

DEPT. NAT. RES & ENV



PE900925

W1114

MOONFISH-2

WCR Vol. 1

**Esso Australia Ltd.**

PETROLEUM DIVISION

WELL COMPLETION REPORT

08 AUG 1995

MOONFISH-2

VOLUME 1

BASIC DATA

GIPPSLAND BASIN, VICTORIA

ESSO AUSTRALIA LTD

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## I. WELL DATA RECORD

LOCATION : Latitude :38° 08' 57.698" South  
Longitude :148° 01' 18.935" East  
X= 589541.59 mE  
Y= 5777104.94 mN  
Map Projection: UTM Zone 55  
Geographical Location: Bass Strait, Victoria  
Field :MOONFISH

PERMIT : Vic/L10

ELEVATION (KB) : 30.8m

WATER DEPTH : 53.9m

TOTAL DEPTH : 2318m MDKB (-2215.5) (Driller)

MAXIMUM DEVIATION : 24°

PLUG BACK TYPE : Cement Plug and EZ-SV

REASONS FOR PLUGGING BACK : Plug and Abandon

MOVE IN : 13/12/94 1430 hours

SPUDDED : 16/12/94 0330 hours

REACHED TD : 13/01/95 0500 hours

RIG RELEASED : 26/01/95 0800 hours

OPERATOR : Esso Australia Resources Ltd.

PERMIT OR LICENSEE : BHP Petroleum (Australia) Pty Ltd and Esso Australia Resources Ltd.

ESSO INTEREST : 50%

OTHER INTEREST : 50%

CONTRACTOR : Reading & Bates Drilling Company

RIG NAME : Harvey H. Ward

EQUIPMENT TYPE : Jack Up

TOTAL RIG DAYS : 42

DRILLING AFE NO : L.05324001

TYPE COMPLETION : Plugged and Abandoned

WELL CLASSIFICATION : Before Drilling: Appraisal  
After Drilling: Appraisal

## II. OPERATIONS SUMMARY

### MOBILISATION/MOORING

After the rig inspection at Cliffy Island the Harvey H. Ward secured the MV Bonavista to the tow bridle at 1750 hours 12/12/1994. The legs were free of the bottom at 1930 hours and raised to towing position. The Harvey H. Ward was under tow with the MV Bonavista and MV Flinders Tide to the Moonfish 2 location at 2000 hours 12/12/1994. The Harvey H. Ward was on location at Moonfish 2 with the legs pinned at 1430 hours 13/12/1994.

Soil boring was undertaken prior to the pre-load test. The Harvey H. Ward was jacked up to drilling position (15.3m air gap) at 1730 hours 14/12/1994 with the cantilever in position. The final rig position was 9.82m on a bearing of 238.33° True from the called location.

### DRILLING OPERATIONS

#### a) 36" Hole & 30" Casing

A Smith DS-4 26" bit with 36" hole opener was made up and spudded Moonfish 2 at 0330 hours 16/12/1994. 36" hole was drilled from 84.7m to 145m. High viscosity sweeps were pumped to clean the hole at regular intervals. Totco surveys were run at 88m (¼°) and 145m (¼°). The hole was circulated clean prior to running a wiper trip to the mudline. The hole was displaced with a gel pill prior to pulling out of the hole to run 30" casing.

Eleven joints of 30" Vetco RL-4S 310lb/ft casing were run with the shoe landed at 142m. The casing was cemented with 510 sacks of class 'G' cement plus 2% CaCl<sub>2</sub> (slurry weight 15.8ppg).

The 30" diverter was nipped up and tested.

#### b) 17½" Hole & 13¾" Casing

A new Smith SDS 17½" bit and drilling assembly was made up and run into the hole to drill out the 30" float shoe and clean the rat hole to 145m. Drilling proceeded using a seawater/gel/native clay mud system from 145-840m. Single shot surveys were run regularly (309m - ½° to 149°, 593m - ½° to 74°, 821m - ½° to 200°). After circulating bottoms up the trip out of the hole was tight and a wiper trip was made from the 30" casing shoe. The hole was circulated clean and a gel pill (100bbl) was spotted in the hole. There were no hole problems tripping out of the hole and the wireline loggers were rigged up and the 17½" hole was logged. Suite #1 run #1 was DLT-SDT-SGT-PCD-SP. After logging rig up for the 13¾" casing commenced.

56 joints of 54.5lb/ft and 12 joints of 68lb/ft 13¾" K-55 casing plus shoe joint and mudline suspension joint were run with the shoe landed at 834m. The casing was cemented with a lead slurry of 750 sacks of class 'G' cement plus 0.45g/sack econolite (slurry weight - 12.5ppg) followed

## II. OPERATIONS SUMMARY (cont.)

by a tail of 710 sacks of 'G' cement at 15.8ppg. The cement was displaced and the plug bumped and held 1500psi (full returns). The 30" conductor and 13<sup>3/8</sup>" annulus was displaced. The diverter was nipped down and the wellhead installed.

The BOP stack was nipped up and pressure tested and function tested along with the choke and kill lines.

### c) 12<sup>1/4</sup>" Hole

A Diamond Boart TD-19L 12<sup>1/4</sup>" PDC bit and tandem FS2000M mud motor were made up with a steerable BHA and run into the hole and tagged TOC at 817m. The float and shoe were drilled out and the rat hole circulated clean prior to drilling new formation from 840-845m. The hole was circulated clean and a Phase II PIT was performed to leak off at 700 psi using sea water (EMW 13.5ppg).

The sea water was displaced with a KCl/PHPA/Glycol mud system and drilling proceeded from 845-853m (kick-off point). From 853 - 1338m steering and rotary drilling was used to follow the proposed well path. The mud weight was raised to 9.5ppg from 1330m. The MWD pulsar failed at 1338m and a trip was made to replace the tool. The trip out of the hole was tight and the drillstring was pumped and backreamed to the 13<sup>3/8</sup>" casing shoe. After replacing the MWD tool the trip into the hole was good with no tight spots. Rotary drilling and steering proceeded from 1338 - 1592m. A bit trip was made due to low ROP. The bit was badly ringed and graded as 100% worn. The bit damage was attributable to the siliceous/pyrite cemented sandstone at Top Coarse Clastics.

A new Diamond Boart TD-13L 12<sup>1/4</sup>" PDC was made up to the same mud motor and BHA and drilled ahead from 1592-1607m. The bit was pulled out of the hole due to very low ROP. The face of the bit was worn completely flat (100% worn). The high torque produced by the tandem motor helped destroy the bit whilst attempting to drill abrasive formation.

A new bit Reed HP51H was made up to a rotary drilling assembly and run into the hole and drilled ahead from 1607-1788m where a sample was circulated for evaluation. Drilling continued from 1788-1801m where another sample was circulated for geological evaluation. A 10 stand wiper trip was made due to tight hole prior to POOH to pick up the core barrel.

A used RC412 12<sup>1/4</sup>" core bit was made up with an 18m core barrel and RIH to cut core #1 from 1801-1816m. The core barrel jammed off and was tripped to recover the core (recovered 14m - 93.3%). The core barrel was dressed and RIH with the same core head and cut core #2 from 1816-1834m. The core barrel was tripped and 18m (100%) of core was recovered at surface. The core barrel was rerun after dressing to cut core #3 from 1834-1852m. Core #3 was recovered at surface (17.3m - 96%) and the barrel was racked back in the derrick.

## II. OPERATIONS SUMMARY (cont.)

A Reed EHP51HDLK was made up with an FS2000m tandem mud motor and run into the hole and drilled ahead from 1852-2105m. The bit was pulled due to hours and lack of BHA weight for drilling through hard volcanic formation. At surface the mud motor was laid out.

A new bit Reed EHP51HDLK was made up to a rotary drilling assembly and run into the hole. The hole was tight on the trip in. Whilst washing and reaming from 1516m to 1904m, repairs were made to the flow line. Circulation could not be re-established as the string had packed off. The string was worked back to 1875m and circulation was gradually re-established but could not be rotated. After 46 hours jarring and applying torque to the drillstring, during which time mud weight was reduced from 9.7 to 9.0ppg, a Pipelax/Envirospot pill was pumped around the BHA. The drillstring was jarred and worked free after waiting for the pill to take effect. After pulling seven stands the mud weight was raised to 9.4ppg. The trip out was tight requiring backreaming from 1875-900m as a result of instability of the Lakes Entrance Formation from the reduced mud weight.

A new Reed EHP51HDLK and BHA were made up and run into the hole. The hole was tight from the casing shoe. Abundant cavings were circulated out whilst reaming down to 1078m. High viscosity sweeps were pumped around with no reduction in cavings (pressure cavings evident). The mud weight was raised to 10.0ppg whilst continuing to ream from 1078-2105m. Drilling proceeded from 2105-2179m where the bit was tripped due to low the penetration rate and concern for bit wear caused by excess reaming to bottom. Another new bit Reed EHP51HDLK was run into the hole and washed and reamed to bottom from 1324m. Drilling proceeded from 2179-2303m. A wiper trip was made to the casing shoe. On the trip in the bit was washed and reamed to bottom from 1391m. Drilling continued from 2303-2318m. Mud losses of 1.5bbl/min were experienced due to possibly crossing a fault. An LCM pill was pumped to heal the well prior to making a wiper trip to the casing shoe (834m). The hole was circulated for bottoms up prior to tripping out of the hole to run E-logs.

The wireline loggers were rigged up to run Suite #2 of the logging program. Run #1 DSI-MSFL-DLL-GR-CAL-SP-AMS was run into the hole but could not pass an obstruction at 1516m. Three further runs with different tool configurations were made without success at passing 1516m. A wiper trip was made prior to rigging up the wireline loggers. Run #5 DSI-MSFL-DLL-GR-CAL-SP-AMS was run into the hole and could not pass an obstruction at 1562m. A wiper trip was made prior to rigging up the wireline loggers for run #6 DSI-MSFL-DLL-GR-CAL-SP-AMS, run #7 FMI-LDL-CNL-NGL-AMS, run #8 MDT-GR-AMS. During run #8 the MDT tool became differentially stuck on the first pretest. The tool was fished out on the first attempt after stripping over the wireline with a cut and thread operation.

## II. OPERATIONS SUMMARY (cont.)

A wiper trip was made after fishing the MDT tool to condition the mud. The wireline loggers were rigged up for run #9 MDT-GR-AMS. The MDT tool failed after the first pressure point and was replaced with the backup RFT tool. Runs #10 & #11 were for samples and pressures with the RFT. Run #12 CSAT was made prior to making a wiper trip to condition the well. The logging program was completed after obtaining more RFT samples and pressures and firing one gun of sidewall cores. The loggers were rigged down after 17 runs to complete Suite 2.

Moonfish 2 was plugged and abandoned with cement plugs spotted over the following intervals 2318-2172m, 2172-2026m, 2026-1880m, 1880-1734m, 1734-1588m, 1588-1442m, 870-750m and 180-100m. An EZ-SV was run on wireline and set at 190m. The casing and conductor were cut below the mudline and retrieved prior to the release of the Harvey H Ward on 26 January 1995.



### III. CASING DATA

Moonfish 2 - Final Well Report

#### CASING DATA

Casing (OD)/Jt.	Length (mRKB)	Nom ID (in)	Drift (in)	Weight (ppf)	Grade	Performance Properties			Joint Length
						Tensile Conn (kips)	Burst (psi)	Collapse (psi)	
30"	142	28.00	(1"wall)	309.72	X-52	ST2 2130 pipe 4738 RL-4 4600	1500 3030 4670	1630	
/1						RL-4			11.889
/2						RL-4			11.659
/3						RL-4			11.649
/4						RL4			11.649
/5						RL-4			11.864
/6						RL-4			11.684
/7						RL-4			11.659
/8						RL-4			11.669
/9						RL-4			11.659
/10						RL-4			10.672
/11						RL4 - ST-2			11.679
/12						ST-2			11.730
/13						ST-2			11.700
Total									151.172
30" casing shoe at 142m RF (111.2m SS)									
13-3/8"	686	12.615	12.459	54.5	K-55	BTC 1038	2730	1130	
/ float shoe									12.09
/ float collar									12.53
/ (56) casing joints									661.39
13-3/8"	150	12.415	12.259	68.0	K-55	BTC 1300	3450	1950	
/ (5) casing joints									59.57
/ casing hanger									3.92
/ running tool									2.99
/ (5) casing joints									59.08
/ spaceout joint									10.30
/ spaceout joint									11.55
/ spaceout pup									3.00
Total									836.42
13-3/8" casing shoe at 834.9m (804.1mSS)									

## IV. CEMENTING DATA

Moonfish 2 - Final Well Report

### CEMENT DATA

Casing (OD)	Shoe Depth (mRF)	Slurry Composition	Qty (sacks)	Slurry Density (ppg)	Water (GPS)	Mix Yield (ft <sup>3</sup> /sx)	Notes
30"	142m	Class G 2%CaCl (w/ Seawater)	510	15.8	5.0	1.15	50% Excess cement to ML.
13-3/8"	840m	Lead Class G w/ 0.45 gal/sk econolite	750	12.5	11.8	2.12	
		Tail Class G neat	710	15.8	5.0	1.15	cement to mudline
Abandonment:							
plug 1	2318 -1442m	Class G 4 gal SCR100L per 10 bbls FW	2907	15.8	5.0	1.15	tagged at 1513m (TOL at 1561m)
plug 2	870 -750m	Class G 3 gal SCR100L /10 bbls SW	420	15.8	5.0	1.15	tagged at 748.6m
plug 3	180 -100m	Class G 2% CaCl FW	200	15.8	5.0	1.15	tagged at 100m

## V. SAMPLES, CONVENTIONAL CORES, SIDEWALL CORES

### Cuttings

3 sets of washed and oven dried cuttings were taken at 30m intervals from 145m to 1450m MDRT and at 5m intervals from 1450m to 2318 MDRT. Lithological descriptions of all samples are contained in Appendix 1.

