2803
730.00	853.70	827.50	2267	2281	102.84	215.79	354.33	
								2803
732.00	856.51	830.31	2269	2282	102.46	215.07	353.26	
								2663
734.00	859.17	832.97	2270	2284	102.12	214.42	352.32	
								2684
736.00	861.85	835.65	2271	2285	101.77	213.78	351.37	
								2761
738.00	864.62	838.42	2272	2286	101.41	213.09	350.36	
								2789
740.00	867.40	841.20	2274	2288	101.05	212.39	349.33	
								2591
742.00	870.00	843.80	2274	2289	100.73	211.81	348.46	
								2034
744.00	872.03	845.83	2274	2288	100.55	211.47	347.99	
								2013
746.00	874.04	847.84	2273	2287	100.37	211.14	347.53	
								2321
748.00	876.36	850.16	2273	2287	100.12	210.69	346.87	
								2687
750.00	879.05	852.85	2274	2289	99.79	210.06	345.95	
								2629
752.00	881.68	855.48	2275	2289	99.48	209.46	345.07	
								2666
754.00	884.34	858.14	2276	2291	99.16	208.85	344.17	
								2830
756.00	887.17	860.97	2278	2292	98.80	208.16	343.14	
								2720
758.00	889.89	863.69	2279	2293	98.47	207.53	342.20	
								2784
760.00	892.68	866.48	2280	2295	98.12	206.87	341.22	
								2619
762.00	895.30	869.10	2281	2296	97.82	206.30	340.38	
								2714
764.00	898.01	871.81	2282	2297	97.50	205.68	339.46	
								2786
766.00	900.80	874.60	2284	2298	97.16	205.03	338.49	

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
768.00	903.48	877.28	2285	2299	96.85	204.44	337.61	2684
770.00	905.97	879.77	2285	2300	96.58	203.94	336.87	2489
772.00	908.13	881.93	2285	2300	96.39	203.58	336.36	2156
774.00	910.20	884.00	2284	2299	96.21	203.25	335.89	2071
776.00	912.22	886.02	2284	2298	96.04	202.94	335.45	2026
778.00	914.24	888.04	2283	2298	95.88	202.63	335.01	2019
780.00	916.88	890.68	2284	2299	95.59	202.07	334.18	2634
782.00	919.81	893.61	2285	2300	95.22	201.37	333.13	2930
784.00	922.50	896.30	2286	2302	94.92	200.79	332.26	2697
786.00	924.96	898.76	2287	2302	94.67	200.32	331.57	2458
788.00	927.51	901.31	2288	2303	94.41	199.81	330.82	2545
790.00	930.25	904.05	2289	2304	94.10	199.22	329.93	2743
792.00	933.03	906.83	2290	2305	93.79	198.61	329.02	2778
794.00	935.98	909.78	2292	2307	93.43	197.92	327.98	2958
796.00	938.94	912.74	2293	2309	93.08	197.24	326.95	2951
798.00	941.68	915.48	2294	2310	92.78	196.66	326.07	2749
800.00	944.55	918.35	2296	2312	92.45	196.03	325.12	2863
802.00	947.22	921.02	2297	2313	92.17	195.48	324.31	2675
804.00	949.84	923.64	2298	2313	91.91	194.97	323.54	2614
806.00	952.33	926.13	2298	2314	91.67	194.51	322.86	2498
808.00	955.01	928.81	2299	2315	91.39	193.98	322.05	2674
810.00	957.66	931.46	2300	2316	91.12	193.45	321.27	2651
812.00	960.24	934.04	2301	2316	90.87	192.96	320.54	2585
814.00	962.89	936.70	2301	2317	90.60	192.45	319.77	2651

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
								2793
816.00	965.69	939.49	2303	2319	90.31	191.87	318.90	
								2687
818.00	968.38	942.18	2304	2320	90.04	191.35	318.11	
								2875
820.00	971.25	945.05	2305	2321	89.73	190.74	317.19	
								2961
822.00	974.21	948.01	2307	2323	89.40	190.10	316.22	
								3200
824.00	977.41	951.21	2309	2325	89.02	189.35	315.07	
								3031
826.00	980.44	954.24	2311	2327	88.68	188.69	314.06	
								3022
828.00	983.46	957.26	2312	2329	88.35	188.04	313.06	
								3280
830.00	986.74	960.54	2315	2332	87.96	187.27	311.88	

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*   SCHLUMBERGER   *
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SYNTHETIC SEISMOGRAM TABLE

COMPANY : BEACH PETROLEUM N.L.

WELL : WRIXONDALE - 1

FIELD : WILDCAT

PERMIT : PEP-107

STATE : VICTORIA

COUNTRY : AUSTRALIA

REFERENCE: 540,421

THE HEADINGS AND FLAGS SHOWN IN THE DATA LIST ARE DEFINED AS FOLLOWS:

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IGEOFL- FLAG INDICATING  MODE OF PROCESSING
        IGEOFL = 0    WST DATA AVAILABLE AND PROCESSED
        IGEOFL = 1    WST DATA NOT AVAILABLE

LOG INPUT DATA :
GRF001- CHANNEL NAME FOR INPUT DENSITY LOG DATA
GTR001- CHANNEL NAME FOR INPUT SONIC LOG DATA
GCURVE- CORRELATION LOG NAMES

USER DEFINED MODELING

LOFVEL- LAYER OPTION FLAG FOR VELOCITY
LOFDEN- LAYER OPTION FLAG FOR DENSITY
LAYVEL- LAYERED VELOCITY VALUES FOR USER SUPPLIED ZONE LIMIT
        WITH RESPECT TO SONIC LOG DATA
LAYDEN- LAYERED DENSITY VALUES FOR USER SUPPLIED ZONE LIMITS
        WITH RESPECT TO SONIC LOG DATA
UNERTH- UNIFORM EARTH VELOCITY
UNFDEN- UNIFORM EARTH DENSITY
SRATE   SAMPLING RATE IN MS
INIDEP  START DEPTH FOR COMPUTING SYNTHETIC SEISMOGRAM
        WITH RESPECT TO SONIC LOG DATA
IGESIP  STOP DEPTH FOR COMPUTING SYNTHETIC SEISMOGRAM
        WITH RESPECT TO SONIC LOG DATA
INITAU  TWO WAY TRAVEL TIME FROM TOP SONIC TO SRD
EKB     ELEVATION OF KELLY BUSHING WITH RESPECT TO
        MEAN SEA LEVEL
SRDGEO  SEISMIC REFERENCE DEPTH WITH RESPECT TO
        MEAN SEA LEVEL
ICDP    FLAG FOR COMPUTING RESIDUAL MULTIPLES
CDPTIM  TWO WAY TIME INTERVAL FOR COMPUTATION OF
        RESIDUAL MULTIPLES
SCRTIM  SURFACE REFLECTOR TWO WAY TIME ABOVE INITAU
SCREFL  SURFACE REFLECTION COEFFICIENT
RCMAX   REFLECTION COEFFICIENTS THAT ARE EQUAL TO OR
        GREATER  THAN THIS VALUE SHALL BE FLAGGED

*NOTE*  IN CASE OF MODELING A SYNTHETIC SEISMOGRAM WITHOUT
        SONIC LOG DATA ,THE DEPTH REFERENCES SHALL BE USER
        DEFINED


OUTPUT DATA

RMSVWE  ROOT MEAN SQUARE VELOCITY FOUND FOR THE WELL
SRDTIM  TWO WAY TRANSIT TIME BETWEEN INIDEP AND SRDGEO

CHANNNEL NAMES
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TWOT- TWO WAY TRAVEL TIME
DSRD- DEPTH OF COMPUTED DATA WITH RESPECT TO SRD
INTV- INTERVAL VELOCITY ON A TIME SCALE
RHOT- INTERVAL DENSITY ON A TIME SCALE
REFL- REFLECTION COEFFICIENT AT GIVEN TWO WAY TRAVEL TIMES
ATTE- ATTENUATION COEFFICIENT AT GIVEN TWO WAY TRAVEL TIMES
PRIM- SYNTHETIC SEISMOGRAM - PRIMARIES
MULT- SYNTHETIC SEISMOGRAM - PRIMARIES + MULTIPLES
MUON- MULTIPLES ONLY

CHANNEL NAMES

CHAN 1 - TWOT.GMU.002.*
CHAN 2 - DSRD.GRF.006.*
CHAN 3 - INTV.GRF.007.*
CHAN 4 - RHOT.GRF.001.*
CHAN 5 - REFL.GRF.001.*
CHAN 6 - ATTE.GRF.001.*
CHAN 7 - PRIM.GRF.001.*
CHAN 8 - MULT.GMU.001.*
CHAN 9 - MUON.GMU.001.*

(GLOBAL PARAMETERS)			(VALUE)	
MODE OF PROC (GEOGRAM)	IGEOFL	:	0	
INITIALIZE CDP LOGIC	ICDP	:	0	
CDP TIME	CDPTIM	:	.200000	S
TIME SAMPLING (WST)	SRATE	:	2.00000	MS
TOP DEPTH OF PROCESSING	INIDEP	:	273.800	M
BOTTOM DEPTH OF PROCESSI	IGESTP	:	963.000	M
INITIAL TWO WAY TRAVEL T	INITAU	:	.262620	S
SRD FOR GEOGRAM	SRDGEO	:	-30479.7	M
ELEVATION OF KELLY BUSHI	EKB	:	0	M
SRD TIME	SRDTIM	:	0	MS
SURFACE COEFFICIENT OF R	SCRTIM	:	0	MS
SURFACE COEFFICIENT OF R	SCREFL	:	-1.00000	
REFLECTION COEFF MAXIMUM	RCMAX	:	.300000	
RMS VELOCITY IN WELL	RMSVWE	:	2438.62	M/S
UNIFORM EARTH VELOCITY	UNERTH	:	2133.60	M/S
UNIFORM DENSITY VALUE	UNFDEN	:	2.30000	G/C3

(MATRIX PARAMETERS)

1 GR*
2 CALI.CUR.LOG.006.*

(ZONED PARAMETERS)		(VALUE)		(LIMITS)		
LAYER OPTION FLAG DENS	LOFDEN	:-1.000000		30479.7	-	0
LAYER OPTION FLAG VELOC	LOFVEL	: 1.000000		30479.7	-	0
USER SUPPLIED DENSITY DA	LAYDEN	:-999.2500	G/C3	30479.7	-	0
USER VELOC (*SI)	LAYVEL	: 2395.000	M/S	300.000	-	185.000
		2117.000		185.000		165.000
		1879.000		165.000		26.2000

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
		2358	2,085					
264,6	276.16			-,009	,99991	-,00943	-,00943	0
		2323	2,076					
266,6	278,48			-,004	,99989	-,00436	-,00445	-,00009
		2286	2,092					
268,6	280,77			,005	,99987	,00470	,00462	-,00008
		2296	2,102					
270,6	283,06			-,007	,99982	-,00691	-,00684	,00007
		2281	2,087					
272,6	285,35			-,011	,99970	-,01117	-,01126	-,00009
		2241	2,077					
274,6	287,59			-,010	,99959	-,01030	-,01059	-,00029
		2215	2,059					
276,6	289,80			,005	,99956	,00531	,00508	-,00023
		2231	2,066					
278,6	292,03			,025	,99895	,02485	,02492	,00006
		2317	2,091					
280,6	294,35			-,005	,99892	-,00499	-,00454	,00045
		2295	2,089					
282,6	296,64			,015	,99869	,01511	,01494	-,00018
		2369	2,086					
284,6	299,01			,021	,99824	,02135	,02119	-,00015
		2441	2,114					
286,6	301,45			-,010	,99813	-,01026	-,00934	,00092
		2406	2,101					
288,6	303,86			-,012	,99797	-,01246	-,01199	,00047
		2367	2,083					
290,6	306,23			,028	,99720	,02785	,02793	,00008
		2462	2,117					
292,6	308,69			-,015	,99698	-,01484	-,01407	,00078
		2415	2,096					
294,6	311.10			-,009	,99690	-,00860	-,00839	,00022
		2393	2,079					
296,6	313,50			,009	,99682	,00895	,00849	-,00046
		2413	2,099					
298,6	315,91			,012	,99668	,01180	,01095	-,00085
		2445	2,120					
300,6	318,36			-,013	,99651	-,01311	-,01332	-,00021
		2423	2,085					
302,6	320,78			,023	,99600	,02244	,02293	,00049
		2511	2,104					
304,6	323,29			-,012	,99586	-,01206	-,01268	-,00062
		2449	2,106					
306,6	325,74			,010	,99576	,00997	,00878	-,00119
		2510	2,096					
308,6	328,25			-,018	,99545	-,01761	-,01566	,00195
		2465	2,060					
310,6	330,71			,003	,99544	,00302	,00288	-,00013
		2499	2,045					

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
312.6	333.21			.020	.99503	.02018	.01848	-.00170
		2557	2.081					
314.6	335.77			.016	.99478	.01568	.01750	.00182
		2563	2.142					
316.6	338.33			-.026	.99412	-.02574	-.02440	.00134
		2471	2.110					
318.6	340.80			-.025	.99347	-.02530	-.02926	-.00396
		2375	2.086					
320.6	343.18			.029	.99262	.02905	.02946	.00041
		2499	2.102					
322.6	345.68			-.029	.99177	-.02914	-.02762	.00152
		2390	2.072					
324.6	348.07			.012	.99163	.01148	.01155	.00007
		2427	2.089					
326.6	350.50			.015	.99140	.01517	.01350	-.00167
		2493	2.097					
328.6	352.99			.008	.99134	.00791	.00844	.00053
		2515	2.112					
330.6	355.50			-.036	.99004	-.03594	-.03723	-.00129
		2384	2.072					
332.6	357.89			-.013	.98988	-.01247	-.01164	.00084
		2343	2.056					
334.6	360.23			.020	.98946	.02024	.01805	-.00220
		2400	2.091					
336.6	362.63			-.026	.98877	-.02619	-.02483	.00136
		2292	2.077					
338.6	364.92			-.010	.98866	-.01035	-.00717	.00318
		2279	2.045					
340.6	367.20			.026	.98788	.02789	.02484	-.00305
		2369	2.081					
342.6	369.57			-.016	.98762	-.01597	-.01945	-.00348
		2308	2.068					
344.6	371.88			-.010	.98751	-.01012	-.00566	.00446
		2298	2.035					
346.6	374.18			.022	.98704	.02161	.02140	-.00020
		2386	2.048					
348.6	376.56			.013	.98686	.01324	.00937	-.00387
		2391	2.099					
350.6	378.95			-.052	.98423	-.05096	-.04737	.00359
		2243	2.018					
352.6	381.20			.020	.98384	.01967	.02247	.00280
		2328	2.024					
354.6	383.52			.026	.98319	.02527	.02147	-.00380
		2417	2.052					
356.6	385.94			.001	.98319	.00141	.00190	.00049
		2392	2.080					
358.6	388.33			-.018	.98288	-.01756	-.00961	.00795
		2340	2.051					
360.6	390.67			-.010	.98277	-.00995	-.01498	-.00502

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
		2270	2,072					
362,6	392,94			,070	,97796	,06878	,06414	-,00464
		2524	2,144					
364,6	395,47			-,062	,97419	-,06074	-,05624	,00449
		2300	2,078					
366,6	397,77			,009	,97411	,00873	,01454	,00581
		2332	2,086					
368,6	400,10			-,029	,97329	-,02822	-,03773	-,00952
		2245	2,045					
370,6	402,34			,002	,97329	,00170	,00424	,00254
		2307	1,997					
372,6	404,65			,038	,97185	,03746	,04200	,00454
		2413	2,062					
374,6	407,06			-,022	,97138	-,02136	-,02302	-,00166
		2325	2,048					
376,6	409,39			-,014	,97120	-,01318	-,01895	-,00577
		2277	2,036					
378,6	411,67			,036	,96992	,03522	,03417	-,00105
		2378	2,096					
380,6	414,04			-,014	,96972	-,01403	-,00700	,00702
		2415	2,005					
382,6	416,46			-,008	,96966	-,00772	-,00936	-,00164
		2344	2,032					
384,6	418,80			,009	,96959	,00833	,00642	-,00190
		2388	2,030					
386,6	421,19			-,086	,96239	-,08356	-,08106	,00250
		2105	1,937					
388,6	423,30			,077	,95666	,07421	,07270	-,00151
		2297	2,072					
390,6	425,59			,036	,95541	,03459	,03241	-,00217
		2455	2,084					
392,6	428,05			-,022	,95495	-,02097	-,01652	,00444
		2346	2,087					
394,6	430,39			,047	,95288	,04451	,04435	-,00015
		2545	2,112					
396,6	432,94			-,034	,95181	-,03194	-,03088	,00107
		2405	2,090					
398,6	435,34			-,020	,95141	-,01949	-,02555	-,00606
		2291	2,106					
400,6	437,63			-,004	,95140	-,00341	,00002	,00343
		2336	2,051					
402,6	439,97			,022	,95093	,02107	,02938	,00831
		2424	2,066					
404,6	442,39			,009	,95085	,00863	,00389	-,00474
		2408	2,117					
406,6	444,80			,012	,95071	,01179	,00253	-,00926
		2459	2,126					
408,6	447,26			-,017	,95042	-,01634	,00063	,01697
		2445	2,065					

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
410.6	449.71	2451	2.114	.013	.95027	.01220	-.00204	-.01424
412.6	452.16	2407	2.036	-.028	.94953	-.02654	-.03150	-.00496
414.6	454.56	2236	2.070	-.028	.94876	-.02705	-.01419	.01286
416.6	456.80	2205	2.066	-.008	.94869	-.00763	-.01280	-.00516
418.6	459.01	2043	1.966	-.063	.94495	-.05957	-.06372	-.00415
420.6	461.05	2355	2.119	.108	.93392	.10211	.09989	-.00222
422.6	463.40	2121	1.990	-.083	.92743	-.07788	-.06964	.00824
424.6	465.52	2344	2.077	.071	.92275	.06583	.05058	-.01525
426.6	467.87	2430	2.110	.026	.92212	.02420	.03222	.00803
428.6	470.30	2416	2.110	-.003	.92211	-.00275	.00433	.00707
430.6	472.72	2446	2.105	.005	.92209	.00465	.00052	-.00413
432.6	475.16	2441	2.112	.001	.92209	.00053	.00582	.00530
434.6	477.60	2458	2.104	.001	.92209	.00127	.00630	.00503
436.6	480.06	2489	2.100	.005	.92206	.00496	.00845	.00349
438.6	482.55	2516	2.144	.016	.92183	.01458	.01245	-.00214
440.6	485.07	2574	2.150	.013	.92168	.01184	.00846	-.00338
442.6	487.64	2396	2.107	-.046	.91973	-.04236	-.04929	-.00693
444.6	490.04	2487	2.147	.028	.91901	.02581	.03394	.00813
446.6	492.52	2406	2.130	-.021	.91862	-.01884	-.02647	-.00763
448.6	494.93	2472	2.130	.013	.91845	.01240	.01327	.00087
450.6	497.40	2362	2.103	-.029	.91767	-.02683	-.00933	.01750
452.6	499.76	2434	2.165	.030	.91686	.02718	.00864	-.01853
454.6	502.20	2506	2.138	.008	.91680	.00768	.00625	-.00144
456.6	504.70	2298	2.113	-.049	.91458	-.04511	-.05167	-.00656
458.6	507.00			.014	.91441	.01249	.02680	.01431

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
		2334	2.138					
460.6	509.33			.023	.91393	.02102	.01155	-.00947
		2407	2.171					
462.6	511.74			-.017	.91368	-.01510	-.00824	.00686
		2376	2.128					
464.6	514.12			-.020	.91331	-.01835	-.01130	.00705
		2296	2.115					
466.6	516.41			-.006	.91327	-.00557	-.01799	-.01242
		2265	2.118					
468.6	518.68			.024	.91276	.02161	.02252	.00091
		2337	2.152					
470.6	521.02			.005	.91274	.00423	.01168	.00746
		2373	2.139					
472.6	523.39			.012	.91261	.01105	.00017	-.01088
		2416	2.153					
474.6	525.80			.021	.91222	.01895	.01527	-.00368
		2477	2.189					
476.6	528.28			.019	.91188	.01746	.03369	.01623
		2561	2.200					
478.6	530.84			-.010	.91179	-.00917	-.01181	-.00264
		2528	2.184					
480.6	533.37			-.031	.91092	-.02809	-.02194	.00615
		2402	2.161					
482.6	535.77			.055	.90821	.04974	.04008	-.00966
		2584	2.241					
484.6	538.36			-.079	.90261	-.07133	-.06425	.00708
		2308	2.143					
486.6	540.67			.025	.90206	.02223	.02641	.00418
		2387	2.177					
488.6	543.05			.010	.90197	.00880	-.01935	-.02815
		2437	2.175					
490.6	545.49			-.020	.90161	-.01804	-.00136	.01668
		2382	2.138					
492.6	547.87			-.009	.90155	-.00771	-.01420	-.00649
		2368	2.114					
494.6	550.24			0	.90155	-.00002	.00207	.00209
		2389	2.095					
496.6	552.63			.047	.89959	.04203	.05336	.01133
		2508	2.191					
498.6	555.14			-.039	.89823	-.03493	-.04655	-.01162
		2401	2.117					
500.6	557.54			.009	.89816	.00802	.02284	.01482
		2383	2.172					
502.6	559.92			-.008	.89811	-.00679	-.01821	-.01142
		2365	2.156					
504.6	562.29			.047	.89610	.04249	.03613	-.00636
		2479	2.261					
506.6	564.77			-.021	.89570	-.01895	-.00719	.01176
		2451	2.192					

