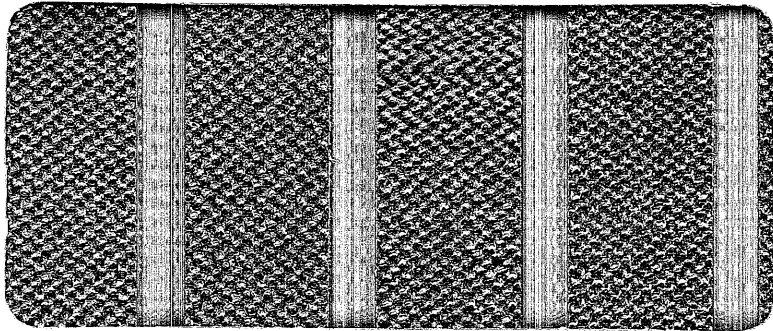




W793



WCR VOL 1

PILOT FISH - 1A

(W793)

ESSEX COUNTY WATER PRODUCTION
WATERWORKS

W793

WELL COMPLETION REPORT

PILOTFISH 1A BASIC

VOLUME 1 2 7 JUN 1983

OIL and GAS DIVISION

**GIPPSLAND BASIN
VICTORIA**

ESSO AUSTRALIA LIMITED

Compiled by: G. Lindsay

May 1983

PILOTFISH-1A

WELL COMPLETION REPORT

VOLUME 1

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ESSO AUSTRALIA LTD.

COMPLETION REPORT

1. WELL DATA RECORD

LOCATION

WELL NAME PILOTFISH 1 PILOTFISH 1A	STATE Victoria	PERMIT or LICENCE VIC/L6	GEOLOGICAL BASIN Gippsland	FIELD
CO-ORDINATES LATITUDE 38° 25' 58.45" S LONGITUDE 148° 28' 8.52" E X 628219 E Y 5745115 N		MAP PROJECTION Transverse Mercator AMG Zone 55	GEOGRAPHICAL LOCATION Bass Strait	
<u>ELEVATIONS & DEPTHS</u>				
ELEVATIONS KB 21m ASL RT	WATER DEPTH 205.6m	TOTAL DEPTH 3521m MEASURED DEPTH -	Average Angle Vertical Hole	
	PLUG BACK TYPE Balanced Plug	REASONS FOR PLUGGING BACK Plug & Abandonment		
<u>DATES</u>				
MOVE IN 7-12-82	RIG UP 8-12-82	SPUDED PILOTFISH 1 9-12-82 PILOTFISH 1A 17-12-82		
RIG DOWN COMPLETE 20-1-83	RIG RELEASED 20-1-83	PRODUCTION UNIT - RIG UP -		
PRODUCTION UNIT - RIG DOWN -		INITIAL PRODUCTION ESTABLISHED -		
<u>MISCELLANEOUS</u>				
OPERATOR Esso Exloration & Production Australia Inc.	PERMITTEE or LICENCE Esso Hematite Petroleum Pty Ltd	ESSO INTEREST 50% OTHER INTEREST 50%		
CONTRACTOR South Seas Drilling Co.	RIG NAME Southern Cross	EQUIPMENT TYPE Oilwell E-2000		
TOTAL RIG DAYS 44	DRILLING AFE NO. 03-05-308-232-009	COMPLETION NO. -	TYPE COMPLETION -	
WELL CLASSIFICATION	Before Drilling After Drilling	New field wildcat Plugged and abandoned Dry Hole		

2. OPERATIONS SUMMARY
PILOTFISH -- 1

Move and Moor

The semi-submersible Southern Cross departed the Wirrah-1 location at 1900 hours on 6 December, 1982 and arrived at the Pilotfish-1 location, after delays due to weather, at 0600 hours on 8th December, 1982. The rig was towed 73 kmn (52 nautical miles) by the workboat Lady Vera in 20 hours at an average speed of 3.65 km/hr (2.61 knots).

Anchor No. 8 was dropped by the rig and the remaining anchors run by the workboats Atlas Dampier, Bass Tide, and Lady Vera in 9 hours.

26" Hole for 20" Conductor

The drilling template was landed at the seafloor depth of 227m RKB. Because the template was set at 2-3/4°, the rig was repositioned and the template relanded at an inclination of 2-1/4°. The 26" hole was drilled to 370m with seawater and displaced at TD with high viscosity gel mud.

After bad weather caused a 33 hour delay in offloading the 20" casing, the 18-3/4" wellhead and 20" casing were run and cemented at a shoe depth of 354m. The string was held in tension while WOC to ensure that the wellhead remained vertical.

The BOP stack was run and pulled three times due to malfunctioning fail-safe choke and kill line valves. The BOP stack and riser were then run and an unsuccessful attempt was made to land the stack. The stack failed to align over the guideposts, resulting in damage to the guide frame and wellhead. The 20" casing was blown and recovered along with the wellhead and drilling template.

Pilotfish-1A

Move

The rig was repositioned and operations begun on Pilotfish-1A at 0000 hours on 17th December, 1982.

26" Hole for 20" Conductor

The drilling template was landed on the seafloor at 227m RKB with an inclination of 1-1/2°. The 26" hole was drilled to 369m with seawater and displaced at TD with high viscosity gel mud.

The 18-3/4" wellhead and 20" casing were run and cemented at a shoe depth of 351m. The BOP stack and riser were run and landed. The 20" casing and collet connector were pressure tested to 3,450 kPa (500 psi).

17-1/2" Hole for 13-3/8" Surface Casing

After drilling out the 20" casing shoe, the 17-1/2" hole was drilled to 953m. The hole was logged and 13-3/8" casing run and cemented at a shoe depth of 938m. The 13-3/8" seal assembly was set and tested along with the BOP and casing.

12-1/4" Hole

The 13-3/8" casing shoe and 7m of new hole were drilled and the formation tested to a leak off of 1.93 SG (16.1 ppv) EMW. The 12-1/4" hole was then drilled with an X3A rock bit to 1494m. While tripping to change bits, the handle from the master bushing pin was dropped downhole. Another X3A bit was run and used to drill to 1690m. The bit was pulled and the bushing handle was recovered in the junk basket.

A 12-1/4" R32 PCD bit was run and used to drill to 1844m. The bit was pulled into the 13-3/8" casing shoe while the kelly was replaced and the kelly bushing redressed. The hole was then drilled to 2043m, where the drill string twisted off in a HWDP box two joints above the 8" drill collars. The fish was recovered on the first attempt. The R32 bit was rerun and drilling continued to 2158m. The drilling string again twisted off, this time in the slip area of the second joint of Grade "E" drillpipe above the drill collars. The fish was retrieved on the first attempt. Drilling continued with the R32 bit down to 2550m, where the bit was pulled due to reduced ROP in the Lakes Entrance Formation.

Drilling continued with an X3A rock bit to 2944m. The mud weight was increased to 1.13 SG (9.4 ppg) before reaching the anticipated Top of Latrobe at 2896m. This mud weight was programmed to provide an overbalance of 2100 kPa (300 psi) into the Latrobe assuming 125m of gas-filled closure. Another X3A bit was run and drilled to 2983m. The hole was then drilled to a TD of 3521m using one J11, two J22, and one J33 journal bearing bits.

Final logs were then run, as well as a velocity survey, an RFT pressure survey and two sidewall core guns.

Plug and Abandonment

The first balanced plug was set in open hole across the Top of Latrobe from 2970 to 2883m (tagged). The next plug was set across the 13-3/8" casing shoe from 988 to 888m and pressure tested to 10,300 kPa (1500 psi). A bridge plug was then set at 515m after running a 13-3/8" gauge ring/junk basket. The 13-3/8" casing was perforated at 305m using a 4" casing gun and an injection rate was established into the annulus. A cement retainer was set on wireline at 295m. After attempts to pump through the retainer failed, the casing was re-perforated at 294m and another retainer set at 292.5m. The 13-3/8" x 20" annulus was squeezed using 323 sacks of Australian Class "N" cement with an additional 97 sacks being dumped above the retainer. The plug was then tested to 6900 kPa (1000 psi) against the shear rams. After displacing the riser with seawater, the BOP and riser were pulled. The 13-3/8" and 20" casing strings were blown 12m below the wellhead using a 15kg charge. The casing stubs were recovered along with the wellhead, guidebase, and drilling template.

Anchor pulling operations were delayed 52-1/2 hours due to weather. The anchors were pulled by the workboats Lady Vera and Atlas Dampier. Anchor No. 8 was pulled in by the rig and the rig was put under tow to Wirrah-2 location by the Atlas Dampier at 0315 hours on 21st January, 1983.

07021/40-41

3. CASING DATA

WELL PILOTFISH-1/1A

CSG O.D. IN.	WT. LBS/FT	GRADE	CONN.	CSG LENGTH METRES	SHOE DEPTH R.K.B.	CENTRALIZER POSITION	REMARKS
24	670	-	CC	10.56			PILE JOINT
20	129	X52	CCXJV	13.24		1' ACROSS COLLARS FOR FIVE COLLARS ABOVE SHOE	CROSSOVER JOINT
20	94	X52	JVXJV	105.36	354		8 JOINTS (INCLUDING SHOE JOINT)
24	670	-	CC	10.60			PILE JOINT
20	129	X52	CCXJV	13.24		1 ACROSS COLLARS FOR FIVE COLLARS ABOVE SHOE	CROSSOVER JOINT
20	94	X52	JVXJV	102.99	351.32		8 JOINTS (INCLUDING SHOE JOINT)
13-3/8	54.5	K55	B.T.C.	3.58		1 ACROSS EACH COLLAR FOR	HGR & PUP JOINT
13-3/8"	54.5	K55	B.T.C.	684.01		5 COLLARS ABOVE SHOE	58 JOINTS
13-3/8"	54.5	K55	B.T.C.	12.35		1 ACROSS EACH COLLAR FOR 6 COLLARS INSIDE	FLOAT COLLAR JOINT
13-3/8"	54.5	K55	B.T.C.	12.28	938.06	20" CASING	FLOAT SHOE JOINT

1

1A

WELL:

PILOTFISH 1A

5. SAMPLES, CONVENTIONAL CORES, SIDEWALL CORES.			
<u>INTERVAL</u>	<u>TYPE</u>	<u>INTERVAL</u>	<u>TYPE</u>
351 - 3521m	5 sets washed & dried cuttings 1 sack washed & bagged cuttings every 5m.		
351 - 3521m	1 tin unwashed samples from each 5m interval every 15m.		
960 - 3496m	102 sidewall cores (101 recovered)		

6. WIRELINE LOGS AND SURVEYS					
Type & Scale	From	To	Type & Scale	From	To
BHC CAL GR Suite 1 1:500 1:200	953	351m	WST (for VSP & check shot)	3502	350m
DLL MSFL GR Suite 2 1:500 1:200	3509	938m	Seismic Quicklook	3502	2840m
LDL CNLG GR Suite 2 1:200 1:500	3509	935m	RFT-GR 1:200 Suite 2 (11 pre-tests no sampling attempted)	3483	2934m
BHC GR Suite 2 1:200 1:500	3502	935m	CST GR Suite 2 Run 1 & 2	3495	960m
HDT Suite 2 1:200	3504	2815m			

7. SUMMARY OF WIRELINE FORMATION TEST PROGRAMME - PILOTFISH-1A

<u>TEST</u>	<u>SEAT</u>	<u>DEPTH</u> <u>(METRES)</u> <u>K.B.</u>	<u>CHAMBER</u>	<u>OIL</u>	<u>COND.</u>	<u>GAS</u>	<u>RECOVERY (LITRES)</u>		<u>SCH. STR. GAUGE</u> <u>FORMATION PRESSURE</u>		<u>SCH. STR. GAUGE</u> <u>HYDROSTATIC PRESSURE</u>		<u>HORIZONTAL</u> <u>PERMEABILITY</u>	<u>REMARKS</u>
							<u>FORMATION</u> <u>WATER</u>	<u>FILTRATE</u>	<u>MPag</u>	<u>Psig</u>	<u>MPag</u>	<u>Psig</u>	<u>millidarcys</u>	
1	1	2934.0	Pretest						28.511	4135	32.538	4719		
	2	2973.5	"						28.870	4187	32.972	4782		
	3	2998.0	"						29.104	4221	33.328	4819		
	4	3007.5	"						29.194	4234	33.338	4835		
	5	3157.0	"						30.732	4457	34.986	5074		
	6	3215.0	"						31.366	4549	35.593	5162		
	7	3247.0	"						31.669	4593	35.958	5215		
	8	3301.0	"						32.200	4670	36.544	5300		
	9	3341.0	"						32.586	4726	36.979	5363		
	10	3438.0	"						33.545	4865	38.034	5516		
	11	3168.0	"						30.821	4470	35.053	5084		

8. PILOTFISH 1A TEMPERATURE RECORD

LOGGING RUN	THERMOMETER DEPTH (m)	MAX. RECORDED TEMPERATURE (C°)	CIRCULATION TIME (t_k) (hours)	TIME AFTER CIRCULATION STOPPED (t)	HORNER* TEMPERATURE (C°)	GEOHERMAL GRADIENT (C°/km)
BHC CAL GR	951	31.1	2.5	4 hrs	-	-
DLL MSFL GR	3509	88.9	2.0	7½ hrs	118	0.033
LDL CNLG GR	3509	98.0		15½ hrs		
BHC GR	3507	103.0		22½ hrs		
HDT GR	3507	108.0		27-3/4 hrs		