### Conventional Coring

3 conventional cores were cut in Moonfish-2 as follows:

CORE #	DEPTH (m MDRT)		RECOVERY
	Top	Bottom	m MD (%)
1	1801.0	1816.0	14 (93.3%)
2	1816.0	1834.0	18 (100%)
3	1834.0	1852.0	17.3 (96.1%)

### Sidewall Coring

1564.0 - 2272.0 CST, 30 Shot, 30 Recovered and Bought (100%).

## VI. WIRELINE LOGS AND SURVEYS

<u>Type and Scale</u>		From	To
	<u>Suite 1</u>		
DLL-A.Sonic-GR-CAL(SRT)-SP (SDT)	1:200	837	141
	<u>Suite 2</u>		
DSI-DLL-MSFL-GR-SP-AMS	1:200	2301	836
LDL-CNL-NGR-AMS- FMI	1:200 1:40	2301 2301	1475 1545
MDT (CQ Gauge Pretests)	(2 Pretests)	1646 & 1813.5	
RFT (HP Gauge Pretests)	(21 Pretests, 9 Samples)	1748	2188
CSAT (Checkshot)	(10 Levels)	2280	955
CST-GR (Sidewall cores)	(30 Shot, 30 Recovered)	2272	1564

## VII. SUMMARY OF WIRELINE FORMATION TEST PROGRAM

Test	Depth (m)	Type	Recovery				API grav.	Formatio Pressure (psia)	Hydrostatic Pressure (psia)	Remarks	
			Oil (l)	Gas (ft <sup>3</sup> )	Water (l)	Filt. (l)					
1/1	1646.0	Pretest	-	-	-	-	-	2199.2	2854.6	MDT Good test - tool stuck in hole	
2/1	1813.5	Pretest	-	-	-	-	-	2422.9	3121.9	MDT Good test	
3/1	1752.0	Pretest	-	-	-	-	-	2348.2	3019.2	RFT Good test	
3/2	1763.0	Pretest	-	-	-	-	-	2350.2	3037.9	RFT Good test	
3/3	1802.3	Pretest	-	-	-	-	-	2416.1	3103.3	RFT Good test	
3/4	1805.5	Pretest	-	-	-	-	-	2416.3	3108.1	RFT Good test	
3/5	1808.3	Pretest	-	-	-	-	-	2418.2	3112.7	RFT Good test	
3/6	1813.5	Pretest	-	-	-	-	-	2423.7	3121.8	RFT Good test	
3/7	1810.5	Pretest	-	-	-	-	-	2420.9	3116.8	RFT Good test	
3/8	1828.5	Pretest	-	-	-	-	-	2438.8	3147.2	RFT Good test	
3/9	1853.5	Pretest	-	-	-	-	-	2472.2	3188.6	RFT Good test	
3/10	2025.5	Pretest	-	-	-	-	-	2747.5	3487.2	RFT Good test	
3/11	2138.0	Pretest	-	-	-	-	-	2892.6	3679.7	RFT Good test	
3/12	2143.6	Pretest	-	-	-	-	-	2901.4	3690.7	RFT Good test	
3/13	2140.2	Pretest	-	-	-	-	-	2897.7	3685.7	RFT Good test	
3/14	2147.0	Pretest	-	-	-	-	-	2905.5	3697.8	RFT Good test	
3/15	2188.0	Pretest	-	-	-	-	-	2964.4	3771.5	RFT Good test	
3/16	1814.5	6 gal	13.9	-	31.0	-	37.5°	2426.5	3122.7	RFT did not wait for full build up	
		2.75 gal	2.9	-	8.0	-	37.5°	2425.6		RFT	
4/1	2138.0	6 gal 1 gal	22.4	-	53.8	-	34.1° -	2893.9	3677.1	RFT RFT	
			Preserved sample RFS-AC-1062								
5/1	1815.3	6 gal 2.75 gal	25.8	-	35.9	-	39.2° -	2424.5	3121.7	RFT RFT	
			Preserved sample RFS-AC-1219								
6/1	1748.0	1 gal	-	Trace	20.5	-	-	2347.5	3008.2	RFT	
7/1	1805.3	1 gal	-	0.003	21.7	-	-	2416.5	3101.2	RFT	
7/2	1808.0	1 gal	3.4	-	4.0	-	37.5°	2417.6	3105.3	RFT	
7/3	1802.3	Pretest	-	-	-	-	-	2415.3	3095.7	RFT Good test	
7/4	1849.0	Pretest	-	-	-	-	-	2470.9	3174.3	RFT Good test	
7/5	1852.7	Pretest	-	-	-	-	-	2471.6	3180.8	RFT Good test	
7/6	1856.0	Pretest	-	-	-	-	-	2431.5	3185.8	RFT incomplete build up. Low Perm.	
7/7	1859.0	Pretest	-	-	-	-	-	2478.3	3190.3	RFT Good test	
7/8	1918.0	Pretest	-	-	-	-	-	2554.1	3293.1	RFT Good test	
7/9	2040.5	Pretest	-	-	-	-	-	2763.3	3503.9	RFT Good test	

# Moonfish-2 Location Map

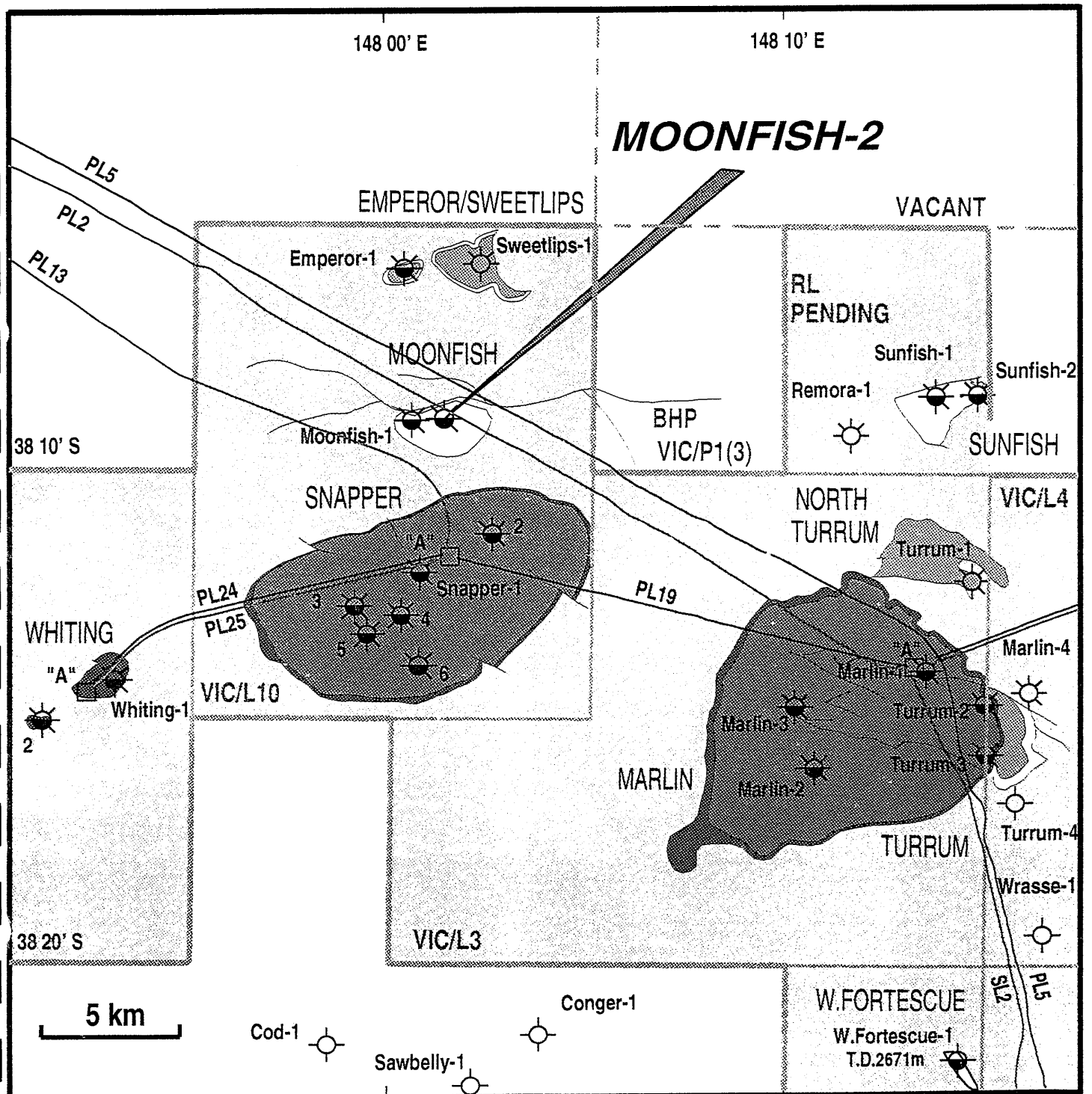
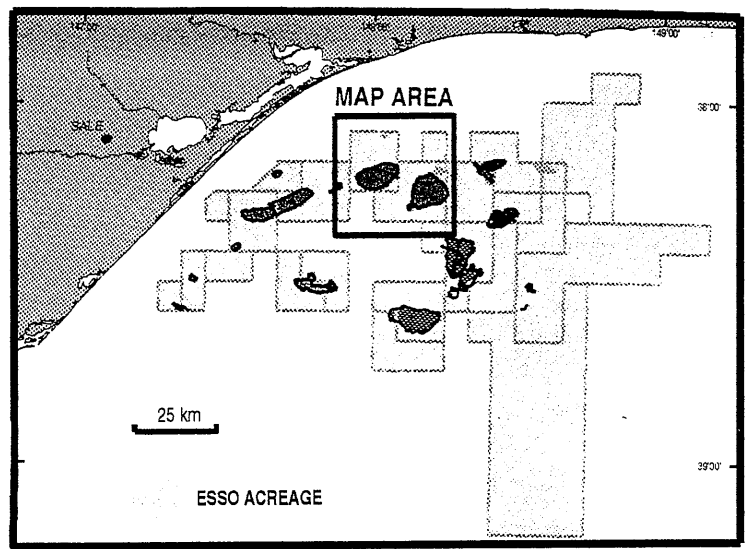


Figure 1

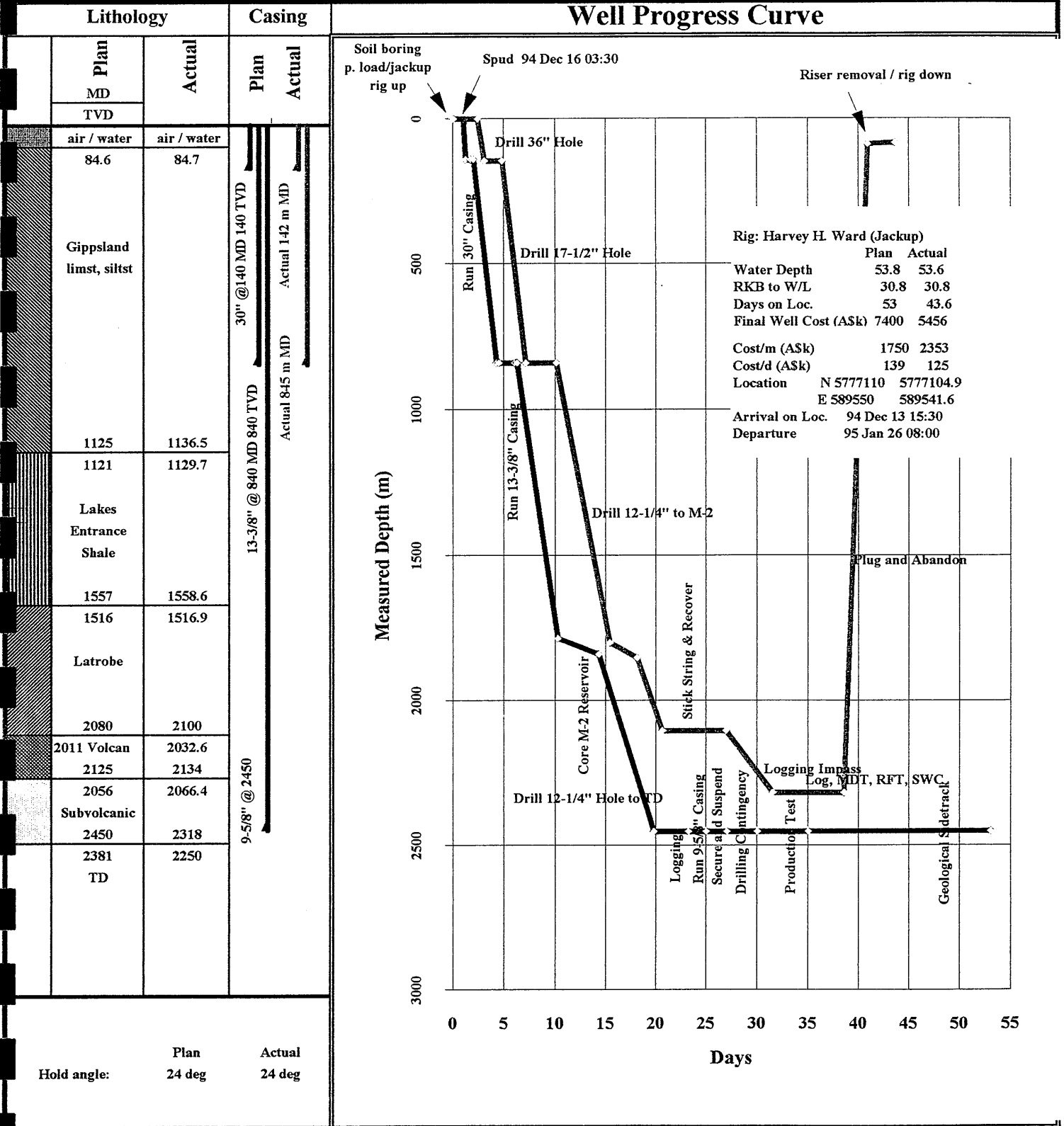
## VIII. TEMPERATURE RECORD

Logging Run	Thermometer Depth	Max. Recorded Temperature (°C)	Circulation Time (tk) (hours)	Time After Circulation Stopped ( $\Delta t$ )	Horner Temp. (°C)	Geothermal Gradient (°C/km)
<b>Suite 1</b>						
DLT-SDT-PCD-SGT-SP	807	44	1.4	7		
<b>Suite 2</b>					94	38.9
DSI-DLL-MSFL-GR-CAL-SP-AMS	2261	80	1.75	7.1		
FMI-LDL-CNL-NGR-AMS	2281	86	1.75	13		
RFT-GR (pre-test)	2188	86	2.17	15.4		
CSAT	2180	no thermometers run				
CST	2272	no thermometers run				