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
508.6	567.22			.051	.89333	.04601	.07028	.02428
		2642	2.253					
510.6	569.86			-.027	.89268	-.02421	-.06221	-.03800
		2530	2.229					
512.6	572.39			-.004	.89266	-.00354	.02023	.02377
		2508	2.232					
514.6	574.90			-.022	.89225	-.01924	-.01003	.00922
		2444	2.193					
516.6	577.34			.042	.89068	.03743	.01851	-.01892
		2593	2.248					
518.6	579.94			.021	.89028	.01879	.03057	.01178
		2689	2.261					
520.6	582.62			-.020	.88992	-.01802	-.03695	-.01892
		2623	2.226					
522.6	585.25			-.049	.88782	-.04317	-.02724	.01592
		2438	2.173					
524.6	587.69			.009	.88776	.00755	-.02306	-.03061
		2464	2.188					
526.6	590.15			.055	.88511	.04847	.06671	.01824
		2659	2.261					
528.6	592.81			-.015	.88492	-.01287	.01046	.02333
		2592	2.253					
530.6	595.40			-.021	.88453	-.01863	-.04160	-.02297
		2515	2.226					
532.6	597.91			-.004	.88452	-.00366	-.00189	.00177
		2514	2.209					
534.6	600.43			-.114	.87301	-.10091	-.09573	.00518
		2141	2.062					
536.6	602.57			.101	.86413	.08800	.05909	-.02891
		2420	2.233					
538.6	604.99			-.064	.86058	-.05543	-.03367	.02176
		2287	2.079					
540.6	607.28			.106	.85098	.09088	.07478	-.01610
		2660	2.209					
542.6	609.94			-.035	.84994	-.02978	.00056	.03034
		2541	2.156					
544.6	612.48			.037	.84878	.03141	.02834	-.00307
		2617	2.254					
546.6	615.10			-.026	.84821	-.02192	-.03299	-.01107
		2531	2.214					
548.6	617.63			-.044	.84657	-.03737	-.03533	.00204
		2346	2.187					
550.6	619.97			.044	.84494	.03715	.06169	.02454
		2489	2.250					
552.6	622.46			-.027	.84432	-.02286	-.04818	-.02532
		2385	2.225					
554.6	624.85			-.049	.84233	-.04101	-.05058	-.00957
		2265	2.126					
556.6	627.11			.033	.84142	.02764	.04628	.01865

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
		2345	2,193					
558,6	629.46			,009	.84135	.00745	-.00704	-.01450
		2389	2,190					
560,6	631.84			-,033	.84044	-.02775	-.03332	-.00557
		2271	2,157					
562,6	634.12			-,052	.83820	-.04337	-.03526	.00811
		2153	2,052					
564,6	636.27			,089	.83160	.07436	.06543	-.00894
		2410	2,190					
566,6	638.68			-,029	.83089	-.02426	-.02115	.00311
		2341	2,126					
568,6	641.02			,002	.83089	.00138	-.01253	-.01392
		2325	2,148					
570,6	643.35			-,007	.83086	-.00552	.01144	.01696
		2290	2,153					
572,6	645.63			,018	.83057	.01535	.00328	-.01207
		2353	2,174					
574,6	647.99			-,070	.82650	-.05815	-.04382	.01434
		2164	2,054					
576,6	650.15			,034	.82553	.02836	.03152	.00316
		2239	2,127					
578,6	652.39			-,026	.82496	-.02159	-.03350	-.01192
		2167	2,085					
580,6	654.56			-,049	.82294	-.04082	-.04390	-.00308
		2052	1,994					
582,6	656.61			,063	.81967	.05187	.06018	.00832
		2216	2,095					
584,6	658.83			-,020	.81936	-.01606	.00782	.02387
		2165	2,062					
586,6	660.99			-,041	.81797	-.03371	-.06840	-.03469
		2057	1,999					
588,6	663.05			,029	.81728	.02378	.03217	.00839
		2124	2,052					
590,6	665.17			-,010	.81721	-.00784	-.01354	-.00571
		2094	2,042					
592,6	667.27			,046	.81546	.03778	.03128	-.00650
		2216	2,117					
594,6	669.48			-,015	.81528	-.01225	.00227	.01452
		2186	2,082					
596,6	671,67			-,010	.81519	-.00832	.00246	.01077
		2157	2,068					
598,6	673,82			,005	.81517	.00443	-.01209	-.01652
		2167	2,081					
600,6	675.99			-,003	.81516	-.00216	.01127	.01343
		2160	2,076					
602,6	678.15			-,010	.81508	-.00833	-.02328	-.01494
		2125	2,067					
604,6	680.28			-,011	.81498	-.00890	-.01420	-.00530
		2106	2,041					

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
606.6	682.38			.007	.81494	.00587	.02359	.01772
		2128	2.049					
608.6	684.51			-.021	.81459	-.01681	-.05374	-.03693
		2058	2.033					
610.6	686.57			-.022	.81419	-.01798	.01254	.03052
		1992	2.010					
612.6	688.56			.049	.81220	.04029	.02644	-.01384
		2118	2.087					
614.6	690.68			-.021	.81184	-.01718	.00243	.01962
		2059	2.058					
616.6	692.74			.012	.81171	.01008	-.01107	-.02116
		2074	2.094					
618.6	694.81			.016	.81149	.01338	.01938	.00600
		2129	2.109					
620.6	696.94			-.032	.81068	-.02557	-.00633	.01924
		2051	2.056					
622.6	698.99			-.014	.81054	-.01095	-.04475	-.03381
		2009	2.043					
624.6	701.00			.005	.81052	.00405	.03446	.03040
		2029	2.043					
626.6	703.03			.022	.81013	.01773	.00910	-.00863
		2074	2.088					
628.6	705.10			.037	.80899	.03033	.03128	.00095
		2179	2.142					
630.6	707.28			-.033	.80810	-.02690	-.00984	.01706
		2115	2.064					
632.6	709.40			.008	.80805	.00630	.01028	.00399
		2109	2.103					
634.6	711.50			.027	.80745	.02201	-.00183	-.02384
		2174	2.154					
636.6	713.68			-.007	.80741	-.00538	-.03045	-.02507
		2157	2.142					
638.6	715.84			-.013	.80727	-.01060	.04759	.05820
		2110	2.133					
640.6	717.95			-.033	.80640	-.02649	-.08612	-.05963
		2032	2.075					
642.6	719.98			.060	.80353	.04812	.07355	.02543
		2189	2.170					
644.6	722.17			-.038	.80236	-.03068	-.03896	-.00827
		2098	2.097					
646.6	724.27			-.026	.80183	-.02072	-.01336	.00736
		2042	2.047					
648.6	726.31			.011	.80173	.00885	-.00753	-.01639
		2071	2.063					
650.6	728.38			-.015	.80154	-.01221	-.00702	.00520
		2038	2.033					
652.6	730.42			.019	.80127	.01488	.03173	.01685
		2080	2.068					
654.6	732.50			.013	.80113	.01043	.00164	-.00879

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
		2120	2,082					
656.6	734.62			-.004	.80112	-.00286	-.01044	-.00758
		2091	2,096					
658.6	736.71			-.012	.80100	-.00998	-.01787	-.00789
		2058	2,077					
660.6	738.77			.006	.80097	.00444	.02554	.02110
		2111	2,048					
662.6	740.88			-.005	.80095	-.00413	-.00109	.00303
		2067	2,070					
664.6	742.94			.068	.79720	.05483	.06262	.00779
		2259	2,172					
666.6	745.20			.018	.79694	.01435	.01276	-.00159
		2327	2,186					
668.6	747.53			.092	.79021	.07321	.07668	.00346
		2638	2,318					
670.6	750.17			-.011	.79011	-.00900	-.00843	.00057
		2650	2,256					
672.6	752.82			-.020	.78981	-.01544	.00088	.01632
		2559	2,247					
674.6	755.38			.081	.78457	.06430	.05940	-.00490
		2851	2,374					
676.6	758.23			-.122	.77288	-.09579	-.08780	.00799
		2390	2,215					
678.6	760.62			-.110	.76351	-.08509	-.10667	-.02158
		2188	1,940					
680.6	762.81			.077	.75898	.05883	.06093	.00210
		2417	2,050					
682.6	765.22			-.280	.69965	-.21219	-.22544	-.01325
		1930	1,445					
684.6	767.15			.181	.67672	.12668	.05414	-.07255
		2080	1,934					
686.6	769.23			.167	.65774	.11332	.16832	.05500
		2533	2,227					
688.6	771.77			-.079	.65368	-.05170	-.00317	.04854
		2365	2,038					
690.6	774.13			.085	.64898	.05543	.00067	-.05476
		2751	2,076					
692.6	776.88			.011	.64890	.00703	.03192	.02489
		2742	2,129					
694.6	779.62			-.043	.64772	-.02771	-.01433	.01338
		2577	2,079					
696.6	782.20			.016	.64754	.01061	.03863	.02802
		2602	2,128					
698.6	784.80			-.016	.64737	-.01053	-.00639	.00414
		2612	2,052					
700.6	787.41			.043	.64615	.02808	.04359	.01551
		2745	2,130					
702.6	790.16			-.023	.64581	-.01494	-.02302	-.00809
		2666	2,094					

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
704.6	792.82			-.003	.64580	-.00194	-.01044	-.00850
		2627	2.112					
706.6	795.45			.038	.64486	.02472	.02749	.00277
		2779	2.156					
708.6	798.23			-.010	.64479	-.00651	-.02865	-.02214
		2740	2.142					
710.6	800.97			-.027	.64433	-.01732	.00263	.01996
		2640	2.107					
712.6	803.61			.010	.64426	.00662	.00063	-.00599
		2690	2.111					
714.6	806.30			.010	.64419	.00639	-.01040	-.01679
		2718	2.131					
716.6	809.02			.010	.64413	.00634	.01913	.01279
		2742	2.155					
718.6	811.76			-.018	.64391	-.01189	-.00404	.00785
		2677	2.127					
720.6	814.44			.029	.64336	.01879	.02390	.00510
		2788	2.165					
722.6	817.22			-.006	.64334	-.00418	-.02551	-.02133
		2753	2.164					
724.6	819.98			.005	.64332	.00296	.03313	.03017
		2766	2.174					
726.6	822.74			-.007	.64329	-.00474	-.00707	-.00234
		2753	2.152					
728.6	825.50			.020	.64304	.01256	-.01825	-.03081
		2832	2.176					
730.6	828.33			-.014	.64292	-.00894	.03807	.04701
		2772	2.162					
732.6	831.10			-.029	.64237	-.01881	-.03297	-.01417
		2656	2.128					
734.6	833.76			.009	.64232	.00564	-.01080	-.01643
		2678	2.147					
736.6	836.43			.025	.64191	.01618	.02040	.00422
		2804	2.157					
738.6	839.24			.006	.64189	.00379	-.01025	-.01404
		2848	2.149					
740.6	842.09			-.216	.61190	-.13873	-.10481	.03392
		2339	1.687					
742.6	844.42			-.236	.57790	-.14424	-.23283	-.08859
		2023	1.206					
744.6	846.45			.065	.57550	.03728	.02548	-.01180
		2014	1.378					
746.6	848.46			.335	.51110	.19251	.18126	-.01125
		2498	2.228					
748.6	850.96			.034	.51052	.01727	.11069	.09342
		2629	2.266					
750.6	853.59			-.026	.51017	-.01332	-.04047	-.02716
		2641	2.141					
752.6	856.23			.027	.50981	.01364	-.03129	-.04493

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
		2779	2.146					
754.6	859.01			-.011	.50975	-.00551	.05321	.05872
		2750	2.122					
756.6	861.76			.010	.50970	.00494	.01516	.01022
		2770	2.148					
758.6	864.53			-.008	.50967	-.00407	.00293	.00699
		2731	2.144					
760.6	867.26			-.045	.50862	-.02314	-.00599	.01715
		2618	2.043					
762.6	869.88			.040	.50779	.02052	.04621	.02568
		2741	2.115					
764.6	872.62			-.005	.50777	-.00266	-.02582	-.02316
		2682	2.139					
766.6	875.30			.043	.50684	.02175	.04089	.01914
		2766	2.260					
768.6	878.07			-.092	.50253	-.04673	-.05410	-.00738
		2387	2.177					
770.6	880.46			-.182	.48580	-.09169	-.11082	-.01913
		2098	1.713					
772.6	882.55			-.080	.48269	-.03890	-.04762	-.00872
		2062	1.484					
774.6	884.61			-.032	.48219	-.01547	-.04541	-.02995
		2016	1.424					
776.6	886.63			-.077	.47933	-.03716	-.02808	.00908
		2040	1.206					
778.6	888.67			.467	.37462	.22404	.16337	-.06066
		2891	2.344					
780.6	891.56			-.027	.37434	-.01024	.01975	.02999
		2870	2.235					
782.6	894.43			-.078	.37205	-.02924	-.01382	.01542
		2619	2.094					
784.6	897.05			-.023	.37186	-.00849	-.05410	-.04561
		2392	2.191					
786.6	899.44			.069	.37010	.02556	.08388	.05832
		2693	2.233					
788.6	902.14			-.008	.37008	-.00293	.05121	.05414
		2721	2.175					
790.6	904.86			.017	.36997	.00635	-.02722	-.03357
		2790	2.196					
792.6	907.65			.061	.36861	.02242	.11183	.08941
		3050	2.266					
794.6	910.70			-.047	.36779	-.01742	-.02204	-.00461
		2847	2.210					
796.6	913.54			-.028	.36751	-.01014	-.12110	-.11096
		2782	2.140					
798.6	916.33			.020	.36736	.00733	.05688	.04954
		2832	2.189					
800.6	919.16			-.017	.36725	-.00637	-.01029	-.00393
		2723	2.199					

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
802.6	921.88	2488	2.295	-.024	.36705	-.00870	.05607	.06477
804.6	924.37	2546	2.314	.016	.36695	.00579	.09628	.09049
806.6	926.92	2685	2.346	.033	.36655	.01226	-.08524	-.09750
808.6	929.60	2629	2.301	-.020	.36639	-.00746	.04625	.05371
810.6	932.23	2591	2.269	-.014	.36632	-.00521	-.07174	-.06653
812.6	934.82	2731	2.273	.027	.36605	.00996	-.00682	-.01678
814.6	937.55	2793	2.314	.020	.36590	.00742	.00859	.00117
816.6	940.35	2692	2.344	-.012	.36584	-.00440	.03203	.03644
818.6	943.04	2854	2.383	.037	.36534	.01364	-.02420	-.03784
820.6	945.89	3012	2.432	.037	.36483	.01359	.04030	.02671
822.6	948.90	3231	2.420	.033	.36445	.01186	.03899	.02713
824.6	952.13	2987	2.419	-.039	.36388	-.01437	-.00903	.00534
826.6	955.12	2984	2.314	-.023	.36369	-.00825	-.01673	-.00847
828.6	958.10	3443	2.450	.100	.36006	.03632	.01919	-.01713
830.6	961.55	3477	2.436	.002	.36006	.00077	-.00297	-.00374
832.6	965.02			0	0	0	.01111	.01111
834.6							.06171	.06171
836.6							.04379	.04379
838.6							-.09851	-.09851
840.6							.06797	.06797
842.6							.01751	.01751
844.6							-.04307	-.04307
846.6							.00653	.00653
848.6							-.01132	-.01132
850.6							-.02648	-.02648

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
852.6							.04423	.04423
854.6							.01522	.01522
856.6							-.02399	-.02399
858.6							-.00743	-.00743
860.6							.06193	.06193
862.6							-.06805	-.06805
864.6							.00244	.00244
866.6							-.02122	-.02122
868.6							.09377	.09377
870.6							-.01336	-.01336
872.6							-.02931	-.02931
874.6							.01706	.01706
876.6							-.03563	-.03563
878.6							-.08180	-.08180
880.6							.05205	.05205
882.6							-.00481	-.00481
884.6							-.03066	-.03066
886.6							.05742	.05742
888.6							.00950	.00950
890.6							.02844	.02844
892.6							-.00316	-.00316
894.6							-.08430	-.08430
896.6							.02705	.02705
898.6							-.01155	-.01155

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
900.6							.06284	.06284
902.6							.02360	.02360
904.6							.01284	.01284
906.6							-.00373	-.00373
908.6							-.05796	-.05796
910.6							.05026	.05026
912.6							-.03354	-.03354
914.6							-.01908	-.01908
916.6							.04231	.04231
918.6							-.01813	-.01813
920.6							-.06853	-.06853
922.6							.02995	.02995
924.6							.02088	.02088
926.6							-.03292	-.03292
928.6							.03187	.03187
930.6							-.03943	-.03943
932.6							.02804	.02804
934.6							.01478	.01478
936.6							-.01086	-.01086
938.6							.06314	.06314
940.6							-.01003	-.01003
942.6							.02864	.02864
944.6							-.07930	-.07930
946.6							.03688	.03688
948.6							.00470	.00470

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
950.6							-.08564	-.08564
952.6							.02342	.02342
954.6							.00441	.00441
956.6							.02905	.02905
958.6							.04725	.04725
960.6							-.00787	-.00787
962.6							-.02958	-.02958
964.6							-.00865	-.00865
966.6							-.02703	-.02703
968.6							-.03549	-.03549
970.6							.01693	.01693
972.6							.04841	.04841
974.6							-.04538	-.04538
976.6							.02926	.02926
978.6							.02475	.02475
980.6							-.00621	-.00621
982.6							.00103	.00103
984.6							.04552	.04552
986.6							.03654	.03654
988.6							-.03370	-.03370
990.6							-.02720	-.02720
992.6							.01576	.01576
994.6							-.07135	-.07135
996.6							.03579	.03579

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
998.6							-.01813	-.01813
1000.6							-.08064	-.08064
1002.6							.02033	.02033
1004.6							.05287	.05287
1006.6							.02705	.02705
1008.6							.03856	.03856
1010.6							-.01968	-.01968
1012.6							-.05975	-.05975
1014.6							.02344	.02344
1016.6							.03286	.03286
1018.6							-.00579	-.00579
1020.6							.03455	.03455
1022.6							.01466	.01466
1024.6							-.05593	-.05593
1026.6							.00380	.00380
1028.6							-.02608	-.02608
1030.6							.01354	.01354
1032.6							-.05390	-.05390
1034.6							.00005	.00005
1036.6							.03944	.03944
1038.6							.02273	.02273
1040.6							-.01596	-.01596
1042.6							-.07398	-.07398
1044.6							.01074	.01074
1046.6							.06597	.06597

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
1048.6							.01012	.01012
1050.6							-.00302	-.00302
1052.6							.03271	.03271
1054.6							-.01405	-.01405
1056.6							-.04642	-.04642
1058.6							.01079	.01079
1060.6							-.02287	-.02287
1062.6							.05831	.05831
1064.6							-.00639	-.00639
1066.6							-.08653	-.08653
1068.6							-.02046	-.02046
1070.6							.06025	.06025
1072.6							.01734	.01734
1074.6							-.01988	-.01988
1076.6							-.00117	-.00117
1078.6							.00637	.00637
1080.6							-.03437	-.03437
1082.6							-.00004	-.00004
1084.6							.08592	.08592
1086.6							-.04926	-.04926
1088.6							.01975	.01975
1090.6							.02351	.02351
1092.6							-.01626	-.01626
1094.6							.01826	.01826

TWO WAY TRAVEL TIME MS	DEPTH FROM SRD (OR TOP) M	INTERVAL VELOCITY M/S	INTERVAL DENSITY G/C3	REFLECT. COEFF.	TWO WAY ATTEN. COEFF.	SYNTHETIC SEISMO. PRIMARY	PRIMARY + MULTIPLES	MULTIPLES ONLY
1096.6							-.03877	-.03877
1098.6							-.06195	-.06195
1100.6							.02382	.02382
1102.6							.01589	.01589
1104.6							.03513	.03513
1106.6							.05077	.05077
1108.6							.00642	.00642
1110.6							-.05819	-.05819
1112.6							-.01572	-.01572
1114.6							.00133	.00133
1116.6							.03547	.03547

APPENDIX 7

SOURCE ROCK STUDIES

AT

KEIRAVILLE KONSULTANTS
PTY. LTD.

7 DALLAS STREET,
KEIRAVILLE, N.S.W.
AUSTRALIA, 2500

TELEPHONE : 042-299843
INTERNATIONAL : 61-42-299843

D.G. Langton
EXPLORATION DIRECTOR
Beach Petroleum No Liability
P.O.Box 360
CAMBERWELL VICTORIA 3124

23.12.85

Dear Doug

Please find enclosed Vitrinite Reflectance results sheets and Total Organic Carbon data for 5 samples from Wrixondale No. 1 (x4050-x4054) and an account on Invoice No. 879.

Yours sincerely

Joan Cook

Joan Cook

Encl

KEIRAVILLE KONSULTANTS
PTY. LTD.

7 DALLAS STREET,
KEIRAVILLE, N.S.W.
AUSTRALIA, 2500

TELEPHONE : 042-299843
INTERNATIONAL : 61-42-299843

Dr. A. Tabasi
Beach Petroleum No Liability
4th Floor
685 Burke Road
CAMBERWELL VICTORIA 3124

RECEIVED
- 4 FEB 1986

3.2.86

Dear Mr. Tabassi

Please find enclosed Vitrinite Reflectance results sheets and Total Organic Carbon data for 4 samples from Wrixondale No. 1 (x4055-4058)) and an account on Invoice No. 908.

