



WCR

NORTH PAARATTE-3

BEACH PETROLEUM

W 732

W732

BEACH PETROLEUM NO LIABILITY

OIL and GAS DIVISION

NORTH PAARATTE NO. 3

WELL COMPLETION REPORT

Prepared by,

D.M. Harrison
July 1980

Distribution:	Beach	2
	Department of Minerals and Energy	1

DR
12/8/80

SUMMARY

North Paaratte No. 3 was drilled over a 16½ day period from 29th May, 1980 to the 15th June, 1980 as a step-out to the North Paaratte No. 1 Waarre Formation gas discovery.

The well was plugged and abandoned as a dry hole after reaching a total depth of 4974 feet. The objective Waarre Formation was intersected ~~31~~ ^{319.4m} feet higher than prognosis and contained porous sandstones that are saturated with saline formation water. (24,000 ppm T.D.S.) Later detailed log analysis indicates that there may be minor gas saturation present within the Waarre Formation. Minor gas was indicated on the gas chromatograph to be present in the upper part of the Paaratte Formation.

A drill stem test conducted over the interval 4500 to 4552 feet in the Otway Group flowed gas to surface at a rate too small to measure. Mud with minor oil scum was recovered from the test tools over this interval whilst the tools were being reverse circulated out.

The section encountered was very close to prognosis with the exception that the presence of the Flaxmans Formation overlying the Waarre Formation had not been forecast.

A result of the well is that it must now be questionable if the strong high amplitude seismic event as correlated with gas filled Waarre Formation at North Paaratte No. 1 is regionally a direct indication of gas in place.

The well was drilled with O.D. & E.'s. rig 12, a National 50 drilling rig, with the following contract services:-

Halliburton	- Cementing and Casing
Go International	- Electric Logging
Exlog	- Mud Logging
Velocity Data Pty. Ltd.	- Velocity Survey

FIGURES

1. North Paaratte Prospect - Top Waarre Sandstone Structure Map
2. Regional Location Map
3. Detailed Location Map
4. Site Location - Survey Traverse and Levelling of Well from SP412 on line PCH80-101
5. Comparison of Predicted and Actual Section
6. Interpretive Lithology Waarre Formation

ENCLOSURES

1. Exploration Logging Mud Log
2. Composite Well Log
3. (a) BHC Sonic Log Runs 1 and 2 2"/100ft.
(b) BHC Sonic Log Runs 1 and 2 5"/100ft.
4. (a) IES Log Run 1 2"/100ft.
(b) IES Log Run 1 5"/100ft.
5. (a) CDL-CNL Log Run 1 2"/100ft.
(b) CDL-CNL Log Run 1 5"/100ft.

CONTENTS

SUMMARY

1. PURPOSE OF WELL
2. GENERALISED STRATIGRAPHIC TABLE OF THE PORT CAMPBELL EMBAYMENT
3. WELL HISTORY
 - 3.1. Location
 - 3.2. General Data
 - 3.3. Drilling Data
 - 3.4. Formation Sampling and Testing
 - 3.4.1. Cuttings and Cores
 - 3.4.2. Tests
 - 3.5. Logging and Surveys
 - 3.5.1. Mud Logging
 - 3.5.2. Electric Logging
 - 3.5.3. Deviation Surveys
 - 3.5.4. Velocity Survey
4. POST DRILLING COMPILATION AND LABORATORY STUDIES
 - 4.1. Composite Well Log
 - 4.2. Cuttings Head Space Gas Analyses
5. RESULTS OF DRILLING
 - 5.1. General
 - 5.2. Formation Tops
 - 5.3. Lithologic Description

APPENDICES

- | | |
|------------|------------------------------------|
| APPENDIX 1 | Details of Drilling Plant |
| APPENDIX 2 | Well Site Cuttings Description Log |
| APPENDIX 3 | Velocity Survey |
| APPENDIX 4 | Bit Record |
| APPENDIX 5 | Formation Testing Service Report |

1. PURPOSE OF WELL

The North Paaratte No. 3 well was drilled as a step-out to the North Paaratte No. 1 Waarre Formation gas discovery. Subsequent to this discovery, 100 line kilometres of seismic profiling was acquired over, and adjacent to, the North Paaratte Prospect. Resulting from this work a feature was delineated which is elongated in an E-W direction. (Refer Figure 1). This feature is expressed on the seismic sections at Waarre Formation level by a strong high-amplitude event which can be tied to well control at North Paaratte No. 1 and is there positively identified as originating from the Waarre Formation. Further, this high amplitude seismic event on the structure was interpreted by Beach technical staff as possibly indicating gas in place in the reservoir sands.

This high amplitude seismic event can be traced east on seismic line PCH80-101 and towards the end of the line is seen to roll over. Line PCH80-101 together with older seismic lines indicated a valid, mapped closure some 750 feet (230 metres) higher than the top of the Waarre Formation at North Paaratte No. 1. (Refer Figure 1). If gas were present at this location, some 3.3 mile (5.32 kilometre) from North Paaratte No. 1, there would be a very considerable increase in the proven recoverable reserves in the North Paaratte field.

Thus North Paaratte No. 3 was programmed to test the Waarre Formation in this crestal position on line PCH80-101. A lesser objective was to examine the upper part of the Otway Group which had minor oil shows in the Port Campbell No. 4 well. The well was thus programmed to penetrate 700 feet (213 metres) of Otway Group.

.../

PE906823

This is an enclosure indicator page.
The enclosure PE906823 is enclosed within the
container PE902711 at this location in this
document.

The enclosure PE906823 has the following characteristics:

- ITEM_BARCODE = PE906823
- CONTAINER_BARCODE = PE902711
 - NAME = Structure - Top Waarre Sandstone
 - BASIN = OTWAY
 - ONSHORE? = Y
 - DATA_TYPE = SEISMIC
 - DATA_SUB_TYPE = HRZN_CONTR_MAP
 - DESCRIPTION = Structure- Top of Waarre Sandstone,
North Paaratte-2
 - REMARKS = PERMIT: PEP93PAGES: 1
- DATE_WRITTEN =
- DATE_PROCESSED =
- DATE_RECEIVED =
- RECEIVED_FROM =
- WELL_NAME = NORTH PARRATTE-3
- CONTRACTOR =
- AUTHOR = M.McNicol
- ORIGINATOR = Beach Petroleum NL
- TOP_DEPTH =
- BOTTOM_DEPTH =
- ROW_CREATED_BY = xls_jc40

(Inserted by DNRE - Vic Govt Mines Dept)

2. GENERALISED STRATIGRAPHIC TABLE OF THE PORT CAMPBELL EMBAYMENT

<u>Age</u>	<u>Group</u>	<u>Formation</u>
Tertiary	Heytesbury	Port Campbell Limestone
		Gellibrand Marl
		Clifton Formation
	Nirranda	Narraturk Marl
		Mepunga Formation
	Wangerrip	Dilwyn Formation
Pember Mudstone		
Pebble Point Formation		
Upper Cretaceous	Sherbrook	Paaratte Formation
		Nullawarre Greensand
		Belfast Formation
		Flaxman Formation
		Waarre Formation
Lower Cretaceous	Otway	Eumeralla Formation

3. WELL HISTORY

3.1. Location (Refer Figures 2 and 3)

The well was located as near as practicable to Shot Point No. 410 on seismic line PCH80-101 of the Beach 1980 Port Campbell High Survey. This location is on the west side of the main (surfaced) road from Port Campbell to Cobden, about 8.4 kilometres (5.25 miles) north from Port Campbell. The location is 5.32 kilometre (3.3 mile) on a line 1.5° south of true east (i.e.:- 91.5° true) from North Paaratte No. 1. The drill site was prepared on crown allotment 2, section 9 of the Parish of Paaratte, County of Heytesbury. This land is owned by Mr. L.A.D. McKenzie. (Refer Figures 2 and 3).

.../

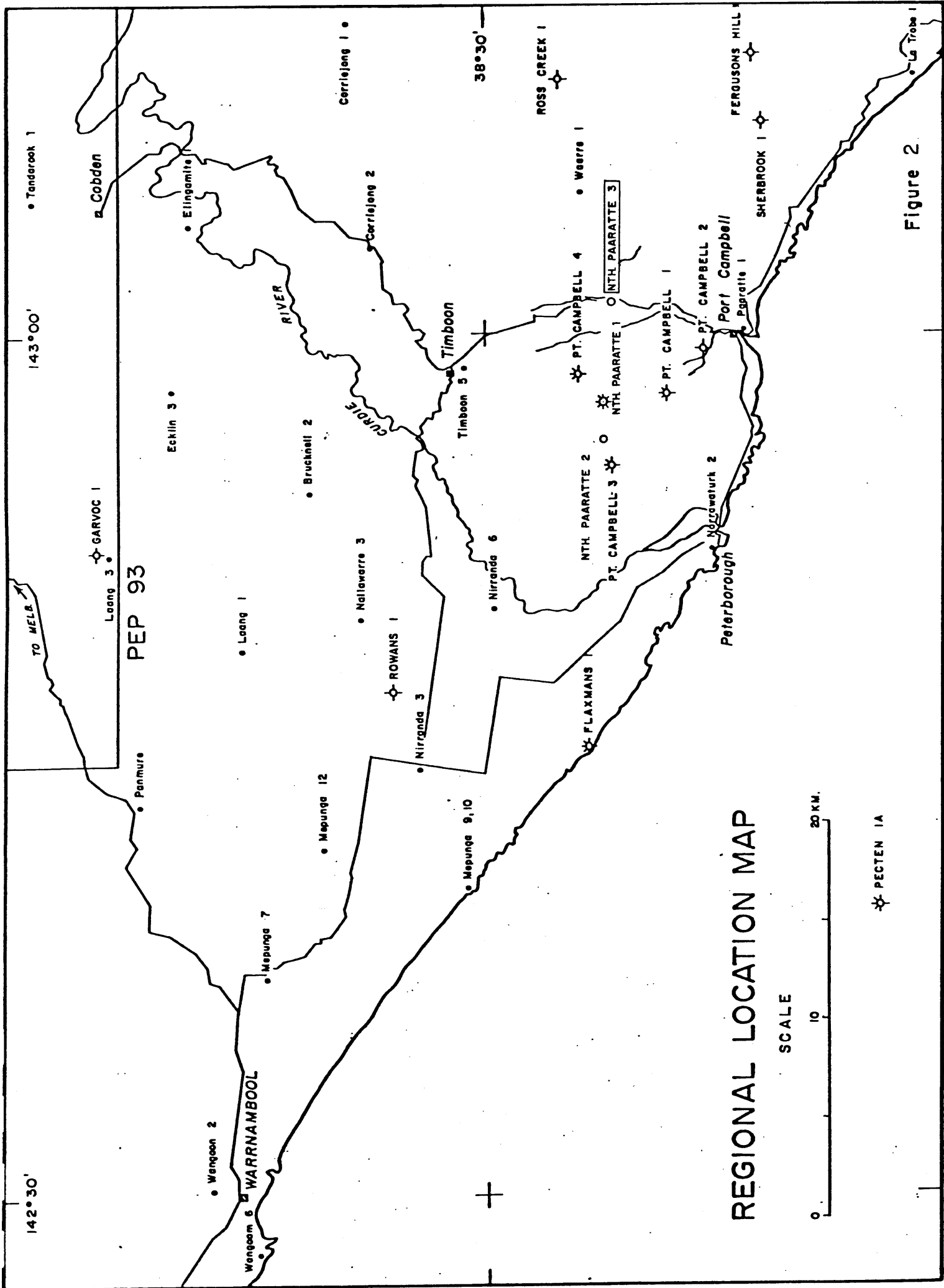


Figure 2

PAARATTE

COUNTY OF HEYTESBURY

SCALE OF CHAINS

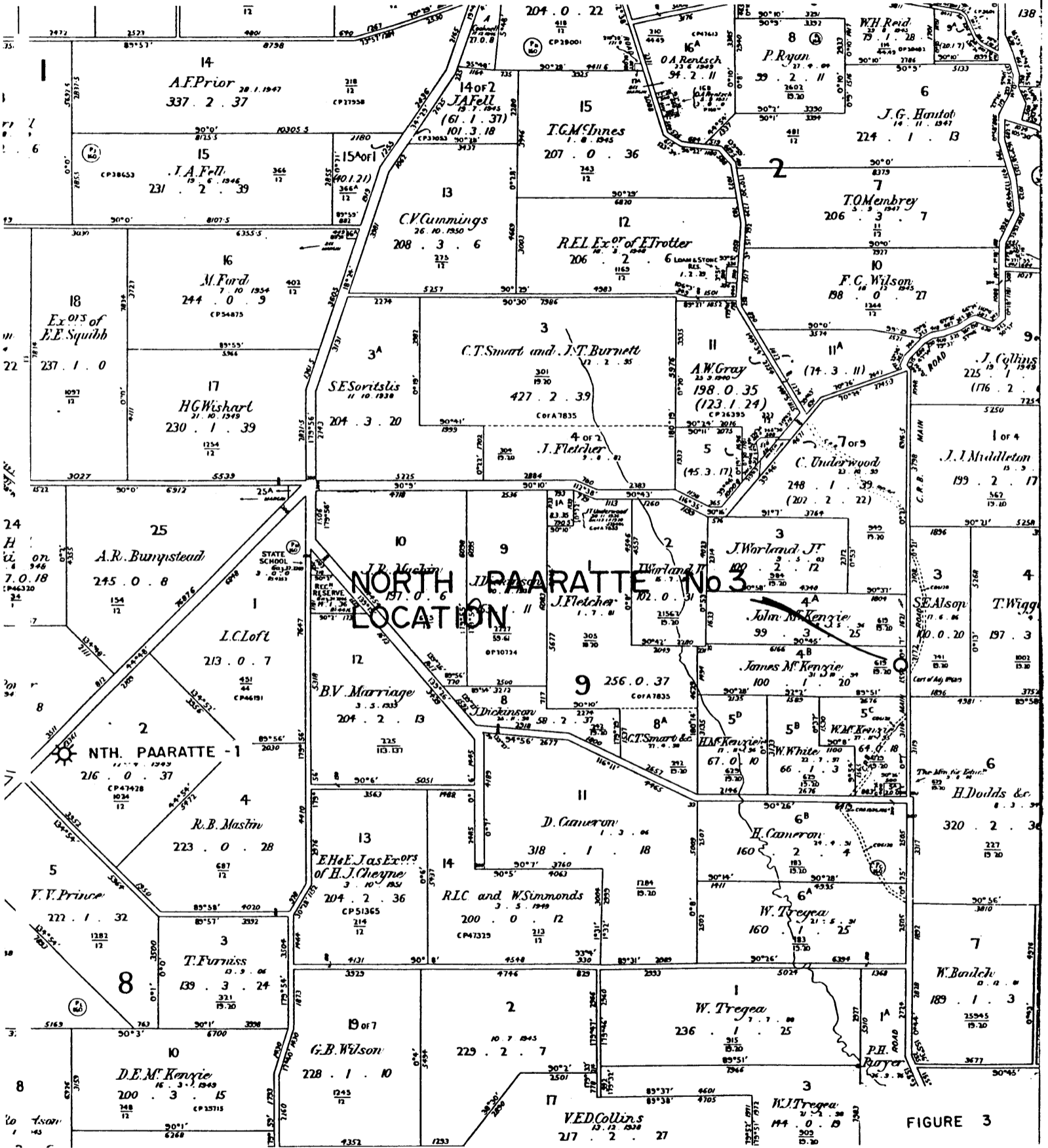
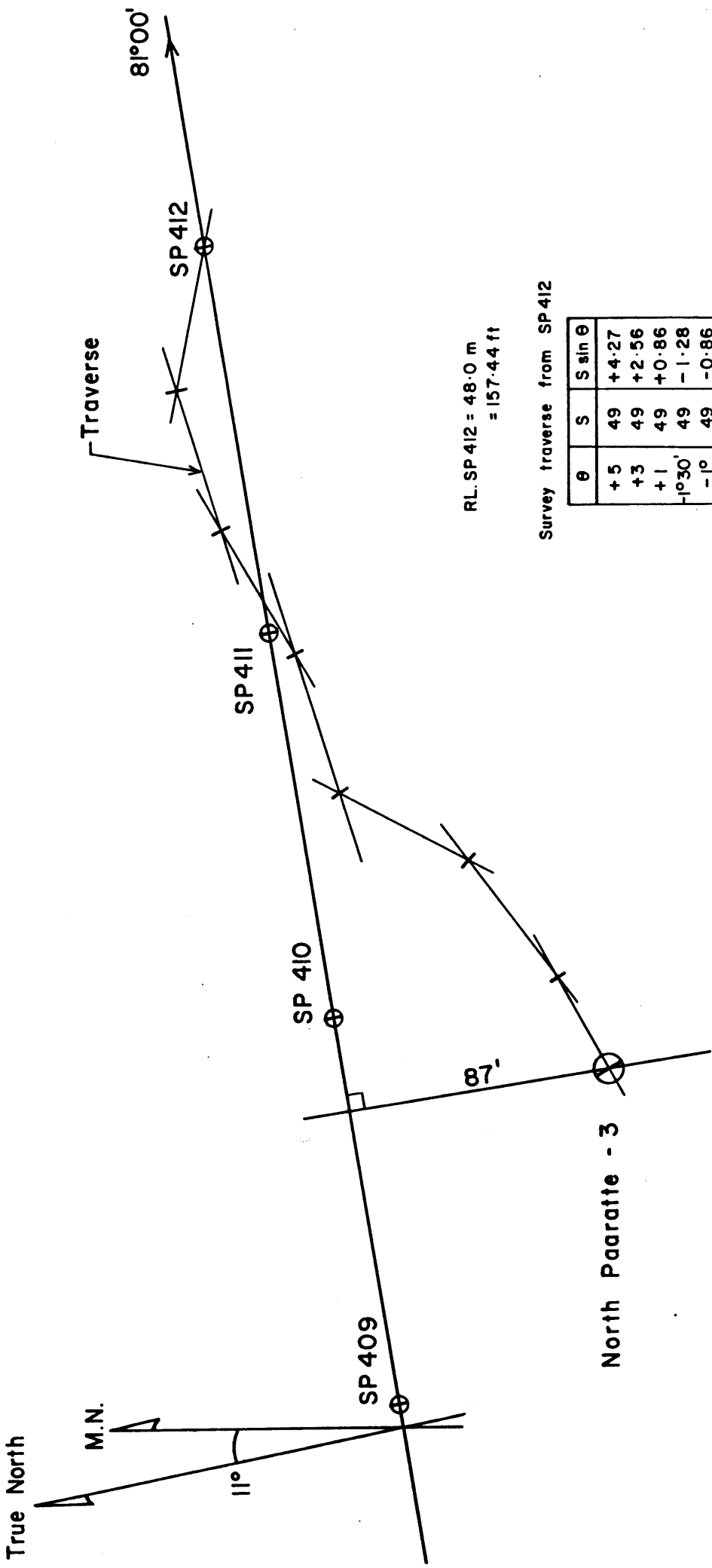


FIGURE 3



RL SP 412 = 48.0 m
= 157.44 ft

Survey traverse from SP 412

θ	S	S sin θ
+5	49	+4.27
+3	49	+2.56
+1	49	+0.86
-1°30'	49	-1.28
-1°	49	-0.86
+1	49	+0.86
0	34	0.0
		+6.41ft

∴ RL of NP # 3 = 157.44 + 6.41
= 163.85 ft
≈ 164 ft

SITE LOCATION
SURVEY TRAVERSE AND LEVELLING OF WELL
FROM SP 412 ON LINE PCH80-101

The approximate geographical co-ordinates are:-

143^o 01' 00" E
38^o 33' 15" S

The location of the well and the ground level of the well in relation to Shot Point No. 410 is depicted in the enclosed sketch; Figure 4.

3.2. General Data

(i) Well Name and Number

Beach North Paaratte No. 3

(ii) Petroleum Title

Petroleum Exploration Permit No. 93, State of Victoria

(iii) District

1:250,000 map sheet: Colac, Sheet SJ54-12; part of the Western District of Victoria.