**Esso Australia Ltd**

**Moonfish 2**

**Well Progress Curve**



**Figure 2**



ESSO AUSTRALIA LTD.  
**MOONFISH-2 FINAL P&A SKETCH**

RKB

ALL DEPTHS FROM RKB

MSL @ 30.8m RKB

WATER DEPTH = 53.8m

ML @ 84.7m RKB

TOC Behind Casing @ ML  
 30" & 13-3/8" Casing cut @  
 91.06m BML

Plug #3 (180 - 100m)  
 198 sx Class G w/ SW  
 Tagged w/ 10 kips

Plug #2 (870 - 748m)  
 408 sx Class G w/ SW  
 Tagged w/ 10 kips &  
 Pressure Test 1500 psi

Plug #1 (2318 - 1513m)  
 2907 sx Class G w/ FW  
 Tagged w/ 10 kips

TOP OF LATROBE @  
 1519m TVD / 1561m MD

Seawater

26" X 36" HOLE

30" 310# X-52 RL-4  
 SHOE @ 141m MD

13-3/8" CIBP @ 189m

17-1/2" HOLE


13-3/8" 68/54.5# K-55 BTC  
 SHOE @ 834m TVD / 834m MD

KOP @ 880m MD  
 BR = 2.5 DEG/30m  
 MAX ANGLE = 24 DEG  
 "S" TURN PROFILE

12-1/4" HOLE

"INHIBITED"  
 KCL/PPHA/GLYCOL  
 MUD (10.3 ppg)

KCL/PPHA/GLYCOL  
 MUD (10.3 ppg)

 Primary Cement

 P&A Cement

TD = 2250m TVD / 2318m MD

RKG 24-Feb-95

DEPTHS "m" = METERS

MF2-P&A.PPT

**Figure 3**

# Moonfish-2 Temperature Plot

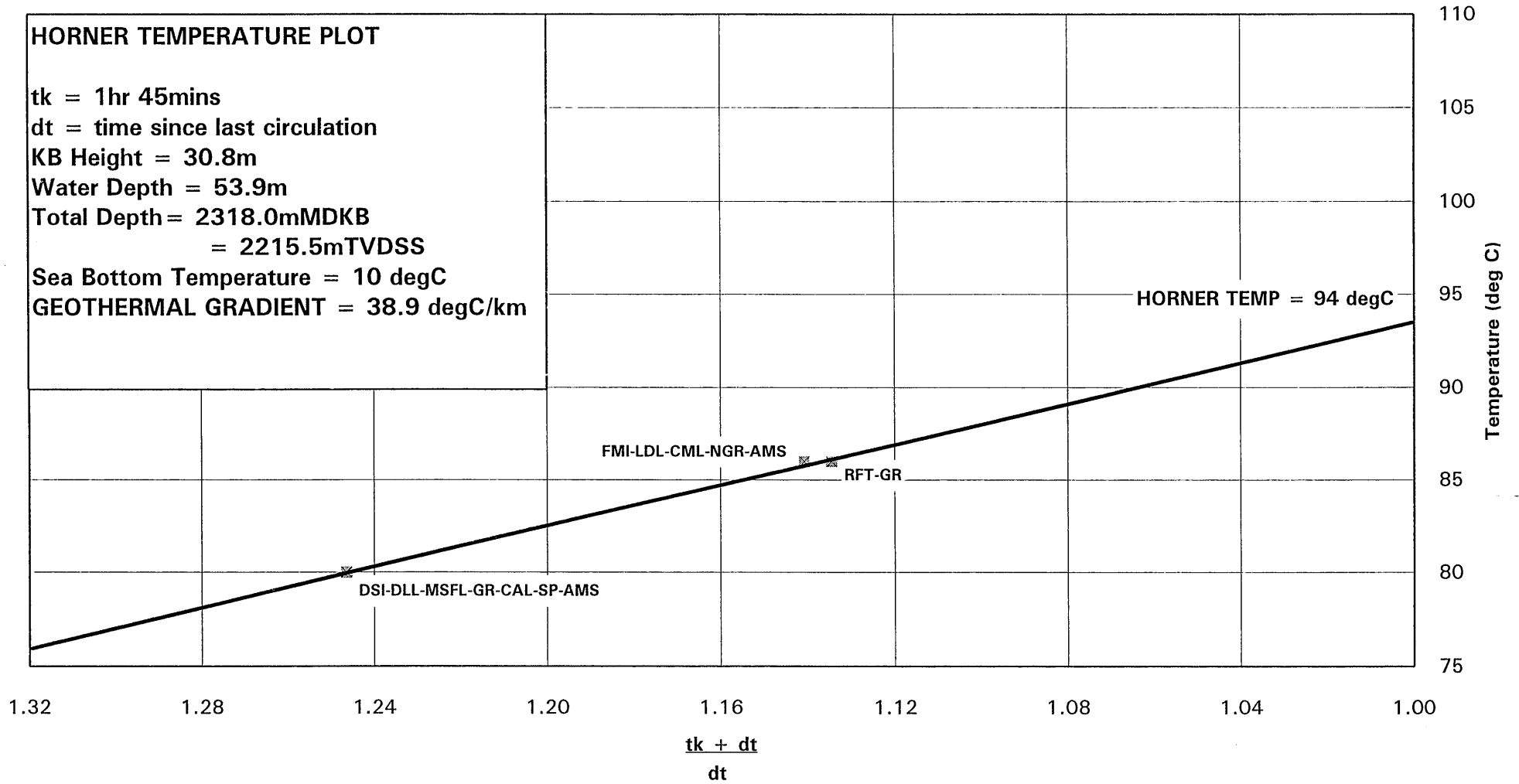


Figure 4

APPENDIX 1

**APPENDIX 1**

**Moonfish-2**

**Lithology/Show Descriptions**

## Moonfish-2 Lithology/Show Descriptions

<u>Depth (mMD)</u>	<u>%</u>	<u>Description</u>
150	100	<u>LIMESTONE</u> : Off white, medium to light grey, biocalcarenite, medium to coarse, spar cement in part, abundant fossil fragments, common gastropods, trace shell fragments, moderately hard, blocky, fair to good visual porosity.
180	100	<u>LIMESTONE</u> : Predominantly as above, biocalcarenite, common forams, trace spicules, fair to good porosity.
210	100	<u>LIMESTONE</u> : Light to medium grey, grey green, calcarenite, fine, micritic cement, argillaceous matrix, common forams, trace shell (bivalve) fragments, trace spicules, trace gastropods, trace glauconite in part, firm to moderately hard, blocky.
240	100	<u>LIMESTONE</u> : Predominantly as above, calcarenite, moderately argillaceous matrix.
270	100	<u>LIMESTONE</u> : Light grey, brown grey, calcarenite, fine, spar cement, slightly argillaceous matrix, trace free vein calcite, trace skeletal fragments, trace coralline fragments, trace carbonaceous specks, moderately hard, blocky.
300	100	<u>LIMESTONE</u> : Predominantly as above, calcarenite, common skeletal fragments.
330	100	<u>LIMESTONE</u> : Predominantly as above, calcarenite, becoming increasingly argillaceous, trace ooids.
360	100	<u>LIMESTONE</u> : Light grey, light grey brown, calcarenite, fine, micritic cement, moderately argillaceous matrix, trace free vein calcite, trace fossil fragments, trace skeletal fragments, rare glauconite, firm to moderately hard, blocky.
390	100	<u>LIMESTONE</u> : Predominantly as above, calcarenite grading to calcisiltite, becoming increasingly argillaceous.
420	100	<u>LIMESTONE</u> : Light grey, light brown grey, calcisiltite, micritic cement, common argillaceous matrix, trace fine calcite spar, trace glauconite, trace fossil fragments, moderately hard, blocky.
450	100	<u>LIMESTONE</u> : Light grey to light grey brown, calcarenite, fine, trace sparry to predominantly micritic cement, common argillaceous matrix, common fossil fragments, trace skeletal fragments, trace glauconite, trace carbonaceous fragments, moderately hard, blocky.
480	100	<u>LIMESTONE</u> : Predominantly as above, calcarenite grades to calcisiltite, becomes increasingly argillaceous.
510	100	<u>LIMESTONE</u> : Light brown grey, light grey, calcisiltite grades to calcarenite, fine in part, common micritic cement, moderately argillaceous matrix, common fossil fragments, trace glauconite, trace carbonaceous fragments, rare forams, firm to moderately hard, blocky.
540	100	<u>LIMESTONE</u> : Predominantly as above, calcisiltite grades to calcarenite, common fossil fragments, locally common calcite spar.
570	100	<u>LIMESTONE</u> : Predominantly as above, calcisiltite grades to calcarenite, fine, becomes increasingly argillaceous, firm sticky in part, massive to amorphous.

<u>Depth (mMD)</u>	<u>%</u>	<u>Description</u>
600	100	<u>LIMESTONE</u> : Predominantly as above, calcisiltite grades to calcarenite, trace fossil and coral fragments, trace carbonaceous specks, soft to firm, amorphous to massive.
630	100	<u>LIMESTONE</u> : Light brown grey, light grey, calcisiltite grades to calcarenite, fine, micritic cement, abundant argillaceous matrix, common spar inclusions, trace fossil and coralline fragments, trace carbonaceous fragments, firm to moderately hard, massive to blocky.
660	100	<u>LIMESTONE</u> : Light grey, light brown grey, calcisiltite grades to calcarenite, trace fine calcite spar, micritic cement, moderately to very argillaceous matrix, rare nodular pyrite and trace pyritic replacement, trace skeletal fragments, trace carbonaceous specks, firm to moderately hard, blocky.
690	100	<u>LIMESTONE</u> : Predominantly as above, calcisiltite grades to calcarenite, rare nodular pyrite, common coral fragments, abundant forams, trace radiolaria, trace skeletal fragments, moderately hard blocky.
720	100	<u>LIMESTONE</u> : Light to medium grey, olive grey, calcisiltite, trace fine calcite spar, micritic cement, moderately to locally very argillaceous matrix, common free vein calcite, common fossil fragments, trace nodular pyrite, trace ooids, common forams, trace light brown microcrystalline inclusions, moderately hard, blocky.
750	100	<u>LIMESTONE</u> : Predominantly as above, calcisiltite grades to calcarenite in part, fine, abundant fossil fragments, trace nodular pyrite.
780	100	<u>LIMESTONE</u> : Predominantly as above, calcisiltite grades to calcarenite, fine, trace nodular pyrite, trace glauconite, moderately hard to hard, blocky.
810	100	<u>LIMESTONE</u> : Light to medium grey, olive grey, calcisiltite, trace fine calcite spar, micritic cement, abundant argillaceous matrix, trace forams, trace fossil fragments, trace light brown microcrystalline inclusions, trace nodular pyrite, moderately hard, blocky.
840	100	<u>LIMESTONE</u> : Light to medium grey, olive grey, calcisiltite grades to calcilutite, micritic cement, locally very argillaceous matrix, trace free calcite crystals, abundant forams and fossil fragments, trace carbonaceous specks, common ooids, trace to locally good trace nodular pyrite and pyritic replacement, common light brown microcrystalline inclusions, moderately hard, blocky.
870	100	<u>LIMESTONE</u> : Medium grey, olive grey, calcisiltite grades to calcilutite, micritic cement, common to locally abundant argillaceous matrix, trace carbonaceous specks, trace forams, trace tight brown cryptocrystalline inclusions, firm, massive to subblocky.
900	100	<u>LIMESTONE</u> : Predominantly as above, becoming increasingly argillaceous grades to calcilutite, trace nodular pyrite.
930		<u>LIMESTONE</u> : Light to medium grey, olive grey in part, calcilutite, micritic cement, trace very fine to silty calcite spar, trace carbonaceous specks, trace cryptocrystalline calcite inclusions, rare forams, trace fossil fragments in part, soft to firm, massive to blocky.
960	100	<u>LIMESTONE</u> : Predominantly as above, locally becomes very silty grades to calcisiltite.
990	100	<u>LIMESTONE</u> : Predominantly as above, calcilutite, locally very silty in part, trace fine calcite spar, soft to firm, massive to subblocky.

