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WCR

ROCKLING-1 (W714)

ESSO EXPLORATION AND PRODUCTION
AUSTRALIA INC.

78 PAGES
& 7 ENCLOSURES.

1/78

OIL and GAS DIVISION

WELL COMPLETION REPORT

ROCKLING-1

W714

GIPPSLAND BASIN, VICTORIA

K.A. Parker

APRIL, 1979.

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ESSO AUSTRALIA LTD.
COMPLETION REPORT

1. WELL DATA RECORD

LOCATION

WELL NAME ROCKLING-1	STATE VIC	PERMIT or LICENCE VIC/P1	GEOLOGICAL BASIN GIPPSLAND	FIELD
CO-ORDINATES LATITUDE 38° 27' 34.60"S LONGITUDE 148° 13' 45.75"E X 607 261E Y 5 742 457N		MAP PROJECTION A.N.S.	GEOGRAPHICAL LOCATION 4.2 Km SW Fortescue-2	
<u>ELEVATIONS & DEPTHS</u>				
ELEVATIONS KB 31m (102 ft.) RT	WATER DEPTH 69m (226 ft.)	TOTAL DEPTH 2684m MEASURED DEPTH 2681m (8796 ft.)	Average Angle Vertical	
	PLUG BACK DEPTH 160m	REASONS FOR PLUGGING BACK ABANDONMENT		
<u>DATES</u>				
MOVE IN 26th December, 1978	RIG UP 27th December, 1978	SPUDED 27th December, 1978		
RIG DOWN COMPLETE 15th January, 1979	RIG RELEASED 15th January, 1979	PRODUCTION UNIT - RIG UP -		
PRODUCTION UNIT - RIG DOWN -		INITIAL PRODUCTION ESTABLISHED -		
<u>MISCELLANEOUS</u>				
OPERATOR ESSO AUSTRALIA LTD	PERMITTEE or LICENSEE ESSO AUSTRALIA LTD HEMATITE PETROLEUM PTY. LTD	ESSO INTEREST 100% OTHER INTEREST		
CONTRACTOR AUSTRALIAN ODECO PTY. LTD.	RIG NAME "OCEAN DIGGER"	EQUIPMENT TYPE SEMI-SUBMERSIBLE DRILLING VESSEL		
TOTAL RIG DAYS 20.7	DRILLING AFE NO. 238016	COMPLETION NO.	TYPE COMPLETION	
LAHEE WELL	Before Drilling	WILDCAT		
CLASSIFICATION	After Drilling	PLUGGED & ABANDONED (DRY HOLE)		

2. CASING - LINER - TUBING RECORD						
Type	Size	Weight	Grade	Thread	No. Joints	Depth
PILE JOINT	24"	670 #	-	CC	1	100m (328.1 ft.)
CONDUCTOR CASING *	20"	94 #	X-52	JV	10	232m (761.2 ft.)
HANGER & PUP JOINT	13 ³ / ₈ "	-	-	-	1	103.1m(338.2 ft.)
SURFACE CASING	13 ³ / ₈ "	54.5#	K-55	BUTT	60	854.3m(2802.8 ft.)
FLOAT COLLAR	13 ³ / ₈ "	54.5#	K-55	BUTT	1	867.7m(2846.8 ft.)

*Included float joint and crossover

3. CEMENT RECORD					
String					
Type of Cement	AUST 'N' neat + 12% gel	Tailed in AUST 'N' neat	AUST 'N' neat + fresh water	Tailed in AUST 'N'+ fresh water	
Slurry Volume M ³	42.25 (1501.50)	11.55 (413.00)	23.93 (855.5)	6.60 (236.00)	
Slurry Density S.G. (ppg)	1.45 (12.1)	1.87 (15.6)	1.87 (15.6)	1.87 (15.6)	
Cement Top	SEAFLOOR		461m		
Casing Tested (KPa)	3,450	(500psi)	10,340	(1500psi)	
Number of Centralizers	6		8		
Number of Scratchers					
Stage Collar					
Remarks					

4. CEMENT PLUGS				
Plug	1	2	3	
Cement Type	AUST 'N' neat + 0.8% HR12 Retarder	AUST 'N' neat	AUST 'N' neat	
Slurry Volume M ³	15.18 (542.80)	11.22 (401.20)	18.15 (649.00)	
Slurry Density	1.87 (15.6)	1.87 (15.6)	1.87 (15.6)	
Cement Base	2550m (8366 ft.)	892m (2926 ft.)	169.8m (557 ft.)	
Cement Top	2425m (7956 ft.)	785m (2575 ft.)	110m (360 ft.)	
Remarks				

WELL ROCKLING-1

5. SAMPLES, CONVENTIONAL CORES, SIDEWALL CORES.			
INTERVAL	TYPE	INTERVAL	TYPE
240m-880m	10m intervals.	81 Sidewall Cores were attempted, with 80 recovered. A detailed list and description is attached.	
880m-2684m	10m intervals. 5 sets washed and dried. 1 set unwashed.		
240-2684m	30m intervals of unwashed canned samples.		

6. WIRELINE LOGS AND SURVEYS

Type & Scale	From To	Type & Scale	From To
ISF-Sonic 1:200, 1:500	Run 1 877.5-231.5m Run 2 2681m-866m	RFT's - (See Part II)	
FDC-Gr 1:200, 1:500	Run 1 879m -100m		
FDC-CNL-Gr 1:200, 1:500	Run 2 2674m-866m		
HDT 1:200, 1:500	Run 1 2682m-866m		
Velocity Survey	2681m-600m		

SUMMARY OF FORMATION TEST PROGRAMME

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TEST	SEAT	DEPTH (METRES) K. B.	CHAMBER	RECOVERY (LITRES)					HEWLETT-PACKARD FORMATION PRESSURE		HEWLETT-PACKARD HYDROSTATIC PRESSURE		HORIZONTAL PERMEABILITY	REMARKS
				OIL	COND.	GAS	FORMATION WATER	FILTRATE	MPag	Psig	MPag	Psig	millidarcys	
RFT 1	1	2663m	PRETEST						25.53	3702.79	30.27	4390.15		
	2	2655m	PRETEST						25.45	3691.70	30.15	4373.12		
	3	2634m	PRETEST						25.25	3662.05	29.84	4328.10		
	4	2626.5m	PRETEST						25.19	3653.69	29.77	4318.04		Oscillation of Pressure when recording. Initial Hydrostatic.
	5	2595m	PRETEST						24.88	3608.05	29.46	4272.69		
	6	2587m	PRETEST						24.80	3597.05	29.38	4261.07		" "
	7	2574m	PRETEST						24.66	3577.20	29.19	4233.23		" "
	8	2567.5m	PRETEST						24.60	3567.59	26.86	3895.46		" "
	9	2536.5m	PRETEST						24.41	3539.73	28.79	4175.69		" "
	10	2529m	PRETEST						24.33	3528.50	28.73	4166.77		" "
	11	2559.5	PRETEST						24.53	3557.41	29.07	4216.44		" "
	12	2517	PRETEST						-	-	28.60	4147.47		Tight

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STRATIGRAPHIC TABLE

MM YEARS	EPOCH	SERIES	FORMATION HORIZON	PALYNOLOGICAL	PLANKTONIC	DRILL DEPTH (METRES)	SUBSEA DEPTH (METRES)	THICKNESS (METRES)	
				ZONATION SPORE - POLLEN ASSEMBLAGE ZONES	FORAMINIFERAL ZONATIONS				
0			SEAFLOOR			69	38		
0-5	PLEIST PLIO	E L E L E M L E M L	GIPPSLAND LIMESTONE		A 1			2184	
					A 2				
					A 3				
					A 4				
5-20	MIOCENE	LATE MIDDLE EARLY			B 1				
					B 2				
					C				
					D 1				
					D 2				
					E 1				
20-35	OLIGOCENE	LATE EARLY	LAKES ENTRANCE	P. tuberculatus	E 2		2215	2184	
					F				
					G				
					H 1				
					H 2				
					I 1				
35-45	EOCENE	LATE MIDDLE	GURNARD FORMATION	Upper N. asperus Middle N. asperus Lower N. asperus			2492	2461	
									J 2
									K
									2502
									2533
									2471
45-55	PALEOCENE	EARLY LATE	LATROBE COARSE CLASTICS TD	P. asperopolus Upper M. diversus Middle M. diversus Lower M. diversus			2502	2471	
									2533
									2502
									2684
									2653
									151
55-65	UPPER CRETACEOUS	LATE		T. longus T. lilliei					

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DESCRIPTION OF LITHOLOGICAL UNITS

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<u>DEPTH</u>	<u>DESCRIPTION</u>
244m-890m	<p style="text-align: center;"><u>GIPPSLAND LIMESTONE (103m-2215m)</u></p> <p><u>CALCARENITE, IN PART GRADING TO LIMESTONE WITH MINOR INTERBEDDED MARL</u></p> <p><u>CALCARENITE</u> - white to light grey to light brown, very fine to fine grained, rounded, friable to hard, trace glauconitic, trace carbonaceous. Fossil fragments include forams, bivalves, bryozoa, corals.</p> <p><u>LIMESTONE</u> - medium brown, microcrystalline, hard.</p> <p><u>MARL</u> - cream to white and light grey to brown, silty, trace carbonaceous.</p>
890m-1144m	<p><u>MARL WITH INTERBEDDED CALCISILTITE</u></p> <p><u>MARL</u> - white, light to medium grey, silty, soft to very soft, rarely firm, trace glauconitic, skeletal fragments.</p> <p><u>CALCISILTITE</u> - light to medium grey, clayey, firm to hard, occasionally friable, trace pyrite. Occasional recrystallised limestone.</p>
1144m-1639m	<p><u>CALCISILTITE LOCALLY GRADING TO CALCARENITE AND LIMESTONE</u></p> <p><u>CALCISILTITE</u> - light to medium grey to light brown, in part micritic, clayey to very clayey, firm to hard, occasionally friable, trace glauconite, trace carbonaceous, trace pyritic, microfossiliferous.</p> <p><u>CALCARENITE</u> - light to medium grey, very fine grained, poorly sorted, firm, clayey matrix, foraminiferal fragments common, glauconitic, trace pyritic.</p> <p><u>LIMESTONE</u> - light to medium grey, microcrystalline, dense, trace glauconitic, trace pyritic.</p>
1639m-2215m	<p><u>CALCAREOUS MUDSTONE GRADING TO AND INTERBEDDED WITH CALCISILTITE AND LIMESTONE</u></p> <p><u>MUDSTONE</u> - light to dark grey, silty, firm, very calcareous, massive, trace pyritic, trace foraminiferal fragments.</p> <p><u>CALCISILTITE</u> - medium grey to brown, friable to firm, microfossiliferous, pyritic, trace glauconitic.</p> <p><u>LIMESTONE</u> - light brown, micritic, hard, pyritic.</p>
2215m-2492m	<p style="text-align: center;"><u>LAKES ENTRANCE FORMATION (2215m-2492m)</u></p> <p><u>MUDSTONE WITH MINOR INTERBEDDED CALCARENITE, LIMESTONE AND CALCISILTITE GRADING TO CALCAREOUS SILTSTONE</u></p> <p><u>MUDSTONE</u> - light to medium brown grey, mottled, firm, calcareous, sub-fissile to massive, trace micaceous, trace glauconitic, trace pyritic, minor foraminiferal fragments.</p> <p><u>CALCISILTITE</u> - light to medium grey, firm, clayey, glauconitic, grading in part to calcareous siltstone.</p> <p><u>CALCARENITE</u> - light grey to brown grey, fine to medium grained, argillaceous, trace pyrite, trace glauconite.</p> <p><u>LIMESTONE</u> - medium to dark grey, firm, very argillaceous, minor pyrite.</p>
2492m-2685m	<p style="text-align: center;"><u>LATROBE GROUP (2492m-2685m)</u></p> <p><u>INTERBEDDED SANDSTONE, SILTSTONE AND MINOR SHALE</u></p>

DESCRIPTION OF LITHOLOGICAL UNITS

ROCKLING-1

<u>DEPTH</u>	<u>DESCRIPTION</u>
2492m-2685m	<p>Continued/.....</p> <p><u>SANDSTONE</u> - light to dark grey, olive grey, grey brown, very fine through coarse grained, angular to subangular and subrounded to rounded, moderate to poorly sorted, clayey matrix, non-calcareous, glauconitic, carbonaceous, pyritic, minor labile components, trace micaceous.</p> <p><u>SILTSTONE</u> - light to dark grey, brown grey, olive grey, firm, argillaceous glauconitic, carbonaceous, pyritic, micaceous.</p> <p><u>SHALE</u> - brown grey, firm, fissile, carbonaceous.</p>
2585m-2685m	<p><u>SANDSTONE</u> - very light to medium grey, fine to medium to coarse grained, subangular to subrounded to rounded, moderately to well sorted, quartzose with trace labile components, argillaceous, in part silty, carbonaceous, pyritic, non-calcareous, good visible porosity.</p>

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GEOLOGICAL AND GEOPHYSICAL ANALYSIS

STRATIGRAPHY

AGE	UNIT/HORIZON	DEPTH (m)			(m) THICKNESS
		PREDICTED	ACTUAL		
		KB	KB	SUBSEA	
Pliocene/Miocene	Gippsland Limestone	100	103	-72	2102
Miocene	Base of High Velocity Channel		1582	-1551	
Miocene/Oligocene	Lakes Entrance Formation		2215	-2184	277
	"Oligocene Wedge"		2478	-2447	14
Eocene/Paleocene	Latrobe Group	2440	2492	-2461	192+
	Gurnard Formation	2440	2492	-2461	10
	Coarse Clastics		2503	-2472	181+
	FM-1.4/M-1.0.2. Base Seal	2480	2537.5	-2506.5	
	M-1.3.1	2535	2584.5	-2553.5	
	T.D.		2684	-2651	

GEOLOGICAL ANALYSIS

Rockling-1 was drilled on a small fault-bound anticline 5.3 km north-west of Tailor-1 in order to test two play concepts. As well as the almost insignificant anticlinal closure, a sand wedge play was conceived whereby oil could be trapped by the intersection of the top of Latrobe Group and an intra-Latrobe shale. The well did not hit hydrocarbons, but formation pressure data indicate that the pinchout play concept still may be valid.

A 14m thick basal Lakes Entrance unit of Oligocene age, comprising glauconite rich calcisiltite and calcarenite, occurs in Rockling-1, and overlies 10m of Gurnard Formation. Both of these units thin up-dip towards Tailor-1, and in fact the "Oligocene Wedge" pinches out before reaching the Tailor well (see geological cross section A-A').

Beneath the Gurnard Formation, the Latrobe Group section encountered at Rockling-1 comprises nearshore marine and alluvial plain sediments. The uppermost marine unit comprises clay rich, slightly glauconitic and pyritic siltstone and fine grained sandstone. With depth, this unit grades to interbedded sandstone, shale and coal typical of the Latrobe Group Coarse Clastics.

The internal Latrobe Group units of L.balmei age at Rockling-1 can be correlated with those at Tailor-1. However, the Lower M.diversus units are truncated up-dip from Rockling-1. In particular, the FM-1.4/M-1.0.2 interbedded shale and coal unit does not extend as far as Tailor-1.

GEOLOGICAL ANALYSIS (Cont.)

Formation pressure data indicate the FM-1.4/M-1.0.2 acts as an hydraulic barrier. The pressure drop across the barrier, from the FM-1.3 sand above it to the M-1.1.1 below, is about 17 psig. This indicates that the FM-1.3 sand is sealed to the extent that it has higher formation pressures than the regional trend.

GEOPHYSICAL ANALYSIS

In Rockling-1, as in the Fortescue-2 well, a thin wedge of Oligocene sediments (here 14m thick) was encountered above the Top of Latrobe Group. It is this body which in fact gives rise to the event mapped as the Top of Latrobe, which was found 32m deeper than predicted (an error of 1.3%). This discrepancy is attributed largely to our pre-drill uncertainty in the velocity field which is affected by shallow Miocene channelling. Since most deeper markers were isopatched down from the Top of Latrobe Group marker, they too were encountered deeper than expected by a similar amount.

The latest Top of Latrobe Seismic Marker map is enclosed with the report (note that this map is on top of the "Oligocene Wedge" wherever it is present).

1. SAMPLE DESCRIPTIONS

APPENDICES 1

Cutting Samples Descriptions.

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<u>DEPTH</u>	<u>%</u>	<u>DESCRIPTION</u>
244m - 780m	100%	Lithology as logged by Ex Log.
	100%	<u>Calcarenite</u> white to medium grey, hard to brittle, mostly fossil fragments, e.g. forams, bivalve fragments, bryozoa, corals, to <u>Marl</u> (and/or <u>Calcisiltite</u>) light grey, very soft, trace black flecks.

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DEPTH	%	DESCRIPTION
780m - 790m	50%	<u>Calcarenite</u> light grey to brown, very fine to fine grain, friable to hard, trace glauconite and carbonaceous matter, forams.
	50%	<u>Marl/Calcareous Clay</u> light grey to brown, very soft.
790m - 800m	50%	<u>Calcarenite</u> as above
	50%	<u>Marl</u> as above.
800m - 810m	60%	<u>Calcarenite</u> as above, grading silty, microfossils.
	40%	<u>Marl</u> as above, grading silty.
		Minor calcareous fossil debris, bivalves, forams, bryozoa.
810m - 820m	60%	<u>Calcarenite</u> light brown, brown to grey, very fine to fine grain, friable to hard, grading calcisiltite, trace carbonaceous, common microfauna, very rare glauconite,
	40%	<u>Marl</u> light brown, brown to grey, occasionally cream, very soft, grading to very soft <u>Calcisiltite</u> .
820m - 830m	80%	<u>Calcarenite</u> as above.
	20%	<u>Marl</u> as above, grading calcisiltite, light brown to grey to white.
830m - 840m	95%	<u>Calcarenite</u> as above, but grading to medium brown, very hard, microcrystalline <u>Limestone</u>
	5%	<u>Marl</u> cream to white to light grey, very soft and silty.
840m - 850m	95%	<u>Calcarenite</u> as above and microcrystalline <u>Limestone</u>
	5%	<u>Marl</u> as above.
850m - 860m	90%	<u>Calcarenite</u> as above.
	10%	<u>Marl</u> as above, silty.
860m - 870m	85%	<u>Calcarenite</u> as above.
	15%	<u>Marl</u> as above.
870m - 880m	80%	<u>Calcarenite</u> as above.
	20%	<u>Marl</u> as above.
		Circulate B.U. at 1000 hours 881.8m. POOH after wiper trip to run logs ISF-Sonic, FDC-GR and run 13 ³ / ₈ " casing.
		Set 13 ³ / ₈ " casing at 867.7m. Conducted PIT 13.5 ppg (S.G. 1.62), no leak off. Drilling ahead 12 ¹ / ₄ " HTC-X3A.
880m - 890m		Dominantly <u>Calcarenite</u> light brown to grey, light brown, predominantly very fine grain, occasionally silt sized, coherent, consisting of rounded fragments of indeterminate microfossils, trace glauconite, firm to hard, Minor <u>Marl</u> light grey, very soft, silty.
		Cement contamination.
890m - 900m	90%	<u>Marl</u> white, predominantly light to medium grey, soft to very soft, occasionally firmer, silty, trace glauconite.
	10%	<u>Calcarenite</u> as above.
	TR	<u>Limestone</u> light brown, microcrystalline, hard, few microfossils - spines and/or spicules, gastropods, forams.

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DEPTH	%	DESCRIPTION
900m - 910m	95%	<u>Marl</u> as above.
	5%	<u>Calcarenite</u> as above.
910m - 920m		Predominantly <u>Marl</u>
920m - 930m		As above.
930m - 940m	90%	<u>Marl</u> as above.
	10%	<u>Calcarenite</u> as above.
940m - 950m	95%	<u>Marl</u> as above, soft, occasionally firm.
	5%	<u>Calcarenite</u> as above, friable to firm, grading silty.
950m - 960m	90%	<u>Marl</u> as above.
	5%	<u>Calcarenite</u> as above.
	5%	<u>Limestone</u> light brown, microcrystalline, trace pyrite, very hard.
960m - 970m	95%	<u>Marl</u> as above.
	5%	<u>Calcarenite and Limestone</u> as above.
970m - 980m	95%	<u>Marl</u> as above.
	5%	<u>Calcarenite</u> grading <u>Calcisiltite</u> as above, trace glauconite.
980m - 990m		As above.
990m - 1000m	90%	<u>Marl</u> light to medium grey, brown to grey, soft, occasionally firm, silty.
	10%	<u>Calcarenite/Calcisiltite</u> light brown, brown to grey, friable to firm, microfossil debris, trace glauconite. Minor skeletal debris, forams.
1000m - 1010m	80%	<u>Marl</u> as above.
	20%	<u>Calcisiltite</u> as above.
1010m - 1020m	90%	<u>Marl</u> as above.
	10%	<u>Calcisiltite</u> as above, soft, friable to firm, grading to <u>Marl</u> .
1020m - 1030m	60%	<u>Marl</u> as above, light grey.
	40%	<u>Calcisiltite</u> as above, soft, friable, occasionally firm, trace pyrite.
1030m - 1040m	80%	<u>Marl</u> as above.
	20%	<u>Calcisiltite</u> as above, light brown to grey, grading to <u>Marl</u> , minor foraminifera, spines, skeletal debris.
1040m - 1050m	90%	<u>Marl</u> as above.
	10%	<u>Calcisiltite</u> as above.
1050m - 1060m	50%	<u>Marl</u> as above.
	50%	<u>Calcisiltite</u> as above.
1060m - 1070m	50%	<u>Marl</u> as above.
	50%	<u>Calcisiltite</u> as above, grading to <u>Marl</u> light brown to grey, firm, comprises silt sized microfossil debris.
1070m - 1080m	60%	<u>Marl</u> as above.
	40%	<u>Calcisiltite</u> as above, trace carbonaceous and glauconite.
1080m - 1090m		As above.