(iv) Elevation (approximate)

Ground Level: 164 feet (50.0m) above mean sea level

Kelly Bushing (Datum): 175 feet (53.4m) above mean sea level

(v) Total Depth

Driller: 4974 feet (1516.5m)

Logger: 4958 feet (1511.6m)

(vi) Date Drilling Commenced

17.00 Hours, Thursday 29th May, 1980

(vii) Date Total Depth Reached

02.00 Hours, Sunday 15th June, 1980

Intermediate Casing

Size: 9 5/8" 24.4 cm (40 joints)
Set at: 1584' 482.9 m
Cement: 120 sacks of Adelaide blended and 300 sacks
of Adelaide construction cement mixed in a
14.8 lbs/gal. slurry
Cemented to: Surface. Displaced with 115 bbls of mud.
No cement returns.
Method: Single stage top plug only, bumped with 950 psi
Equipment: Halliburton Twin T-10 Pumps
Casing Weight: 43.5 lbs/ft.
Grade: N80
Range: 3
Coupling: L.T. & C

3.3.3. Drilling Fluid

The hole was drilled into the Belfast Mudstone with an XP20/Spersene mud with the following properties; 8.8 to 8.9 lbs/gallon mud weight, viscosity 30 to 35 secs. API, fluid loss less than 13 ml and pH averaging 9. Within the Belfast Mudstone and prior to intersecting the objective Waarre Formation the mud was altered to one with the following properties; 10.3 lbs/gallon mud weight, viscosity 40 to 50 secs API, fluid loss less than 8 ml, pH averaging 10 to 11. Whilst drilling the Eumeralla Formation of the Otway Group the mud weight was gradually reduced to 9.7 lbs/gallon.

3.3.4. Water Supply

Water was pumped from a small dam on Mr. L.A.D. McKenzie's property and a small nearby creek - Newfield Creek.

3.3.5. Plugging and Abandonment

The well was plugged and abandoned as a dry hole by setting four plugs in the following manner:-

(viii) Date Rig Released

08.00 Hours, Tuesday 17th June, 1980

(ix) Drilling Time in Days to Total Depth

16½ Days

(x) Status

Plugged and Abandoned as a dry well

3.3. Drilling Data

3.3.1. Plant

O.D. & E. Pty. Ltd. of 50 Bridge Street, Sydney, N.S.W. 2000, contracted their rig 12, a National 50 drilling rig. Details of the plant are provided in Appendix 1.

3.3.2. Casing and Cementing Details

Conductor Pipe

Size: 19½" 49.5 cm
Set at: 32' 9.8 m
Cement: 50 sacks, Type A

Surface Casing

Size: 13 3/8" 34cm (11 joints)
Set at: 428' 130.5 m
Cement: 280 sacks, Adelaide blended - Type A. mixed in a 15.3 lbs/gal. slurry
Cemented to: Surface. Displaced with 63 bbls. of mud. No cement returns
Method: Single stage top plug only, bumped with 750 psi.
Equipment: Halliburton Twin T-10 Pumps
Casing Weight: 48 lbs/ft
Grade: H40
Range: 3
Coupling: S.T. & C.

Plug 1 was set from 3940 feet to 3800 feet using 60 sacks of cement. This plug was set at the base of the Belfast Formation in order to isolate the saline waters of the Waarre Formation.

Plug 2 was set from 3376 feet to 3250 feet using 50 sacks of cement. This plug was set at the base of the Skull Creek Member in order to isolate waters of the Nullawarre Greensand from Paaratte aquifers.

Plug 3 was set from 1634 feet to 1500 feet across the intermediate casing shoe using 50 sacks of cement.

Plug 4 The casing was cut and a top plug was installed from 30 feet to surface. A steel plate was welded across the casing stub just below ground level.

3.4. Formation Sampling and Testing

3.4.1. Cuttings and Cores

Representative lagged cuttings samples were taken as follows:

Surface to 420' (128.0m) every 30' (9.14m)
420' to 1500' (457.3m) every 20' (6.10m)
1500' to 4974' (1516.5m) every 10' (3.05m)

Cuttings were continuously described and the cuttings description log is enclosed as Appendix 2.

Samples were washed clean of drilling mud, bagged and air dried. Two splits of the cutting samples were made, one for Beach Petroleum N.L. and one for the Department of Minerals and Energy. Additional unwashed samples were taken every 10' to form 100' composites

from 1600' to T.D. These unwashed cuttings were sealed in tin cans for head space light hydrocarbon analysis by the B.M.R.

No cores or sidewall cores were cut.

3.4.2. Tests

4503' - 4553'

One open hole drill stem test was conducted, the details of which are below. This test was conducted to test a drilling break from 30ft/hr. to 85ft/hr. at ~~3550~~ feet in which gas background altered from 10 gas units to 45 gas units and fluorescence was observed in the mud.

Drill Stem Test No. 1

Interval Tested: 4500 - 4552 feet

Packer Set at: 4500 feet with no cushion

Recovery: The tool was initially opened for 2 minutes with a good blow and gas to surface. The tool was then closed for 20 minutes and reopened with a good blow but decreasing with time. The gas to surface was flared. The flow rate was too small to measure. The tool was then closed for 45 minutes after having been open for 25 minutes. Reverse circulated pipe out with no fluids recovery to surface except mud with minor oil scum.

Pressures: (a) First Flow Period

at 4490 feet IF: 108 PSI
FF: 108 PSI
CIP: 1341 PSI
IHM: 2462 PSI

at 4548 feet IF: 161 PSI
FF: 161 PSI
CIP: 1313 PSI
IHM: 2486 PSI

(b) Second Flow Period

at 4490 feet	IF:	81 PSI
	FF:	108 PSI
	CIP:	993 PSI
	FHM:	2462 PSI
at 4548 feet	IF:	134 PSI
	FF:	134 PSI
	CIP:	993 PSI
	FHM:	2486 PSI

3.5. Logging and Surveys

3.5.1. Mud Logging

A Standard Skid Mounted Exploration Logging (EXLOG) unit was contracted to provide a complete mud logging service. Drill penetration rate, continuous drilling mud gas detection and intermittent cuttings gas analyses were performed and the mudlog is enclosed as Enclosure 1.

3.5.2. Electric Logging

Two open hole logging runs were made by Go International; one prior to 9 5/8" casing at 1584' (482.9m) drillers depth and one at T.D. of 4974' (1516.5m) drillers depth.

Logs run from 428' to 1584'

BHC Sonic Log (Sonic and Gamma Ray)

Logs run from 1584' to 4974' (T.D.)

BHC Sonic Log (Sonic, Gamma Ray and Caliper)
IES Log (SP, Caliper, Induction, Short Normal)

Logs run from 1900' to 4974' (T.D.)

CDL-CNL (Neutron, Density, Gamma Ray Caliper)

These logs have been printed at 2"/100' and 5"/100' scales and are enclosed. (Enclosures 3A to 5B inclusive).

3.5.3. Deviation Surveys

During drilling, deviation surveys were run using a SURE SHOT survey instrument. Results were as follows:-

1° at 130'
1° at 268'
1/4° at 440'
1/4° at 745'
3/4° at 986'
3/4° at 1320'
3/4° at 1552'
3/4° at 2565'
2° at 3597'

1/4° at 4015'

(Crow's Foot ran upside down and therefore reading is considered unreliable)

3.5.4. Velocity Survey

A Velocity Survey was run after T.D. by Velocity Data Pty. Ltd. Thirteen shots were taken over eleven levels in the well. In addition some experimentation work was incorporated into the survey using a thumper energy source.

The report on the velocity survey is included as Appendix 3.

4. POST DRILLING COMPILATION AND LABORATORY STUDIES

4.1. Composite Well Log

A composite well log has been compiled and is included as Enclosure 2.

4.2. Cuttings Head Space Gas Analysis

Unwashed canned cuttings samples were collected while drilling and forwarded to the B.M.R. in Canberra for head-space light hydro-carbon analysis.

5. RESULTS OF DRILLING

5.1. General

North Paaratte No. 3 was plugged and abandoned as a dry hole after reaching a total depth of 4974 feet. Only background gas was detected in the prospective Waarre Formation. The objective Waarre Formation contained porous sandstones that are filled with saline formation water (24,000 ppm T.D.S.). No major cross-overs indicative of hydrocarbons are evident on the CDL-CNL log, no high resistivity zones are present on the induction log and the gas chromatograph did not respond. Log analysis however, indicates there may be minor gas saturations present within the Waarre Formation. Some minor small cross-overs are indicated on the CDL-CNL log (Refer Enclosure 5). Minor gas was indicated on the gas chromatograph to be present in the upper part of the Paaratte Formation. A drill stem test conducted over the interval 4500-4552 feet in the Otway Group flowed gas to surface at a rate too small to measure. Mud with a minor oil scum was recovered from the test tools over this interval whilst the tools were being reverse circulated out.

The section encountered was very close to prognosis with one exception. Flaxmans Formation that had not been predicted was intersected between 3806 feet to 3872 feet. Tops that can be tied to seismic events (and are therefore more predictable) came in consistently high within a range of 25 feet to 78 feet. (Refer Figure 5).

5.2. Formation Tops

The following formation tops have been picked using cuttings description, mudlog and electric log data:-

.../

		<u>KB</u>	<u>Subsea</u>
Gellibrand Marl	(outcrop)	11	+ 164
Clifton Formation		459	- 295
Narrawaturk Marl		565	- 401
Mepunga Formation		656	- 492
Dilwyn Formation		751	- 587
Pember Mudstone		1545	-1381
Pebble Point Formation		1788	-1624
Paaratte Formation		1926	-1762
Nullawarre Greensand		3306	-3142
Belfast Formation		3594	-3430
Flaxmans Formation		3806	-3642
Waarre Formation		3872	-3708
Eumeralla Formation (Otway Group)		4132	-3968

5.3. Lithologic Description

The lithologies encountered in the well are generalised as follows:-
(all depths are feet below K.B.)

- 11 - 459 Gellibrand Marl
Marl, medium grey, very soft, strongly fossiliferous. Abundant foraminifera and shell fragments. (Echinoid stems, broken lamellibranchs, coralline fragments and minor broken gastropods). Glauconite and minor pyritisation. Trace of brown calcareous nodules.
- 459 - 565 Clifton Formation
Sandy Limestone, white, hard, fine grained glauconitic and ferruginous grains in a calcareous matrix. Interbedded with; Sandstone, fine grained, quartzose, ferruginous, glauconitic, sub-rounded clear and yellow-brown quartz. Loosely consolidated.
- 565 - 656 Narrawaturk Marl
Marl, light grey to light brown, very soft to soft, strongly shelly and strongly pyritic and glauconitic. Fossils include turretted gastropods, broken lamellibranchs, coralline fragments and minor foraminifera.
- 656 - 751 Mepunga Formation
Silty Claystone and Clayey Siltstone, light grey to white and light green, soft, slightly calcareous and slightly glauconitic.
At 700' have a flood of coarse grained glauconite associated with the above silty claystone.
- 751 - 1545 Dilwyn Formation
- 751 - 962 Dominantly Sandstone, coarse grained, minor very coarse grained to medium grained, yellow-brown, iron-stained, unconsolidated, sub-rounded to sub-angular. Good inferred porosity. Interbedded with; Sandstone, white, fine grained, lithic and quartzose, calcareous to slightly calcareous cement, hard. No visible porosity. From 908 to 962 have interbedded; Shale, black carbonaceous.

- 962 - 1545 Dominantly Sandstone, white to clear, unconsolidated, coarse grained, moderately sorted, sub-rounded to sub-angular. Good inferred porosity but pyritic cement common. Interbedded with; Siltstone, clayey dark grey and brown, soft and Siltstone, dark brown, hard and indurated grading into Sandstone, dark brown, to grey, fine grained, lithic, cemented, hard.
- Minor carbonaceous shale, black coal, glauconite and shell fragments.
- 1545 - 1788 Pember Mudstone
- Silty Claystone and Clayey Siltstone, brown to grey, soft, slightly glauconitic. Interbedded with minor black carbonaceous shale and siltstone, brown, slightly glauconitic, hard.
- 1788 - 1926 Pebble Point Formation
- 1788 - 1856 Sandstone, white and light green, dominantly coarse grained, medium to very coarse grained, poorly sorted, sub-angular, loosely consolidated. Quartz has iron-staining and green clay mineral staining on micro-fractures. Abundant clayey glauconite pellets may form lithic component to sandstone but also argillaceous clayey glauconite probably forms a matrix to the quartz grains.
- 1856 - 1926 Siltstone, brown, slightly glauconitic, hard, in part grades to Silty Sandstone, fine to medium grained quartz set in the above siltstone matrix.
- 1926 - 3306 Paaratte Formation
- 1926 - 2888 Sandstone, white, medium to coarse grained with minor grit, moderately sorted, sub-rounded to sub-angular, loosely consolidated. Quartz is clear to white (smokey opaque). Good inferred porosity. This is a massive sandstone unit with minor interbeds of Shale, black, carbonaceous, pyritic, Coal, black, dull, Chert, grey, green and red-brown. (Note; the chert may simply be a lithic component to the Sandstone). Also have interbeds of; Siltstone, medium grey to dark grey, very hard, cemented, with minor fine grained to medium grained quartz floaters. These units are at 2356-2366, 2378-2383, 2396-2406, 2425-2432, 2539-2581. Sandstone, white, fine grained, siliceously cemented, hard, slightly carbonaceous, tight, no visible porosity.
- 2888 - 3306 Silty Claystone, medium grey-brown, slightly glauconitic and slightly carbonaceous, very soft, sticky, dispersive. Minor buff-brown, hard dolomite nodules.

3306 - 3594 Nullawarre Greensand

Sandstone, white, yellow-brown and green, coarse grained, moderate to well sorted, sub-rounded, glauconitic, loosely consolidated. Grades downwards into fine to medium grained and becomes more strongly glauconitic and therefore dark green. Quartz becomes increasingly dirty with green clay mineral on microfractures. Good inferred porosity.

3594 - 3806 Belfast Formation

Silty Claystone, medium grey, soft, slightly glauconitic with common carbonaceous flecks. Grading into; Siltstone, clayey, medium grey, firm to soft, slightly glauconitic, slightly micaceous.

3806 - 3872 Flaxmans Formation

Thin interbeds of the following facies; Sandstone, buff brown to white, fine grained, hard to firm, brittle, cemented with medium grained glauconite, slightly calcareous, tight, no visible porosity. Siltstone, clayey, medium grey, firm to soft, slightly glauconitic, slightly micaceous. Calcisiltite or calcareous Siltstone, buff brown and light grey, hard, strongly calcareous.

With trace of Limestone, buff-brown, cryptocrystalline, hard and Coal, black, fibrous.

3872 - 4132 Waarre Formation

Reference to Figure 6 shows five lithologies present within the Waarre Formation.

LITHOLOGY 1

Sandstone, white to clear, dominantly coarse grained, medium to very coarse grained, moderately sorted, sub-rounded to sub-angular, loosely consolidated. Good inferred porosity. This sandstone occurs in the intervals 3872-3887, 3888-3892, 3896-3903, 3905-3914, 3920-3924, 3929-3940, 3942-3945, 3948-3958, 3982-3991, 3993-3998, 4000-4004, 4013-4016, 4020-4029, 4036-4041.

LITHOLOGY 2

Siltstone, clayey, medium grey, firm to soft, slightly glauconitic, slightly micaceous. Occurs over intervals 3887-3888, 3892-3896, 3916-3920, 3924-3929, 3940-3942, 3945-3948, 3963-3971, 3976-3982, 3991-3993, 4004-4010, 4016-4020, 4041-4051, 4053-4066, 4081-4091, 4109-4111, 4126-4128.

.../

- LITHOLOGY 3 Sandstone, white, fine grained, sub-angular, poor to moderate sorting, calcareous, firm to hard with clayey (Kaolin?) cement, tight, no visible porosity. This sandstone is quartzose at the top but becomes increasingly lithic down section. Occurs over intervals 3998-4000, 4070-4076, 4077-4080, 4091-4092, 4094-4109, 4111-4119, 4122-4126.
- LITHOLOGY 4 Sandstone, white to buff-light brown, fine grained, hard, cemented, dolomitic cement. Forms thin resistive beds as shown in Figure 6. Occurs over intervals; 3960-3963, 3974-3976, 4010-4013, 4032-4036, 4066-4070, 4092-4094, 4119-4122, 4128-4132.
- LITHOLOGY 5 Coal, black, earthy, pyritic and in places associated brown clayey seat earth. Thin seams at 3903-3905, 3914-3916, 3958-3960, 3971-3974, 4029-4032, 4051-4053, 4076-4077, 4080-4081.
- 4132 - 4974 (TD) Eumeralla Formation (Otway Group)
Claystone, light grey, very soft, puggy. Texture and slight whiteness indicates probably Kaolinitic. Interbedded with; Lithic Sandstone, feldspathic, fine to coarse grained, poorly sorted, white, green and grey, white calcareous clay cement. Tight, no visible porosity. This sand is lithic/feldspar dominant with very little quartz. Grey, green and brown metaquartzite grains are the most common lithics. Interbedded with; Siltstone, light grey-white, light green, soft to firm, speckled pepper and salt texture. (carbonaceous and feldspar specks).

PE906824

This is an enclosure indicator page.
The enclosure PE906824 is enclosed within the
container PE902711 at this location in this
document.

The enclosure PE906824 has the following characteristics:

ITEM_BARCODE = PE906824
CONTAINER_BARCODE = PE902711
NAME = Predicted v. Actual Section
BASIN = OTWAY
ONSHORE? = Y
DATA_TYPE = WELL
DATA_SUB_TYPE = STRAT_COLUMN
DESCRIPTION = Predicted v. Actual Section for North
Paaratte-3
REMARKS = PERMIT: PEP93PAGES: 1
DATE_WRITTEN = 31-JUL-1980
DATE_PROCESSED =
DATE_RECEIVED =
RECEIVED_FROM =
WELL_NAME = NORTH PARRATTE-3
CONTRACTOR =
AUTHOR =
ORIGINATOR = Beach Petroleum NL
TOP_DEPTH =
BOTTOM_DEPTH =
ROW_CREATED_BY = xls_jc40

(Inserted by DNRE - Vic Govt Mines Dept)

PE604756

This is an enclosure indicator page.
The enclosure PE604756 is enclosed within the
container PE902711 at this location in this
document.

The enclosure PE604756 has the following characteristics:

ITEM_BARCODE = PE604756
CONTAINER_BARCODE = PE902711
NAME = Composite Log (interpreted)
BASIN = OTWAY
ONSHORE? = Y
DATA_TYPE = WELL
DATA_SUB_TYPE = COMPOSITE_LOG
DESCRIPTION = Composite Log (interpreted lithology's)
for North Paaratte-3
REMARKS = PERMIT: PEP93PAGES: 1
DATE_WRITTEN = 31-JUL-1980
DATE_PROCESSED =
DATE_RECEIVED =
RECEIVED_FROM =
WELL_NAME = NORTH PARRATTE-3
CONTRACTOR =
AUTHOR =
ORIGINATOR = Beach Petroleum NL
TOP_DEPTH = 3800
BOTTOM_DEPTH = 4200
ROW_CREATED_BY = xls_jc40

(Inserted by DNRE - Vic Govt Mines Dept)

APPENDIX 1

DETAILS OF DRILLING PLANT

4. (a) DRILLING RIG AND EQUIPMENT TO BE FURNISHED BY CONTRACTOR:

Contractor's Rig No.: 12

DRAWWORKS

Ideal type 50 with 16" x 34" spooling drum (1-1/8" lebus grooved) and 14" x 36" 9/16" Sandline drum with foster 24AD and 37AH Catheads and Parkersburg 36" single type R Hydromatic Brake.

MUD PUMPS

National K380. 7 1/4" x 14" powered by GM16V Series 71 engine with K 10 pulsation dampener. Ideco MM700 7 1/2" x 14" with K20 pulsation dampener and powered from compound 71 twin engines. (The Ideco MM700 was used as the No. 1 pump; the National K380 was used as the No. 2 pump.)

MIXING PUMP

Mission 5 x 6 Centrifugal pump powered by GM371 diesel engine.

MANIFOLD

Complete Manifold system for circulating mud and water.

ENGINES (DRAWWORKS)

2 GM12107 Series 71 twins with GM torque converters.

DRIVE GROUP

Ideal "BL Modified" 2 engine with #2 having pump countershaft drive (18" PD 10D Sheave).