<u>Depth (mMD)</u>	<u>%</u>	<u>Description</u>
1020	100	<u>LIMESTONE</u> : Predominantly as above, calcilutite grades to calcisiltite, trace nodular pyrite and pyritic replacement, trace white to clear microcrystalline calcite inclusions and free calcite, trace fossil fragments, trace light brown cryptocrystalline dolomitic inclusions, trace fine glauconite.
1050	100	<u>LIMESTONE</u> : Predominantly as above, calcilutite, slightly silty in part, firm, massive to blocky.
1080	100	<u>LIMESTONE</u> : Light to medium grey, grey brown, olive grey in part, calcisiltite grades to calcilutite, micritic cement, locally very argillaceous matrix, trace fine calcite sand, trace carbonaceous specks, trace disseminated pyrite, rare fossil fragments, firm to moderately hard, massive to blocky.
1110	100	<u>LIMESTONE</u> : Predominantly as above, becomes increasingly argillaceous grades calcilutite, trace disseminated pyrite.
1140	80	<u>LIMESTONE</u> : Light to medium grey, grey brown in part, calcisiltite grades to calcilutite, trace fine calcite spar, micritic cement, trace disseminated pyrite, trace carbonaceous specks, firm to moderately hard, massive to blocky.
	20	<u>SILTSTONE</u> : Medium to dark grey, moderately to locally very calcareous, very argillaceous, trace carbonaceous fragments, trace disseminated pyrite, slightly micromicaceous, moderately hard, blocky.
1170	80	<u>LIMESTONE</u> : Predominantly as above, light grey, becomes increasingly argillaceous grades to calcilutite.
	20	<u>SILTSTONE</u> : As above.
1200	70	<u>LIMESTONE</u> : Predominantly as above, calcilutite, slightly silty in part, trace fine glauconite.
	30	<u>SILTSTONE</u> : As above.
1230	60	<u>SILTSTONE</u> : Predominantly as above, trace disseminated pyrite, trace lithic fragments, firm to moderately hard, massive to blocky.
	40	<u>LIMESTONE</u> : Light to occasionally medium grey, calcilutite, micritic cement, trace very fine to silty calcite sand, locally off white calcarenite fine grained inclusions, firm to moderately hard, massive to blocky.
1260	80	<u>SILTSTONE</u> : As above.
	20	<u>LIMESTONE</u> : As above, calcilutite.
1290	90	<u>SILTSTONE</u> : Predominantly as above, very argillaceous, trace disseminated pyrite, very calcareous, moderately hard, blocky.
	10	<u>LIMESTONE</u> : Predominantly as above, light grey to off white, calcilutite.
1320	100	<u>SILTSTONE</u> : Light to medium grey, grey brown in part, moderately to very argillaceous, grades to claystone in part, very calcareous in part, trace carbonaceous flecks, trace nodular pyrite, rare glauconite, slightly micromicaceous in part, trace fine grained calcarenite inclusions in part, firm to moderately hard, blocky.
1350	100	<u>SILTSTONE</u> : As above.
1380	100	<u>SILTSTONE</u> : Light to predominantly medium grey, moderately to very argillaceous, locally very calcareous, trace disseminated pyrite, slightly micromicaceous, trace carbonaceous specks, rare glauconite, firm to moderately hard, blocky.

<u>Depth (mMD)</u>	<u>%</u>	<u>Description</u>
1410	100	<u>SILTSTONE</u> : Predominantly as above, becomes increasingly argillaceous grades to claystone, soft to firm, massive to blocky.
1440	100	<u>SILTSTONE</u> : As above.
1450	100	<u>SILTSTONE</u> : Light to occasionally medium grey, moderately calcareous, moderately to very argillaceous, trace disseminated pyrite, slightly micromicaceous, trace carbonaceous specks, trace fine calcite sand, rare lithic fragments, firm, massive to blocky.
1455	100	<u>SILTSTONE</u> : Predominantly as above, locally very calcareous grades to calcisiltite in part, trace fine calcite sand in part, trace ooids, trace forams.
1460	100	<u>SILTSTONE</u> : As above.
1465	100	<u>SILTSTONE</u> : Predominantly as above, becomes predominantly light grey, occasionally light brown grey.
1470	100	<u>SILTSTONE</u> : As above.
1475	100	<u>SILTSTONE</u> : As above.
1480	100	<u>SILTSTONE</u> : Predominantly as above, locally becomes very argillaceous grades to claystone.
1485	100	<u>SILTSTONE</u> : Light to predominantly medium grey, light brown grey in part, moderately to very argillaceous, very calcareous in part grades to calcisiltite, trace disseminated pyrite, trace carbonaceous specks, slightly micromicaceous, rare lithic fragments, soft to firm, massive to blocky.
1490	100	<u>SILTSTONE</u> : As above.
1495	100	<u>SILTSTONE</u> : As above.
1500	100	<u>SILTSTONE</u> : As above.
1505	100	<u>SILTSTONE</u> : Predominantly as above, trace calcarenite inclusions, trace nodular pyrite, firm to moderately hard, blocky.
1510	100	<u>SILTSTONE</u> : As above.
1515	100	<u>SILTSTONE</u> : Predominantly as above, becomes medium to dark grey in part, slightly arenaceous in part.
1520	100	<u>SILTSTONE</u> : As above.
1525	100	<u>SILTSTONE</u> : Light grey, light grey brown, moderately to very calcareous, very argillaceous, trace lithic fragments, trace carbonaceous fragments, slightly micromicaceous, trace disseminated pyrite, moderately hard, blocky.
1530	100	<u>SILTSTONE</u> : As above.
1535	100	<u>SILTSTONE</u> : Light brown grey, light grey to occasionally medium, moderately calcareous, very argillaceous, trace carbonaceous fragments, slightly micromicaceous, trace fine calcite sand, moderately hard, blocky.



<u>Depth (mMD)</u>	<u>%</u>	<u>Description</u>
1540	100	<u>SILTSTONE</u> : As above.
1545	100	<u>SILTSTONE</u> : As above.
1550	100	<u>SILTSTONE</u> : Predominantly as above, locally very argillaceous grades to claystone.
1555	100	<u>SILTSTONE</u> : Predominantly as above, trace nodular pyrite.
1560	100	<u>SILTSTONE</u> : Light to predominantly medium grey, olive grey in part, slightly to moderately calcareous, very argillaceous grades to claystone in part, micromicaceous, trace carbonaceous fragments, trace lithic fragments, trace disseminated and nodular pyrite, rare glauconite, moderately hard, subblocky to blocky.
1565	10	<u>SANDSTONE</u> : Clear to translucent, coarse to very coarse, occasionally medium, angular to subrounded, poor to moderate sorting, strong siliceous cement, common pyrite cement and pyritic nodules, trace o common glauconite, common very coarse to granular milky quartz, predominantly loose, occasional hard aggregates, inferred very poor porosity, no fluorescence.
	80	<u>SILTSTONE</u> : Predominantly as above, locally very argillaceous grades to claystone, common glauconite.
	10	<u>CLAYSTONE</u> : Light yellow, orange brown, limonitic staining (weathered zone), silty & arenaceous in part, soft to plastic, massive to amorphous.
1570	40	<u>SANDSTONE</u> : Predominantly as above, strong siliceous/pyrite cement, very coarse, no fluorescence.
	60	<u>SILTSTONE</u> : Predominantly as above, slightly to non calcareous.
	Trace	<u>CLAYSTONE</u> : As above.
1575	40	<u>SANDSTONE</u> : Clear to translucent, frosted, coarse to predominantly very coarse, subangular to subrounded, moderate sorting, common pyritic cement and pyrite nodules, common milky quartz, trace glauconite, loose, inferred fair to good porosity, trace dull yell orange mineral fluorescence, no show.
	60	<u>SILTSTONE</u> : Light grey, occasionally medium grey, moderately to very argillaceous, slightly to non calcareous, trace glauconite in part, micromicaceous, firm to moderately hard, blocky to subfissile.
1580	30	<u>SANDSTONE</u> : Clear to translucent, frosted, coarse to very coarse, subangular to subrounded, moderate sorting, trace kaolinitic matrix in part, common milky quartz, loose, inferred fair to good porosity, trace to 5% dull yellow gold mineral fluorescence, no show.
	60	<u>SILTSTONE</u> : Light grey, occasionally medium grey, slightly calcareous, slightly siliceous in part, moderately to very argillaceous locally grades to claystone, trace carbonaceous specks, trace lithic fragments, slightly micromicaceous, moderately hard to hard, blocky to subfissile.
	10	<u>COAL</u> : Dark brown black, black, very argillaceous/silty in part, lignitic in part, subvitreous to occasionally vitreous lustre, subconchoidal fracture in part, moderately hard to brittle, blocky to subfissile in part. Occasionally becomes very grades to carbonaceous claystone.
1585	70	<u>SANDSTONE</u> : Predominantly as above, trace mineral fluorescence as above.
	30	<u>COAL</u> : As above.
	Trace	<u>SILTSTONE</u> : As above.

<u>Depth (mMD)</u>	<u>%</u>	<u>Description</u>
1590	20	<u>SANDSTONE</u> : As above, no fluorescence.
	50	<u>SILTSTONE</u> : Light grey to blue grey in part, occasionally grey brown, slightly siliceous/calcareous cement, very argillaceous, trace carbonaceous fragments, trace lithic fragments, moderately hard to hard, blocky to subfissile.
	30	<u>COAL</u> : As above.
1595	100	<u>SILTSTONE</u> : Light to predominantly medium grey, moderately to very argillaceous, slightly to moderately calcareous in part, moderately siliceous, trace carbonaceous specks, slightly micromicaceous, trace lithic fragments, moderately hard to occasionally hard, subfissile.
	Trace	<u>COAL</u> : As above.
1600	20	<u>SANDSTONE</u> : Clear to translucent, frosted, coarse to very coarse, angular to subrounded, moderate sorting, trace kaolinitic matrix, rare nodular pyrite, common milky quartz, loose, inferred good porosity, no show.
	70	<u>SILTSTONE</u> : As above.
	10	<u>COAL</u> : As above.
1605	30	<u>SANDSTONE</u> : Clear to translucent, frosted, coarse to predominantly very coarse, angular to subrounded, moderate sorting, moderate calcareous cement in part, trace kaolinitic matrix, common milky quartz, loose, common moderately hard aggregates, very poor to fair visual porosity, no show, dull yellow mineral fluorescence only.
	70	<u>SILTSTONE</u> : Light to medium grey, brown grey in part, moderately calcareous in part, very argillaceous, slightly siliceous, trace lithic fragments, trace carbonaceous specks, moderately hard to hard in part, blocky to subfissile.
	Trace	<u>COAL</u> : Predominantly as above, becomes very argillaceous grades to carbonaceous claystone.
1610	80	<u>SILTSTONE</u> : As above.
	20	<u>COAL</u> : As above.
1615	20	<u>SANDSTONE</u> : Clear to translucent, frosted, coarse to very coarse, subangular to subrounded, moderate sorting, trace kaolinitic matrix, common very coarse to granular milky quartz, loose, inferred good porosity, no fluorescence.
	70	<u>SILTSTONE</u> : Predominantly as above, occasionally medium brown in part, slightly calcareous, moderately hard, blocky to subfissile.
	10	<u>COAL</u> : As above.
1620	10	<u>SANDSTONE</u> : As above.
	40	<u>SILTSTONE</u> : As above.
	50	<u>COAL</u> : Predominantly as above, black, subbituminous, dull to subvitreous lustre, subconchoidal fracture, brittle, blocky.
1625	60	<u>SILTSTONE</u> : Light grey to predominantly medium brown grey, moderately argillaceous, slightly to predominantly non calcareous, mottled texture in part, trace carbonaceous and lithic fragments, firm to moderately hard, blocky to subfissile.
	40	<u>COAL</u> : As above.
1630	20	<u>SANDSTONE</u> : Clear to translucent, frosted, predominantly coarse to occasionally very coarse, angular to subrounded, poor sorting, common milky quartz, trace nodular pyrite, loose, inferred good porosity, no fluor.
	70	<u>SILTSTONE</u> : As above.
	10	<u>COAL</u> : As above.

<u>Depth (mMD)</u>	<u>%</u>	<u>Description</u>
1635	50	<u>SANDSTONE</u> : Predominantly as above, occ rounded grains, no fluorescence.
	40	<u>SILTSTONE</u> : As above.
	10	<u>COAL</u> : As above.
1640	30	<u>SANDSTONE</u> : Clear to translucent, frosted, coarse to predominantly very coarse, angular to subrounded, moderate sorting, abundant milky quartz, rare nodular pyrite, loose, inferred good porosity, no fluorescence.
	70	<u>SILTSTONE</u> : Light to medium grey brown in part, occasionally blue grey, slightly calcareous in part, very argillaceous, micromicaceous, slightly siliceous, trace carbonaceous/lithic fragments, moderately hard to occasionally hard, blocky to subfissile.
1645	40	<u>SANDSTONE</u> : As above.
	60	<u>SILTSTONE</u> : As above.
1650	90	<u>SANDSTONE</u> : Clear to translucent, frosted, subangular to subrounded, moderate sorting, trace weak calcareous cement in part, common milky/smoky quartz, trace nodular pyrite in part, loose, inferred good porosity, no fluorescence.
	10	<u>SILTSTONE</u> : As above.
1655	100	<u>SANDSTONE</u> : Predominantly as above, trace very coarse milky quartz.
1660	90	<u>SANDSTONE</u> : As above.
	10	<u>SILTSTONE</u> : Light to occasionally medium grey, very argillaceous, slightly calcareous in part, trace lithic fragments, slightly carbonaceous, firm to predominantly hard, subfissile.
1665	90	<u>SANDSTONE</u> : As above.
	10	<u>COAL</u> : Black, subbituminous, dull lustre, subconchoidal fracture, brittle, blocky.
1670	90	<u>SANDSTONE</u> : Predominantly as above, coarse to very coarse, common very coarse to granular milky quartz.
	10	<u>SILTSTONE</u> : As above.
1675	100	<u>SANDSTONE</u> : Predominantly as above, becomes coarse to occasionally very coarse, rounded to subangular, moderate sorting, common very coarse to granular milky quartz, no fluorescence.
1680	100	<u>SANDSTONE</u> : Predominantly as above, becomes very coarse to granular, common smoky quartz, loose, good porosity, no fluorescence.
1685	80	<u>SANDSTONE</u> : Predominantly as above, trace to common kaolinitic matrix, trace nodular pyrite, fair porosity, no fluorescence.
	20	<u>SILTSTONE</u> : Light to occasionally medium grey, blue grey in part, slightly calcareous, very argillaceous, trace lithic fragments, moderately hard, blocky to subfissile.
1690	100	<u>SANDSTONE</u> : Clear to translucent, frosted, coarse to predominantly very coarse to granular, subangular to subrounded, poor sorting, trace kaolinitic matrix, trace nodular pyrite, common milky quartz, loose, inferred fair to good porosity, no fluorescence.
	Trace	<u>SILTSTONE</u> : As above.
1695	90	<u>SANDSTONE</u> : As above.
	10	<u>SILTSTONE</u> : Light to medium grey in part, brown grey, slightly calcareous in part, very argillaceous, trace carbonaceous specks, trace lithic fragments, moderately hard to occasionally hard, blocky to subfissile.