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DEPTH	%	DESCRIPTION
1090m - 1100m	70%	<u>Marl</u> light to medium grey, occasionally laminated, soft to occasionally firm, intergradational to <u>Calcsiltite</u>
	30%	<u>Calcsiltite</u> light grey to brown, friable to firm.
1100m - 1110m	60%	<u>Marl</u> as above.
	40%	<u>Calcsiltite</u> as above.
1110m - 1120m	50%	<u>Marl</u> as above.
	50%	<u>Calcsiltite</u> as above.
1120m - 1130m	40%	<u>Marl</u> as above.
	60%	<u>Calcsiltite</u> light brown to grey, friable to firm, composed of microfossil debris.
		Minor forams, larger skeletal debris as loose fragments in <u>Marl</u> .
1130m - 1140m	20%	<u>Marl</u> as above.
	80%	<u>Calcsiltite</u> as above.
1140m - 1150m	20%	<u>Marl</u> as above.
	80%	<u>Calcsiltite</u> as above.
1150m - 1160m	25%	<u>Marl</u> as above.
	75%	<u>Calcsiltite</u> light brown to grey, firm occasionally hard, traces of pyrite.
1160m - 1170m	25%	<u>Marl</u> light grey, occasionally medium grey, rarely laminated, soft to occasionally firm, silty.
	75%	<u>Calcsiltite</u> as above.
1170m - 1180m	10%	<u>Marl</u> as above.
	90%	<u>Calcsiltite</u> light grey to brown, occasionally light grey, firm to hard, occasionally friable, blocky fracture, trace pyrite, rare trace carbonaceous.
1180m - 1190m		As above.
1190m - 1200m	15%	<u>Marl</u> as above, very silty.
	85%	<u>Calcsiltite</u> as above, few broken spines, gastropod skeletal debris. Few forams.
1200m - 1210m	10%	<u>Marl</u> as above.
	90%	<u>Calcsiltite</u> as above.
1210m - 1220m		As above.
1220m - 1230m	20%	<u>Marl</u> as above.
	80%	<u>Calcsiltite</u> as above.
		Traces <u>Limestone</u> light grey to brown to medium brown, Microcrystalline, very hard.
1230m - 1240m	15%	<u>Marl</u> as above.
	85%	<u>Calcsiltite</u> as above.
1240m - 1250m	10%	<u>Marl</u> as above.
	90%	<u>Calcsiltite</u> as above, trace glauconite.
1250m - 1260m	20%	<u>Marl</u> as above.
	80%	<u>Calcsiltite</u> as above.
1260m - 1270m	30%	<u>Marl</u> as above.
	70%	<u>Calcsiltite</u> as above.

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DEPTH	%	DESCRIPTION
1270m - 1280m	20% 80%	<u>Marl</u> as above. <u>Calcsiltite</u> as above, trace glauconite, carbonaceous matter, pyrite.
1280m - 1290m	15% 85%	<u>Marl</u> as above. <u>Calcsiltite</u> as above. Trace <u>Limestone</u> .
1290m - 1300m	25% 75%	<u>Marl</u> as above. <u>Calcsiltite</u> as above. Circulated B.U. at 0630 hours 2/1/79, at 1307 metres 1440 hours on #3 X3A. BOB at 1640 hours N.B. #4 X3A.
1300m - 1310m	15% 85%	<u>Marl</u> as above. <u>Calcsiltite</u> trace glauconite, pyrite and carbonaceous, few microfossils. (Bristol line/kelly height indicator down)
1310m 1315m	10% 90%	<u>Marl</u> as above, very silty. <u>Calcsiltite</u> as above.
1315m - 1320m	5% 95%	<u>Marl</u> light to medium grey, occasionally laminated, soft to firm. <u>Calcsiltite</u> as above.
1320m - 1325m	10% 90%	<u>Marl</u> grading silty. <u>Calcsiltite</u> as above.
1325m - 1330m		As above.
1330m - 1335m	5% 95%	<u>Marl</u> as above, mainly firm. <u>Calcsiltite</u> light to medium grey brown, firm to hard, as above. Few loose calcareous foraminifera.
1335m - 1340m	5% 95%	<u>Marl</u> as above. <u>Calcsiltite</u> as above.
1340m - 1345m		As above.
1345m - 1350m		Predominantly <u>Calcsiltite</u> as above.
1350m - 1355m	5% 95%	<u>Marl</u> as above. <u>Calcsiltite</u> as above, friable to firm and hard, trace glauconite, pyrite and carbonaceous matter, few included calcareous microfossils.
1355m - 1360m		Predominantly <u>Calcsiltite</u> as above.
1360m - 1365m	5% 95%	<u>Marl</u> as above. <u>Calcsiltite</u> as above.
1365m - 1370m		As above.
1370m - 1375m		As above.
1375m - 1380m	5% 95%	<u>Marl</u> as above, light to medium grey, firm, occasionally soft, trace carbonaceous and glauconite, very silty. <u>Calcsiltite</u> as above.

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29/12/78

DEPTH	%	DESCRIPTION
		Few loose foraminifera.
1380m - 1385m		As above.
1385m - 1390m		As above.
*1390m - 1395m	10%	<u>Marl</u> as above, grading firmer and developing a platy habit.
	90%	<u>Calcsiltite</u> as above.
1395m - 1400m		As above.
1400m - 1405m	15%	<u>Marl</u> as above.
	85%	<u>Calcsiltite</u> as above.
1405m - 1410m		As above.
1410m - 1415m	10%	<u>Marl</u> as above.
	90%	<u>Calcsiltite</u> as above.
1415m - 1420m		As above.
1420m - 1425m	5%	<u>Marl</u> as above.
	95%	<u>Calcsiltite</u> as above.
		Few loose forams, spines.
1425m - 1430m		As above.
1430m - 1435m	20%	<u>Marl</u> predominantly medium grey, exhibiting a platy habit, trace carbonaceous and pyrite, soft to firm, laminated.
	80%	<u>Calcsiltite</u> as above.
1435m - 1440m		As above.
1440m - 1445m	20%	<u>Marl</u> as above.
	80%	<u>Calcsiltite</u> as above, predominantly medium grey to brown, firm to hard.
*1445 - 1450m	15%	<u>Marl</u> as above.
	85%	<u>Calcsiltite</u> as above, trace pyrite, glauconite, carbonaceous.
		Minor <u>Limestone</u> medium to light brown, very hard, trace pyrite and glauconite, microcrystalline.
1450m - 1455m	20%	<u>Marl</u> as above.
	80%	<u>Calcsiltite</u> as above.
		Minor <u>Limestone</u> as above.
1455m - 1460m	10%	<u>Marl</u> as above.
	90%	<u>Calcsiltite</u> as above, grading very fine grain, micritic and grading to <u>Limestone</u> light to medium brown, microcrystalline.
1460m - 1465m	20%	<u>Marl</u> as above.
	80%	<u>Calcsiltite</u> as above, grading micritic in part.
1465m - 1470m	20%	<u>Marl</u> as above, light grey, very soft to soft in part.
	80%	<u>Calcsiltite</u> as above, minor microcrystalline <u>Limestone</u> .
1470m - 1475m		As above.

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DEPTH	%	DESCRIPTION
1475m - 1480m	10% 90%	<u>Marl</u> as above. <u>Calcisiltite</u> as above.
1480m - 1485m	15% 85%	<u>Marl</u> as above. <u>Calcisiltite</u> light to medium grey brown, grading in part micritic, few visible microfossil skeletal debris, trace glauconite, pyrite and carbonaceous matter, firm to hard.
1485m - 1490m	20% 80%	<u>Marl</u> as above. <u>Calcisiltite</u> as above.
1490m - 1495m	10% 90%	<u>Marl</u> as above. <u>Calcisiltite</u> rarely micritic.
1495m - 1500m	15% 85%	<u>Marl</u> as above. <u>Calcisiltite</u> as above.
1500m - 1505m	15%	<u>Marl</u> light to medium grey, very soft to soft, in part firm and platy.
1505m - 1510m		As above. Minor <u>Limestone</u> as above.
1510m - 1515m		As above.
1515m - 1518m	15% 85%	<u>Marl</u> as above, platy in part. <u>Calcisiltite</u> as above, light to medium grey brown, in part micritic. Few foraminifera. Circulated B.U. at 0745 hours at 1518m. Totco Bit #4 X3A 1310 hours. BOB and drilling at 1545 hours. Bit #5 X3A.
1518m - 1525m	TR 100%	<u>Marl</u> light grey, soft to firm, is gradational to <u>Calcisiltite</u> where firm and very silty. <u>Calcisiltite</u> predominantly light to medium grey brown, occasionally light grey where gradational to <u>Marl</u> in part, gradational to micritic in part, hard to very hard, few visible microfossil debris components, trace glauconite, pyrite and carbonaceous matter.
1525m - 1530m	Tr only	Predominantly <u>Calcisiltite</u> as above. <u>Marl</u>
1530m - 1535m		As above.
1535m - 1540m		As above. <u>Calcisiltite</u> friable to hard, becoming more glauconitic and pyritic, trace carbonaceous.
1540m - 1545m	100%	<u>Calcisiltite</u> as above, minor clay in part where <u>Marley</u> shows platy to subfissile habit; <u>Calcisiltite</u> grading micritic in part.
1545m - 1550m		As above. Rare loose foraminifera, spinose debris.

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29/12/78

DEPTH	%	DESCRIPTION
1550m - 1555m		Predominantly <u>Calcisiltite</u> as above. (*Flow check 1551m - 1552m, increase ROP)
1555m - 1560m		As above.
1560m - 1565m	100%	<u>Calcisiltite</u> grading clayey in part to <u>Marl</u> otherwise as above.
1565m - 1570m	95% 5%	<u>Calcisiltite</u> as above. <u>Marl</u> light to medium grey, very soft to soft, grading firm and platy and very silty to light to medium grey, <u>Calcisiltite</u> . Trace glauconite and slightly carbonaceous.
1570m - 1575m	TR	As above. <u>Limestone</u> light brown, microcrystalline, very hard.
1575m - 1580m	20% 80%	<u>Marl</u> as above. <u>Calcisiltite</u> as above.
1580m - 1585m	80% 20%	<u>Calcisiltite</u> as above, grading in part to very fine grain <u>Calcarenite</u> . <u>Marl</u> as above.
1585m - 1590m	75% 25%	<u>Calcisiltite</u> light to predominant medium grey-brown, friable to hard, trace glauconite and pyrite, few included microfossils and skeletal debris. <u>Marl</u> as above.
1590m - 1595m	75% 25%	<u>Calcisiltite</u> as above, in part <u>Calcarenite</u> very fine grain, glauconite and pyrite. <u>Marl</u> as above.
1595m - 1600m	85% 15%	<u>Calcisiltite</u> as above. <u>Marl</u> as above.
*1600m - 1605m	60% 30% 10%	<u>Calcisiltite</u> as above. <u>Calcarenite</u> cream to light brown, fine to medium grain, skeletal debris, microcrystalline to micritic fragments in cream to light brown sparry calcite cement, occasionally very glauconitic, pyrite. <u>Marl</u> as above.
1605m - 1610m	75% 25%	<u>Calcisiltite</u> as above, trace only <u>Calcarenite</u> . <u>Marl</u> as above.
1610m - 1615m		As above.
1615m - 1620m		As above.
1620m - 1625m	90% 10%	<u>Calcisiltite</u> light to medium brown-grey, friable to hard, trace glauconite and pyrite, carbonaceous, few visible microfossils. <u>Marl</u> as above.
1625m - 1630m	85% 15%	<u>Calcisiltite</u> as above, grading micritic in part. <u>Marl</u> as above, very silty. Few loose forams.

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DEPTH	%	DESCRIPTION
1630m - 1635m	80%	<u>Calcisiltite</u> as above.
	20%	<u>Marl</u> light to medium grey, predominantly light grey, very soft to soft, occasionally firmer, tending platy and very silty.
1635m - 1640m		As above.
1640m - 1645m	80%	<u>Calcisiltite</u> as above, trace <u>Calcarenite</u> .
	20%	<u>Marls</u> above, few included calcareous foraminifera, few pyritised microfossils.
1645m - 1650m		As above.
*1650m - 1655m	50%	<u>Calcisiltite</u> as above, friable to occasionally firm.
	50%	<u>Marl</u> as above.
1655m - 1660m	55%	<u>Calcisiltite</u> light to medium grey-brown, predominantly friable, grading micritic in part, also grading to <u>Marl</u>
	45%	<u>Marl</u> as above.
1660m - 1665m		As above.
1665m - 1670m	50%	<u>Calcisiltite</u> as above, grading to <u>Marl</u>
	50%	<u>Marl</u> as above.
1670m - 1675m	55%	<u>Calcisiltite</u> light to medium grey-brown, friable and soft, occasionally firm, grading micritic and <u>Marly</u> (clayey).
	45%	<u>Marl</u> as above.
1675m - 1680m	75%	<u>Calcisiltite</u> as above, very pyritiferous in part.
	25%	<u>Marl</u> as above.
1680m - 1685m	60%	<u>Calcisiltite</u> as above.
	40%	<u>Marl</u> as above.
1685m - 1690m	75%	<u>Calcisiltite</u> predominantly medium grey-brown, soft to friable grading <u>Marly</u> when soft and more clayey.
	25%	<u>Marl</u> as above.
1690m - 1695m	70%	<u>Calcisiltite</u> as above, trace <u>Calcarenite</u>
	30%	<u>Marl</u> as above.
		Minor pyrite aggregates, commonly after microfossils e.g., spines, few forams.
1695m - 1700m	75%	<u>Calcisiltite</u> as above, gradational in part to
	25%	<u>Marl</u> as above.
1700m - 1705m	65%	<u>Calcisiltite</u> as above.
	35%	<u>Marl</u> as above. Pyrite aggregates.
1705m - 1710m	85%	<u>Calcisiltite</u> as above, trace glauconite, quite pyritic.
	15%	<u>Marl</u> as above. Abundant calcareous microfauna, predominantly foram species, minor spines.
1710m - 1715m		Predominantly <u>Calcisiltite</u> medium grey-brown, friable to firm, platy habit, pyrite, trace glauconite, composed of silt size microfossils in part, micritic in part.
1715m - 1720m		As above.
1720m - 1725m	55%	<u>Calcisiltite</u> as above.
	45%	<u>Marl</u> as above.

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DEPTH	%	DESCRIPTION
1725m - 1730m	70% 30%	<u>Calcsiltite</u> as above. <u>Marl</u> as above.
1730m - 1735m	50% 50%	<u>Calcsiltite</u> as above. <u>Marl</u> as above.
1735m - 1740m		Predominantly <u>Calcsiltite</u> as above.
1740m - 1745m	90% 10%	<u>Calcsiltite</u> grading <u>Marly</u> <u>Marl</u> grading firmer, very silty to <u>Calcsiltite</u> .
1745m - 1750m	95% 5%	<u>Calcsiltite</u> medium grey brown, soft to friable to firm, few visible microfaunal components, grading micritic, grandmass, platy to blocky habit, pyrite, trace glauconite. <u>Marl</u> as above.
1750m - 1755m		As above. Common loose microfauna, predominantly various foram species; few pyrite aggregates.
1755m - 1760m	80% 20%	<u>Calcsiltite</u> as above. <u>Marl</u> as above.
1760m - 1765m		As above.
1765m - 1770m	85% 15%	<u>Calcsiltite</u> as above. <u>Marl</u> as above.
1770m - 1775m		As above. * 10m samples from 1780m onwards.
1775m - 1780m	90% 10%	<u>Calcsiltite</u> as above. <u>Marl</u> as above.
1780m - 1790m	70% 30%	<u>Calcsiltite</u> as above. <u>Marl</u> as above. Pyrite aggregates, microfauna.
1790m - 1800m	75% 25%	<u>Calcsiltite</u> as above. <u>Marl</u> light grey, very soft to soft, occasionally firm, occasionally laminated light to medium grey, very silty.
1800m - 1810m	90% 10%	<u>Calcsiltite</u> medium grey-brown, friable to firm, blocky to platy habit, contains common silt-sized microfauna, pyritic, trace carbonaceous and glauconite. <u>Marl</u> as above. Abundant forams, pyrite aggregates.
1810m - 1820m	80% 20%	<u>Calcsiltite</u> as above. <u>Marl</u> light grey, occasionally medium grey and laminated, very silty, grading in part where firmer and platy to <u>Calcsiltite</u> as above. Accessory microfauna, often pyritised.
1820m - 1830m	60% 40%	<u>Calcsiltite</u> as above. <u>Marl</u> as above.

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29/12/78

DEPTH	%	DESCRIPTION
1830m - 1840m	65% 35%	<u>Calcisiltite</u> as above, pyritic, trace glauconite. <u>Marl</u> as above.
1840m - 1850m	75% 25%	<u>Calcisiltite</u> as above. <u>Marl</u> as above, pyrite.
1850m - 1860m	90% 10%	<u>Calcisiltite</u> as above. <u>Marl</u> as above. Abundant calcareous microfossils.
*1860m - 1870m	35% 60% 5%	<u>Limestone</u> light brown, micritic, blocky to subconchoidal fractures, very hard, pyritic, with sparry white calcite veining. <u>Calcisiltite</u> as above. <u>Marl</u> as above.
1870m - 1880m	5% 90% 5%	<u>Limestone</u> as above. <u>Calcisiltite</u> medium grey-brown, medium grey, as above. <u>Marl</u> as above. Loose forams, often pyritised.
1880m - 1890m		Predominantly <u>Calcisiltite</u> as above. Trace <u>Limestone</u> as above. Minor <u>Marl</u> as above.
1890m - 1900m	95% 5% TR	<u>Calcisiltite</u> medium grey to brown, friable to occasionally firm, blocky to platy fracture, pyrite, trace glauconite. <u>Marl</u> as above, pyrite and glauconite, trace only. <u>Limestone</u> as above. Circulated BU at 1900m at 1440 hours, 1890 hours on BIT #5 X3A. BOB and drilling at 2350 hours 4/1/79. NB #6 HTC-X3A.
1900m - 1910m	90% 10%	<u>Calcisiltite</u> as above, trace carbonaceous. <u>Marl</u> as above. Abundant forams, spines, often pyritised, pyrite aggregates.
1910m - 1920m	75% 25% TR	<u>Calcisiltite</u> as above. <u>Marl</u> light to occasionally medium grey, very soft, occasionally firmer and grading platy, very silty grading to <u>Calcisiltite</u> as above. <u>Limestone</u> as above.
1920m - 1930m	75% 25%	<u>Calcisiltite</u> medium grey-brown, predominantly pyritic, mere trace glauconite. <u>Marl</u> predominantly medium grey. Few prismatic aggregates of calcite.
1930m - 1940m		As above.
1940m - 1950m	70% 25% 5%	<u>Calcisiltite</u> as above. <u>Marl</u> as above. <u>Limestone</u> light brown, very hard and pyritic, micro-crystalline.
1950m - 1960m	65% 35%	<u>Calcisiltite</u> as above, friable, blocky to platy fractures. <u>Marl</u> as above.

ROCKLING-1

5/1/79

DEPTH	%	DESCRIPTION
1960m - 1970m	75% 25%	<u>Calcsiltite</u> as above. <u>Marl</u> as above.
1970m - 1980m	85% 15%	<u>Calcsiltite</u> as above. <u>Marl</u> as above. One pump down, controlled drilling.
1980m - 1990m		As above.
1990m - 2000m		As above.
2000m - 2010m	85% 15%	<u>Calcsiltite</u> as above, some included fine grain sized forams. <u>Marl</u> as above.
2010m - 2020m	85% 15%	<u>Calcsiltite</u> medium grey-brown, friable to firm, blocky fractures, visible silt sized microfaunal components - often pyritised, quite pyritic, trace glauconite. <u>Marl</u> light to medium grey, very soft, pyritic. Common loose skeletal debris.
2020m - 2030m	95% 5%	<u>Calcsiltite</u> as above. <u>Marl</u> as above. Pump in action again.
2030m - 2040m		As above.
2040m - 2050m	85% 15%	<u>Calcsiltite</u> as above. <u>Marl</u> as above.
2050m - 2060m		As above.
2060m - 2070m	80% 20%	<u>Calcsiltite</u> as above. <u>Marl</u> as above. Minor <u>Calcarenite</u> white to brown, fine to medium grain, contains forams and other microfossil debris, very glauconitic, firm to hard and quartz grains.
*2070m - 2080m	80% 10% 10%	<u>Calcsiltite</u> as above. <u>Marl</u> as above. <u>Quartz</u> loose, clear to milky, medium grain to occasionally very coarse grain, well rounded. Calcareous and pyritic microfauna, essentially forams and spines. Minor <u>Calcarenite</u> as above, very glauconitic and pyritic.
2080m - 2090m	70% 30%	<u>Calcsiltite</u> as above. <u>Marl</u> as above. Minor <u>Quartz</u> loose, as above. Minor <u>Calcarenite</u> as above, predominantly fine grain.
2090m - 2100m	70% 30%+ TR	(Kelly height indicator down) <u>Calcsiltite</u> as above. <u>Marl</u> as above. <u>Calcarenite</u> , <u>Limestone</u> and loose <u>Quartz</u> .
2100m - 2110m	60% 40%	<u>Calcsiltite</u> medium grey-brown, as above <u>Marl</u> as above, predominantly light grey.

ROCKLING-1

5/1/79

DEPTH	%	DESCRIPTION
2110m - 2120m	70% 30% TR	<u>Calcsiltite</u> medium grey, firm, foraminiferal, micro-fauna. <u>Marl</u> medium to light grey, soft. Loose <u>Quartz</u> grains, fine to coarse grain, rounded to subrounded.
2120m - 2130m	60% 35% 5% TR	<u>Calcsiltite</u> as above. <u>Marl</u> as above. <u>Calcarenite</u> (skeletal packstone with sparry calcite cement) skeletal, glauconite, bryozoans, pyrite. Loose <u>Quartz</u> grains, medium to very coarse grain, rounded to subrounded. Drilled to 2132m. POH to change bit. Junk Basket Samples: <u>Sandstone</u> : white, hard, moderately sorted, medium to coarse grain, subrounded to rounded, quartz, calcite cement, very tight.
2132m - 2140m	70% 15% 5% 10% TR	<u>Calcsiltite</u> medium grey, soft, poorly sorted, crinoid fragments, patchy glauconite, calcite cement, pyrite. <u>Marl</u> light grey, soft, very fine, minor glauconite tracings, isolated quartz fragments. <u>Calcarenite</u> light grey to light brown, soft, poorly sorted, medium grain, angular to subrounded, quartz and skeletal fragments, patchy glauconite, fine pyrite, calcite cement. <u>Crinoidal</u> fragments foram tests. amounts of <u>Quartz</u> , red chert.
2140m - 2150m	60% 10% 15% 15% TR	<u>Calcsiltite</u> medium grey, soft, poor sorting, medium grain, skeletal fragments, pyrite. <u>Marl</u> white to light grey, soft, patchy glauconite, dark tracing define bedding. <u>Calcarenite</u> light grey, medium grain, fair sorting, subangular, quartz, skeletal fragments, patchy glauconite, pyrite, calcite cement. Foram tests, ostracod test, crinoidal fragments, pyrite encrusted skeletal fragments. <u>Quartz</u> fragments.
2150m - 2160m	60% 20% 15% 5% TR	<u>Calcsiltite</u> as above. <u>Marl</u> as above with pyrite streaks common. <u>Calcarenite</u> as above, rich in glauconite. Skeletal fragments, foram tests. <u>Quartz</u> .
2160m - 2170m	70% 10% 10% 5% 5%	<u>Calcsiltite</u> as above, pyrite rich, pyrite coating on microfossils, shows stratification. <u>Marl</u> as above. <u>Calcarenite</u> as above. Foram tests, crinoid fragments. <u>Quartz</u> fragments.
2170m - 2180m	80% 15% 5% TR	<u>Calcsiltite</u> as above. <u>Marl</u> as above, with glauconite. Foram test, crinoid fragments with pyrite. <u>Quartz</u> .