FIGURES

PILOTFISH-1A LOCALITY MAP

SCALE - 1 : 250 000

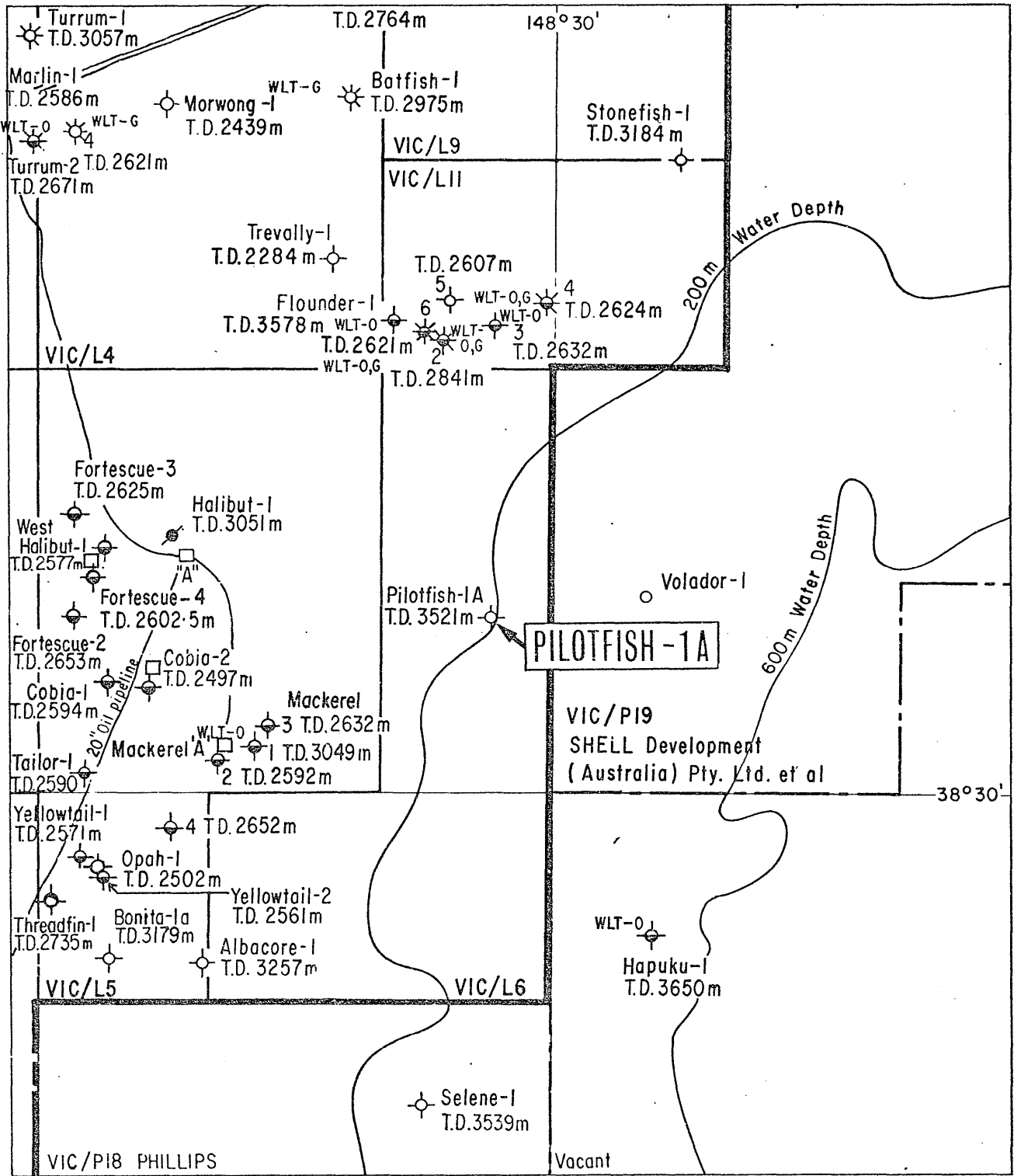


Figure 1

FIGURE 2

WELL PROGRESS CURVE

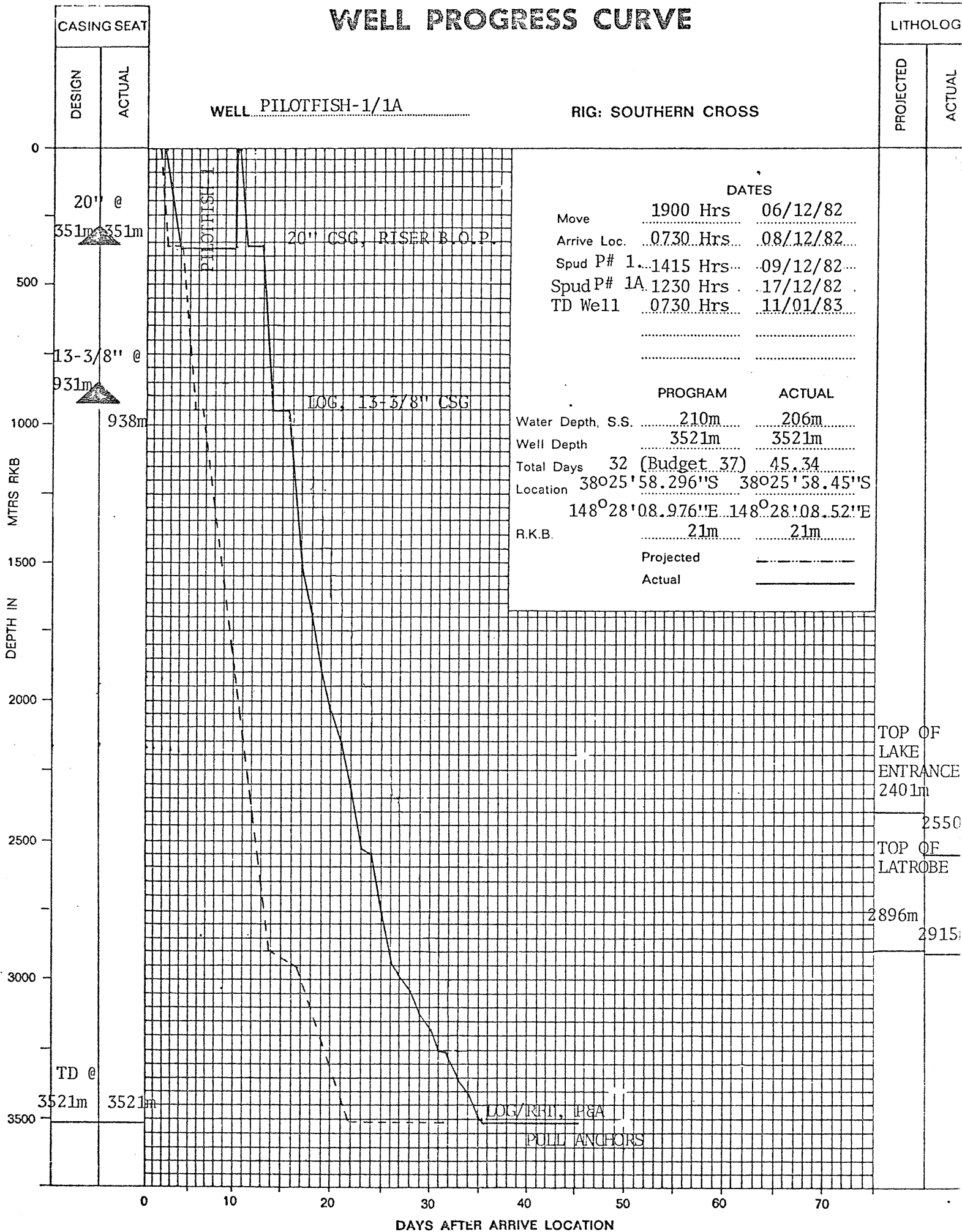


FIGURE 3

Well: Pilotfish-1A

RKB

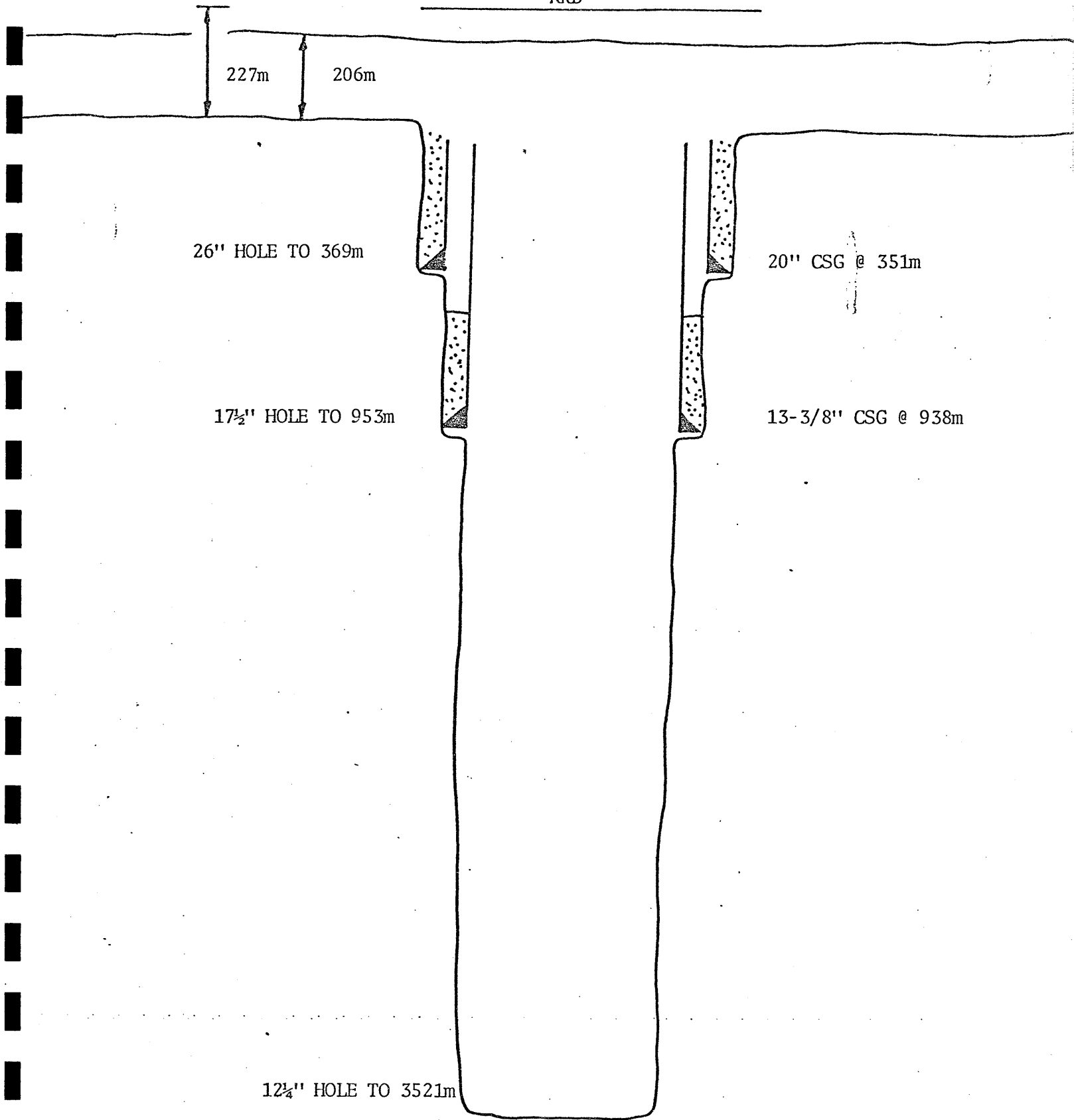


FIGURE 4a

ABANDONMENT SCHEMATIC

WELL: PILOTFISH-1

RKB

227m

206m

26" HOLE TO 370m

20" CSG @ 354m

NOTE: BLEW OFF PILE JOINT AT 12.2m BELOW WELLHEAD.



FIGURE 4b

ABANDONMENT SCHEMATIC

WELL: PILOTFISH-1A

RKB

227m

206m

13-3/8" CMT RET @ 293m

20" CSG @ 351m

PERFORATE 13-3/8" CSG W/
4" CSG GUN @ 294m.

TOC @ 481m.
(calculated)

13-3/8" CSG @ 938m

PLUG No. 3.

CASING : 311-261m

ANNULUS: 391-311m

PRESSURE TEST TO 6900 kPa
(1000 psi)

13-3/8" BRIDGE PLUG @ 515m

PLUG No. 2.

988-888m

PRESSURE TEST TO 10,300 kPa
(1500 psi)

PLUG No. 1.

2970-2883m

TAGGED W/10 KIPS

NOTE: BLEW OFF PILE JT. AND
13-3/8" CSG AT 12m
BELOW WELLHEAD AND
RECOVERED SAME.

12 1/4" HOLE TO 3521m.



P & A CMT



PRIMARY CMT

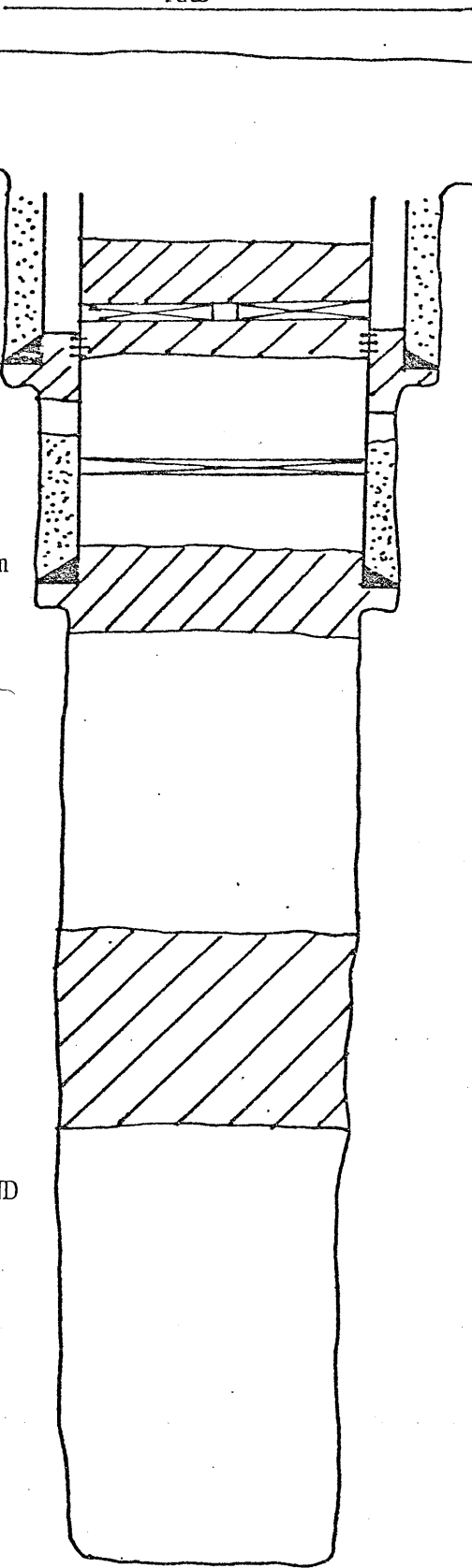
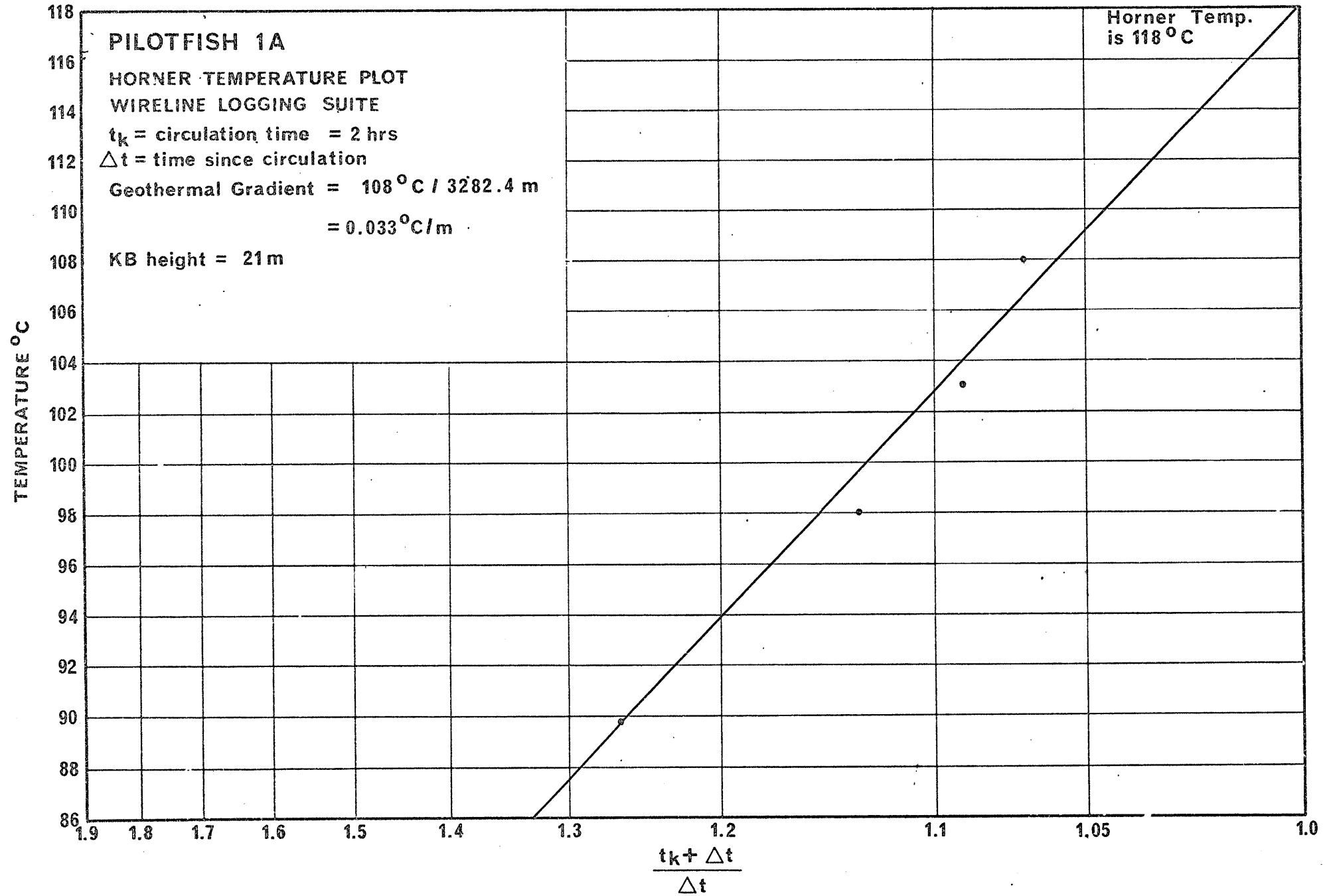


FIGURE 3



APPENDIX 1

APPENDIX 1

APPENDIX 1

LITHOLOGICAL DESCRIPTIONS

PILOTFISH -1A

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
953 - 955m	100	CEMENT
955 - 960m	100	CEMENT
	trace	SANDSTONE: loose quartz grains, clear to translucent, subrounded, coarse grained.
	trace	FORAMS
960 - 965m	trace	CALCILUTITE: light grey, soft, with black flecking.
	5	
	95	CEMENT
965 - 970m	trace	SANDSTONE: as above.
	10	FORAMS
	trace	CALCILUTITE: as above.
	90	CEMENT
970 - 975m	80	SANDSTONE: as above.
	20	CALCILUTITE: as above.
975 - 980m	80	CEMENT
	20	CALCILUTITE: as above.
980 - 985m	70	CEMENT
	30	CALCILUTITE: light grey, soft, rounded cuttings, with black flecking.
985 - 990m	60	CALCILUTITE: as above.
	40	CEMENT
	trace	FORAMS
990 - 995m	60	CALCILUTITE: as above.
	40	CEMENT
	trace	FORAMS
995 - 1000	80	CALCILUTITE: light to medium grey, soft.
	20	CEMENT
	trace	FORAMS
	trace	?BRYOZOAN/COAL FRAGMENT
1000 - 1005m	70	CALCILUTITE: as above.
	10	CALCISILTITE: medium grey, hard, subangular cuttings.
	20	CEMENT
	trace	FORAMS
1005 - 1010m	95	CALCILUTITE: as above, tending to very soft - gumbo.
	5	CEMENT
	trace	FORAMS
1010 - 1015m	100	CALCILUTITE: light grey, soft, rounded cuttings.
	trace	CEMENT
	trace	FORAMS
	trace	CALCISILTITE: medium grey, hard.
1015 - 1020m	100	CALCILUTITE: as above.
	trace	FORAMS
	trace	CALCISILTITE: as above.

1020 - 1025m	100 trace trace	CALCILUTITE: as above. CALCISILTITE: as above. FORAMS
1025 - 1030m	100 trace trace	CALCILUTITE: as above. CALCISILTITE: as above. SANDSTONE: loose quartz fragments, clear, coarse, subrounded grains.
1030 - 1035m	100 trace	CALCILUTITE: light grey to medium grey, soft. CALCISILTITE: as above.
1035 - 1040m	100 trace trace	CALCILUTITE: light grey, soft to very soft and gummy in part. CALCISILTITE: medium grey, hard. SANDSTONE: loose quartz grains, clear, coarse, subrounded grains.
1040 - 1045m	100 trace	CALCILUTITE: tending to gumbo in parts otherwise as above. FORAMS
1045 - 1050m	100 trace	CALCILUTITE: as above. FORAMS
1050 - 1055m	100 trace	CALCILUTITE: as above, becoming coarser grained. FORAMS
1055 - 1060m	100 trace trace	CALCILUTITE: as above. FORAMS CALCISILTITE: light grey to dark grey, hard.
1060 - 1065m	100 trace	CALCILUTITE: as above, grading to calcisiltite. FORAMS: poorly preserved.
1065 - 1070m	85 15	CALCISILTITE: light grey, soft to very soft, rounded cuttings, with black flecking. MICRITE: medium grey, very hard, angular cuttings, microcrystalline.
1070 - 1075m	80 20 trace	CALCISILTITE: as above. MICRITE: as above. FORAMS: poorly preserved.
1075 - 1080m	85 15	CALCISILTITE: as above. MICRITE: as above.
1080 - 1085m	75 25 trace	CALCISILTITE: as above. MICRITE: as above. FORAMS
1085 - 1090m	80 20 trace	CALCISILTITE: as above. MICRITE: light grey to medium grey, very hard, angular cuttings. FORAMS
1090 - 1095m	90 10 trace trace	CALCARENITE: very fine grained, light grey, soft to very soft and gummy, with black flecking. MICRITE: as above. FORAMS: common well preserved forams. PYRITE
1095 - 1100m	90 10 trace	CALCARENITE: as above. MICRITE: as above. FORAMS: common, generally well preserved.

1100 - 1105m	90	CALCARENITE: occasionally firm to hard, otherwise soft and gummy as above.
	10	MICRITE: as above.
	trace	SANDSTONE: loose quartz, clear to translucent, subrounded, coarse grains.
	trace	FORAMS: common spheroidal and tear drop shapes.
1105 - 1100m	95	CALCARENITE: as above.
	5	MICRITE: as above.
	trace	FORAMS
1100 - 1115m	100	CALCARENITE: very fine grained, light grey, occasionally firm to hard, dominantly soft to very soft, tending to gumbo in parts.
	trace	MICRITE: medium grey, hard, angular cuttings.
	trace	FORAMS
1115 - 1120m	100	CALCARENITE: as above.
	trace	MICRITE: as above.
	trace	FORAMS
	trace	PYRITE
1120 - 1125m	100	CALCARENITE: as above.
	trace	MICRITE: as above.
	trace	SANDSTONE: loose quartz grains, clear, subrounded, coarse to very coarse grained.
	trace	FORAMS
1125 - 1130m	100	CALCARENITE: very fine grained, light grey, soft to very soft, sticky - tending to gumbo in parts.
1130 - 1135m	100	CALCISILTITE: light grey soft to very soft, sticky tending to gumbo.
	trace	MICRITE: medium grey, hard, subangular cuttings.
	trace	FORAMS
1135 - 1140m	100	CALCISILTITE: becoming very soft, very sticky - gumbo, otherwise as above.
	trace	MICRITE: as above.
	trace	FORAMS
1140 - 1145m	100	CALCISILTITE: as above.
	trace	MICRITE: as above.
	trace	FORAMS
1145 - 1150m	100	CALCISILTITE: very soft and very sticky - gumbo.
1150 - 1155m	100	CALCILUTITE: light grey, very soft, very sticky, black flecking - tending to gumbo.
1155 - 1160m	100	CALCILUTITE: as above.
	trace	FORAMS
1160 - 1165m	100	CALCILUTITE: as above.
1165 - 1170m	100	CALCILUTITE: light grey, soft to very soft, sticky, tends to gumbo in part, occasionally firm to hard.
1170 - 1175m	100	CALCILUTITE: as above.
1175 - 1180m	100	CALCILUTITE: as above.
	trace	MICRITE: medium dark grey, hard, angular cuttings.