<u>Depth (mMD)</u>	<u>%</u>	<u>Description</u>
1700	100 Trace	<u>SANDSTONE</u> : As above. <u>SILTSTONE</u> : As above.
1705	100	<u>SANDSTONE</u> : Predominantly as above, becomes coarse to very coarse, subangular to subrounded, moderate sorting, trace rose quartz, no fluorescence.
1710	100 Trace	<u>SANDSTONE</u> : Predominantly as above, trace kaolinitic matrix, fair porosity, no fluorescence. <u>SILTSTONE</u> : As above.
1715	100	<u>SANDSTONE</u> : Predominantly as above, very coarse, subangular to subrounded, good sorting, trace nodular pyrite, common milky quartz, no fluorescence.
1720	100	<u>SANDSTONE</u> : As above.
1725	100 Trace	<u>SANDSTONE</u> : Predominantly as above, coarse to occasionally very coarse, trace nodular pyrite, loose, good porosity, no fluorescence. <u>SILTSTONE</u> : As above.
1730	60 40	<u>SANDSTONE</u> : Predominantly as above, becomes medium to coarse, subangular to subrounded, moderate to good sorting, no fluorescence. <u>COAL</u> : Brown black to black, very argillaceous/silty in part, dull lustre, subconchoidal fracture, brittle, blocky to fissile in part.
1735	70 30	<u>SANDSTONE</u> : As above. <u>COAL</u> : As above.
1740	70 20 10	<u>SANDSTONE</u> : Predominantly as above, becomes coarse to very coarse, trace kaolinitic matrix, good porosity, no fluorescence. <u>SILTSTONE</u> : Light grey, occasionally medium grey, slightly calcareous in part, very argillaceous, trace lithic fragments, slightly arenaceous in part, rare glauconite, moderately hard to hard, blocky to subfissile. <u>COAL</u> : As above.
1745	70 20 10	<u>SANDSTONE</u> : As above. <u>SILTSTONE</u> : As above. <u>COAL</u> : As above.
1750	30 50 20	<u>SANDSTONE</u> : Clear to translucent, frosted, medium to predominantly coarse to very coarse, angular to subrounded, poor sorting, locally common kaolinitic matrix, trace nodular pyrite, abundant milky quartz, loose, inferred fair to good porosity, no fluorescence. <u>SILTSTONE</u> : Light grey, occasionally blue grey, slightly calcareous, very argillaceous, trace lithic fragments, trace carbonaceous fragments, moderately hard to hard, blocky to subfissile. <u>COAL</u> : As above.
1755	40 40 20	<u>SANDSTONE</u> : Predominantly as above, trace siliceous cement, very poor porosity, no fluorescence. <u>SILTSTONE</u> : As above. <u>COAL</u> : As above.
1760	60 30 10	<u>SANDSTONE</u> : As above. <u>SILTSTONE</u> : As above. <u>COAL</u> : As above.

<u>Depth (mMD)</u>	<u>%</u>	<u>Description</u>
1765	30	<u>SANDSTONE</u> : Clear to translucent, frosted, coarse to very coarse, subangular to subrounded, moderate sorting, trace to common kaolinitic matrix, trace glauconite, fair to good porosity, no fluorescence.
	70	<u>COAL</u> : Black to brown black, dull to occasionally subvitreous lustre, very argillaceous in part grades to carbonaceous claystone, slightly silty, trace disseminated pyrite, brittle, blocky to subfissile.
1770	30	<u>SANDSTONE</u> : As above.
	50	<u>SILTSTONE</u> : Light brown, light grey brown, very argillaceous, micromicaceous, trace to common carbonaceous specks trace lithic fragments, trace disseminated pyrite, moderately hard, subfissile.
	20	<u>COAL</u> : As above.
1775	30	<u>SANDSTONE</u> : Predominantly as above, medium to predominatly coarse, trace kaolinitic matrix, common milky quartz, loose, fair porosity, no fluorescence.
	60	<u>SILTSTONE</u> : As above.
	10	<u>COAL</u> : As above.
1780	10	<u>SANDSTONE</u> : As above.
	40	<u>SILTSTONE</u> : Predominantly as above, becomes predominantly light brown, common carbonaceous fragments, mottled texture in part.
	50	<u>COAL</u> : As above.
1785	10	<u>SANDSTONE</u> : As above.
	50	<u>SILTSTONE</u> : As above.
	40	<u>COAL</u> : As above.
1790	10	<u>SANDSTONE</u> : As above.
	70	<u>SILTSTONE</u> : As above.
	30	<u>COAL</u> : As above.
1795	30	<u>SILTSTONE</u> : Pale brown, light grey, very argillaceous, slightly calcareous in part, slightly siliceous, arenaceous in part, trace to locally common coal fragments, slightly micromicaceous, firm to moderately hard, blocky to subfissile.
	70	<u>COAL</u> : Brown black to black, subbituminous, argillaceous/silty in part, occasionally subvitreous lustre, woody texture in part, brittle, blocky, trace fluorescent amber inclusions.
1800	10	<u>SANDSTONE</u> : Off white, clear to translucent, frosted in part, very fine to medium, occasionally coarse, subangular to subrounded, poor to moderate sorting, common to abundant argillaceous matrix, trace nodular pyrite, trace coarse milky quartz, loose, poor to fair porosity, no fluorescence.
	60	<u>SILTSTONE</u> : As above.
	30	<u>COAL</u> : As above.

(Beginning of core chip descriptions from 1801-1852m; Cores #1, #2, #3)

1801	<u>SANDSTONE</u> : Pale to light grey, fine to predominantly medium, subangular to subrounded, moderate to good sorting, weak calcareous cement, slightly silty matrix, common smoky quartz, trace rock fragments, friable, fair porosity. Fluorescence: 20% dull pale yellow patchy fluorescence, fast streaming cut, moderate ring residue. Weak petroliiferous odour.
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<u>Depth (mMD)</u>	<u>%</u>	<u>Description</u>
1802		<u>SANDSTONE</u> : Light grey, fine to medium, angular to subrounded, moderate sorting, common silty/argillaceous matrix, trace rose quartz, common milky/smoky quartz, trace carbonaceous fragments, trace altered feldspar, trace rock fragments, moderately hard, poor porosity. Fluorescence: 40% Dull to moderately bright pale yellow fluorescence, moderate fast streaming cut, moderate ring residue. Weak petroliferous odour.
1803		<u>SANDSTONE</u> : Off white to light grey, medium to coarse, angular to subrounded, moderate sorting, weak siliceous cement, common milky/smoky quartz, trace rock fragments, moderately hard, fair porosity. Fluorescence: 40% moderately bright patchy pale yellow fluorescence, instant cut, moderate ring residue. Weak petroliferous odour.
1804		<u>SANDSTONE</u> : Light grey, coarse, subangular to subrounded, moderate to good sorting, trace silty matrix, common rock fragments, trace smoky quartz, friable, good porosity. Fluorescence: 100% bright pale yellow solid fluorescence, instant cut, thick ring residue. Moderate petroliferous odour.
1805		<u>SANDSTONE</u> : Light brown, light grey, medium to coarse, subangular to subrounded, poor to moderate sorting, weak siliceous cement, common rock fragments, friable, fair to good porosity. Fluorescence: 100% as above. Moderate petroliferous odour.
1805.9		<u>SANDSTONE</u> : As above. Fluorescence: 100% as above. Moderate petroliferous odour.
1807		<u>SANDSTONE</u> : Light grey, fine to medium, subangular to subrounded, good sorting, moderate siliceous cement, trace rock fragments, trace carbonaceous specks, trace quartz overgrowths, moderately hard, fair porosity. Fluorescence: 80% moderately bright to bright pale yellow fluorescence, fast streaming cut, moderately thick ring residue. Moderate petroliferous odour.
1808		<u>SANDSTONE</u> : Predominantly as above, becomes medium, trace altered feldspar. Fluorescence: 80% as above. Moderate petroliferous odour.
1809		<u>SANDSTONE</u> : Light grey brown, medium to coarse, angular to subrounded, poor sorting, weak siliceous cement, silty/argillaceous matrix, trace carbonaceous fragments, trace rock fragments, moderately hard, fair porosity. Fluorescence: 100% bright pale yellow solid fluorescence, fast streaming cut, thick ring residue. Moderate petroliferous odour.
1810		<u>SANDSTONE</u> : Light grey, fine to coarse, subangular to subrounded, poor sorting, weak siliceous cement, trace argillaceous/silty matrix, trace rock fragments, common milky/smoky quartz, moderately hard, fair porosity. Fluorescence: 80% moderately bright patchy to solid pale yellow fluorescence, fast streaming cut, moderately thick ring residue. Moderate petroliferous odour.
1811		<u>SANDSTONE</u> : Light grey brown, fine to medium, subangular to subrounded, moderate to good sorting, common argillaceous matrix, common smoky quartz, trace lithic fragments, slightly chloritic in part, moderately hard, poor porosity. Fluorescence: 100% even dull-moderately bright pale yellow fluorescence, fast streaming cut, moderate ring residue. Weak petroliferous odour.
1812		<u>SANDSTONE</u> : Light brown, medium to predominantly coarse, angular to subangular, mod. sorting, moderate siliceous cement, trace quartz overgrowths, trace smoky quartz, trace rock fragments, moderately hard, fair porosity. Fluorescence: 100% bright pale yellow solid fluorescence, fast to instant cut, thick ring residue. Moderate petroliferous odour.

<u>Depth (mMD)</u>	<u>%</u>	<u>Description</u>
1813		<u>SANDSTONE</u> : Light brown, coarse to very coarse, subangular to subrounded, moderate sorting, very weak siliceous cement, trace rock fragments, common milky quartz, friable, good porosity. Fluorescence: 100% bright pale yellow solid fluorescence, instant cut, thick ring residue. Strong petroliferous odour.
1814		<u>COAL</u> : Black, subbituminous, trace disseminated pyrite, dull lustre, subconchoidal fracture, hard to brittle, massive.
1815		<u>SILICEOUS CLAYSTONE</u> : Dark brown, strong siliceous cement, trace coal fragments, conchoidal fracture, dense, very hard, massive, flinty.
1816		<u>CLAYSTONE/SHALE</u> : Dark brown, moderately to very siliceous, trace coal flecks, slicken sides, hard, massive to fissile in part, flinty.
1817		<u>CLAYSTONE/SHALE</u> : Medium brown, olive grey, slightly silty, slightly to moderately siliceous, moderately hard, subfissile to fissile.
1818		<u>SHALE</u> : Olive grey, slightly siliceous, trace carbonaceous flecks, slightly micromicaceous, moderately hard to hard, subfissile to fissile.
1819		<u>SANDSTONE</u> : Light grey, very fine to fine, subangular to subrounded, good sorting, strong siliceous cement, trace disseminated pyrite, trace glauconite, trace rock fragments, moderately hard to hard, tight, no fluorescence.
1820		<u>SANDSTONE</u> : Light grey, very fine to fine, subangular to subrounded, good sorting, strong siliceous cement, trace carbonaceous fragments, trace muscovite, trace lithic fragments, hard, tight, no fluorescence.
1821		<u>SILTSTONE</u> : Medium grey, grey brown, very argillaceous, slightly to moderately arenaceous, trace carbonaceous fragments/ microlaminations, micromicaceous, hard, subfissile.
1822		<u>SILTSTONE</u> : As above.
1823		<u>SILTSTONE</u> : As above.
1824		<u>SILTSTONE</u> : Predominantly as above, becomes very arenaceous, common lithic fragments.
1825		<u>SANDSTONE</u> : Light to medium grey, fine to medium, subangular to subrounded, good sorting, trace calcareous cement, moderately argillaceous matrix, trace altered feldspar, trace lithic fragments, moderately hard, very poor to poor porosity. Fluorescence: 5% dull patchy pale yellow fluorescence, fast weak cut, thin ring residue.
1826		<u>SANDSTONE</u> : Light grey, fine to predominantly medium, subangular to subrounded, good sorting, trace siliceous cement, trace kaolinitic matrix, trace milky/smoky quartz, trace chlorite, moderately hard, poor porosity. Fluorescence: Trace very dull patchy to pin point pale yellow fluorescence, weak fast cut, thin ring residue.
1827		<u>SANDSTONE</u> : As above. Fluorescence: Trace as above.