ROCKLING-1

6/1/79

DEPTH	%	DESCRIPTION
2180m - 2190m	60% 30% 5% 5% TR	<u>Calcsiltite</u> as above. <u>Marl</u> as above, with skeletal fragments common. <u>Calcarenite</u> as above. <u>Forams</u> , crinoid fragments. <u>Quartz</u> .
2190m - 2200m	80% 15% 2½% 2½%	<u>Calcsiltite</u> as above, shows bedding, pyrite common. <u>Marl</u> as above. <u>Foram</u> , crinoid. <u>Quartz</u> .
2200m - 2210m	80% 15% 5% TR	<u>Calcsiltite</u> as above, pyrite common. <u>Marl</u> as above. <u>Foram</u> tests. <u>Calcarenite</u> , <u>Quartz</u> .
2210m - 2220m	70% 20% 10% TR	<u>Calcsiltite</u> light to medium grey, soft, fine grains, foram fossil fragments, pyrite, calcite cement. <u>Marl</u> white to light grey, very soft, contains numerous foram fossil fragments, pyrite, minor glauconite. <u>Foram</u> tests. <u>Quartz</u> ; <u>Calcarenite</u> containing glauconite.
2220m - 2230m	60% 30% 10% TR	<u>Calcsiltite</u> as above. <u>Marl</u> as above, pyrite layers common. <u>Foram</u> tests. <u>Quartz</u> , <u>Calcarenite</u> .
2230m - 2240m	70% 25% 5% TR	<u>Calcsiltite</u> as above. <u>Marl</u> as above. <u>Foram</u> tests. <u>Quartz</u> , glauconite rich <u>Marl</u> .
2240m - 2250m	80% 15% 5%	<u>Calcsiltite</u> as above. <u>Marl</u> as above. <u>Forams</u> , crinoidal remains rare.
2250m - 2260m	80% 10% 10% TR	<u>Calcsiltite</u> as above. <u>Marl</u> as above. <u>Forams</u> . <u>Calcarenite</u> , rich in skeletal remains and glauconite.
2260m - 2270m	80% 20%	<u>Calcsiltite</u> light to medium grey, soft to firm, 20-30% silt size microfossils and detrital matter in 70-80% calcareous clayey matrix, thin laminae, calcareous cement, trace disseminated pyrite, slight trace glauconite. <u>Marl</u> very light grey, soft, massive, estimated 20% silt sized forams, occasional trace carbonaceous matter.
2270m - 2280m	70% 30%	<u>Calcsiltite</u> as above, trace carbonaceous matter, good trace pyrite, occasional fine grained forams. <u>Marl</u> as above.
2280m - 2290m	80% 20% TR TR	<u>Calcsiltite</u> as above. <u>Marl</u> as above. Loose <u>Quartz</u> grains. <u>Skeletal Fragments</u> .
2290m - 2300m	80% 20% TR	<u>Calcsiltite</u> as above, massive to slight fissile, thin laminae, % carbonate. <u>Marl</u> as above. Loose medium to coarse grain, well rounded, white quartz grains.

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DEPTH	%	DESCRIPTION
2300m - 2310m	90%	<u>Calcisiltite</u> light to medium grey, tan grey, firm, massive to thin laminae, slightly fissile, 20-40% silt sized particles (forams and detrital matter) in 60-80% calcareous clay matrix, good trace pyrite, trace coral or bryozoa fragments.
	10%	<u>Marl</u> as above.
	TR	Medium grained <u>Forams</u> .
2310m - 2320m	TR	Loose grains as above.
	85%	<u>Calcisiltite-Calcareous Siltstone</u> light to medium grey, tan grey, 20-40% silt size forams, and clastics in a 60-80% slightly calcareous clay matrix, trace to 5% white, very fine to fine grain skeletal fragments, slight trace of carbonaceous matter, good trace pyrite, firm, massive to thin laminae, slightly fissile.
	5%	<u>Marl</u> white to light grey, very soft, 20-30% silt sized to very fine <u>Forams</u> , in 70-80% calcareous clay matrix.
	10%	<u>Forams</u> tan, light grey, translucent, fine to coarse grain, predominantly medium grained, loose.
2320m - 2330m	TR	Loose medium to coarse grain, quartz grains.
	90%	<u>Calcisiltite-Calcareous Siltstone</u> as above, trace bright green glauconite, trace pyrite, trace carbonaceous matter.
	5%	<u>Marl</u> as above.
2330m - 2340m	5%	<u>Forams</u> as above.
	90%	<u>Calcisiltite-Calcareous Siltstone</u> as above.
	5%	<u>Marl</u> as above.
	5%	<u>Forams</u> as above.
2340m - 2350m	TR	Spicules.
	90%	<u>Calcareous Siltstone</u> grading to <u>Calcisiltite</u> and <u>Calcareous Claystone</u> , light grey, light tan grey, firm, massive to thin laminae, subfissile, 20-40% silt size clastics and <u>Forams</u> in calcareous claystone matrix, trace carbonaceous matter, trace pyrite.
	5%	<u>Marl</u> as above.
	5%	<u>Forams</u> as above.
2350m - 2355m	TR	Medium to coarse grain, loose quartz grains, with occasional bright green glauconite.
	95%	<u>Calcareous Siltstone</u> as above.
	5%	<u>Forams</u> Slight trace echinoid spine.
2355m - 2360m	95%	<u>Calcareous Siltstone</u> as above.
	5%	<u>Forams</u> as above.
2360m - 2365m	100%	<u>Calcareous Siltstone</u> as above.
	TR	<u>Forams</u> as above.
2365m - 2370m	95%	<u>Calcareous Siltstone</u> as above, fissile.
	2%	<u>Marl</u> as above.
	3%	<u>Forams</u> .
	TR	<u>Carbonaceous</u> fragments, quartz.
2370m - 2375m	85%	<u>Calcareous Siltstone</u> light grey to medium grey, soft, contains numerous microfossils, minor carbonaceous fragments, fissile, alternating patches of carbonate and argillaceous cement.
	10%	<u>Marl</u> very light grey, very soft, microfossils (silt sized), pyrite layers.
	5%	<u>Foram</u> tests, crinoid stems.

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DEPTH	%	DESCRIPTION
2375m - 2380m	90% 5% 5%	<u>Calcareous Siltstone</u> as above, carbonaceous fragments. <u>Marl</u> as above. <u>Foram</u> tests.
2380m - 2385m	90% 5% 5% TR	<u>Calcareous Siltstone</u> as above, coaly fragments, pyritic. <u>Marl</u> as above. <u>Foram</u> tests. <u>Calcareous Sandstone</u> white, soft and friable, very fine grained, moderately sorted, rounded graining, matrix plus cement = 30%, contains microfossils, quartz.
2385m - 2390m	95% 3% 2%	<u>Calcareous Siltstone</u> as above, fissile, coaly fragments and pyrite. <u>Marl</u> as above. <u>Forams</u> crinoid fragments.
2390m - 2395m	95% 3% 2% TR	<u>Calcareous Siltstone</u> as above, fissile, coaly fragments, pyrite. <u>Marl</u> as above, minor glauconite. <u>Forams</u> , crinoids. Very fine <u>Calcareous Siltstone</u> as above.
2395m - 2400m	90% 5% 5%	<u>Calcareous Siltstone</u> as above, increasing fissility. <u>Marl</u> as above. <u>Forams</u> crinoidal fragments.
2400m - 2405m	70% 20% 10%	<u>Calcareous Siltstone</u> black grey, soft, cement predominantly clay and carbonate, fissile, pyrite and carbonaceous fragments. <u>Marl</u> light grey, contains pyrite and silt size microfossils. <u>Forams</u> crinoidal fragments.
2405m - 2410m	90% 5% 5%	<u>Calcareous Siltstone</u> as above, both fissile and massive. <u>Marl</u> as above. <u>Foram</u> tests, crinoidal fragments.
2410m - 2415m	90% 10% TR	<u>Calcareous Siltstone</u> as above. <u>Marl</u> as above. <u>Foram</u> tests, crinoidal fragments.
2415m - 2420m	85% 10% 5%	<u>Calcareous Siltstone</u> as above. <u>Marl</u> as above. <u>Calcareous Arenite</u> , white, very fine grained, moderately sorted, subangular, calcareous cement and dominance of sand sized fossils, glauconite present.
2420m - 2425m	80% 10% 8% 2%	<u>Calcareous Siltstone</u> as above. <u>Marl</u> as above. <u>Calcareous Arenite</u> as above. <u>Foram</u> .
2425m - 2430m	70% 10% 15% 5%	<u>Calcareous Siltstone</u> as above. <u>Marl</u> as above. <u>Calcareous Arenite</u> as above, glauconite present. <u>Forams</u> and crinoids.
2430m - 2435m	65% 25% 5% 5%	<u>Calcareous Siltstone</u> as above. <u>Calcareous Arenite</u> as above, good trace bright glauconite. <u>Marl</u> as above. <u>Forams</u> as above, plus crinoid stems, bryozoa.

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DEPTH	%	DESCRIPTION
2435m - 2440m	45% 50% 5% TR	<p><u>Calcareous Siltstone</u> as above.</p> <p><u>Calcareous Arenite</u> light grey, brown grey, firm, friable, 40-70% fine to medium grain, occasionally coarse grained forams in 30-60% argillaceous matrix, good trace glauconite, trace pyrite, trace pyrite sponge spicules.</p> <p><u>Marl</u> white, very light grey, soft, massive, 5-10% silt sized forams in 90-95% calcareous clayey matrix, trace pyrite.</p> <p><u>Sandstone</u> light grey, dark grey, mottled, very firm, coarse to very coarse grain, estimated 20% argillaceous matrix, glauconite.</p>
2440m - 2445m	70% 25% 5%	<p><u>Calcareous Siltstone</u> light to medium grey, firm, thin laminae, slightly fissile, 5-20% silt size to occasionally fine grained forams in 80-95% calcareous clayey matrix, slight trace carbonaceous matter.</p> <p><u>Calcareous Arenite</u> as above.</p> <p><u>Marl</u> as above.</p>
2445m - 2450m	80% 10% 5% 5%	<p><u>Calcareous Siltstone</u> as above.</p> <p><u>Calcareous Arenite</u> as above.</p> <p><u>Marl</u> as above.</p> <p><u>Forams</u> crinoidal fragments.</p>
2450m - 2455m	80% 10% 5% 5%	<p><u>Calcareous Siltstone</u> as above, glauconite.</p> <p><u>Marl</u> as above.</p> <p><u>Calcareous Arenite</u> as above.</p> <p><u>Forams</u> crinoidal fragments.</p>
2455m - 2460m	80% 20% TR	<p><u>Calcareous Siltstone</u> light grey to medium light grey, buff grey, firm, 30-60% silt size with occasional very fine grains, predominant forams, 40-70% clay size, slightly calcareous matrix, abundant disseminated pyrite and pyritized spicules, poorly defined thin laminae, occasional sub fissile, slight trace carbonaceous matter.</p> <p><u>Calcareous Arenite</u> light grey, buff grey, firm, occasionally friable, 50-80% fine to medium grain grading to silt size grains, predominant forams, 20-50% slightly calcareous, clay to silt matrix, trace glauconite.</p> <p><u>Forams</u> loose.</p>
2460m - 2465m	70% 25% 5%	<p><u>Calcareous Siltstone</u> as above, trace glauconite, trace pyrite, trace carbonaceous matter.</p> <p><u>Calcareous Arenite</u> as above.</p> <p><u>Forams</u> as above.</p>
2465m - 2470m	100% TR	<p><u>Calcareous Siltstone</u> as above, glauconite, medium grey, grades to calcareous arenite, very fine grain, <u>Forams</u>.</p>
2570m - 2575m	80% 15% 5%	<p><u>Calcareous Siltstone</u> as above, spicules?.</p> <p><u>Calcareous Arenite</u> as above.</p> <p><u>Forams</u>.</p>
2475m - 2480m	80% 10% 10% TR	<p><u>Calcareous Siltstone</u> as above.</p> <p><u>Calcareous Arenite</u> as above, glauconite present.</p> <p><u>Marl</u> white, contains silt size fossils.</p> <p><u>Forams</u>.</p>

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DEPTH	%	DESCRIPTION
2480m - 2485m	50% 30% 20%	<u>Calcareous Siltstone</u> as above, glauconite present. <u>Calcareous Arenite</u> as above. <u>Marl</u> as above.
2485m - 2490m	60% 30% 10% TR	<u>Calcareous Siltstone</u> as above. <u>Calcareous Arenite</u> as above. <u>Marl</u> as above. <u>Quartz</u> grains, <u>Forams</u> .
2490m - 2495m	40% 40% 20% TR	<u>Calcareous Siltstone</u> as above, very abundant to approximately ½% fresh glauconite, good trace disseminated replacement pyrite. <u>Calcareous Arenite</u> as above, good trace glauconite. <u>Forams</u> fine to medium grain, loose. <u>Marl</u> as above.
2495m - 2500m	40% 10% 50%	<u>Calcareous Siltstone</u> as above. <u>Calcareous Arenite</u> as above, trace gypsum. <u>Sandstone</u> very light grey, light brown grey, yellow green, mottled, firm, very friable, very fine to medium grain, occasionally coarse grain, predominantly medium grain, moderate to poor sorting, 10-40% yellow green matrix, also trace to 10% argillaceous matrix, 1-5% bright glauconite, subangular to subrounded grains, poor visceous porosity, appears tight, trace minimal fluorescence, no cut.
2500m - 2505m	95% 5%	<u>Sandstone</u> clear, yellow, loose to very friable, medium to coarse grain, occasionally very coarse, predominantly medium grain, well sorted, subangular to rounded, quartz, estimated 10% yellow green clay size matrix, trace to 5% glauconite, trace pyrite. <u>Calcareous Siltstone</u> as above, probable cavings.
2505m - 2510m	100%	<u>Sandstone</u> as above. (<u>Calcareous Siltstone</u> as above, cavings)
2510m - 2515m	25% 75%	<u>Sandstone</u> (a) as above. <u>Sandstone</u> (b) white, loose grains, medium to coarse grains, well sorted, rounded to well rounded, pyrite cement, loose quartz grains dominant.
2515m - 2520m	10% 90%	<u>Sandstone</u> (a) as above. <u>Sandstone</u> (b) as above.
2520m - 2525m	10% 90%	<u>Sandstone</u> (a) (Gunurd FM) as above. <u>Sandstone</u> (b) as above, pyrite on quartz grains.
2525m - 2529m	90% 10%	<u>Sandstone</u> clear, light grey, loose grains, medium to coarse grains, predominantly medium grained, occasionally fine grained, well sorted, subangular to subrounded, quartz, 10% of grains have very fine coating of pyrite, trace glauconite, possible cavings. <u>Claystone</u> white, very light grey, very soft, massive, possibly matrix for sandstone above.
2529m - 2530m	90% 10%	<u>Sandstone</u> as above. <u>Claystone</u> as above.
2530m - 2535m	80%	(Very poor sample, estimated 80% angular calcareous siltstone cuttings-5% glauconite sandstone cavings?) <u>Sandstone</u> as above. (Cont.)

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<u>DEPTH</u>	<u>%</u>	<u>DESCRIPTION</u>
2530m - 2535m (Cont.)	10% 10%	<u>Claystone</u> as above. <u>Claystone</u> medium to dark brown grey, moderately hard, fissile, micaceous, carbonaceous, non calcareous, estimated 20-30% silt size grades to siltstone.
2535m - 2540m	100%	(Estimated greater than 90% argillaceous, calcareous, siltstone cavings) <u>Sandstone</u> , clear, loose grains, quartz, medium to very coarse grained, predominantly coarse grained, well sorted, subangular to rounded.
2540m - 2545m	90% 10%	(Greater than 90% argillaceous, calcareous siltstone cavings) <u>Sandstone</u> as above. <u>Claystone</u> , dark brown, occasionally black, silty, non calcareous, abundant pyrite, occasionally very carbonaceous micaceous.
2545m - 2550m	50% 30% 20%	(greater than 90% cavings as above) <u>Sandstone</u> as above. <u>Siltstone</u> medium to dark grey brown, soft to firm, very micaceous, very carbonaceous, non calcareous, grades to <u>Claystone</u> dark brown, as above.
2550m - 2555m	50% 30% 20%	(Greater than 90% cavings as above) <u>Sandstone</u> as above. <u>Siltstone</u> as above, grades to <u>Claystone</u> as above.
2555m - 2560m	70% 20% 10%	(95+% cavings, light to medium grey, calcareous siltstone with minor glauconitic sandstone) <u>Siltstone</u> grey brown, soft, fissile, very micaceous, carbonaceous, non calcareous, grades to <u>Claystone</u> silty, carbonaceous. <u>Sandstone</u> clear, medium to coarse grained, loose.
2560m - 2565m	70% 20% 10%	(90%± cavings as above) <u>Sandstone</u> as above. <u>Siltstone</u> as above, grades to <u>Claystone</u> as above.
2565m - 2570m	40% 30% 30%	(80-85% cavings as above) <u>Claystone</u> dark grey brown, soft, fissile, very micaceous, carbonaceous, non calcareous, grades to <u>Siltstone</u> as above. <u>Sandstone</u> clear, loose, quartz, medium to coarse grained, predominantly medium grained, well sorted, subangular to subrounded, pyritic.
2570m - 2575m	80% 10% 10%	(80% cavings as above) <u>Claystone</u> brown black, very carbonaceous. <u>Siltstone</u> , as above. <u>Sandstone</u> , as above.
2575m - 2580m	70% 30%	(90% cavings, light to medium grey, calcareous siltstone) <u>Sandstone</u> as above. <u>Claystone</u> dark brown, carbonaceous, non calcareous.
2580m - 2585m	50% 50%	(90% cavings) <u>Sandstone</u> as above. <u>Claystone</u> as above, carbonaceous to very carbonaceous.

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DEPTH	%	DESCRIPTION
2585m - 2590m	50% 40% 10%	(90-95% cavings as above) <u>Sandstone</u> clear, loose, medium to coarse grained, well sorted, subangular to subrounded, mosaic fabric, pyritic. <u>Shale</u> as above, occasionally very carbonaceous. <u>Coal</u> black, brittle, silty.
2590m - 2595m	80% 20%	(90%± cavings) <u>Sandstone</u> as above. <u>Shale</u> as above.
2595m - 2600m	100% Trace Trace	Sample quality is very poor. Sample consists mainly of foraminiferal bearing calcisiltites from the Lakes Entrance Formation (90%). <u>Sandstone</u> loose quartz grains, clear, medium to coarse grained, moderate sorting, subangular to subrounded; pyritic, glauconitic. <u>Shale</u> hard, black to dark grey, very carbonaceous, micaceous (Claystone). <u>Coal</u> black, brittle.
2600m - 2605m	100% Trace Trace	(Sample mainly cavings) <u>Sandstone</u> loose quartz grains as above. <u>Shale</u> as above, very carbonaceous. <u>Coal</u> as above.
2605m - 2610m	95% 5% Trace	(Sample mainly cavings) <u>Sandstone</u> as above, pyrite:glauconite common. <u>Coal</u> pyrite coated. <u>Shale</u> as above, very carbonaceous.
		Drilled to 2611.22m. Pulled out of hole to change bits.
2610m - 2615m	80% 20%	<u>Siltstone</u> - light brown, firm, moderately sorted; clear cement, containing sand sized quartz grains and carbonaceous fragments, mica and pyrite common, fissile. <u>Sandstone</u> as above.
2600m - 2615m	20% 80%	<u>Sandstone</u> loose quartz grains, clear, medium to coarse grained, subrounded to rounded, moderately sorted, quartz grades to clean very fine grained siltstone. <u>Siltstone</u> medium brown to medium grey, firm, poorly sorted, quartz, carbonaceous, micaceous, grades to very fine grained dirty siltstone.
2615m - 2620m	35% 50% 10% 5%	<u>Sandstone</u> as above grading to very fine grained siltstone, micaceous, carbonaceous, quartzose, weakly cemented. <u>Siltstone</u> as above, very carbonaceous. <u>Shale</u> medium brown to black, firm, very carbonaceous, mica, pyrite. <u>Coal</u> black, brittle.
2620m - 2625m	70% 20% 10% Trace Trace	<u>Sandstone</u> loose quartz grains, as above. <u>Siltstone</u> very carbonaceous, as above. <u>Sandstone</u> white to light grey, firm to friable, very fine grained to fine grained, moderately sorted, subrounded to rounded, quartz, carbonaceous, clay, mica, weakly cemented, some pyrite cement. <u>Shale</u> very carbonaceous as above. <u>Coal</u> as above.

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DEPTH	%	DESCRIPTION
2625m - 2630m	80% 20% Trace	<u>Sandstone</u> loose grains, as above, pyrite and iron oxide(?) cement. <u>Siltstone</u> as above. <u>Sandstone</u> very fine to fine grained, as above.
2630m - 2635m	90% 10% Trace Trace	<u>Sandstone</u> loose grains, as above, pyrite cement. <u>Sandstone</u> very fine to fine grained, as above, very abundant pyrite. <u>Coal</u> . <u>Siltstone</u> .
2635m - 2640m	95% 5% Trace	<u>Sandstone</u> loose grains, white, coarse to very coarse grained to occasionally granular, very well sorted, rounded to well rounded, pyrite cement. <u>Shale</u> black, pyritic, fissile. <u>Coal</u> bright.
2640m - 2645m	60% 20% 20% Trace	<u>Sandstone</u> loose grains, as above. <u>Siltstone</u> light brown, soft, micaceous and carbonaceous, interlaminated with very fine grained with sandstone. <u>Sandstone</u> white to light brown, soft, moderately sorted, subangular to subrounded, clay matrix, clay cement and pyrite; quartz and possibly feldspar, grades into siltstone and often forms silt/sand laminite. <u>Coal</u>
2645m - 2650m	50% 40% 10%	<u>Sandstone</u> loose grains as above. <u>Siltstone</u> interlaminated with <u>Sandstone</u> (silt dominant) (a) <u>Siltstone</u> light brown, soft, grain size variable, clay cement, carboniferous coarsens to very fine sandstone, micaceous. (b) <u>Sandstone</u> white to light brown, soft, moderately sorted, subangular, clay matrix, clay cement, forms wavy layers interbedded with silt or grades into silt. <u>Shale</u> black, carbonaceous, pyritic, interbedded with silt or very fine sand.
2650m - 2655m	20% 60% 15% 5%	<u>Sandstone</u> loose grains as above. <u>Siltstone</u> as above. <u>Sandstone</u> very fine grained as above. <u>Coal</u> massive, bright (vitrite).
2655m - 2660m	80% 10% Trace Trace 10%	<u>Sandstone</u> loose quartz grains, medium to very coarse grained, moderately sorted, subrounded to rounded, pyrite cement. <u>Siltstone</u> interlaminated with very fine grained siltstone, dark brown to medium grey, firm to friable, poorly sorted, clay, quartz, carbonaceous, pyrite. <u>Coal</u> black, brittle. <u>Shale</u> dark brown to medium grey, firm, carbonaceous, micaceous, clays, pyrite. <u>Sandstone</u> white, friable, very fine to fine grained, moderately sorted, subangular to subrounded, clay matrix, quartz, pyrite.