1180 - 1185m	100	CALCILUTITE: as above, grading to very fine calcarenite, light grey, soft to occasionally firm to hard.
1185 - 1190m	100 trace	CALCILUTITE: as above. FORAMS
1190 - 1195m	100	CALCILUTITE: as above.
1195 - 1200m	100	CALCILUTITE: light grey, predominantly soft to very soft, gummy/sticky - tending to gumbo; occasionally firm.
1200 - 1205m	100 trace trace	CALCILUTITE: as above. MICRITE: medium grey, hard, angular cuttings. FORAMS
1205 - 1210m	100 trace	CALCILUTITE: as above. FORAMS
1210 - 1215m	100 trace trace	CALCILUTITE: light grey, occasionally firm, predominantly soft, tending to very soft and sticky - gumbo in parts. MICRITE: as above. FORAMS
1215 - 1220m	80 20	CALCILUTITE: light grey, soft to very soft and sticky - tending to gumbo in part. CALCARENITE: light grey, soft to friable, rounded cuttings.
1220 - 1225m	80 20	CALCILUTITE: as above. CALCARENITE: as above.
1225 - 1230m	90 10	CALCILUTITE: as above, very sticky. CALCARENITE: as above.
1230 - 1235m	100 trace trace	CALCILUTITE: as above. CALCARENITE: as above. FORAMS
1235 - 1240m	100 trace trace	CALCILUTITE: as above. CALCARENITE: as above. FORAMS
1240 - 1245m	100 trace	CALCILUTITE: as above. FORAMS
1245 - 1250m	100	CALCILUTITE: light grey, soft to very soft, sticky to very sticky in parts - tending to gumbo.
1250 - 1255m	100 trace	CALCILUTITE: light grey, soft, sticky, rounded cuttings. FORAMS: rare
1255 - 1260m	100 trace	CALCILUTITE: as above. FORAMS
1260 - 1265m	100 trace	CALCILUTITE: as above. FORAMS
1265 - 1270m	100 trace trace	CALCILUTITE: as above, and becoming very soft. CALCISILTITE: becoming friable to hard otherwise as above. FORAMS

1270 - 1275m	90	CALCILUTITE:	as above, and tending to gumbo.
	10	CALCISILTITE:	becoming friable to hard
			otherwise as above.
	trace	FORAMS	
1275 - 1280m	100	CALCILUTITE:	as above.
1280 - 1285m	100	CALCILUTITE:	as above, and becoming very
			sticky.
1285 - 1290m	100	CALCILUTITE:	as above.
1290 - 1295m	80	CALCILUTITE:	as above.
	20	CALCISILTITE:	light grey to medium light grey,
			friable to hard, subangular cuttings.
	trace	FORAMS:	common well preserved forams.
1295 - 1300m	90	CALCILUTITE:	light grey, soft to very soft,
			gummy.
	10	CALCISILTITE:	as above.
	trace	FORAMS	
1300 - 1305m	90	CALCILUTITE:	as above.
	10	CALCISILTITE:	as above.
	trace	FORAMS	
1305 - 1310m	100	CALCILUTITE:	as above.
	trace	CALCISILTITE:	as above.
	trace	FORAMS	
1310 - 1315m	90	CALCILUTITE:	as above.
	10	CALCISILTITE:	as above.
	trace	FORAMS	
1315 - 1320m	100	CALCILUTITE:	as above.
	trace	CALCISILTITE:	as above.
	trace	FORAMS	
1320 - 1325m	90	CALCILUTITE:	as above.
	10	CALCISILTITE:	as above.
	trace	FORAMS	
1325 - 1330m	100	CALCILUTITE:	light grey to medium light grey,
			soft to very soft, sticky.
	trace	CALCISILTITE:	light grey to medium light grey,
			friable to moderately hard, subrounded cuttings.
	trace	FORAMS	
1330 - 1335m	100	CALCILUTITE:	as above.
	trace	CALCISILTITE:	as above.
	trace	FORAMS	
1335 - 1340m	80	CALCILUTITE:	light to medium light grey, soft
			to very soft.
	20	CALCISILTITE:	as above.
	trace	FORAMS	
1340 - 1345m	90	CALCILUTITE:	as above.
	10	CALCISILTITE:	as above.
	trace	FOSSILS	
	trace	?FORAMS	
1345 - 1350m	100	CALCILUTITE:	as above.
	trace	CALCISILTITE:	as above.
1350 - 1355m	100	CALCILUTITE:	as above.
	trace	CALCISILTITE:	as above.
	trace	FORAMS	

1355 - 1360m	100 trace trace	CALCILUTITE: as above. CALCISILTITE: as above. FORAMS
1360 - 1365m	90 10 trace	CALCILUTITE: as above. CALCISILTITE: medium light grey to medium grey, friable, subrounded cuttings. FORAMS
1365 - 1370m	95 5	CALCILUTITE: medium light grey, soft to very soft, gummy. CALCISILTITE: as above.
1370 - 1375m	100 trace	CALCILUTITE: as above. CALCISILTITE: as above.
1375 - 1380m	100 trace trace	CALCILUTITE: as above. CALCISILTITE: as above. FORAMS
1380 - 1385m	100 trace	CALCILUTITE: as above. CALCISILTITE: as above.
1385 - 1390m	70 30 trace	CALCILUTITE: light grey to medium light grey, soft to very soft, sticky. CALCISILTITE: medium light grey, friable to moderately hard, subrounded cuttings. FORAMS
1390 - 1395m	70 30	CALCILUTITE: as above. CALCISILTITE: as above.
1395 - 1400m	90 10	CALCILUTITE: as above. CALCISILTITE: as above.
1400 - 1405m	100	CALCILUTITE: as above.
1405 - 1410m	70 30	CALCILUTITE: as above. CALCISILTITE: as above.
1410 - 1415m	60 40 trace	CALCILUTITE: as above. CALCISILTITE: as above. FORAMS
1415 - 1420m	70 30	CALCILUTITE: as above. CALCISILTITE: as above.
1420 - 1425m	80 20	CALCILUTITE: as above. CALCISILTITE: as above.
1425 - 1430m	80 20	CALCILUTITE: as above. CALCISILTITE: as above.
1430 - 1435m	80 20 trace	CALCILUTITE: light grey, soft to very soft, predominantly very soft and sticky. CALCISILTITE: medium grey, friable to moderately hard, subrounded cuttings. FORAMS
1435 - 1440m	90 10	CALCILUTITE: as above. CALCISILTITE: as above.
1440 - 1445m	100 trace	CALCILUTITE: as above. CALCISILTITE: as above.
1445 - 1450m	90 10 trace	CALCILUTITE: as above. CALCISILTITE: as above. ?FORAMS

1450 - 1455m	90	CALCILUTITE:	as above.
	10	CALCISILTITE:	as above.
	trace	FORAMS	
1455 - 1460m	90	CALCILUTITE:	as above.
	10	CALCISILTITE:	as above.
1460 - 1465m	100	CALCILUTITE:	as above.
	trace	CALCISILTITE:	as above.
	trace	FORAMS	
1465 - 1470m	90	CALCILUTITE:	as above.
	10	CALCISILTITE:	as above.
1470 - 1475m	95	CALCILUTITE:	as above.
	5	CALCISILTITE:	as above.
1475 - 1480m	90	CALCILUTITE:	light grey, soft to very soft, sticky.
	10	CALCISILTITE:	medium light grey, friable to moderately hard, subrounded cuttings.
1480 - 1485m	90	CALCILUTITE:	as above.
	10	CALCISILTITE:	as above.
1485 - 1490m	80	CALCILUTITE:	light grey, soft to very soft, rounded cuttings (ie. not sticky as above).
	20	CALCISILTITE:	as above.
	trace	FORAMS:	rare poorly preserved forams.
1490 - 1495m	60	CALCILUTITE:	as above.
	40	CALCISILTITE:	predominantly moderately hard, otherwise as above.
	trace	FORAMS	
1495 - 1500m	50	CALCILUTITE:	as above.
	50	CALCISILTITE:	predominantly friable, otherwise as above.
	trace	FORAMS:	poorly preserved.
1500 - 1505m	50	CALCILUTITE:	as above.
	50	CALCISILTITE:	friable, as above.
	trace	FORAMS:	fragments
1505 - 1510m	60	CALCISILTITE:	medium light to medium grey, generally friable, occasionally moderately hard, subangular cuttings.
	40	CALCILUTITE:	as above.
1510 - 1515m	55	CALCISILTITE:	as above.
	30	CALCILUTITE:	as above.
	15	MICRITE:	yellow brown, very hard, cryptocrystalline, angular cuttings.
1515 - 1520m	60	CALCISILTITE:	as above, and now frequently moderately hard.
	30	CALCILUTITE:	as above.
	10	MICRITE:	as above.
	trace	FORAMS	
1520 - 1525m	50	CALCISILTITE:	as above.
	50	CALCILUTITE:	as above.
	trace	MICRITE:	as above.
1525 - 1530m	50	CALCISILTITE:	as above.
	50	CALCILUTITE:	as above.
	trace	MICRITE:	as above.

1530 - 1535m	50	CALCISILTITE: as above.
	50	CALCILUTITE: as above.
	trace	FORAMS: rare
1535 - 1540m	60	CALCILUTITE: as above, slightly stickier in parts.
	40	CALCISILTITE: as above.
	trace	MICRITE: as above.
	trace	FORAMS
1540 - 1545m	50	CALCISILTITE: as above.
	50	CALCILUTITE: as above, ie. sticky in parts.
	trace	MICRITE: as above.
	trace	FORAMS: rare
1545 - 1550m	50	CALCISILTITE: as above.
	50	CALCILUTITE: as above.
	trace	FORAMS: rare fragments
1550 - 1555m	70	CALCISILTITE: as above.
	30	CALCILUTITE: as above.
1555 - 1560m	50	CALCISILTITE: as above, grading to finer calcilutite.
	50	CALCILUTITE: as above.
1560 - 1565m	70	CALCILUTITE: light to medium grey, friable to moderately hard, subrounded cuttings, grading from coarser calcisiltite.
	30	CALCILUTITE: light grey, soft to very soft, gummy, rounded cuttings.
	trace	FORAMS: fragments
1565 - 1570m	60	CALCILUTITE: light to medium grey, as above.
	40	CALCILUTITE: light grey, soft, as above.
1570 - 1575m	50	CALCILUTITE: light grey, very soft, as above.
	50	CALCILUTITE: grading to calcisiltite; medium light to medium grey, soft to moderately hard - generally friable, subrounded cuttings.
1575 - 1580m	50	CALCILUTITE: light grey, soft, as above.
	50	CALCILUTITE: grading to calcisiltite.
1580 - 1585m	60	CALCISILTITE: grading from calcilutite, as above.
	40	CALCILUTITE: light grey, very soft, as above.
1585 - 1590m	70	CALCISILTITE: grading from calcilutite, as above.
	30	CALCILUTITE: light grey, very soft, as above.
	trace	MICRITE: pale brown, very hard, cryptocrystalline, angular cuttings.
1590 - 1595m	50	CALCISILTITE: most of cuttings are moderately hard and angular, otherwise as above.
	30	CALCILUTITE: as above.
	20	MICRITE: as above.
1595 - 1600m	45	CALCISILTITE: hard, angular cuttings.
	35	CALCILUTITE: as above.
	20	MICRITE: as above.
1600 - 1605m	60	CALCISILTITE: hard, angular cuttings as above grading to friable calcisiltite.
	40	CALCILUTITE: very soft, as above.

1605 - 1610m	80	CALCISILTITE:	as above.
	20	CALCILUTITE:	as above.
1610 - 1615m	60	CALCISILTITE:	as above.
	40	CALCILUTITE:	as above.
1615 - 1620m	50	CALCISILTITE:	light to medium grey, friable to moderately hard, subrounded to occasionally angular cuttings. Grades to finer calcilutite.
	50	CALCILUTITE:	light grey, soft to very soft, rounded cuttings.
	trace	FORAMS:	rare.
1620 - 1625m	50	CALCISILTITE:	as above.
	50	CALCILUTITE:	as above.
1625 - 1630m	70	CALCILUTITE:	as above.
	30	CALCISILTITE:	as above.
1630 - 1635m	80	CALCILUTITE:	as above.
	20	CALCISILTITE:	predominantly friable, otherwise as above.
1635 - 1640m	85	CALCILUTITE:	as above.
	15	CALCISILTITE:	as above.
1640 - 1645m	90	CALCISILTITE:	predominantly moderately hard, subangular cuttings.
	10	CALCILUTITE:	as above.
	trace	MICRITE:	as above.
1645 - 1650m	70	CALCISILTITE:	as above, with cuttings becoming friable and subrounded.
	30	CALCILUTITE:	as above.
	trace	MICRITE:	as above.
1650 - 1655m	80	CALCILUTITE:	light grey, soft to very soft, rounded cuttings.
	20	CALCISILTITE:	medium grey, very friable to predominantly friable, subangular to subrounded cuttings.
1655 - 1660m	80	CALCILUTITE:	as above.
	20	CALCISILTITE:	predominantly moderately hard, angular cuttings, otherwise as above.
1660 - 1665m	90	CALCILUTITE:	as above.
	10	CALCISILTITE:	as above, and tending to friable rather than hard.
1665 - 1670m	90	CALCILUTITE:	as above.
	10	CALCISILTITE:	as above.
	trace	CALCARENITE:	medium grey, very friable, very fine grained, grades into calcisiltite.
1670 - 1675m	90	CALCILUTITE:	as above.
	10	CALCISILTITE:	as above.
	trace	CALCARENITE:	as above.
	trace	FORAMS	
	trace	SANDSTONE:	transparent to translucent, very hard, coarse to very coarse grained, angular to subangular.

1675 - 1680m	40	CALCILUTITE: medium light grey, soft, sticky, blocky cuttings, very calcareous, no cut, water sensitive.
	40	CALCISILTITE: medium light grey to medium grey, soft to firm, grades to very fine grained calcarenite as below.
	20	CALCARENITE: medium light grey to medium grey, firm to hard, weak cement, very fine grained, well sorted.
	trace	SANDSTONE: quartzose, as above, with rare well rounded grains.
	trace	MICRITE: medium light grey to light grey, hard, brittle, blocky.
	trace	FORAMS
1680 - 1685m	50	CALCILUTITE: as above.
	30	CALCISILTITE: as above.
	20	CALCARENITE: as above.
	trace	SANDSTONE: as above.
1685 - 1690,	80	CALCILUTITE: as above, rounded cuttings.
	20	CALCISILTITE: as above, rounded cuttings.
	trace	SANDSTONE: as above.
1690 - 1695m	80	CALCILUTITE: as above.
	20	CALCISILTITE: as above.
1695 - 1700m	60	CALCILUTITE: as above.
	40	CALCISILTITE: as above.
1700 - 1705m	50	CALCILUTITE: as above.
	50	CALCISILTITE: as above.
1705 - 1710m	70	CALCISILTITE: as above.
	30	CALCILUTITE: as above.
1710 - 1715m	80	CALCISILTITE: as above, grading to very fine grained calcarenite, as above.,
	20	CALCILUTITE: as above.
1715 - 1720m	60	CALCISILTITE: as above.
	10	CALCILUTITE: as above.
	30	CALCARENITE: very fine grained, as above, grading to fine grained.
1720 - 1725m	50	CALCISILTITE: as above.
	10	CALCILUTITE: as above.
	40	CALCARENITE: as above.
1725 - 1730m	80	CALCARENITE: as above, very fine grained to fine grained in silty matrix.
	20	CALCISILTITE: as above.
	trace	CALCILUTITE: as above.
1730 - 1735m	60	CALCARENITE: as above.
	30	CALCISILTITE: as above.
	10	CALCILUTITE: as above.
1735 - 1740m	80	CALCARENITE: trace forams and spicules.
	20	CALCISILTITE: some cuttings hard otherwise as above.
	trace	CALCILUTITE: as above.
1740 - 1745m	90	CALCARENITE: as above.
	10	CALCISILTITE: as above.
	trace	CALCILUTITE

1745 - 1750m	60	CALCARENITE:	trace forams and spicules.
	40	CALCISILTITE:	as above.
	trace	CALCILUTITE	
1750 - 1755m	60	CALCISILTITE:	as above.
	30	CALCARENITE:	as above.
	10	CALCILUTITE:	as above.
1755 - 1760m	trace	CALCILUTITE:	as above.
	70	CALCARENITE:	as above.
	30	CALCISILTITE:	as above.
1760 - 1765m	trace	CALCILUTITE:	as above,
	50	CALCARENITE:	as above, trace spicules and forams.
	50	CALCISILTITE:	as above.
1765 - 1770m	60	CALCISILTITE:	as above.
	30	CALCILUTITE:	as above.
	10	CALCARENITE:	as above.
1770 - 1775m	trace	CALCILUTITE:	as above.
	50	CALCARENITE:	as above.
	50	CALCISILTITE:	as above.
1775 - 1780m	100	CALCARENITE/CALCILUTITE:	as above.
	trace	CALCILUTITE:	as above.
1780 - 1785m	90	CALCARENITE/CALCILUTITE:	as above.
	10	CALCILUTITE:	as above.
1785 - 1790m	trace	CALCILUTITE:	as above.
	60	CALCARENITE:	as above.
	40	CALCISILTITE:	as above.
1790 - 1795m	60	CALCARENITE:	medium light grey to medium grey, firm to hard, very fine to fine grained, friable, blocky cuttings, trace spicules, trace forams, calcitic.
	20	CALCILUTITE:	light grey to medium light grey, soft to very soft, water sensitive, rounded cuttings contain occasional fine grained inclusions - forams etc.
	20	CALCISILTITE:	medium light grey to medium grey, firm to hard, calcitic, grading to calcarenite as below.
	trace	MICRITE:	crystalline CaCO ₃ , recrystallised in part, translucent to white, hard, well cemented.
1795 - 1800m	80	CALCARENITE:	as above.
	trace	CALCILUTITE:	as above.
	20	CALCISILTITE:	as above.
1800 - 1805m	70	CALCARENITE:	as above.
	trace	CALCILUTITE:	as above.
	30	CALCISILTITE:	as above.
	trace	DOLOMITE:	orange with rare white, subangular to subrounded cuttings, microcrystalline, dull yellow mineral fluorescence, no cut, no crush cut.
	trace	LITHIC FRAGMENTS:	dark grey to black, coarse to very coarse grained, subangular to subrounded.
1805 - 1810m	30	CALCILUTITE:	as above.
	40	CALCISILTITE:	as above.
	30	CALCARENITE:	as above.
	trace	LITHIC FRAGMENTS:	as above.