MAST

131' Lee C. Moore Standard Canti-Lever equivalent to API Derrick capacity of 550,000 lbs. Racking capacity 12420' 4 1/2" drill pipe.

SUBSTRUCTURE - MAST

Lee C. Moore 10' high x 20' 9" wide x 31' long.

SUBSTRUCTURE-ENGINE

Lee C. Moore 10' high x 20' 9" wide x 11' 9" long.

INSTRUMENTATION

Martin Decker Type D Weight Indicator with 0/3000 lbs. mud pump gauge. Martin Decker tong torque gauge. Geograph G3 Recorder.

KELLY COCK

1 Omsco unit with 6-5/8" LH Box up x 6-5/8" LH pin down.

DE-SANDER

Cyclone unit with 3 x 6" and 2" x 8" cones and mission 5 x 6 centrifugal pump powered by GM371 engine.

DEVIATION INSTRUMENT

Sure Shot 0° - 7° unit.

BLOWOUT PREVENTERS

1-12 3000 psi WP Cameron "SS" Double gate with C.S.O. & 4½" Rams.
1-12 3000 psi WP Hydril
1-K80 Hydril Accumulator with 2 Nitrogen Bottle emergency closing system
1-Set BOP Hoses and steel lines (latter installed in walkways)

DRILL PIPE

6000' - 4½" OD x 16.60 lb/ft grade E Range 2 with 4½" FH connections.
6 Joints - 4½" Hevi-Wate

DRILL COLLARS

6-8" OD x 30' with 6-5/8" regular connections.
18-6½" OD x 30' with 4½" IF connections.

CHOKE MANIFOLD

1-5000 psi dual choke unit

ROTARY TABLE

Ideal type 20½" complete with master bushing

TRAVELLING BLOCK AND HOOK

National 436 'E' 140 rated capacity 140 tons.

CROWN BLOCK

Lee C. Moore with 5 x 42" OD and 1 x 56" OD sheaves

SWIVEL

National Ideal Type 'D'

GENERATORS, COMPRESSORS AND CIRCULATING PUMP (Installed in Generator House)

2 Delco-GM 92.5 KVA generators powered by GM671 engines.
2 Ingersoll Rand air compressors.
2 Southern x 1½" x 2" centrifugal water pump powered by electric motor.

SHALE SHAKER

2 Link belt type NR145 model 53A.

RIG LIGHTING

Hutchinson "Flo-Light" flame-proof complete for National 50 rig and Lee C. Moore Mas

MUD TANKS

2 Mild Steel with walk partitions and guns - each 30' x 8' x 6' high.

WATER TANKS

2 mild steel each 30' x 8' x 6' high.

PIPE RACKS AND WALK

90 ft Tumble type pipe racks complete with steel decked walk.

FISHING TOOLS

1 set Bowen or McCullough Mechanical Hydraulic Jars.
Overshot to catch Drill Pipe and 6½" Drill Collars
Overshot to catch 8" Drill Collars.

SPOOLS

As required to cross over between Contractors BOP's and Operators Casing BOP's.

SHEDS

1 Dog House 14' x 8'
1 Generator shed 24' x 8'
1 Utility Shed 27' x 8'
1 Spares/Tool shed 26' x 8'

MUD TESTING EQUIPMENT

Magcobar rig laboratory

WELDING EQUIPMENT

Oxy/acetylene set
1 M6 Lincoln electric set

CASING AND DRILL PIPE HANDLING TOOLS:

1 set (2) Tongs with jaw range 3½" - 13-3/8"
2 Sets 4½" drill pipe slips
1 Set 5½" - 7" drill collar slips
1 Set 6-3/4" - 8½" drill collar slips
1 Set 7" Casing Slips
1 Set 9-5/8" Casing Slips
1 Set 13-3/8" Casing Slips
1 Set CR drill collar safety clamps
2 Sets 4½" Drill pipe Elevators
1 Set 7" Casing Elevators (single joint)
1 Set 7" Casing Elevators (running)
1 Set 9-5/8" Single Joint Casing Elevator
1 Set 9-5/8" Casing Elevator (running)
1 13-3/8" Single Joint Casing Elevator
1 13-3/8" Casing Elevator (running)
1 Set each 2-7/8" Tubing Elevators & Slips

ELEVATOR LINKS

1 Set 2½" x 72" 110 ton capacity
Set 2-3/4" x 84" 150 ton capacity

SUBSTITUTES

All necessary lifting, crossover and bit substitutes for 4½" drill pipe; 6" & 8" drill collars, and drill collars to other down hole tools furnished by Contractor with National 50 rig.

KELLY AND KELLY DRIVE

1 4½" Square Kelly with 6-5/8" LH Box Up
1 Baash Ross 2RBS6 Kelly Drive

JUNK BOX

Skid Mounted 14' x 8' x 4'

RATHOLE DRILLER

Unit Rig digger with drive for 4½" square kelly.

MUD SAVER

"OKEH" mud saver bucket for 4½" drill pipe.

MATTING

Hardwood matting for National 50 Sub-base and pump area.

DAY TANK

1 - 2000 gallon diesel day tank

FIRE EXTINGUISHERS

1 Set as required to comply with State Mines Department Regulations.

APPENDIX 2

WELL SITE CUTTINGS DESCRIPTION LOG

INTERVAL	%	LITHOLOGICAL DESCRIPTION
30 - 60	100	Marl, medium-grey, very soft, strongly fossiliferous. Abundant foraminifera, echinoid stems, broken lamellibranchs, coralline fragments, minor gastropoda. Some minor pyritisation, trace glauconite.
60 - 90	100	As above
90 - 120	100	As above
120 - 150		As above
150 - 180		As above
180 - 210		As above
210 - 240		As above
240 - 270		As above
270 - 295		As above
295 - 330	100	Marl, light grey-green, very soft, strongly fossiliferous. Fossils as above
	Tr	Siltstone/Sandstone, very fine grained, white, calcareous cement
	Tr	Calcareous cemented modules, brown.
330 - 360		As above
360 - 390	100	Marl, as above
	Tr	Calcareous, cemented nodules, brown
390 - 420	95	Marl, as above
	5	Sandstone, coarse grained, orange-brown, ferruginous, angular.
	Tr	Glauconite, coarse grained, rod-like.
	Tr	Sand, white-clear, medium grain, moderately rounded.
420 - 440	95	Marl, as above
	5	Glauconite, coarse grained, rod-like
	Tr	Sandstone, coarse grained, orange-brown, ferruginous, angular.
440 - 460	50	Marl, as above
	50	Sandstone, white-light grey, hard, fine grain-medium grain, predominantly fine grain, glauconitic, calcareous cement, matrix dominant.
	Tr	Sandstone, coarse grain, orange-brown, ferruginous
	Tr	Sand, coarse and very coarse grain, yellow-brown and clear, angular, with ferruginous cement. 'Sample badly contaminated by cement'.
460 - 480	100	Sandstone, white to buff white and minor-green-brown, fine grain, minor medium grain, glauconitic, ferruginous, calcareous cement, hard, matrix dominant.

INTERVAL	%	LITHOLOGICAL DESCRIPTION
480 - 500	100	Sandstone, as above, clayey
	Tr	Coarse grain, glauconite, green
	Tr	Corralline shell fragments replaced by glauconite
	Tr	Sand, coarse grain-very coarse grain, as above.
500 - 520	20	Sandstone, as above
	70	Sandstone, fine grain, quartzose, sub-rounded, loosely consolidated, ferruginous and glauconitic.
	10	Shell fragments
	Tr	Sand, coarse grain - very coarse grain, as above.
520 - 540	70	Sandstone, white to buff white with green-brown flecks, fine grain glauconitic, ferruginous, calcareous, cement. (Matrix dominant).
	30	Sandstone, fine grain, quartzose, ferruginous, loosely consolidated and glauconitic.
	Tr	Phosphatic claystone and grit, yellow and Khaki
	ab.	Shell fragments
540 - 560	40	Sandstone, calcareous as above
	60	Sandstone, quartzose, as above
	Tr	Phosphatic claystone and grit as above
	ab	Shell fragments
	Tr	Coarse grain, glauconite and pyrite
560 - 580	45	Sandstone, calcareous, as above
	45	Sandstone, quartzose, as above
	ab	Shell fragments
	10	Marl, light grey-brown, glauconitic, soft-very soft, fossiliferous, minor pyrite
	Tr	Pyrite, coarse grain.
580 - 600	10	Pyrite, coarse grain
	60	Shell fragments, turretted gastropods, broken lamellibranch, coralline fragments, minor-forams.
	30	Clayey siltstone, light grey-white, soft, slightly calcareous, slightly glauconitic.
	10	Marl, as above
600 - 620	40	Silty claystone, light grey-light green, soft, slightly calcareous, slightly glauconitic.
	50	Marl, as above.
	10	Shell fragments, as above
620 - 640	50	Marl, as above.
	40	Silty claystone, as above
	10	Shell fragments, as above
640 - 660	20	Glauconite, dark green, sub-rounded, medium grain.
	50	Marl, as above
	30	Shell fragments, as above
660 - 680	20	Glauconite, as above
	50	Marl, as above
	20	Shell fragments, as above
	10	Silty claystone, as above.

.../

INTERVAL	%	LITHOLOGICAL DESCRIPTION
680 - 700	70	Marl, as above
	10	Silty claystone, light grey-light green, as above
	10	Shell fragments, as above
	10	Glauconite, coarse grain and medium grain, sub-rounded.
700 - 720	30	Glauconite, coarse grain, angular and medium grain, sub-rounded, glauconite flood.
	70	Marl, brown, soft-very soft, glauconitic, as above
	ab	Fossil fragments, as above.
720 - 740	30	Glauconite, as above
	40	Silty claystone, as above
	30	Marl, as above.
740 - 760	90	Sandstone, coarse grain-very coarse grain, minor medium grain, yellow-brown, iron stained, sub-rounded to sub-angular, moderately sorted, loosely consolidated, inferred good porosity.
	10	Sandstone, white, fine grain, lithic and quartzose, calcareous to slightly calcareous, hard cemented.
760 - 780	80	Sandstone, coarse grain, minor very-coarse grain, yellow-brown, iron stained, sub-rounded to sub-angular, moderately sorted, loosely consolidated, inferred good porosity.
	20	Sandstone, white, fine grain, lithic as above.
		Note: These 2 sandstones are most likely interbedded, refer drilling rate, however, the cemented sandstone can act as a cement to the coarse grain quartz.
780 - 800	80	Sandstone, coarse grain, as above
	20	Sandstone, white, fine grain, cemented as above.
800 - 820	60	Sandstone, coarse grain, as above
	40	Sandstone, white, light grey, light brown, fine grain, cemented as above.
820 - 840	90	Sandstone, yellow-brown, very coarse grain-coarse grain, angular moderately sorted, predominately iron-stained, loosely consolidated inferred good porosity. Tr. clear quartz and white, smokey quartz, tr pyramid quartz, iron stained.
	10	Sandstone, white, light grey, light brown, cemented, slightly calcareous, hard, lithic and quartzose.
840 - 860	80	Sandstone, loosely consolidated, as above
	20	Sandstone, white, cemented, as above
860 - 880	95	Sandstone, coarse grain, loosely consolidated, yellow brown, as above.
	5	Sandstone, cemented, as above.
880 - 900	80	Sandstone, coarse grain to very coarse grain, loosely consolidated as above.
	20	Sandstone, white minor light brown, fine grain, cemented, as above.

.../

INTERVAL	%	LITHOLOGICAL DESCRIPTION
900 - 920	90	Sandstone, coarse grain, moderately sorted, subrounded, as above
	10	Sandstone, cemented, hard, as above
	Ab	Coarse grain, pyrite and glauconite, pellets
920 - 940	80	Sandstone, coarse grain, as above
	20	Sandstone, cemented, hard, as above
	Ab	Coarse grain pyrite and glauconite pellets and rods
940 - 960	90	Sandstone, white, predominantly coarse grain quartz and medium grain, minor very coarse grain, loosely consolidated, sub-rounded to sub-angular, moderately sorted.
	Tr	Carbonaceous shale, black.
	Ab	Coarse grain, pyrite and glauconite pellets and rods
	10	Sandstone, cemented, white-light brown, hard, as above.
960 - 980	90	Sandstone, white, predominantly coarse grain, quartz, very coarse grain to medium grain, loosely consolidated, sub-rounded to sub-angular, moderately sorted, good inferred porosity. Minor pyrite adhering to quartz grains.
	10	Sandstone, cemented, white-light brown, hard, as above.
980 - 1000	100	Sandstone, white, as above, trace light grey quartz with minor pyrite cement
	Tr	Coarse grain, pyrite and glauconite pellets
	Tr	Sandstone, cemented, white, hard, as above.
1000 - 1020	100	Sandstone, white, loosely consolidated, as above
	Tr	Coarse grain, pyrite, glauconite
	Tr	Cemented, pyrite, cement, fine grain, quartzose sandstone.
1020 - 1040	100	Sandstone, white, loosely consolidated, medium-coarse grain, minor very coarse grain, sub-rounded to sub-angular, moderately sorted.
	Tr	Carbonaceous shale, black
	Tr	Cemented, pyrite cement, hard, fine grain, quartzose sandstone as above
	Tr	Coarse grain, pyrite, glauconite
1040 - 1060	100	Sandstone, light grey, white-clear, loosely consolidated, as above
	Tr	Pyrite, pyrite cemented, brown, quartz, hard, fine grain, sandstone
1060 - 1080	100	Sandstone, clear-white, loosely consolidated, as above
	Tr	Pyrite, glauconite, cemented sandstone, as above
1080 - 1100	90	Sandstone, clear-white, loosely consolidated, dominantly, coarse grain, very coarse grain-medium grain, sub-rounded to sub-angular, pyritic
	10	Carbonaceous shale, black, pyritic
	Tr	Sandstone, fine grain, cemented, pyritic cement
1100 - 1120		Too badly contaminated
1120 - 1140	90	Sandstone, white-clear, as above, pyritic
	10	Sandstone, fine grain, pyritic cemented quartzose

INTERVAL	%	LITHOLOGICAL DESCRIPTION
1140 - 1160	100 Tr	Sandstone, white-clear, as above, pyritic Glauconite, coarse grain, pyrite
1160 - 1180	90 10	Sandstone, unconsolidated, as above Siltstone, clayey and silty claystone, dark brown, soft
1180 - 1190	90 10 Tr	Sandstone, unconsolidated, as above, medium-coarse grain, slightly iron-stained again, sample quality suspect! Siltstone, clayey, dark grey and brown, soft, as above Indurated siltstone, brown, hard, slightly calcareous
1200 - 1220	80 20	Sandstone, unconsolidated, coarse grain, as above Siltstone, dark brown, dark grey, hard and indurated in part and soft in part.
1220 - 1240	80 20	Sandstone, unconsolidated, coarse grain, as above Siltstone, dark brown and dark grey, soft, as above
1240 - 1260	10 10 80	Siltstone, brown, hard, indurated Siltstone, dark grey, soft Sandstone, as above, trace pyrite. Sampling either side of drilling break at 1275' leads one to interpret slower drilling due to; Siltstone, clayey, dark brown, minor black, slightly calcareous.
1260 - 1280	80 10 10	Sandstone, as above, quartz is becoming more iron-stained Siltstone, brown, hard, indurated Siltstone, dark grey, soft Circulated up drilling break at 1307ft. WOB 10,000 lb., RPM = 110 ROP 1290' - 1307' 17ft in 15 min 68ft/hr. ROP 1307' - 1320' 13ft in 2 min 390ft/hr.
1280 - 1300	90 5 5 Tr Tr	Sandstone, white-clear, coarse grain, loosely consolidated, sub-rounded to sub-angular. Siltstone, clayey, dark brown, minor black, slightly calcareous Shale, black, carbonaceous, pyritic Coarse grain, glauconite and pyrite Sandstone, light brown, cemented, fine grain, slightly glauconitic.
1300 - 1310	90 5 5	Sandstone, loosely consolidated, as above Grey quartz, very coarse grain, angular with pyrite on fractures Pyrite, coarse grain
1310 - 1320		As above
1320 - 1340	90 5 5 Tr Tr	Sandstone, white to clear, medium grain-coarse grain, moderately sorted unconsolidated, sub-rounded to sub-angular. Siltstone, dark brown, hard, indurated Siltstone, clayey or silty claystone, dark grey, soft Black carbonaceous shale Sandstone, fine grain, cemented, white, as above

INTERVAL	%	LITHOLOGICAL DESCRIPTION
1340 - 1360	90	Sandstone, white to clear, coarse grain, sub-rounded to sub-angular pyrite cement, common, as above.
	5	Siltstone, dark brown, hard, indurated
	5	Siltstone, clayey or silty claystone, as above, soft
1360 - 1380		'Badly contaminated sample - no description attempted'
1380 - 1400		Also badly contaminated
	10	Siltstone, dark brown, hard, indurated
	90	Sandstone, as above, some iron-stained, pyrite cement abundant
	Tr	Silty claystone, dark grey, soft, as above
At 1412		Hard, indurated, dark brown siltstone, hard drilling caused bit to be pulled
1400 - 1420	85	Sandstone, white-clear, coarse grain, moderately sorted, sub-angular sub-rounded, uncontaminated
	10	Siltstone, dark brown, hard, indurated
	Tr	Carbonaceous Shale, black
	5	Clayey siltstone, dark brown, soft
	Tr	Glauconite, coarse grain, Pyrite, citrine quartz
1420 - 1440	90	Clayey siltstone/silty claystone, dominant
	10	Shell fragments and coarse grain quartz
1440 - 1460	95	Loose quartz, as above
	5	Sandstone, fine grain, lithic, cemented, hard
	Tr	Silty claystone, dark brown, dark grey
1460 - 1480	85	Loose quartz, as above
	5	Dark grey, cemented, firm sandy claystone
	5	Brown, indurated siltstone, hard
	5	Dark brown, grey soft, claystone
1480 - 1500	80	Loose quartz, as above
	5	Dark brown, indurated siltstone, hard
	5	Dark grey, soft claystone
	10	Sandstone, fine grain, lithic, dark brown-grey, cemented, hard
1500 - 1510	80	Loose quartz sandstone, as above
	5	Dark brown, indurated siltstone, hard, as above
	5	Dark grey, soft claystone, as above
	10	Sandstone, fine grain, lithic, dark brown-grey, cemented hard.
1510 - 1520	80	Loose quartz sandstone, as above
	10	Dark grey, soft, claystone, as above
	10	Hard lithic sandstone, as above, gradational into hard indurated siltstone as above
	Tr	Firm to hard, light grey-light brown, siltstone
1520 - 1530	45	Silty claystone, soft-firm, dark grey
	45	Loose quartz, as above
	10	Hard lithic sandstone, as above
1530 - 1540	80	Loose quartz, as above
	15	Hard Lithic sandstone, as above
	5	Silty claystone, soft-firm, dark grey

INTERVAL	%	LITHOLOGICAL DESCRIPTION
1540 - 1550	90 5 5 Tr	Loose quartz, as above Silty claystone, as above Hard lithic sandstone, as above Green shale, resinous, micaceous
1550 - 1560	85 5 5 5	Loose quartz Silty claystone, as above Hard lithic sandstone, as above Brown indurated siltstone, hard
1560 - 1570	90 5 5	Loose quartz Silty claystone, as above Hard lithic sandstone, as above
1570 - 1580	85 5 5 5	Loose quartz, as above Silty claystone, as above Hard lithic sandstone, as above Hard indurated siltstone, as above
1580 - 1590	85 15	Loose quartz, as above Hard lithic sandstone, fine grain, slightly glauconitic
1590 - 1600	?	Badly contaminated sample with cement
1600 - 1610	?	Sample badly contaminated with cement
1610 - 1620	100	Silty claystone and clayey siltstone, medium brown, soft, slightly glauconitic. Claystone dominant. Accessories; coarse grain, angular quartz grains, medium grained glauconite, coarse grain pyrite, trace black carbonaceous shale. Slightly pyritic (Presumably < 2.5%)
1620 - 1630		Same as above
1630 - 1640		Same as above
1640 - 1650		Same as above
1650 - 1660		Same as above
1660 - 1670		Same as above
1670 - 1680		Same as above
1680 - 1690		Same as above
1690 - 1700		Same as above
1700 - 1710	70 30 Tr	Siltstone, brown, hard, slightly glauconitic Sandstone, white-clear, coarse grain, angular, moderately sorted Glauconite and pyrite, coarse grain
1710 - 1720	70 30 Tr	Siltstone, as above Sandstone, as above Glauconite and pyrite, coarse grain N.B.:- Trace orange-brown, ferruginous siltstone fragments probably indicative of weathering surface