<u>Depth (mMD)</u>	<u>%</u>	<u>Description</u>
1828		<u>SANDSTONE</u> : Light grey, medium to occasionally coarse, subangular to subrounded, moderate to good sorting, trace siliceous cement, trace to moderate kaolinitic matrix, trace carbonaceous microlaminations, trace lithic fragments, friable, fair porosity. Fluorescence: 20% dull patchy pale yellow fluorescence, weak fast streaming cut, thin ring residue.
1829		<u>SANDSTONE</u> : Light grey, fine, subangular to subrounded, good sorting, strong siliceous cement, trace altered feldspar, trace carbonaceous fragments, trace disseminated pyrite, moderately hard to hard, tight, no fluorescence.
1830		<u>SANDSTONE</u> : Off white, light grey, very fine to fine, subangular, good sorting, abundant kaolinitic matrix, trace carbonaceous microlaminations, trace altered feldspar, moderately hard, poor porosity. Fluorescence: 60% moderately bright pale yellow fluorescence, moderately fast streaming cut, thin ring residue.
1831		<u>SANDSTONE</u> : Light grey, fine to medium, subangular to subrounded, good sorting, moderate siliceous cement, trace carbonaceous fragments, trace nodular pyrite, moderately hard, very poor porosity. Fluorescence: 40% as above.
1832		<u>SANDSTONE</u> : Light grey, fine to predominantly medium, subangular to subrounded, moderate to good sorting, moderate siliceous cement, trace argillaceous matrix, trace nodular pyrite, trace rock fragments, trace altered feldspar, trace smoky quartz, moderately hard to friable, poor porosity. Fluorescence: 40% moderately bright to patchy bright pale yellow fluorescence, moderately fast streaming to instant cut, moderate ring residue.
1833		<u>CARBONACEOUS SILTSTONE</u> : Dark grey, grey black, very argillaceous, Slightly coaly in part, trace arenaceous microlaminations, moderately hard, subfissile.
1834		<u>SANDSTONE</u> : Light grey, fine to occasionally medium, subangular to subrounded, moderate to good sorting, trace kaolinitic matrix, trace smoky quartz, trace lithic fragments, friable, fair porosity. Fluorescence: 60% moderately bright pale yellow patchy fluorescence, moderately fast streaming cut, thin to moderate ring residue. Weak petroliferous odour.
1835		<u>SANDSTONE</u> : Light grey, off white to pale brown, medium to coarse, angular to subrounded, moderate to good sorting, trace kaolinitic matrix, trace to common coal fragments and microlaminations, trace smoky quartz, friable. fair to good porosity. Fluorescence: 20% dull to patchy moderately bright pale yellow fluorescence, instant weak cut, thin ring residue.
1836		<u>COAL</u> : Black, bituminous, vitreous lustre in part, subconchoidal fracture, hard, brittle, massive.
1837		<u>COAL</u> : As above.
1838		<u>COAL</u> : Predominantly as above, trace medium to coarse quartz grains.
1839		<u>CLAYSTONE</u> : Medium brown grey, olive grey, slightly siliceous cement, slightly micromicaceous, trace coal fragments, hard, massive to subfissile.
1840		<u>CLAYSTONE</u> : As above.
1841		<u>CLAYSTONE</u> : Predominantly as above, slightly silty in part, micromicaceous.



<u>Depth (mMD)</u>	<u>%</u>	<u>Description</u>
1841.75		<u>CLAYSTONE</u> : Predominantly as above, slightly silty, moderately siliceous cement, moderately micromicaceous.
1843		<u>CLAYSTONE</u> : Predominantly as above, trace carbonaceous fragments.
1844		<u>CLAYSTONE</u> : Predominantly as above, trace carbonaceous fragments and microlaminations.
1845		<u>CLAYSTONE</u> : Medium to dark grey, olive grey, moderately to very silty, slightly arenaceous, slightly siliceous, moderately carbonaceous, micromicaceous, hard, massive to subfissile.
1846		<u>SANDSTONE</u> : Off white to light grey, medium to predominantly coarse, subangular to subrounded, moderate to good sorting, moderate silty/kaolinitic matrix, common smoky quartz, trace rock fragments, friable, good porosity, no fluorescence.
1847		<u>SANDSTONE</u> : Off white to light grey, coarse to very coarse, angular to subangular, poor sorting, trace siliceous cement, trace kaolinitic matrix, common milky/smoky quartz, trace coal fragments, friable, good porosity, no fluorescence.
1848		<u>SANDSTONE</u> : Off white to light grey, coarse, angular to subrounded, moderate sorting, silty matrix, trace coal fragments, common milky quartz, trace rock fragments, friable to moderately hard, fair porosity, no fluorescence.
1849		<u>SANDSTONE</u> : Off white to light grey, medium to coarse, subangular to subrounded, moderate to good sorting, slight siliceous cement, common nodular pyrite, trace granular milky quartz, trace smoky quartz, friable to moderately hard, fair porosity. Fluorescence: Trace dull patchy yellow green fluorescence, very weak instant cut, trace to nil ring residue.
1850		<u>SANDSTONE</u> : Light grey to light brown grey, medium, subangular to subrounded, good sorting, common silty matrix, trace kaolinitic matrix, trace carbonaceous fragments, trace smoky/milky quartz, friable to moderately hard, fair porosity. Fluorescence: 80% moderately bright to patchy bright pale yellow fluorescence, instant to fast streaming cut, moderate ring residue. Faint petroliferous odour.
1851		<u>SANDSTONE</u> : Light brown, fine to medium, occasionally coarse, subangular to subrounded, poor to moderate sorting, trace siliceous cement, trace kaolinitic matrix, trace smoky quartz, friable to moderately hard, fair to good porosity. Fluorescence: 100% bright pale yellow solid fluorescence, instant cut, thick ring residue. faint petroliferous odour.

(End of core chip descriptions )

1852-1855	10	<u>SANDSTONE</u> : Off white to light grey, fine to occasionally medium, subangular to subrounded, moderate to good sorting, very argillaceous/silty matrix, trace coarse milky quartz float, friable, loose in part, fair to poor porosity, no fluorescence.
	90	<u>SILTSTONE</u> : Light grey, light brown, slightly siliceous/calcareous cement, trace carbonaceous fragments, moderately hard, massive to blocky.

<u>Depth (mMD)</u>	<u>%</u>	<u>Description</u>
1860	Trace	<u>SANDSTONE</u> : As above, no fluorescence.
	60	<u>SILTSTONE</u> : Light grey, blue grey, medium to pale brown, very argillaceous, slightly siliceous, trace carbonaceous fragments, slightly micromicaceous, moderately hard to hard, blocky to subfissile.
	40	<u>COAL</u> : Black, bituminous, slightly argillaceous, subvitreous lustre, subconchoidal fracture, brittle to hard, blocky.
1865	40	<u>SANDSTONE</u> : Clear to translucent, coarse to occasionally very coarse, subangular to subrounded, moderate sorting, common kaolinitic/silty matrix, common milky quartz, loose, fair to poor porosity, no fluorescence.
	50	<u>SILTSTONE</u> : As above.
	10	<u>COAL</u> : As above.
1870	10	<u>SANDSTONE</u> : As above, no fluorescence.
	50	<u>SILTSTONE</u> : As above.
	40	<u>CLAYSTONE</u> : Off white, pale brown, slightly silty, trace lithic fragments, soft to firm, massive to amorphous.
1875	Trace	<u>SANDSTONE</u> : Clear to translucent, frosted, coarse to very coarse, moderate sorting, common kaolinitic matrix, common milky quartz, loose, inferred fair porosity, no fluorescence.
	40	<u>SILTSTONE</u> : Light grey to brown grey, lightly siliceous, very argillaceous, trace carbonaceous fragments, trace lithic fragments, moderately hard to hard, blocky to subfissile.
	60	<u>CLAYSTONE</u> : Off white, pale brown, silty, trace lithic fragments, trace very fine quartz sand, soft to dispersive, massive to amorphous.
	Trace	<u>COAL</u> : As above.
1880	10	<u>SANDSTONE</u> : As above, no fluorescence.
	20	<u>SILTSTONE</u> : As above.
	50	<u>CLAYSTONE</u> : As above.
	20	<u>COAL</u> : Predominantly as above, subfissile in part.
1885	30	<u>SILTSTONE</u> : As above.
	70	<u>CLAYSTONE</u> : Predominantly as above, slightly arenaceous in part, very dispersive.
	Trace	<u>COAL</u> : As above.
1890	40	<u>SILTSTONE</u> : Medium grey, occasionally medium brown, very argillaceous in part, moderately arenaceous, micromicaceous, trace coal fragments, moderately hard to hard, blocky to subfissile.
	50	<u>CLAYSTONE</u> : As above.
	10	<u>COAL</u> : As above.
1895	40	<u>SILTSTONE</u> : Predominantly as above, becomes medium brown, trace coaly microlaminations.
	60	<u>CLAYSTONE</u> : Predominantly as above, trace arenaceous inclusions, trace coal fragments.
	Trace	<u>COAL</u> : As above.
1900	30	<u>SILTSTONE</u> : Light to medium grey, medium brown, very argillaceous, slightly calcareous in part, trace carbonaceous fragments, trace lithic fragments, micromicaceous, moderately hard, blocky to subfissile.
	70	<u>CLAYSTONE</u> : Pale brown, off white, slightly silty, occasionally arenaceous inclusions, trace carbonaceous and lithic fragments, slightly dispersive to soft, massive to amorphous.
	Trace	<u>COAL</u> : As above.

<u>Depth (mMD)</u>	<u>%</u>	<u>Description</u>
1905	10	<u>SILTSTONE</u> : As above.
	50	<u>CLAYSTONE</u> : As above.
	40	<u>COAL</u> : As above.
1910	10	<u>SILTSTONE</u> : As above.
	80	<u>CLAYSTONE</u> : As above.
	10	<u>COAL</u> : As above.
1915	20	<u>SILTSTONE</u> : Medium brown, light grey, very argillaceous, common carbonaceous fragments, slightly micromicaceous, moderately hard to hard, blocky to subfissile.
	60	<u>CLAYSTONE</u> : Pale brown, off white, slightly silty, trace arenaceous inclusions, slightly micromicaceous, soft to dispersive, massive to amorphous, hygroturgid.
	20	<u>COAL</u> : Black bituminous, dull to subvitreous lustre, subconchoidal fracture, brittle to hard, blocky to occasionally subfissile.
1920	10	<u>SANDSTONE</u> : Clear to translucent, light brown to off white, very fine to fine, subangular, good sorting, common kaolinitic matrix, trace carbonaceous specks, very poor to nil porosity, no fluorescence.
	60	<u>SILTSTONE</u> : As above.
	20	<u>CLAYSTONE</u> : Predominantly as above, becomes increasingly silty grades to siltstone.
	10	<u>COAL</u> : As above.
1925	10	<u>SANDSTONE</u> : Predominantly as above, becomes fine to medium, very argillaceous matrix, firm, poor porosity. Fluorescence: Trace moderately bright yellow white fluorescence, weak crush cut, nil to trace ring residue.
	90	<u>SILTSTONE</u> : Predominantly as above, becomes very argillaceous grades in part to claystone.
	Trace	<u>COAL</u> : As above.
1930	20	<u>SANDSTONE</u> : As above. Fluorescence: 10% as above.
	80	<u>SILTSTONE</u> : As above grades to claystone in part.
	Trace	<u>COAL</u> : As above.
1935	10	<u>SANDSTONE</u> : Predominantly as above, abundant argillaceous matrix, no fluorescence.
	90	<u>SILTSTONE</u> : As above.
	Trace	<u>COAL</u> : As above.
1940	10	<u>SANDSTONE</u> : As above, no fluorescence.
	90	<u>SILTSTONE</u> : As above.
1945	20	<u>SANDSTONE</u> : Light grey, light brown grey, very fine to predominantly fine, subangular, good sorting, weak calcareous cement in part, very argillaceous matrix, trace lithic & carbonaceous fragments, trace nodular pyrite, friable to moderately hard, very poor to nil porosity, no fluorescence.
	80	<u>SILTSTONE</u> : Grey brown to pale brown, very argillaceous in part grades to claystone, very coaly in part, trace lithic fragments, soft to predominantly dispersive, massive to amorphous.
1950	40	<u>SILTSTONE</u> : As above.
	60	<u>COAL</u> : Black, bituminous, trace disseminated pyrite, subvitreous lustre, subconchoidal fracture, hard to brittle, blocky.

<u>Depth (mMD)</u>	<u>%</u>	<u>Description</u>
1955	10	<u>SANDSTONE</u> : Off white to light grey, very fine to fine, subangular, good sorting, weak calcareous/siliceous cement, common argillaceous/silty matrix, trace nodular pyrite, rare chlorite, moderately hard, tight, no fluorescence.
	40	<u>SILTSTONE</u> : Light to medium grey, medium brown, very argillaceous, common carbonaceous fragments, micromicaceous, soft to firm, moderately hard in part, massive to amorphous, occasionally grades to claystone.
	50	<u>COAL</u> : As above.
1960	10	<u>SANDSTONE</u> : Predominantly as above, becomes very fine, grades to silty sandstone.
	80	<u>SILTSTONE</u> : Predominantly as above, locally becomes very arenaceous grades to sandstone in part.
	10	<u>COAL</u> : As above.
1965	Trace	<u>SANDSTONE</u> : As above.
	60	<u>SILTSTONE</u> : As above.
	40	<u>COAL</u> : As above.
1970	Trace	<u>SANDSTONE</u> : As above.
	90	<u>SILTSTONE</u> : As above.
	10	<u>DOLOMITE</u> : Off white, buff, cryptocrystalline, trace pyrite inclusions, dense, very hard, flinty, blocky.
1975	60	<u>SILTSTONE</u> : Predominantly as above, medium brown, becomes very argillaceous, grades to claystone, hygroturgid.
	40	<u>COAL</u> : As above.
1980	90	<u>SILTSTONE</u> : Light grey, light to medium brown, very argillaceous, slightly micromicaceous, trace carbonaceous fragments, soft, massive, hygroturgid.
	10	<u>COAL</u> : As above.
1985	30	<u>SILTSTONE</u> : As above.
	70	<u>COAL</u> : As above.
1990	10	<u>SANDSTONE</u> : Off white to light grey, very fine, subangular, good sorting, weak siliceous cement, moderately to very argillaceous, trace carbonaceous specks, moderately hard, tight, no fluorescence.
	80	<u>SILTSTONE</u> : Predominantly as above, common mica, trace carbonaceous & lithic fragments.
	10	<u>COAL</u> : As above.
1995	10	<u>SANDSTONE</u> : As above.
	90	<u>SILTSTONE</u> : Predominantly as above, becomes very argillaceous grades to claystone in part.
	Trace	<u>COAL</u> : As above.
2000	10	<u>SANDSTONE</u> : Light grey, off white, very fine, subangular, good sorting, moderate siliceous cement, common argillaceous matrix, trace mica, trace carbonaceous & lithic fragments, moderately hard, tight, no fluorescence. Grades in part to siltstone.
	50	<u>SILTSTONE</u> : As above.
	40	<u>COAL</u> : As above.