1810 - 1815m	20	CALCILUTITE:	as above.
	40	CALCISILTITE:	as above.
	40	CALCARENITE:	as above.
	trace	LITHIC FRAGMENTS:	as above.
1815 - 1820m	80	CALCISILTITE:	as above, grading to sandstone.
	20	CALCILUTITE:	as above.
1820 - 1825m	100	CALCISILTITE/CALCARENITE:	as above.
	trace	CALCILUTITE:	as above.
1825 - 1830m	100	CALCISILTITE/CALCARENITE:	as above.
	trace	FORAMS	
1830 - 1835m	100	CALCISILTITE/CALCARENITE:	as above.
	trace	FORAMS	
1835 - 1840m	90	CALCISILTITE/CALCARENITE:	as above.
	10	CALCILUTITE:	as above.
	trace	DOLOMITE	
1840 - 1845m	80	CALCISILTITE:	light grey to medium grey, soft to friable, subrounded cuttings, with occasional very fine black inclusions and forams also as inclusions.
	20	CALCILUTITE:	light grey, soft to very soft, rounded cuttings, with very fine inclusions, black material? and clear grains?
	trace	SANDSTONE:	loose quartz fragments, clear, very coarse grained, angular.
1845 - 1850m	90	CALCISILTITE:	as above.
	10	CALCILUTITE:	as above.
1850 - 1855m	90	CALCISILTITE:	as above.
	10	CALCILUTITE:	tending to water sensitive, otherwise as above.
1855 - 1860m	90	CALCISILTITE:	as above.
	10	CALCILUTITE:	as above.
	trace	?PYRITE	
1860 - 1865m	90	CALCISILTITE:	friable, otherwise as above.
	10	CALCILUTITE:	as above.
1865 - 1870m	100	CALCISILTITE:	occasionally hard otherwise as above.
	trace	CALCILUTITE:	as above.
1870 - 1875m	100	CALCISILTITE:	as above.
	trace	CALCILUTITE:	as above.
	trace	MICRITE:	light grey, very hard, angular cuttings.
1875 - 1880m	100	CALCISILTITE:	as above.
	trace	CALCILUTITE:	as above.
1880 - 1885m	90	CALCISILTITE:	as above.
	10	CALCILUTITE:	as above.
1885 - 1890m	90	CALCARENITE:	light grey, friable to moderately hard, subrounded cuttings, very fine grained, calcitic, inclusions of very fine black material and occasional fossil material, grading from calcisiltite as above.
	10	CALCILUTITE:	light grey, soft to very soft, well rounded cuttings.

1890 - 1895m	100 trace	CALCARENITE: as above. CALCILUTITE: as above.
1895 - 1900m	100 trace	CALCARENITE: as above. CALCILUTITE: as above.
1900 - 1905m	100 trace	CALCARENITE: friable to moderately hard, otherwise as above. CALCILUTITE: as above.
1905 - 1910m	100 trace	CALCARENITE: as above, with greater percentage of moderately hard cuttings. CALCILUTITE: as above.
1910 - 1915m	100 trace	CALCARENITE: as above. CALCILUTITE: as above.
1915 - 1920m	100 trace	CALCARENITE: grading to finer calcisiltite in parts, as above. CALCILUTITE: as above.
1920 - 1925m	100 trace	CALCISILTITE: medium light grey, friable, calcitic, subrounded cuttings tending toward tabular shape. CALCILUTITE: light grey, soft to predominantly very soft, calcitic, well rounded, blocky cuttings.
1925 - 1930m	90 10	CALCISILTITE: as above. CALCILUTITE: as above, and becoming water sensitive.
1930 - 1935m	90 10 trace	CALCISILTITE: as above. CALCILUTITE: as above. FORAMS: rare trace.
1935 - 1940m	90 10	CALCISILTITE: as above and grading to calcarenite, medium light grey, friable, calcitic, subrounded cuttings. CALCILUTITE: as above.
1940 - 1945m	90 trace 10	CALCISILTITE: as above. CALCILUTITE: as above. MICRITE: light grey, very hard, cryptocrystalline, angular cuttings.
1945 - 1950m	90 10 trace	CALCISILTITE: grading to calcarenite as above. CALCILUTITE: as above. MICRITE: as above.
1950 - 1955m	90 10 trace	CALCISILTITE: as above. CALCILUTITE: as above. MICRITE: as above.
1955 - 1960m	90 10 trace	CALCISILTITE: as above, grading to calcarenite as above. CALCILUTITE: as above. SANDSTONE: loose quartz, clear, angular, coarse to very coarse grained.
1960 - 1965m	100 trace trace	CALCISILTITE: as above. CALCILUTITE: as above. SANDSTONE: loose quartz, red to orange, coarse to very coarse grained, well rounded.
1965 - 1970m	100 trace trace	CALCISILTITE: as above. CALCILUTITE: as above. SANDSTONE: as above.

1970 - 1975m	100 trace trace	CALCISILTITE: as above. CALCILUTITE: as above. MICRITE: as above.
1975 - 1980m	100 trace trace trace	CALCISILTITE: as above. CALCILUTITE: as above. SANDSTONE: as above, clear. FORAMS AND OSTRACODS.
1980 - 1985m	90 10 trace	CALCISILTITE/CALCARENITE: as above. CALCILUTITE: as above. MICRITE
1985 - 1990m	100 trace trace	CALCISILTITE/CALCARENITE: as above. CALCILUTITE: as above. FORAMS AND OSTRACODS
1990 - 1995m	90 10	CALCISILTITE: as above. CALCILUTITE: as above.
1995 - 2000m	100 trace	CALCISILTITE: as above. CALCILUTITE: as above.
2000 - 2005m	90 10	CALCISILTITE: as above. CALCILUTITE: as above.
2005 - 2010m	90 10	CALCISILTITE: as above. CALCILUTITE: as above.
2010 - 2015m	100 trace	CALCISILTITE: as above. CALCILUTITE: as above.
2015 - 2020m	70 30	CALCISILTITE: as above. CALCILUTITE: as above.
2020 - 2025m	100 trace	CALCISILTITE: as above. CALCILUTITE: as above.
2025 - 2030m	80 20	CALCISILTITE: as above. CALCILUTITE: as above.
2030 - 2035m	100 trace	CALCISILTITE: medium light grey, occasionally to medium dark grey, very friable, calcitic, subangular cuttings. CALCILUTITE: light grey, very soft, calcitic, well rounded cuttings, water sensitive.
2035 - 2040m	100 trace	CALCISILTITE: very friable to friable, otherwise as above. CALCILUTITE: as above.
2040 - 2045m	100 trace	CALCISILTITE: as above. CALCILUTITE: as above.
2045 - 2050m	80 20	CALCISILTITE: as above. CALCILUTITE: as above.
2050 - 2055m	70 30	CALCISILTITE: as above. CALCILUTITE: as above.
2055 - 2060m	90 10	CALCISILTITE: as above. CALCILUTITE: as above.
2060 - 2065m	90 10	CALCISILTITE: as above. CALCILUTITE: as above.
2065 - 2070m	90 10	CALCISILTITE: as above. CALCILUTITE: as above.

2070 - 2075m	70	CALCISILTITE: medium light grey to medium grey, friable, calcitic, subangular cuttings, inclusions of very fine black material.
	30	CALCILUTITE: light grey, very soft, calcitic, well rounded cuttings.
2075 - 2080m	60	CALCISILTITE: as above and grading in parts to very fine calcarenite: light grey, friable, calcitic, subangular cuttings, with inclusions of very fine black material.
	40	CALCILUTITE: as above.
2080 - 2085m	70	CALCISILTITE: as above.
	30	CALCILUTITE: as above.
2085 - 2090m	80	CALCISILTITE: as above.
	20	CALCILUTITE: as above.
2090 - 2095m	80	CALCISILTITE: as above.
	20	CALCILUTITE: as above.
2095 - 2100m	90	CALCISILTITE: as above.
	10	CALCILUTITE: as above.
2100 - 2105m	90	CALCISILTITE: as above.
	10	CALCILUTITE: water sensitive, otherwise as above.
2105 - 2110m	80	CALCISILTITE: as above.
	20	CALCILUTITE: as above.
2110 - 2115m	70	CALCISILTITE: as above.
	30	CALCILUTITE: as above.
2115 - 2120m	80	CALCISILTITE: as above.
	20	CALCILUTITE: as above.
2120 - 2125m	60	CALCISILTITE: as above.
	40	CALCILUTITE: as above.
2125 - 2130m	100	CALCISILTITE: as above.
	trace	CALCILUTITE: as above.
2130 - 2135m	80	CALCISILTITE: as above.
	20	CALCILUTITE: as above.
2135 - 2140m	90	CALCISILTITE: as above.
	10	CALCILUTITE: as above.
2140 - 2145m	50	CALCISILTITE: as above.
	50	CALCILUTITE: as above.
2145 - 2150m	60	CALCISILTITE: as above.
	40	CALCILUTITE: as above.
2150 - 2155m	80	CALCISILTITE: medium light grey to medium grey, friable, calcitic, subangular cuttings. Grading to very fine calcarenite: medium light grey, friable, calcitic, subrounded cuttings, occasionally moderately hard.
	20	CALCILUTITE: light to medium light grey, soft to very soft, calcitic, well rounded cuttings.
2155 - 2160m	70	CALCISILTITE: as above, grading to calcarenite as above.
	30	CALCILUTITE: water sensitive, otherwise as above.

2160 - 2165m	90	CALCARENITE:	as above, with minor calcisiltite, both with very fine black flecking.
	10	CALCILUTITE:	as above.
2165 - 2170m	90	CALCARENITE:	as above, with minor calcisiltite, as above.
	10	CALCILUTITE:	as above.
2170 - 2175m	90	CALCARENITE:	as above.
	10	CALCILUTITE:	as above.
2175 - 2180m	60	CALCARENITE:	very fine calcarenite as above, with minor calcisiltite, as above.
	40	CALCILUTITE:	light grey, very soft to unconsolidated - disperses through sample in parts, calcitic, when consolidated cuttings are well rounded, water sensitive.
2180 - 2185m	60	CALCARENITE:	as above.
	40	CALCILUTITE:	as above.
2185 - 2190m	50	CALCARENITE:	as above.
	50	CALCILUTITE:	as above, and becoming gummy.
2190 - 2195m	60	CALCILUTITE:	as above.
	40	CALCARENITE:	as above.
2195 - 2200m	60	CALCILUTITE:	as above.
	40	CALCARENITE:	as above.
2200 - 2205m	80	CALCARENITE:	as above.
	20	CALCILUTITE:	as above.
2205 - 2210m	50	CALCARENITE:	as above.
	50	CALCILUTITE:	as above.
2210 - 2215m	60	CALCARENITE:	as above.
	40	CALCILUTITE:	as above.
2215 - 2220m	60	CALCARENITE:	argillaceous, otherwise as above.
	40	CALCILUTITE:	as above.
	trace	SANDSTONE:	quartzose, translucent to white, coarse to very coarse grained, well rounded to subrounded.
	trace	MICRITE:	white, soft to very soft, calcareous.
2220 - 2225m	70	CALCARENITE:	as above.
	30	CALCILUTITE:	as above.
2225 - 2230m	70	CALCILUTITE:	as above, becoming sticky.
	30	CALCARENITE:	as above.
2230 - 2235m	60	CALCARENITE:	as above.
	40	CALCILUTITE:	as above.
2235 - 2240m	50	CALCARENITE:	as above, grading to calcisiltite as below.
	40	CALCILUTITE:	as above.
	5	CALCISILTITE:	medium grey to pale brown, firm to hard, brittle, fine to coarse silt sized grains, well sorted, cuttings smaller than previously described.
	5	SANDSTONE:	quartzose, white to translucent, coarse to very coarse grained, loose grains, well rounded to subrounded, moderately sorted.
	trace	MICRITE:	white to buff, hard, brittle.
	trace	FORAMS	

2240 - 2245m	60	CALCARENITE:	as above.
	30	CALCILUTITE:	as above.
	10	CALCISILTITE:	as above.
	trace	SANDSTONE:	clear, angular to subangular, otherwise as above.
2245 - 2250m	70	CALCARENITE:	as above.
	20	CALCILUTITE:	as above.
	10	CALCISILTITE:	as above.
	trace	SANDSTONE:	as above.
2250 - 2255m	80	CALCARENITE:	medium light grey, friable, fine to very coarse grained, subangular to subrounded cuttings, calcitic, slightly argillaceous, with very fine black flecking.
	20	CALCILUTITE:	light grey, very soft, medium to coarse grained, well rounded cuttings, calcitic.
	trace	SANDSTONE:	clear to white, medium to very coarse grained, subrounded, loose quartz grains.
2255 - 2260m	80	CALCARENITE:	as above.
	15	CALCILUTITE:	as above.
	5	SANDSTONE:	subangular to well rounded, otherwise as above.
2260 - 2265m	60	CALCARENITE:	with cuttings becoming coarser, otherwise as above.
	40	CALCILUTITE:	becoming sticky, and unconsolidated, disperses throughout sample.
	trace	SANDSTONE:	loose quartz, as above.
2265 - 2270m	50	CALCARENITE:	as above.
	50	CALCILUTITE:	as above.
	trace	MICRITE:	light brown to light grey, very hard, angular cuttings.
2270 - 2275m	60	CALCILUTITE:	as above, sticky, with black flecking.
	40	CALCARENITE:	as above.
	trace	SANDSTONE:	as above.
2275 - 2280m	60	CALCILUTITE:	as above.
	40	CALCARENITE:	as above.
2280 - 2285m	70	CALCILUTITE:	as above.
	30	CALCARENITE:	as above.
2285 - 2290m	50	CALCILUTITE:	as above.
	50	CALCARENITE:	as above.
	trace	SANDSTONE:	as above.
2290 - 2295m	50	CALCILUTITE:	as above.
	50	CALCARENITE:	as above.
2295 - 2300m	60	CALCARENITE:	as above.
	40	CALCILUTITE:	as above.
2300 - 2305m	70	CALCILUTITE:	as above.
	30	CALCARENITE:	as above.
2305 - 2310m	70	CALCARENITE:	as above.
	30	CALCILUTITE:	as above.
	trace	SANDSTONE:	as above.

2310 - 2315m	80	CALCARENITE: as above, grading to calcisiltite, medium grey, friable to soft, subrounded, very coarse to granule gravel cuttings, calcitic.
	20	CALCILUTITE: as above.
	trace	SANDSTONE: as above.
2315 - 2320m	70	CALCARENITE: as above, with minor calcisiltite, as above.
	30	CALCILUTITE: becoming less sticky and more dispersive (unconsolidated) otherwise as above.
2320 - 2325m	60	CALCARENITE: medium light to medium grey, friable, subrounded, very coarse to granule gravel cuttings, slightly argillaceous, calcitic, in parts grading to calcisiltite as above.
	40	CALCILUTITE: light grey, soft to occasionally very soft, sticky, calcitic, well rounded, very coarse to larger cuttings.
2325 - 2330m	70	CALCARENITE: as above, grading to calcisiltite as above.
	30	CALCILUTITE: as above.
2330 - 2335m	90	CALCARENITE: as above.
	10	CALCILUTITE: as above.
	trace	MICRITE: medium grey to medium dark grey, very hard, angular cuttings.
2335 - 2340m	70	CALCARENITE: as above.
	30	CALCILUTITE: as above, but no longer sticky.
2340 - 2345m	70	CALCARENITE: as above.
	30	CALCILUTITE: as above.
2345 - 2350m	60	CALCISILTITE: as above, grades from calcarenite as above but becoming more argillaceous and less calcareous.
	40	CALCILUTITE: very calcareous, as above.
2350 - 2355m	70	CALCARENITE: as above, becoming less calcareous and more argillaceous in parts.
	30	CALCILUTITE: as above.
2355 - 2360m	80	CALCARENITE: calcarenite grading to calcisiltite as above.
	20	CALCILUTITE: as above.
2360 - 2365m	80	CALCARENITE: grading to calcisiltite, as above.
	20	CALCILUTITE: as above.
2365 - 2370m	60	CALCARENITE: grading to calcisiltite as above.
	40	CALCILUTITE: as above, and becoming less calcitic and more argillaceous.
2370 - 2375m	80	CALCARENITE: as above.
	20	CALCILUTITE: as above.
2375 - 2380m	60	CALCARENITE: as above, in argillaceous matrix, also contains rounded, very fine to fine calcitic grains, grading to calcisiltite.
	40	CALCILUTITE: as above, water sensitive.
	trace	PYRITE: microcrystalline in laminae.
	trace	MICROMICA: in calcarenite/calcisiltite.
	trace	FORAMS

2380 - 2385m	70	CALCARENITE:	as above.
	30	CALCILUTITE:	as above.
	trace	MICROPYRITE	
	trace	MICROMICA	
	trace	FORAMS	
	trace	GLAUCONITE:	pale green, soft, in siltstone matrix.
2385 - 2390m	60	CALCARENITE:	as above.
	40	CALCILUTITE:	as above.
	trace	MICROPYRITE	
	trace	MICROMICA	
	trace	FORAMS	
	trace	GLAUCONITE	
	trace	SHELL FRAGMENTS	
2390 - 2395m	70	CALCARENITE:	as above, pyrite and glauconite more common than above.
	30	CALCILUTITE:	as above.
	trace	MICROPYRITE	
	trace	MICROMICA	
	trace	FORAMS	
	trace	GLAUCONITE	
	trace	SHELL FRAGMENTS	
2395 - 2400m	60	CALCILUTITE:	as above.
	40	CALCARENITE:	as above.
	trace	SHELL FRAGMENTS	
	trace	SPICULES	
2400 - 2405m	60	CALCILUTITE:	as above.
	40	CALCARENITE:	as above.
	trace	MICROPYRITE	
	trace	MICROMICA	
	trace	FORAMS	
	trace	SHELL FRAGMENTS	
	trace	SPICULES	
2405 - 2410m	60	CALCARENITE:	medium grey to medium light grey, firm, very fine sand to coarse silt sized grains, blocky cuttings, well rounded calcareous grains, some angular to subangular shell fragments, moderately sorted, argillaceous matrix in part.
	40	CALCILUTITE:	light grey to very light grey, soft to very soft, calcitic, slightly argillaceous, occasional forams, spicules and sand grains in matrix.
	trace	SANDSTONE:	loose quartz grains, transparent, coarse to very coarse, rounded to subrounded.
	trace	FORAMS	
	trace	SHELL FRAGMENTS	
	trace	GLAUCONITE	
	trace	SPICULES	
2410 - 2415m	80	CALCILUTITE:	as above.
	20	CALCISILTITE:	as for calcarenite above but predominantly silt.
	trace	GLAUCONITE	
2415 - 2420m	50	CALCISILTITE:	as above.
	50	CALCILUTITE:	as above.
2420 - 2425m	50	CALCISILTITE:	as above.
	50	CALCILUTITE:	as above.
2425 - 2430m	60	CALCISILTITE:	as above.
	40	CALCILUTITE:	as above.