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DEPTH	%	DESCRIPTION
2660m - 2665m	90% 5% 5% Trace Trace	<u>Sandstone</u> - loose quartz grains, as above. <u>Siltstone</u> as above. <u>Sandstone</u> very fine grained, white, as above. <u>Shale</u> as above. <u>Coal</u> as above.
2665m - 2670m	70% 15% 15% Trace Trace	<u>Sandstone</u> loose quartz grains as above. <u>Siltstone</u> as above. <u>Sandstone</u> , very fine grained, white, as above. <u>Coal</u> <u>Shale</u> brown to black, carbonaceous.
2670m - 2675m	100% Trace	<u>Sandstone</u> loose quartz grains as above, pyrite cement. <u>Siltstone</u> as above. Drilled to 2686m, high torque, bit would not drill. Pulled out of hole to log.
2675m - 2680m	100% Trace	<u>Sandstone</u> white, loose grains, very coarse to coarse, well sorted, subrounded to rounded, pyrite cement (minor), quartz. <u>Shale</u> black, carbonaceous, pyritic.
2680m - 2685m	100% Trace	<u>Sandstone</u> loose grains, as above. <u>Siltstone</u> as above.
		Total Depth at 2686m.

2. SIDEWALL
DESCRIPTIONS

APPENDICES 2

Sidewall Cores Descriptions.

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ATT DATE 15/1/79

ESSO AUSTRALIA LTD.
SIDEWALL CORE DESCRIPTIONS

WELL ROCKLING-1
GEOLOGIST DJH/VZ
SERVICE CO. SCHLUMBERGER

NO. 1a	DEPTH 1	REC 2	ROCK TYPE 3	MODIFIERS 4	CAL 5	COLOR 6	INDUR DEG 7	GRAIN SIZE 8	SRTG 9	RND 10	DISS CLAY 11	STAIN 12	FLOURESCENCE				CUT FLUOR.		CUT RESIDUE		SHOW 21	PROB PROD 22	REMARKS - GAS 23
													% RK	DISTR 14	INTEN 15	COLOR 16	INTEN 17	COLOR 18	QUAN 19	COLOR 20			
1	2670	20	SAND STONE	Clean		medium to light grey	fri- able	medium to coarse	well	sr- r												Clean sand.	
2	2659.3	15	SAND STONE	Quartzose		very light grey	very fri- able	medium to coarse	well	sr- r												Clean sand.	
3	2656	30	SAND STONE	Quartzose		medium to light grey	very fri- able	medium to very coarse	mod- erate	sr		Tr.										Clean sand.	
4	2652.5	10	SAND STONE	Quartzose	V	medium grey	very fri- able	very fine to fine	poor	sa- sr		10										Fine sandstone.	
5	2646	10	SAND STONE	Silty		light grey	fri- able	silty to very coarse grain	poor to medium	sa- sr		20										Carbonaceous layering.	
6	2644.5	20	SAND STONE	Silty	SL	medium to light grey	fri- able	silty to very fine grain	medium to poor	sa		5										Laminated, carbonaceous.	
7	2640	15	SAND STONE	Silty		medium to light grey	fri- able	silty to very fine	medium	sr- r		Tr.										Pyrite, iron stain, carbonaceous.	
8	2634	20	SAND STONE	Clean		light grey	very fri- able	coarse	well	r												Very clean sandstone.	
9	2631.5	15	SAND STONE	Silty		medium to light grey	fri- able	silty to very fine	poor	sr		20										Very carbonaceous, pyritic.	
0	2623	15	SAND STONE	Quartzose		light grey	fri- able	fair to medium	medium	sr- r		Tr.										Trace pyrite, trace rock fragments.	

WELL ROCKLING-1
 GEOLOGIST DJH/VZ
 SERVICE CO SCHLUMBERGER
 ESSO AUSTRALIA LTD.
 SIDEWALL CORE DESCRIPTIONS
 ATT DATE 15/1/79
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 REC

NO. 1a	DEPTH 1	REC 2	ROCK TYPE 3	MODIFIERS 4	CAL 5	COLOR 6	INDUR DEG 7	GRAIN SIZE 8	SRTG 9	RND 10	DISS CLAY 11	STAIN 12	FLOURESCENCE				CUT FLUOR.		CUT RESIDUE		SHOW 21	PROB PROD 22	REMARKS - GAS 23
													% RK	DISTR 14	INTEN 15	COLOR 16	INTEN 17	COLOR 18	QUAN 19	COLOR 20			
11	2618	15	SAND STONE	Quartzose		light grey	friable	very firm to medium	medium sr	sa	5												Trace pyrite, trace rock fragments.
12	2616	15	SAND STONE	Carbonaceous		medium to light grey	friable	medium to firm	medium sr	sa	10												Carbonaceous bonds, trace pyrite.
13	2611.530		SAND STONE	Quartzose		medium to light grey	friable	fine	well	sa	TR												Trace pyrite.
14	2609	10	SAND STONE	Argillaceous		light grey	friable	medium to coarse	medium sr	sa	20												Common pyrite, trace carbonaceous.
15	2593	15	SAND STONE	Quartzose		light grey	friable	medium to coarse	well	sa sr	TR												Trace pyrite, trace to 5% rock fragments
16	2584	15	SAND STONE	Silty		medium grey	friable	silt to fine	medium sr	sa	20												Carbonaceous, pyrite, trace rock fragments
17	2582	15	SAND STONE	Quartzose		light grey	friable	silt to very fine	medium	sa	5												Carbonaceous fragmen trace rock fragments trace pyrite.
18	2576	20	SAND STONE	Quartzose		light grey	friable	fine to medium	well	sa	10												Pyrite, carbonaceous fragments, micaceous rock fragments.
19	2562.515		SHALE	Silty		brown grey	firm																Carbonaceous.
20	2557.320		SILT STONE	Argillaceous, sandy.		brown grey	firm	clayey to very fine			40												Carbonaceous flecks.
21	2553	20	SILT STONE	Carbonaceous		medium grey	firm	silty			50												Carbonaceous frag- ments, pyrite, micaceous.
22	2547.525		SILT STONE	Carbonaceous, Sandy.		medium to dark grey	firm	silty to very fine			50												Carbonaceous layers mica, pyrite.
23	2544.520		SILT STONE	Argillaceous, Sandy,		very light to medium grey	firm	silt to very fine	poor		40												Laminated, argillac- eous, pyrite, mica.

NO.	DEPTH	REC	ROCK TYPE	MODIFIERS	CAL	COLOR	INDUR DEG	GRAIN SIZE	SRTG	RND	DISS CLAY	STAIN	FLOURESCENCE			CUT FLUOR.		CUT RESIDUE		SHOW	PROB PROD	REMARKS - GAS
													% RK	DISTR	INTEN	COLOR	INTEN	COLOR	QUAN			
1a	1	2	3	4	5	6	7	8	9	10	11	12	14	15	16	17	18	19	20	21	22	23
24	2542.5	20	SILT STONE	Carbonaceous, sandy.		very light to medium grey	firm	silt to very fine	poor													Bonded, carbonaceous micas, fissile.
25	2538.5	15	SAND STONE	Quartzose		medium to light grey	friable	fine to medium	medium r	sr												Fe stain, trace rock, trace pyrite.
26	2535	20	SAND STONE	Quartzose		very light grey	friable	silt to medium	poor	a-												Trace rock, mica, occasional very coarse grains, poor.
27	2531.5	30	SAND STONE	Glaucinite, Quartzose,		very light grey	friable	fine to medium	medium sr	sa-												Trace pyrite, trace glauconite.
28	2517.5	20	SILT STONE	Argillaceous		medium to dark grey	firm	clayey to very fine	poor													Very fine grained sandstone layers, pyrite.
29	2508.5	25	SILT STONE	Argillaceous		medium to light grey	soft	silt														Pyrite, coal, laminae organic.
30	2495.5	30	SAND STONE	Silty, argillaceous, glauconite.		brown black	friable	fair to medium	poor	r-wr												Very glauconitic, Fe, silty.
31	2317.5	34	MUD STONE	Calcareous	V	medium to light grey	firm	clayey														Very calcareous, mottled.
32	2248.5	40	MUD STONE	Calcareous, massive	V	medium brown grey	firm	silt to clay														Mottled, recrystallised, massive.
33	2176	35	LIME STONE	Very Argillaceous	V	medium to dark grey	firm	clayey to silty														Silt sized, pyritic.
34	2100	20	MUD STONE	Calcareous	V	medium grey	firm	clayey to silty														
35	2025	25	MUD STONE	Calcareous	V	medium to dark grey	firm	clayey to silty														Forams, trace pyrite massive.
36	1950	30	MUD STONE	Calcareous	V	medium grey	firm	clayey to silty														Forams, trace pyrite

NO.	DEPTH	REC	ROCK TYPE	MODIFIERS	CAL	COLOR	INDUR DEG	GRAIN SIZE	SRTG	RND	DISS CLAY	STAIN	FLOURESCENCE				CUT FLUOR.		CUT RESIDUE		SHOW	PROB PROD	REMARKS - GAS
													% RK	DISTR	INTEN	COLOR	INTEN	COLOR	QUAN	COLOR			
1 a	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
37	1875.	30	MUD STONE	Calcareous	V	medium grey	firm	clayey to silty				50											Trace carbonaceous, trace pyrite, forams
38	1800	26	MUD STONE	Calcareous	V	medium grey	firm	clayey silty				50											Trace pyrite, trace forams, massive.
39	1722.543		MUD STONE	Calcareous	v	medium grey	firm	clayey to silty				60											Massive, forams, trace pyrite.
40	1646	25	MUD STONE	Calcareous	V	medium grey	firm	clayey to silty				50											Massive.
41	1575	15	LIME STONE	Argillaceous	V	light to medium grey	firm	clayey				40											Pyritic, crinoid, occasional forams.
42	1500	10	LIME STONE	Calcarenite	V	medium to light grey	firm	silty to very fine				30											Pyrite, foram grains
43	1443	NR																					
44	1359	15	LIME STONE	Argillaceous	V	medium to light grey	firm	clayey				40											Forams, trace pyrite.
45	1275	15	LIME STONE	Calcsiltite	V	light grey	firm	clayey to silty				20											Silt size forams.
46	1200	25	LIME STONE	Calcsiltite	V	medium grey	firm	clayey to silty				40											Silt size forams, trace pyrite.
47	1125	15	LIME STONE	Calcsiltite	V	light grey	firm	clayey to silty				20											Recrystallized limestone, pyrite, silt size forams.
48	1050	20	LIME STONE	Calcsiltite	V	medium to light grey	firm	clayey to silty				15											Trace pyrite, organic flecks, forams.

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NO. 1 a	DEPTH 1	REC 2	ROCK TYPE 3	MODIFIERS 4	CAL 5	COLOR 6	INDUR DEG 7	GRAIN SIZE 8	SRTG 9	RND 10	DISS CLAY 11	STAIN 12	FLOURESCENCE			CUT FLUOR.		CUT RESIDUE		SHOW 21	PROB PROD 22	REMARKS - GAS 23
													% RK	DISTR 14	INTEN 15	COLOR 16	INTEN 17	COLOR 18	QUAN 19			
49	975	30	LIME STONE	Calcisiltite V		medium to light grey	firm	clayey to silty				15										mottled, recrystall- ised limestone, microfossils.
50	900	25	LIME STONE	Calcilutite V		medium to light grey	firm	clayey to silty				10										Pyritic, silt size microfossils.
51	885	25	LIME STONE	Calcisiltite V		medium to light grey	firm	clayey to very fine				20										Forams, quartz, silt.
52	2529.515		SAND STONE	Quartzose		very light grey	friable	very fine to fine	medium	sa-		5										Trace mica, Fe stain clean, pyrite, trace rock.
53	2527.510		SAND STONE	Quartzose		very light grey	friable	very fine to fine	medium			5										Poor sample, crushed.
54	2524	5	SAND STONE	Quartzose		very light grey	friable	very fine to fine	medium													Poor sample, trace glauconite.
55	2521.515		SAND STONE	Quartzose		light grey	friable	very fine to medium	medium			10										Trace pyrite, 1% rock.
56	2519	10	SAND STONE	Argillaceous, Silty,		brown grey	friable	silt to medium	poor	sa- sr		20										20% rock, pyrite, Fe stain.
57	2516	15	SAND STONE	Silty, mica		light grey	friable	silt to fine grain	medium			10										Pyrite, trace mica, trace carbonaceous.
58	2514	10	SAND STONE	Silty		medium to light grey	friable	silt to fine	medium			10										Trace mica, pyrite, trace glauconite.
59	2512	15	SAND STONE	Silty, lamin- ated.		medium light grey	friable	silt to fine				15										Laminated, mica, carbonaceous streaks, pyrite.

NO. 1 a	DEPTH 1	REC 2	ROCK TYPE 3	MODIFIERS 4	CAL 5	COLOR 6	INDUR DEG 7	GRAIN SIZE 8	SRTG 9	RND 10	DISS CLAY 11	STAIN 12	FLOURESCENCE			CUT FLUOR.		CUT RESIDUE		SHOW 21	PROB PROD 22	REMARKS - GAS 23
													% RK	DISTR 14	INTEN 15	COLOR 16	INTEN 17	COLOR 18	QUAN 19			
60	2510	15	SILT STONE	Argillaceous Sandy,		brown grey	friable	clayey to fine	poor													Poor sample, carbonaceous.
61	2507	20	SAND STONE	Micaceous, Silty,		medium to light grey	friable	silt to fine	poor													Mica, glauconite, pyrite, rock frag- ments, carbonaceous.
62	2505	25	SAND STONE	Argillaceous, Silty,		brown	friable	clayey to coarse	poor sr													Good traces glaucon- ite, pyrite.
63	2503	15	SAND STONE	Silty, Argillaceous		dark grey	friable	clayey to coarse	poor sa													Carbonaceous, trace glauconite, trace pyrite.
64	2500	15	SILT STONE	Sandy, Argillaceous		olive grey to dark grey	soft	clayey to fine	poor													Fe stain, glauconite.
65	2497	20	SILT STONE	Sandy, Argillaceous		olive grey	soft	clayey to coarse	poor sr													Glauconite, massive, trace pyrite.
66	2494	45	SAND STONE	Glauconite, Argillaceous		Dark olive grey	soft	clayey to medium	poor sa													5% Glauconite.
67	2492	TR	SAND STONE	Glauconite, silty		medium to light grey	friable	silt to medium	poor sa													5% Glauconite.
68	2490	15	SAND STONE	Glauconite, calcareous		medium to medium dark grey	firm to friable	silt to medium	poor sa													2% glauconite, trace mica, very calcareous
69	2488	TR	LIME STONE	Calcarenite	V	medium grey	soft	silt to medium	poor r													5% glauconite, 20% forams.
70	2486	10	LIME STONE	Calcarenite	V	medium grey	soft	silt to fine	poor													Good trace glauconite
71	2484	15	LIME STONE	Calcsiltite	V	medium to light grey	firm	silt to fine	poor													5% glauconite, 20% forams.

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NO.	DEPTH	REC	ROCK TYPE	MODIFIERS	CAL	COLOR	INDUR DEG	GRAIN SIZE	SRTG	RND	DISS CLAY	STAIN	FLOURESCENCE			CUT FLUOR.		CUT RESIDUE		SHOW	PROB PROD	REMARKS - GAS	
													%	DISTR	INTEN	COLOR	INTEN	COLOR	QUAN				COLOR
1a	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
72	2482	20	LIME STONE	Calcsiltite	v	medium grey	firm	silt to very fine	medium		10												Trace glauconite.
73	2480	30	LIME STONE	Calcsiltite	v	medium grey	firm	silt to fine	medium ^r		10												50% forams, trace glauconite.
74	2478	TR	LIME STONE	Calcsiltite	v	medium grey	firm	silt to very fine	medium		20												Abundant forams.
75	2475	30	LIME STONE	Calcilutite	v	medium to light grey	firm	clayey to silt	poor		10												5% quartz grains, forams, trace pyri.
76	2470	25	MUD STONE	Calcareous	v	medium grey	firm	clayey to silt			20												Trace pyrite, very thin laminae, subfissile.
77	2465	25	MUD STONE	Calcareous	v	medium grey	firm	clayey to silt			40												Trace pyrite, very thin laminae, forams.
78	2460	20	LIME STONE	Calcsiltite	v	medium grey	firm	clayey to very fine	poor		30												Thin laminae, subfissile.
79	2455	35	MUD STONE	Calcareous	v	medium grey	firm	clayey to silt			50												Subfissile, trace pyrite.
80	2450	45	MUD STONE	Calcareous	v	medium grey	firm	clayey to silt			50												Subfissile, thin laminae, pyrite.
81	2406.540		MUD STONE	Calcareous	v	medium to dark grey	firm	clayey to silt			50												Carbonaceous trace trace pyrite.

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SWC NO.	DEPTH	RECOVERED	DESCRIPTION
1.	2670m	20mm	<u>Sandstone</u> medium light grey to medium grey, very friable, medium to coarse grained, moderately sorted, subangular to rounded, quartz, trace to 5% clay matrix, trace very fine disseminated pyrite cement.
2.	2659.3m	15mm	<u>Sandstone</u> very light grey to light grey, very friable, medium to coarse grained, well sorted, quartz, subrounded to rounded, trace to 5% clay matrix, good trace very fine disseminated pyrite, trace carbonaceous material.
3.	2656m	30mm	<u>Sandstone</u> medium light grey, very friable, medium to very coarse grained, occasionally granular, moderately sorted, quartz, subrounded, trace clay matrix, good trace very fine disseminated pyrite.
4.	2652.5m	10mm	<u>Sandstone</u> medium grey, very friable, very fine to fine grained, poor to moderately sorted, subangular to subrounded, quartz, estimated 10% argillaceous matrix.
5.	2646m	10mm	<u>Sandstone</u> light grey, friable, silt to very fine grained, moderately sorted, subangular to subrounded, quartz, estimated 20% clay size matrix, trace disseminated pyrite, trace carbonaceous laminae, thin laminae.
6.	2644.5m	20mm	<u>Sandstone</u> medium light grey, friable, silt to very fine grained, moderately to poor sorted, subangular, estimated 5% clay matrix, very thin carbonaceous laminae, trace pyrite.
7.	2640m	15mm	<u>Sandstone</u> medium light grey, friable, silt to very fine grained, moderately sorted, subrounded to rounded, quartz, silty layers, good visual porosity, trace carbonaceous flecks, trace disseminated pyrite, trace iron stain, non calcareous.
8.	2634m	20mm	<u>Sandstone</u> light grey, very friable, loose, coarse grained, occasionally medium grained, well sorted, rounded, quartz with trace rock fragments, very good visual porosity, non calcareous.
9.	2631.5m	15mm	<u>Sandstone</u> medium light grey, friable, silt to very fine grained, poor to moderately sorted, silty layers, subrounded, quartz, 5% carbonaceous material, estimated 20% clay matrix, trace pyrite, non calcareous.
10.	2623m	15mm	<u>Sandstone</u> light grey, friable, fine to medium grained, moderately sorted, subrounded to rounded, quartz, trace rock fragments, trace pyrite, trace clay matrix, non calcareous.
11.	2618m	15mm	<u>Sandstone</u> light grey, friable, very fine to medium grained, moderately sorted, subangular to subrounded, 5% clay matrix, trace rock fragments, trace pyrite.

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SWC NO.	DEPTH	RECOVERED	DESCRIPTION
12.	2616m	15mm	<u>Sandstone</u> medium light grey, friable, medium to fine grained, moderate sorting, subangular to subrounded, 10% clay matrix, carbonaceous bands, trace pyrite.
13.	2611.5m	30mm	<u>Sandstone</u> medium light grey, friable, fine grained, well sorted, subangular, trace of clay matrix, trace pyrite.
14.	2609m	10mm	<u>Sandstone</u> light grey, friable, medium to coarse grained, moderate sorting, subangular to subrounded, 20% clay matrix, pyrite common, trace carbonaceous fragments.
15.	2593m	15mm	<u>Sandstone</u> light grey, friable, medium to coarse grained, well sorted, subangular to subrounded, trace clay matrix, 5% rock fragments (chert), trace pyrite.
16.	2584m	15mm	<u>Sandstone</u> medium grey, friable, silt to fine grained, moderate sorting, subangular to subrounded, 20% clay matrix, carbonaceous, trace pyrite, trace rock fragments.
17.	2582m	15mm	<u>Sandstone</u> light grey, friable, silt to very fine grained, moderate sorting, subangular, 5% clay matrix, carbonaceous fragments, trace rock fragments, trace pyrite.
18.	2576m	20mm	<u>Sandstone</u> light grey, friable, fine to medium grained, well sorted, subangular, 10% clay matrix, trace pyrite, carbonaceous fragments, micaceous, rock fragments.
19.	2562.5m	15mm	<u>Shale</u> brown grey, firm, fissile, carbonaceous.
20.	2557.3m	20mm	<u>Siltstone</u> brown grey, firm, clay to very fine grained, 40% clay matrix, carbonaceous flecks.
21.	2553m	20mm	<u>Siltstone</u> medium grey, firm, silt size, 50% argillaceous matrix, non calcareous, trace carbonaceous flecks, trace pyrite, trace micaceous.
22.	2547.5	25mm	<u>Siltstone</u> medium dark grey, firm, silt to very fine grained, 50% argillaceous matrix, non calcareous, carbonaceous layers, micaceous, trace pyrite.
23.	2544.5m	20mm	<u>Siltstone</u> very light grey to medium grey, firm, layers of silt size to very fine grained with argillaceous laminae, very fine micaceous, pyritic bands.
24.	2542.5m	20mm	<u>Siltstone</u> very light grey to medium grey, laminations silt and very fine grained laminations, firm, sand size, moderate sorting, fine laminae, carbonaceous and pyritic, micaceous, fissile.
25.	2538.5m	15mm	<u>Sandstone</u> medium light grey, friable, fine to medium grained, moderate sorting, subrounded to rounded, quartz, minor rock fragments, trace pyrite, trace iron stain.