Yours sincerely

Joan Cook

Encl

WRIXONDALE NO. 1

K.K. No.	Depth (m)	$\bar{R}_v$max	Range	N	Description Including Exinite Fluorescence
					Gippsland Limestone
x4050	470 Ctgs	-	-	-	No exinite fluorescence. (Limestone>>pyrite=mud additive. Dom absent. Pyrite abundant, partly framboidal.)
x4051	550 Ctgs	0.31	0.30-0.32	2	Rare ?phytoplankton, yellow to yellow orange. (Limestone>>pyrite. Dom very rare, E>>I=V. Exinite rare, trace of inertinite and vitrinite. Shell fragments present. Framboidal pyrite abundant.)
	$\bar{R}_I$	1.35	-	1	
					Lakes Entrance Formation
x4052	650 Ctgs	0.35	-	1	Rare ?phytoplankton, yellow to yellow orange. (Limestone>>sandstone=pyrite. Dom very rare, E>I>V. Exinite very rare, trace of inertinite and vitrinite. Rare small oval patches of greenish yellow fluorescing oil/bitumen. Shell fragments and foraminifers present. Framboidal pyrite abundant.)
	$\bar{R}_I$	0.83	0.67-0.98	5	
x4053	751 SWC	?0.29	0.28-0.29	2	Rare phytoplankton, yellow, trace of sporinite, yellow orange. (Limestone>calcareous siltstone>calcareous claystone>sandstone>pyrite. Dom rare, E>I=I. Exinite rare, trace of vitrinite and inertinite. Framboidal pyrite abundant.)
					Latrobe Group
x4054	795 SWC	0.31	0.26-0.35	5	Common phytoplankton, yellow, sparse sporinite, yellow to yellow orange, rare ?dinoflagellates, yellow. (Claystone>>coal. Coal common, V only. Vitrite. Dom common, E>>I>V. Exinite common, inertinite rare, vitrinite rare. Vitrinite in coal is texto-ulminite showing weak brown primary fluorescence and weak ?oil cut. ?Oil present in mounting resin. Pyrite sparse.)
	$\bar{R}_I$	0.98	0.62-1.35	10	
x4055	910.5 SWC	0.38	0.34-0.44	27	Abundant sporinite, greenish yellow to yellow, abundant suberinite, dull orange to weak brown, abundant liptodetrinite, greenish yellow to yellow, common fluorinite/resinite, greenish yellow. (Coal. Coal dominant, V>>E>I. Exinite approximately 10% Latrobe Valley facies. Weak green oil haze emitted by coal. Dom absent. All three maceral groups absent as dom. Vitrinite is commonly micrinitized.)
x4056	925 SWC	0.35	0.31-0.38	5	Rare ?sporinite, yellow. (Claystone. Dom rare, V>?E. Vitrinite and ?exinite rare, inertinite absent. Brilliant green fluorescing ?oil globules rare in claystone. Iron oxides sparse. Pyrite rare.)
					Strzelecki Formation
x4057	955 SWC	0.63	0.47-0.80	16	Sparse sporinite, yellow to orange, rare liptodetrinite, yellow to orange. (Sandstone. Dom sparse to common, I>E>V. Inertinite sparse to common, exinite sparse, vitrinite rare. Some reworked coal, R>1.0%, present. Pyrite rare.)
	$\bar{R}_I$	1.42	0.96-2.12	10	
x4058	980 SWC	0.58	0.52-0.64	4	Rare sporinite and liptodetrinite, yellow to orange. (Siltstone. Dom sparse, I>>E>V. Inertinite sparse, exinite and vitrinite rare. Rare green fluorescing ?oil droplets in setting medium. Sparse pyrite.)
	$\bar{R}_I$	1.56	1.00-2.10	20	

WRIXONDALE NO. 1

KK No.	Depth (m)	TOC
x4050	470	0.07
x4051	550	0.09
x4052	650	0.16
x4053	751	0.44
x4054	795	0.95
x4055	910.5	49.00
x4056	925	0.59
x4057	955	0.77
x4058	980	0.29

APPENDIX 8

ROCK EVALUATION ANALYSIS

The Australian
Mineral Development
Laboratories

Flemington Street, Frewville,
South Australia 5063
Phone Adelaide (08) 79 1662
Telex AA82520

Please address all
correspondence to
P.O. Box 114 Eastwood
SA 5063
In reply quote:

amdel

12 March 1986

F 3/944/0
F 6350 (Addendum)

Beach Petroleum Pty Limited
685 Burke Road
CAMBERWELL VIC 3124

Attention: Dr A. Tabassi

REPORT F 6350 - Addendum

YOUR REFERENCE:	Letter dated 7 February 1986 from D.G. Langton
TITLE:	Notes on the significance of hydrocarbons extracted from a sidewall core, Wrixondale-1, onshore Gippsland Basin
MATERIAL:	Sidewall cores
LOCALITY:	WRIXONDALE-1
IDENTIFICATION:	SWC-24, 26, 17, 12, 8 and 3
DATE RECEIVED:	10 February 1986
WORK REQUIRED:	Total organic carbon. Rock-Eval pyrolysis. Interpretation

Investigation and Report by: Dr David McKirdy and
Teresa O'Leary

Manager-Petroleum Services Section: Dr Brian G. Steveson

Brian Steveson.

for Dr William G. Spencer
General Manager
Applied Sciences Group

cap

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Branch Laboratories:
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NOTES ON THE SIGNIFICANCE OF HYDROCARBONS EXTRACTED FROM SWC 24, WRIXONDALE-1, ONSHORE GIPPSLAND BASIN

1. Rock-Eval Tmax data indicate that Latrobe Group sediments from 790-925 metres depth in Wrixondale-1 are thermally immature (VR < 0.5% : Fig. 1).

2. The lack of significant odd/even predominance displayed by the C_{23+} n-alkanes extracted from SWC 24 (801.0 metres) (Fig. 3) suggests that these hydrocarbons are not indigenous.

3. However, staining of SWC 24 by *migrated* hydrocarbons (as suggested by fluorescence noted in cuttings) would be expected to give rise to a higher production index (S_1/S_1+S_2 >0.2) than obtained for this sample (Table 1).

4. Moreover, hydrocarbons (saturated plus aromatic) comprise only 6.4% of the SWC extract. This is atypically low for a non-biodegraded residual oil.

5. The extracted hydrocarbons have a pristane/phytane ratio (pr/ph = 5.1) which is similar to that of the West Seahorse-1 crude (pr/ph = 5.2) measured from Fig. 1 in Alexander *et al.*, 1983). The West Seahorse-1 oil has been biodegraded to a *minor* extent. Such biodegradation is not evident in the Wrixondale-1 SWC 24 extract (see e.g. pristane/n-C_{17} = 0.42; cf. West Seahorse-1, pristane/n-C_{17} = 3.4).

CONCLUSION

Hydrocarbons isolated from SWC 24, Wrixondale-1, display certain gross similarities with the West Seahorse-1 crude (e.g. pr/ph ≃5). However, the low Rock-Eval production index of this sample and the low hydrocarbon content of its solvent extract are inconsistent with the presence of residual oil. The possibility of low-level contamination cannot be ruled out.

REFERENCES

ALEXANDER, R., KAGI, R.I., WOODHOUSE, G.W., and VOLKMAN, J.K., 1983 - The geochemistry of some biodegraded Australian oils. *APEA Journal*, 23(1), 53-63.

ROCK-EVAL PYROLYSIS

06/03/86

Client BEACH PETROLEUM

Well WRIXONDALE-1

DEPTH	T MAX	S1	S2	S3	S1+S2	PI	S2/S3	PC	TOC	HI	OI
LATROBE GROUP											
790.00	396	0.05	0.34	0.36	0.39	0.13	0.94	0.03	0.57	60	63
801.00	414	0.07	1.42	0.47	1.49	0.05	3.02	0.12	-	-	-
875.50	411	0.22	2.66	0.33	2.88	0.08	8.06	0.24	0.80	333	41
910.50	415	13.03	140.26	11.33	153.29	0.09	12.37	12.77	55.20	254	21
925.00	430	0.09	0.99	0.40	1.08	0.08	2.47	0.09	0.57	174	70
STRZELECKI GROUP											
955.00	443	0.04	0.94	0.25	0.98	0.04	3.76	0.08	1.04	90	24

KEY TO ROCK-EVAL PYROLYSIS DATA SHEET

	PARAMETER	SPECIFICITY
T max	position of S_2 peak in temperature program (^oC)	Maturity/Kerogen type
S_1	kg hydrocarbons (extractable)/tonne rock	Kerogen type/Maturity/Migrated oil
S_2	kg hydrocarbons (kerogen pyrolysate)/tonne rock	Kerogen type/Maturity
S_3	kg CO_2 (organic)/tonne rock	Kerogen type/Maturity *
$S_1 + S_2$	Potential Yield	Organic richness/Kerogen type
PI	Production Index ($S_1/S_1 + S_2$)	Maturity/Migrated Oil
PC	Pyrolysable Carbon (wt. percent)	Organic richness/Kerogen type/Maturity
TOC	Total Organic Carbon (wt. percent)	Organic richness
HI	Hydrogen Index (mg h'c (S_2)/g TOC)	Kerogen type/Maturity
OI	Oxygen Index (mg $CO_2(S_3)$/g TOC)	Kerogen type/Maturity *

*Also subject to interference by CO_2 from decomposition of carbonate minerals.

FIGURE 1

Client : BEACH PETROLEUM
Well name : WRIXONDALE-1
Interval : LATROBE GROUP

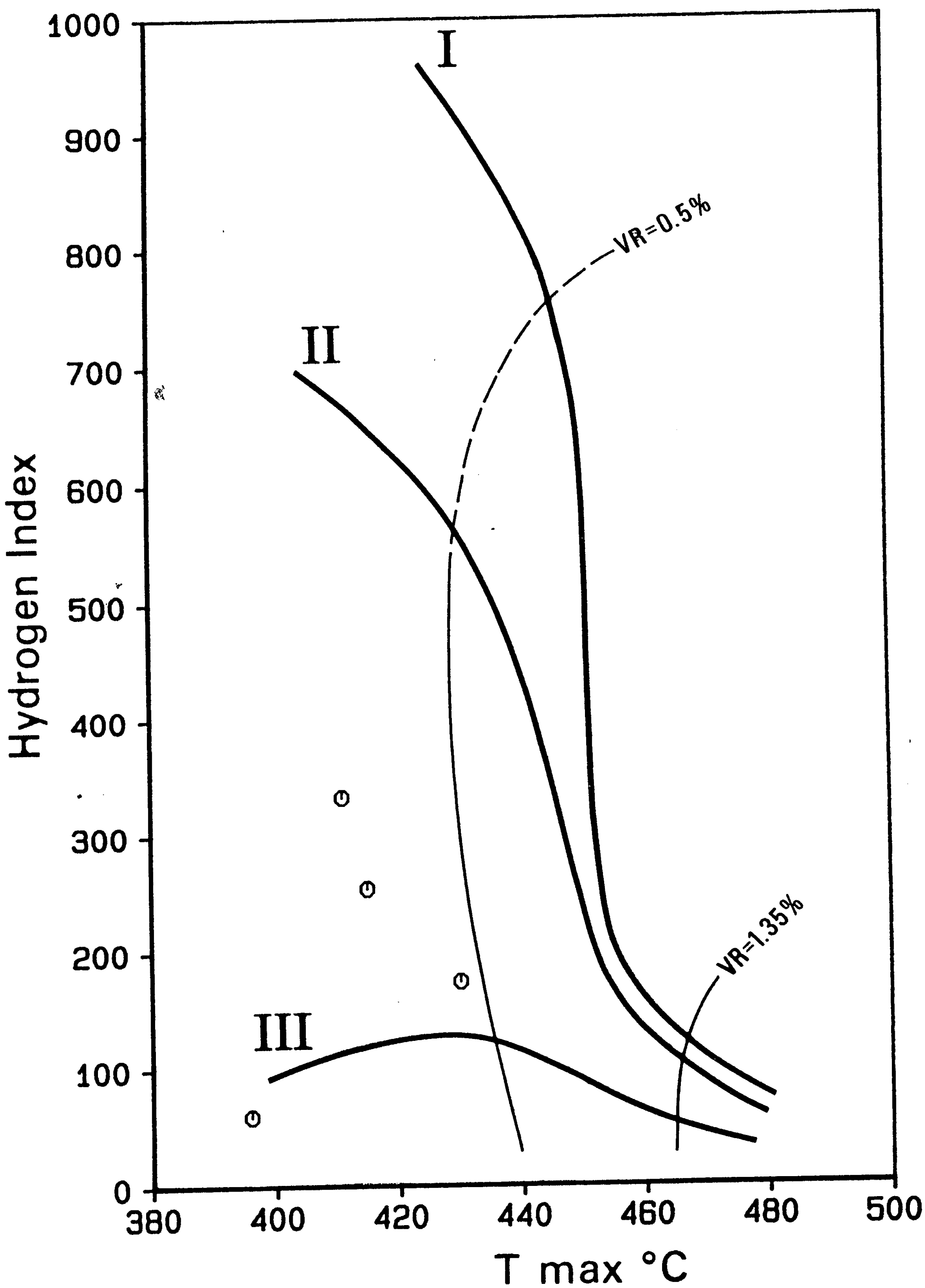


FIGURE 2

Client : BEACH PETROLEUM
Well name : WRIXONDALE-1
Interval : STRZELECKI GROUP

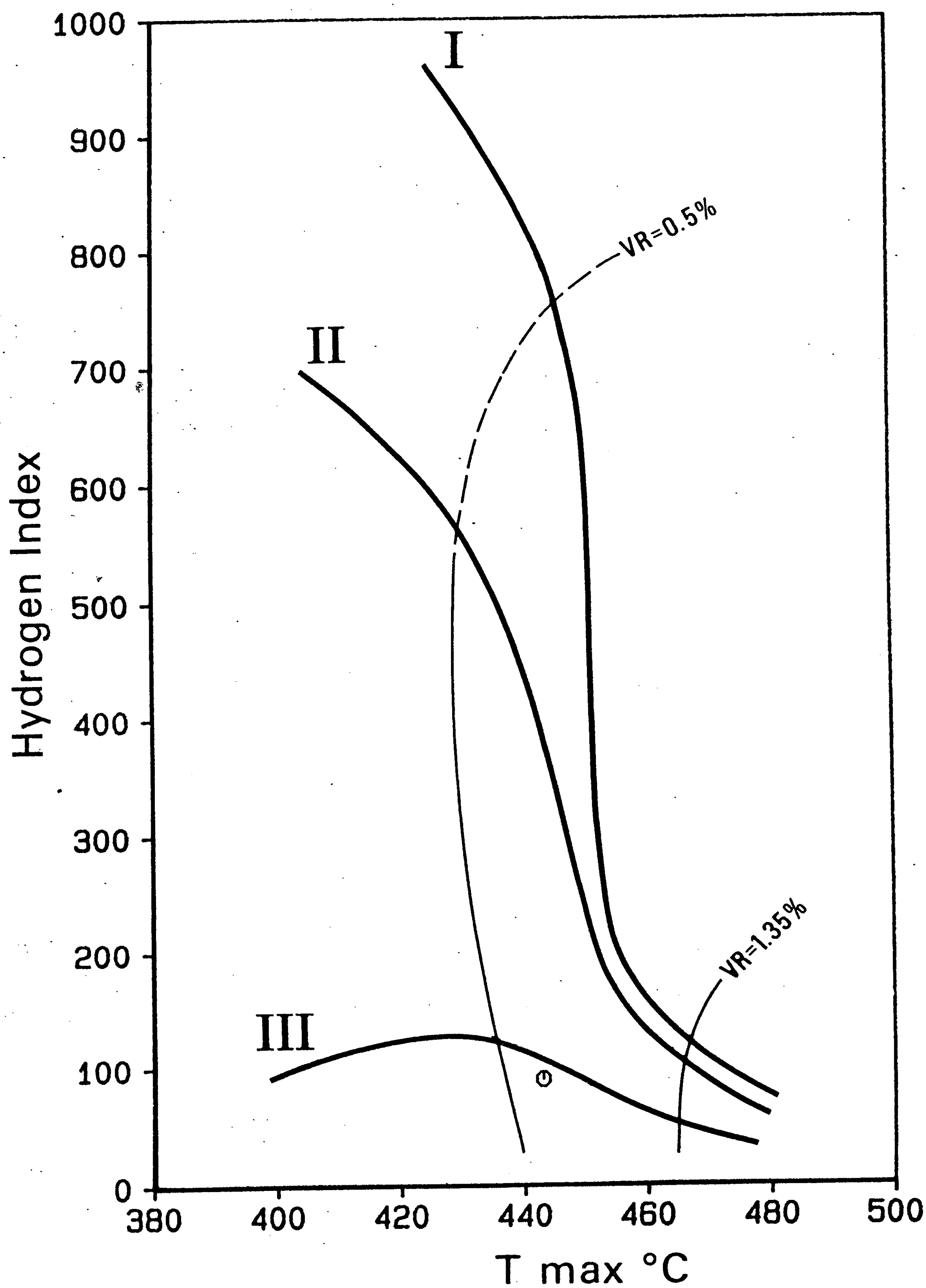
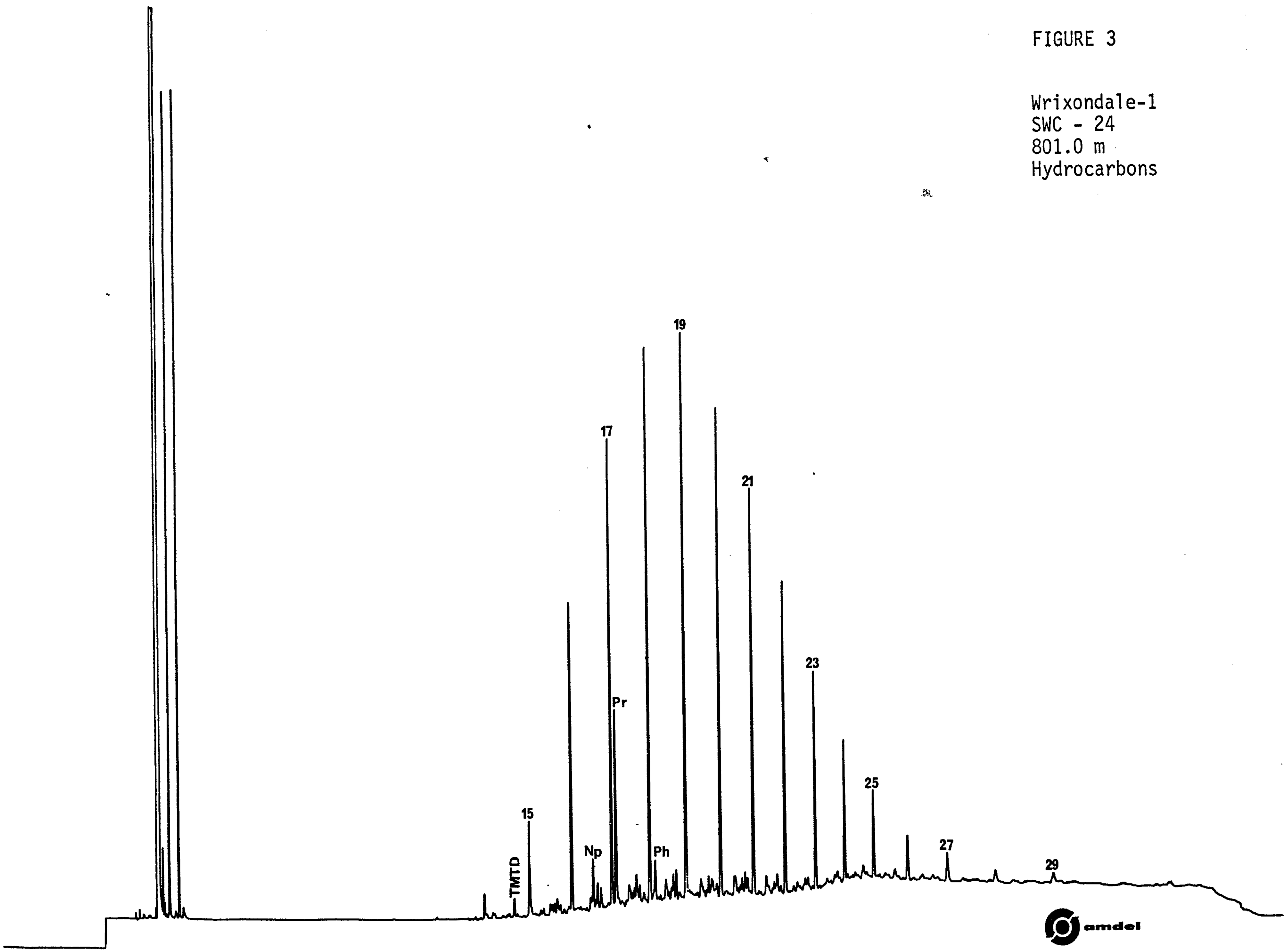


FIGURE 3

Wrixondale-1
SWC - 24
801.0 m
Hydrocarbons



APPENDIX 9

EXTRACTION AND DETERMINATION OF HYDROCARBONS

The Australian Mineral Development Laboratories

Flemington Street, Frewville,
South Australia 5063
Phone Adelaide (08) 79 1662
Telex AA82520

Please address all correspondence to
P.O. Box 114 Eastwood
SA 5063
In reply quote:

amdel

23 January 1986

3/944/0 - F6350/86

Beach Petroleum
PO Box 360
CAMBERWELL VIC 3124

Attention: Dr Tabassi

REPORT: F6350/86

YOUR REFERENCE:	Letter dated 26 November 1985.
TITLE:	Determination of Presence of Hydrocarbons in SWC-24, Wrixondale-1.
SAMPLE IDENTIFICATION:	SWC-24.
LOCALITY:	Wrixondale-1.
WORK REQUIRED:	Extraction and determination of hydrocarbons.