2430 - 2435m	70 30	CALCISILTITE: as above. CALCILUTITE: as above.
2435 - 2440m	50 50	CALCISILTITE: as above. CALCILUTITE: as above.
2440 - 2445m	50 50	CALCISILTITE: as above. CALCILUTITE: as above.
2445 - 2450m	60 40	CALCISILTITE: as above, less glauconite than previously. CALCILUTITE: as above.
2450 - 2455m	60 40 trace	CALCISILTITE: as above, very argillaceous. CALCILUTITE: as above. MICROPYRITE: coarse grain sized aggregates.
2455 - 2460m	50 50	CALCISILTITE: as above, very argillaceous. CALCILUTITE: as above.
2460 - 2465m	60 40	CALCISILTITE: as above, very argillaceous. CALCILUTITE: as above.
2465 - 2470m	70 30	CALCILUTITE: as above. CALCISILTITE: as above, very argillaceous.
2470 - 2475m	70 30	CALCISILTITE: as above. CALCILUTITE: as above.
2475 - 2480m	60 40	CALCISILTITE: as above. CALCILUTITE: as above.
2480 - 2485m	50 50	CALCISILTITE: as above. CALCILUTITE: as above.
2485 - 2490m	60 40	CALCILUTITE: as above. CALCISILTITE: as above, scarce medium dark grey to medium grey cuttings.
2490 - 2495m	60 40	CALCILUTITE: as above. CALCISILTITE: as above.
2495 - 2500m	60 40	CALCILUTITE: as above. CALCISILTITE: as above.
2500 - 2505m	50 50 trace	CALCISILTITE: medium light grey to medium grey, soft to friable, fine black flecking, subrounded blocky cuttings, calcitic and argillaceous. Grading to a very calcareous siltstone. CALCILUTITE: very light grey to light grey, very soft to unconsolidated, ie. disperses through sample, water sensitive, gummy, calcitic, argillaceous. PYRITE: microcrystalline aggregates.
2505 - 2510m	60 40 trace	CALCISILTITE: as above, and grades to calcareenite: as for calcisiltite above except for grain size - very fine. CALCILUTITE: becomes slightly sticky, otherwise as above. PYRITE
2510 - 2515m	60 40 trace trace	CALCISILTITE: as above. CALCILUTITE: as above. PYRITE FORAMS

2515 - 2520m	70	CALCISILTITE:	as above.
	30	CALCILUTITE:	as above.
	trace	PYRITE	
	trace	FORAMS	
2520 - 2525m	70	CALCARENITE:	medium light grey to medium grey, soft to friable, fine black flecking, subrounded blocky cuttings, calcitic, argillaceous, grades from calcisiltite as above.
	30	CALCILUTITE:	sticky, as above.
2525 - 2530m	80	CALCISILTITE:	as above.
	20	CALCILUTITE:	as above.
	trace	PYRITE	
	trace	FORAMS	
2530 - 2535m	50	CALCISILTITE:	as above.
	40	CALCILUTITE:	as above.
	10	CALCAREOUS SILTSTONE:	medium light grey to medium dark grey, friable, calcitic, argillaceous with occasional black inclusions, forams also as inclusions, subangular elongated cuttings.
	trace	PYRITE	
	trace	GLAUCONITE:	often as inclusions in calcareous siltstone.
	trace	FORAMS:	at times as inclusions in siltstone/calcisiltite.
2535 - 2540m	50	CALCISILTITE:	as above.
	40	CALCILUTITE:	as above.
	10	CALCAREOUS SILTSTONE:	as above.
	trace	GLAUCONITE:	as above.
	trace	PYRITE:	as above.
2540 - 2545m	50	CALCILUTITE:	as above, i.e. sticky, dispersive.
	30	CALCISILTITE:	as above.
	20	CALCAREOUS SILTSTONE:	as above, i.e. with glauconite inclusions and occasional pyrite veins, cuttings are sub-angular tending to splinter shape.
2545 - 2550m	100	CALCAREOUS SILTSTONE:	as above.
2550 - 2555m	100	CALCAREOUS SILTSTONE:	as above.
2555 - 2560m	100	CALCAREOUS SILTSTONE:	as above.
2560 - 2565m	100	CALCAREOUS SILTSTONE -	medium to dark grey, soft to hard, cuttings blocky and sub-rounded.
	trace	CARBONACEOUS FLECKING.	
	trace	LIMESTONE -CAVINGS?	
	trace	SHELL MATERIAL.	
2565 - 2570m	100	CALCAREOUS SILTSTONE:	as above.
	trace	Light grey clay material,	very soft.
2570 - 2575m	100	CALCAREOUS SILTSTONE:	as above.
2575 - 2580m	100	CALCAREOUS SILTSTONE:	as above.
2580 - 2585m	1000	CALCAREOUS SILTSTONE:	as above.
	trace	Very soft light grey clay material.	
	trace	PYRITE.	
2585 - 2595m	100	CALCAREOUS SILTSTONE:	as above.
	trace	CARBONACEOUS material.	
2600 - 2605m	100	CALCAREOUS SILTSTONE	

2605 - 2610m	90	CALCAREOUS SILTSTONE:	medium grey to medium dark grey, soft to friable, blocky, dominantly sub-rounded cuttings, with occasional black carbonaceous flecking, and traces of pyrite and rare glauconite.
	10	CALCAREOUS CLAYSTONE:	light grey, soft to very soft, blocky well-rounded cuttings, calcitic, gummy.
	trace	FORAMS	
2610 - 2615m	90	CALCAREOUS SILTSTONE:	as above.
	10	CALCAREOUS CLAYSTONE:	as above
	trace	FORAMS	
2615 - 2620m	85	CALCAREOUS SILTSTONE:	as above.
	15	CALCAREOUS CLAYSTONE:	as above.
	trace	PYRITE -	microcrystalline aggregates.
2620 - 2625m	80	CALCAREOUS SILTSTONE:	with occasional forams and carbonaceous matter as inclusions, otherwise as above.
	20	CALCAREOUS CLAYSTONE:	as above.
	trace	PYRITE:	as above.
2625 - 2630m	85	CALCAREOUS SILTSTONE:	as above, with some cuttings becoming elongated, and friable to moderately hard.
	15	CALCAREOUS CLAYSTONE:	as above.
2630 - 2635m	80	CALCAREOUS SILTSTONE:	as above.
	20	CALCAREOUS CLAYSTONE:	as above.
	trace	PYRITE:	as inclusions within calcareous siltstone or as microcrystalline aggregates.
2635 - 2640m	85	CALCAREOUS SILTSTONE:	as above.
	15	CALCAREOUS SILTSTONE:	as above.
	trace	PYRITE:	as above.
2640 - 2645m	90	CALCAREOUS SILTSTONE:	as above.
	10	CALCAREOUS CLAYSTONE:	as above.
2645 - 2650m	80	CALCAREOUS SILTSTONE:	as above, with some cuttings becoming platy.
	20	CALCAREOUS CLAYSTONE:	as above.
2650 - 2655m	90	CALCAREOUS SILTSTONE:	as above.
	10	CALCAREOUS CLAYSTONE:	as above.
2655 - 2660m	90	CALCAREOUS SILTSTONE:	as above.
	10	CALCAREOUS CLAYSTONE:	as above.
2660 - 2665m	70	CALCAREOUS SILTSTONE:	as above.
	30	CALCAREOUS CLAYSTONE:	as above.
2665 - 2670m	70	CALCAREOUS SILTSTONE:	as above.
	30	CALCAREOUS CLAYSTONE:	as above.
	trace	SHELL MATERIAL	
2670 - 2675m	80	CALCAREOUS SILTSTONE:	as above.
	20	CALCAREOUS CLAYSTONE:	as above.
2675 - 2680m	80	CALCAREOUS SILTSTONE:	as above.
	20	CALCAREOUS CLAYSTONE:	as above.
2680 - 2685m	70	CALCAREOUS SILTSTONE:	as above.
	30	CALCAREOUS CLAYSTONE:	as above.
2685 - 2690m	80	CALCAREOUS SILTSTONE:	as above.
	20	CALCAREOUS CLAYSTONE:	as above.

2690 - 2695m	80 20	CALCAREOUS SILTSTONE: as above. CALCAREOUS CLAYSTONE: as above.
2695 - 2700m	85 15	CALCAREOUS SILTSTONE: as above. CALCAREOUS CLAYSTONE: as above.
2700 - 2705m	90 10	CALCAREOUS SILTSTONE: medium light to medium dark grey, friable to moderately hard, calcitic, subrounded, blocky to occasional platy cuttings, with inclusions of pyrite and black carbonaceous matter and flecking. CALCAREOUS CLAYSTONE: light grey, soft to very soft, calcitic, well rounded cuttings, with fine black (carbonaceous) flecking, gummy.
2705 - 2710m	80 20	CALCAREOUS SILTSTONE: as above, with the medium light grey cuttings blocky, and the medium dark grey cuttings tending to platy and/or elongate. CALCAREOUS CLAYSTONE: as above.
2710 - 2715m	90 10	CALCAREOUS SILTSTONE: as above. CALCAREOUS CLAYSTONE: as above.
2715 - 2720m	95 5	CALCAREOUS SILTSTONE: as above. CALCAREOUS CLAYSTONE: as above.
2720 - 2725m	90 10 trace	CALCAREOUS SILTSTONE: as above, with trace glauconite. CALCAREOUS CLAYSTONE: as above. PYRITE: microcrystalline aggregates.
2725 - 2730m	90 10	CALCAREOUS SILTSTONE: as above. CALCAREOUS CLAYSTONE: as above.
2730 - 2735m	90 10	CALCAREOUS SILTSTONE: as above. CALCAREOUS CLAYSTONE: as above.
2735 - 2740m	90 10	CALCAREOUS SILTSTONE: as above. CALCAREOUS CLAYSTONE: as above.
2740 - 2745m	70 30 trace	CALCAREOUS SILTSTONE: as above. CALCAREOUS CLAYSTONE: very soft to unconsolidated - dispersed through sample, otherwise as above. FORAMS
2745 - 2750m	100 trace	CALCAREOUS SILTSTONE: as above. CALCAREOUS CLAYSTONE: as above, soft to very soft, sticky, ie. unconsolidated.
2750 - 2755m	80 20 trace	CALCAREOUS SILTSTONE: as above. CALCAREOUS CLAYSTONE: as above. FOSSILS: undifferentiated.
2755 - 2760m	70 30	CALCAREOUS SILTSTONE: as above. CALCAREOUS CLAYSTONE: as above.
2760 - 2765m	70 30	CALCAREOUS SILTSTONE: as above. CALCAREOUS CLAYSTONE: as above.
2765 - 2770m	80 20	CALCAREOUS SILTSTONE: as above. CALCAREOUS CLAYSTONE: as above.
2770 - 2775m	70 30	CALCAREOUS SILTSTONE: as above. CALCAREOUS CLAYSTONE: as above.

2775 - 2780m	80 20	CALCAREOUS SILTSTONE: CALCAREOUS CLAYSTONE:	as above. as above.
2780 - 2785m	70 30	CALCAREOUS SILTSTONE: CALCAREOUS CLAYSTONE:	as above. as above.
2785 - 2790m	90 10	CALCAREOUS SILTSTONE: CALCAREOUS CLAYSTONE:	as above. as above.
2790 - 2795m	70 30	CALCAREOUS SILTSTONE: CALCAREOUS CLAYSTONE:	as above. as above.
2795 - 2800m	80 20	CALCAREOUS SILTSTONE: CALCAREOUS CLAYSTONE:	as above. as above.
2800 - 2805m	70 30	CALCAREOUS SILTSTONE: CALCAREOUS CLAYSTONE:	as above. as above.
2805 - 2810m	90 10	CALCAREOUS SILTSTONE: CALCAREOUS CLAYSTONE:	light to dark grey, firm to hard, blocky to platy, trace carbonaceous flecking. as above.
2810 - 2815m	80 20	CALCAREOUS SILTSTONE: CALCAREOUS CLAYSTONE:	as above. as above.
2815 - 2820m	80 20	CALCAREOUS SILTSTONE: CALCAREOUS CLAYSTONE:	as above. as above.
2820 - 2825m	90 10	CALCAREOUS SILTSTONE: CALCAREOUS CLAYSTONE:	as above. as above.
2825 - 2830m	90 10	CALCAREOUS SILTSTONE: CALCAREOUS CLAYSTONE:	as above. as above.
2830 - 2835m	80 20	CALCAREOUS SILTSTONE: CALCAREOUS CLAYSTONE:	as above. as above.
2835 - 2840m	70 30	CALCAREOUS SILTSTONE: CALCAREOUS CLAYSTONE:	as above. as above.
2840 - 2845m	80 20	CALCAREOUS SILTSTONE: CALCAREOUS CLAYSTONE:	as above. as above.
2845 - 2850m	90 10 trace	CALCAREOUS SILTSTONE: CALCAREOUS CLAYSTONE: CARBONACEOUS MATERIAL	as above. as above.
2850 - 2855m	80 20	CALCAREOUS SILTSTONE: CALCAREOUS CLAYSTONE:	as above. as above.
2855 - 2860m	80 20	CALCAREOUS SILTSTONE: CALCAREOUS CLAYSTONE:	as above. as above.
2860 - 2865m	90 10 trace	CALCAREOUS SILTSTONE: CALCAREOUS CLAYSTONE: FORAMS	as above. as above.
2865 - 2870m	90 10 trace	CALCAREOUS SILTSTONE: CALCAREOUS CLAYSTONE: PYRITE: blocky.	as above. as above.
2870 - 2875m	80 20	CALCAREOUS SILTSTONE: CALCAREOUS CLAYSTONE:	as above. as above.
2875 - 2880m	90 10	CALCAREOUS SILTSTONE: CALCAREOUS CLAYSTONE:	as above. as above.

2880 - 2885m	90 10	CALCAREOUS SILTSTONE: CALCAREOUS CLAYSTONE:	as above. as above.
2885 - 2890m	70 30	CALCAREOUS SILTSTONE: CALCAREOUS CLAYSTONE:	as above. as above.
2890 - 2895m	90 10 trace	CALCAREOUS SILTSTONE: CALCAREOUS CLAYSTONE: CARBONACEOUS MATERIAL	as above. as above. .
2895 - 2900m	80 20	CALCAREOUS SILTSTONE: CALCAREOUS CLAYSTONE:	as above. as above.
2900 - 2905m	90 10	CALCAREOUS SILTSTONE: CALCAREOUS CLAYSTONE:	as above. as above.
2905 - 2910m	90 10	CALCAREOUS SILTSTONE: CALCAREOUS CLAYSTONE:	as above. as above.
2910 - 2915m	90 10	CALCAREOUS SILTSTONE: brown, soft to firm, blocky, grades to a sandy siltstone with traces of glauconite. CALCAREOUS CLAYSTONE:	grey to light grey as above.
2915 - 2920m	50 40 10 trace trace trace	SANDSTONE: grades from a fine grained quartzose sandstone to a sandy siltstone, calcareous, occasionally micaceous, no shows. CALCAREOUS SILTSTONE: CALCAREOUS MUDSTONE: PYRITE COARSE QUARTZ GRAINS GLAUCONITE	medium grey, soft to hard, blocky, as above. as above.
2920 - 2925m	50 50 trace trace trace	CALCAREOUS SILTSTONE: SANDSTONE: PYRITE COARSE QUARTZ GRAINS GLAUCONITE	as above. as above.
2925 - 2930m	50 50	CALCAREOUS SILTSTONE: SANDSTONE:	as above. as above.
2930 - 2935m	50 50 trace trace trace	CALCAREOUS SILTSTONE: SANDSTONE: GLAUCONITE PYRITE COARSE QUARTZ GRAINS	as above. as above.
2935 - 2940m	60 40 trace trace trace	SANDSTONE: CALCAREOUS SILTSTONE: CALCAREOUS CLAYSTONE: LOOSE QUARTZ: PYRITE GLAUCONITE	as above, as above, and CALCAREOUS as above. coarse grains.
2940 - 2945m	50 50 trace trace	SANDSTONE: CALCAREOUS SILTSTONE AND CALCAREOUS CLAYSTONE: GLAUCONITE LOOSE QUARTZ:	as above. as above. coarse grains.
2945 - 2950m	100 trace trace trace trace	CALCAREOUS SILTSTONE: SANDSTONE: GLAUCONITE PYRITE COARSE QUARTZ GRAINS	as above. as above.