INTERVAL	%	LITHOLOGICAL DESCRIPTION
1720 - 1730		As for 1710-1720 with some trace orange-brown siltstone
1730 - 1740	90	Siltstone, as above
	10	Quartz, as above
		Note:- some trace of orange-brown siltstone and trace orange-brown quartz
1740 - 1750	30	Siltstone, as above
	50	Quartz, as above
	20	Glauconite, coarse grain
1750 - 1760	20	Siltstone, as above
	60	Quartz, as above
	20	Glauconite, medium-coarse grain
1760 - 1770	65	Quartz, white and light green (in part), coarse grain, sub-angular, poorly sorted. Quartz has green-clay material on microfractures.
	20	Glauconite, medium-coarse grain, as above. Note: glauconite is in part fine grain glauconitic claystone or siltstone.
	15	Siltstone, as above
1770 - 1780		As for 1760 - 1770
1780 - 1790		Summary-green sand
	80	Glauconite as above, note glauconite is green, firm but mainly fine grain, clayey glauconite. (Therefore this sand would be a lithic sand). This is green formless, clay cement to a fine-medium grain sand grain
	Tr	Siltstone, as above
1790 - 1800	90	Sandstone, white-clay, coarse grain (minor medium grain), sub-rounded to sub-angular, moderately sorted, loosely consolidated.
	5	Glauconite, as above
	5	Siltstone, as above
		Note:- quartz still has some material, brown on microfractures. N.B. not green.
1800 - 1810	80	Sandstone, as above, quartz with some brown material on microfracture
	5	Glauconite, as above
	15	Siltstone, as above but firm to soft
1810 - 1820	100	Sandstone, white-clear, coarse grain-medium grain, moderately sorted, sub-rounded to sub-angular, loosely consolidated
	Tr	Siltstone, as above, cave-in
1820 - 1830	100	Sandstone, white-clear, medium-coarse grain, moderately sorted, sub-rounded to sub-angular
	Tr	Siltstone, as above, cave-in
1830 - 1840	80	Sandstone, coarse grain, white-clear and cream, minor yellow-brown and very coarse grain, poorly sorted, brown-iron matrix on fractures
	10	Silty sandstone, fine-medium grain, angular quartz with a brown matrix cement, hard, cemented, slightly glauconitic
	10	Clayey glauconite as above, cave in

INTERVAL	%	LITHOLOGICAL DESCRIPTION
1840 - 1850		As for 1830 - 1840
1850 - 1860	90	Sandstone, white and light yellow-brown, coarse grain, sub-angular, moderate to poorly sorted, loosely consolidated
	10	Silty sandstone, as above
	Tr	Clayey glauconite, as above
1860 - 1870	70	Sandstone, medium-grain, very coarse grain, dominantly coarse grain, poorly sorted, sub-angular, still dirty with brown material on fractures. Loosely consolidated
	30	Silty sandstone, as above
	Tr	Coarse grain, pyrite
	Tr	Clayey glauconite, as above
1870 - 1880	70	Sandstone, coarse grain, moderately sorted, yellow-brown, brown material on fractures of quartz, coarse grain, moderately sorted, loosely consolidated, minor very coarse grain
	30	Silty sandstone, fine-medium grain, sub-angular quartz with a brown silty matrix cement, hard, slightly glauconitic. Contains glauconite grains, cemented by the siltstone.
	Tr	Pyrite, coarse grain
1880 - 1890	70	Sandstone, as above
	30	Siltstone, brown, slightly glauconite, hard,
	Tr	Pyrite, coarse grain
1890 - 1900	30	Siltstone, brown, slightly glauconitic, sandy, contains fine-medium grain quartz grains i.e.- siltstone forms matrix to minor quartz floaters, hard
	70	Sandstone, as above
	Tr	Hard glauconitic clay
1900 - 1910	90	Sandstone, white and yellow, medium-coarse grain, moderately sorted, sub-rounded, loosely consolidated
	5	Siltstone, as above
	5	Hard glauconitic clay
1910 - 1920		As for 1900 - 1910
1920 - 1930		As for 1900 - 1910
1930 - 1940	100	Sandstone, white, (some slightly milky), medium-coarse grain and minor grit - moderately sorted, loosely consolidated, sub-rounded, sub-angular
	Tr	Grey and green chert, hard
	Tr	Black, carbonaceous shale, firm
1940 - 1950	100	Sandstone, as above
	Tr	Grey, red-brown, brown chert
1950 - 1960	100	Sandstone, as above
	Tr	Fine grain, cemented sandstone, white
	Tr	Black, carbonaceous shale, firm
	Tr	Chert, green, grey

INTERVAL	%	LITHOLOGICAL DESCRIPTION
1960 - 1970 } 1970 - 1980 }	90 5 5	Composite because of fast drilling rate Sandstone, white, coarse grain with minor grit, moderately sorted, loosely consolidated, as above Black carbonaceous shale, firm Chert, as above
1980 - 2000	90 10 Tr Tr	Sandstone, white to clear, medium-very coarse grain, dominantly coarse grain, moderately sorted, sub-rounded to sub-angular Black carbonaceous shale, firm, trace black coal Fine grain cemented sandstone, as above, white and light grey Grey and red-brown chert
2000 - 2020	90 5 5	Sandstone, as above Black carbonaceous shale, as above Grey and red-brown, chert, as above. All units have assoc. pyrite, commonly a cement in the sandstones.
2020 - 2040		As for 2000 - 2020'
2040 - 2060	90 10 Tr	Sandstone, as above Grey, red-brown chert, as above Fine grain, cemented sandstone, white and light brown, saccharoidal pyritic cement as above
2060 - 2080	90 5 5 Tr	Sandstone, as above Grey, red-brown chert, lithics as above Black carbonaceous shale and dark grey, hard shale, as above Fine grain, cemented sandstone, as above
2080 - 2100	90 5 5 Tr	Sandstone, white-clear, medium-coarse grain, moderately sorted, sub-rounded to sub-angular, loose Chert, as above Carbonaceous shale, as above Fine grain, cemented sandstone, as above
2100 - 2120	90 5 5	Sandstone, as above Sandstone, cemented brown, fine grain, matix dominated in part Carbonaceous shale, black, abundant pyrite associated with shale
2120 - 2140	90 5 5	Sandstone, as above Carbonaceous shale, pyrite, as above Chert lithics, grey-green, brown as above
2140 - 2150	20 5 5 Tr 70	Carbonaceous shale, black, pyritic Amber resin, yellow-brown, coarse grain Chert lithics, red-brown, dominant as above Bronzite mica Sandstone, as above
2150 - 2160	10 20 5 Tr 5 Tr	Sandstone, as above Carbonaceous shale, black, pyritic, firm Amber resin, yellow-brown, coarse grain Bronzite mica and muscovite mica Red-brown and green chert lithics and green quartzite Fine grain, white cemented, saccharoidal sandstone

.../

INTERVAL	%	LITHOLOGICAL DESCRIPTION
2160 - 2170	10 Tr 5 85	Carbonaceous shale, black, as above and trace black coal Dark grey siltstone, hard Grey, green and red-brown, chert lithics Sandstone, as above
2170 - 2190	10 5 85	Carbonaceous shale, black as above and trace black coal Grey and brown chert Sandstone, as above
2190 - 2210	95 5	Sandstone, white-clear, as above Carbonaceous shale, black, as above, chert as above and grey and green, fine grain cemented sandstone, saccharoidal, as above
2210 - 2230	100 Tr	Sandstone, white-clear, coarse grain, moderately sorted, sub-rounded to sub-angular, loosely consolidated Carbonaceous shale, chert and cemented sandstone, as above
2230 - 2240	100 Tr	Sandstone, as above Carbonaceous shale, chert and cemented sandstone, as above
2240 - 2260		As for 2230 - 2240'
2260 - 2280	90 5 5 Tr	Sandstone, as above, loose Sandstone, cemented, fine grain, saccharoidal, hard Chert, grey and green Carbonaceous shale, black, firm
2280 - 2300	90 5 5	Sandstone, as above, loose Black carbonaceous shale, strong pyritic, hard to firm, as above Chert, red-brown, grey and green, as above
2300 - 2320	100 Tr	Sandstone, white-clear, sub-angular to sub-rounded, moderate to well sorted, loosely consolidated Grey chert, hard, coarse grain, pyrite
2320 - 2340	95 5 Tr	Sandstone, as above Black carbonaceous shale, strong pyritic hard to firm Grey chert, hard and medium grey, siltstone
2340 - 2360		As for 2320 - 2340'
2360 - 2380	90 5 5	Sandstone, white-clear, very coarse grain, sub-angular Black carbonaceous shale, pyritic, hard and dark grey siltstone Grey, pyritic chert
2380 - 2400	95 5 Tr	Sandstone, as above Medium grey siltstone, chert, hard Pyrite, coarse grain
2400 - 2420	90 5 5 Tr	Sandstone, white-clear, medium grain-very coarse grain, moderately sorted, sub-angular to sub-rounded, loosely consolidated Dark grey, siltstone, hard Chert, grey-green Coarse grain, pyrite, black carbonaceous shale, pyritic
2420 - 2430		As for 2400 - 2420'

INTERVAL	%	LITHOLOGICAL DESCRIPTION
2430 - 2440	10	Dark grey siltstone, very hard, (very slow drilling) cemented with minor fine grain and even more minor medium grain quartz floaters in places
	90	Sandstone, as above
	Tr	Coarse grain, pyrite, black, pyritic, carbonaceous shale
2440 - 2460	20	Black carbonaceous shale, pyritic, trace black coal
	80	Sandstone, as above
	Tr	Fine grain, pyritic cemented sandstone, trace amber
	Tr	Siltstone, dark grey, very hard, as above
2460 - 2480	95	Sandstone, as above
	5	Black carbonaceous shale, pyritic
	Tr	Siltstone, dark grey-medium grey, very hard, as above
2480 - 2500	100	Sandstone, as above
	Tr	Black carbonaceous shale, pyritic, firm
	Tr	Siltstone, dark grey-medium grey, very hard, as above
	Tr	Coarse grain, pyrite
	Tr	Fine grain, cemented sandstone, white, green and brown
2500 - 2520		As for 2480 - 2500'
2520 - 2540		As for 2480 - 2500'
2540 - 2550	5	Medium grey siltstone, very hard, cemented with minor fine grain-medium grain quartz floaters. This is causing the slow drilling this could be acting as a cement to the sandstone in these slow drilling periods. (However, could also be due in part to worn bit).
	95	Sandstone, as above, trace, coarse grain, pyrite, black coal, black carbonaceous shale, pyrite
2550 - 2560	5	Medium grey-dark grey siltstone, very hard, cemented, as above
	95	Sandstone, as above
	Tr	Black carbonaceous shale, pyritic
	Tr	Fine grain, pyritic cemented sandstone
2560 - 2569		As for 2550 - 2560'
2569 - 2580	80	Sandstone, as above
	20	Coal, black, dull, pyritic
	Tr	Siltstone, as above
	Tr	Coarse grain, pyrite
	Tr	Grey, red-brown chert
	Tr	Amber
2580 - 2600	70	Coal, black, dull, pyritic
	5	Red-brown, sandy siltstone, firm to hard (weathering surface)
	25	Sandstone, white, fine-grain, saccharoidal, cemented, hard
	Tr	Amber

INTERVAL	%	LITHOLOGICAL DESCRIPTION
2600 - 2620	95	Sandstone, white, medium-coarse grain, moderate to well sorted, sub-angular to sub-rounded, loosely consolidated
	5	Coal, black, dull, pyritic
	Tr	Claystone, silty, brown, soft
	Tr	Siltstone, light grey, hard
2620 - 2640	90	Sandstone, as above
	10	Coal, as above
	Tr	Claystone and siltstone, as above
	Tr	Amber, yellow-brown, coarse grain, angular, yellow, fluorescence
2640 - 2660	100	Sandstone, as above
	Tr	Coal, as above, red-brown seat earth to coal (a coal sandwich with red-brown sides), grey siltstone, as above, amber as above
2660 - 2680	20	Coal, as above
	80	Sandstone, as above
	Tr	Siltstone, as above, amber as above, chert red-brown, as above
	Tr	Coarse grain pyrite
2680 - 2700		As for 2660 - 2680'
2700 - 2720	5	Claystone, silty, brown and grey, soft
	70	Sandstone, as above
	5	Sandstone, fine grain, cemented, saccharoidal, grey, white and light green
	20	Coal, as above
2720 - 2740	5	Sandstone, fine grain, cemented, as above
	10	Coal, as above
	5	Claystone, as above
	75	Sandstone, as above
	Tr	Amber, as above
2740 - 2760	10	Sandstone, fine grain, cemented, as above
	5	Siltstone, medium grey, hard
	20	Coal, black, dull, as above
	Tr	Amber and green chert
	65	Sandstone, as above
2760 - 2780	80	Coal, black, dull, blocky fracture, as above
	20	Sandstone, loose, as above
	Tr	Siltstone, as above, sandstone, fine grain, cemented, as above
	Tr	Amber, as above
2780 - 2800	90	Sandstone, loose, as above
	5	Coal, as above
	5	Siltstone, as above
	Tr	Sandstone, cemented, fine grain, as above
	Tr	Amber, as above
2800 - 2820		As for 2780 - 2800'
2820 - 2840		As for 2780 - 2800'

.../

INTERVAL	%	LITHOLOGICAL DESCRIPTION
2840 - 2860	85 15 Tr Tr	Sandstone, as above Coal, as above Siltstone, as above Sandstone, fine grain cemented, saccharoidal, as above
2860 - 2880		As for 2840 - 2860'
2880 - 2890	5 5 Tr Tr 90	Siltstone, as above, hard Black coal, as above Claystone, silty, as above, soft Amber, coarse grain, pyrite Sandstone, loose, as above
2900 - 2920	70 5 2 23 Tr	Sandstone, white, fine grain, cemented, saccharoidal, siliceously cemented, hard, (minor brown coloured). Black coal, as above Siltstone, clayey soft, brown Sandstone, loose, as above Amber, as above, chert, red-brown
2920 - 2940	30 2 5 63 Tr	Sandstone, cemented, white, brown minor green, fine grain, as above, hard Siltstone, clayey, brown and grey, soft Black coal, as above Sandstone, coarse grain, loose, as above Amber, as above
2940 - 2960	50 5 45 Tr	Sandstone, cemented, fine grain, as above Black coal, as above Sandstone, coarse grain, clear-white, loose, as above Amber, as above, chert, red-brown
2960 - 2980	100 Tr Tr	Sandstone, white (minor grey, green and brown), siliceously cemented, fine grain, slightly carbonaceous and slightly glauconitic (?) (at least a green mineral - resolution not possible) hard. Loose sandstone, as above Coal black, as above and red-brown chert
2980 - 2990		As for 2960 - 2980'
2990 - 3000	90 5 5	Sandstone, white, fine grain, cemented, as above Coal, black, as above Siltstone, clayey, brown, soft, as above
3000 - 3010	90 5 2.5 2.5 Tr	Sandstone, white, fine grain, cemented, as above, hard Sandstone, loose, as above Coal, black, as above Siltstone, clayey, brown, soft Amber, as above, grey and brown chert
3010 - 3030	90 5 5 Tr	Sandstone, white, fine grain, cemented, hard, as above Sandstone, loose, as above Siltstone, clayey, grey-brown, soft Amber, as above, chert, grey and red-brown

.../

INTERVAL	%	LITHOLOGICAL DESCRIPTION
3030 - 3040	70	Sandstine, white, fine grain, cemented, hard, as above
	5	Coal, black, as above
	5	Siltstone, clayey, grey-brown, soft
	20	Sandstone, loose, as above
	Tr	Amber, chert, grey and red-brown
3040 - 3060	50	Sandstone, white, fine grain, cemented, as above
	40	Sandstone, loose, as above, coarse grain
	5	Coal, black, as above
	5	Siltstone, clayey, grey-brown, soft
	Tr	Coarse grain, pyrite, chert grey and red brown, amber, as above
3060 - 3080	100	Sandstone, white-clear, coarse grain, moderate to well sorted, sub-rounded, loosely consolidated
	Tr	Sandstone cemented, as above, coal, black, as above, chert, grey and green
3080 - 3100		As for 3060 - 3080'
3100 - 3110		As for 3060 - 3080'
3110 - 3120	95	Sandstone, loose, as above
	5	Sandstone, buff brown, very fine grain, cemented, very hard, slightly dolomitic
	Tr	Siltstone, clayey, grey-brown, soft
	Tr	Sandstone, white, cemented, fine grain, as above
3120 - 3130	85	Sandstone, loose, as above
	5	Sandstone, white, cemented, fine grain, as above
	5	Siltstone, clayey, grey-brown, soft, as above
	5	Coal, black, as above
		Note: Percentages are largely meaningless due to amount of dispersive clay in sample. The sample is most likely Claystone dominant. (See sample description below).
3130 - 3140		Dominant percentages in washed samples are 90% loose sandstone, as above, 5% cemented white fine grain sandstone, 5% sandstone, very fine grain, buff-brown, cemented, very hard, slightly dolomitic, trace coal However, drilling through; Silty Claystone, medium grey (minor-brown), very soft, sticky, dispersive, slightly carbonaceous
3140 - 3150		As for 3130 - 3140' Dominant percentages in washed samples are; much as above with 5% sandstone very fine grain, hard, buff-brown grading to hard. Siltstone as above, slightly dolomitic
3150 - 3160		As for 3130 - 3140'
3160 - 3170		As for 3130 - 3140'
3170 - 3180		As for 3130 - 3140'

.../

INTERVAL	%	LITHOLOGICAL DESCRIPTION
3180 - 3190		As for 3130 - 3140'
3190 - 3200		As for 3130 - 3140'
3200 - 3210		As for 3140 - 3150' Note:- influx of yellow-brown, coarse grain, quartz and buff, hard, dolomitic siltstone
3210 - 3220		As for 3200 - 3210'
3220 - 3230		As for 3200 - 3210'
3230 - 3240		As for 3200 - 3210'
3240 - 3250		As for 3200 - 3210' with trace glauconite
3250 - 3260	80	Silty Claystone, medium grey-brown, slightly glauconitic and slightly carbonaceous, very soft, sticky, dispersive: (Mud properties are now sufficient to show the true lithology, therefore the recovery
	20	Loose quartz, some yellow-brown, black coal (cave-in) and amber
3260 - 3270		As for 3250 - 3260' increase in glauconite and coarse grain pyrite, clay dispersed again.
3270 - 3280	90	Silty Claystone, as above
	10	Loose quartz
	Ab	Glauconite and coarse grain, pyrite
3280 - 3290	100	Silty claystone, as above
3290 - 3300	90	Silty claystone, as above
	10	Loose quartz, fine grain-coarse grain, white and clear minor yellow-brown
	Tr	Coarse grain pyrite, coal, amber
3300 - 3310	90	Silty claystone, as above
	10	Glauconite, coarse grain, medium green
	Tr	Loose quartz, fine grain-coarse grain
3310 - 3320	100	Sandstone, white, yellow-brown and green, coarse grain, sub-rounded, moderately sorted, loosely consolidated, glauconitic (glauconite up to 10%) (Some medium grain to fine grain material is weakly cemented).
3320 - 3330	100	Sandstone, green sand, as above
3330 - 3340	100	Sandstone, green, as above
3340 - 3350	100	Sandstone, as above but sample is in fact very clayey. Drilling rate suggests back in silty claystone, as above
3350 - 3360		Texture indicates very clayey, Washed sample 100% sandstone, as above