Investigation and Report by: Teresa O'Leary.

Chief, Petroleum Services: Dr Brian G Steveson.

W G Spencer

for Dr William G Spencer
General Manager
Applied Sciences Group

sj

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Townsville
Queensland 4814
Telephone (077) 75 1377

DISCUSSION

1. The extractable organic matter contained a low yield of condensate like hydrocarbons, however, due to the presence of drilling mud, it is not possible to say whether the hydrocarbons present are indigenous to the sandstone or are contaminants from the mud.

2. The high pristane/phytane ratio suggests a terrigenous derivation for the hydrocarbons present in SWC-24 from Wrixondale-1.

sj:1

AMDEL

RESIDUAL OIL ANALYSIS

WELL: WRIXONDALE-1

SAMPLE: SWC 24

weight of sample extracted 15.339 g
weight of eom 69.2 mg
extracted organic matter 4511 ppm

ANALYSIS OF EXTRACTED ORGANIC MATTER, (%)

SATURATES / AROMATICS	6.4
RESINS / ASPHALTENES	93.6

N-ALKANE DISTRIBUTION OF SATURATES

C-NO.	%	C-NO.	%	C-NO.	%	C-NO.	%	C-NO.	%
12	.0	17	12.3	22	8.3	27	1.0	32	.0
13	.0	18	14.6	23	5.7	28	.5	33	.0
14	.7	19	14.9	24	3.7	29	.3	34	.0
15	2.5	20	12.9	25	2.4	30	.0	35	.0
16	8.1	21	10.8	26	1.4	31	.0	36	.0

ISOPRENOID DISTRIBUTION IN SATURATES

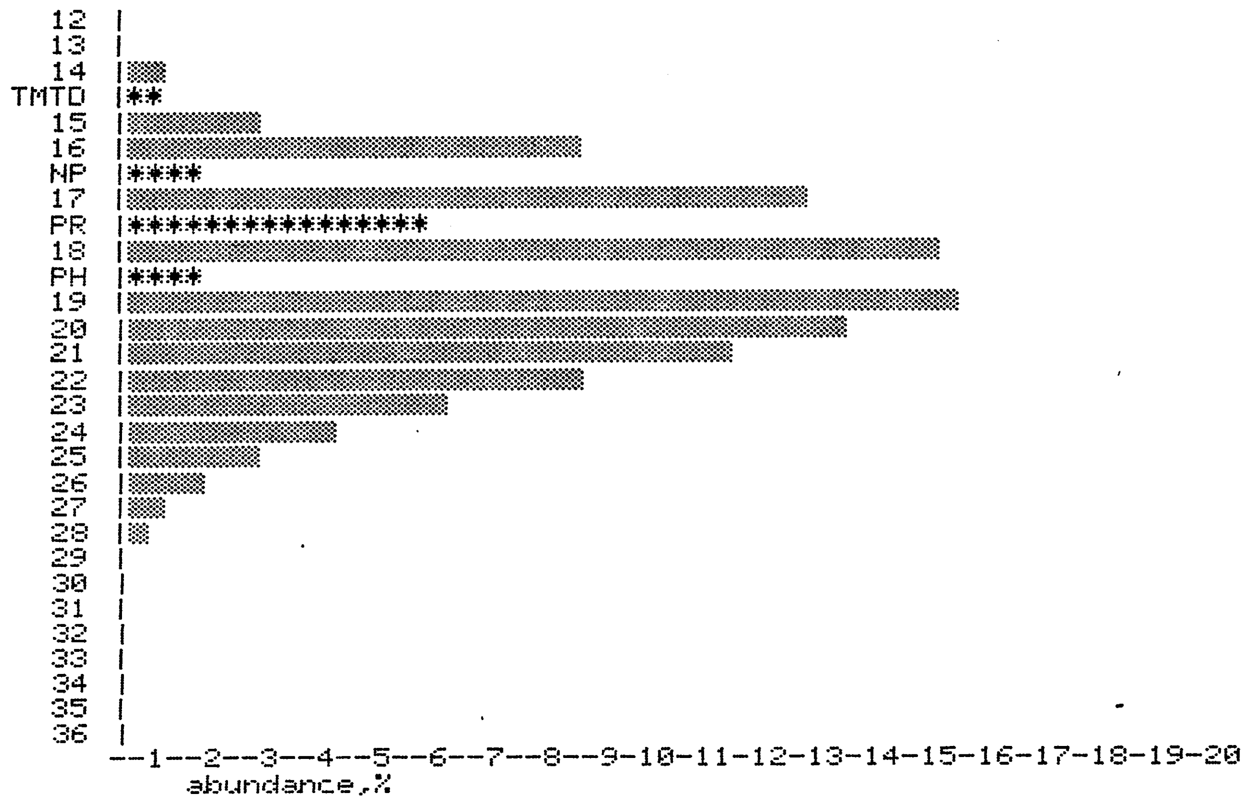
TMTD/pristane ratio	.09
norpristane/pristane ratio	.25
pristane/phytane ratio	5.05
pristane/c-17 ratio	.42
phytane/c-18 ratio	.07

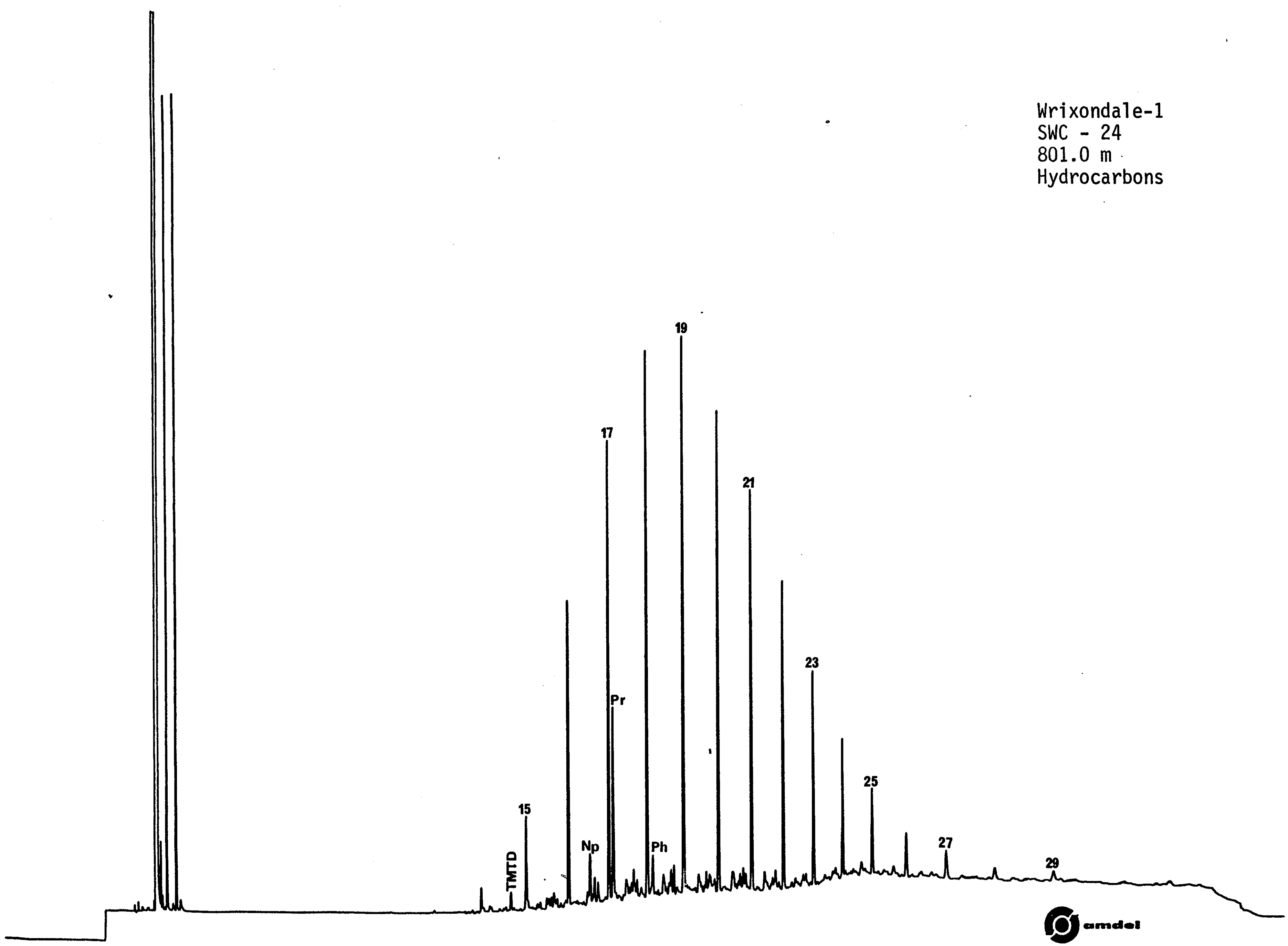
ODD EVEN PREDOMINANCE

O.E.P. C-17 = 1
O.E.P. C-19 = 1.02
O.E.P. C-25 = 1.04
O.E.P. C-27 = 1.15

WRIXONDALE-1
SWC 24

HISTOGRAM OF N-ALKANE DISTRIBUTION OF SATURATES




Wrixondale-1
SWC - 24
801.0 m
Hydrocarbons
19
17
21
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Pr
25
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TMTD
amdel

APPENDIX 10

BIOSTRATIGRAPHIC REPORT

BIOSTRATIGRAPHIC REPORT,
WRIXONDALE NO. 1,
GIPPSLAND BASIN

February, 1986

J.P. Rexilius
M.J. Dudgeon
M.A. Islam
ECL Australia Pty Ltd
16 Altona Street
WEST PERTH WA 6005

I. SUMMARY

Eight sidewall cores from Wrixondale-1 (PEP 107) indicate the following stratigraphic subdivision:-

SAMPLE	FORAM ZONE	NANNO ZONE	PALY ZONE	AGE	UNIT	ENVIRONMENT
SWC 28, 768.0m	H1	NN1	P. tuberculatus	basal E. Miocene	Lakes Ent. Fm ('upper mbr')	Middle Neritic
SWC 27, 772.0m	H1	NN1	P. tuberculatus	basal E. Miocene	Lakes Ent. Fm ('upper mbr')	Middle Neritic
SWC 26, 790.0m	Indet.	Indet.	Upper N. asperus	E. Oligocene	Latrobe Group	Non-marine
SWC 25, 795.0m	Not Studied	Not Studied	Middle N. asperus	L. Eocene	Latrobe Group	Non-marine
SWC 23, 815.0m	Not Studied	Not Studied	Middle N. asperus	L. Eocene	Latrobe Group	Non-marine
SWC 20, 854.0m	Not Studied	Not Studied	Indeterminate	Tertiary undiff.	Latrobe Group	Non-marine
SWC 17, 875.5m	Not Studied	Not Studied	Middle N. asperus	L Eocene	Latrobe Group	Non-marine
SWC 8, 925.0m	Not Studied	Not Studied	?lower N. asperus	?M. Eocene	Latrobe Group	Non-marine

II. INTRODUCTION

Eight sidewall cores from Wrixondale-1 were provided by Beach Petroleum NL for micropalaeontological and palynological analysis. Palynomorphs were recovered from all eight samples but only two of the three samples used for micropalaeontology contained any useful calcareous microfossils. The observed palynomorphs are listed in Enclosure 1 and the calcareous microfossils are listed in Appendix 1.

III. PALYNOLOGY

i) 768m : *P. tuberculatus* Zone (Late Oligocene - Early Miocene)

The presence of *Periporopollenites vesicus, Ischyosporites gremius* and *Foveotriletes lacunosus* restricts this sample to the *P. tuberculatus* Zone.
Dinoflagellates are abundant and indicate an open marine environment and thus the assemblage comes from the Lakes Entrance Formation.

ii) 772m : *P. tuberculatus* Zone (Late Oligocene - Early Miocene)

The sample is no older than mid *P. tuberculatus* Zone as indicated by the presence of *Foveotriletes lacunosus*. Most of the other spores/pollen also suggest a *P. tuberculatus* assignment. Dinoflagellates are abundant and the association is almost identical to the one in the sample at 768m.

iii) 790m : Upper *N. asperus* Zone (Early Oligocene)

The presence of Grandodiporites nebulosus restricts this sample to the Upper *N. asperus* Zone. Although not definite the assemblage may correlate with the lower part of this zone as suggested by the presence of *Anacolosidites luteoides*. The absence of dinoflagellates indicates that open marine conditions did not prevail and the absence of acritarchs indicates that brackish conditions were probably absent. This negative evidence suggests a freshwater depositional environment.

iv) 795m : Middle *N asperus* Zone (Late Eocene)

The pollen *Liliacidites bainii* and *Tricolpites simatus* limit the upper age of this sample and *Triporopollenites chnosus* the lower age to the Middle *N. asperus* Zone which is Late Eocene in age. The environmental interpretation is similar to that for 790m.

v) 815m : Middle *N. asperus* Zone (Late Eocene)

Helciporites astrus limits the age of this sample to the Lower or Middle *N. asperus* Zones and as there are no forms present that are restricted to the Lower *N. asperus* Zone then a Middle *N. asperus* correlation is indicated. A non-marine, possibly fluviatile, environment of deposition prevailed.

vi) 854m : Tertiary undifferentiated.

No age diagnostic species were identified from this sample but a Middle *N. asperus* Zone assignment is inferred.

vii) 875.5m : Middle *N. asperus* Zone (Late Eocene)

Santalumidites cainozoicus and *Tricolipites simatus* limit the upper range to the top of the Middle *N. asperus* Zone and the lack of older spores and pollen suggests a Middle *N. asperus* assignment.

viii) 925m : ?Lower *N. asperus* Zone (?Middle Eocene)

The pollen *Tricolpites thomasii* is only found in the Lower *N. asperus* or lowermost Middle *N. asperus* Zones (Stover & Partridge, 1973) while *Gephyropollenites calathus* is found in the uppermost Lower *N. asperus* Zone or higher in the Gippsland Basin. Based on the occurence of these two species in this sample one can infer that the assemblage correlates with the upper Lower *N. asperus* or lower Middle *N. asperus* Zones - probably the former.

IV. MICROPALAEONTOLOGY

A total of 3 sidewall core samples from the interval 768.0-790.0m were analysed for foraminifera and calcareous nannoplankton. Calcareous microfossil species identified in the well section, interpreted zonation and depositional environment subdivision have been plotted on the micropalaeontological distribution chart (Appendix 1).

The planktonic foraminiferal letter zonal scheme of Taylor (in prep.) and the NP-NN calcareous nannoplankton letter scheme of Martini (1971) are used in this investigation. Foraminiferal studies by Carter (1964) and Jenkins (1971), and calcareous nannoplankton investigations by Edwards (1971) and Siesser (1979) have also been consulted.

(A) Calcareous Nannoplankton Biostratigraphy

i) 768.0-772.0m : upper zone NN1 (basal Early Miocene)

The absence of *Zygrhablithus bijugatus* and *Helicosphaera cartieri* in a high yielding and well preserved nannofossil assemblage is indicative of an upper NN1 zonal assignment (= *Reticulofenestra gartneri* Zone of Edwards (1971).

ii) 790.0m : Indeterminate

The sample at 790.0m is barren of calcareous nannoplankton.

(B) Planktonic Foraminiferal Biostratigraphy

i) 768.0-772.0m : Zone H1 (basal Early Miocene)

The occurrence of *Globigerina woodi connecta* without *Globigerinoides trilobus* is indicative of Zone H1.

ii) 790.0m : Indeterminate

The sample at 790.0m contains minor caved planktonic foraminifera from the Seaspray Group.

(C) Environment of Deposition

i) 768.0-772.0m : Middle-outer neritic

A middle to outer neritic environment of deposition for the interval is indicated by a high yielding planktonic foraminiferal fauna, high yielding calcareous nannoplankton assemblage and a rich benthonic foraminiferal fauna *including Sphaeroidina bulloides, Euvigerina miozea, Cassidulina laevigata , Globocassidulina subglobosa, Pullenia bulloides* and *Brizalina* spp. The planktonic foraminiferal percentage ranges between 30 and 50%.

ii) 790.0m : Indeterminate

The sample at 790.0m contains juvenile planktonic foraminifera which are interpreted to be contaminants from the Seaspray Group. Palynological evidence suggests that the sample at 790.0m is Upper *N. asperus* in age and non-marine.

V. CORRELATION WRIXONDALE-1 AND PAYNESVILLE-1

A chronostratigraphic correlation between Wrixondale-1 and Paynesville-1 is given in Fig. 1. Log correlation character between the two wells is good which compensates for the poor sample control across the Latrobe Group/Seaspray Group boundary in Wrixondale-1.

i) Latrobe Group

The shale member in the upper part of the Latrobe Group in both wells is interpreted to be time synchronous. The shale member is a similar thickness in both wells (15m in Paynesville-1, 17.5m in Wrixondale-1) and the overall log character comparable. There is a significant difference in sidewall core sample quality between the two wells in the upper part of the Latrobe Group. In Paynesville-1 mud contamination was significant down to 597m resulting in a broad palynological age assignment for the upper part of the Latrobe Group (Middle *N. asperus-P. tuberculatus*). Rich dinoflagellate assemblages were recorded in Paynesville-1 in this interval which suggested deposition in a marine environment. This data conflicted with wireline log and lithological character which suggested that the interval represented non-marine siliciclastics of the Latrobe Group. Because of the uncertainty whether the rich dinoflagellate assemblages in Paynesville-1 in the siliciclastic sequence between 576 and 597m were *in situ*, the siliciclastics were originally interpreted to represent a facies of the Latrobe Group or the lower part of the marine Seaspray Group (See page 5 in Paynesville-1 report). On the basis of evidence from Wrixondale-1, the dinoflagellates between 576 and 579m in Paynesville-1 are now considered to represent mud contaminants from the Seaspray Group.

Sidewall core sample quality in the shale member at the top of the Latrobe Group in Wrixondale-1 is excellent. Palynological evidence in Wrixondale-1 indicates that the shale member is non-marine and ranges in age from Middle to Upper *N. asperus*. Since the top 7.5m of the Latrobe Group in Wrixondale has not been sampled it is possible that this section may be as young as *P. tuberculatus* in age although this seems unlikely. Log character indicates that this upper 7.5m probably represents non-marine Latrobe Group sediments.

ii) Lakes Entrance Formation ("lower member")

The top of the Latrobe Group in both Paynesville-1 and Wrixondale-1 is defined be oxidised horizons (sonic kicks). The top of Latrobe is defined at the top of the oxidized horizons (576.0m in Paynesville-1, 782.5m in Wrixondale-1). The "lower member" of the Lakes Entrance Formation is interpreted to be represented between 775.0m and 782.5m in Wrixondale-1. In Paynesville-1 the "lower member" occurs between 569.0 and 576.0m. The "lower member" is a comparable thickness in both wells (7m in

Paynesville-1, 7.5m in Wrixondale-1). The top of the "lower member" is defined by oxidised horizons in both wells.

iii) Lakes Entrance Formation ("upper member")

Middle-outer neritic basal Early Miocene carbonates ("upper member" of the Lakes Entrance Formation) occurs above 569.0m in Paynesville-1 and 775.0m in Wrixondale-1. In Wrixondale-1 the interval from 770.0 to 775.0m is more glauconitic than the interval above 770.0m. Although the sidewall core sample at 772.0m in Wrixondale-1 is glauconitic, the lack of quartz and its age (Early Miocene) indicates that the sample probably represents the "upper member" rather than the "lower member" of the Lakes Entrance Formation.