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<u>SWC NO.</u>	<u>DEPTH</u>	<u>RECOVERED</u>	<u>DESCRIPTION</u>
26.	2535m	20mm	<u>Sandstone</u> very light grey, friable, silt to medium grained, occasionally very coarse grained, poor sorting, angular (broken) to rounded, estimated 15% clay matrix, trace rock fragments, trace mica, trace pyrite.
27.	2531.5m	30mm	<u>Sandstone</u> very light grey, friable, fine to medium grained, moderate sorting, subangular to subrounded quartz, massive, non calcareous, trace glauconite, trace pyrite.
28.	2517.5m	20mm	<u>Siltstone</u> medium dark grey, firm, clay to very fine grained, poorly sorted, estimated 50% clay matrix, thin laminae, trace pyrite.
29.	2508.5m	25mm	<u>Siltstone</u> medium light grey, soft, clay to silt size, estimated 60% clay matrix, very thin organic rich laminae.
30.	2495.5m	30mm	<u>Sandstone</u> brown black, fine to medium grained, poor sorting, silty, estimated 40% clay matrix, very abundant glauconite, ferruginous cement, non calcareous.
31.	2317.5m	34mm	<u>Mudstone</u> calcareous, medium light grey, firm, clay 60%, carbonate 40%. Massive and mottled appearance.
32.	2248.5m	40mm	<u>Mudstone</u> calcareous, medium brown grey, firm, silt to clay, clay 60%, mottled, recrystallised, massive.
33.	2176m	35mm	<u>Limestone</u> very argillaceous, medium dark grey, firm, silty to clay, clay 50%, silt sized grains isolated, minor pyrite.
34.	2110m	20mm	<u>Mudstone</u> very calcareous, medium grey, firm, clay to silt, 50% clay.
35.	2025m	25mm	<u>Mudstone</u> very calcareous, medium dark grey, firm, clay to silt, 60% clay, forams, trace pyrite, massive.
36.	1950m	30mm	<u>Mudstone</u> very calcareous, medium grey, firm, clay to silt, 50% clay, forams, trace pyrite.
37.	1875m	30mm	<u>Mudstone</u> very calcareous, medium grey, firm, clay to silt, 50% clay, forams, trace pyrite, trace carbonate.
38.	1800m	26mm	<u>Mudstone</u> very calcareous, medium grey, firm, clay to silt, 50% clay, trace forams, trace pyrite, massive.
39.	1722.5m	43mm	<u>Mudstone</u> very calcareous, medium grey, firm, clay to silt, 50% clay, forams, trace pyrite, massive.
40.	1646m	25mm	<u>Mudstone</u> very calcareous, medium grey, firm, clay to silt, 50% clay, massive.
41.	1575m	15mm	<u>Limestone</u> argillaceous, light to medium grey, firm, clay size, occasionally silt, estimated 40% clay, trace pyrite, occasional forams, trace crinoid stems.

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<u>SWC NO.</u>	<u>DEPTH</u>	<u>RECOVERED</u>	<u>DESCRIPTION</u>
42.	1500m	10mm	<u>Calcarenite</u> medium light grey, firm, silt to very fine grained, poor sorting, estimated 30% clay matrix, massive, predominantly foram grains in calcareous clay matrix, trace pyrite.
43.	1443m	NR	No recovery.
44.	1359m	15mm	<u>Limestone</u> medium light grey, firm, clay size, abundant forams, estimated 40% clay, trace pyrite, massive.
45.	1275m	15mm	<u>Calcsiltite</u> light grey, firm, clay to silt size, estimated 20% clay, silt size forams, trace pyrite.
46.	1200m	25mm	<u>Calcsiltite</u> medium grey to olive grey, firm, clay to silt size, estimated 40% clay, silt size forams, trace pyrite, massive.
47.	1125m	15mm	<u>Calcsiltite</u> light grey, firm, clay to silt size, silt size forams, estimated 20% clay, patches of fine grained recrystallised limestone, trace pyrite.
48.	1050m	20mm	<u>Calcsiltite</u> medium light grey, firm, clay to silt size, estimated 15% clay, microfossils, trace pyrite, organic flecks.
49.	975m	30mm	<u>Calcsiltite</u> medium light grey, firm, clay to silt size, estimated 15% clay, silt size microfossils, mottled, recrystallised patches.
50.	900m	25mm	<u>Calcsiltite</u> medium light grey, firm, clay to silt size, estimated 10% clay, microfossils, trace pyrite.
51.	885m	25mm	<u>Calcsiltite</u> medium light grey, firm, clay to very fine grained size, very fine grained forams, 5-10% quartz silt, estimated 20% clay matrix, massive.
52.	2529.5m	15mm	<u>Sandstone</u> - very light grey, very friable, very fine grained to fine grained, occasionally medium grained moderate sorting, subangular to rounded, quartz, trace mica, massive, trace pyrite, clean.
53.	2527.5m	10mm	<u>Sandstone</u> very light grey, very friable, very fine grained to fine grained, well sorted, crushed grains (Sidewall gun) trace rock fragments (chert), trace pyrite.
54.	2524m	5mm	<u>Sandstone</u> small crushed mud contaminated sample, very light grey, very friable, very fine to fine grained, moderate sorting, quartz, trace glauconite.
55.	2521.5m	15mm	<u>Sandstone</u> light grey, friable, very fine to medium grained, moderate sorting, crushed by gun, estimated 10% clay matrix, non calcareous, trace to 1% chert grains, trace pyrite.
56.	2519m	10mm	<u>Sandstone</u> brown grey, friable, silt to medium grained, poor sorting, estimated 20% clay matrix, 2% rock fragments, good trace pyrite.
57.	2516m	15mm	<u>Sandstone</u> light grey, friable, silt fragments, moderate sorting, estimated 10% clay matrix,

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SWC NO.	DEPTH	RECOVERED	DESCRIPTION
58.	2514m	10mm	Sandstone medium light grey, friable, silt to very fine grained, moderate sorting, estimated 10% clay matrix, angular to subrounded, quartz, trace rock fragments, trace mica, trace glauconite, good trace pyrite, dirty.
59.	2512m	15mm	Sandstone laminate, medium light grey to medium grey, friable, silt to fine grained, occasionally medium grained, poor sorting, relatively clean quartz bands with 1mm carbonaceous and silty laminae, estimated 15% clay, trace pyrite, non calcareous.
60.	2510m	15mm	Siltstone sandy, brown grey, clay to fine grained, poor sorting, estimated 25% clay matrix, trace carbonaceous, dirty.
61.	2507m	20mm	Sandstone medium light grey, friable, silt to fine grained, poor sorting, quartz, minor rock fragments, estimated 10% clay matrix, trace carbonaceous material, good trace pyrite, trace glauconite, dirty, good trace mica.
62.	2505m	25mm	Sandstone brown, brown grey, friable, clay to coarse grained, very poor sorting, subrounded, quartz grains, estimated 40% dark clay matrix, good trace bright green glauconite, good trace pyrite.
63.	2503m	15mm	Sandstone dark grey, friable, clay to coarse grained, very poor sorting, subangular, quartz, estimated 40% clay matrix, very carbonaceous, trace glauconite, trace pyrite.
64.	2500m	15mm	Siltstone dark grey, olive grey, soft, clay to fine grained, very poor sorting, estimated 50% clay matrix, non calcareous, trace glauconite, iron stain, very dirty.
65.	2497m	20mm	Siltstone dark olive grey, very soft, clay to coarse grained, very poor sorting, subrounded quartz grains, estimated 50% clay matrix, good trace glauconite, non calcareous.
66.	2494m	45mm	Sandstone dark olive grey, very soft, clay to medium grained, very poor sorting, subangular grains, estimated 30% clay matrix, 5-10% bright glauconite, some as replacement of sand size forams.
67.	2492m	TR	Sandstone medium light grey, friable to firm, very fine to medium grained, occasionally coarse grained, glauconite grains, poor sorting, angular to subangular, quartz, 5-10% glauconite, moderately calcareous, estimated 15% clay matrix, very poor sample recovery.
68.	2490m	15mm	Sandstone medium grey to medium dark grey, firm, friable, silt to medium grained, poor sorting, estimated 10% clay matrix, 30-40% carbonate grains, 50-60% silt and sand grains, trace rock fragments, trace mica.

SIDEWALL CORE DESCRIPTIONS

ROCKLING-1

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SWC NO.	DEPTH	RECOVERED	DESCRIPTION
69.	2488m	TR	<u>Calcarenite</u> medium grey, soft, silt to medium grained, poor sorting, estimated 10% silt to medium grained forams, estimated 15% clay matrix, 5% fine grained glauconite, very calcareous, estimated 60% carbonate.
70.	2486m	10mm	<u>Calcarenite</u> medium grey, soft, silt to medium grained, poor sorting, estimated 60% carbonate, estimated 30% silt and sand grains, estimated 10% clay matrix, good trace glauconite, abundant very fine to fine grained forams.
71.	2484m	15mm	<u>Calcsiltite</u> medium light grey, firm, silt to fine grained, estimated 10% clay matrix, estimated 50% carbonate matrix and grains, estimated 35% quartz grains, estimated 5% glauconite, very abundant forams.
72.	2482m	25mm	<u>Calcsiltite</u> medium grey, firm, silt to very fine grained, moderate sorting, estimated 10% clay matrix estimated 60% carbonate grains and matrix, abundant forams, estimated 30% quartz grains, trace glauconite.
73.	2480m	30mm	<u>Calcsiltite</u> medium grey, firm, silt to fine grained, moderate sorting, estimated 10% clay matrix, estimated 30% forams, estimated 40% quartz grains, trace rock fragments, trace glauconite.
74.	2478m	TR	<u>Calcsiltite</u> medium grey, firm, silt to very fine grained, moderate sorting, abundant forams, very thin laminae, very poor sample, possible contamination.
75.	2475m	30mm	<u>Calcsiltite</u> medium grey, firm, clay to silt, estimated 10% clay matrix, abundant silt size forams, trace pyrite, 5% quartz grains.
76.	2470m	25mm	<u>Mudstone</u> calcareous, medium grey, firm, clay to silt size, estimated 20% forams, trace mica, trace glauconite, subfissile, very thin laminae, estimated 20-30% clay matrix.
77.	2465m	25mm	<u>Mudstone</u> calcareous, medium grey, firm, clay to silt size, estimated 40% clay matrix, silt size to occasional fine grained forams, in calcareous clay silty matrix, subfissile, trace pyrite.
78.	2460m	20mm	<u>Calcsiltite-Siltstone</u> medium grey, firm, subfissile, clay to very fine grained, poorly sorted, estimated 30% clay matrix, estimated 20% forams, estimated 50% quartz grains.
79.	2455m	35mm	<u>Mudstone</u> calcareous, medium grey, firm, subfissile, clay to silt, estimated 50% clay matrix, very thin laminae, good trace pyrite, abundant to 5% forams.

SIDEWALL CORE DESCRIPTIONS

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ROCKLING-1

15/1/79

SWC NO.	DEPTH	RECOVERED	DESCRIPTION
80.	2450m	45mm	Mudstone calcareous, medium grey, firm, subfissile, clay to silt, estimated 50% clay matrix, very thin laminae, good trace pyrite, abundant to 5% forams.
81.	2406.5m	40mm	Mudstone calcareous, medium grey to medium dark grey, firm, subfissile, clay to silt size, predominantly clay, estimated 50%, estimated 40% carbonate, trace very thin carbonaceous layers, trace pyrite.

3. PALYNOLOGY

APPENDICES 3

Palynological Report.

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A PALYNOLOGICAL ANALYSIS OF
ROCKLING-1, GIPPSLAND BASIN

by

H.E. STACY

and

A.D. PARTRIDGE

ESSO AUSTRALIA LTD
PALAEOLOGY REPORT 1979/6

MARCH 20, 1979

I N T R O D U C T I O N

Thirty eight sidewall cores were processed and examined for palynology. Recovery was poor to fair for the most part, however, except for two samples, enough palynomorphs were extracted so that age determinations could be made.

Zones and lithological/facies subdivisions of the basal Lakes Entrance Formation and the Latrobe Group is summarized below. All samples examined are summarised in Table 1 and each occurrence for the individual species is tabulated in the distribution charts.

S U M M A R Y

<u>UNIT/FACIES</u>	<u>ZONE</u>	<u>DEPTH (in metres)</u>
LAKES ENTRANCE FORMATION Marl	<u>P. tuberculatus</u>	2475 - 2486m
UNCONFORMITY		
GURNARD FORMATION	Upper ? <u>N. asperus</u>	2494m
Glaucconitic Sandstone	Lower <u>N. asperus</u>	2495.5(?) - 2497m
UNCONFORMITY		
LATROBE GROUP	Middle <u>M. diversus</u>	2500 - 2508.5m
Course Clastics	Lower? <u>M. diversus</u>	2512 - 2517.5m
	Lower <u>M. diversus</u>	2519 - 2584m
	Upper <u>L. balmei</u>	2609 - 2659.3m
	T.D.	2684m

G E O L O G I C A L C O M M E N T S

1. All Paleocene sediments (2609m to 2659m) are considered to belong to the Upper L. balmei Zone. The lack of markers for the Upper L. balmei below 2640m is believed to be due to poor fossil recovery and low species diversity, rather than to a change in age.

2. By including the unidentified sediments between the last Lower M. diversus identification (2584m) and the first positive L. balmei sample (2609m) as part of the Lower M. diversus beds, a thickness of approximately 90 metres is obtained for the Lower M. diversus section, which is similar to that found for West Halibut-1 and Fortescue-1.
3. The Lower M. diversus section is conformably overlain by less than 20 metres of Middle M. diversus sediments.
4. A major unconformity situated between 2497m and 2500m separates the Middle M. diversus sediments and the N. asperus age Gurnard greensand.
5. The two lower samples from the Gurnard, 2497m and 2495.5m are Lower N. asperus in age, however, the next sample above, 2494m, appears to be as young as Upper N. asperus.
6. The sample from 2490m between the Lakes Entrance and Gurnard Formations is barren of diagnostic fossils and cannot be assigned to either with confidence.

D I S C U S S I O N O F Z O N E S

The presence and distribution of this individual species is presented in the distribution sheets. The basis for the zonation of this well section is discussed below:

Upper Lygistepollenites balmei Zone: 2609 - 2659.3 metres.

The highest in-place occurrence of L. balmei, and below the last occurrence of such Lower Eocene species as S. prominatus and M. diversus, is the basis for picking the top of the L. balmei zone. The presence of such species as Proteacidites grandis, P. incurvatus and P. annularis are considered indicative that the enclosing sediments are no older than the Upper part of the L. balmei Zone. As noted in the geological discussion, indicator species for the Upper subzone were not found below 2631.5m but, because of the paucity of the flora, this absence was not considered significant.

Wetzeliella hyperacantha Zone: 2562.5 - 2584 metres.

Wetzeliella hyperacantha is restricted to the lower part of the Lower M. diversus Zone in this well, and was not found to extend into the upper part of the Upper L. balmei sediments, as was noted in nearby wells.

Lower Malvacipollis diversus Zone: 2514 - 2584 metres.

Sediments above the highest occurrence of L. balmei and including such forms as S. prominatus, and M. diversus are evidence for a Lower M. diversus or younger age. The scattered occurrence of Tetracolporites multistrixis is used as evidence that this section belongs to the Lower subdivision of the M. diversus Zone.

Lower ? Malvacipollis diversus Zone: 2512 - 2517.5 metres.

Although T. multistrixis is not found in this interval, the continued upward occurrence of Deflandrea dartmooria and the lack of any M. diversus Zone markers suggests that these beds may also be Lower M. diversus in age.

Middle Malvacipollis diversus Zone: 2500 - 2508.5 metres.

The negative evidence of the lack of such important Lower M. diversus Zone indicator species as T. multistrixis and the overall similarity of the assemblages to those in samples from the Middle M. diversus Zone in adjacent wells is our justification for referring this section to the Middle M. diversus Zone. Although the evidence is weak, and hence the zone assignment can only be given a 2 confidence rating, there is no doubt that the section is of Early Eocene age and that it can be no younger than the Middle M. diversus Zone. Even though the sidewall cores from this interval are very badly contaminated with Lakes Entrance Formation fossils which are suspected to be derived from dissolution and remobilisation of this formation by the drilling mud.

Lower Nothofagidites asperus Zone: 2497 - 2495.5 metres.

The common occurrence of the dinoflagellate Areosphaeridium dictyoplokus in the Lower sample confirms the presence of the Lower N. asperus Zone. The higher sample contains a more limited and less diagnostic assemblage, however the presence of a possible specimen of Corrudinium incompositum suggests that this sample could be as young as the Middle N. asperus Zone.

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Upper? Nothofagidites asperus Zone : 2494 metres.

The assignment of this flora to the "Upper" part of the N. asperus zone is based primarily on negative evidence. The Lower N. asperus index, A. dictyoplokus, which was common in one of the samples below is not present in this flora: neither are any of the other Lower or Middle N. asperus markers. At the same time, these palynomorphs are distinct from the overlying Lakes Entrance Formation assemblages.

Proteacidites tuberculatus Zone: 2475 - 2486 metres.

Cyatheacidites annulatus and the several index species of Dinospherea were present throughout this section and indicate that these sediments are Post-Eocene and belong to the Lakes Entrance Formation.

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P A L Y N O L O G Y D A T A S H E E T

B A S I N: GIPPSLAND
 WELL NAME: ROCKLING-1

ELEVATION: KB: 31 GL: 69
 TOTAL DEPTH: 2684

AGE	PALYNOLOGICAL ZONES	H I G H E S T D A T A					L O W E S T D A T A				
		Preferred Depth	Rtg	Alternate Depth	Rtg	Two Way Time	Preferred Depth	Rtg	Alternate Depth	Rtg	Two Way Time
NEOGENE	<i>T. pleistocenicus</i>										
	<i>M. lipsis</i>										
	<i>C. bifurcatus</i>										
	<i>T. bellus</i>										
PALEOGENE	<i>P. tuberculatus</i>	2475	0				2486	0			
	Upper <i>N. asperus</i>	2494	2				2494	2			
	Mid <i>N. asperus</i>	2495.5	2	2497	1		2497	1			
	Lower <i>N. asperus</i>										
	<i>P. asperopolus</i>										
	Upper <i>M. diversus</i>										
	Mid <i>M. diversus</i>	2500	2				2508.5	2			
	Lower <i>M. diversus</i>	2512	2	2519	1		2584	1			
	Upper <i>L. balmei</i>	2609	1				2659.3	2	2631.5	1	
	Lower <i>L. balmei</i>										
LATE CRETACEOUS	<i>T. longus</i>										
	<i>T. lilliei</i>										
	<i>N. senectus</i>										
	U. <i>T. pachyexinus</i>										
	L. <i>T. pachyexinus</i>										
	<i>C. triplex</i>										
	<i>A. distocarinatus</i>										
EARLY CRET.	<i>C. paradoxus</i>										
	<i>C. striatus</i>										
	<i>F. asymmetricus</i>										
	<i>F. wonthaggiensis</i>										
	<i>C. australiensis</i>										
PRE-CRETACEOUS											

COMMENTS: Wetzeliella hyperacantha Zone : 2562.5 - 2584 metres.

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

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

DATA RECORDED BY: H.E. STACY DATE: MARCH 20, 1979
 DATA REVISED BY: _____ DATE: _____

Well Name ROCKLING-1

Basin GIPPSLAND

Sheet No. 1 of 8

SAMPLE TYPE #	DEPTHS																
	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
<i>A. qualumis</i>																	
<i>A. acutullus</i>																	
<i>A. luteoides</i>																	
<i>A. oculatus</i>																	
<i>A. sectus</i>																	
<i>A. triplaxis</i>																	
<i>A. obscurus</i>																	
<i>B. disconformis</i>																	
<i>B. arcuatus</i>																	
<i>B. elongatus</i>																	
<i>B. mutabilis</i>																	
<i>B. otwayensis</i>																	
<i>B. elegansiformis</i>																	
<i>B. trigonalis</i>																	
<i>B. verrucosus</i>																	
<i>B. bombaxoides</i>																	
<i>B. emaciatus</i>																	
<i>C. bullatus</i>																	
<i>C. heskermensis</i>																	
<i>C. horrendus</i>																	
<i>C. meleosus</i>																	
<i>C. apiculatus</i>																	
<i>C. leptos</i>																	
<i>C. striatus</i>																	
<i>C. vanraadshoovenii</i>																	
<i>C. orthoteichus/major</i>																	
<i>C. annulatus</i>	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
<i>C. gigantis</i>																	cf
<i>C. splendens</i>	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
<i>D. australiensis</i>																	
<i>D. granulatus</i>																	
<i>D. tuberculatus</i>																	
<i>D. delicatus</i>																	
<i>D. semilunatus</i>																	
<i>E. notensis</i>																	
<i>E. crassiexinus</i>																	
<i>F. balteus</i>																	
<i>F. crater</i>																	
<i>F. lucunosus</i>																	
<i>F. palaequetrus</i>																	
<i>G. edwardsii</i>																	
<i>G. rudata</i>																	
<i>G. divaricatus</i>																	
<i>G. gestus</i>																	
<i>G. catathus</i>																	
<i>G. cranwellae</i>																	
<i>G. wahooensis</i>																	cf
<i>G. bassensis</i>																	
<i>G. nebulosus</i>																	
<i>H. harrisii</i>	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
<i>H. astrus</i>																	
<i>H. elliotii</i>																	
<i>I. anguloclavatus</i>																	
<i>I. antipodus</i>																	
<i>I. notabilis</i>																	
<i>I. gremius</i>																	
<i>I. irregularis</i>	/	/	cf.	/	/	/	/	/	/	/	/	/	/	/	/	/	/
<i>J. peiratus</i>																	
<i>K. waterbolkii</i>																	
<i>L. amplus</i>																	
<i>L. crassus</i>																	
<i>L. ohaiensis</i>																	
<i>L. bainii</i>																	
<i>L. lanceolatus</i>																	
<i>L. balmei</i>																	?
<i>L. florinii</i>	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
<i>M. diversus</i>																	
<i>M. duratus</i>																	
<i>M. grandis</i>																	
<i>M. perimagnus</i>																	

*C= core; S= sidewall core; T= cuttings.