<u>Depth (mMD)</u>	<u>%</u>	<u>Description</u>
2005	10	<u>SANDSTONE</u> : Predominantly as above, becomes predominantly off white, abundant kaolinitic/silty matrix, tight, no fluorescence.
	60	<u>SILTSTONE</u> : Predominantly as above, becomes pale brown in part, locally very argillaceous grades to claystone in part, hygrotergic.
	30	<u>COAL</u> : As above.
2010	30	<u>SILTSTONE</u> : Medium brown, light grey, very argillaceous, trace very fine sand, trace lithic fragments trace carbonaceous material, firm to moderately hard, massive.
	30	<u>CLAYSTONE</u> : Pale brown, light grey brown, slightly silty, trace carbonaceous & lithic fragments, soft to dispersive, amorphous, hygrotergic.
	40	<u>COAL</u> : As above.
2015	10	<u>SANDSTONE</u> : Off white, clear to translucent, very fine, subangular, good sorting, trace siliceous cement, moderately argillaceous matrix, trace nodular pyrite, trace carbonaceous fragments, trace lithic fragments, rare altered feldspar, firm, very poor porosity. Fluorescence: Trace dull patchy yellow green fluorescence, faint crush cut, trace to nil ring residue.
	30	<u>SILTSTONE</u> : As above.
	40	<u>CLAYSTONE</u> : As above.
	20	<u>COAL</u> : As above.
2020	20	<u>SANDSTONE</u> : As above, common argillaceous/silty matrix. Fluorescence: Trace as above.
	70	<u>SILTSTONE</u> : As above.
	10	<u>COAL</u> : As above.
2025	30	<u>SANDSTONE</u> : Light grey, off white, clear to translucent, very fine to fine, subangular to subrounded, good sorting, weak siliceous cement, common argillaceous matrix, trace carbonaceous fragments, friable to moderately hard, very poor porosity. Fluorescence: 20% dull to patchy moderately bright yellow green fluorescence, very weak crush cut, thin ring residue.
	60	<u>SILTSTONE</u> : As above.
	10	<u>CLAYSTONE</u> : As above.
2030	40	<u>SANDSTONE</u> : As above. Fluorescence: 40% as above.
	50	<u>SILTSTONE</u> : As above.
	10	<u>CLAYSTONE</u> : As above.
2035	50	<u>SANDSTONE</u> : Predominantly as above, becomes fine to occasionally medium, abundant argillaceous matrix. Fluorescence: 50% predominantly dull to occasionally bright patchy yellow green fluorescence, weak faint crush cut, trace to nil ring residue. .Fluorescence associated with clay matrix in part.
	40	<u>SILTSTONE</u> : As above.
	10	<u>CLAYSTONE</u> : As above.
2040	30	<u>SANDSTONE</u> : Predominantly as above, trace coarse milky quartz. Fluorescence: 30% dull to occasionally moderately patchy yellow green fluorescence, weak faint crush cut, trace to nil ring residue.
	40	<u>SILTSTONE</u> : As above.
	30	<u>CLAYSTONE</u> : As above.

<u>Depth (mMD)</u>	<u>%</u>	<u>Description</u>
2045	50	<u>SANDSTONE</u> : Clear to translucent, off white to light grey, fine to predominantly medium to coarse, angular to subrounded, poor sorting, common argillaceous/silty matrix, common milky quartz, trace nodular pyrite, friable to loose in part, poor porosity. Fluorescence: 50% as above.
	40	<u>SILTSTONE</u> : As above.
	10	<u>CLAYSTONE</u> : As above.
2050	30	<u>SANDSTONE</u> : As above. Fluorescence: 20% dull patchy yellow green fluorescence, very faint crush cut, trace to nil ring residue.
	60	<u>SILTSTONE</u> : As above.
	10	<u>CLAYSTONE</u> : As above.
2055	30	<u>SANDSTONE</u> : Clear to translucent, light grey to off white, fine to predominantly medium, occasionally coarse, angular to subrounded, poor sorting, abundant kaolinitic matrix, trace muscovite, trace lithic & carbonaceous fragments, friable, very poor porosity. Fluorescence: 20% dull fluorescence as above.
	20	<u>SILTSTONE</u> : As above.
	50	<u>CLAYSTONE</u> : As above.
2060	20	<u>SANDSTONE</u> : Predominantly as above, common coarse milky quartz. Fluorescence: 10% as above.
	70	<u>SILTSTONE</u> : Medium brown, light grey brown, very argillaceous, arenaceous in part, common lithic/carbonaceous fragments, slightly micromicaceous, firm, massive to blocky.
	10	<u>CLAYSTONE</u> : As above.
2065	10	<u>SANDSTONE</u> : As above. Fluorescence: 5% as above.
	90	<u>SILTSTONE</u> : As above.
	Trace	<u>COAL</u> : Black, bituminous, slightly argillaceous/silty subvitreous lustre, subconchoidal fracture, brittle, hard, blocky to subfissile.
2070	20	<u>SANDSTONE</u> : Predominantly as above, common coarse milky quartz, trace nodular pyrite. Fluorescence: 5% as above.
	60	<u>SILTSTONE</u> : As above.
	20	<u>COAL</u> : As above.
2075	30	<u>SANDSTONE</u> : Off white, clear to translucent, fine to medium, occasionally coarse, angular to subrounded, poor to moderate sorting, abundant argillaceous/silty matrix, trace coarse milky quartz, trace muscovite, friable to loose, poor porosity. Fluorescence: 10% dull yellow green patchy fluorescence, very weak crush cut, trace to nil ring residue.
	60	<u>SILTSTONE</u> : Medium brown, pale grey brown very, argillaceous in part, arenaceous in part, common carbonaceous fragments, micromicaceous, soft to firm, massive to blocky.
	10	<u>COAL</u> : As above.
2080	20	<u>SANDSTONE</u> : As above. Fluorescence: Trace as above.
	60	<u>SILTSTONE</u> : As above.
	20	<u>COAL</u> : As above.
2085	20	<u>SANDSTONE</u> : Predominantly as above, common milky coarse quartz float. Fluorescence: 20 as above.
	70	<u>SILTSTONE</u> : As above.
	10	<u>COAL</u> : As above.

<u>Depth (mMD)</u>	<u>%</u>	<u>Description</u>
2090	10	<u>SANDSTONE</u> : As above, no fluorescence.
	80	<u>SILTSTONE</u> : Predominantly as above, becomes light brown, locally very argillaceous grades to claystone in part.
	10	<u>COAL</u> : As above.
2095	10	<u>SANDSTONE</u> : Predominantly as above, common kaolinitic matrix, common coarse milky quartz, poor to fair porosity, no fluorescence.
	30	<u>SILTSTONE</u> : As above.
	60	<u>COAL</u> : As above.
2100	Trace	<u>SANDSTONE</u> : As above.
	30	<u>SILTSTONE</u> : As above.
	70	<u>COAL</u> : As above.
2105	Trace	<u>SANDSTONE</u> : As above.
	60	<u>SILTSTONE</u> : Predominantly as above, light brown, very argillaceous in part, trace nodular pyrite, slightly arenaceous in part.
	40	<u>COAL</u> : As above.
2110	40	<u>SILTSTONE</u> : Light grey to medium grey, medium brown in part, very argillaceous, common carbonaceous and microlaminations, slightly micromicaceous in part, firm to moderately hard, blocky to subfissile.
	20	<u>COAL</u> : Black, argillaceous in part, subbituminous, subvitreous lustre, brittle, blocky to fissile in part.
	40	<u>VOLCANICS</u> : Off white to white, light blue grey, translucent in part, fine, microcrystalline groundmass, euhedral feldspar and pyroxene crystals in part, trace anhedral mafic mineral, trace pyrite inclusions, very hard, occasionally brittle, massive to platy in part.
2115	30	<u>SILTSTONE</u> : Predominantly as above, becomes very argillaceous in part grades to claystone.
	10	<u>COAL</u> : As above.
	60	<u>VOLCANICS</u> : As above.
2120	40	<u>SILTSTONE</u> : As above.
	10	<u>COAL</u> : As above.
	50	<u>VOLCANICS</u> : As above.
2125	30	<u>SILTSTONE</u> : As above.
	20	<u>COAL</u> : As above.
	50	<u>VOLCANICS</u> : Predominantly as above, white in part, trace vein pyrite and inclusions.
2130	50	<u>SILTSTONE</u> : light to medium grey, grey brown, very argillaceous, slightly calcareous cement, trace carbonaceous and lithic fragments, trace disseminated pyrite in part, firm to moderately hard, blocky.
	20	<u>COAL</u> : Black, slightly argillaceous, subbituminous dull lustre, trace disseminated pyrite, subconchoidal fracture in part, brittle, blocky to subfissile.
	30	<u>VOLCANICS</u> : Predominantly as above, occasionally white, trace vein pyrite, trace mafic mineral.

<u>Depth (mMD)</u>	<u>%</u>	<u>Description</u>
2135	10	<u>SANDSTONE</u> : Off white to light brown, very fine, subangular, good sorting, abundant silty/argillaceous matrix, trace carbonaceous specks, occasionally coarse milky quartz float, friable to moderately hard, very poor porosity. Fluorescence: Trace moderately bright pale yellow patchy fluorescence, very slow cut, thin ring residue to film residue.
	60	<u>SILTSTONE</u> : As above.
	10	<u>COAL</u> : As above.
	20	<u>VOLCANICS</u> : As above.
2140	10	<u>SANDSTONE</u> : As above. Fluorescence: Trace as above.
	90	<u>SILTSTONE</u> : As above.
2145	20	<u>SANDSTONE</u> : Predominantly as above, becomes very fine to fine, trace siliceous cement in part, very poor porosity. Fluorescence: 5% as above.
	80	<u>SILTSTONE</u> : As above.
2150	30	<u>SANDSTONE</u> : Predominantly as above, becomes predominantly fine, trace coarse milky quartz. Fluorescence: 5% as above.
	60	<u>SILTSTONE</u> : As above.
	10	<u>COAL</u> : As above.
2155	30	<u>SANDSTONE</u> : Predominantly as above, clear to translucent in part, fine to occasionally medium, fair porosity in part. Florescence: 5-10% dull to moderately bright pale yellow patchy fluorescence, weak slow cut, thin ring residue.
	70	<u>SILTSTONE</u> : As above.
	Trace	<u>COAL</u> : As above.
2160	40	<u>SANDSTONE</u> : Clear to translucent, frosted, very coarse, angular, moderately sorted, trace kaolinitic matrix, common coarse milky quartz, trace nodular pyrite, loose, good porosity. Fluorescence: Trace as above.
	60	<u>SILTSTONE</u> : As above.
	Trace	<u>COAL</u> : As above.
2165	30	<u>SANDSTONE</u> : Clear to translucent, frosted, fine to predominantly medium to coarse, angular, moderate sorting, trace kaolinitic matrix, trace nodular pyrite and pyritic cement, common milky quartz, loose, fair to good porosity. Fluorescence: 10% as above.
	70	<u>SILTSTONE</u> : As above.
2170	50	<u>SANDSTONE</u> : Predominantly as above, medium to coarse, occasionally very coarse, trace to common nodular pyrite, loose, fair to good porosity. Fluorescence: 10% predominantly as above, becomes dull to occasionally moderately bright patchy pale yellow fluorescence, weak slow cut, trace to nil ring residue.
	50	<u>SILTSTONE</u> : As above.
2175	40	<u>SANDSTONE</u> : Predominantly as above, coarse to very coarse. Fluorescence: trace as above, becomes predominantly dull.
	60	<u>SILTSTONE</u> : Predominantly as above, medium brown in part, locally very carbonaceous.
2180	20	<u>SANDSTONE</u> : As above. Fluorescence: Trace as above.
	80	<u>SILTSTONE</u> : Predominantly as above, medium grey.



<u>Depth (mMD)</u>	<u>%</u>	<u>Description</u>
2185	10	<u>SANDSTONE</u> : Off white to light grey, very fine to fine, subangular, good sorting, weak siliceous cement, trace kaolinitic/silty matrix, trace altered feldspar, trace lithic fragments, moderately hard, tight, no fluorescence.
	90	<u>SILTSTONE</u> : Medium grey, medium brown, moderately to locally very argillaceous, trace lithic and carbonaceous fragments, slightly arenaceous in part, trace biotite, moderately hard to hard in part, blocky to subfissile.
2190	Trace	<u>SANDSTONE</u> : As above, no fluorescence.
	80	<u>SILTSTONE</u> : As above.
	20	<u>CLAYSTONE</u> : Pale grey to light grey, slightly siliceous, slightly micromicaceous, trace carbonaceous speck, moderately hard, blocky.
2195	Trace	<u>SANDSTONE</u> : As above. Trace coarse to very coarse milky quartz float, no fluorescence.
	90	<u>SILTSTONE</u> : As above.
	10	<u>CLAYSTONE</u> : Predominantly as above, occasionally off white, soft in part.
2200	Trace	<u>SANDSTONE</u> : Predominantly as above, trace quartz float.
	90	<u>SILTSTONE</u> : Predominantly as above, trace nodular pyrite, trace carbonaceous microlaminations.
	10	<u>CLAYSTONE</u> : Predominantly as above, predominantly off white to white.
2205	20	<u>SANDSTONE</u> : Clear to translucent, frosted, medium to coarse, occasionally very coarse, angular to subangular, moderate sorting, trace siliceous cement, trace quartz overgrowths, common coarse milky quartz, trace nodular pyrite in part, friable to predominantly loose, inferred fair to good porosity, no fluorescence.
	60	<u>SILTSTONE</u> : Medium grey, medium brown, very argillaceous, slightly calcareous in part, trace carbonaceous specks and microlaminations, moderately hard, blocky.
	20	<u>CLAYSTONE</u> : Off white to pale grey, light brown in part, slightly silty, trace carbonaceous flecks, soft to firm, massive to blocky.
2210	10	<u>SANDSTONE</u> : As above.
	80	<u>SILTSTONE</u> : As above.
	10	<u>CLAYSTONE</u> : As above.
2215	10	<u>SANDSTONE</u> : As above.
	80	<u>SILTSTONE</u> : As above.
	10	<u>CLAYSTONE</u> : As above.
2220	10	<u>SANDSTONE</u> : Clear to translucent, frosted, medium to coarse, angular to subrounded, moderate sorting, trace kaolinitic matrix, trace to common nodular pyrite, common milky quartz, loose, good porosity, no fluorescence.
	80	<u>SILTSTONE</u> : As above.
	10	<u>CLAYSTONE</u> : As above.
2225	20	<u>SANDSTONE</u> : Predominantly as above, becomes fine to medium, common argillaceous matrix, no fluorescence.
	60	<u>SILTSTONE</u> : Predominantly as above, becomes medium grey to occasionally olive grey, common lithic fragments.
	20	<u>COAL</u> : Black, argillaceous in part, trace disseminated pyrite, subvitreous lustre, brittle, blocky to fissile in part.
2230	20	<u>SANDSTONE</u> : Predominantly as above, fine to medium, occasionally coarse, very poor to nil porosity, no fluorescence.
	80	<u>SILTSTONE</u> : Predominantly as above, becomes arenaceous in part.