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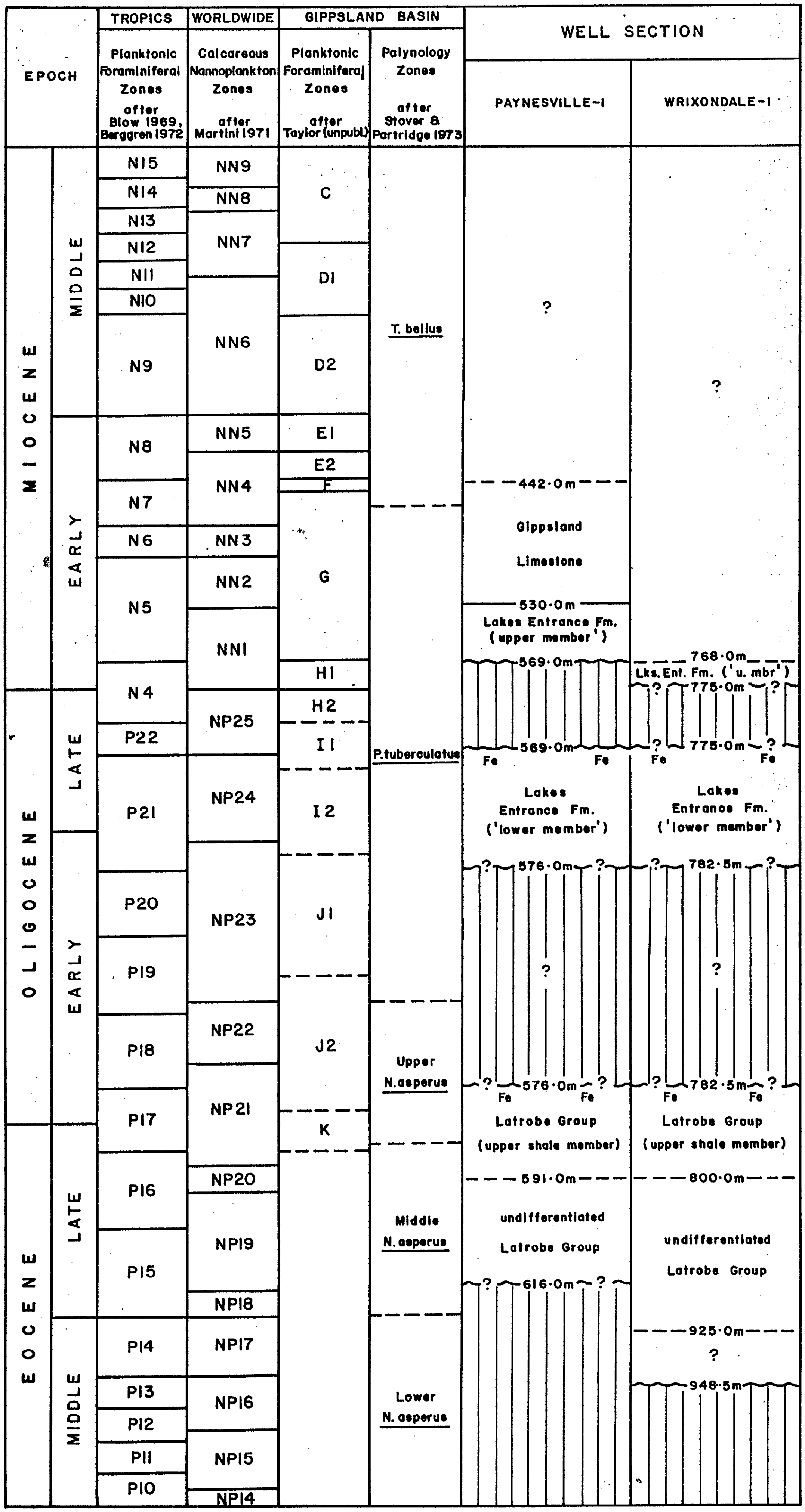

Fe = oxidized horizon

Fig. 1 Chronostratigraphic correlation between Wrixondale-1 & Paynesville-1 wells, onshore Gippsland Basin.

APPENDIX 1 : Calcareous microfossil distribution chart, Wrixondale-1

SAMPLE TYPE OR NO.	28	27	26
FOSSIL NAMES / DEPTHS	768.0m	772.0m	790.0m
PLANKTONIC FORAMINIFERA			
Globigerina praebulloides	■	●	
Globigerina woodi connecta	O	O	
Globigerina woodi woodi	•		
Globorotalia nana group	●	●	
Globigerina spp.	●	●	
juvenile planktonics	●	●	C
BENTHONIC FORAMINIFERA			
Nonionella spp.	●		
Lagena apiculata	/		
Sphaeroidina bulloides	O	●	
Trifarina bradyi	O	●	
Cassidulina laevigata	●	O	
Nodosaria spp.	/		
Euvigerina miozea	●		
Gyroidinoides subzelandica	O	/	
Euvigerina cf. canariensis	•		
Lagena acuticostata	/	•	
Pyrulina cylindroides	•		
Cibicides subhaidingeri	/	O	
Globocassidulina subglobosa	/		
Anomalina planata	/	/	
Guttelina problema	/	/	
Karreria maoria	•	/	
Lenticulina spp.	•	/	
Cibicides cf. cygnorum	•	•	
Fissurina spp.	•	/	
Lagena sulcata	•		
Pullenia quinqueloba	•	/	
Brizalina spp.	O	O	
Brizalina anastomosa	/		
Textularia spp.		/	
Almaena gippslandica		O	
Dentalina spp.		•	
Pullenia bulloides		/	
Cibicides spp.		O	
Cibicides vortex		•	
Guttelina segnenzana		•	
CALCAREOUS NANNOPLANKTON			
Cyclicargolithus floridanus	■	●	
Discoaster deflandre	/		
Coccolithus eupelagicus	O	●	
Sphenolithus moriformis	O	/	
Pontosphaera spp.	/	/	
Cyclococclithus spp.	/		
Braarudosphaera bigelowi	/	•	
Helicosphaera euphratis	/	/	
juvenile coccoliths	●	●	
Dictyococcites bisectus		R	

• Single specimen / 2-5 specimens O 6-20 specimens ● 21-99 specimens ■ >100 specimens R Reworked C contamination

PE900761

This is an enclosure indicator page.
The enclosure PE900761 is enclosed within the container PE902366 at this location in this document.

The enclosure PE900761 has the following characteristics:

ITEM_BARCODE = PE900761
CONTAINER_BARCODE = PE902366
NAME = Palynmorph Table
BASIN = GIPPSLAND
PERMIT = PEP107
TYPE = WELL
SUBTYPE = DIAGRAM
DESCRIPTION = Palynmorphs Recorded in Wrixondale-1
REMARKS =
DATE_CREATED =
DATE_RECEIVED = 1/05/86
W_NO = W919
WELL_NAME = WRIXONDALE-1
CONTRACTOR = ECL AUSTRALIA
CLIENT_OP_CO = BEACH PETROLEUM NL

(Inserted by DNRE - Vic Govt Mines Dept)

APPENDIX 11

PETROGRAPHICAL STUDIES

The Australian
[M]ineral Development
Laboratories

Flemington Street, Frewville,
South Australia 5063
Phone Adelaide (08) 79 1662
Telex AA82520

Please address all
correspondence to
P.O. Box 114 Eastwood
SA 5063
In reply quote:

amdel

7 January 1986

F 3/0/0

Beach Petroleum N.L.,
P.O. Box 360,
CAMBERWELL, VIC. 3124

ATT: DR. A. TABASSI

REPORT F 6350/86 - PART I (AMENDED)

YOUR REFERENCE:	Letter dated 26 November 1985
IDENTIFICATION:	See report
MATERIAL:	Fifteen Sidewall Core Samples and one formation water sample
LOCALITY:	Wrixondale No. 1, Gippsland Basin
WORK REQUIRED:	Petrography (15 Code MA1.3.2), Photomicrography, Water analysis (1 Code W2/1)

Investigation and Report by: Frank Radke

Chief - Petroleum Services Section: Dr Brian G Steveson

Brian G Steveson

for Dr William G Spencer
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bp

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INVESTIGATION OF SAMPLES FROM WRIXONDALE NO. 1

1. SUMMARY

Fifteen samples submitted for petrographic examination were given the following rock names.

SAMPLE & THIN SECTION NO.	DEPTH (m)	ROCK NAME
Core 4: TSC46549	947.0	Granule Conglomerate
Core 6: TSC46550	937.5	Argillaceous, Fine Grained Sandstone
Core 7: TSC46551	932.0	Argillaceous Sandstone
Core 9: TSC46552	922.5	Argillaceous Sandstone
Core 13: TSC46553	898.0	Argillaceous Sandstone
Core 14: TSC46554	888.5	Argillaceous Sandstone
Core 15: TSC46555	886.5	Argillaceous Sandstone
Core 16: TSC46556	882.5	Argillaceous Sandstone
Core 19: TSC46557	865.0	Argillaceous Sandstone
Core 20: TSC46558	854.0	Argillaceous Sandstone
Core 21: TSC46559	834.0	Argillaceous Sandstone
Core 22: TSC46560	825.0	Argillaceous Sandstone
Core 23: TSC46561	815.0	Argillaceous Sandstone
Core 25: TSC46562	795.0	Claystone
Core 24: TSC46756	801.0	Argillaceous Sandstone

These samples consist mainly of fine to medium grained sandstones with a very weakly indurated character. The sandstones consist mainly of detrital quartz grains although minor amounts of other detritus are locally present. In most of the sandstones the quartz grains are not in contact with each other but are separated by interstitial voids and clay. Many of the samples have abundant void spaces and this is particularly true of the unconsolidated samples Core 14 and Core 15. It is thought that much of these voids have formed during coring and sample preparation making it difficult to determine the original porosity of these samples.

Most of these sample are fine to medium grained sandstones with a moderate clay component and are considered to be from an essentially low energy environment. Only the Core 4 sample (947.0 ft. depth) has coarser grained detrital material. It was suggested that these samples could come from a barrier bar environment but in general they appear to be from a lower energy environment.

2. INTRODUCTION

One Formation Water sample from DST No. 2 and fifteen Sidewall Core samples from the Wrixondale No. 1 Well were submitted for analysis. The formation water sample was submitted for routine formation water analysis (AMDEL Code W2/1). Fourteen of the sidewall core samples were submitted for petrographic examination including photomicrography and one sidewall core sample was submitted for confirmation of the presence of hydrocarbons. This report contains the petrography, photomicrography and water analysis. The testing for hydrocarbons will be reported separately.

This amended report contains a petrographic description and photomicrography of the Core 24 sample as requested during a telephone conversation on December 20, 1985.

3. WATER ANALYSIS

The formation water analysis is given as an appendix to this report.

4. PETROGRAPHY

All of the thin sections described in this report have been stained with an alizarin red-S solution to distinguish calcite from other carboonates by staining it pink. In the petrographic descriptions calcite is used only for stained carbonate. Photomicrographs showing typical textures are given in plates 1 to 13.

SAMPLE: Core 4: TSC46549

Rock Name:
Granule Conglomerate

Hand Specimen:
This is a friable rock containing large pale grey quartz grains up to about 8 mm long and one elongate, fine grained brown coloured clast up to 1.5 cm long cemented by an interstitial pale grey matrix.

Thin Section:
An optical estimate of the constituents gives the following :

	%
Quartz	50
Clay/sericite	30
Calcite	Tr-1
Zircon	Tr
(?)Glauconite	Tr
Opaques	1
Voids	18

This sample consists mainly of detrital quartz grains cemented by an interstitial, argillaceous matrix. Most of the quartz grains have a size between 0.5 and several millimetres although some finer grained detrital quartz grains below 0.1 mm in size are locally intergrown with the argillaceous matrix. The quartz grains typically exhibit angular to subangular shapes although some of the larger grains have subrounded shapes. A small number of the larger quartz grains have highly fractured textures.

The interstitial argillaceous matrix consists mainly of weakly birefringent clay intergrown with small amounts of birefringent sericite. Within localised areas the fine sericite flakes exhibit a weakly developed lepidoblastic foliation which has a variable orientation through the rock. The interstitial areas between the detrital quartz grains also contain a significant proportion of voids as irregular patches up to about 0.5 mm wide. It is difficult to determine whether these voids are due to coring and thin section preparation or whether they represent original porosity and it is considered likely that they are a combination of both.

The thin section was cut to include the pale brown lithic clast noted in hand specimen. This clast consists mainly of weakly birefringent clay and finely divided sericite similar to the argillaceous matrix. Within the clast the sericite exhibits a strong lepidoblastic foliation which is also defined by very minor amounts of opaque material which forms elongate bodies with a subparallel orientation. This clast also contains minor amounts of silt-sized detrital quartz grains.

Traces of zircon were noted as small detrital grains up to 0.15 mm wide. The rock contains a few green pellets up to 0.1 mm wide which could represent glauconite pellets. Opaques are disseminated through the rock as anhedral grains and aggregates up to 0.3 mm wide which are generally intergrown with the argillaceous matrix.

This is a weakly sorted detrital sediment comprised mainly of detrital quartz grains with at least one large shale clast cemented by an argillaceous matrix.

SAMPLE: Core 6: TSC46550

Rock Name:

Argillaceous, Fine Grained Sandstone

Hand Specimen:

A grey coloured rock with a very fine grained, friable texture. The rock contains a few discontinuous darker coloured lamellae up to approximately 1 mm wide.

Thin Section:

An optical estimate of the constituents gives the following :

	%
Quartz	55
Clay/sericite	35
Muscovite	1
Tourmaline	Tr
Opaques and semi-opaques	4
Voids	5

This sample consists mainly of detrital quartz grains ranging up to 0.2 mm in size distributed through an argillaceous matrix. The rock has a discontinuous banded character produced by narrow lamellae up to approximately 1 mm wide comprised largely of argillaceous material. These lamellae have an elongate, lenticular character and typically contain concentrations of opaque to translucent iron oxides as very narrow, discontinuous lamellae.

The detrital quartz grains typically exhibit angular to subangular shapes although a few detrital grains with subrounded shapes are also present. The rock contains some relatively large muscovite flakes up to 0.5 mm long which are also thought to be of detrital origin. Traces of tourmaline form small detrital grains up to 0.15 mm wide.

The matrix consists mainly of weakly birefringent clay intergrown with smaller amounts of birefringent sericite. Locally the matrix contains concentrations of opaque to translucent iron oxides as very narrow, discontinuous lamellae. Some larger flakes of weakly birefringent clay believed to be kaolinite are also disseminated through the rock. The interstitial regions between the detrital quartz grains also locally contain irregular void spaces up to 0.1 mm wide. Voids also occur as fractures up to 0.3 mm wide. It is difficult to determine whether these voids represent original porosity and fracturing or loss of matrix produced by coring and thin section preparation.

This is a fine grained detrital sediment comprised mainly of fine sand-sized quartz-rich detritus distributed through an argillaceous matrix.

SAMPLE: Core 7: TSC46551

Rock Name:
Argillaceous Sandstone

Hand Specimen:
This is a pale grey coloured rock with a friable, granular texture.

Thin Section:
An optical estimate of the constituents gives the following :

	%
Quartz	50
Clay	25
Muscovite	1
Tourmaline	Tr-1
Zircon	Tr
Opaques and semi-opaques	3
Voids	20

This sample consists mainly of detrital quartz grains between 0.1 and 1.5 mm in size distributed through an argillaceous matrix. Most of the detrital quartz grains have angular shapes although a few subrounded detrital quartz grains are also present. The argillaceous matrix consists mainly of weakly birefringent clay intergrown with very small amounts of slightly more birefringent sericitic material.

Muscovite is disseminated through the rock as small flakes up to 0.2 mm long which tend to have a somewhat fibrous, degraded appearing texture. It is considered likely that these muscovite flakes are of detrital origin. The rock contains some detrital tourmaline grains up to 0.2 mm wide. A very small proportion of the detrital tourmaline exhibits very fine overgrowths which locally have an acicular texture. Traces of zircon were also noted as small detrital grains up to 0.1 mm wide. Although most of the clay in this rock occurs as an argillaceous matrix a small proportion of clay was noted as detrital clasts up to 0.5 mm wide which could represent small shale clasts.

The detrital quartz grains are generally not in contact with each other but are separated by either the argillaceous matrix or by irregular void spaces. Within localised areas the interstitial areas between the quartz grains consist mainly of voids. Some of these voids range up to 0.5 mm in size and it is difficult to determine whether they represent original porosity or areas where the argillaceous matrix has been lost by coring and thin section preparation.

Opaques are disseminated through the rock as anhedral grains and aggregates up to 0.15 mm wide. Locally the matrix contains concentrations of opaque to translucent iron oxides which imparts a dark reddish-brown colour to it.

This is a fine to medium grained detrital sedimentary rock comprised mainly of detrital quartz grains cemented by an argillaceous matrix.

SAMPLE: Core 9: TSC46552

Rock Name:
Argillaceous Sandstone

Hand Specimen:
This is a fine to medium grained, highly friable sample with a pale tan colour.

Thin Section:
An optical estimate of the constituents gives the following :

	%
Quartz	50
Clay/sericite	25
Zircon	Tr
Biotite	Tr
Opaques and semi-opaques	1
Voids	25

This sample consists mainly of detrital quartz grains ranging up to 0.8 mm in size distributed through an argillaceous matrix. Most of the detrital quartz grains exhibit angular to subangular shapes although a few exhibit subrounded shapes. The argillaceous matrix consists mainly of weakly birefringent clay intergrown with smaller amounts of birefringent sericite. Within localised areas the matrix contains concentrations of sericitic material within patches up to 0.3 mm wide.

A small proportion of the detrital quartz grains consist of very finely granular, cherty material. Traces of biotite were noted as very small flakes up to 0.1 mm long which are totally included within some quartz grains. Traces of zircon form detrital grains up to 0.2 mm wide.

The detrital quartz grains are generally not in contact with each other but are separated by the argillaceous matrix and irregular voids. Within localised areas the interstitial regions consist mainly of void spaces which range up to about 1 mm in size. It is difficult to determine whether these voids represent original porosity or regions where the original clay matrix has been lost during coring and sample preparation.

Minor opaques are disseminated through the rock as small grains and aggregates up to 0.2 mm wide. Opaque to translucent, reddish-brown iron oxides are locally intergrown with the matrix as narrow bands up to 0.5 mm wide. Some bands consist mainly of interstitial opaque material.

This is a detrital sedimentary rock comprised of sand-sized, quartz-rich detritus and a clay-rich matrix.

SAMPLE: Core 13: TSC46553

Rock Name:
Argillaceous Sandstone

Hand Specimen:
This is a pale grey coloured rock with a friable, granular texture.

Thin Section:
An optical estimate of the constituents gives the following :

	%
Quartz	50
Clay/sericite	25
Tourmaline	Tr
Garnet	Tr
Zircon	Tr
Opaques and semi-opaques	1
Voids	25

This sample consists mainly of detrital quartz grains between 0.1 and 0.8 mm in size separated by an argillaceous matrix. Most of the detrital quartz grains have angular to subangular shapes although some subrounded grains are present. The argillaceous matrix consists mianly of weakly birefringent clay intergrown with smaller amounts of birefringent sericite. Within localised areas the matrix contains concentrations of fibrous textured sericite.

The detrital quartz grains are generally not in contact with each other but are separated by the argillaceous matrix and interstitial void spaces. These voids range up to 0.5 mm in size and it is difficult to determine whether they represent original porosity or areas where the argillaceous matrix has been lost.

Traces of tourmaline, garnet and zircon form small detrital grains up to 0.3 mm wide. Opaques are disseminated through the rock as anhedral grains and aggregates up to 0.2 mm wide. Opaque to translucent iron oxides are also locally intergrown with the matrix. Within localised areas the matrix has a weakly translucent iron stained colour.

This is a detrital sedimentary rock comprised mainly of sand-sized quartz grains in an argillaceous matrix.

SAMPLE: Core 14: TSC46554

Rock Name:

Argillaceous Sandstone

Hand Specimen:

This is an unconsolidated sample comprised of quartz grains weakly cemented by an argillaceous paste.

Thin Section:

An optical estimate of the constituents gives the following :

	%
Quartz	45
Clay	15
Muscovite	1
Tourmaline	Tr
Opaques and semi-opaques	1
Voids	40

This sample consists mainly of angular to subangular sand-sized grains typically between 0.1 and 1 mm in size. These grains consist mainly of quartz grains although a few argillaceous lithic clasts up to 0.5 mm in size are also present. A small number of quartz grains consist of finely granular, cherty textured clasts.

The detrital grains are separated mainly by voids which locally contain minor amounts of weakly birefringent clay. The clay tends to form irregular patches up to 0.3 mm wide or marginal intergrowths around detrital grains. Much of the clay has a translucent, reddish-brown iron stained colour. Some clay is also concentrated in what appear to be small shale clasts up to 0.5 mm wide which have subrounded shapes. These clasts consist of clay minerals which show a weakly developed foliation.

Traces of tourmaline were noted as small detrital grains up to 0.5 mm wide. Opaques are also disseminated through the thin section as small grains and aggregates up to 0.2 mm wide.

This is essentially an unconsolidated detrital sediment comprised mainly of quartz grains along with smaller amounts of clay.

SAMPLE: Core 15: TSC46555

Rock Name:

Argillaceous Sandstone

Hand Specimen:

This is an unconsolidated sample comprised mainly of sand-sized grains with some argillaceous material.

Thin Section:

An optical estimate of the constituents gives the following :

	%
Quartz	45
Clay/sericite	20
Muscovite	1
Opaques and semi-opaques	1
Voids	35

This sample consists mainly of detrital grains between 0.15 and 1.5 mm in size. The detrital grains consist mainly of angular to subangular quartz grains. Some of the quartz grains consist of very finely granular, cherty textured mosaics. The rock also contains some detrital lithic clasts comprised of very fine grained quartz intergrown with an argillaceous matrix. These clasts range up to about 1 mm in size and tend to have subrounded shapes. The argillaceous matrix in these clasts consists of weakly birefringent clay and small amounts of birefringent sericite.

Most of the detrital grains are separated from each other by large void spaces up to approximately 1 mm in size. Locally the interstitial areas between the detrital grains are filled or partially filled with weakly birefringent clay. Some patches up to approximately 3 mm wide contain concentrations of interstitial clay. Minor clay also occurs as localised narrow rims or partial rims around some detrital grains. A significant proportion of this clay has a translucent, reddish-brown iron stained colour.

Minor opaques are disseminated through the sample as small grains up to 0.1 mm wide which are generally intergrown with the clay. Minor muscovite was also noted as small flakes up to 0.1 mm long which occur both as individual flakes or as inclusions within detrital quartz grains.

This is an unconsolidated sandy sediment quite similar to sample Core 14 except that the detritus has a slightly coarser grain size.

SAMPLE: Core 16: TSC46556

Rock Name:
Argillaceous Sandstone

Hand Specimen:
This is a largely unconsolidated to weakly consolidated sample comprised of sand along with irregular argillaceous bands which have a darker colour.