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Well Name ROCKLING-1

Basin GIPPSLAND

Sheet No. 3 of 8

SAMPLE TYPE *	DEPTHS																											
	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	
PALYNOMORPHS	2475	2482	248	2486	2490	2494	2495.5	2497	2500	2503	2505	2507	2508.5	2512	2514	2516	2517.5	2519	2521.5	2542.5	2544.5	2547.5	2553	2557.3	2562.5	2576	2582	2584
<i>P. rectomarginis</i>																												
<i>P. reflexus</i>																												
<i>P. reticulatus</i>																												
<i>P. reticuloconcavus</i>																												
<i>P. reticuloscabratus</i>																												
<i>P. rugulatus</i>																												
<i>P. scitus</i>																												
<i>P. stipplatus</i>																												
<i>P. tenuixinus</i>																		/	/	/	/	/	/	/	/	/	/	/
<i>P. truncatus</i>																												
<i>P. tuberculatus</i>																												
<i>P. tuberculiformis</i>																												
<i>P. tuberculotumulatus</i>																												
<i>P. xestoformis (Prot.)</i>																												
<i>Q. brosius</i>																												
<i>R. boxatus</i>																												
<i>R. stellatus</i>																												
<i>R. mallatus</i>																		/	/	/	/	/	/	/	/	/	/	/
<i>R. trophus</i>																												
<i>S. cainozoicus</i>																												
<i>S. rotundus</i>																												
<i>S. digitatoides</i>																												
<i>S. marlinensis</i>																												
<i>S. rarus</i>																												
<i>S. meridianus</i>									/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
<i>S. prominatus</i>																												
<i>S. uvatus</i>																												
<i>S. punctatus</i>								/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
<i>S. regium</i>																												
<i>T. multistrius (CP4)</i>																		/	/	/	/	/	/	/	/	/	/	/
<i>T. textus</i>																												
<i>T. verrucosus</i>																												
<i>T. securus</i>																												
<i>T. confessus (C3)</i>																												
<i>T. gillii</i>																												
<i>T. incisus</i>																												
<i>T. longus</i>																												
<i>T. phillipsii</i>																		/	/	/	/	/	/	/	/	/	/	/
<i>T. renmarkensis</i>																												
<i>T. sabulosus</i>																												
<i>T. simatus</i>																												
<i>T. thomasii</i>																												
<i>T. waiparaensis</i>																												
<i>T. adalaidensis (CP3)</i>																		/	/	/	/	/	/	/	/	/	/	/
<i>T. angurium</i>																												
<i>T. delicatus</i>																												
<i>T. geraniodes</i>																												
<i>T. leuros</i>																												
<i>T. lilliei</i>																												
<i>T. marginatus</i>																												
<i>T. moultonii</i>																		/	/	/	/	/	/	/	/	/	/	/
<i>T. paenestriatus</i>																												
<i>T. retequetrus</i>																												
<i>T. scabratus</i>																												
<i>T. sphaerica</i>																												
<i>T. magnificus (P3)</i>																												
<i>T. spinosus</i>																												
<i>T. ambiguus</i>																												
<i>T. chnosus</i>																												
<i>T. helosus</i>																												
<i>T. scabratus</i>																												
<i>T. sectilis</i>																												
<i>V. attinatus</i>																												
<i>V. cristatus</i>																												
<i>V. kopukuensis</i>							/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

*C=core; S=sidewall core; T=cuttings.

SAMPLE TYPE *	DEPTHS																											
	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S											
PALYNOMORPHS	2475	2482	2484	2486	2490	2494	2495.5	2497	2500	2503	2505	2507	2508.5	2512	2514	2516	2517.5	2519	2521.5	2542.5	2544.5	2547.5	2553	2557.3	2562.5	2576	2582	2584
<i>Operc. brevum</i>	/																											
<i>Syst. placacantha</i>	/																											
<i>Tuber. vancompoae</i>	/																											
<i>Ling. machaerophorum</i>	/					/																						
<i>H'Kolpoma rugaudae</i>	/					/																						cf
<i>Dinosph. simplex</i>	/					/																						
<i>Dinosphere sp.</i>	/					/																						
<i>Operc. centrocarpum</i>	/					/								/														
<i>Batiacasphaera sp.</i>	/					/																						
<i>Leptodinium sp.</i>	/					/																						
<i>Spin. ramosa</i>	/					/																						
<i>Dinosph. pontus</i>	/					/								cf														
<i>Acritarch, LEOS type</i>	/					/																						
<i>Defl. obliquipes</i>	/					/																						
<i>Emsland. australina</i>	/					/																						
<i>Defl. spp.</i>	/					/																						
<i>Dinosph. scabroellipticus</i>	/					/																						
<i>Homotryb. tasmaniense</i>	/					/																						
<i>Homotryblium sp.</i>	/					/																						
<i>Corrud. incompositum</i>	/					/																						
<i>Phthanoperidinium sp.</i>	/					/																						
<i>Tectat. marlum</i>	/					/																						
<i>Areosph. diktyoplokus</i>	/					/																						
<i>Hemicystodinium sp.</i>	/					/																						
<i>Cleistosphaeridium sp.</i>	/					/																						
<i>Reticulodinium sp.</i>	/					/																						
<i>Nematosph. balcombiana</i>	/					/																						
<i>Defl. flounderensis</i>	/					/																						
<i>Spiniferites sp.</i>	/					/																						
<i>Spinidinium spp.</i>	/					/																						
<i>Paral. indentata</i>	/					/																						
<i>Paleocyst. australinum</i>	/					/																						
<i>Heter. paxilla</i>	/					/																						
<i>Bitectatodinium sp.</i>	/					/																						
<i>Senon. morayensis</i>	/					/																						
<i>Penta laticinctum</i>	/					/																						
<i>Defl. dartmooria</i>	/					/																						
<i>Hystr. tubiferum</i>	/					/																						
<i>Adnato. recticulense</i>	/					/																						
<i>Dyphes colligerum</i>	/					/																						
<i>Thal. pelagica</i>	/					/																						
<i>Tubiosph. filosa</i>	/					/										cf												
<i>Apect. (W) homomorpha(l.s.)</i>	/					/																						
<i>Apect. (W) hyperacantha</i>	/					/																						
<i>Ken. pachycerata</i>	/					/																						

*C=core; S=sidewall core; T= cuttings.

Well Name ROCKLING-1

Basin GIPPSLAND

Sheet No. 5 of 8

SAMPLE TYPE *	DEPTHS																					
	S	S	S	S	S	S	S	S	S	S	S											
2609	2616	2618	2631.5	2640	2644.5	2646	2652.5	2656	2659.3													
PALYNOMORPHS																						
<i>A. qualumis</i>																						
<i>A. acutullus</i>																						
<i>A. luteoides</i>																						
<i>A. oculus</i>																						
<i>A. sectus</i>																						
<i>A. triplaxis</i>																						
<i>A. obscurus</i>																						
<i>B. disconformis</i>		/			/				/													
<i>B. arcuatus</i>																						
<i>B. elongatus</i>																						
<i>B. mutabilis</i>																						
<i>B. otwayensis</i>																						
<i>B. elegansiformis</i>																						
<i>B. trigonalis</i>																						
<i>B. verrucosus</i>																						
<i>B. bombaxoides</i>																						
<i>B. emaciatus</i>																						
<i>C. bullatus</i>																						
<i>C. heskermensis</i>																						
<i>C. horrendus</i>																						
<i>C. meleosus</i>																						
<i>C. apiculatus</i>																						
<i>C. leptos</i>																						
<i>C. striatus</i>																						
<i>C. vanraadshoovenii</i>																						
<i>C. orthoteichus/major</i>																						
<i>C. annulatus</i>			/																			
<i>C. gigantis</i>		/			/			/		/												
<i>C. splendens</i>		/			/			/		/												
<i>D. australiensis</i>																						
<i>D. granulatus</i>	/	/		/		/		/		/												
<i>D. tuberculatus</i>																						
<i>D. delicatus</i>																						
<i>D. semilunatus</i>																						
<i>E. notensis</i>																						
<i>E. crassiexinus</i>																						
<i>F. balteus</i>																						
<i>F. crater</i>																						
<i>F. lucunosus</i>																						
<i>F. palaequetrus</i>																						
<i>G. edwardsii</i>		/		/																		
<i>G. rudata</i>																						
<i>G. divaricatus</i>																						
<i>G. gestus</i>																						
<i>G. catathus</i>																						
<i>G. cranwellae</i>																						
<i>G. wahoensis</i>																						
<i>G. bassensis</i>																						
<i>G. nebulosus</i>																						
<i>H. harrisii</i>	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/		
<i>H. astrus</i>																						
<i>H. elliotii</i>																						
<i>I. anguloclavatus</i>																						
<i>I. antipodus</i>																						
<i>I. notabilis</i>																						
<i>I. gremius</i>																						
<i>I. irregularis</i>																						
<i>J. peiratus</i>																						
<i>K. waterbolkii</i>																						
<i>L. amplus</i>																						
<i>L. crassus</i>																						
<i>L. ohaiensis</i>																						
<i>L. bainii</i>																						
<i>L. lanceolatus</i>																						
<i>L. balmei</i>	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/		
<i>L. florinii</i>	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/		
<i>M. diversus</i>																						
<i>M. duratus</i>																						
<i>M. grandis</i>																						
<i>M. perimagnus</i>																						

*C=core; S=sidewall core; T=cuttings.

Well Name ROCKLING-1

Basin GIPPSLAND

Sheet No. 6 of 8

SAMPLE TYPE * DEPTHS	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	
	2609	2616	2618	2631.5	2640	2644.5	2646	2652.5	2656	2659.3												
PALYNOMORPHS																						
<i>M. subtilis</i>	/																					
<i>M. ornamentalis</i>																						
<i>M. hypolaenoides</i>																						
<i>M. homeopunctatus</i>																						
<i>M. parvus/mesonesus</i>								/														
<i>M. tenuis</i>								/														
<i>M. verrucosus</i>								/														
<i>M. australis</i>								/														
<i>N. asperus</i>			/																			
<i>N. asperoides</i>			/																			
<i>N. brachyspinulosus</i>	/							/														
<i>N. deminutus</i>	/							/														
<i>N. emarcidus/heterus</i>								/														
<i>N. endurus</i>								/														
<i>N. falcatus</i>								/														
<i>N. flemingii</i>	/							/														
<i>N. goniatus</i>	/							/														
<i>N. senectus</i>								/														
<i>N. vansteenisii</i>								/														
<i>O. sentosa</i>								/														
<i>P. ochesis</i>								/														
<i>P. catastus</i>								/														
<i>P. demarcatus</i>								/														
<i>P. magnus</i>								/														
<i>P. polyoratus</i>	/							/														
<i>P. vesicus</i>	/							/														
<i>P. densus</i>								/														
<i>P. velosus</i>								/														
<i>P. morganii/jubatus</i>								/														
<i>P. mawsonii</i>	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
<i>P. reticulosaccatus</i>	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
<i>P. verrucosus</i>								/														
<i>P. crescentis</i>								/														
<i>P. esobalteus</i>								/														
<i>P. langstonii</i>								/														
<i>P. reticulatus</i>								/														
<i>P. simplex</i>								/														
<i>P. varus</i>								/														
<i>P. adenanthoides (Prot.)</i>	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
<i>P. alveolatus</i>								/														
<i>P. amolosexinus</i>								/														
<i>P. angulatus</i>								/														
<i>P. annularis</i>		/		/		/		/														
<i>P. asperopolus</i>		/		/		/		/														
<i>P. biornatus</i>		/		/		/		/														
<i>P. clarus</i>		/		/		/		/														
<i>P. cleinei</i>		/		/		/		/														
<i>P. confragosus</i>		/		/		/		/														
<i>P. crassis</i>		/		/		/		/														
<i>P. delicatus</i>		/		/		/		/														
<i>P. formosus</i>		/		/		/		/														
<i>P. grandis</i>		/		/		/		/														
<i>P. grevillaensis</i>		/		/		/		/														
<i>P. incurvatus</i>		/		/		/		/														
<i>P. intricatus</i>		/		/		/		/														
<i>P. kopiensis</i>		/		/		/		/														
<i>P. lapis</i>		/		/		/		/														
<i>P. latrobensis</i>		/		/		/		/														
<i>P. leightonii</i>		/		/		/		/														
<i>P. obesolabrus</i>		/		/		/		/														
<i>P. obscurus</i>		/		/		/		/														
<i>P. ornatus</i>		/		/		/		/														
<i>P. otwayensis</i>		/		/		/		/														
<i>P. pachyopolus</i>		/		/		/		/														
<i>P. palisadus</i>		/		/		/		/														
<i>P. parvus</i>		/		/		/		/														
<i>P. plemmelus</i>		/		/		/		/														
<i>P. prodigus</i>		/		/		/		/														
<i>P. pseudomoides</i>		/		/		/		/														
<i>P. recavus</i>		/		/		/		/														

*C=core; S=sidewall core; T=cuttings.

Well Name ROCKLING-1

Basin GIPPSLAND

Sheet No. 7 of 8

SAMPLE TYPE #	DEPTHS																			
	S	S	S	S	S	S	S	S	S	S										
	2609	2616	2618	2631.5	2640	2644.5	2646	2652.5	2656	2659.3										
PALYNOMORPHS																				
<i>P. rectomarginis</i>	•																			
<i>P. reflexus</i>	•																			
<i>P. reticulatus</i>	•																			
<i>P. reticuloconcavus</i>	•																			
<i>P. reticulosabratus</i>	•																			
<i>P. rugulatus</i>	•																			
<i>P. scitus</i>	•																			
<i>P. stipplatus</i>	•																			
<i>P. tenuixinus</i>	•	/	/	/		/														
<i>P. truncatus</i>	•																			
<i>P. tuberculatus</i>	•																			
<i>P. tuberculiformis</i>	•																			
<i>P. tuberculotumulatus</i>	•																			
<i>P. xestiformis (Prot.)</i>	•																			
<i>Q. brossus</i>																				
<i>R. boxatus</i>																				
<i>R. stellatus</i>																				
<i>R. mallatus</i>							/													
<i>R. trophus</i>																				
<i>S. cainozoicus</i>																				
<i>S. rotundus</i>																				
<i>S. digitatoides</i>																				
<i>S. marlinensis</i>																				
<i>S. rarus</i>																				
<i>S. meridianus</i>		/			/	/														
<i>S. prominatus</i>																				
<i>S. uvatus</i>																				
<i>S. punctatus</i>																				
<i>S. regium</i>																				
<i>T. multistrix (CP4)</i>									/											
<i>T. textus</i>																				
<i>T. verrucosus</i>																				
<i>T. securus</i>																				
<i>T. confessus (C3)</i>																				
<i>T. gillii</i>																				
<i>T. incisus</i>																				
<i>T. longus</i>																				
<i>T. phillipsii</i>		/																		
<i>T. renmarkensis</i>																				
<i>T. sabulosus</i>																				
<i>T. simatus</i>																				
<i>T. thomasii</i>																				
<i>T. waiparaensis</i>																				
<i>T. adelaidensis (CP3)</i>																				
<i>T. angurium</i>																				
<i>T. delicatus</i>																				
<i>T. geranioides</i>																				
<i>T. leuros</i>																				
<i>T. lilliei</i>																				
<i>T. marginatus</i>																				
<i>T. moultonii</i>																				
<i>T. paenestriatus</i>																				
<i>T. retequetrus</i>																				
<i>T. scabratus</i>																				
<i>T. sphaerica</i>																				
<i>T. magnificus (P3)</i>																				
<i>T. spinosus</i>																				
<i>T. ambiguus</i>																				
<i>T. chnosus</i>																				
<i>T. helosus</i>																				
<i>T. scabratus</i>																				
<i>T. sectilis</i>																				
<i>V. attinatus</i>																				
<i>V. cristatus</i>																				
<i>V. kopukuensis</i>																				

*C=core; S=sidewall core; T=cuttings.

T A B L E 1:

SUMMARY OF PALEONOLOGICAL ANALYSES, ROCKLING-1, GIPPSLAND BASIN.

SAMPLE	DEPTH (m)	DEPTH (ft)	ZONE	AGE	CONFIDENCE RATING	YIELD	DIVERSITY	COMMENTS
SWC 75	2475	8120	<u>P. tuberculatus</u>	Oligo-Miocene?	0	Low	Moderate	
SWC 72	2482	8143	<u>P. tuberculatus</u>	Oligo-Miocene?	0	Low	Moderate	
SWC 71	2484	8153	<u>P. tuberculatus</u>	Oligo-Miocene?	1	Very low	Very Poor	Almost barren, but <u>C. annulatus</u> present
SWC 70	2486	8156	<u>P. tuberculatus</u>	Oligo-Miocene?	0	Very low	Poor	
SWC 68	2490	8169	Indeterminate	-	-	Very low	Very Poor	Almost barren.
SWC 66	2494	8182	Upper? <u>N. asperus</u>	Late Eocene	2	Low	Moderate	
SWC 30	2495.5	8187	Lower <u>N. asperus</u>	Middle Eocene	2	Low	High	
SWC 65	2497	8192	Lower <u>N. asperus</u>	Middle Eocene	1	Low	Moderate	<u>A. dictyoplokus</u>
SWC 64	2500	8202	Middle <u>M. diversus</u>	Early Eocene	2	Fair	Poor	Badly contaminated, <u>D. flounderensis</u>
SWC 63	2503	8212	Middle <u>M. diversus</u>	Early Eocene	2	Fair	Moderate	
SWC 62	2505	8219	Middle <u>M. diversus</u>	Early Eocene	2	Low	Poor	Badly contaminated
SWC 61	2507	8225	Middle <u>M. diversus</u>	Early Eocene	2	Low	Moderate	<u>P. biornatus</u>
SWC 29	2508.5	8230	Middle <u>M. diversus</u>	Early Eocene	2	Low	Moderate	<u>I. intipodicus</u>
SWC 59	2512	8241	Lower? <u>M. diversus</u>	Early Eocene	2	Fair	Moderate	Numerous dinoflagellates, <u>Defl. dartmooria</u>
SWC 58	2514	8248	Lower? <u>M. diversus</u>	Early Eocene	2	Fair	Moderate	
SWC 57	2516	8255	Lower? <u>M. diversus</u>	Early Eocene	2	Low	Poor	
SWC 28	2517.5	8260	Lower? <u>M. diversus</u>	Early Eocene	2	Fair	Moderate	
SWC 56	2519	8264	Lower <u>M. diversus</u>	Early Eocene	1	Good	High	<u>T. multistrius</u>
SWC 55	2521.5	8273	Lower <u>M. diversus</u>	Early Eocene	1	Low	Poor	
SWC 24	2542.5	8342	Lower <u>M. diversus</u>	Early Eocene	1	Good	Moderate	
SWC 23	2544.5	8348	Lower <u>M. diversus</u>	Early Eocene	1	Good	Moderate	
SWC 22	2547.5	8358	Lower <u>M. diversus</u>	Early Eocene	1	Good	High	<u>T. multistrius</u>
SWC 21	2553	8376	Lower <u>M. diversus</u>	Early Eocene	1	Good	High	<u>T. multistrius</u>
SWC 20	2557.3	8390	Lower <u>M. diversus</u>	Early Eocene	1	Good	High	<u>S. prominatus</u>
SWC 19	2562.5	8407	Lower <u>M. diversus</u>	Early Eocene	1	Good	High	<u>A. hyperacantha</u>
SWC 18	2576	8451	Lower <u>M. diversus</u>	Early Eocene	2	Low	Very Poor	
SWC 17	2582	8471	Lower <u>M. diversus</u>	Early Eocene	1	Low	Poor	<u>S. prominatus</u>
SWC 16	2584	8478	Lower <u>M. diversus</u>	Early Eocene	1	Low	High	<u>A. hyperacantha</u> , <u>S. prominatus</u> , <u>L. balmei</u> (RW)
SWC 14	2609	8560	Upper <u>L. balmei</u>	Paleocene	1	Fair	Moderate	<u>A. homomorpha</u>
SWC 12	2616	8583	Upper <u>L. balmei</u>	Paleocene	1	Good	Moderate	<u>P. grandis</u>
SWC 11	2618	8589	Indeterminate	-	-	Low	Poor	<u>P. tuberculatus</u> flora only
SWC 9	2631.5	8634	Upper <u>L. balmei</u>	Paleocene	1	Low	Poor	
SWC 7	2640	8661	Upper? <u>L. balmei</u>	Paleocene	2	Low	Poor	
SWC 6	2644.5	8676	Upper? <u>L. balmei</u>	Paleocene	2	Low	Poor	
SWC 5	2646	8681	Upper? <u>L. balmei</u>	Paleocene	2	Low	Poor	
SWC 4	2652.5	8702	Upper? <u>L. balmei</u>	Paleocene	2	Low	Poor	
SWC 3	2656	8714	Upper? <u>L. balmei</u>	Paleocene	2	Fair	Poor	
SWC 2	2659.3	8725	Upper? <u>L. balmei</u>	Paleocene	2	Low	Very Poor	

8/2/89

4: LOG ANALYSIS

APPENDICES 4

Log Analysis.

ROCKLING NO.1

QUANTITATIVE LOG EVALUATION

1. SUMMARY OF RESULTS

<u>INTERVAL</u>	<u>AVERAGE POROSITY</u>	<u>AVERAGE Sw</u>	<u>AVERAGE Vsh</u>
2533m to 2537m	20.0%	98%	21%
2563.5m to 2568m	22.5%	99%	7%
2569.5m to 2580m	22.7%	87%	24%
2585m to 2591m	19.4%	99%	17%
2593m to 2605m	20.5%	93%	28%
2619m to 2630m	20.5%	92%	27%
2632m to 2635m	19.7%	92%	23%

All zones are interpreted as water saturated.

2. TECHNIQUES

- (a) Porosity values were calculated from the density log after correcting for shale effects.
- (b) Vsh was calculated using neutron-density crossplot techniques.
- (c) Sw was calculated using the "Indonesia" shaly sand equation.
- (d) F was calculated using the Humble Equation.