.../

INTERVAL	%	LITHOLOGICAL DESCRIPTION
3360 - 3370	100	Sandstone, green, coarse grain, moderately sorted, sub-rounded loosely consolidated, strongly glauconitic. (glauconite up to 40%). Quartz grains are white, clear, yellow-brown, light green. (These contain chamosite or glauconite clay on microfractures). Trace coarse grain pyrite
3370 - 3380	100	Sandstone, dark green, coarse grain, as above, glauconite up to 70%. Note:- sample volume down; desanders are running, sampling revealed much fine grain sand (some green sand as described for the coarse grain species).
3380 - 3390	100	Sandstone, dark green, as above, fine-medium grain, poorly sorted, glauconite ≈ 35%, quartz is increasingly dirty, (i.e.: green staining on microfractures). trace coarse grain, pyrite
3390 - 3400	100	As for 3380 - 3390' with glauconite down to 20%
3400 - 3410	100 Tr	As for 3390 - 3400' Coarse grain, pyrite
3410 - 3420	100 Tr	As for 3390 - 3400' Coarse grain, pyrite
3420 - 3430	100 Tr	Sandstone, green, fine-medium-coarse grain, poorly sorted, sub-rounded, loosely consolidated and weakly cemented in places. Cement may be glauconitic clay and pyrite Silty claystone, grey, soft
3430 - 3440	100 Tr Tr	Sandstone, as above, more strongly glauconitic; up to 80%, much of it is paler green clayey acting as a cement. Much of the quartz is yellow-brown Silty claystone, grey, soft, slightly carbonaceous Pyrite, coarse grain, as above
3440 - 3450		As for 3430 - 3440'
3450 - 3460		As for 3430 - 3440' The trace of silty claystone is becoming more abundant
3460 - 3470		As for 3430 - 3440' but glauconite down to 60%.
3470 - 3480		As for 3430 - 3440', glauconite down to 40%. Trace of silty claystone more abundant
3480 - 3490		As for 3470 - 3480'
3490 - 3510	95 5	Glauconitic greensand as above Silty claystone, grey, soft, slightly carbonaceous
3510 - 3530		As for 3490 - 3510'
3530 - 3550		As for 3490 - 3510'
3550 - 3570		As for 3490 - 3510'
3570 - 3590		As for 3490 - 3510'

.../

INTERVAL	%	LITHOLOGICAL DESCRIPTION
3590 - 3600	90	Glauconitic greensand, as above
	10	Clayey siltstone, light grey, slightly carbonaceous, soft-firm
3600 - 3610	70	Glauconitic greensand, as above
	30	Siltstone, clayey, light grey, slightly carbonaceous, soft-firm
3610 - 3620		As for 3600 - 3610' Note: from 3586' the glauconite sand has been a cave-in component
3620 - 3630	80	Siltstone, clayey, light grey to medium grey, slightly carbonaceous and slightly glauconitic, soft-firm
	20	Glauconitic greensand, cave-in, as above
3630 - 3640	90	Siltstone, as above
	10	Glauconitic greensand, cave-in, as above
3640 - 3650	90	Siltstone, as above
	10	Glauconitic greensand, cave-in, as above
3650 - 3660	95	Siltstone, as above
	5	Glauconitic greensand, cave-in, as above
3660 - 3670	95	Siltstone, as above
	5	Glauconitic greensand, cave-in, as above
3670 - 3680	50	Siltstone, as above
	50	Glauconitic greensand, as above, fine coarse grain, drill rate suggests could correlate with a thin interbed of sand in this 10' interval
3680 - 3690	80	Siltstone, as above
	20	Glauconite, sub-rounded, fine-medium grain, (probably cave-in material, but may be in situ?).
3690 - 3700	80	Siltstone, as above
	20	Glauconite, sub-rounded, fine-medium grain (probably cave-in material but may be in situ?).
	Tr	Quartz grains of green sand (cave-in!).
3700 - 3710		As for 3690 - 3700'
3710 - 3720		As for 3690 - 3700'
3720 - 3730	100	Silty claystone, medium grey, strongly glauconitic, soft
3730 - 3740	100	Silty claystone, medium grey, strongly glauconitic, soft
3740 - 3750	100	Silty claystone, medium grey, moderately glauconitic, soft
3750 - 3760	90	Silty claystone, as above
	10	Glauconitic sub-rounded, fine-medium grain, (probably cave-in but may be in situ).
3760 - 3770		As for 3750 - 3760'

INTERVAL	%	LITHOLOGICAL DESCRIPTION
3770 - 3780	100	Siltstone, clayey, firm, light to medium grey, moderately glauconitic
	Tr	Glauconite sand, quartz of green sand unit
3780 - 3790	100	Siltstone, clayey, as above
	Tr	Thick walled lamellibranch fragments
3790 - 3800		As for 3780 - 3790'
3800 - 3810	20	Sandstone, fine grain, hard, cemented, buff to white with medium grain glauconite grains, tight, no porosity, slightly calcareous
	80	Siltstone, clayey as above
	Tr	Thick walled lamellibranch fragments
	Tr	Pyrite and green sand quartz and glauconite (cave-in?).
3810 - 3820		As for 3800 - 3810'
		Note a turreted gastropod
	Tr	Buff, brown, limestone, cryptocrystalline
	Tr	Coal, black, fibrous and lignitic brown coal material
3820 - 3830	30	Sandstone, fine grain, hard to firm, cemented, buff to white with medium grain, glauconite grains, slightly calcareous, tight, no porosity
	70	Siltstone, clayey, as above
	Tr	Shell fragments and green sand quartz and glauconite
3830 - 3840	70	Sandstone, as above
	30	Siltstone, clayey, as above
	Tr	Shell fragments and green sand, quartz and glauconite, coarse grain, pyrite
3840 - 3850	70	Sandstone, as above
	20	Siltstone, clayey, medium grey, soft, as above
	10	Siltstone, brown, hard, gradational to brown buff, sandstone, slightly calcareous
	Tr	Limestone, grey, cryptocrystalline
3850 - 3860	20	Siltstone, clayey, medium grey, soft, as above
	70	Calcsiltite, buff-brown and light grey, hard, (strongly calcareous, siltstone).
	5	Sandstone, cemented, as above
	5	White, calcite, yellow-mineral fluorescence
3860 - 3870	90	Siltstone, clayey, medium grey, soft-firm, slightly glauconitic, slightly micaceous, as above
	10	Calcsiltitite, as above
	Tr	Sandstone, cemented, as above
	Tr	White, calcite
3870 - 3880	90	Sandstone, white-clear, dominantly coarse grain, medium-very coarse grain, moderately sorted, sub-rounded to sub-angular, loosely consolidated
	10	Clayey siltstone, as above
	Tr	Calcsiltitite, as above
	Tr	Glauconite, coarse grain, pyrite and cemented sandstone, as above
		- all cave-ins

INTERVAL	%	LITHOLOGICAL DESCRIPTION
3880 - 3890	70	Sandstone, white-clear, loose, as above
	30	Clayey siltstone, as above, medium grey, soft, slightly glauconitic
	Tr	Limestone, grey, cryptocrystalline
	Tr	Fine-medium-grain, glauconite, coarse grain, pyrite, cave-in material. What is principal lithology? Drill rate suggests the soft clayey siltstone rather than the loose sandstone, the clayey siltstone could be very dispersive
3890 - 3900	80	Sandstone, white-clear, coarse grain, moderate to well sorted, sub-rounded to sub-angular, loosely consolidated
	10	Clayey siltstone, as above
	10	Coal, black, dull with associated amber and associated brown seat-earth clay (dispersive). (The comment for 3880 - 3890 could be still valid though, with the influx of the coal and seat-earth material less likely).
3900 - 3910	55	Sandstone, white-clear, coarse grain, as above
	40	Coal black, as above and associated brown seat-earth clay
	Tr	Brown, buff, dolomite
	Tr	Brown, buff, fine grain cemented sandstone and siltstone
3910 - 3920	5	Clayey siltstone, as above
		As for 3900 - 3910' Note:- Sandstone has weak siliceous cement, aggregate grain size is coarse, coarse grain are in part mosaics of fine-medium grain (dominantly medium grain) quartz therefore grain size definition is difficult. Grains sub-rounded to sub-angular. Minor pyritic cement.
3920 - 3930	Tr	White, fine grain, cemented sandstone, hard to brittle
	80	Sandstone, white-clear, coarse grain, as above
	10	Clayey siltstone, as above
	10	Glauconite, fine-medium grain, rounded
	Tr	White, fine grain, cemented sandstone
	Tr	Black shale, carbonaceous, and/or black coal
3930 - 3940	Tr	Iron stained, yellow-brown quartz and coarse grain quartz
	20	Clayey siltstone, as above
	75	Sandstone, white-clear, coarse grain, very coarse grain, sub-rounded to sub-angular, moderate to well sorted, loose
	5	Sandstone, white-buff, fine grain, cemented, firm to hard
3940 - 3950	Tr	Buff dolomitic sandstone, hard
	20	Glauconite, fine-medium grain, rounded
	65	Sandstone, coarse grain, moderated to well sorted, very coarse grain-medium grain, sub-rounded
	15	Clayey siltstone, as above
	Tr	Note:- 3944 - 3950' spot sample, almost 100% black coal, carbonaceous shale, black, pyritic and brown clayey seat earth, note well trace of sandstone as for 3800 - 3810' interval, i.e.- typical Flaxman Sand).

.../

INTERVAL	%	LITHOLOGICAL DESCRIPTION
3950 - 3960	40	Clayey siltstone, as above
	5	Coal, black, dull, pyrite
	5	Fine grain cemented sandstone, buff, glauconite like 3800 - 3810'
	50	Sandstone, coarse grain, loose, as above
	Tr	Coarse grain, pyrite, glauconite, fine-medium grain, rounded, buff limestone
3960 - 3970	5	Buff, cryptocrystalline limestone and slightly calcareous, fine grain, glauconite sandstone as for 3800 - 3810'
	40	Clayey siltstone, as above
	5	Black carbonaceous shale, pyrite and trace black coal
	5	Sandstone, coarse grain, loose, as above, slightly pyritic cement on fractures
	Tr	Coarse grain, pyrite
3970 - 3980	80	Clayey siltstone, as above
	10	Glauconite
	10	Quartz grains, coarse grain, white-clear, sub-angular to sub-rounded
	Tr	Coarse grain pyrite
	Tr	Buff, fine grain, cemented, dolomitic sandstone
3980 - 3990	70	Sandstone, buff, white, fine grain, cemented, hard, dolomitic in part?
	20	Clayey siltstone, medium grey, soft, slightly glauconitic
	10	Glauconite, coarse grain, pyrite, loose clear-white quartz
	Tr	Slicken sided flounder calcite
3990 - 4000	10	Glauconite and coarse grain, pyrite
	40	Loose quartz, coarse grain
	40	Clayey sandstone, as above
	10	Sandstone, buff, white, fine-medium grain, cemented, hard, possibly feldspathic, medium grain, glauconite
4000 - 4010		As for 3990 - 4000'
4010 - 4020	30	Sandstone, white, fine grain, with prominent white, calcareous clayey (probably Kaolin) cement, firm to hard, tight, no visible porosity
	10	Sandstone, buff, cemented, hard, as above
	30	Clayey, siltstone, glauconitic, as above
	10	Glauconite, medium-coarse grain, sub-rounded
	Tr	White calcite
	20	Loose quartz grains, as above
4020 - 4030	20	Clayey siltstone, slightly glauconitic, as above, soft
	20	Loose quartz grains, as above
	10	Glauconite, medium-coarse grain, sub-rounded
	50	Sandstone, as above, white, fine grain, cemented
4030 - 4040	90	Sandstone, loosely consolidated quartz, clear and/or brown, yellow, coarse grain
	10	Clayey siltstone, as above
	Tr	Coal, black, carbonaceous shale
4040 - 4050	70	Clayey siltstone, medium grey, soft, slightly glauconitic
	20	Sandstone, loose, as above
	10	Sandstone, white, cemented, fine grain, as above
		Note:- trace orange-brown clayey material

INTERVAL	%	LITHOLOGICAL DESCRIPTION
4050 - 4060	70	Sandstone, loose, as above
	20	Clayey siltstone, as above
	10	Sandstone, white cemented, fine grain, as above
	Tr	Black coal, shell fragments, buff, fine grain-medium grain, sandstone with glauconite
	Tr	Orange-brown, clayey material
4060 - 4070	40	Glauconitic green sand, fine-medium grain, moderately sorted, sub-rounded
	20	Sandstone, white, fine-grain, cemented, white clay matrix, as above
	20	Clayey siltstone, slightly glauconitic, soft, as above
	20	Sandstone, loose, coarse grain, as above
	Tr	Coarse grain, pyrite
	Tr	Orange-brown clayey material
4070 - 4080	95	Sandstone, white, fine-grain, cemented, with calcareous and clayey (Kaolin), lithic (in part), minor glauconite grains, firm to hard, tight, no visible porosity
	5	Coal, black
	Tr	Sandstone, loose, as above
4080 - 4090	80	Sandstone, cemented, as above
	10	Sandstone, loose as above
	10	Glauconite, fine-medium grain, well rounded
	Tr	Coarse grain, pyrite
4090 - 4100	30	Sandstone, cemented, as above. Note:- yellow-brown coarse grain dolomite (or siderite) (reacts with hot acid) associated with this sandstone
	10	Glauconite
	Tr	Coarse grain, pyrite
	60	Loose quartz, medium-coarse grain
4100 - 4110	60	Sandstone, cemented, fine grain with calcareous and clay cement lithic
	10	Siltstone clayey, soft, medium grey, as above
	30	Loose quartz, coarse grain
	Tr	Coarse grain, pyrite
4110 - 4120	90	Sandstone, yellow-brown and white, yellow-brown coarse grain dolomite (or siderite?) grains cemented:- fine grain cemented, white sandstone, lithic feldspathic slightly calcareous and clayey.
	10	Sandstone, loose quartz, coarse grain, as above
4120 - 4130	100	Sandstone, as for 4110 - 4120'
	Tr	Coal, black, loose quartz
4130 - 4140	100	Sandstone, as for 4110 - 4120', note same brick red lithics
4140 - 4150	100	Claystone light grey, very soft, puggy, may have some Kaolin content due to trace white material

.../

INTERVAL	%	LITHOLOGICAL DESCRIPTION
4150 - 4160	90	Claystone, light grey, soft, puggy, as above
	10	Lithic sandstone, as above. Note:- orange-brown, silty material (weathering surface).
4160 - 4170	10	Lithic sandstone, white, green-grey, fine-medium grain, white clayey, calcareous cement, feldspathic. This sandstone is lithic/feldspathic dominant with very little quartz. Coarse grain, grey, green and brown meta-quartzite grains are basically loose but are obviously part of the sandstone (as finer grained grains are cemented in the lithic sandstone and the coarse grains have cement remnants on them). Tight, no porosity. Note:- also the orange-brown silty material.
	90	Claystone, light grey, soft, puggy, dispersive
4170 - 4180	90	Claystone, as above
	10	Lithic sandstone, as above
	Tr	Siltstone, grey, soft-firm, speckled pepper and salt texture. (Presumably black = carbonaceous, white-feldspathic).
4180 - 4190	90	Siltstone, clayey, grey-white, light green, soft-firm, speckled pepper and salt texture, as above
	5	Meta-quartzite lithic grains, as above
	5	Coal, black. Note:- these percentages are of the washed sample it probably only represent 10% of the whole cut interval. 90% is claystone, as above
4190 - 4200		As for 4180 - 4190'
	Tr	With also a fine grain lithic sandstone with red-brown lithics
4200 - 4210		As for 4189 - 4190'
4210 - 4220		As for 4180 - 4190'
		With trace coal black and pyritic cement in lithic sandstone
4220 - 4230	90	Claystone, grey, soft, puggy, as above
	10	Siltstone, grey-white, light green, soft-firm, speckled, as above
4230 - 4240		As for 4220 - 4230'
4240 - 4250		As for 4220 - 4230'
4250 - 4260		As for 4220 - 4230'
4260 - 4270		As for 4220 - 4230'
4270 - 4280	90	Claystone, as above
	10	Lithic sandstone, as above (Lithics 70%, Quartz 30%)
4280 - 4290		As for 4270 - 4280'
4290 - 4300	100	Lithic sandstone, as above, medium-coarse grain (Lithics 80%, Quartz 20%)
	Tr	Black coals How much clay has been washed out of this sample is unknown

INTERVAL	%	LITHOLOGICAL DESCRIPTION
4300 - 4310	90 10	Lithic sandstone, medium-coarse grain as for 4290 - 4300' Siltstone, as for 4220 - 4230'
4310 - 4320	100 Tr	Lithic sandstone, medium-coarse grain as above (Lithics 80%, Quartz 20%) Siltstone and claystone, as above
4320 - 4330		As for 4310 - 4320'
4330 - 4340		As for 4320 - 4330', trace pyritic cement
4340 - 4350		As for 4320 - 4330'
4350 - 4360		As for 4330 - 4340'
4360 - 4370		As for 4330 - 4340'
4370 - 4380		As for 4330 - 4340'
4380 - 4390		As for 4330 - 4340' with trace of yellow-brown quartz and red lithic, trace coarse grain pyrite
4390 - 4400		As for 4380 - 4390'
4400 - 4410		As for 4380 - 4390'
4410 - 4420		As for 4330 - 4340'
4420 - 4430		As for 4380 - 4390'
4430 - 4440	90 10	Lithic sandstone, as above Siltstone, clayey, light green - light grey
4440 - 4450	30 70	Siltstone, clayey, light green - light grey, speckled Lithic sandstone, as above
4450 - 4460	90 10	Claystone, light grey, puggy, as above Lithic sandstone, as above
4460 - 4470		As for 4450 - 4460'
4470 - 4480		As for 4450 - 4460'
4480 - 4490	20 80	Siltstone, clayey, light green - light grey, speckled Lithic sandstone, as above
4490 - 4500	90 10	Lithic sandstone, very fine grain, light grey-light white grading into Siltstone, as above Lithic sandstone, medium-coarse grain, as above
4500 - 4510	70 30	Sandy lithic claystone, light grey-white, very soft Lithic sandstone, medium-coarse grain, as above

INTERVAL	%	LITHOLOGICAL DESCRIPTION
4510 - 4520		As for 4500 - 4510'
4520 - 4530	20 80	Sandy lithic claystone, very soft, light grey-white, as above Lithic sandstone, medium grain, as above
4530 - 4540	10 90	Sandy lithic claystone, very soft, light grey-white, as above Lithic sandstone, medium grain, as above
4540 - 4550	10 90	Siltstone, clayey, light green - light grey, speckled, soft Lithic sandstone, medium-coarse grain, as above
4550 - 4560	70 30	Siltstone, to fine, grained sandstone, clayey, light grey Lithic sandstone, medium grained minor carbonate material, sub-rounded
4560 - 4570	70 30	Lithic sandstone medium grained, sub-angular to sub-rounded consisting 60% quartz, 40% lithics Siltstone as matrix, light grey - grey, moderately soft-soft. Koalin matrix
4570 - 4580		As above, 50% lithics and 50% quartz
4580 - 4590	80 20	Lithic sandstone, medium grained, as above Siltstone, matrix, as above
4590 - 4600		As for 4580 - 4590'
4600 - 4610	90 10	Sandstone, medium grained, weak siliceous cement, moderately hard, lithic fragments, sub-rounded Sandstone, medium grained, carbonate cement, moderately soft, quartz grains only
4610 - 4620	100	Sandstone, medium grained, siliceously cemented, as above
4620 - 4630	100	Sandstone, medium grained, siliceously cemented, as above with possible Kaolinitic clayey matrix
4630 - 4640	100	Sandstone, medium grained, siliceously cemented, as above. Abundant 80%, Kaolin as Matrix.
4640 - 4650	30 70	Sandstone, lithic, light grey to grey, green, medium to coarse grain, sub-rounded, with weak siliceous cement lithic fragments are mainly quartzite. Together with Siltstone, clayey light grey speckled strongly kaolinitic, soft to very soft
4650 - 4660	60 30 20	Sandstone, lithic grey, medium to coarse grained, sub-angular, with weak siliceous cement. Mainly quartzite lithics Claystone, kaolinitic, light grey to white, soft to very soft Siltstone, grey to green, moderately soft
4660 - 4670	60 20 20	Sandstone, lithic, as above Siltstone, as above Claystone, as above