Thin Section:
An optical estimate of the constituents gives the following :

	%
Quartz	45
Clay/sericite	30
Tourmaline	Tr
Opaques and semi-opaques	5
Voids	20

This is a somewhat variable rock comprised mainly of sand-sized detrital quartz grains intergrown with small amounts of an argillaceous matrix. The detrital quartz grains range between 0.1 and 0.5 mm in size and typically exhibit angular to subangular shapes. Some of the detrital quartz grains have very finely granular, cherty textures. The rock also contains a few detrital particles believed to represent lithic clasts which consist of very fine sand to silt-sized quartz grains in an argillaceous matrix.

The detrital quartz grains are generally not in contact with each other and the interstitial areas between the grains consist of either voids or smaller amounts of weakly birefringent clay. This birefringent clay tends to be concentrated within localised interstitial patches up to a few millimetres wide. The clay typically has a weakly translucent brown iron stained coloure which is locally better developed.

The rock also contains an irregular band or lense several millimetres wide comprised mainly of clay intergrown with smaller amounts of finer grained quartz-rich detritus. The quartz grains in this area have a typical grain size between 0.05 and 0.2 mm. Within localised areas this argillaceous lense also contains concentrations of opaque to translucent iron oxides as patches up to several millimetres in size which could represent intensely iron stained clay-rich patches.

Traces of tourmaline were noted as small detrital grains up to 0.2 mm wide. Minor opaques form small disseminated grains and aggregates up to 0.15 mm wide.

This is a detrital sediment comprised mainly of sand-sized quartz-rich detritus along with localised clay-rich areas.

SAMPLE: Core 19: TSC46557

Rock Name:

Argillaceous Sandstone

Hand Specimen:

This is a very weakly consolidated rock comprised of sand grains weakly cemented by a pale brown, argillaceous matrix.

Thin Section:

An optical estimate of the constituents gives the following :

	%
Quartz	55
Clay	20
Feldspar	2
Lithic clasts	1
Muscovite	1
Tourmaline	Tr
Opaques and semi-opaques	1
Voids	20

This sample consists mainly of detrital quartz grains between 0.1 and 1 mm in size intergrown with much smaller amounts of interstitial clay. The quartz grains typically exhibit angular to subangular shapes although a few subrounded grains are also present. In addition to the quartz minor feldspar comprised mainly of untwinned potash feldspar is also present as angular detrital grains up to about 1.5 mm in size. A small proportion of detrital lithic clasts including some which exhibit remnant volcanic textures were also noted. Minor muscovite forms small flakes up to 0.2 mm long which are most likely of detrital origin and traces of tourmaline form small detrital grains up to 0.3 mm wide.

Most of the detrital grains are not in contact with each other but are separated by a clay matrix and voids. Within localised regions voids up to approximatley 1 mm wide are present and these voids tend to be concentrated in narrow bands with a parallel orientation. As with the previously described samples it is difficult to determine in what proportion these void spaces represent original porosity and what proportion is due to loss of the clay matrix during coring and thin section preparation.

The argillaceous matrix consists mainly of weakly birefringent clay which locally has a fibrous texture. Some lithic clasts comprised of argillaceous material intergrown with very fine detrital quartz grains are present in the rock and in some cases are difficult to distinguish from the argillaceous matrix. Locally the argillaceous matrix exhibits a reddish-brown iron stained colour or contains disseminated opaque to translucent iron oxides.

This is a detrital sedimentary rock comprised mainly of quartz grains very weakly cemented by an argillaceous matrix.

SAMPLE: Core 20: TSC46558

Rock Name:

Argillaceous Sandstone

Hand Specimen:

This is a pale grey coloured rock with a friable, finely granular texture.

Thin Section:

An optical estimate of the constituents gives the following :

	%
Quartz	50
Clay/sericite	40
Muscovite	4
Tourmaline	Tr
Zircon	Tr
Opaques and semi-opaques	3
Voids	3

This sample consists mainly of detrital quartz grains disseminated through an argillaceous matrix. The rock has a very vague banded and foliated texture produced by a tendency for opaque to translucent iron oxides to be concentrated in vague, narrow lamellae with a parallel orientation as well as a preferred orientation of large muscovite flakes. The detrital quartz grains have a bimodal character with typical grain size ranging between 0.1 and 0.3 mm or between 0.5 and several millimetres. The banded character of the rock is further emphasized by a tendency for the coarser grained quartz to occur within localised vague lenses. The detrital quartz grains typically exhibit angular to subangular shapes.

The argillaceous matrix consists mainly of weakly birefringent clay intergrown with much smaller amounts of birefringent sericite which forms small finely divided flakes. In addition to the sericite the rock contains some large muscovite flakes up to 0.5 mm long which are considered to be of detrital origin. At least locally these muscovite flakes exhibit a preferred orientation.

Within localised areas minor voids which are generally below 0.2 mm wide are intergrown with the argillaceous matrix. Some very large voids up to 1.5 mm in size are also locally present.

A small proportion of the detrital quartz grains have very finely granular, cherty textures. Traces of tourmaline and zircon form small detrital grains up to 0.2 mm wide. Opaque to translucent iron oxides are concentrated as irregular patches and vague lamellae intergrown with the argillaceous matrix.

This is an immature detrital sedimentary rock comprised largely of detrital quartz grains cemented by an argillaceous matrix.

SAMPLE: Core 21: TSC46559

Rock Name:
Argillaceous Sandstone

Hand Specimen:
This is a pale grey coloured rock with a friable, granular texture.

Thin Section:
An optical estimate of the constituents gives the following :

	%
Quartz	55
Clay/sericite	20
Muscovite	2
Feldspar	Tr-1
Tourmaline	Tr
Zircon	Tr
Opaques and semi-opaques	2
Voids	20

This sample consists mainly of detrital quartz grains between 0.1 and 1 mm in size weakly cemented by an argillaceous matrix. Most of the detrital quartz grains exhibit angular and subangular shapes although a few have subrounded shapes. A small proportion of the quartz grains exhibit very finely granular, cherty textures. The rock also contains a small proportion of detrital feldspar grains up to about 1 mm in size comprised of untwinned, potash feldspar.

The detrital grains are generally not in contact with each other but are separated by interstitial clay and void spaces. Locally the clay forms irregular patches up to 1.5 mm in size. Some of the void spaces range up to 1 mm in size. Most of the clay has a very weakly birefringent mineral although minor amounts of a fibrous, birefringent sericite are intergrown with it. The rock also contains some disseminated muscovite flakes up to 0.3 mm long which could be of detrital origin. Locally some irregular patches up to about 1 mm in size consist of clay containing finely granular quartz and these areas could represent small, argillaceous lithic clasts.

Traces of tourmaline and zircon form small detrital grains up to 0.2 mm wide. Opaques are disseminated through the rock as small grains and aggregates up to 0.1 mm in size which are generally intergrown with the argillaceous matrix.

This is a quartz-rich detrital sediment weakly cemented by an argillaceous matrix.

SAMPLE: Core 22: TSC46560

Rock Name:

Argillaceous Sandstone

Hand Specimen:

This is a pale grey, highly friable rock containing some relatively large milky grey quartz grains up to approximately 5 mm wide.

Thin Section:

An optical estimate of the constituents gives the following :

	%
Quartz	50
Clay	30
Muscovite	2
Tourmaline	Tr
Opaques and semi-opaques	3
Voids	15

This sample consists mainly of detrital quartz grains disseminated through an iron stained, argillaceous matrix. The detrital quartz grains range up to several millimetres in size and tend to have a bimodal character with most being either above 1 mm in size or between 0.1 and 0.5 mm in size. Most of the detrital quartz grains exhibit angular to subangular shapes although some larger grains have subrounded shapes. A small proportion of the detrital quartz grains have very finely granular, cherty textures.

The detrital quartz grains are generally not in contact with each other but are separated by an argillaceous matrix and voids. The argillaceous matrix consists of weakly birefringent clay which typically has a reddish-brown iron stained colouring. This iron staining is somewhat variable locally producing a translucent character in the matrix. Some clay forms rounded appearing clasts up to 0.5 mm wide which appear to be of detrital origin. Within localised areas larger detrital quartz grains exhibit marginal rims of clay. Minor muscovite is also disseminated through the rock as fibrous textured flakes up to 0.4 mm long which are most likely of detrital origin.

Most of the voids are below 0.2 mm in size and have irregular shapes. It is difficult to determine whether these voids represent original porosity or areas where the interstitial clay matrix has been lost during sampling and thin section preparation.

Traces of tourmaline form small disseminated grains up to 0.1 mm wide some of which occur as inclusions within larger detrital quartz grains. Minor opaques form disseminated grains and aggregates up to 0.2 mm wide which are generally intergrown with the argillaceous matrix.

This is a weakly cemented detrital sediment containing an argillaceous matrix. This rock has a general slightly coarser grain size than most of the previously described argillaceous sandstones and also has a more iron stained argillaceous matrix.

SAMPLE: Core 23: TSC46561

Rock Name:

Argillaceous Sandstone

Hand Specimen:

A friable rock containing milky grey quartz grains up to approximately 3 mm wide cemented by a dark grey matrix.

Thin Section:

An optical estimate of the constituents gives the following :

	%
Quartz	55
Clay	20
Muscovite/sericite	1
Calcite	Tr
Opaques and semi-opaques	4
Voids	20

This sample consists mainly of detrital quartz grains intergrown with smaller amounts of iron stained clay. Most of the detrital quartz grains are between 0.3 and several millimetres in size and have angular to subangular shapes. A small proportion of finer grained detrital quartz with a grain size of about 0.1 mm is also present. Some of the detrital quartz grains have very finely granular, cherty textures and these typically exhibit somewhat more rounded shapes. Many of the large quartz grains also have polycrystalline, deformed textures.

The quartz grains are generally only weakly in contact with each other and are separated by interstitial clay and voids. The clay is a very weakly birefringent variety and forms localised patches up to a few millimetres in size. Some of these clay patches have irregular rounded shapes and could represent detrital argillaceous clasts. Interstitial iron stained clay with a translucent, reddish-brown colour occurs marginal to many quartz grains. Many of the interstices between the quartz grains consists of voids up to approximately 1 mm wide. Traces of calcite form small grains up to 0.1 mm wide intergrown with the clay.

The rock contains a small number of fibrous, muscovite flakes which are generally intergrown with the clay and could represent degraded detrital flakes. The rock also contains some clasts up to about 1 mm wide comprised of foliated muscovite flakes intergrown with granular quartz which are believed to represent low grade metamorphic rock clasts.

Opaque to translucent iron oxides form irregular patches up to 0.3 mm wide which are generally intergrown with clay.

This is a detrital sedimentary rock comprised mainly of quartz grains cemented by an iron stained, argillaceous matrix.

SAMPLE: Core 25: TSC46562

Rock Name:
Claystone

Hand Specimen:
This is a pale grey, argillaceous rock with some narrow darker grey veinlets.

Thin Section:
An optical estimate of the constituents gives the following :

	%
Clay	95
Quartz	2
Opaques and semi-opaques	3

This sample consists mainly of a weakly birefringent clay which forms a fibrous textured matrix exhibiting a weakly developed foliation. The clay typically has a translucent, reddish-brown iron stained colour and contains localised concentrations of translucent iron oxides as small disseminated grains and narrow, discontinuous lamellae. Iron oxides also locally form narrow fracture and vein fillings. Many of the iron oxides form weakly zoned areas around narrow fractures which appear to represent liesegang type structures.

Fine sand to silt-sized detrital quartz grains range up to 0.15 mm in size are are disseminated through the rock.

This is a well foliated argillaceous sediment containing a minor proportion of detrital quartz grains.

APPENDIX

FORMATION WATER ANALYSIS OF WRIXONDALE NO. 1, DST 2

CHEMICAL COMPOSITION

		MG/L	ME/L
CATIONS			
CALCIUM	(CA)	29.0	1.45
MAGNESIUM	(MG)	2.00	0.165
SODIUM	(NA)	340	14.8
POTASSIUM	(K)	23.0	0.588
ANIONS			
HYDROXIDE	(OH)		
CARBONATE	(CO3)	22.6	0.754
BICARBONATE	(HCO3)	465	7.61
SULPHATE	(SO4)	24.0	0.500
CHLORIDE	(CL)	276	7.79
NITRATE	(NO3)	<4.0	

REACTION - PH	8.7
CONDUCTIVITY (E.C.) MICRO-S/CM AT 25 C	1700
RESISTIVITY OHM.M @ 25C	5.88

DERIVED DATA

	MG/L
TOTAL DISSOLVED SOLIDS	
A. BASED ON E.C.	959
B. CALCULATED (HCO3=CO3)	949
TOTAL HARDNESS	80.6
CARBONATE HARDNESS	80.6
NON-CARBONATE HARDNESS	
TOTAL ALKALINITY	418
(EACH AS CACO3)	

TOTALS AND BALANCE

CATIONS(ME/L) 17.0 DIFF= 0.331
ANIONS (ME/L) 16.7 SUM = 33.6
DIFF*100./SUM = 0.984%

SODIUM / TOTAL CATION RATIO 87.1%

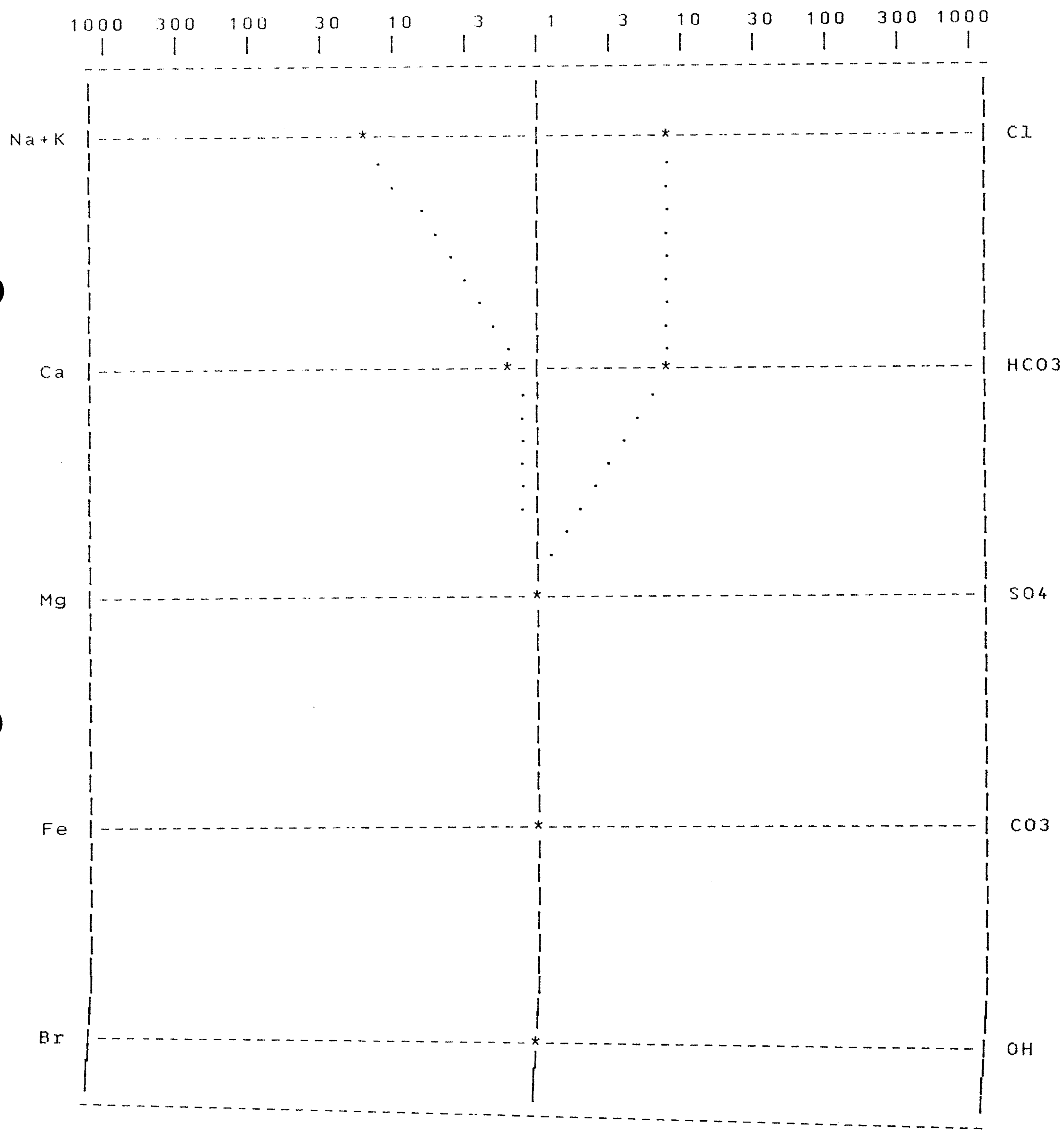
REMARKS

NOTE: MG/L = MILLIGRAMS PER LITRE
ME/L = MILLIEQUIVS. PER LITRE

STIFF DIAGRAM.

Sample: WRIXONDALE #1 DST 2

Scale is logarithm (base 10) of milli-equivalent values



amdel

service report

THE AUSTRALIAN MINERAL DEVELOPMENT LABORATORIES, FLEMINGTON STREET, FREWVILLE, SOUTH AUSTRALIA 5063

PE906543

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The enclosure PE906543 is enclosed within the container PE902366 at this location in this document.

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DATE_RECEIVED =	1/05/86
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WELL_NAME =	WRIXONDALE-1
CONTRACTOR =	AMDEL
CLIENT_OP_CO =	BEACH PETROLEUM NL

(Inserted by DNRE - Vic Govt Mines Dept)

W·C·R

PLATE 1

Sample: Core 4: TSC46549

a. Plane Light (1)

0.5 mm

b. Crossed Nicols (2)

Detrital quartz grains with interstitial pale brown, clay matrix and blue voids. The impregnation medium in all samples has been dyed blue producing blue coloured voids in this and all subsequent photomicrographs.

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       CONTRACTOR = AMDEL
     CLIENT_OP_CO = BEACH PETROLEUM NL
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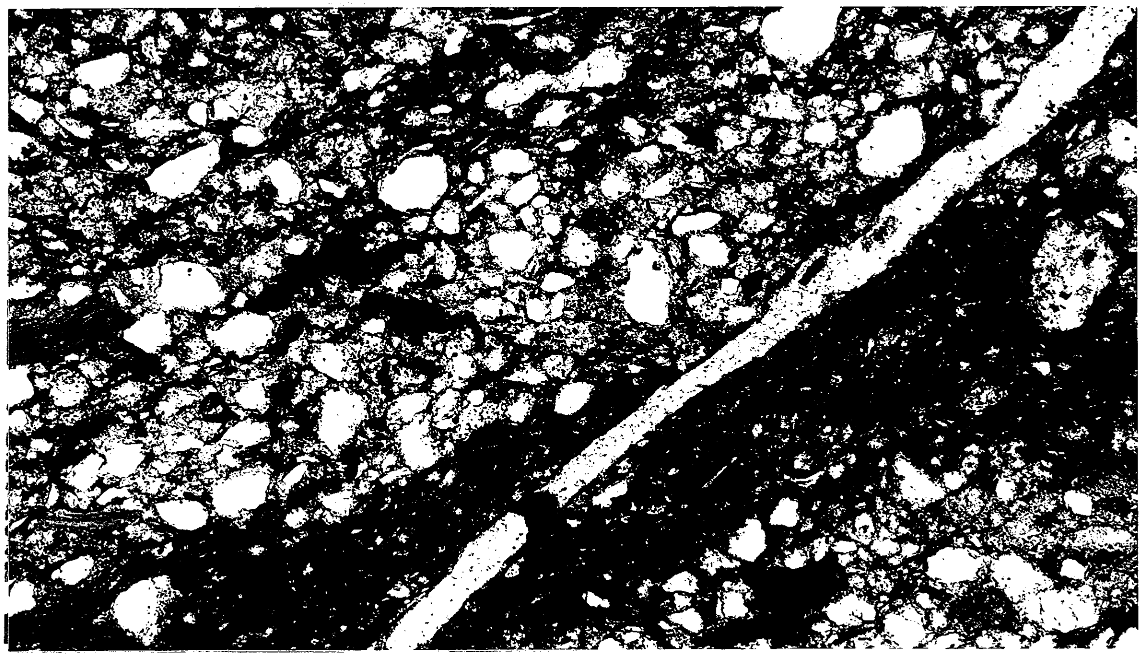
(Inserted by DNRE - Vic Govt Mines Dept)

W.C.R

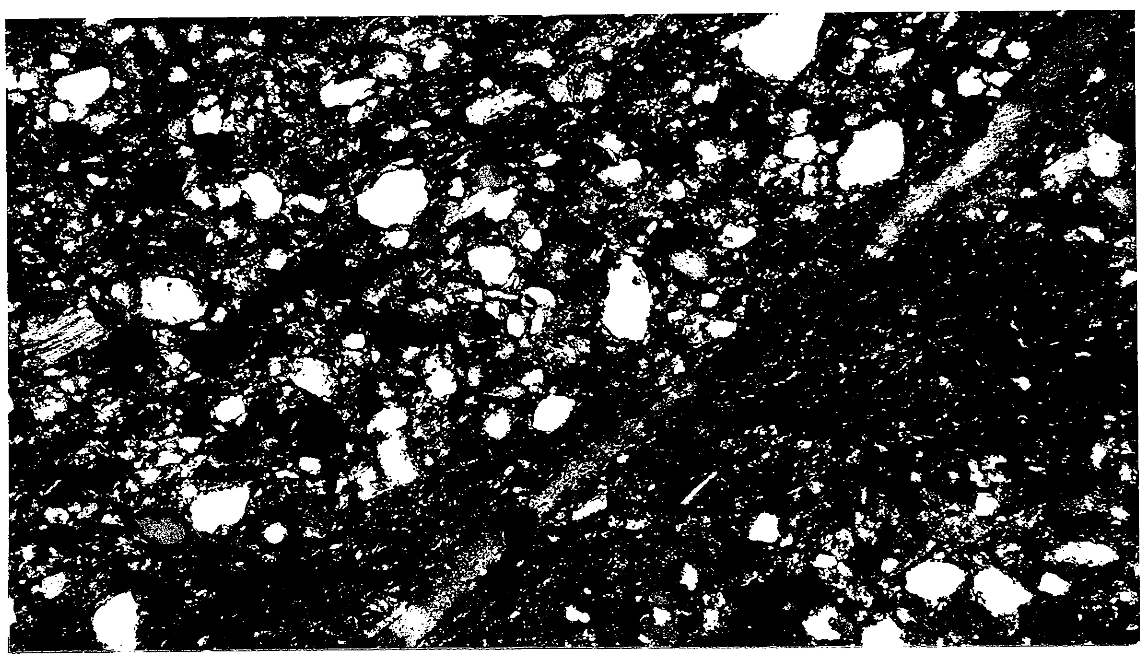
PLATE 2

Sample: Core 6: TSC46550



a. Plane Light (3)

0.5 mm



b. Crossed Nicols (4)

Fine grained detrital quartz in a pale brown argillaceous matrix. The field includes a large discontinuous clay-rich band which has a much darker brown iron stained colour. The field is also transected by a fracture type void.