The following shale parameters were chosen:

$$\rho_{sh} = 2.52 \quad \phi_{nsh} = .33 \quad R_{sh} = 9.$$


- (e) Rw was determined using two methods:

$$Rw_1 = \frac{Rt}{F}$$

$$\text{where } F = \frac{.62}{\phi^{2.15}}$$

$$Rw_2 = \frac{RtRmf}{Rxo}$$

From these two methods an Rw of .058 ohm-m was chosen.
 At a B.H.T. of 89°C (192°F) this corresponds to a salinity of approximately 45,000 ppm (Na-Cl eq)


H. M. GORDON

5. VELOCITY SURVEY

APPENDICES 5

Velocity Survey.

VELOCITY SURVEY

Well ROCKLING-1

Basin ... GIPPSLAND

INTRODUCTION

Esso personnel J. HUGHES

Contractor VELOCITY DATA PTY LTD

Supplied (1) Instruments

(2) Personnel

Seismic Observer B. POTTER

Marine Shooter G. ATKINSON

Dynamite

(3) Seismic Souce

(3) Licenced Shooting Boat

Gas Gun
Gas Pressures
Oxygen 90 psi
Propane 50 psi

name
date loaded
date released
Agent
.....
amount of powder lbs
size of cans lbs
number of cans
number of caps
number of boosters

Personnel and Instruments

assembled at .. SALE date .. 8.1.1979
boarded (rig)... OCEAN DIGGER date .. 9.1.1979
date of survey.. 10.1.1979
casing depth... 13.3/8" @ 868m
T.D. when shot.. 2684m FTD .. 2684m
water depth... 72m
K.B. = 31m

SURVEY PROCEDURE

Weather: sea 1/2 - 1m
rig movement None
rig noise None
Hydrophones: number Two
depth below sea level 12.2 metres
position 1m above bottom of gas gun.

Shot Positioning and Charges:

marker buoys (number
(distance
(direction
charge depth metres
number of shots charge size lbs.
number of shots charge size lbs.
number of misfires
amount of powder used lbs

Gas gun
Number of bongs per level 2 to 3

amount of powder dumped lbs. ⁷⁹/₇₈

Well-phone positioning :

T-bar

number of depths 14

Time: first shot

last shot 1222

rig time 3 hours

RESULTS

Quality of records (good 29
(fair 1
(poor
(not used

Comparison of Interval Times
with sonic log

/Δ/average 3.5microsec/metre

/Δmax/ 8.5microsec/metre

CONCLUSION

Reliability of T-D curve GOOD

COMMENTS:

Ran in hole at 0930 hours. No problems were experienced during the survey and the records were of good quality with little noise and good breaks. The survey was completed at 1230 hours.

ES50
COPY



VELOCITY DATA PTY. LTD.

PO. Box 141, Kenmore, Queensland, 4069
Telephone (072) 78 4860 (Office)
(072) 93 1514 (Field Operations)

DATE OF SURVEY 10 JAN 1979 71/78

CLIENT
ES50

WELL
ROCKLING No. 1.

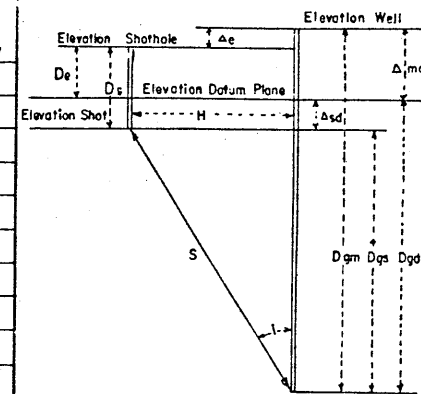
OBSERVERS REPORT

ENERGY SOURCE GAS GUN RECORDING INSTRUMENTS RS44 LOGGER SCHLUMBERGER
 GEOPHONES: WELL WLS1000 REFERENCE PRESSURE SEA FLOOR _____ REFRACTION _____
 REFERENCE SENSOR OFFSET 2 M DEPTH 12 M. DRILL SHIP OCEAN DIGGER SHIP HEADING _____
 WEATHER OVERCAST-COOL SEAS MODERATE

KB DEPTH	SHOT DEADING	CHARGE	SHOT DEPTH	SHOT		AMPLIFIER GAIN		TIME	COMMENTS
				LOCATION	OFFSET	ATTN.	#		
885 m	1	15 Sec	12 m	Sbd	160 ft	7	2-1	0951	Agfa paper
"	2	1		Crane		1	1	0952	
2157	3	20				10	2-1	1022	
"	4							1023	Kodak paper
"	5							1024	
2490	6							1037	
"	7							1038	
"	8							1039	
2681	9							1048	
"	10							1049	
2563	11							1055	
"	12							1057	
2308	13							1106	
"	14							1107	
2000	15							1121	
"	16							1122	
1820	17							1130	
"	18							1131	
1655	19					8		1141	
"	20							1142	
1582	21							1147	
"	22							1148	
1435	23							1155	
"	24							1156	
1285	25							1202	
"	26							1203	
1085	27							1210	
"	28							1211	
600	29							1221	
"	30							1222	

NUMBER OF RECORDS 30 EXPLOSIVES USED: CAPS _____ PRIMERS _____ EXPLOSIVE _____
 DEPART BRISBANE 8 JAN 79 RETURN BRISBANE 11 JAN 79 OBSERVER BK Potter

Shothole information:- Elevation, Distance & Direction from Well										Company		Well		Elevation (Derrick Floor)	Total Depth	LOCATION									
										ESSO EXPLORATION		ROCKLING-1		31m	2684m	Coordinates		Section, Township, Range		County	Area or Field				
																LAT: 38° 27' 34.28"				GIPPSLAND BASIN					
																LONG: 148° 13' 46.24"		DATUM: SEA LEVEL							
Record Number	Shothole Number	Time of Shot	Dgm	Ds	tus	fr	T			Dgs	H	TAN i	Cos i	Tgs	Δsd	Δsd/V	Tgd	Tgd Average	Dgd	ΔDgd	ΔTgd	Vi Interval Velocity	Va Average Velocity		
							Reading	Polarity	Grade																
29		1221	600				.258	D	G	556.8	44.2	.0794	.9969	.257	12.2	.008	.265	.265	569				2146		
30		1222	600				.258	"	"																
1			885				.351	"	"	841.8	"	.0525	.9986	.351	"	"	.359	.359	854	285	.093	3054	2382		
2			885				.351	"	"																
27		1210	1085				.416	"	"	1041.8	"	.0424	.9991	.416	"	"	.424	.424	1054	200	.065	3072	2488		
28		1211	1085				.416	"	"																
25		1202	1285				.478	"	"	1241.8	"	.0356	.9994	.478	"	"	.486	.486	1254	200	.062	3222	2582		
26		1203	1285				.478	"	"																
23		1155	1435				.519	"	"	1391.8				.519	"	"	.527	.527	1404	150	.041	3655	2665		
24		1156	1435				.519	"	"																
21		1147	1582				.558	"	"	1538.8				.558	"	"	.566	.566	1551	147	.039	3766	2741		
22		1148	1582				.558	"	"																
19		1141	1655				.580	"	"	1611.8				.580	"	"	.588	.588	1624	73	.022	3316	2763		
20		1142	1655				.580	"	"																
17		1130	1820				.636	"	"	1776.8				.636	"	"	.644	.644	1789	165	.056	2945	2779		
18		1131	1820				.636	"	"																
15		1121	2000				.695	"	"	1956.8				.695	"	"	.703	.703	1969	180	.059	3050	2802		
16		1122	2000				.695	"	"																
3		1022	2157				.745	"	"											157	.050	3139			
4		1023	2157				.745	"	"	2113.8				.745	"	"	.753	.753	2126				2824		
5		1024	2157				.745	"	"																
13		1106	2308				.798	"	"											151	.052	2903			
14		1107	2308				.797	"	"	2264.8				.797	"	"	.805	.805	2277				2829		
6		1038	2490				.855	"	"											182	.058	3137			
7		1039	2490				.855	"	"	2446.8				.855	"	"	.863	.863	2459				2850		
8		1040	2490				.856	"	"																
11		1055	2563				.874	"	"	2519.8				.874	"	"	.882	.882	2532	73	.019	3841	2871		
12		1057	2563				.874	"	F																
9		1048	2681				.908	"	G											118	.033	3575			
10		1049	2681				.907	"	"	2637.8				.907	"	"	.915	.915	2650				2897		



Dgm = Geophone depth measured from well elevation
Dgs = " " " " shot "
Dgd = " " " " datum "
Ds = Depth of shot
De = Shotpoint elevation to datum plane
H = Horizontal distance from well to shotpoint
S = Straight line travel path from shot to well geophone
tus = Uphole time at shotpoint
T = Observed time from shotpoint to well geophone.
tr = " " to reference geophone.
Δe = Difference in elevation between well & shotpoint.
Δsd = " " " " shot & datum plane
Δsd = Ds - De
Dgs = Dgm - Ds ± Δe; $\tan i = \frac{H}{Dgs}$
Tgs = $\cos i$; T = Vert. travel time from shot elev. to geophone
Tgd = $Tgs \pm \frac{\Delta sd}{V}$ = " " " datum plane "
Dgd = Dgm - Δmd
Vi = Interval velocity = $\frac{\Delta Dgd}{\Delta Tgd}$
Va = Average = $\frac{Dgd}{Tgd}$
J. HUGHES
Surveyed by: _____
Date: 10.1.79
Weathering Data: _____

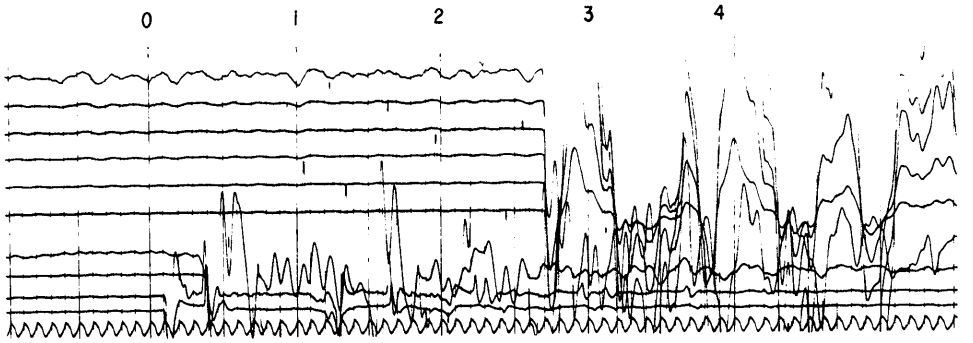
Casing Record
20" @ 232m, 13.3/8" @ 868m

74
78

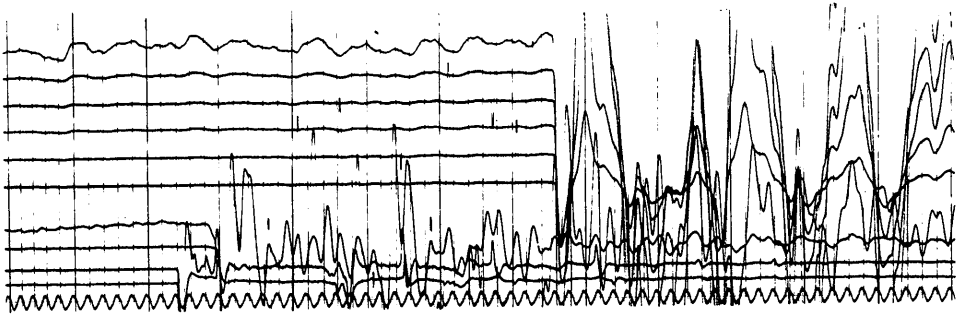
WELL VELOCITY RECORD

10-1-79

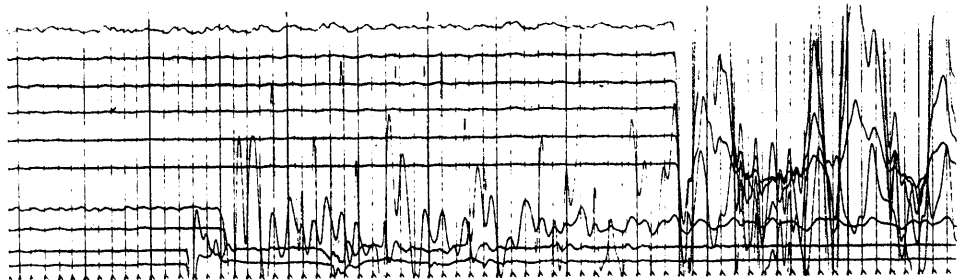
Rec. No. 29
600 m K.B.



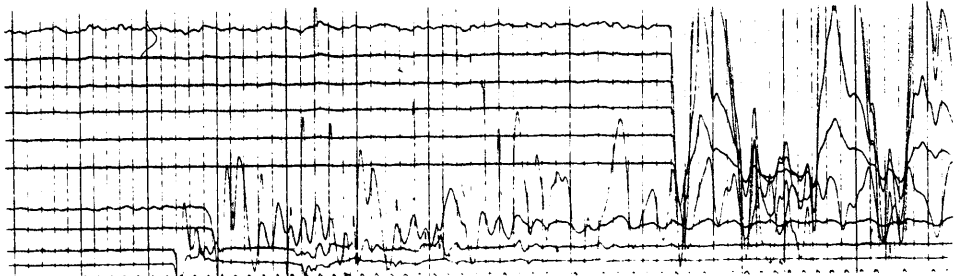
Rec. No. 30
600 m K.B.



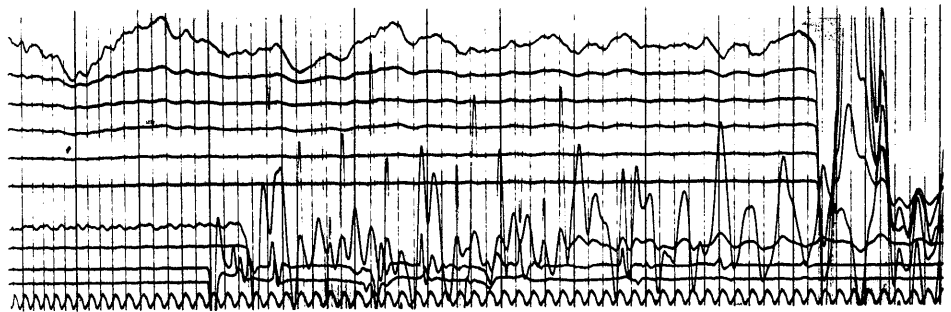
Rec. No. 1
885 m K.B.



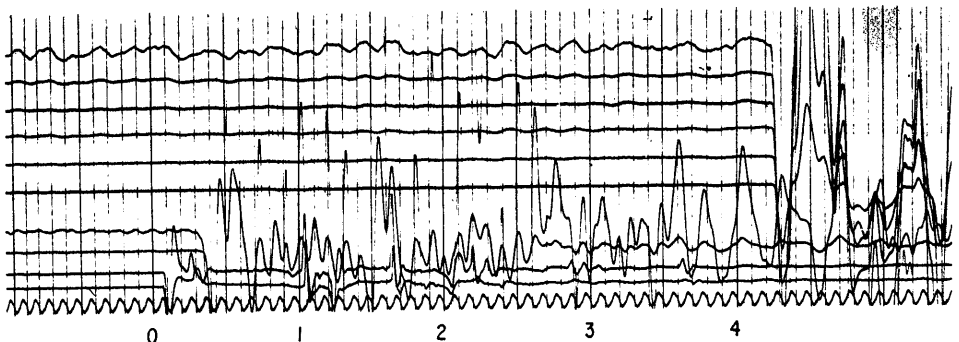
Rec. No. 2
885 m K.B.



Rec. No. 27
1085 m K.B.



Rec. No. 28
1085 m K.B.



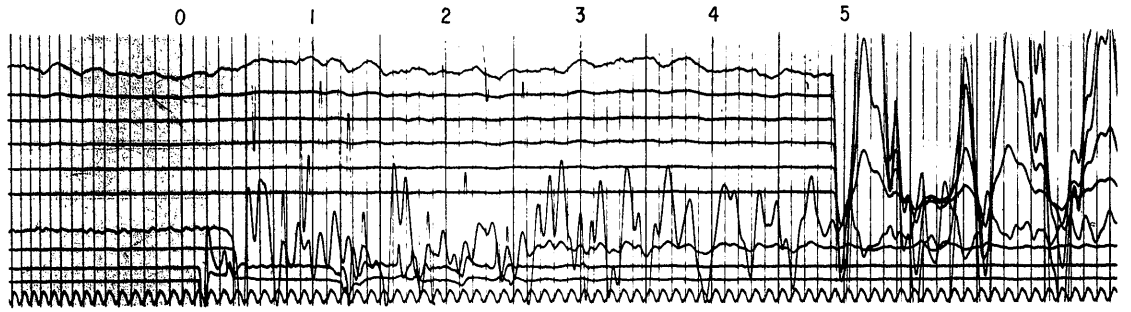
ROCKLING - 1

75
78

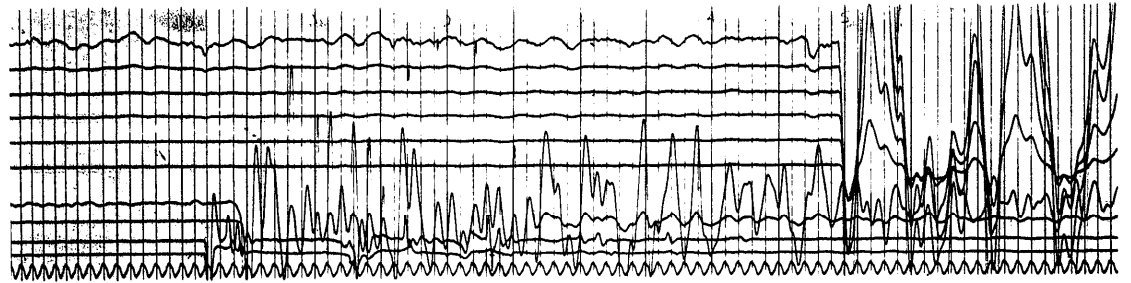
WELL VELOCITY RECORD

10-1-79

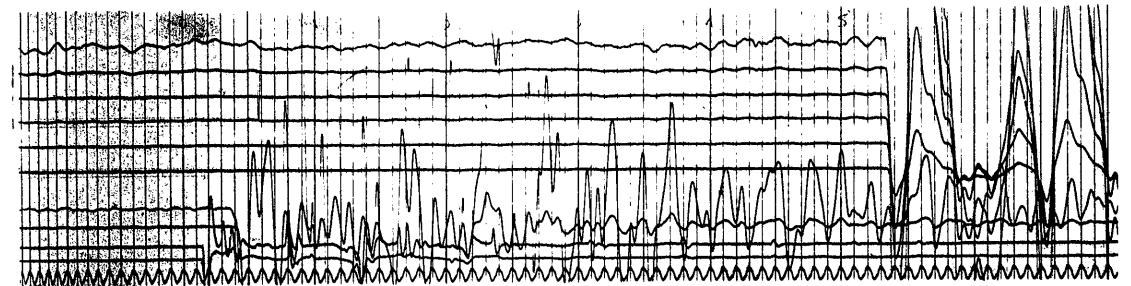
Rec. No. 25
1285 m K.B.



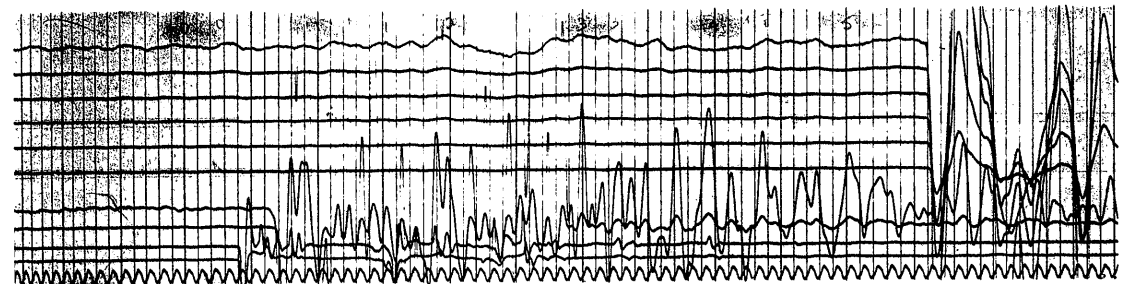
Rec. No. 26
1285 m K.B.



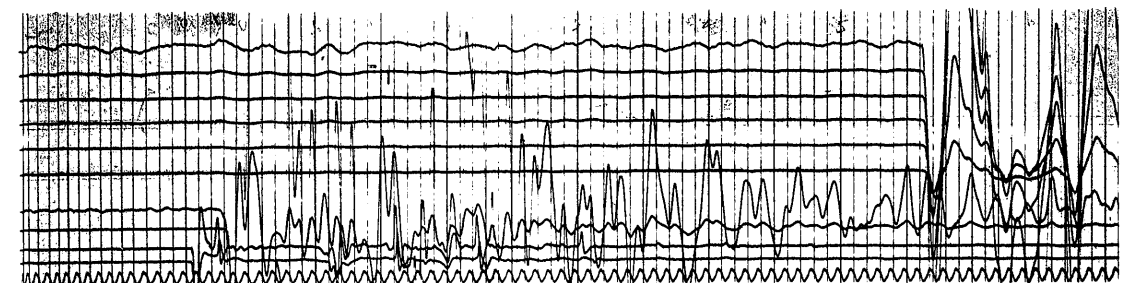
Rec. No. 23
1435 m K.B.



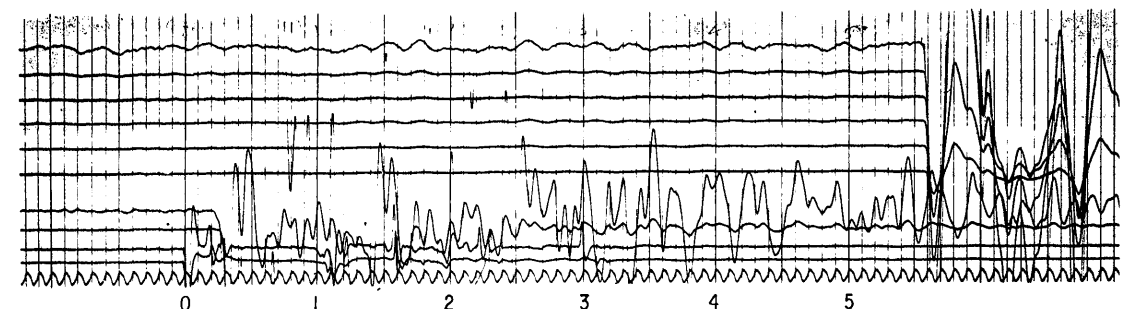
Rec. No. 24
1435 m K.B.



Rec. No. 21
1582 m K.B.



Rec. No. 22
1582 m K.B.