2950 - 2955m	100	CALCAREOUS SILTSTONE: as above.
	trace	SANDSTONE: as above.
	trace	GLAUCONITE
	trace	PYRITE
	trace	COARSE QUARTZ GRAINS
2955 - 2960m	90	CALCAREOUS SILTSTONE: light grey, hard, blocky, trace carbonaceous flecking, calcareous.
	10	SANDSTONE: grey to white, firm to very hard, fine to medium grained, usually very glauconitic, sometimes pyritic.
	trace	PYRITE: as discrete coarse angular grains, sometimes glauconitic.
	trace	GLAUCONITE: as discrete grains.
	trace	COARSE QUARTZ GRAINS: increasing amounts, very coarse, angular to subangular.
	trace	DOLOMITIC SANDSTONE? slightly calcareous?
2960 - 2965m	50	SAND: clear to frosty loose quartz grains, angular to subangular, moderately sorted, no shows.
	10	SANDSTONE: as above.
	40	SILTSTONE: as above.
	trace	DOLOMITIC SANDSTONE
	trace	PYRITE
	trace	GLAUCONITE
2965 - 2970m	50	SILTSTONE: as above.
	40	SAND: as above.
	10	SANDSTONE: as above, dolomitic.
	trace	PYRITE
	trace	GLAUCONITE
2970 - 2975m	50	SILTSTONE: as above.
	40	SAND: as above.
	10	SANDSTONE: as above.
	trace	GLAUCONITE
	trace	PYRITE
2975 - 2980m	50	CALCAREOUS SILTSTONE: medium light to medium dark grey, moderately hard, calcareous, blocky subangular cuttings.
	40	SAND: loose quartz; clear to translucent, medium to very coarse grained, subrounded to angular, some grains have dolomitic? cement on one or more sides. The dolomite cement shows mineral fluorescence. No quartz shows.
	trace	SANDSTONE: clear, fine to medium quartz grains, friable, very glauconitic, no shows.
	10	SANDSTONE: clear to translucent, subangular, medium to very coarse quartz grains in a white dolomitic? cement with occasional pyrite inclusions. The aggregates show mineral fluorescence - no cut, no crush cut. Occasional aggregates are very pyritic with glauconite inclusions.
2980 - 2983m	50	SAND: loose quartz, as above, no shows.
	45	CALCAREOUS SILTSTONE: as above.
	5	SANDSTONE: quartz aggregates, mineral fluorescence, as above.
	trace	SANDSTONE: glauconitic aggregates, as above.
2983 - 2985m	70	SILTSTONE: as above.
	30	SAND: as above, much fine grains though, only a trace of dolomitic sandstone.
	trace	GLAUCONITE
	trace	PYRITE

2985 - 2990m	80	SILTSTONE:	as above.
	20	SANDSTONE:	as above.
		Desander sample - large amounts of medium to coarse loose quartz grains - well sorted, subangular to subrounded, trace dolomite, trace glauconite, trace pyrite.	
2990 - 2995m	50	SILTSTONE:	as above.
	50	SANDSTONE:	clear to frosty loose quartz grains, medium to very coarse grained, moderately to well sorted, subangular to subrounded.
	trace	GLAUCONITE	
	trace	PYRITE:	discrete coarse grains.
2995 - 3000m	60	SANDSTONE:	as above.
	40	SILTSTONE:	as above.
	trace	GLAUCONITE	
	trace	PYRITE	
3000 - 3005m	80	SANDSTONE:	as above.
	20	SILTSTONE:	as above.
	trace	PYRITE	
	trace	GLAUCONITE	
3005 - 3010m	90	SANDSTONE:	loose quartz, clear to translucent, medium to very coarse grained, predominantly coarse to very coarse, subangular to well rounded, moderately sorted, no fluorescence, occasionally with traces of pyrite.
	10	SILTSTONE:	medium light grey to medium dark grey, friable, blocky subangular to subrounded cuttings, calcareous with occasional carbonaceous and pyrite inclusions.
3010 - 3015m	90	SANDSTONE:	clear to frosty loose quartz grains, medium coarse to very coarse, well rounded to subangular, moderately sorted, no shows.
	10	SILTSTONE:	light grey to dark grey brown, firm to hard, blocky, calcareous in part.
	trace	GLAUCONITE:	associated with sandstone and siltstone but also as discrete grains.
	trace	PYRITE:	discrete coarse grains and associated with other grains.
	trace	CARBONACEOUS SILTSTONE (COAL?)	
3015 - 3020m	90	SANDSTONE:	as above.
	10	SILTSTONE:	as above.
	trace	GLAUCONITE	
	trace	PYRITE	
3020 - 3025m	90	SANDSTONE:	as above.
	10	SILTSTONE:	grey to brown, soft to hard, blocky, carbonaceous, becoming predominantly non calcareous.
	trace	GLAUCONITE	
	trace	PYRITE	
	trace	COAL	
3025 - 3030m	90	SANDSTONE:	as above.
	10	SILTSTONE:	as above.
	trace	GLAUCONITE	
	trace	PYRITE	
	trace	COAL	

3030 - 3035m	90	SANDSTONE:	as above.
	10	SILTSTONE:	as above.
	trace	GLAUCONITE	
	trace	PYRITE	
	trace	COAL	
3035 - 3040m	80	SANDSTONE:	as above.
	20	SILTSTONE:	as above.
	trace	PYRITE	
	trace	COAL	
3040 - 3045m	60	SANDSTONE:	as above.
	40	SILTSTONE:	as above.
	trace	PYRITE	
	trace	COAL	
3045 - 3050m	60	SANDSTONE:	as above.
	40	SILTSTONE:	as above.
	trace	PYRITE	
	trace	COAL	
3050 - 3055m	40	SANDSTONE:	as above.
	40	COAL:	as above.
	20	SILTSTONE:	as above.
	trace	PYRITE	
3055 - 3060m	50	SILTSTONE:	as above.
	30	SANDSTONE:	as above.
	20	COAL:	as above.
3060 - 3065m	50	SILTSTONE:	dark grey to brown, blocky to platy, often very carbonaceous. Predominantly non calcareous, some calcareous cavings?
	30	SANDSTONE:	clear to frosty, loose quartz grains, medium coarse to very coarse grained, moderately to poorly sorted, subangular to well rounded.
	20	COAL:	as above.
3065 - 3070m	50	SILTSTONE:	as above.
	30	SANDSTONE:	as above.
	20	COAL:	as above.
3070 - 3075m	70	SILTSTONE:	as above.
	20	SANDSTONE:	as above.
	10	COAL:	as above.
	trace	MICA	
	trace	PYRITE	
3075 - 3080m	80	SILTSTONE:	as above.
	20	SANDSTONE:	as above.
3080 - 3085m	70	SILTSTONE:	as above.
	30	SANDSTONE:	as above.
	trace	PYRITE	
	trace	COAL	
3085 - 3090m	80	SILTSTONE:	as above.
	20	SANDSTONE:	as above.
	trace	COAL	
3090 - 3095m	90	SILTSTONE:	as above.
	10	SANDSTONE:	as above.
	trace	COAL	
3095 - 3100m	80	SILTSTONE:	as above.
	20	SANDSTONE:	as above.
	trace	COAL	

3100 - 3105m	100	SILTSTONE: mottled grey/brown to dark brown, firm to hard, blocky, non calcareous, often very carbonaceous.
	trace	SANDSTONE: as above.
	trace	COAL
3105 - 3110m	100	SILTSTONE: as above.
	trace	SANDSTONE: as above.
	trace	COAL
3110 - 3115m	80	SILTSTONE: as above.
	20	SANDSTONE: coarse quartz grains as above, but also a fine to medium grained, well sorted, consolidated, quartz sand, hard to friable, fair to good visible porosity, carbonaceous. Some very coarse quartz grains appear fractured or welded - others appear well rounded and loose.
	trace	COAL
3115 - 3120m	90	SILTSTONE: as above.
	10	SANDSTONE: as above.
	trace	COAL
3120 - 3125m	60	SILTSTONE: as above.
	30	COAL
	10	SANDSTONE: as above.
3125 - 3130m	90	SILTSTONE: as above.
	10	SANDSTONE: as above.
	trace	COAL
3130 - 3135m	60	SILTSTONE: as above.
	20	SANDSTONE: as above.
	20	COAL
3135 - 3140m	40	SILTSTONE: as above.
	40	SANDSTONE: as above.
	20	COAL
	trace	PYRITE
3140 - 3145m	60	SILTSTONE: as above.
	40	SANDSTONE: as above.
	trace	COAL
	trace	PYRITE
3145 - 3150m	90	SILTSTONE: as above, very carbonaceous.
	10	SANDSTONE: as above.
	trace	COAL
3150 - 3155m	80	SILTSTONE: grey to dark brown, blocky, soft to firm, very carbonaceous in part, micaceous, grades to a fine sandstone.
	20	SANDSTONE: in part clear to frosty loose quartz grains, very coarse grained, well sorted, angular to subrounded, some welded grains; in part a fine to medium coarse grained consolidated quartz sandstone, friable, carbonaceous, poor to moderate visible porosity.
	trace	COAL
3155 - 3160m	90	SILTSTONE: as above.
	10	SANDSTONE: as above.
3160 - 3165m	60	SANDSTONE: as above.
	40	SILTSTONE: as above.
	trace	COAL

3165 - 3170m	90	SANDSTONE:	as above.
	10	SILTSTONE:	as above.
3170 - 3175m	70	SANDSTONE:	as above, trace dolomite cement.
	30	SILTSTONE:	as above..
	trace	PYRITE	
3175 - 3180m	80	SANDSTONE:	predominantly clear to frosty loose quartz grains, predominantly subangular to very angular grains, some fractured, some welded grains, some well rounded very coarse grains also, sandstone 'in-situ' ie. downhole may be becoming very tight; trace dolomite.
	20	SILTSTONE:	as above.
	trace	PYRITE	
3180 - 3185m	80	SANDSTONE:	as above.
	20	SILTSTONE:	as above.
	trace	PYRITE	
3185 - 3190m	100	SANDSTONE:	as above.
	trace	SILTSTONE:	as above.
	trace	PYRITE	
3190 - 3195m	100	SANDSTONE:	as above.
	trace	SILTSTONE:	as above.
	trace	PYRITE	
3195 - 3200m	80	SANDSTONE:	as above, grains very coarse.
	20	SILTSTONE:	as above, becoming harder.
	trace	PYRITE	
3200 - 3205m	90	SANDSTONE:	as above.
	10	SILTSTONE:	as above.
	trace	PYRITE	
3205 - 3210m	90	SANDSTONE:	as above, still very coarse.
	10	SILTSTONE:	as above.
3210 - 3215m	80	SANDSTONE:	as above, more rounded than above.
	20	SILTSTONE:	as above.
	trace	PYRITE	
3215 - 3220m	70	SANDSTONE:	as above.
	30	SILTSTONE:	as above.,
	trace	PYRITE	
3220 - 3225m	60	SANDSTONE:	as above.
	40	SILTSTONE:	as above.
	trace	PYRITE	
3225 - 3230m	70	SANDSTONE:	clear to frosty loose quartz grains, very coarse, angular to subrounded, moderately to well sorted, some welded, some fractured, some fine to medium grained sandstone also.
	30	SILTSTONE:	grey to brown, firm to hard, blocky, non calcareous, carbonaceous in part, cuttings subrounded.
	trace	PYRITE	
	trace	GLAUCONITE	
	trace	MICA	
3230 - 3235m	70	SANDSTONE:	as above, grains medium to coarse to very coarse grained.
	30	SILTSTONE:	as above.
	trace	PYRITE:	increasing amount of coarse angular grains.

3235 - 3240m	60 40 trace	SANDSTONE: SILTSTONE: PYRITE	as above. as above.
3240 - 3245m	80 20 trace	SANDSTONE: SILTSTONE: PYRITE	as above. as above.
3245 - 3250m	80 20 trace trace	SANDSTONE: SILTSTONE: PYRITE GLAUCONITE	as above. as above.
3250 - 3255m	90 10 trace	SANDSTONE: SILTSTONE: PYRITE	as above. as above.
3255 - 3260m	50 50 trace trace	SANDSTONE: SILTSTONE: PYRITE COAL	as above. as above.
3260 - 3265m	70 30 trace	SANDSTONE: SILTSTONE: PYRITE	as above. as above.
3265 - 3270m	60 40 trace	SANDSTONE: SILTSTONE: PYRITE	as above. as above.
3270 - 3275m	60 40 trace	SANDSTONE: SILTSTONE: PYRITE	as above. as above.
3275 - 3280m	90 10 trace	SANDSTONE: SILTSTONE: PYRITE	as above. as above.
3280 - 3285m	90 10 trace	SANDSTONE: SILTSTONE: PYRITE	clear to frosty, loose quartz grains, very coarse, angular to subangular, occasionally well rounded to subrounded, moderately well sorted, some fine to medium coarse consolidated sandstone. grey to dark brown, firm to hard, blocky, occasionally carbonaceous, non calcareous, some white, very soft, silt/mudstone.
3285 - 3290m	100 trace trace	SANDSTONE: SILTSTONE: PYRITE	as above. as above.
3290 - 3295m	80 20 trace	SANDSTONE: SILTSTONE: PYRITE	as above. as above.
3295 - 3300m	80 20 trace trace	SANDSTONE: SILTSTONE: PYRITE DOLOMITE	as above. as above.
3300 - 3305m	100 trace trace trace	SANDSTONE: SILTSTONE: PYRITE DOLOMITE	as above. as above.

3305 - 3310m	100 trace trace trace	SANDSTONE: as above. SILTSTONE: as above. PYRITE DOLOMITE: about 5%.
3310 - 3315m	100 trace trace	SANDSTONE: as above, 5-10% dolomite. SILTSTONE: as above. PYRITE
3315 - 3320m	100 trace trace	SANDSTONE: as above, 5-10% dolomite. SILTSTONE: as above. PYRITE
3320 - 3325m	100 trace trace	SANDSTONE: as above. SILTSTONE: as above. PYRITE
3325 - 3330m	100 trace trace	SANDSTONE: as above. SILTSTONE: as above. PYRITE
3330 - 3335m	100 trace trace	SANDSTONE: as above. SILTSTONE: as above. PYRITE
3335 - 3340m	100 trace trace	SANDSTONE: as above, increasing amount of dolomite (10%). SILTSTONE PYRITE
3340 - 3345m	100 trace trace	SANDSTONE: as above, 10% dolomite. SILTSTONE PYRITE
3345 - 3350m	100 trace trace	SANDSTONE: as above. SILTSTONE PYRITE
3350 - 3355m	100 trace	SANDSTONE: as above, 20-30% dolomite. SILTSTONE: as above.
3355 - 3360m	100 trace trace	SANDSTONE: clear to frosty loose quartz grains, very angular to subangular, occasionally subrounded, moderate to well sorted, low visible porosity, 40% of grains with dolomite cement, some grains fractured, some welded together, no shows, trace fine to medium grained consolidated sandstone. COAL SILTSTONE
3360 - 3365m	100 trace	SANDSTONE: as above. SILTSTONE: as above.
3365 - 3370m	100 trace trace	SANDSTONE: as above. SILTSTONE: as above. PYRITE
3370 - 3375m	80 20	SANDSTONE: as above. SILTSTONE: as above.
3375 - 3380m	70 30	SANDSTONE: as above. SILTSTONE: medium to dark grey, hard, angular to platy cuttings, occasionally carbonaceous, grades to a fine sandstone, calcareous.

3380 - 3385m	70	SANDSTONE:	as above.
	30	SILTSTONE:	as above.
	trace	PYRITE	
3385 - 3390m	80	SANDSTONE:	as above.
	20	SILTSTONE:	as above.
	trace	PYRITE	
3390 - 3395m	70	SANDSTONE:	as above, decrease in dolomite, only 5-10%.
	30	SILTSTONE:	as above, calcareous in part.
	trace	PYRITE	
3395 - 3400m	70	SANDSTONE:	as above, 5% dolomite cement.
	30	SILTSTONE:	as above.
	trace	PYRITE	
3400 - 3405m	70	SANDSTONE:	as above, 5% dolomite cement.
	30	SILTSTONE:	as above.
	trace	PYRITE	
3405 - 3410m	80	SANDSTONE:	as above.
	20	SILTSTONE:	as above.
	trace	PYRITE	
3410 - 3415m	70	SANDSTONE:	as above.
	30	SILTSTONE:	as above.
	trace	PYRITE	
3415 - 3420m	60	SANDSTONE:	as above, non dolomitic.
	40	SILTSTONE:	mottled grey, soft to hard, carbonaceous, micaceous, blocky, grades to a fine to medium sandstone, predominantly non calcareous.
	trace	PYRITE	
3420 - 3425m	50	SANDSTONE:	as above.
	50	SILTSTONE:	as above.
	trace	PYRITE	
3425 - 3430m	50	SANDSTONE:	as above.
	50	SILTSTONE:	as above.
	trace	PYRITE	
3430 - 3435m	50	SANDSTONE:	as above.
	50	SILTSTONE:	as above.
3435 - 3440m	60	SILTSTONE:	as above.
	40	SANDSTONE:	as above.
	trace	PYRITE	
3440 - 3445m	50	SANDSTONE:	as above.
	50	SILTSTONE:	as above.
3445 - 3450m	80	SANDSTONE:	as above.
	20	SILTSTONE:	as above.
3450 - 3455m	80	SANDSTONE:	as above.
	20	SILTSTONE:	as above.
3455 - 3460m	90	SANDSTONE:	as above.
	10	SILTSTONE:	as above.

3460 - 3465m	90	SANDSTONE:	clear to frosty loose quartz grains, very coarse grained, very angular to subangular, well sorted, some grains fractured, some fine to medium grained consolidated sandstone, silica cemented.
	10	SILTSTONE:	light grey and brown to dark grey, soft to hard, non calcareous, blocky cuttings, occasionally carbonaceous.
3465 - 3470m	90	SANDSTONE:	as above.
	10	SILTSTONE:	as above.
3470 - 3475m	90	SANDSTONE:	as above.
	10	SILTSTONE:	as above.
3475 - 3480m	70	SANDSTONE:	as above, 10% dolomite cement.
	30	SILTSTONE:	as above.
3480 - 3485m	60	SANDSTONE:	as above.
	40	SILTSTONE:	as above.
	trace	COAL	
3485 - 3490m	50	SANDSTONE:	as above.
	50	SILTSTONE:	as above.
	trace	COAL	
3490 - 3495m	100	SILTSTONE:	as above.
	trace	SANDSTONE:	as above.
3495 - 3500m	100	SILTSTONE:	mottled grey/white, soft to hard, blocky, carbonaceous, micaceous, non calcareous, grades to a fine sandstone.
	trace	SANDSTONE:	as above.
3500 - 3505m	100	SILTSTONE:	as above.
	trace	SANDSTONE:	as above.
3505 - 3510m	100	SILTSTONE:	as above.
	trace	SANDSTONE:	as above.
3510 - 3515m	100	SILTSTONE:	as above.
	trace	SANDSTONE:	as above.
	trace	PYRITE	
3515 - 3521m	100	SILTSTONE:	as above.
	trace	SANDSTONE:	as above.

07021/1-34

APPENDIX 2

APPENDIX 2

CORE DESCRIPTIONS

CORE DESCRIPTIONS

No cores were cut in the Pilotfish-1/1A well.