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WELL_NAME = WRIXONDALE-1
CONTRACTOR = AMDEL
CLIENT_OP_CO = BEACH PETROLEUM NL

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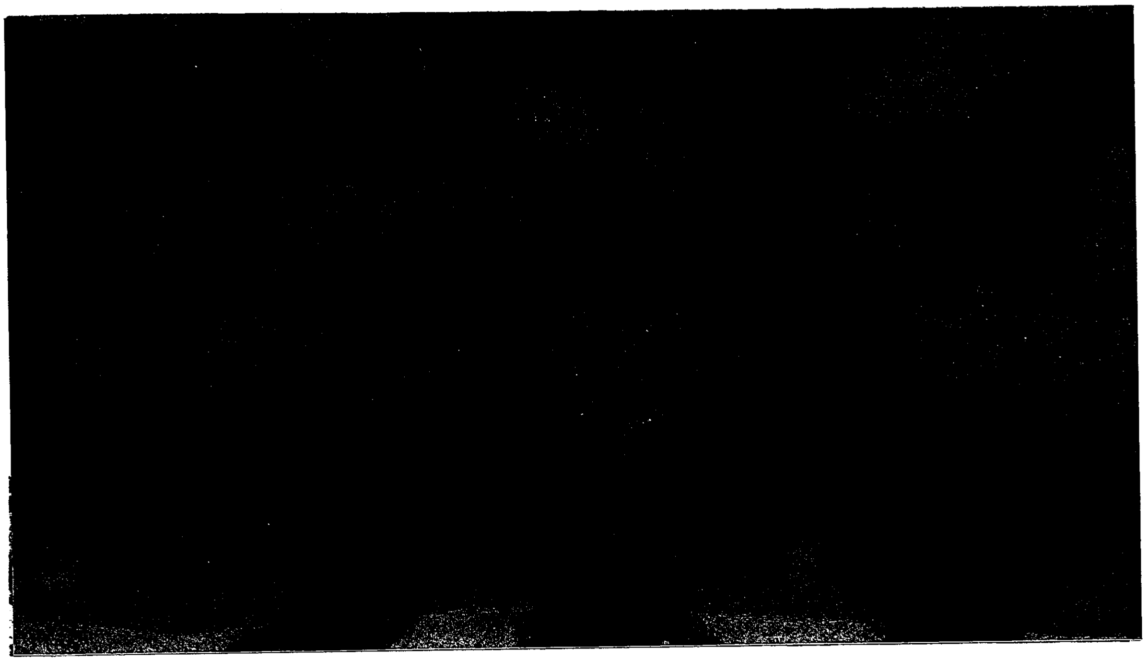
W.C.R.

01 MAY 1986

PLATE 3

Sample: Core 7: TSC46551



a. Plane Light (5)

0.5 mm

b. Crossed Nicols (6)

Detrital quartz grains with interstitial pale brown clay and blue voids.

PE906546

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       CONTRACTOR = AMDEL
     CLIENT_OP_CO = BEACH PETROLEUM NL
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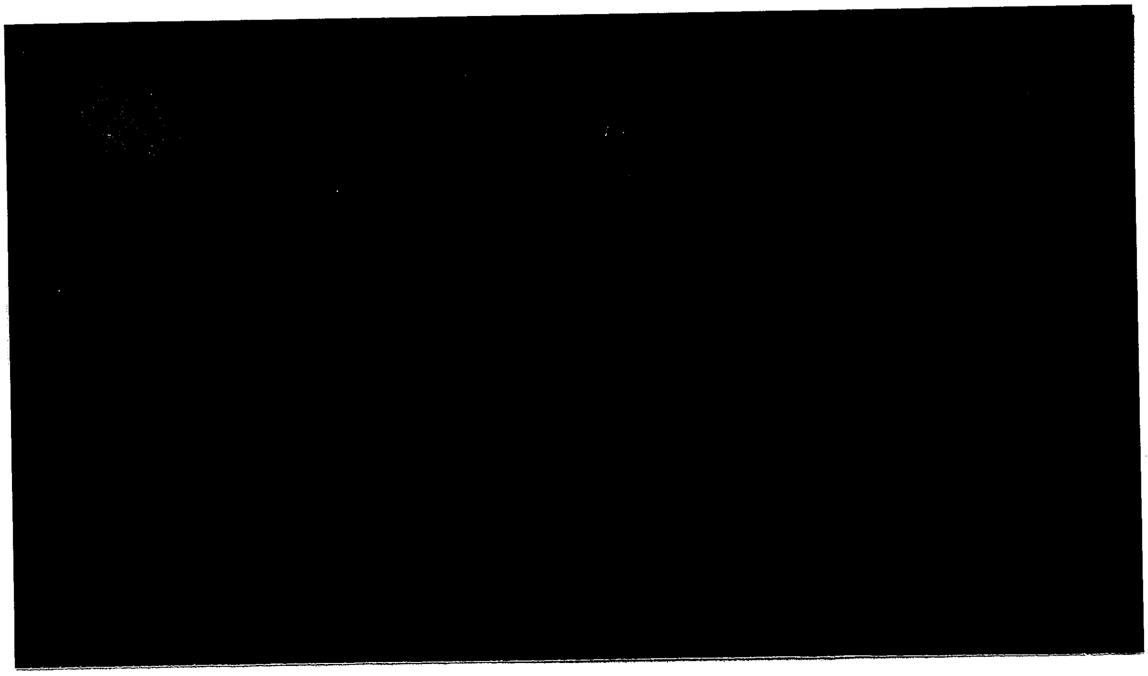
W.C.R

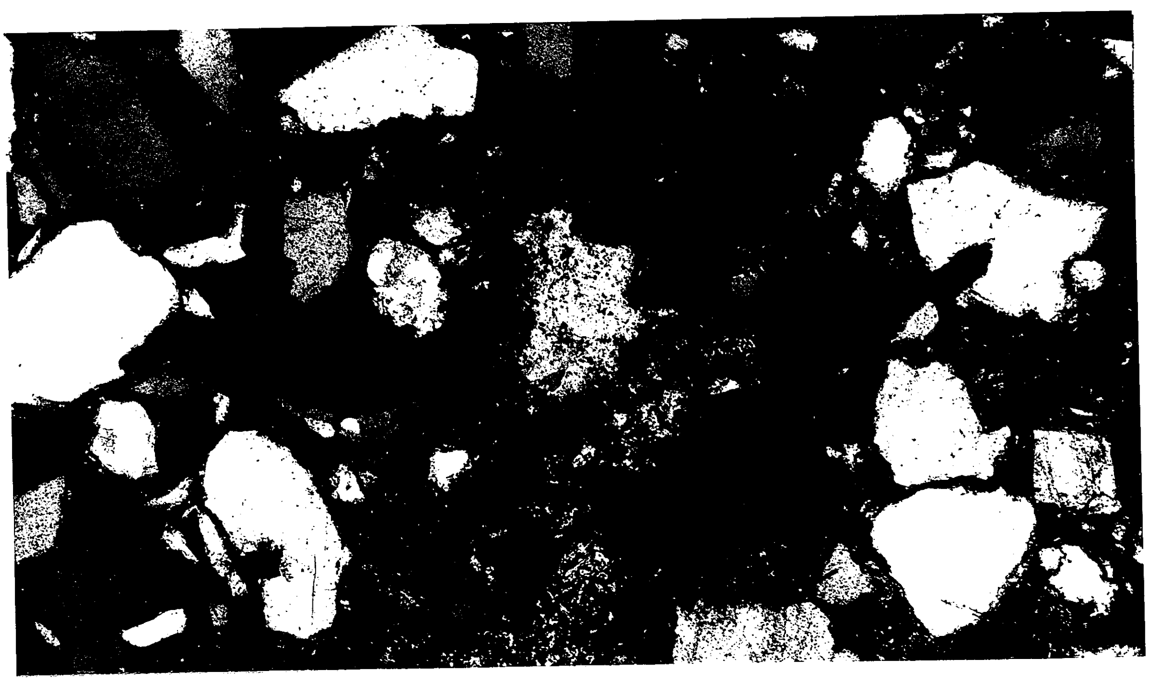
PLATE 4

Sample: Core 9: TSC46552



a. Plane Light (7)

0.5 mm



b. Crossed Nicols (8)

Detrital quartz grains in a pale brown, argillaceous matrix with abundant voids. Note presence of birefringent sericitic material in clay.

PE906547

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DATE_RECEIVED = 1/05/86
W_NO = W919
WELL_NAME = WRIXONDALE-1
CONTRACTOR = AMDEL
CLIENT_OP_CO = BEACH PETROLEUM NL

(Inserted by DNRE - Vic Govt Mines Dept)

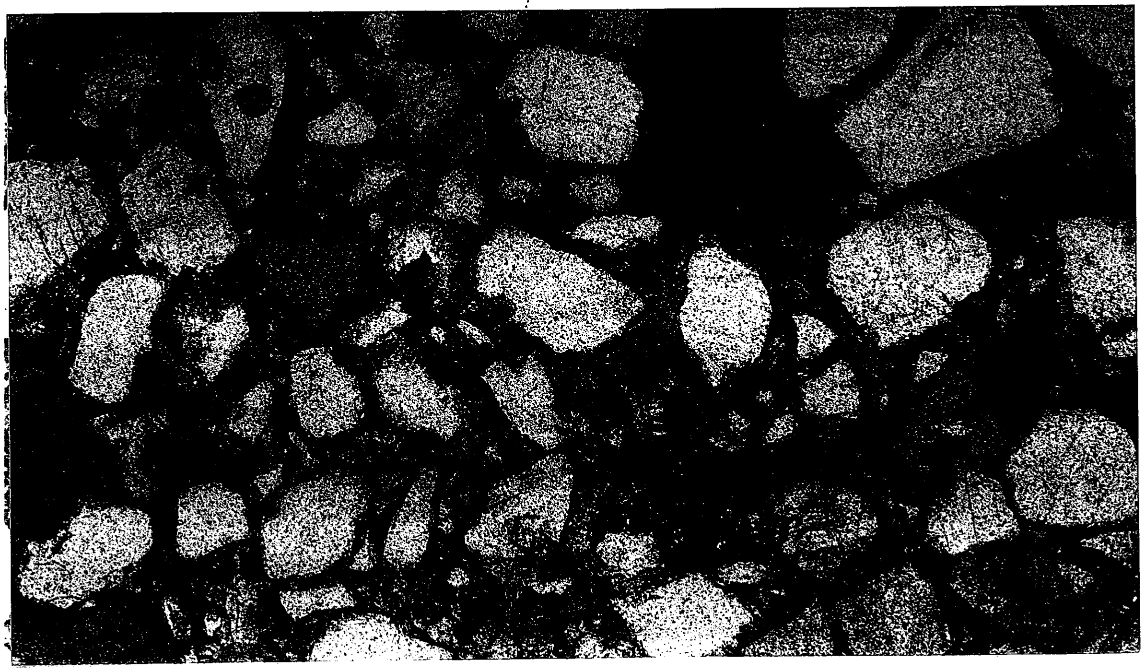
W·C·R

PETROLEUM DIVISION

01 MAY 1986

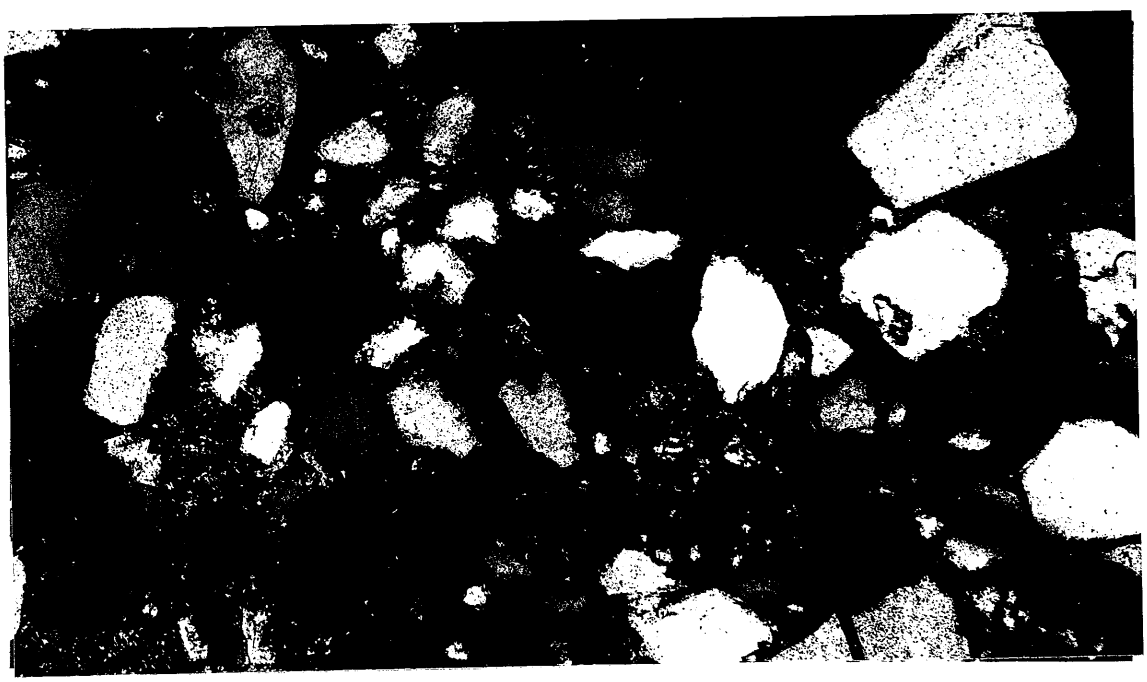
PLATE 5

Sample: Core 13: TSC46553



a. Plane Light (9)

0.5 mm



b. Crossed Nicols (10)

Detrital quartz grains with a pale brown argillaceous matrix and irregular voids. Note detrital garnet grain with high relief and an isotropic character. The clay matrix of this rock also contains finely intergrown birefringent sericite.

PE906548

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WELL_NAME = WRIXONDALE-1
CONTRACTOR = AMDEL
CLIENT_OP_CO = BEACH PETROLEUM NL

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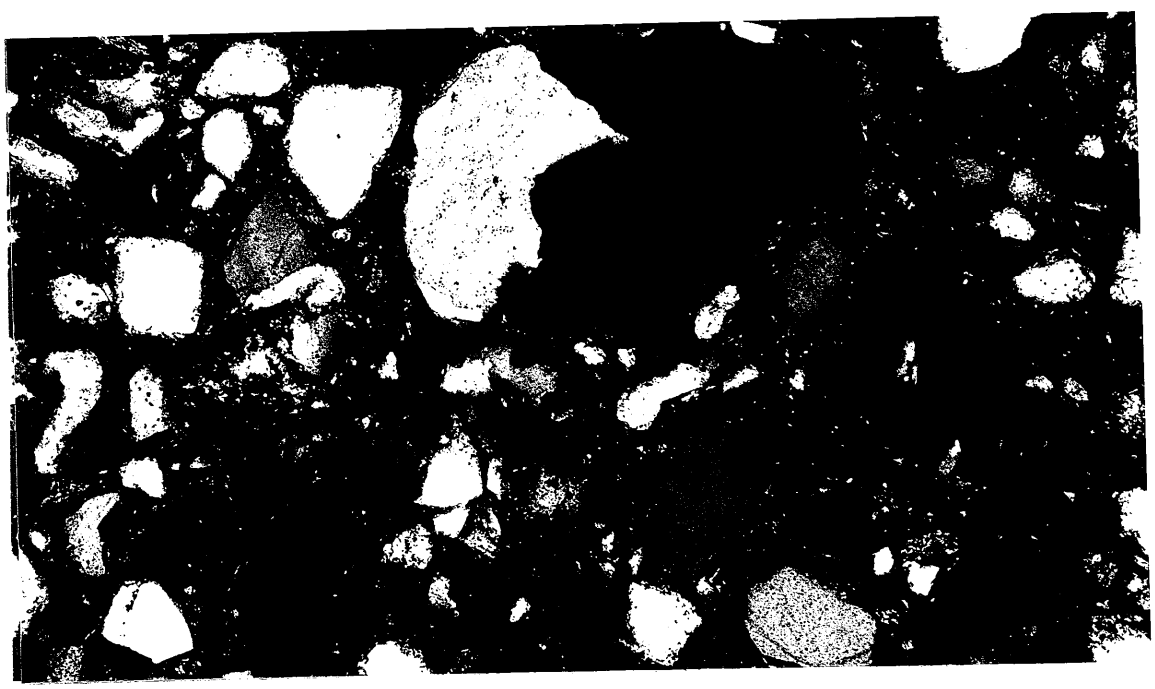
PLATE 6

Sample: Core 14: TSC46554

a. Plane Light (11)

0.5 mm



b. Crossed Nicols (12)

Detrital quartz grains with minor amounts of interstitial clay and abundant interstitial voids.

PE906549

This is an enclosure indicator page.
The enclosure PE906549 is enclosed within the container PE902366 at this location in this document.

The enclosure PE906549 has the following characteristics:

ITEM_BARCODE =	PE906549
CONTAINER_BARCODE =	PE902366
NAME =	Microphotographs, Plate 7
BASIN =	GIPPSLAND
PERMIT =	PEP107
TYPE =	WELL
SUBTYPE =	PHOTOMICROGRAPH
DESCRIPTION =	Microphotographs, Plate 7, App 11, Wrixondale-1
REMARKS =	
DATE_CREATED =	7/01/86
DATE_RECEIVED =	1/05/86
W_NO =	W919
WELL_NAME =	WRIXONDALE-1
CONTRACTOR =	AMDEL
CLIENT_OP_CO =	BEACH PETROLEUM NL

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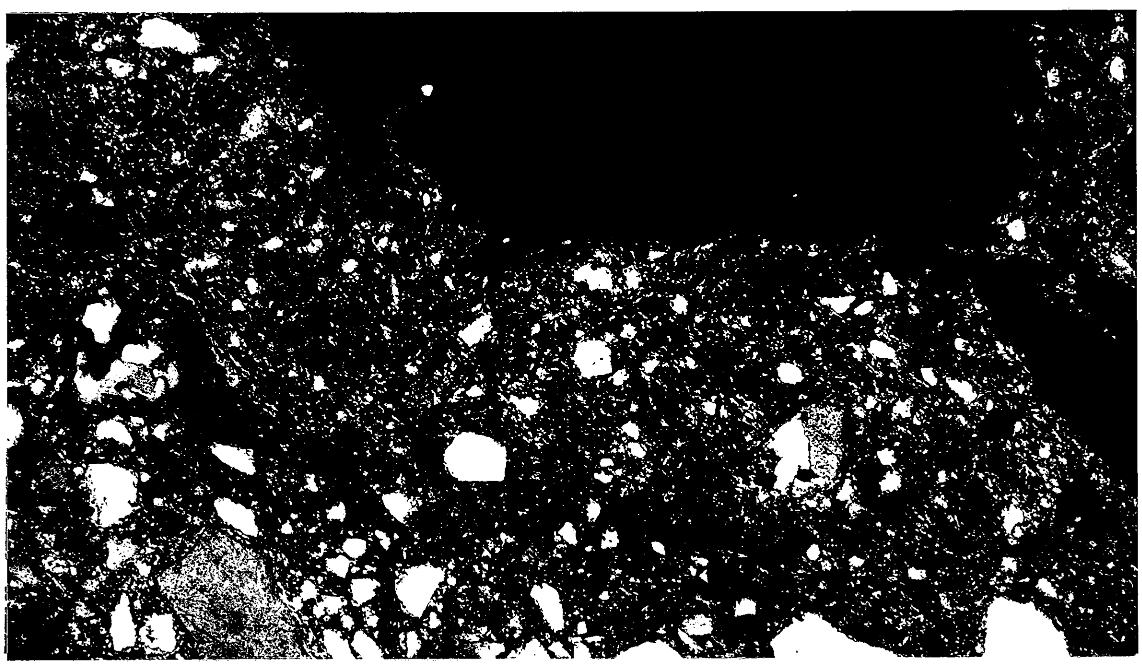
PLATE 7

Sample: Core 16: TSC46556

a. Plane Light (13)

0.5 mm



b. Crossed Nicols (14)

Contact between a clay-rich band with finer grained detrital quartz grains and the coarser grained detrital area with an interstitial argillaceous matrix. The clay-rich band contains opaque to translucent reddish-brown iron oxide-rich patches. Also note vein-like structure of blue void spaces.