.../

26

INTERVAL	%	LITHOLOGICAL DESCRIPTION
4670 - 4680		As for 4660 - 4670'
4680 - 4690	20	Siltstone, as above
	60	Sandstone, lithic as above
	20	Claystone, as above
4690 - 4700		As for 4600 - 4700
4700 - 4710	10	Siltstone, grey to green, moderately hard
	Tr	Siltstone, light grey and speckled
	20	Claystone, as above
	70	Sandstone, as above
4710 - 4720	30	Claystone, as above
	20	Siltstone, grey to green, moderately hard
	50	Sandstone, as above
4720 - 4730		As for 4710 - 4720
4730 - 4740		As for 4710 - 4720
4740 - 4750		As for 4710 - 4720
4750 - 4760	50	Claystone, as above
	25	Siltstone, as above
	25	Sandstone, as above
4760 - 4770	20	Siltstone, as above
	50	Claystone, as above
	30	Sandstone, as above
	Tr	Black coal, vitreous
4770 - 4780	10	Siltstone, grey green to brown, moderately hard
	50	Claystone, as above
	40	Sandstone, as above
	Tr	Black coal, as above
4780 - 4790		As for 4770 - 4780
4790 - 4800	60	Claystone, as above
	30	Sandstone, as above
	10	Siltstone, as above
	Tr	Black coal, as above
4800 - 4810		As for 4790 - 4800'
4810 - 4820		As for 4790 - 4800'
4820 - 4830	50	Sandstone, as above
	30	Siltstone, as above
	20	Claystone, as above
	Tr	Black coal, as above
4830 - 4840	70	Sandstone, as above
	20	Claystone, as above
	10	Siltstone, as above

.../

INTERVAL	§	LITHOLOGICAL DESCRIPTION
4840 - 4850	50	Sandstone, as above
	20	Siltstone, as above
	30	Claystone, as above
4850 - 4860	50	Claystone, as above
	10	Siltstone, as above
	40	Sandstone, as above
	Tr	Black coal as above, and minor pyrite nodular
4860 - 4870	70	Claystone, white kaolinitic light grey to white, soft to very soft
	10	Siltstone, green-brown-grey, moderate hardness
	20	Sandstone, lithic, as above
4870 - 4880	70	Claystone, as above
	20	Siltstone, as above
	10	Sandstone, as above
	Tr	Shale, black and carbonaceous
	Tr	Pyrite
4880 - 4890	70	Claystone, as above
	25	Sandstone, as above
	5	Siltstone, as above
4890 - 4900	Tr	Shale, black, hard
	Tr	Glauconite, green, fine grain, rounded
	90	Sandstone, lithics include yellow quartz
	5	Claystone, as above
	5	Siltstone, as above
	Tr	Pyrite, nodular
4900 - 4910		As for 4890 - 4900'
4910 - 4920		As for 4890 - 4900'
4920 - 4930	70	Sandstone, as above
	20	Claystone, as above
	10	Siltstone, as above
	Tr	Pyrite, as above
	Tr	Shale, as above
	Tr	Glauconite, as above
4930 - 4940		As for 4920 - 4930'
4940 - 4950	50	Claystone, as above
	20	Siltstone, as above
	30	Sandstone, as above
	Tr	Glauconite, as above
4950 - 4960	50	Claystone, as above
	5	Siltstone, as above
	45	Sandstone, as above
	Tr	Pyrite nodular
	Tr	Glauconite, as above
	Tr	Shale, black carbonaceous, pyritised

.../

INTERVAL	\$	LITHOLOGICAL DESCRIPTION
----------	----	--------------------------

4960 - 4970	20	Siltstone, as above
	30	Claystone, as above
	Tr	Pyrite, as above
	Tr	Shale, as above

4970 - 4974		As for 4960 - 4970'
-------------	--	---------------------

TOTAL DEPTH 4974'

APPENDIX - 3

VELOCITY SURVEY

BY

VELOCITY DATA PTY. LTD.

WELL VELOCITY SURVEY

NORTH PAARATTE NO. 3

PEP 93

Victoria

for

BEACH PETROLEUM NO LIABILITY

by

Velocity Data Pty Ltd.

Brisbane, Australia

June 15, 1980

INDEX

	<u>Page</u>
SUMMARY	1
GENERAL COMMENTS	1
EQUIPMENT	2
RECORDING	2
COMPUTATIONS	3
COMPUTATION SHEETS	

Figures:

Figure 1	Location Map
Figure 2	Shot location sketch
Figure 3	Time-depth points and Velocity Functions
Figure 4	Time-depth, average velocity and interval velocity curves Sample Records

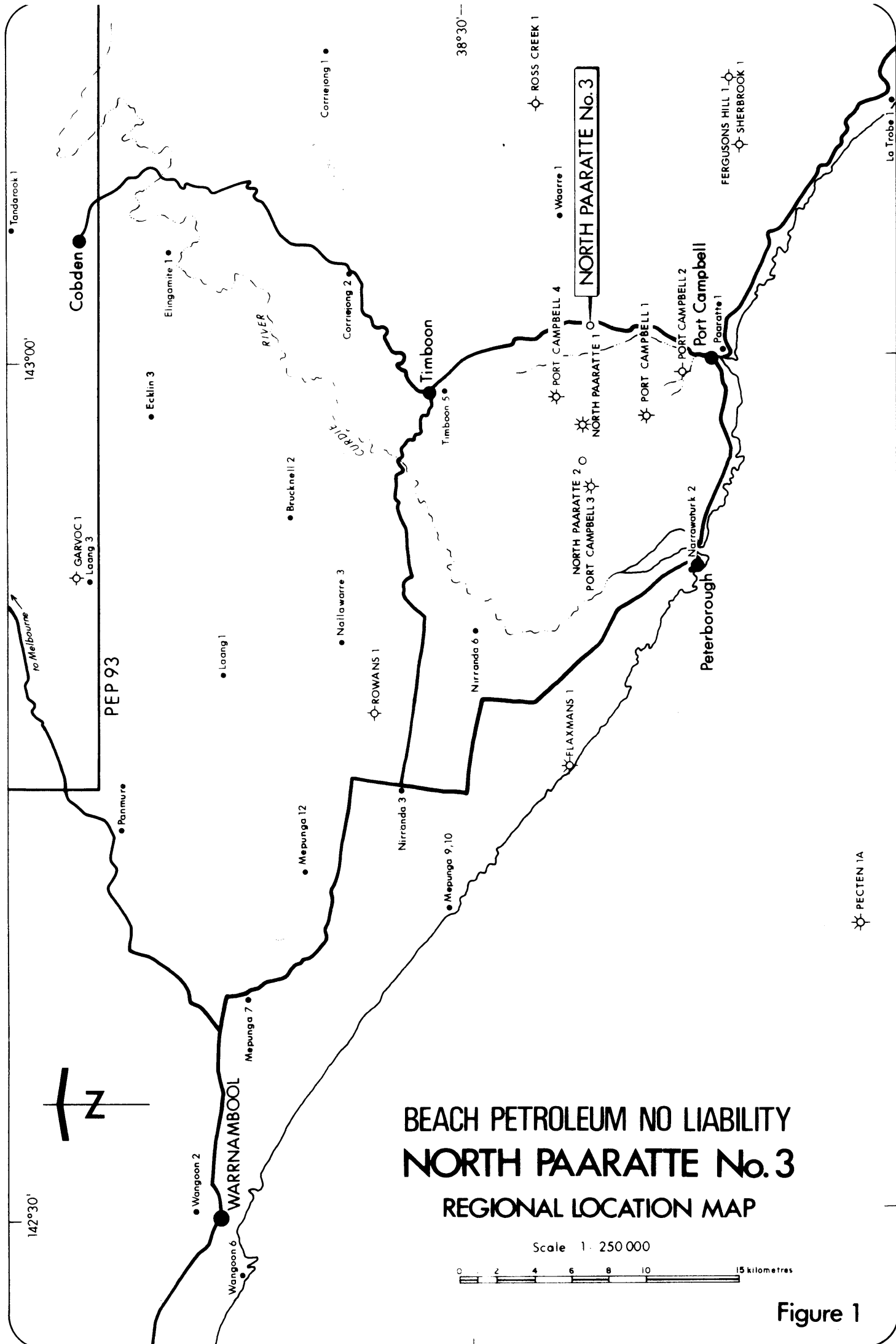
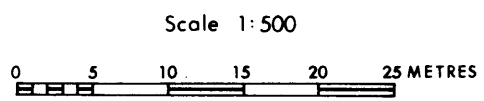
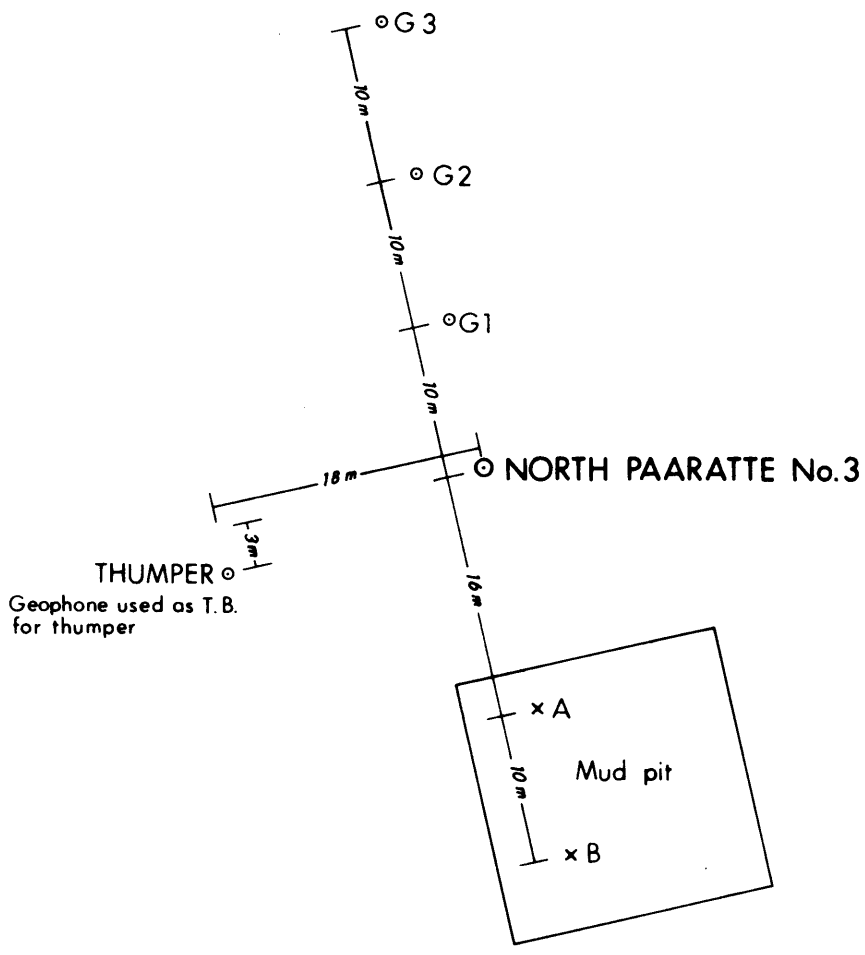
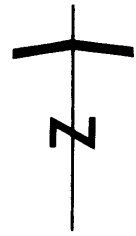


Figure 1



BEACH PETROLEUM NO LIABILITY
NORTH PAARATTE No.3
SHOT POINT LOCATION SKETCH

Figure 2

SUMMARY

Velocity Data Pty. Ltd. conducted a velocity survey for Beach Petroleum No Liability in the North Paaratte No. 3 Well, PEP93, Victoria. The date of the survey was June 15, 1980.

Twenty-eight shots were taken over eleven levels in the well. Twelve of these shots were with a surface thumper and these have not been used in preparing this report. Except for the shots taken at datum (175 feet below kelly bushing), record quality was fair to good.

Explosives were used as an energy source, the charges varying between one half and three sticks of dynamite. Charges were fired in the mud pit.

The survey was used to calibrate sonic logs. A calculated depth function of $Z = 8851t^{1.197}$ is a reasonable fit to the time-depth curve.

The well was surveyed to a depth of 4948 feet below kelly bushing.

GENERAL

Velocity Data Pty. Ltd. of Brisbane, Australia, conducted a velocity survey for Beach Petroleum N.L. on June 15, 1980. One man and the equipment travelled from Brisbane by air. A second man was mobilised from Adelaide.

Name of Well	: North Paaratte No. 3
Location	: PEP93, Victoria
Co-ordinates	: Lat. 38°33'18"S. Long. 143°00'48.4"E.
Date of Survey	: June 15, 1980
Elevation of K.B.	: 175 feet ASL
Logging	: Go-International
Weather	: Windy and wet
Sonic Log Interval	: 426 to 4958 feet below K.B.
Depth Surveyed	: 4948 feet below K.B.
Operator	: H. Hunt

COMPUTING

Sonic times are adjusted to check-shot times using two methods.

- 1) A linear correction

$$\frac{(t_{L_2} - t_{R_2}) - (t_{L_1} - t_{R_1})}{Z_2 - Z_1} = \text{correction in } \mu\text{secs/ft.}$$

- 11) A differential correction

$$100 \left(1 - \frac{(t_{R_2} - t_{R_1})}{(t_{L_2} - t_{L_1})} \right) = \% \text{ decrease in interval time}$$

where t_L = sonic log time

t_R = record time

and $Z_2 - Z_1$ = depth interval

Where check-shot interval times are longer than corresponding sonic interval times, errors are assumed to be instrumental and are adjusted using the linear correction. However, if formation characteristics, such as high porosity or the presence of gas are suspected, the differential correction is used.

The differential correction is also applied where check-shot interval times are shorter than corresponding sonic times and these differences are assumed to arise from caving or mud cake effects.

The quality of the shots taken at datum was very poor. The results of Shot 28, although very weak, have been used in calculations since resulting velocity is in reasonable agreement with the shallow refraction profiling in the vicinity of the well.

A datum correction time of -0.027^3 has been applied. No other corrections have been applied when relating two way times to the record section.

The two shots taken at total depth (4948 feet) were in close agreement. Elsewhere single shots were taken at each level. Shot 8 at the top of the Otway (4130 feet) has not been used in calculations since a plot of the time-depth point indicates an obvious error in the recorded depth.

The discrepancy between the shot interval time and the corresponding sonic interval time over the interval 656 to 1544 feet is very large. The difference of 30 milliseconds indicates possible cycle skipping on the sonic log over this interval. Elsewhere the differences are moderate, ranging from 2.6 to 6.5 μ secs/ft. over the intervals down to the Warre Sandstone. Below this the discrepancy is very small.

A calculated depth function $Z = 8851t^{1.197}$ fits the time-depth curve closely except for one point at the Nullawarre Greensand.

Time-depth and velocity curves are submitted with this report along with copies of the field records.



L.W. Pfitzner

PE906825

This is an enclosure indicator page.
The enclosure PE906825 is enclosed within the
container PE902711 at this location in this
document.

The enclosure PE906825 has the following characteristics:

ITEM_BARCODE = PE906825
CONTAINER_BARCODE = PE902711
 NAME = Check Shot and Sonic Data, 1 of 2
 BASIN = OTWAY
 ONSHORE? = Y
 DATA_TYPE = WELL
 DATA_SUB_TYPE = VELOCITY
 DESCRIPTION = Check Shot and Sonic Point Data, 1 of
 2, North Paaratte-3
 REMARKS = PERMIT: PEP93PAGES: 1
 DATE_WRITTEN = 15-JUN-1980
DATE_PROCESSED =
DATE_RECEIVED =
RECEIVED_FROM =
 WELL_NAME = NORTH PARRATTE-3
 CONTRACTOR = Velocity Data Pty. Ltd.
 AUTHOR =
 ORIGINATOR = Beach Petroleum NL
 TOP_DEPTH =
 BOTTOM_DEPTH =
ROW_CREATED_BY = xls_jc40

(Inserted by DNRE - Vic Govt Mines Dept)

PE906826

This is an enclosure indicator page.
The enclosure PE906826 is enclosed within the
container PE902711 at this location in this
document.

The enclosure PE906826 has the following characteristics:

ITEM_BARCODE = PE906826
CONTAINER_BARCODE = PE902711
NAME = Check Shot and Sonic Data, 2 of 2
BASIN = OTWAY
ONSHORE? = Y
DATA_TYPE = WELL
DATA_SUB_TYPE = VELOCITY
DESCRIPTION = Check Shot and Sonic Point Data, 2 of
2, North Paaratte-3
REMARKS = PERMIT: PEP93PAGES: 1
DATE_WRITTEN = 15-JUN-1980
DATE_PROCESSED =
DATE_RECEIVED =
RECEIVED_FROM =
WELL_NAME = NORTH PARRATTE-3
CONTRACTOR = Velocity Data Pty. Ltd.
AUTHOR =
ORIGINATOR = Beach Petroleum NL
TOP_DEPTH =
BOTTOM_DEPTH =
ROW_CREATED_BY = xls_jc40

(Inserted by DNRE - Vic Govt Mines Dept)

PE906827

This is an enclosure indicator page.
The enclosure PE906827 is enclosed within the
container PE902711 at this location in this
document.

The enclosure PE906827 has the following characteristics:

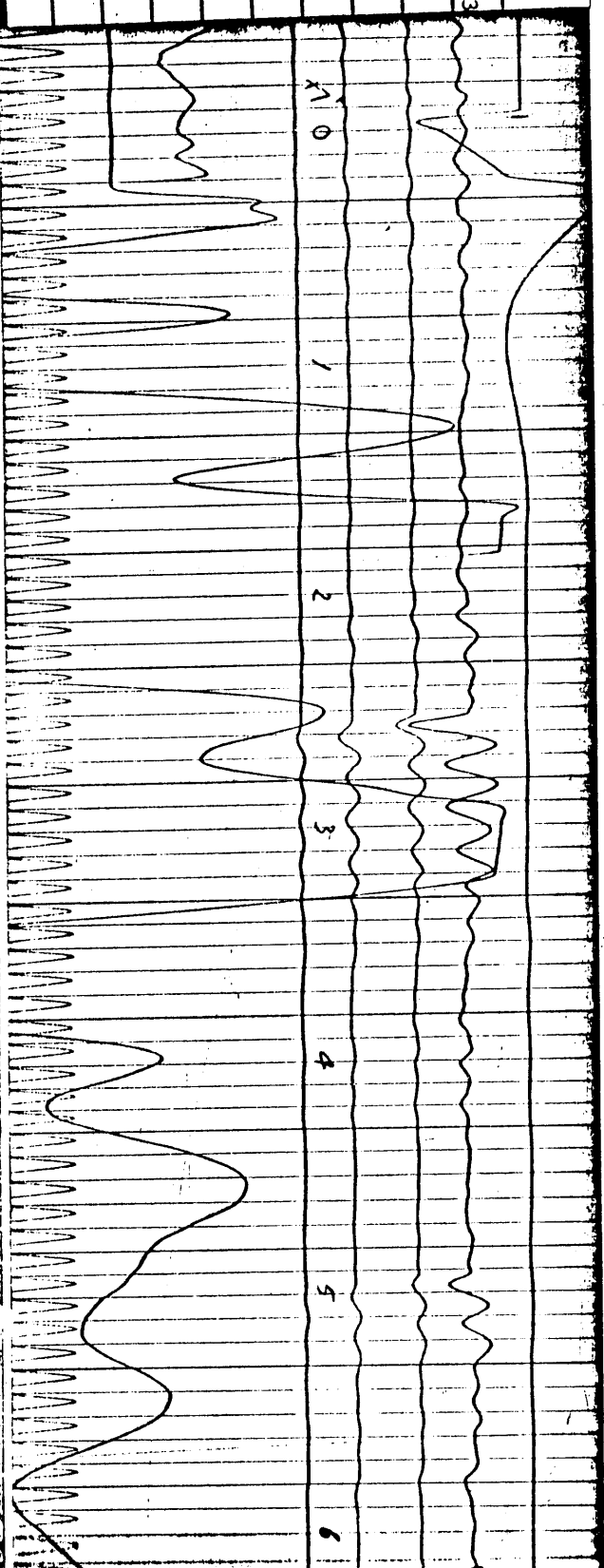
ITEM_BARCODE = PE906827
CONTAINER_BARCODE = PE902711
NAME = Seismic Section and Time-Depth Curve
BASIN = OTWAY
ONSHORE? = Y
DATA_TYPE = WELL
DATA_SUB_TYPE = MONTAGE
DESCRIPTION = Seismic Section and Time-Depth and
Velocity Curve for North Paaratte-3
REMARKS = PERMIT: PEP93PAGES: 1
DATE_WRITTEN = 15-JUN-1980
DATE_PROCESSED =
DATE_RECEIVED =
RECEIVED_FROM =
WELL_NAME = NORTH PARRATTE-3
CONTRACTOR = Velocity Data Pty. Ltd.
AUTHOR =
ORIGINATOR = Beach Petroleum NL
TOP_DEPTH =
BOTTOM_DEPTH =
ROW_CREATED_BY = xls_jc40