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/18

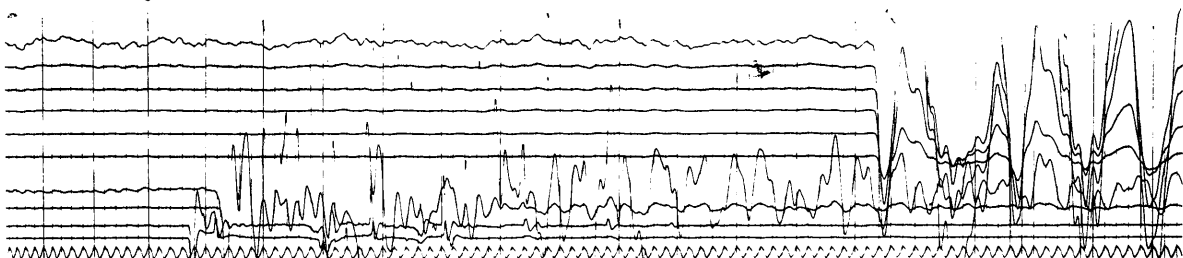
ROCKLING - 1

WELL VELOCITY RECORD

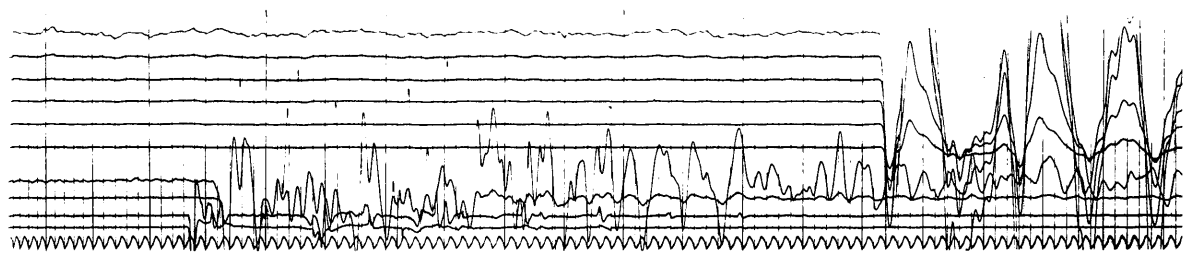
10-1-79

0 1 2 3 4 5 6

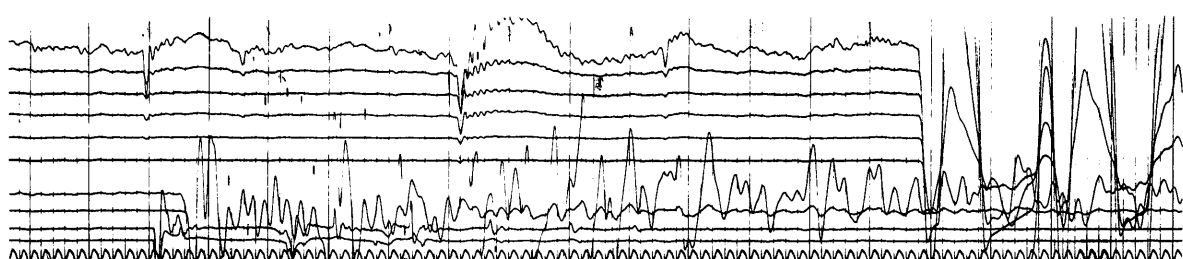
Rec. No. 19
1655 m K.B.



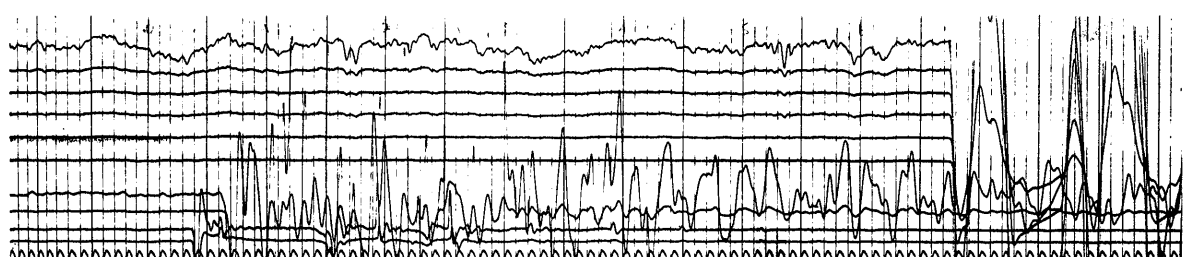
Rec. No. 20
1655 m K.B.



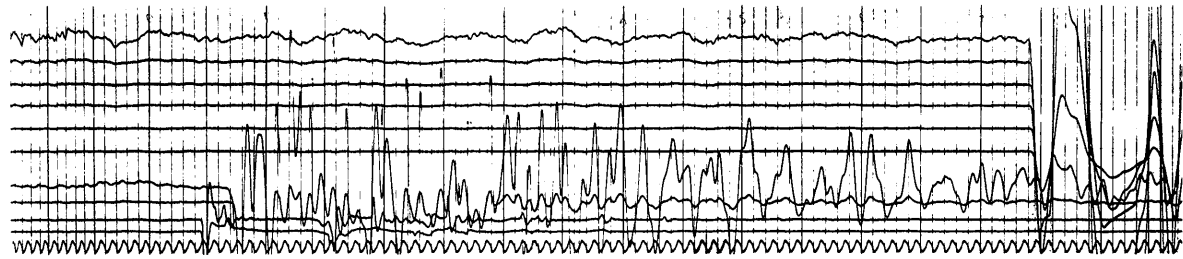
Rec. No. 17
1820 m K.B.



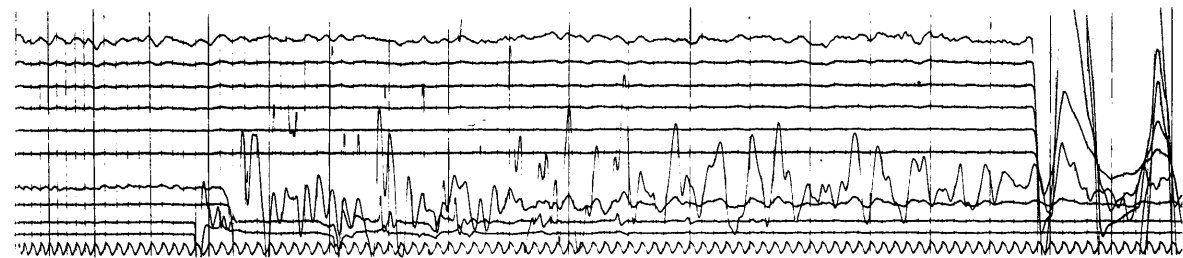
Rec. No. 18
1820 m K.B.



Rec. No. 15
2000 m K.B.



Rec. No. 16
2000 m K.B.



0 1 2 3 4 5 6 7

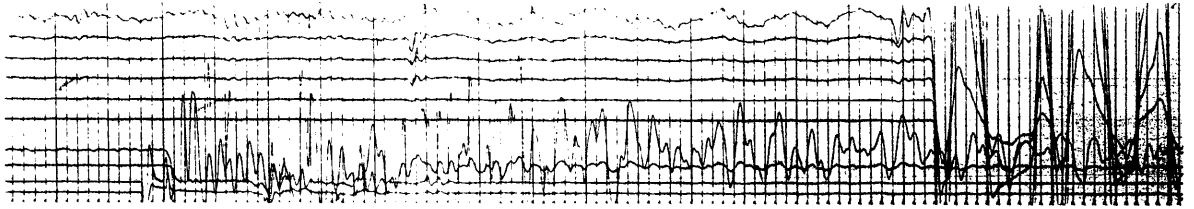
77
/78

WELL VELOCITY RECORD

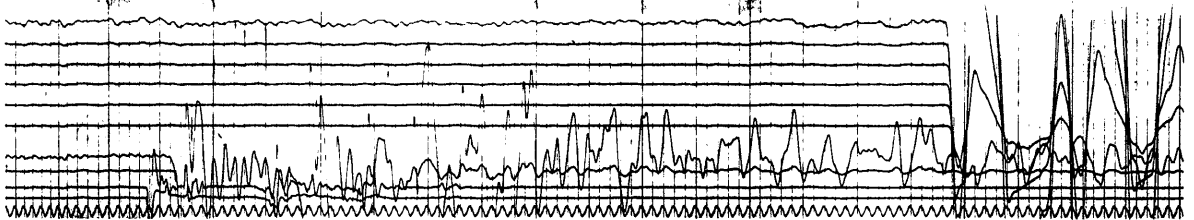
10-1-79

0 1 2 3 4 5 6 7 8

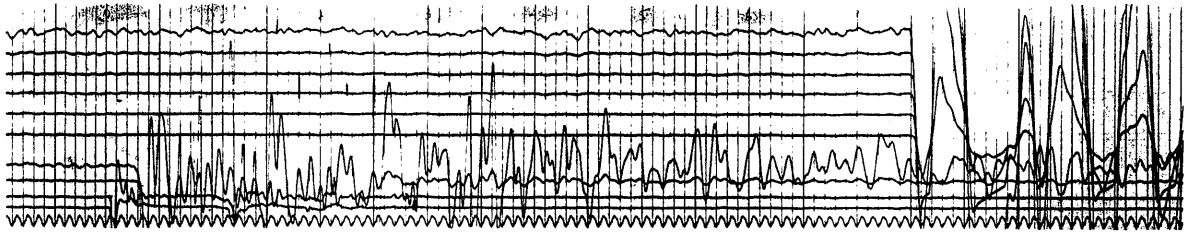
Rec. No. 3
2157 m K.B.



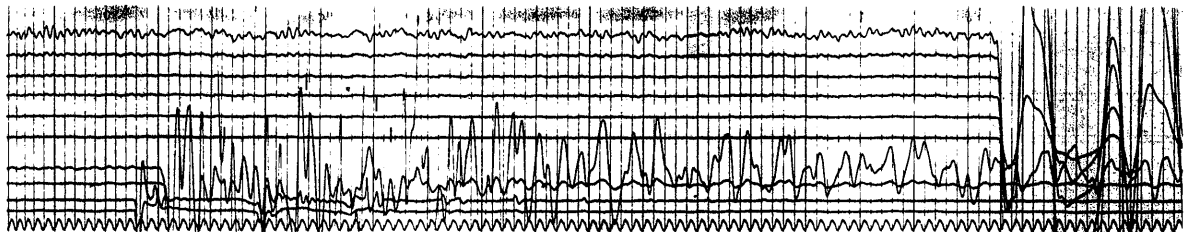
Rec. No. 4
2157 m K.B.



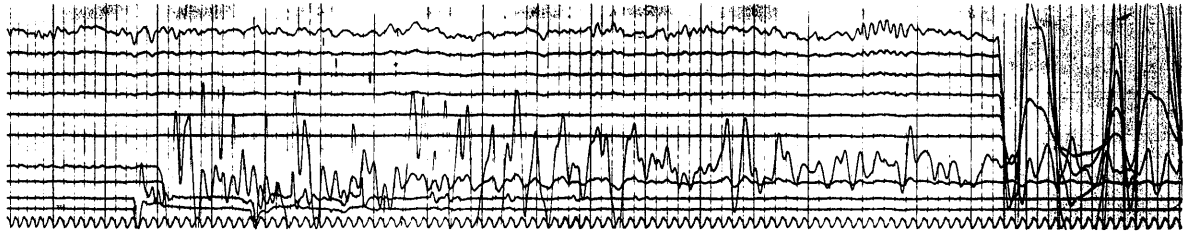
Rec. No. 5
2157 m K.B.



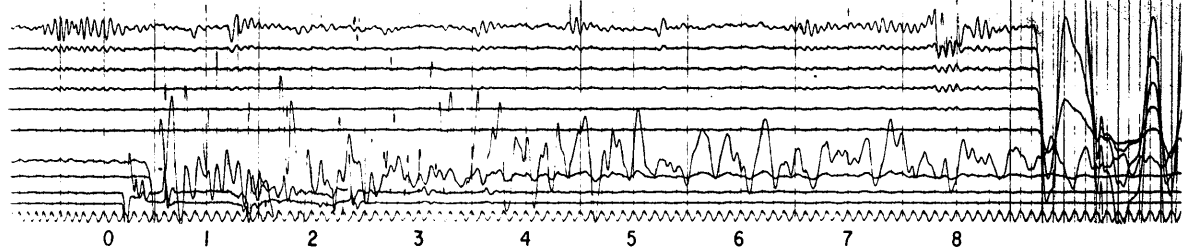
Rec. No. 13
2308 m K.B.



Rec. No. 14
2308 m K.B.



Rec. No. 6
2490 m K.B.



78.
78.

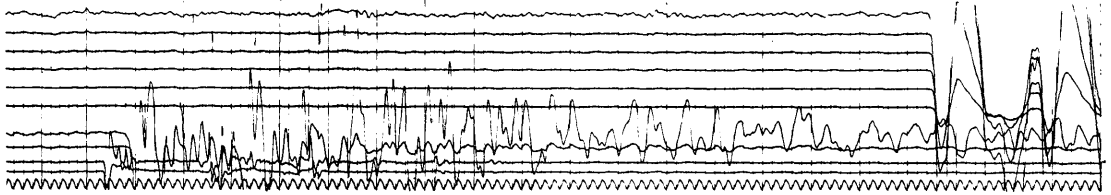
ROCKLING - 1

WELL VELOCITY RECORD

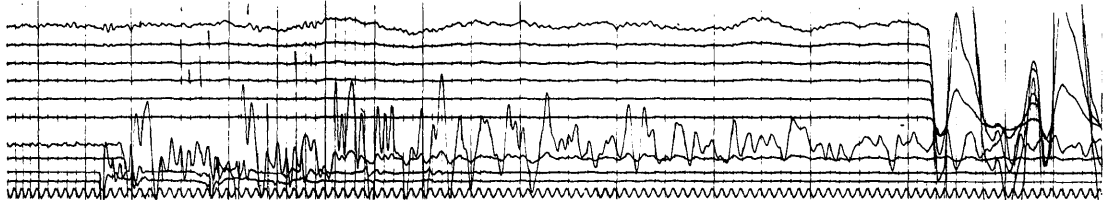
10-1-79

0 1 2 3 4 5 6 7 8

Rec. No. 7
2490 m K.B.



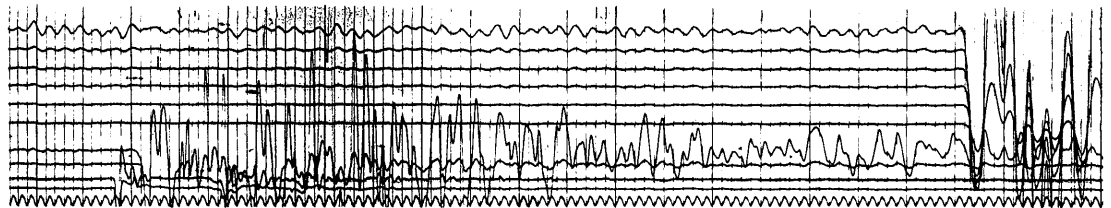
Rec. No. 8
2490 m K.B.



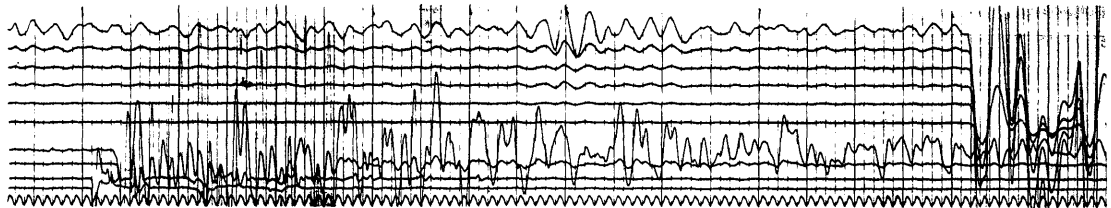
Rec. No. 11
2563 m K.B.



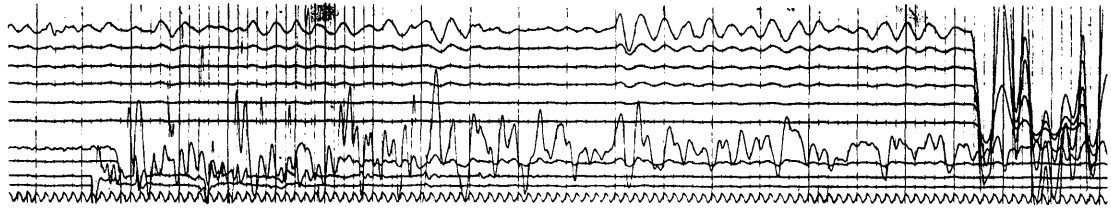
Rec. No. 12
2563 m K.B.



Rec. No. 9
2681 m K.B.



Rec. No. 10
2681 m K.B.



0 1 2 3 4 5 6 7 8

ENCLOSURES

PE902722

This is an enclosure indicator page.
The enclosure PE902722 is enclosed within the
container PE902721 at this location in this
document.

The enclosure PE902722 has the following characteristics:

ITEM_BARCODE = PE902722
CONTAINER_BARCODE = PE902721
NAME = Sonic Calibration Curve
BASIN = GIPPSLAND
PERMIT =
TYPE = WELL
SUBTYPE = VELOCITY_CHART
DESCRIPTION = Sonic Calibration Curve
REMARKS =
DATE_CREATED = 1/07/79
DATE_RECEIVED =
W_NO = W714
WELL_NAME = Rockling-1
CONTRACTOR = ESSO
CLIENT_OP_CO = ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE902723

This is an enclosure indicator page.
The enclosure PE902723 is enclosed within the
container PE902721 at this location in this
document.

The enclosure PE902723 has the following characteristics:

ITEM_BARCODE = PE902723
CONTAINER_BARCODE = PE902721
NAME = Time Depth Curve
BASIN = GIPPSLAND
PERMIT =
TYPE = WELL
SUBTYPE = VELOCITY_CHART
DESCRIPTION = Time Depth Curve
REMARKS =
DATE_CREATED = 1/01/79
DATE_RECEIVED =
W_NO = W714
WELL_NAME = Rockling-1
CONTRACTOR = ESSO
CLIENT_OP_CO = ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE902724

This is an enclosure indicator page.
The enclosure PE902724 is enclosed within the
container PE902721 at this location in this
document.

The enclosure PE902724 has the following characteristics:

- ITEM_BARCODE = PE902724
- CONTAINER_BARCODE = PE902721
 - NAME = Geological Cross Section A-A' Rocklin1
- Tailor 1
 - BASIN = GIPPSLAND
 - PERMIT =
 - TYPE = WELL
 - SUBTYPE = CROSS_SECTION
 - DESCRIPTION = Geological Cross Section A-A' Rocklin1
- Tailor 1
- REMARKS =
- DATE_CREATED = 1/05/79
- DATE_RECEIVED =
- W_NO = W714
- WELL_NAME = Rockling-1
- CONTRACTOR = ESSO
- CLIENT_OP_CO = ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE902726

This is an enclosure indicator page.
The enclosure PE902726 is enclosed within the
container PE902721 at this location in this
document.

The enclosure PE902726 has the following characteristics:

- ITEM_BARCODE = PE902726
- CONTAINER_BARCODE = PE902721
 - NAME = Depth Structure Map Top of Latrobe
Group Seismic Marker
 - BASIN = GIPPSLAND
 - PERMIT =
 - TYPE = SEISMIC
 - SUBTYPE = HRZN_CONTR_MAP
 - DESCRIPTION = Depth Structure Map Top of Latrobe
Group Seismic Marker
 - REMARKS =
- DATE_CREATED = 1/05/79
- DATE_RECEIVED =
- W_NO = W714
- WELL_NAME = Rockling-1
- CONTRACTOR = ESSO
- CLIENT_OP_CO = ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE902725

This is an enclosure indicator page.
The enclosure PE902725 is enclosed within the
container PE902721 at this location in this
document.

The enclosure PE902725 has the following characteristics:

- ITEM_BARCODE = PE902725
- CONTAINER_BARCODE = PE902721
 - NAME = Time Structure Map Top of Latrobe Group
Seismic Marker
 - BASIN = GIPPSLAND
 - PERMIT =
 - TYPE = SEISMIC
 - SUBTYPE = HRZN_CONTR_MAP
 - DESCRIPTION = Time Structure Map Top of Latrobe Group
Seismic Marker
 - REMARKS =
- DATE_CREATED = 1/05/79
- DATE_RECEIVED =
- W_NO = W714
- WELL_NAME = Rockling-1
- CONTRACTOR = ESSO
- CLIENT_OP_CO = ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE603619

This is an enclosure indicator page.
The enclosure PE603619 is enclosed within the
container PE902721 at this location in this
document.

The enclosure PE603619 has the following characteristics:

ITEM_BARCODE = PE603619
CONTAINER_BARCODE = PE902721
NAME = Well Completion Log
BASIN = GIPPSLAND
PERMIT =
TYPE = WELL
SUBTYPE = COMPLETION_LOG
DESCRIPTION = Well Completion Log (enclosure from
WCR) for Rockling-1
REMARKS =
DATE_CREATED = 27/12/78
DATE_RECEIVED =
W_NO = W714
WELL_NAME = Rockling-1
CONTRACTOR = ESSO
CLIENT_OP_CO = ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE902728

This is an enclosure indicator page.
The enclosure PE902728 is enclosed within the
container PE902721 at this location in this
document.

The enclosure PE902728 has the following characteristics:

ITEM_BARCODE = PE902728
CONTAINER_BARCODE = PE902721
NAME = Drilling History Curve
BASIN = GIPPSLAND
PERMIT =
TYPE = WELL
SUBTYPE = DIAGRAM
DESCRIPTION = Drilling History Curve
REMARKS =
DATE_CREATED = 27/11/78
DATE_RECEIVED =
W_NO = W714
WELL_NAME = Rockling-1
CONTRACTOR = ESSO
CLIENT_OP_CO = ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE603620

This is an enclosure indicator page.
The enclosure PE603620 is enclosed within the
container PE902721 at this location in this
document.

The enclosure PE603620 has the following characteristics:

ITEM_BARCODE = PE603620
CONTAINER_BARCODE = PE902721
NAME = Mud Log
BASIN = GIPPSLAND
PERMIT = VIC/P1
TYPE = WELL
SUBTYPE = MUD_LOG
DESCRIPTION = Mud Log for Rockling-1
REMARKS =
DATE_CREATED = 9/01/79
DATE_RECEIVED = 12/02/87
W_NO = W714
WELL_NAME = ROCKLING-1
CONTRACTOR = EXPLORATION LOGGING (BAKER INTER.)
CLIENT_OP_CO = ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)