PE906550

This is an enclosure indicator page.
The enclosure PE906550 is enclosed within the container PE902366 at this location in this document.

The enclosure PE906550 has the following characteristics:

ITEM_BARCODE = PE906550
CONTAINER_BARCODE = PE902366
NAME = Microphotographs, Plate 8
BASIN = GIPPSLAND
PERMIT = PEP107
TYPE = WELL
SUBTYPE = PHOTOMICROGRAPH
DESCRIPTION = Microphotographs, Plate 8, App 11, Wrixondale-1
REMARKS =
DATE_CREATED = 7/01/86
DATE_RECEIVED = 1/05/86
W_NO = W919
WELL_NAME = WRIXONDALE-1
CONTRACTOR = AMDEL
CLIENT_OP_CO = BEACH PETROLEUM NL

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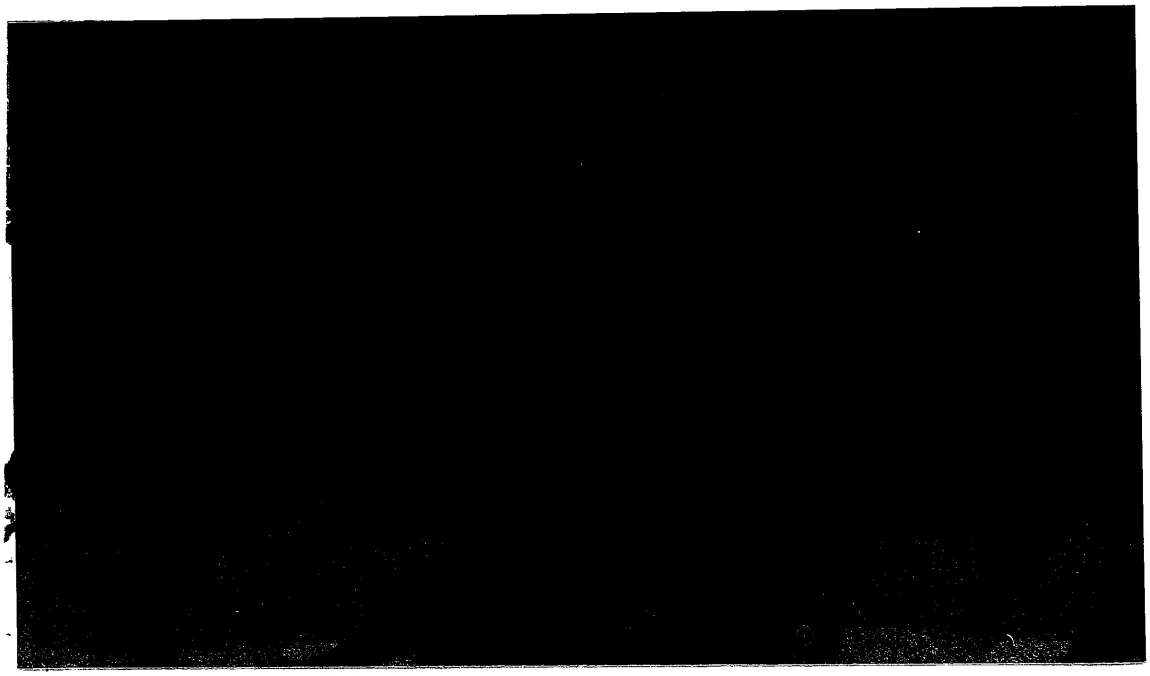
PLATE 8

Sample: Core 19: TSC46557



a. Plane Light (15)

0.5 mm

b. Crossed Nicols (16)

Detrital quartz grains with pale brown clay matrix and interstitial voids.

PE906551

This is an enclosure indicator page.
The enclosure PE906551 is enclosed within the container PE902366 at this location in this document.

The enclosure PE906551 has the following characteristics:

ITEM_BARCODE =	PE906551
CONTAINER_BARCODE =	PE902366
NAME =	Microphotographs, Plate 9
BASIN =	GIPPSLAND
PERMIT =	PEP107
TYPE =	WELL
SUBTYPE =	PHOTOMICROGRAPH
DESCRIPTION =	Microphotographs, Plate 9, App 11, Wrixondale-1
REMARKS =	
DATE_CREATED =	7/01/86
DATE_RECEIVED =	1/05/86
W_NO =	W919
WELL_NAME =	WRIXONDALE-1
CONTRACTOR =	AMDEL
CLIENT_OP_CO =	BEACH PETROLEUM NL

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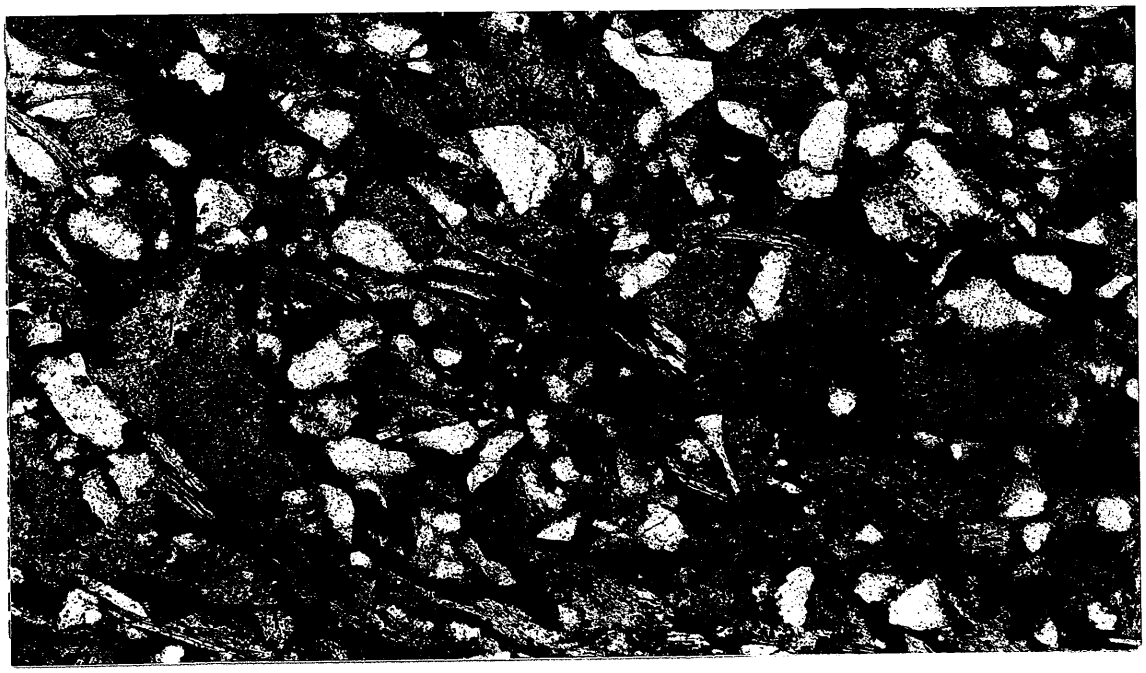
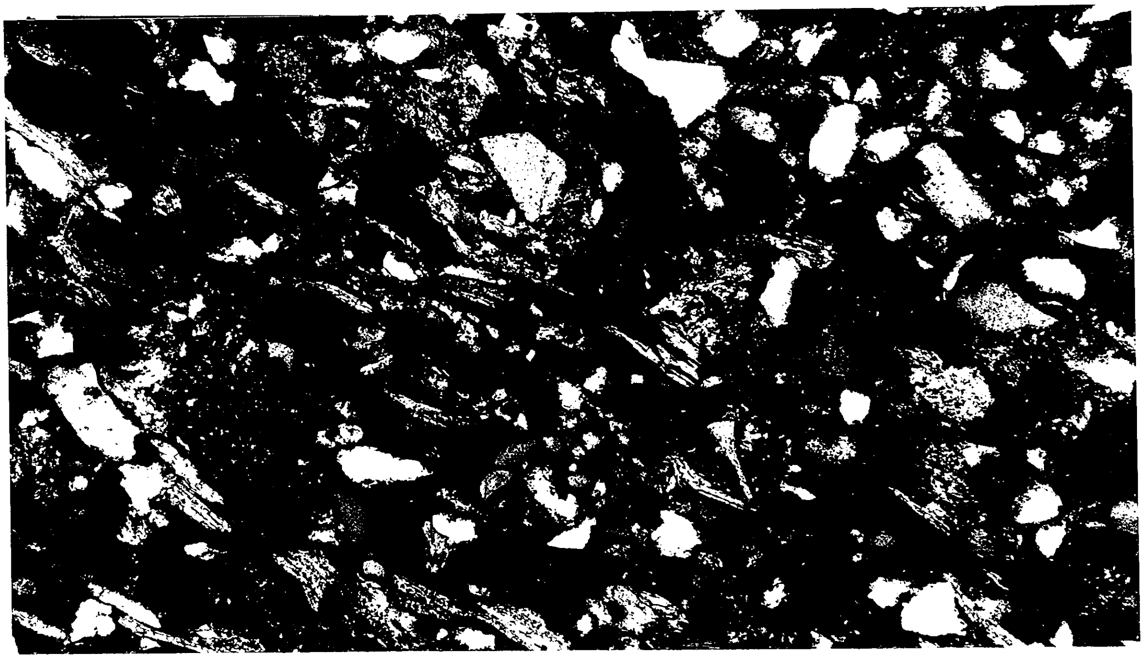
PLATE 9

Sample: Core 20: TSC46558



a. Plane Light (17)

0.5 mm



b. Crossed Nicols (18)

A well foliated portion of the sample containing detrital quartz grains and relatively large muscovite flakes intergrown with pale brown clay. Both the muscovite flakes and opaque to translucent iron oxides exhibit a strong preferred orientation.

PE906552

This is an enclosure indicator page.
The enclosure PE906552 is enclosed within the container PE902366 at this location in this document.

The enclosure PE906552 has the following characteristics:

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CONTAINER_BARCODE = PE902366
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            BASIN = GIPPSLAND
           PERMIT = PEP107
             TYPE = WELL
          SUBTYPE = PHOTOMICROGRAPH
      DESCRIPTION = Microphotographs, Plate 10, App 11,
                    Wrixondale-1
          REMARKS =
     DATE_CREATED = 7/01/86
    DATE_RECEIVED = 1/05/86
             W_NO = W919
        WELL_NAME = WRIXONDALE-1
       CONTRACTOR = AMDEL
     CLIENT_OP_CO = BEACH PETROLEUM NL
```

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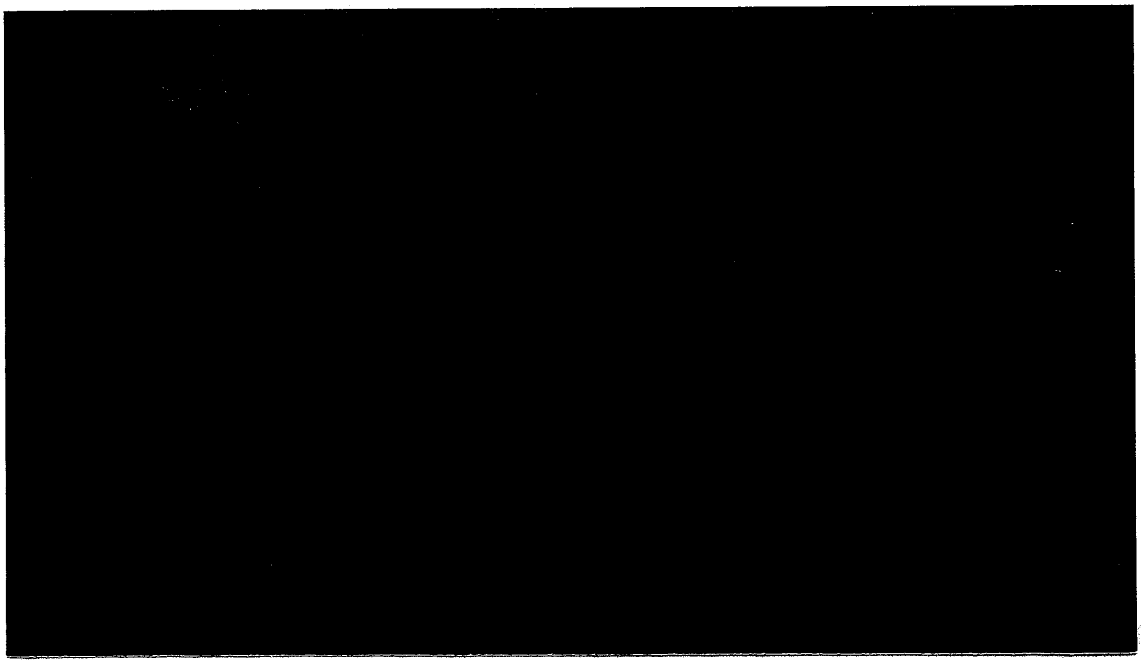
PLATE 10

Sample: Core 22: TSC46560



a. Plane Light (19)

0.5 mm

b. Crossed Nicols (20)

Detrital quartz grains with an interstitial argillaceous matrix which has a variable reddish-brown iron stained character. The sample also contains a significant proportion of interstitial voids.

PE906553

This is an enclosure indicator page.
The enclosure PE906553 is enclosed within the container PE902366 at this location in this document.

The enclosure PE906553 has the following characteristics:

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CONTAINER_BARCODE = PE902366
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            BASIN = GIPPSLAND
           PERMIT = PEP107
             TYPE = WELL
          SUBTYPE = PHOTOMICROGRAPH
      DESCRIPTION = Microphotographs, Plate 11, App 11,
                    Wrixondale-1
          REMARKS =
     DATE_CREATED = 7/01/86
    DATE_RECEIVED = 1/05/86
             W_NO = W919
        WELL_NAME = WRIXONDALE-1
       CONTRACTOR = AMDEL
     CLIENT_OP_CO = BEACH PETROLEUM NL
```

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PLATE 11

Sample: Core 23: TSC46561

a. Plane Light (21)

0.5 mm

b. Crossed Nicols (22)

Detrital quartz grains and brown argillaceous clast with abundant interstitial voids. Note small amount of very dark coloured iron stained clay located interstitially between detrital grains.

PE906554

This is an enclosure indicator page.
The enclosure PE906554 is enclosed within the container PE902366 at this location in this document.

The enclosure PE906554 has the following characteristics:

ITEM_BARCODE = PE906554
CONTAINER_BARCODE = PE902366
NAME = Microphotographs, Plate 12
BASIN = GIPPSLAND
PERMIT = PEP107
TYPE = WELL
SUBTYPE = PHOTOMICROGRAPH
DESCRIPTION = Microphotographs, Plate 12, App 11, Wrixondale-1
REMARKS =
DATE_CREATED = 7/01/86
DATE_RECEIVED = 1/05/86
W_NO = W919
WELL_NAME = WRIXONDALE-1
CONTRACTOR = AMDEL
CLIENT_OP_CO = BEACH PETROLEUM NL

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PLATE 12

Sample: Core 25: TSC46562

a. Plane Light (23)

0.5 mm

b. Crossed Nicols (24)

Foliated argillaceous matrix comprised mainly of fibrous sericite containing small amounts of disseminated fine sand to silt-sized quartz. Narrow fracture along field has a liesegang type rim of opaque to translucent iron oxides. Minor iron oxides also form very narrow discontinuous linings along foliation lamellae.

PE906555

This is an enclosure indicator page.
The enclosure PE906555 is enclosed within the container PE902366 at this location in this document.

The enclosure PE906555 has the following characteristics:

ITEM_BARCODE =	PE906555
CONTAINER_BARCODE =	PE902366
NAME =	Microphotographs, Plate 13
BASIN =	GIPPSLAND
PERMIT =	PEP107
TYPE =	WELL
SUBTYPE =	PHOTOMICROGRAPH
DESCRIPTION =	Microphotographs, Plate 13, App 11, Wrixondale-1
REMARKS =	
DATE_CREATED =	7/01/86
DATE_RECEIVED =	1/05/86
W_NO =	W919
WELL_NAME =	WRIXONDALE-1
CONTRACTOR =	AMDEL
CLIENT_OP_CO =	BEACH PETROLEUM NL

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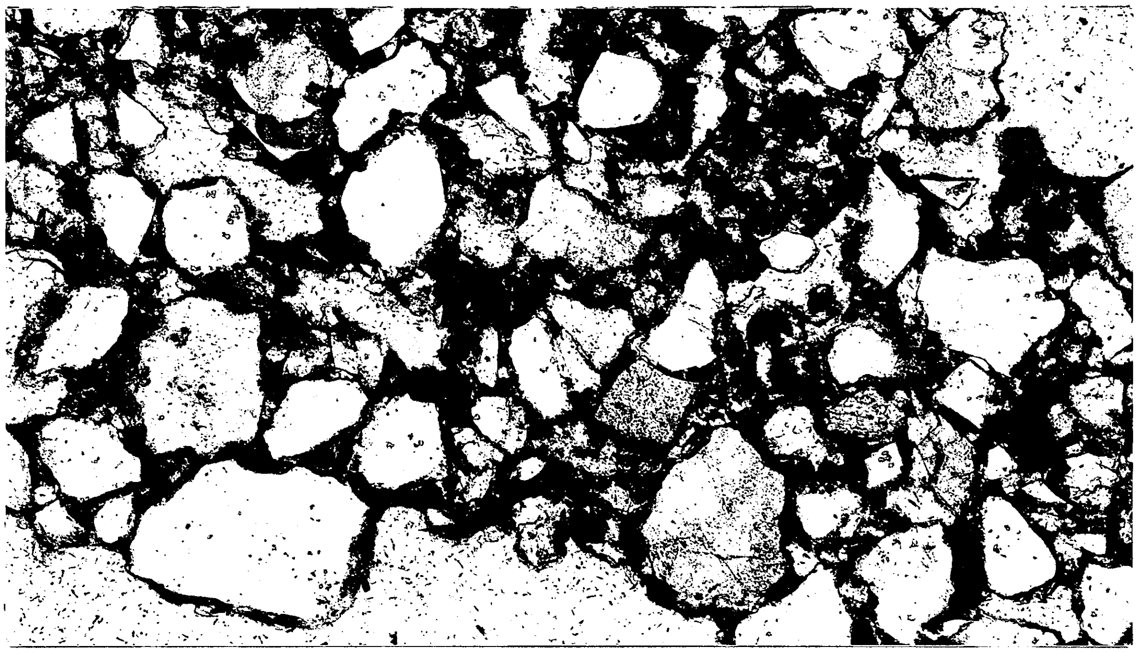
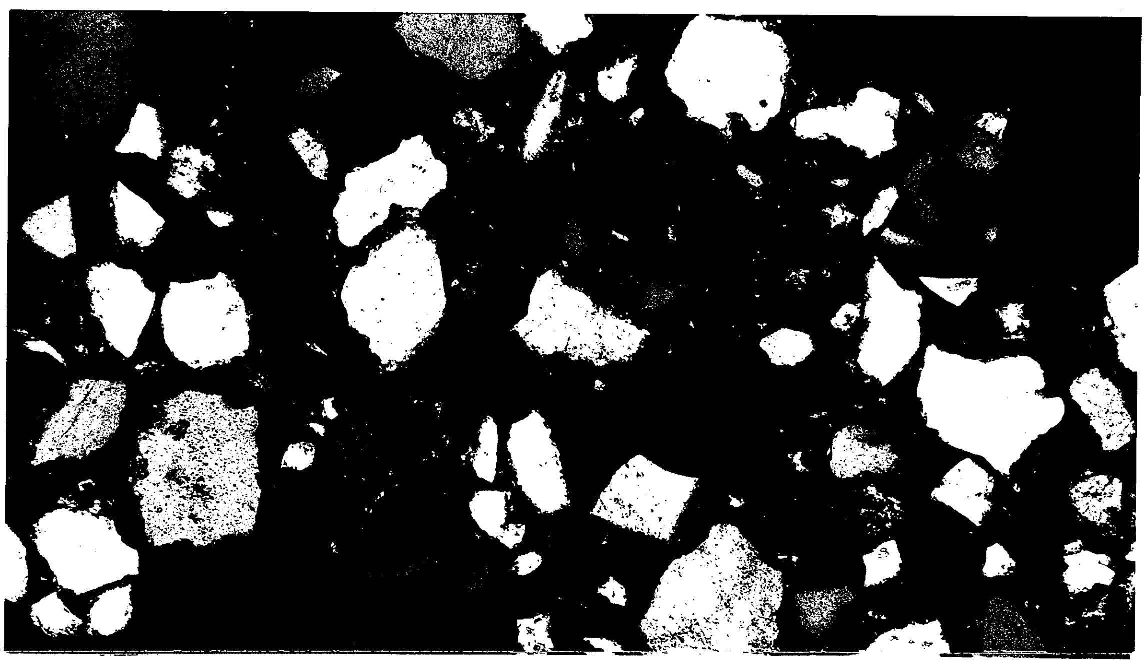
PLATE 13

Sample: Core 24: TSC46756



a. Plane Light

0.5 mm



b. Crossed Nicols

Detrital quartz grains cemented by translucent, brown iron stained matrix.