(Inserted by DNRE - Vic Govt Mines Dept)

9/23

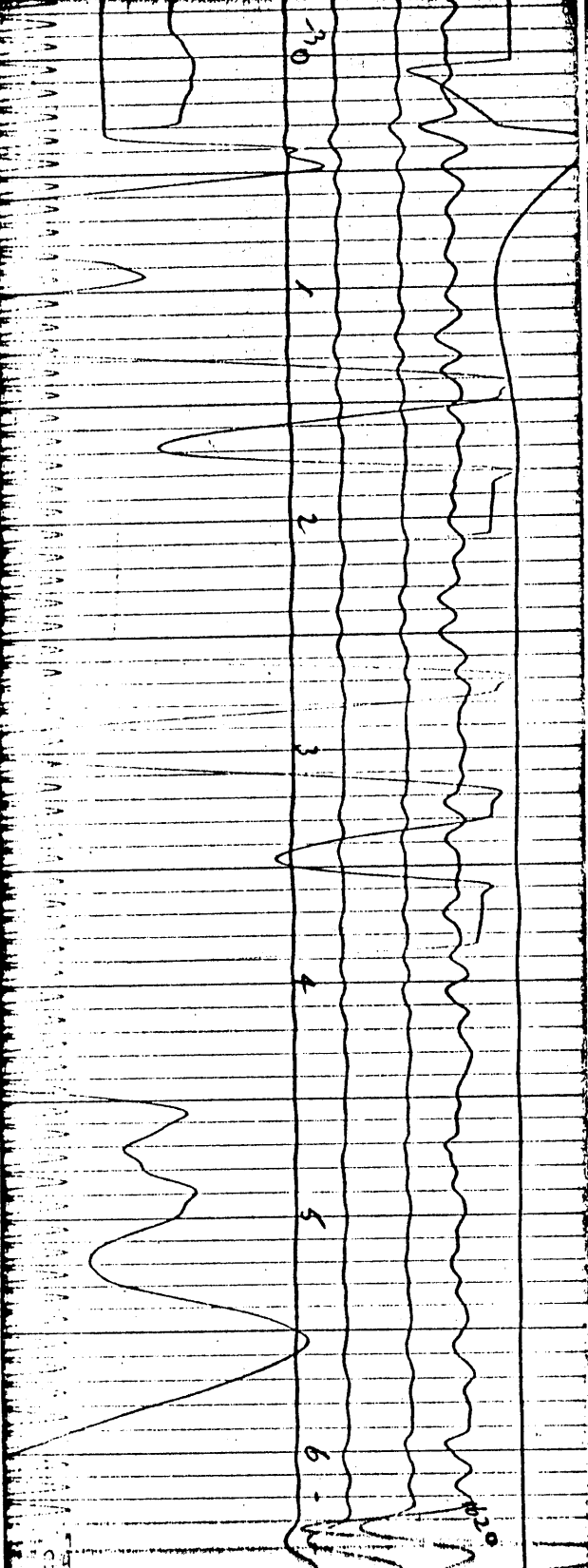
VELOCITY SURVEY

FOR: BEACH PETROLEUM N.L.
 NAME: NORTH PARAPATTE NO. 3
 RECORD NO. 5
 ELEV. K.B. 175'
 DEPTH BELOW K.B. 4948'
 ENERGY SOURCE Dyn.
 SHOT DEPTH 6'
 CHARGE SIZE 2 sts.
 ATTENUATION 50 db
 OFFSET 52'
 Velocity Data, Brisbane



VELOCITY SURVEY

FOR: BEACH PETROLEUM N.L.
 NAME: NORTH PARAPATTE NO. 3
 RECORD NO. 7
 ELEV. K.B. 175'
 DEPTH BELOW K.B. 4948'
 ENERGY SOURCE Dyn.
 SHOT DEPTH 6'
 CHARGE SIZE 4 sts.
 ATTENUATION 50 db
 OFFSET 52'
 Velocity Data, Brisbane



10/23

VELOCITY SURVEY

FOR: BEACH PETROLEUM N.L.

NAME: NORTH PARATTEE NO. 3

RECORD NO. 8

ELEV. K.B. 175'

DEPTH BELOW K.B. 4130'

ENERGY SOURCE Dyn.

SHOT DEPTH 6'

CHARGE SIZE 3 sts.

ATTENUATION 50db

OFFSET 52'

Velocity Data, Brisbane

VELOCITY SURVEY

FOR: BEACH PETROLEUM N.L.

NAME: NORTH PARATTEE NO. 3

RECORD NO. 10

ELEV. K.B. 175'

DEPTH BELOW K.B. 3869'

ENERGY SOURCE Dyn.

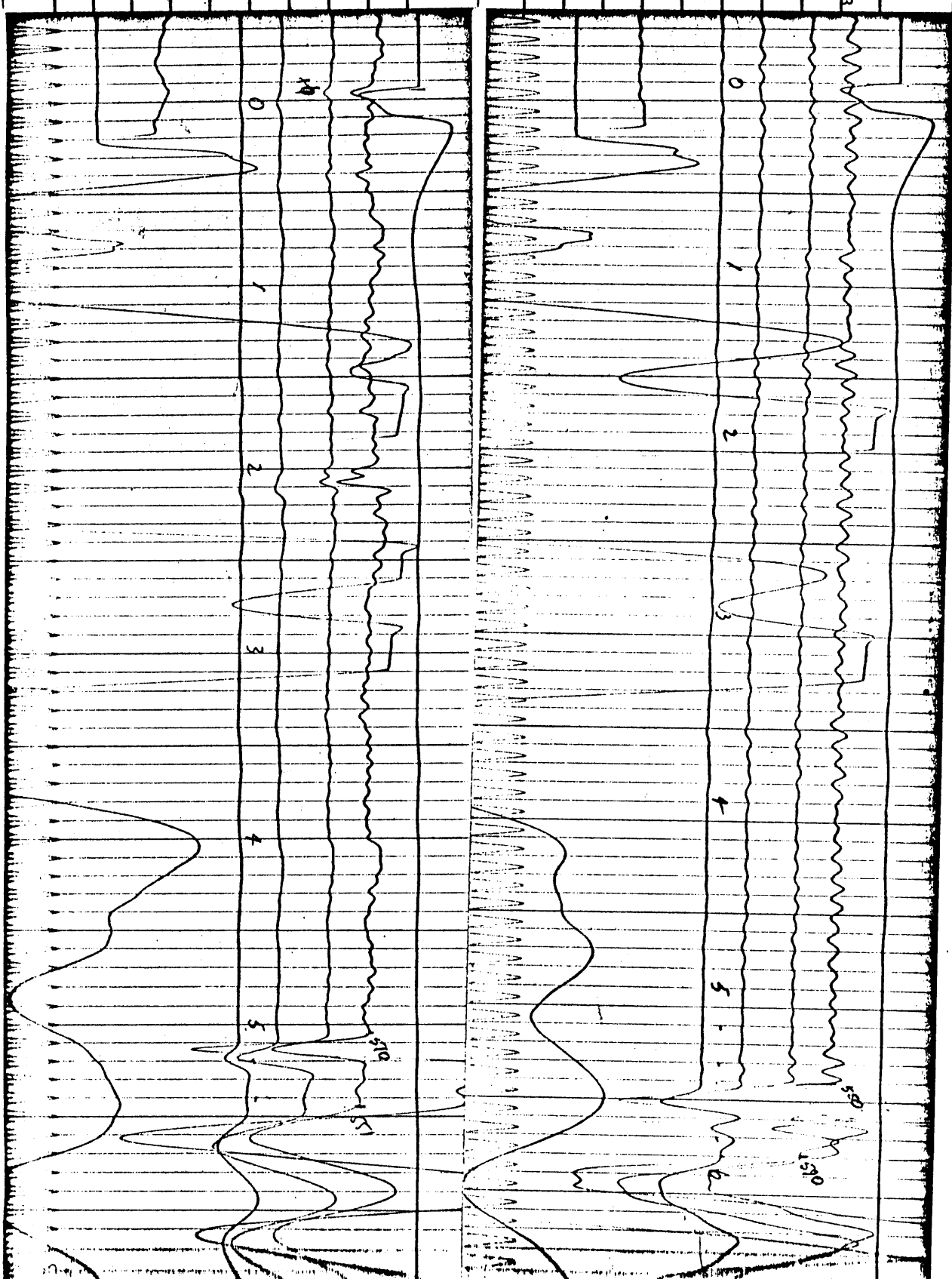
SHOT DEPTH 6'

CHARGE SIZE 3 sts.

ATTENUATION 50db

OFFSET 52'

Velocity Data, Brisbane



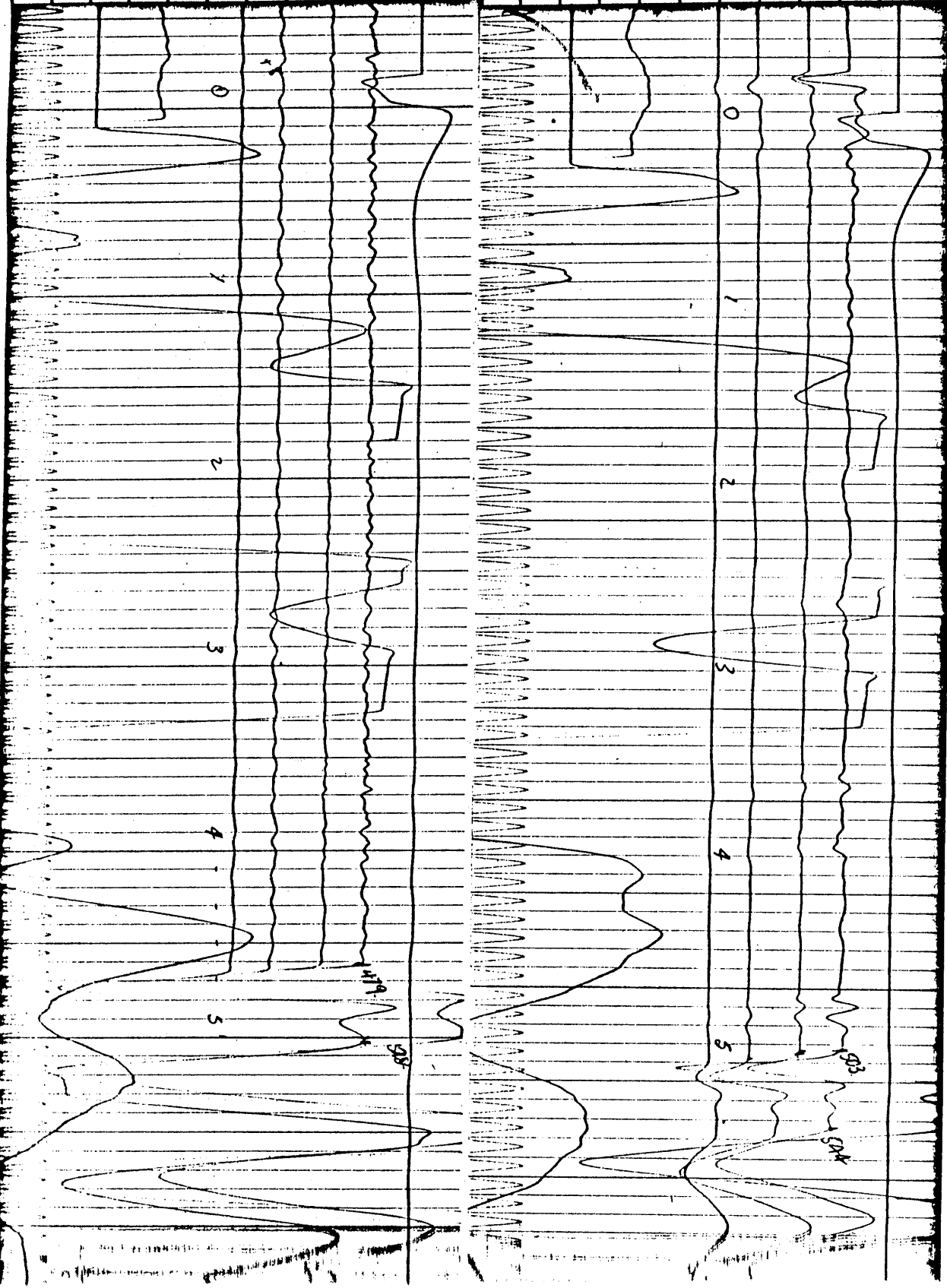
11/23

VELOCITY SURVEY

FOR: BEACH PETROLEUM N.L.
 NAME: NORTH PARATTE NO. 3
 RECORD NO. 12
 ELEV. K.B. 175'
 DEPTH BELOW K.B. 3805'
 ENERGY SOURCE DYN.
 SHOT DEPTH 6'
 CHARGE SIZE 3 sts.
 ATTENUATION 50db
 OFFSET 52'
 Velocity Data, Brisbane

VELOCITY SURVEY

FOR: BEACH PETROLEUM N.L.
 NAME: NORTH PARATTE NO. 3
 RECORD NO. 11
 ELEV. K.B. 175'
 DEPTH BELOW K.B. 3590'
 ENERGY SOURCE DYN.
 SHOT DEPTH 6'
 CHARGE SIZE 3 sts.
 ATTENUATION 60db
 OFFSET 52'
 Velocity Data, Brisbane

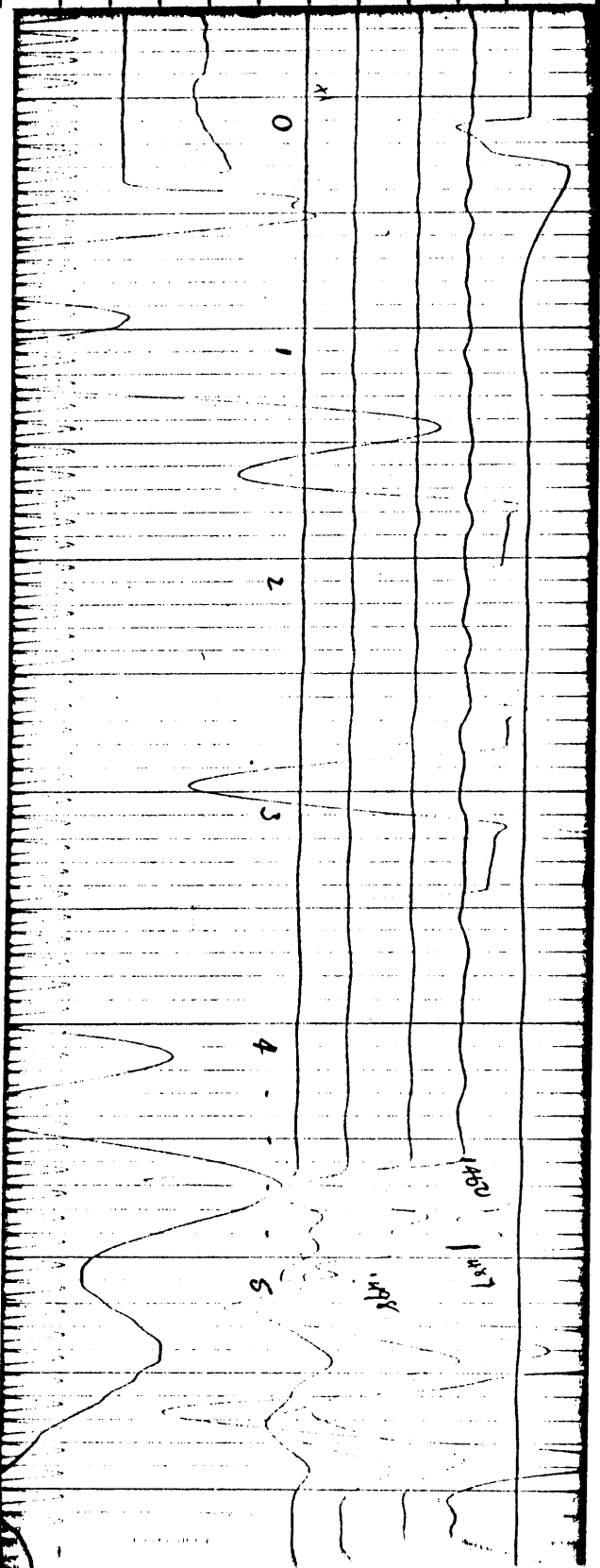


12/23

VELOCITY SURVEY

FOR: BEACH PETROLEUM N.I.
 NAME: NORTH PARAFFINE NO. 3
 RECORD NO. 16
 ELEV. K.B. 175'
 DEPTH BELOW K.B. 3304'
 ENERGY SOURCE Dyn.
 SHOT DEPTH 6'
 CHARGE SIZE 3 sts.
 ATTENUATION 50db
 OFFSET 52'

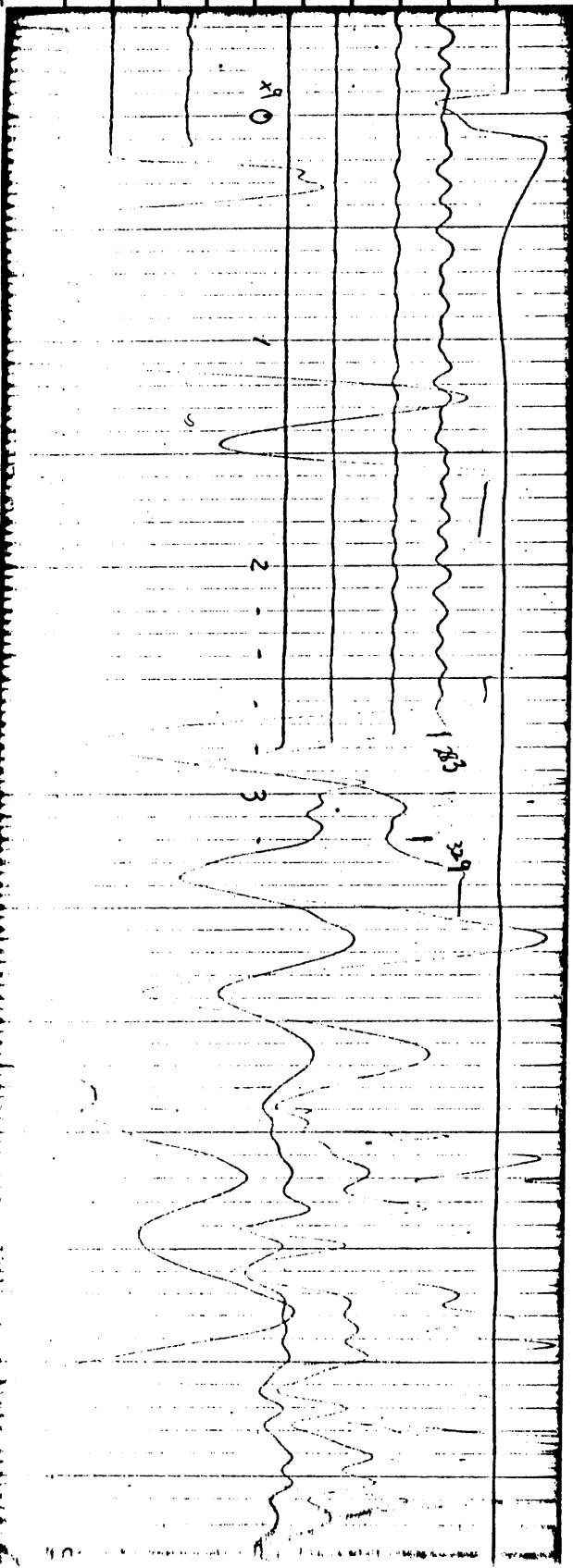
Velocity Data, Brisbane



VELOCITY SURVEY

FOR: BEACH PETROLEUM N.I.
 NAME: NORTH PARAFFINE NO. 3
 RECORD NO. 18
 ELEV. K.B. 175'
 DEPTH BELOW K.B. 1925'
 ENERGY SOURCE Dyn.
 SHOT DEPTH 6' .
 CHARGE SIZE 2 sts.
 ATTENUATION 50db
 OFFSET 52'

Velocity Data, Brisbane



VELOCITY SURVEY

FOR: BEACH PETROLEUM N.L.