APPENDIX 3

APPENDIX 3

SIDEWALL CORE DESCRIPTIONS

PILOTFISH - 1

SIDEWALL CORE DESCRIPTIONS

<u>No.</u>	<u>Depth</u>	<u>Rec.</u> <u>(mm)</u>	<u>Rock</u> <u>Type</u>	<u>Description</u>
1	3496.0	20	Sandstone	Grey, very fine grained, well sorted, subrounded, firm, moderately calcareous, silty, quartzose.
2	3455.6	60	Siltstone	Dark grey, firm, slightly calcareous, quartzose, carbonaceous.
3	3424.5	40	Siltstone	Grey to white, firm, quartzose, sandy, carbonaceous.
4	3400.1	30	Siltstone	Dark grey, firm, quartzose, sandy, carbonaceous.
5	3383.5	20	Siltstone	Grey, firm, slightly calcareous, quartzose, coarse grained.
6	3363.5	30	Sandstone	Light grey, medium to coarse grained, poorly sorted, subangular, hard, quartzose, silty, micaceous.
7	3318.0	30	Siltstone	Dark grey, firm, quartzose, carbonaceous.
8	3294.0	25	Siltstone	Grey, firm, moderately calcareous, quartzose, micaceous.
9	3263.1	25	Siltstone	Grey to white, firm, slightly calcareous, quartzose, pyritic.
10	3253.0	25	Siltstone	Grey, hard, quartzose, micaceous.
11	3230.0	30	Siltstone	Grey to white, firm, quartzose, crystalline, quartzose.
12	3209.5	20	Siltstone	Grey, firm, quartzose, glauconitic.
13	3178.0	40	Siltstne	Grey to brown, firm, moderately calcareous, quartzose, crystalline, pyritic.
14	3148.5	20	Siltstone	Dark grey, firm, quartzose, carbonaceous.
15	3124.0	15	Siltstone	Grey, firm, moderately calcareous, quartzose, sandy, pyritic.
16	3103.0	30	Siltstone	Grey, firm, quartzose, sandy.
17	3074.9	20	Siltstone	Grey, firm, moderately calcareous, quartzose, sandy, pyritic.
18	3058.1	30	Sandstone	Light grey, very fine grained, well sorted, subrounded, soft, quartzose, silty, clayey.
19	3039.0	15	Siltstone	Dark grey, hard, quartzose, carbonaceous.
20	3025.0	10	Siltstone	Grey, firm, quartzose, micaceous.

21	3014.5	30	Sandstone	Grey, medium grained, well sorted, subrounded, firm, very calcareous, quartzose, silty.
22	3002.5	40	Siltstone	Grey, hard, quartzose, crystalline.
23	2965.0	30	Sandstone	White, fine grained, well sorted, subrounded, firm, quartzose, silty.
24	2963.0	15	Sandstone	Light grey, medium grained, poorly sorted, subangular, firm, quartzose.
25	2961.1	20	Sandstone	Grey, fine grained, well sorted, subrounded, firm, slightly calcareous, quartzose, silty, pyritic.
26	2959.1	30	Sandstone	Brown to grey, very coarse grained, poorly sorted, angular, hard, slightly calcareous, quartzose, pyritic.
27	2957.0	20	Sandstone	Brown to white, very coarse grained, poorly sorted, angular, very hard, slightly calcareous, quartzose, crystalline quartzose, pyritic, silty.
28	2955.0	20	Sandstone	Brown to grey to white, very coarse grained, poorly sorted, angular, hard, slightly calcareous, quartzose, pyritic, crystalline quartz, silty.
29	2953.0	25	Sandstone	White, coarse grained, well sorted, subrounded, firm, slightly calcareous quartzose, carbonaceous.
30	2951.0	20	Sandstone	Gold to green, coarse grained, poorly sorted, subangular, hard, slightly calcareous, quartzose, pyritic, glauconitic.
31	2949.0	35	Sandstone	Glauconitic, green, coarse grained, poorly sorted, subrounded, hard, quartzose.
32	2947.0	30	Sandstone	Glauconitic, green, coarse grained, poorly sorted, subrounded, hard, quartzose.
33	2944.9	20	Sandstone	Glauconitic, green, coarse grained, poorly sorted, subrounded, hard, quartzose, silty.
34	2943.1	20	Sandstone	Glauconitic, green to brown, coarse grained, poorly sorted, subrounded, hard, quartzose, silty.
35	2941.0	30	Sandstone	Glauconitic, green to brown, medium grained, poorly sorted, subrounded, slightly calcareous, hard, quartzose, silty.
36	2939.0	20	Sandstone	Glauconitic, light brown, fine grained, well sorted, subangular, firm, quartzose, silty.
37	2937.0	20	Sandstone	Glauconitic, green to brown, fine grained, poorly sorted, subangular, hard, quartzose, silty.

38	2935.0	30	Sandstone	Glauconitic, green to brown, coarse grained, poorly sorted, subangular, firm, quartzose, silty, micaceous.
39	2933.0	20	Sandstone	Glauconitic, white to green, medium grained, poorly sorted, subangular, firm, moderately calcareous, quartzose, silty, micaceous.
40	2931.0	15	Sandstone	Glauconitic, white to green, medium grained, poorly sorted, subrounded, firm, quartzose, silty, micaceous.
41	2929.0	15	Sandstone	Glauconitic, white to green, medium grained, poorly sorted, subrounded, firm, quartzose, silty, micaceous.
42	2927.0	30	Sandstone	Glauconitic, green to grey, fine grained, well sorted, subrounded, firm, quartzose, silty, micaceous.
43	2925.0	10	Sandstone	Brown, fine grained, well sorted, subrounded, firm, quartzose, silty, micaceous, glauconitic.
44	2923.0	10	Sandstone	Light brown, medium grained, well sorted, subrounded, firm, moderately calcareous, quartzose, silty, micaceous, glauconitic.
45	2921.0	15	Sandstone	Light brown, fine grained, well sorted, subrounded, firm, quartzose, silty, glauconitic.
46	2919.0	10	Sandstone	Brown, fine grained, well sorted, subrounded, firm, moderately calcareous, quartzose, silty, micaceous.
47	2917.0	30	Sandstone	White, fine grained, well sorted, subrounded, friable, quartzose, carbonaceous.
48	2914.9	35	Siltstone	Grey, hard, very calcareous, quartzose, micaceous.
49	2912.8			Misfire.
50	2911.1	30	Siltstone	Brown, hard, very calcareous, quartzose.
51	2909.0	30	Siltstone	Grey, hard, very calcareous, quartzose.
52	2907.0	20	Siltstone	Grey, firm, very calcareous, quartzose, carbonaceous.
53	2905.0	15	Siltstone	Grey, firm, very calcareous, quartzose.
54	2903.0	40	Siltstone	Grey, firm, very calcareous, quartzose.
55	2901.0	40	Siltstone	Grey, firm, very calcareous, quartzose.
56	2899.0	25	Siltstone	Grey, firm, very calcareous, quartzose.
57	2897.0	25	Siltstone	Grey, firm, very calcareous, quartzose.
58	2892.0	20	Siltstone	Grey, hard, very calcareous, quartzose.

59	2897.0	15	Siltstone	Grey, hard, very calcareous, quartzose.
60	2882.0	15	Siltstone	Grey, firm, very calcareous, quartzose.
61	2877.0	25	Siltstone	Grey, firm, very calcareous, quartzose.
62	2872.0	30	Siltstone	Grey, firm, very calcareous, quartzose.
63	2866.9	30	Siltstone	Grey to brown, hard, very calcareous, quartzose, micaceous.
64	2861.9	20	Siltstone	Light grey, hard, very calcareous, quartzose.
65	2857.0	15	Siltstone	Grey brown, hard, very calcareous, quartzose, sandy.
66	2852.0	30	Siltstone	Light grey, hard, very calcareous, quartzose.
67	2847.0	30	Siltstone	Light grey, firm, very calcareous, quartzose.
68	2830.0	20	Siltstone	Light grey, firm, very calcareous, quartzose.
69	2810.0	20	Siltstone	Light grey, hard, very calcareous, quartzose.
70	2790.0	35	Siltstone	Grey, firm, very calcareous, quartzose.
71	2770.0	15	Siltstone	Light grey, firm, very calcareous, quartzose.
72	2750.0	20	Siltstone	Grey, hard, very calcareous, quartzose, sandy.
73	2730.0	40	Siltstone	Grey, hard, very calcareous, quartzose, sandy.
74	2710.0	25	Siltstone	Grey, soft, very calcareous, quartzose.
75	2690.0	50	Siltstone	Grey, hard, very calcareous, quartzose.
76	2670.0	40	Siltstone	Grey to brown, hard, very calcareous, quartzose.
77	2650.0	50	Siltstone	Grey, hard, very calcareous, quartzose.
78	2628.0	50	Siltstone	Dark grey, hard, very calcareous, quartzose, micaceous.
79	2611.0	40	Siltstone	Dark grey, hard, very calcareous, quartzose, micaceous, carbonaceous.
80	2560.0	20	Siltstone	Light grey, very hard, very calcareous, quartzose.
81	2470.0	40	Siltstone	Grey, hard, very calcareous, quartzose.
82	2400.0	20	Siltstone	Grey to brown, hard, very calcareous, quartzose.
83	2330.0	20	Siltstone	Grey, hard, very calcareous, quartzose.
84	2260.0	20	Siltstone	Grey, hard, very calcareous, quartzose.
85	2190.0	15	Siltstone	Grey, hard, very calcareous, quartzose.

86	2120.0	15	Siltstone	Grey, hard, very calcareous, quartzose.
87	2050.0	15	Siltstone	Grey, hard, very calcareous, quartzose.
88	1980.0	15	Siltstone	Light grey, firm, very calcareous, quartzose.
89	1910.0	15	Siltstone	Light grey, firm, very calcareous, quartzose.
90	1840.0	15	Siltstone	Grey, very calcareous, quartzose, sandy, micaceous.
91	1770.0	20	Limestone	Light grey, very fine grained, hard, very calcareous, silty.
92	1700.0	30	Limestone	Light grey, very fine grained, hard, very calcareous, silty.
93	1630.0	10	Limestone	Light grey, very fine grained, hard, very calcareous, silty.
94	1560.0	20	Limestone	Grey, very fine grained, hard, very calcareous, silty.
95	1490.0	15	Limestone	Grey, very fine grained, friable, very calcareous, silty.
96	1420.0	20	Limestone	Grey, very fine grained, friable, very calcareous, silty.
97	1350.1	25	Limestone	Grey, very fine grained, firm, very calcareous, silty.
98	1250.0	30	Limestone	Grey, very fine grained, firm, very calcareous, silty.
99	1175.0	30	Limestone	Grey, very fine grained, firm, very calcareous, silty.
100	1100.0	25	Limestone	Grey, very fine grained, firm, very calcareous, silty.
101	1025.0	25	Limestone	Grey, very fine grained, firm, very calcareous, silty.
102	960.0	30	Limestone	Grey, very fine grained, firm, very calcareous, silty.

07021/35-39

APPENDIX 4

APPENDIX 4

APPENDIX 4

VELOCITY SURVEY REPORT

MARINE VELOCITY SURVEY

Well PILOTFISH-1A
Basin GIPPSLAND

INTRODUCTION

Esso Personnel BRETT HARDIMAN
Contractor SCHLUMBERGER

Supplied (1) Instruments.
(2) Personnel

Seismic Observer..... A. JAMES
Marine Shooter
Navigation..... N/A

(3) Licenced Shooting Boat

Name..... N/A
Date Loaded.....
Date Released.....
Agent.....

(4) Seismic Source

Air Gun
Gas Pressures..... VARIED

Personnel and Instruments

assembled at LONGFORD Date 10/1/83
Boarded (rig) SOUTHERN CROSS Date 10/1/83
Date of survey 12/1/83
Casing Depth 13 3/8" @ 938m RKB
.....
T.D. when shot 3521m RKB
water depth 205.6metres

SURVEY PROCEDURE

Weather: Wind MODERATE - HIGH
Swell MODERATE
Sea ROUGH
Rig Movement MODERATE - HIGH
Rig Noise MODERATE

Hydrophones: Number.....1
 Depth below sea level6.1.....metres
 Position3.05m below gun.....

Gas Gun: number of shots per levelVaried.....
 gun depth3.05.....metres

Well phone positioning:
 No of depths54.....

Time: first shot00:06 13/1/83.....
 last shot10:26 13/1/83.....
 Total rig time11½ hours.....

RESULTS

Quality of results (good
 (fair
 (poor
 (not used

Comparison of Interval Times with Sonic Log

/ / averagemicrosec/metre
 / / maxmicrosec/metre

CONCLUSION

Reliability of T-D curve

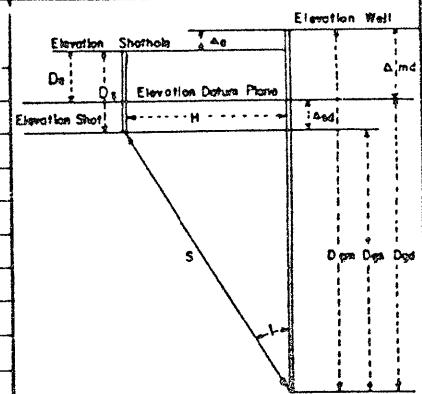
COMMENTS

Unable to shoot zone between 2505m RKB and 2724m RKB due to bad hole condition.
 Total number of levels shot 54.
 Total number of shots recorded 476.
 Schlumberger recording for V.S.P. work is not based on a depth interval but on a time interval approx. 7 msec.

V.S.P. survey was shot between 3502m RKB (T.D.) and 2215m R.K.B. Standard check shot survey was shot at the following depths; 350m, 791m, 930m, 1121m, 1461m, 1721m and 1961m RKB.

A large nuber of the shots fired were not used in final summing due to noisy hole conditions.
 0586Q:3-4

Shot Hole Information: - Elevation, Distance & Direction from Well										Company		Well		Elevation (Derrick Floor)	Total Depth	LOCATION							
(TIMES PICKED OFF RAW RECORDS) Gun depth - KB = 24m Gun offset - 50m										ESSO EXPLORATION AUSTRALIA INC.		PILOTFISH-1A		21m	3521m RKB	Coordinates Lat. 38°25'58.45"S Long 148°28'08.52"E DATUM: M.S.L.		Section, Township, Range County Area or Field GIPPSLAND					
Record Number	Shot Hole Number	Time of Shot	Dgm	Ds	tus	tr	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														
1		0006	791	6			.388		P	764	50	.0654	.9979	.3872	6	4	3912	.3929	.770				1960
2			"	"			.392		G	"	"	"	"	.3912	"	"	3952						
3			"	"			.389		"	"	"	"	"	.3882	"	"	3922						
458		0950	1121	"			.509		F	1094	"	.0457	.9989	.5085	"	"	5125	.5125	1100	330	.1196	2759	2146
452		0940	1461	"			.616		F	1434	"	.0349	.9994	.6156	"	"	6196	.6196	1440	340	.1071	3175	2324
5		0021	1961	"			.757		G	1934	"	.0258	.9997	.7567	"	"	7607	.7607	1940	500	.1411	3543	2550
6			"	"			.757		"	"	"	"	"	"	"	"	"	"					
7		0046	2916	"			1.068		"	2889	"	OFFSET DOES NOT AFFECT TIME		"	"	1.072	1.0725	2895	955	.3118	3063	2699	
8			"	"			1.069		P	"	"			"	"	1.073			128	.033	3879	2735	
175		0341	3044	"			1.101		F	3017	"	"	"	"	"	1.105	1.1055	3023					
176			"	"			1.102		"	"	"	"	"	"	"	1.106			190	.0495	3838	2782	
105		0244	3234	"			1.151		P	3207	"	"	"	"	"	1.155	1.155	3213					
95		0238	3263	"			1.158		F	3236	"	"	"	"	"	1.162	1.162	3242					
88		0231	3292	"			1.164		"	3265	"	"	"	"	"	1.168	1.168	3271	85	.023	3695	2800	
82		0219	3322	"			1.174		"	3295	"	"	"	"	"	1.178	1.178	3301					
73		0212	3353	"			1.178		"	3326	"	"	"	"	"	1.182	1.182	3332					
65		0205	3382	"			1.187		"	3355	"	"	"	"	"	1.191	1.191	3361	93	.020	4650	2822	
55		0151	3415	"			1.195		"	3388	"	"	"	"	"	1.199	1.198	3394					
60			"	"			1.193		"	"	"	"	"	"	"	1.197							
45		0140	3442	"			1.202		"	3415	"	"	"	"	"	1.206	1.206	3421	87	.022	3955	2837	
28		0109	3502	"			1.216		P	3475	"	"	"	"	"	1.220	1.220	3481					



Dgm = Geophone depth measured from well elevation
Dgs = " " " " shot "
Dgd = " " " " datum "
Ds = Depth of shot
De = Shot hole elevation to datum plane
H = Horizontal distance from well to shotpoint
S = Straight line travel path from shot to well geophone
tus = Uphole time of 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 = H / Dgs
Tgs = cos i; T = V * t, travel time from shot elev. to geophone
Tgd = Tgs ± Δsd / V = " " " datum plane "
Dgd = Dgm - Δmd
Vi = Interval velocity = ΔDgd / ΔTgd
Va = Average = Dgd / Tgd