NAME: NORTH PARATTE NO. 3

RECORD NO. 20

ELEV. K.B. 175'

DEPTH BELOW K.B. 1544'

ENERGY SOURCE Dyn.

SHOT DEPTH 6'

CHARGE SIZE 2 sts.

ATTENUATION 60db

OFFSET 52'

Velocity Data, Brisbane

VELOCITY SURVEY

FOR: BEACH PETROLEUM N.L.

NAME: NORTH PARATTE NO. 3

RECORD NO. 22

ELEV. K.B. 175'

DEPTH BELOW K.B. 656'

ENERGY SOURCE Dyn.

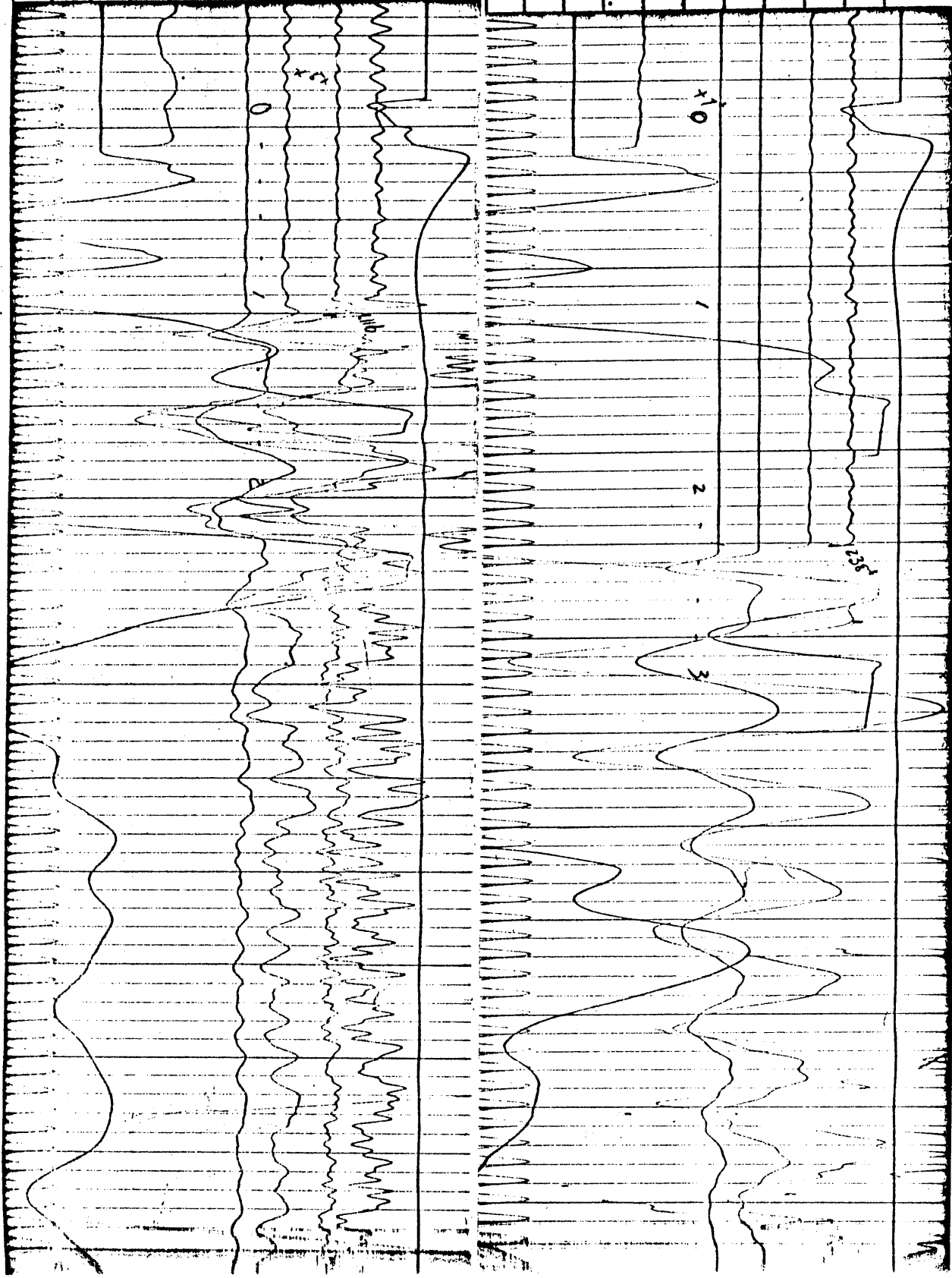
SHOT DEPTH 6'

CHARGE SIZE 2 sts.

ATTENUATION 30db

OFFSET 52'

Velocity Data, Brisbane



14/23

VELOCITY SURVEY

FOR: BEACH PETROLEUM N.L.

NAME: NORTH PARAPATTE NO. 3

RECORD NO. 24

ELEV. K.B. 175'

DEPTH BELOW K.B. 459'

ENERGY SOURCE DYN.

SHOT DEPTH 6'

CHARGE SIZE 2 sts.

ATTENUATION 30db

OFFSET 52'

Velocity Data, Brisbane

VELOCITY SURVEY

FOR: BEACH PETROLEUM N.L.

NAME: NORTH PARAPATTE NO. 3

RECORD NO. 26

ELEV. K.B. 175'

DEPTH BELOW K.B. 175'

ENERGY SOURCE DYN.

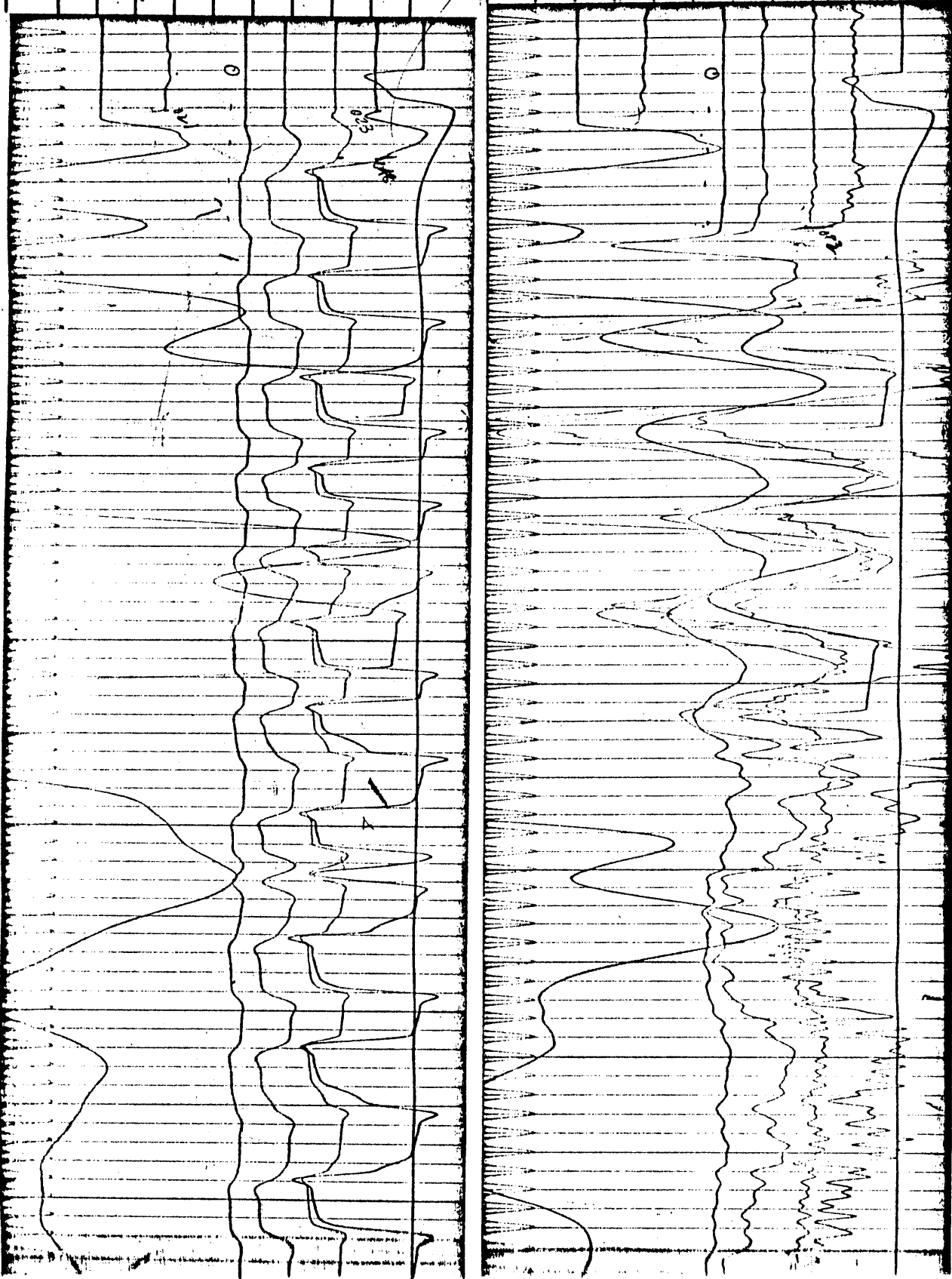
SHOT DEPTH 6'

CHARGE SIZE 1 st.

ATTENUATION 20db

OFFSET 52'

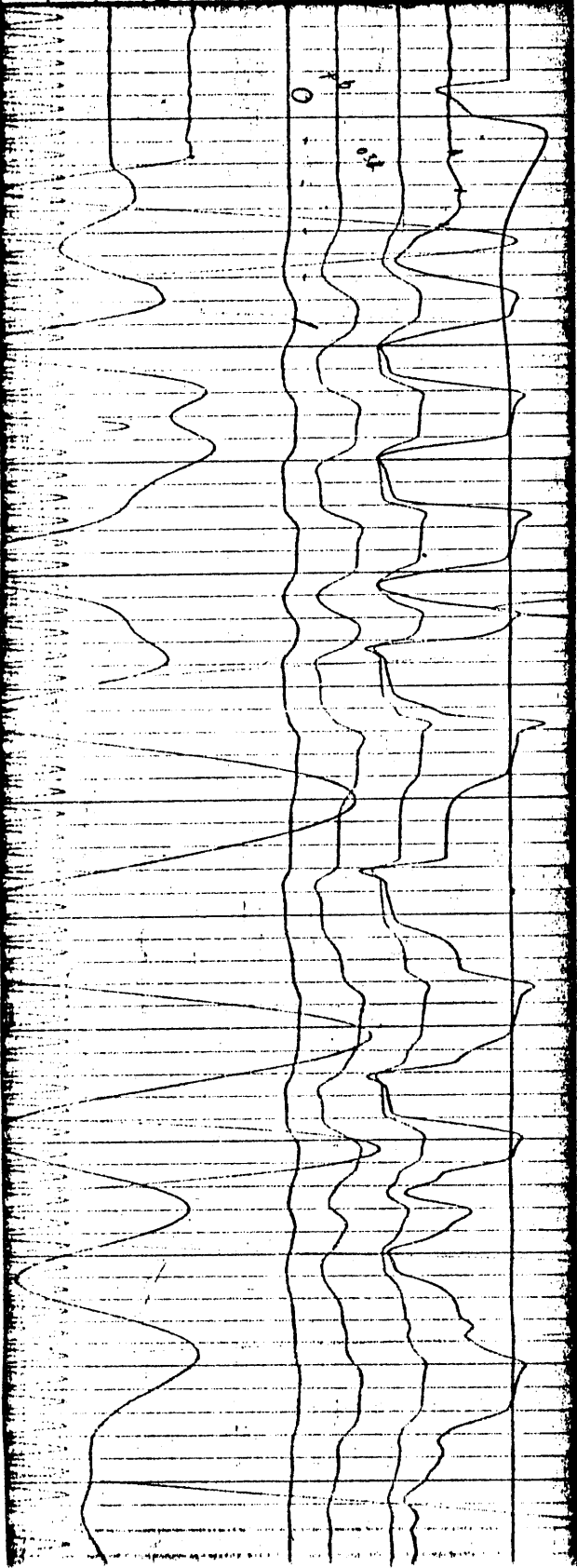
Velocity Data, Brisbane



15/23

VELOCITY SURVEY

FOR: BEACH PETROLEUM N.E.
NAME: NORTH PARAFFIN NO. 3
RECORD NO. 28
ELEV. K.B. 175'
DEPTH BELOW K.B. 175'
ENERGY SOURCE Dyn.
SHOT DEPTH 6'
CHARGE SIZE 1/2 s
ATTENUATION 20db
OFFSET 52'
Velocity Data, Brisbane



PE902712

This is an enclosure indicator page.
The enclosure PE902712 is enclosed within the
container PE902711 at this location in this
document.

The enclosure PE902712 has the following characteristics:

ITEM_BARCODE = PE902712
CONTAINER_BARCODE = PE902711
NAME = Time-Depth & Velocity Curves
BASIN = OTWAY
ONSHORE? = N
DATA_TYPE = WELL
DATA_SUB_TYPE = VELOCITY_CHART
DESCRIPTION = Time-Depth & Velocity Curves
REMARKS =
DATE_WRITTEN = 15-JUN-1980
DATE_PROCESSED =
DATE_RECEIVED =
RECEIVED_FROM = Beach Petroleum NL
WELL_NAME = North Parratte-3
CONTRACTOR = Beach Petroleum NL
AUTHOR =
ORIGINATOR = Beach Petroleum NL
TOP_DEPTH =
BOTTOM_DEPTH =
ROW_CREATED_BY = xls_kb00

(Inserted by DNRE - Vic Govt Mines Dept)

APPENDIX 4

BIT RECORD

CONTRACTOR **OD & E** RIG NO. **12**
 COMPANY **BEACH PET** FIELD **APPRAISAL**
 LEASE **N. PAARATTE** WELL NO. **3**
 STATE **VIC** COUNTY **PORT CAMPBELL**
 EC./SHIP/RANGE **PORT CAMPBELL**

RIG MAKE **IDEAL**
 RIG SIZE **NAY 50**
 PUMP NO. **1MH 700**
 PUMP NO. **2 K 380**
 MUD TYPE **SPERSENE/XP-20**

COLLARS: OD X ID X LENGTH
8" X 3" X 30'
6" X 2 1/4" X 30'
 DRILL PIPE **4 1/2" F.H.**
 TOOL JOINT **6 1/8"**

MO. / DAY / YR. **5 / 19 / 80**
 SPUD **6 / 2 / 80**
 UNDER SURFACE **8 / 8 / 80**
 UNDER INTER. **6 / 15 / 80**
 TOTAL DEPTH

UN. NO.	SIZE	MAKE	TYPE	SERIAL NO.	JETS - 32nds			DEPTH OUT	FEET	HOURS	FEET PER HOUR	WT. 1000 LBS.	R.P.M.	PUMP PRESS.	PUMP NO. 1		PUMP NO. 2	MUD PROPERTIES			Ver. Dev.	Dull. Cond. 1/4 1/8			Date	
					1	2	3								Liner	SPM		WT.	WL.	F.V.		P.V.	T	B		G
1	1 1/2"	HTC	OSC NT	VD 994	16	16	16	440	406	25 1/2	1592	15	110	1100	5 1/2	52	40	7 1/4			1/4	1	2	IN	RUN 13 3/4 CASING	9/6
2	12 1/4"	HTC	OSC	UM95512	16	16	16	1413	973	21 1/2	45 1/4	15	110	1100	5 1/2	33	5 1/2	5 1/2	5 1/2	3 1/4	3/4	1	2	IN	NEW BIT	10/6
3	12 1/4"	HTC	OSC	UM95525	16	16	16	1593	180	4 1/2	40	15	80	1100	5 1/2	52	5 1/2	5 1/2	3 1/4	3/4	1	1	IN	RUN 9 1/2 CASING	11/6	
4	8 1/2"	Sec	OSC	312290	11	11	11	2585	972	22	44	10	60	950	5 1/2	52	5 1/4	62	8.7	13.34	2°	6	3	0 1/4	F.N.B.	10/6
5	8 1/2"	HTC	OSC	094201	11	11	11	3602	1037	22	47	15	80	1000	5 1/2	52	5 1/4	8.9	10.36	1 1/4	4	4	I	F.N.B.	11/6	
6	8 1/2"	HTC	OSC	59266	12	12	12	4043	441	22	20	15	80	1000	5 1/2	52	5 1/4	10.3	8.243	1 1/4	4	4	I	F.N.B.	11/6	
7	8 1/2"	Sec	M4LG	338776	11	11	11	4153	110	8 1/2	13	15	75	1250	5 1/2	52	5 1/4	10.2	8.047	-	2	2	I	F.N.B. (Balled)	12/6	
8	8 1/2"	Sec	S44	550986	11	11	11	4550	397	10 1/2	38	18	80	1275	5 1/2	54	5 1/4	64	8.9	8.955	-	1	1	I	POH w/ D.S.T.	13/6
9	8 1/2"	Sec	S44	550986	11	11	11	4974	424	19 1/2	21	18	80	1300	5 1/2	54	5 1/4	8.7	7.243	-	7	6	0 1/4	POH. T.O.	15/6	

APPENDIX 5

FORMATION TESTING SERVICE REPORT

PE906828

This is an enclosure indicator page.
The enclosure PE906828 is enclosed within the
container PE902711 at this location in this
document.

The enclosure PE906828 has the following characteristics:

ITEM_BARCODE = PE906828
CONTAINER_BARCODE = PE902711
NAME = DST Record
BASIN = OTWAY
ONSHORE? = Y
DATA_TYPE = WELL
DATA_SUB_TYPE = DST
DESCRIPTION = DST Test 1 for North Paaratte-3
REMARKS = PERMIT: PEP93PAGES: 1
DATE_WRITTEN = 14-JUN-1980
DATE_PROCESSED =
DATE_RECEIVED =
RECEIVED_FROM =
WELL_NAME = NORTH PARRATTE-3
CONTRACTOR = Halliburton Logging Services Pty Ltd
AUTHOR =
ORIGINATOR = Beach Petroleum NL
TOP_DEPTH =
BOTTOM_DEPTH =
ROW_CREATED_BY = xls_jc40

(Inserted by DNRE - Vic Govt Mines Dept)

PE604757

This is an enclosure indicator page.
The enclosure PE604757 is enclosed within the
container PE902711 at this location in this
document.

The enclosure PE604757 has the following characteristics:

ITEM_BARCODE = PE604757
CONTAINER_BARCODE = PE902711
NAME = Mud Log
BASIN = OTWAY
ONSHORE? = Y
DATA_TYPE = WELL
DATA_SUB_TYPE = MUD_LOG
DESCRIPTION = Mud Log for North Paaratte-3
REMARKS = PERMIT: PEP93PAGES: 1
DATE_WRITTEN = 15-JUN-1980
DATE_PROCESSED =
DATE_RECEIVED =
RECEIVED_FROM =
WELL_NAME = NORTH PARRATTE-3
CONTRACTOR = Exploration Logging Inc.
AUTHOR =
ORIGINATOR = Beach Petroleum NL
TOP_DEPTH = 32
BOTTOM_DEPTH = 4974
ROW_CREATED_BY = xls_jc40

(Inserted by DNRE - Vic Govt Mines Dept)

PE601405

This is an enclosure indicator page.
The enclosure PE601405 is enclosed within the
container PE902711 at this location in this
document.

The enclosure PE601405 has the following characteristics:

ITEM_BARCODE = PE601405
CONTAINER_BARCODE = PE902711
 NAME = Composite Well Log
 BASIN = OTWAY
 ONSHORE? = N
 DATA_TYPE = WELL
DATA_SUB_TYPE = COMPOSITE_LOG
DESCRIPTION = Composite Well Log
REMARKS =
DATE_WRITTEN = 29-MAY-1980
DATE_PROCESSED =
DATE_RECEIVED =
RECEIVED_FROM = Beach Petroleum NL
 WELL_NAME = North Parratte-3
CONTRACTOR = Go International Australia Pty Ltd
AUTHOR =
ORIGINATOR = Beach Petroleum NL
TOP_DEPTH = 1584
BOTTOM_DEPTH = 4933
ROW_CREATED_BY = xls_kb00