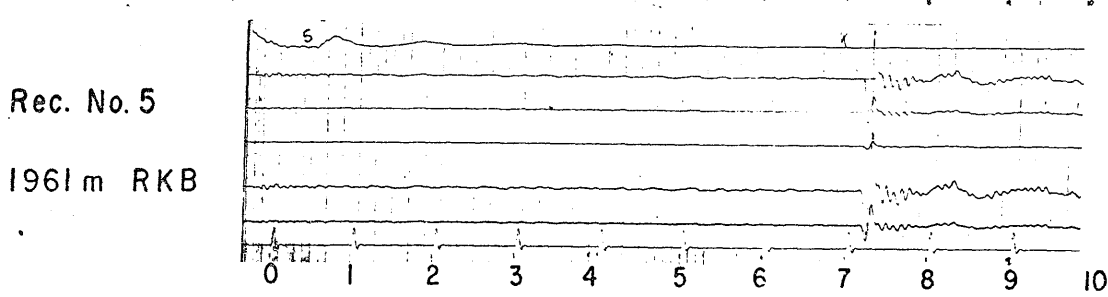
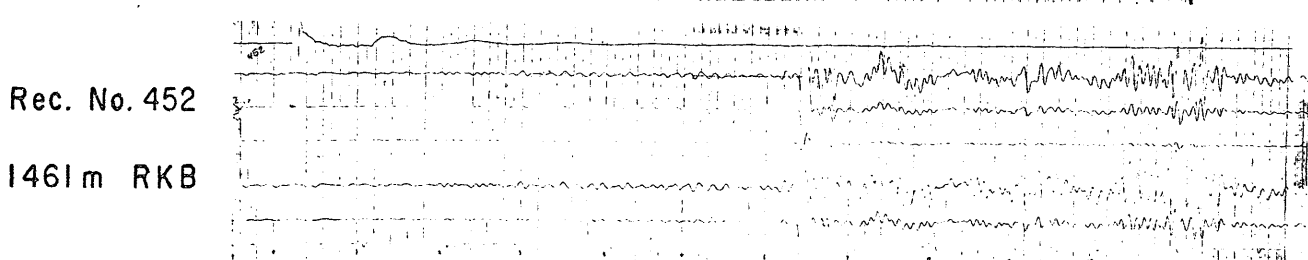
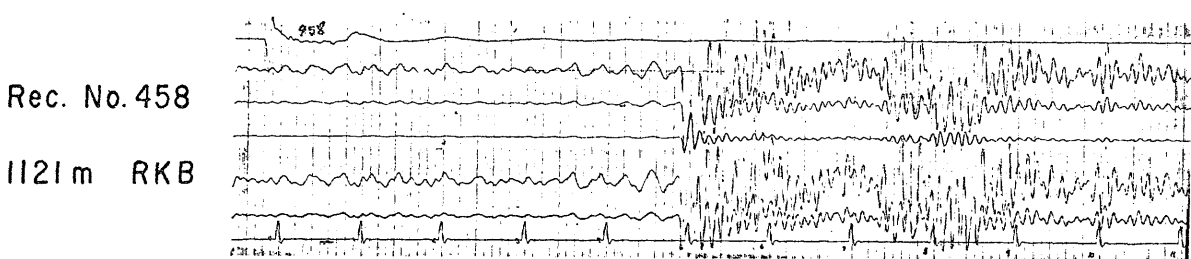
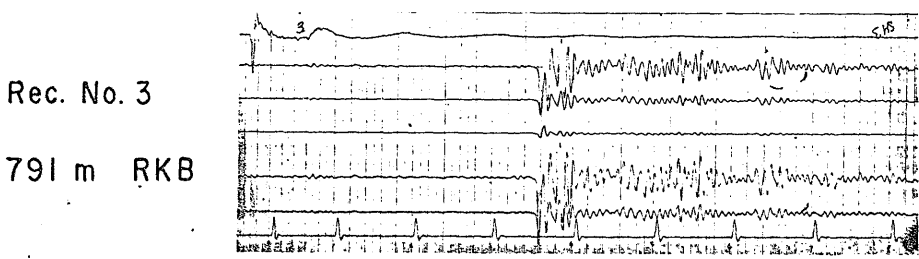
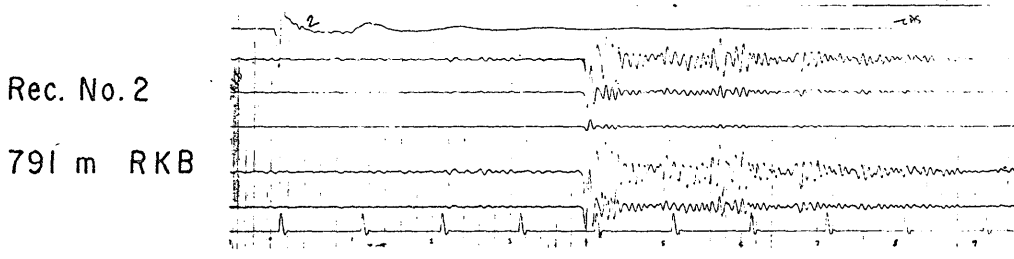
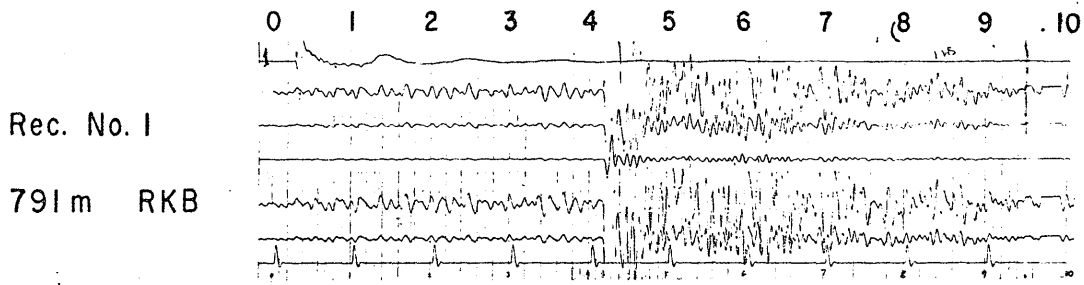
Schlumberger
Surveyed by: _____
Date: 12/1/83
20" @ 351m RKB
13 3/8" @ 939m RKB
Casing Record

PILOTFISH - 1 A

PAGE 1 OF 4

WELL VELOCITY RECORD

12-1-83



PILOTFISH - 1A

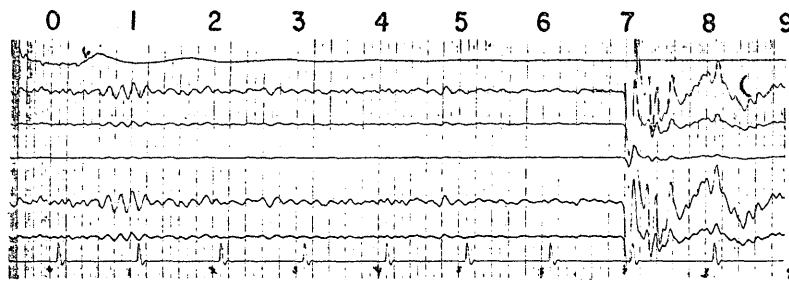
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WELL VELOCITY RECORD

12-1-83

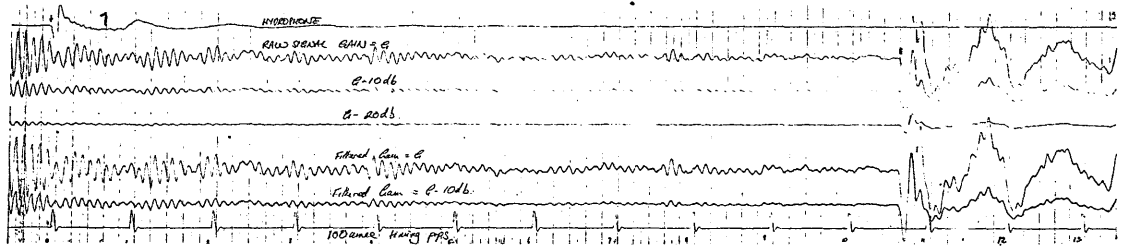
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1961m RKB



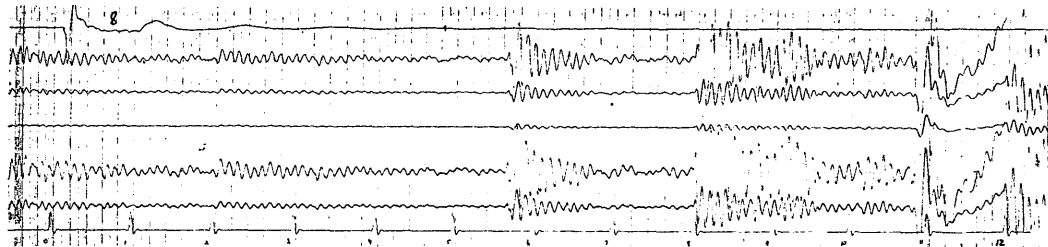
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2916m RKB



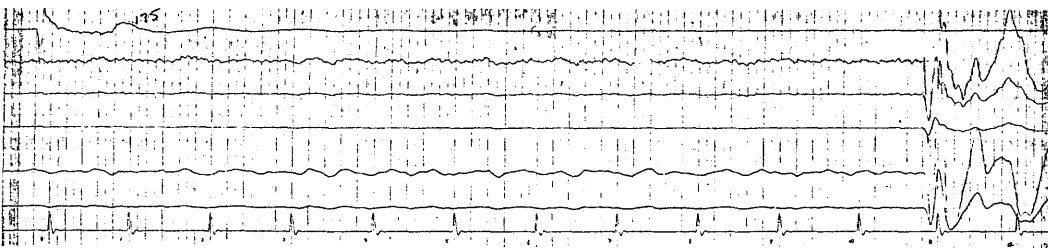
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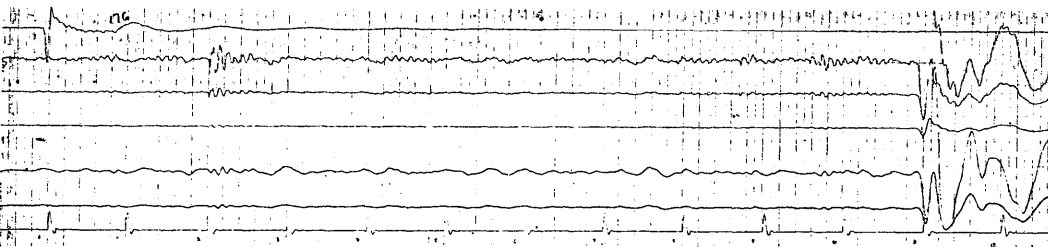
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3044m RKB



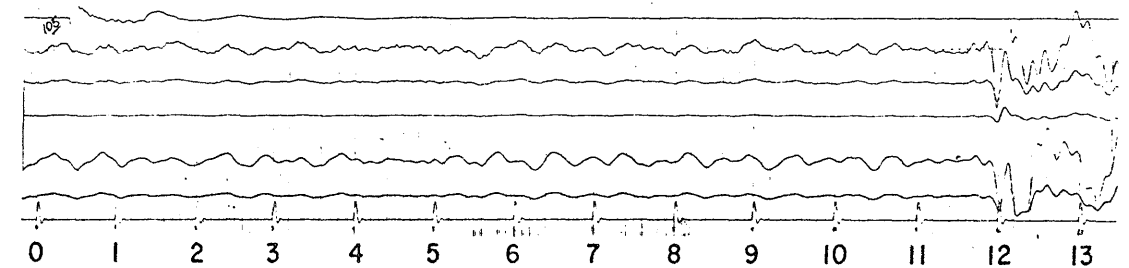
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3044m RKB



Rec. No. 105

3234m RKB

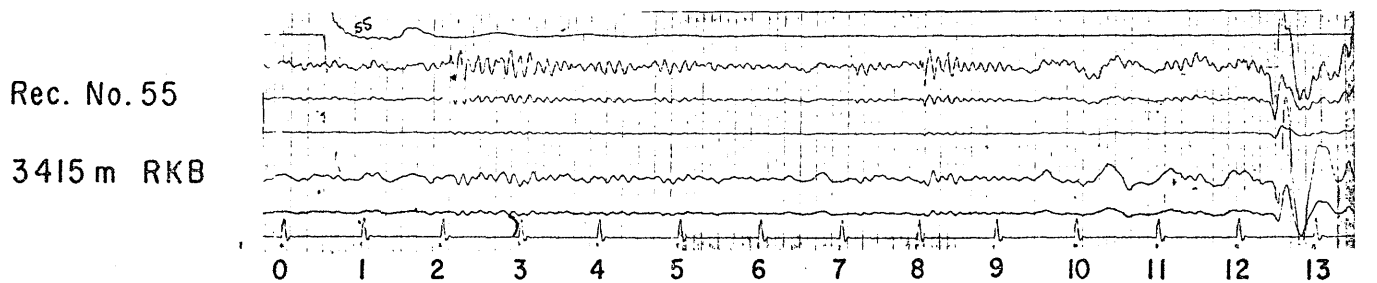
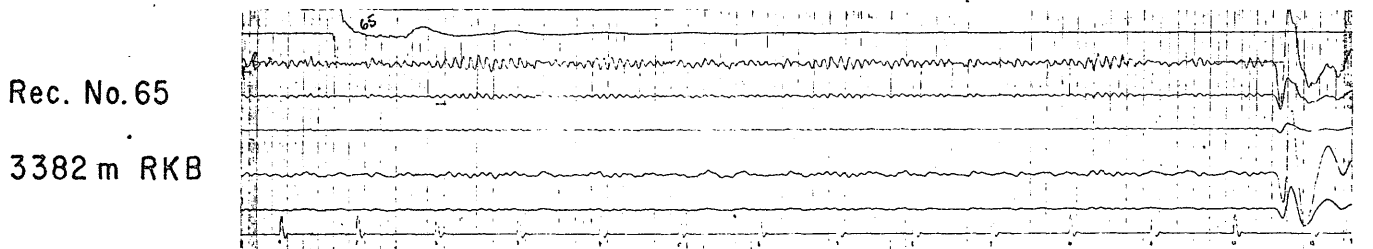
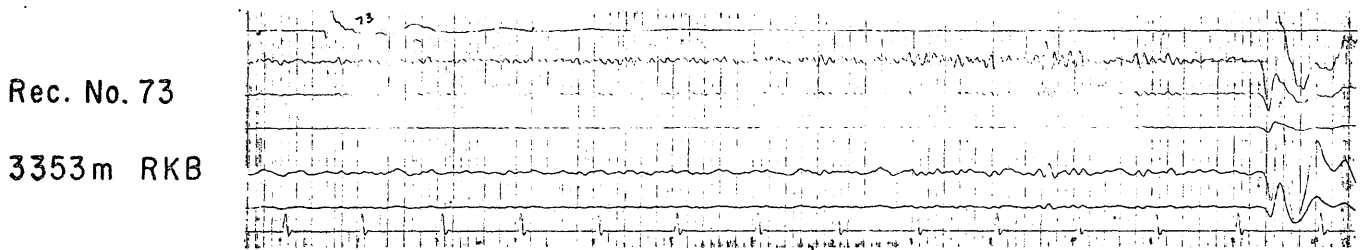
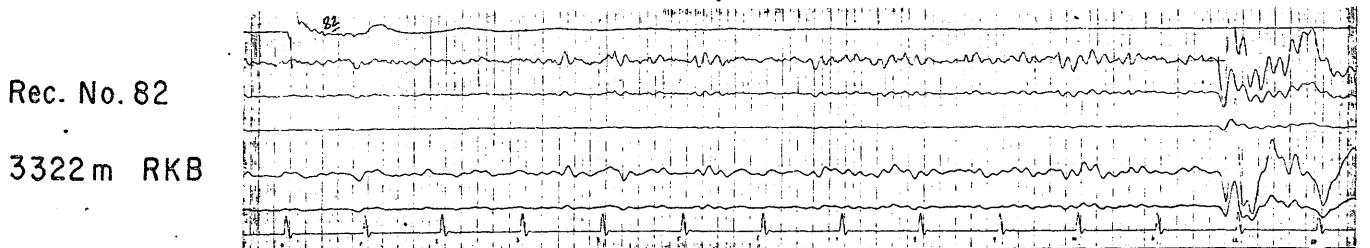
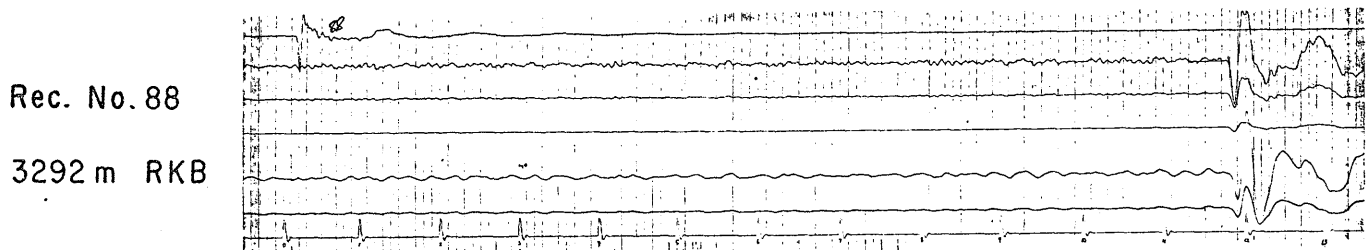
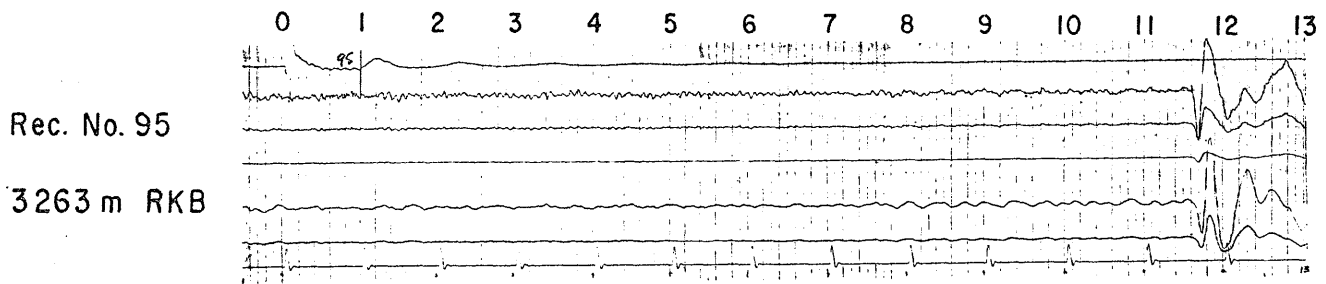


PILOTFISH - 1A

PAGE 3 OF 4

WELL VELOCITY RECORD

12-1-83



PILOTFISH - 1A

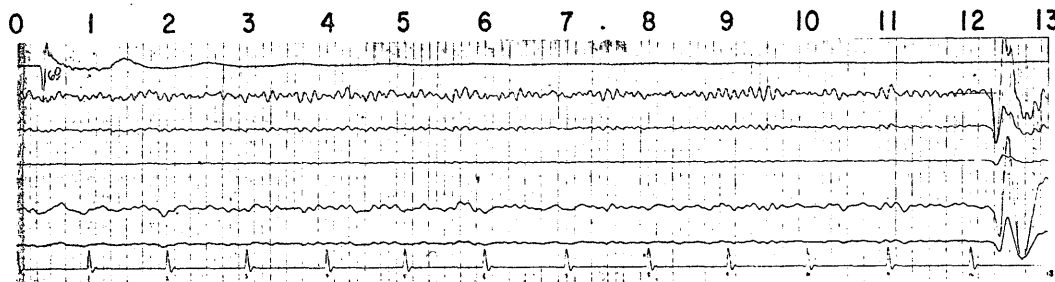
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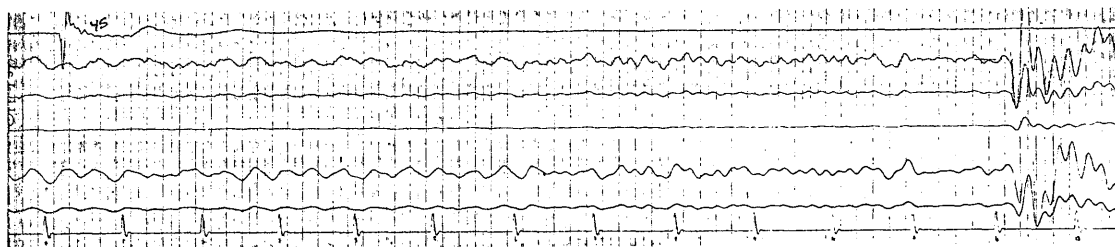
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3415 m RKB



Rec. No. 45

3442 m RKB



Rec. No. 28

3502 m RKB