<u>Depth (mMD)</u>	<u>%</u>	<u>Description</u>
2235	30	<u>SANDSTONE</u> : Clear to translucent, off white, medium to coarse, occasionally very coarse, angular to subangular, poor sorting, trace siliceous cement, trace kaolinitic matrix, trace nodular pyrite, trace quartz overgrowths, trace altered feldspar, trace milky quartz, loose, occasionally hard aggregates, poor porosity, no fluorescence.
	70	<u>SILTSTONE</u> : Medium grey, occasionally olive grey, very argillaceous, slight calcareous cement in part, trace lithic fragments, slightly micromicaceous, trace disseminated pyrite, moderately hard to hard in part, blocky to subfissile in part.
2240	20	<u>SANDSTONE</u> : As above.
	80	<u>SILTSTONE</u> : As above.
2245	10	<u>SANDSTONE</u> : Predominantly as above, becomes coarse grained, angular, moderately sorted, no fluorescence.
	90	<u>SILTSTONE</u> : Predominantly as above, common carbonaceous fragments and pyritic nodules in part, moderately hard to hard.
2250	20	<u>SANDSTONE</u> : Predominantly as above, medium to coarse, poor sorting, locally common nodular pyrite.
	60	<u>SILTSTONE</u> : As above.
	20	<u>CLAYSTONE</u> : Pale brown, light grey to off white, slightly silty, trace carbonaceous specks, slightly arenaceous, firm to soft in part, massive to blocky.
2255	20	<u>SANDSTONE</u> : Clear to translucent, off white in part, fine to predominantly medium to coarse, subangular to subrounded, moderately sorted, locally common kaolinitic matrix, weak calcareous cement in part, trace nodular pyrite, common milky coarse quartz, poor to fair porosity, no fluorescence.
	50	<u>SILTSTONE</u> : As above.
	30	<u>CLAYSTONE</u> : As above.
2260	30	<u>SANDSTONE</u> : Predominantly as above, fine to medium, common coarse milky quartz, fair porosity. Fluorescence: Trace-5% patchy dull to moderately bright pale yellow fluorescence, very faint weak cut, trace to nil ring residue.
	50	<u>SILTSTONE</u> : As above.
	20	<u>CLAYSTONE</u> : As above.
2265	20	<u>SANDSTONE</u> : As above. Fluorescence: Trace as above.
	80	<u>SILTSTONE</u> : Predominantly as above, becomes medium brown in part, trace to common coaly fragments and microlaminations.
	Trace	<u>CLAYSTONE</u> : As above.
2270	20	<u>SANDSTONE</u> : Off white, clear to translucent, fine to predominantly medium to coarse, subangular to subrounded, moderate sorting, common kaolinitic matrix, trace coarse milky quartz, friable to loose, poor porosity, no fluorescence.
	80	<u>SILTSTONE</u> : Medium grey, medium brown, very argillaceous, common coaly fragments, common carbonaceous microlaminations, trace disseminated pyrite, slightly arenaceous in part, trace biotite, moderately hard, blocky to subfissile.
2275	30	<u>SANDSTONE</u> : Predominantly as above, becomes predominantly coarse, common milky quartz, loose, no fluorescence.
	70	<u>SILTSTONE</u> : As above.

<u>Depth (mMD)</u>	<u>%</u>	<u>Description</u>
2280	10	<u>SANDSTONE</u> : As above.
	70	<u>SILTSTONE</u> : As above.
	20	<u>COAL</u> : Black, brown black, argillaceous in part, trace disseminated pyrite, dull lustre, becomes very argillaceous in part grades to carbonaceous claystone in part, brittle, blocky to subfissile.
2285	20	<u>SANDSTONE</u> : Predominantly as above, becomes medium to coarse, common kaolinitic matrix, no fluorescence.
	80	<u>SILTSTONE</u> : As above.
2290	10	<u>SANDSTONE</u> : Predominantly as above, common kaolinitic matrix, trace nodular pyrite, no fluorescence.
	90	<u>SILTSTONE</u> : Predominantly as above, common coaly fragment.
2295	10	<u>SANDSTONE</u> : Predominantly as above, becomes coarse, trace siliceous cement, common kaolinitic matrix, trace nodular pyrite, trace altered feldspar, poor porosity, no fluorescence.
	90	<u>SILTSTONE</u> : As above.
2300	40	<u>SANDSTONE</u> : Clear to translucent, frosted, medium to coarse, occasionally very coarse, subangular to subrounded, poor to moderate sorting, common kaolinitic matrix, trace nodular pyrite, common milky quartz, trace lithic fragments, loose, fair to good porosity, no fluorescence.
	60	<u>SILTSTONE</u> : Olive grey, grey brown in part, very argillaceous, slightly calcareous in part, common carbonaceous fragments/microlaminations, common lithic fragments, trace biotite, moderately hard, blocky to subfissile.
2305	10	<u>SANDSTONE</u> : As above.
	90	<u>SILTSTONE</u> : As above.
2310	20	<u>SANDSTONE</u> : Clear to translucent, frosted, medium, occasionally coarse, angular to subangular, poor to moderate sorting, strong siliceous cement, locally common kaolinitic matrix, trace quartz over growths, trace nodular pyrite, poor to fair porosity, no fluorescence.
	80	<u>SILTSTONE</u> : Light to medium grey, olive grey, brown grey in part very argillaceous, trace carbonaceous fragments, trace lithic fragments, micromicaceous, moderately hard to hard, blocky.
2315	30	<u>SANDSTONE</u> : As above
	70	<u>SILTSTONE</u> : As above.
2318TD	30	<u>SANDSTONE</u> : As above
	70	<u>SILTSTONE</u> : As above.

APPENDIX 2

**APPENDIX 2**

**Moonfish-2**

**Core Descriptions**

<b>CORE DESCRIPTIONS</b>
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Moonfish-2

<u>Core No.</u>	#1		<u>Well</u>	Moonfish #2
<u>Interval Cored</u>	1801m	1816m		
<u>Cut</u>	15m		<u>Recovered</u>	14m (93.3%)
<u>Bit Type</u>	RC412		<u>Bit Size</u>	12¼"
<u>Described by</u>	Greg Clota		<u>Date</u>	29/12/1994
<u>Core No.</u>	#2		<u>Well</u>	Moonfish #2
<u>Interval Cored</u>	1816m	1834m		
<u>Cut</u>	18m		<u>Recovered</u>	18m (100%)
<u>Bit Type</u>	RC412		<u>Bit Size</u>	12¼"
<u>Described by</u>	Greg Clota		<u>Date</u>	30/12/1994
<u>Core No.</u>	#3		<u>Well</u>	Moonfish #2
<u>Interval Cored</u>	1834m	1852m		
<u>Cut</u>	18m		<u>Recovered</u>	17.3m (96%)
<u>Bit Type</u>	RC412		<u>Bit Size</u>	12¼"
<u>Described by</u>	Greg Clota		<u>Date</u>	31/12/1994



## ESSO AUSTRALIA LTD CORE DESCRIPTION

CORE No.:	1	WELL:	Moonfish-2
Interval cored:	1801-1816m	Recovered:	14m (93.3%)
Cut:	15m	Bit size:	12 1/4"
Bit type:	RC412	Date:	29/12/94
Described by:	Greg Clota		

Interval	Depth & ROP	Shows	Descriptive Lithology
(m)	(m/hr)	% Fluor	
1801	20	0	1801 SANDSTONE: Pale to light grey, fine to predominantly medium, subangular to subrounded, moderate to good sorting, weak calcareous cement, slightly silty matrix, common smoky quartz, trace rock fragments, friable, fair porosity. Fluorescence: 20% dull pale yellow patchy fluorescence, fast streaming cut, moderate ring residue. Weak petroliferous odour.
1802	10	0	1802 SANDSTONE: Light grey, fine to medium, angular to subrounded, moderate sorting, common silty/argillaceous matrix, trace rose quartz, common milky/smoky quartz, trace carbonaceous fragments, trace altered feldspar, trace rock fragments, moderately hard, poor porosity. Fluorescence: 40% Dull to moderately bright pale yellow fluorescence, moderate fast streaming cut, moderate ring residue. Weak petroliferous odour.
1803			1803 SANDSTONE: Off white to light grey, medium to coarse, angular to subrounded, moderate sorting, weak siliceous cement, common milky/smoky quartz, trace rock fragments, moderately hard, fair porosity. Fluorescence: 40% moderately bright patchy pale yellow fluorescence, instant cut, moderate ring residue. Weak petroliferous odour.
1804			1804 SANDSTONE: Light grey, coarse, subangular to subrounded, moderate to good sorting, trace silty matrix, common rock fragments, trace smoky quartz, friable, good porosity. Fluorescence: 100% bright pale yellow solid fluorescence, instant cut, thick ring residue. Moderate petroliferous odour.
1805			1805 SANDSTONE: Light brown, light grey, medium to coarse, subangular to subrounded, poor to moderate sorting, weak siliceous cement, common rock fragments, friable, fair to good porosity. Fluorescence: 100% as above. Moderate petroliferous odour.
1806			1805.9 SANDSTONE: As above. Fluorescence: 100% as above. Moderate petroliferous odour.
1807			1807 SANDSTONE: Light grey, fine to medium, subangular to subrounded, good sorting, moderate siliceous cement, trace rock fragments, trace carbonaceous specks, trace quartz overgrowths, moderately hard, fair porosity. Fluorescence: 80% moderately bright to bright pale yellow fluorescence, fast streaming cut, moderately thick ring residue. Moderate petroliferous odour.
1808			1808 SANDSTONE: Predominantly as above, becomes medium, trace altered feldspar. Fluorescence: 80% as above. Moderate petroliferous odour.
1809			1809 SANDSTONE: Light grey brown, medium to coarse, angular to subrounded, poor sorting, weak siliceous cement, silty/argillaceous matrix, trace carbonaceous fragments, trace rock fragments, moderately hard, fair porosity. Fluorescence: 100% bright pale yellow solid fluorescence, fast streaming cut, thick ring residue. Moderate petroliferous odour.
1810			



## ESSO AUSTRALIA LTD CORE DESCRIPTION

CORE No.:	1	WELL:	Moonfish-2
Interval cored:	1801-1816m	Recovered:	14m (93.3%)
Cut:	15m	Bit size:	12 1/4"
Bit type:	RC412	Date:	29/12/94
Described by:	Greg Clota		

Interval	Depth & ROP	Shows	Descriptive Lithology
(m)	(m/hr)	% Fluor	
1810 20 10 0		100 0	
1811	[Grid]	[Fluor Scale]	1810 SANDSTONE: Light grey, fine to coarse, subangular to subrounded. poor sorting. weak siliceous cement, trace argillaceous/silty matrix. trace rock fragments. common milky/smoky quartz, moderately hard, fair porosity. Fluorescence: 80% moderately bright patchy to solid pale yellow fluorescence. fast streaming cut. moderately thick ring residue. Moderate petroliferous odour.
1812	[Grid]	[Fluor Scale]	1811 SANDSTONE: Light grey brown, fine to medium, subangular to subrounded. moderate to good sorting. common argillaceous matrix. common smoky quartz, trace lithic fragments, slightly chloritic in part. moderately hard, poor porosity. Fluorescence: 100% even dull-moderately bright pale yellow fluorescence. fast streaming cut, moderate ring residue. Weak petroliferous odour.
1813	[Grid]	[Fluor Scale]	1812 SANDSTONE: Light brown, medium to predominantly coarse, angular to subangular, mod. sorting, moderate siliceous cement. trace quartz overgrowths. trace smoky quartz, trace rock fragments. moderately hard. fair porosity. Fluorescence: 100% bright pale yellow solid fluorescence. fast to instant cut, thick ring residue. Moderate petroliferous odour.
1814	[Grid]	[Fluor Scale]	1813 SANDSTONE: Light brown, coarse to very coarse. subangular to subrounded. moderate sorting, very weak siliceous cement. trace rock fragments. common milky quartz. friable, good porosity. Fluorescence: 100% bright pale yellow solid fluorescence. instant cut, thick ring residue. Strong petroliferous odour.
1815	[Grid]	[Fluor Scale]	1814 COAL: Black, subbituminous, trace disseminated pyrite, dull lustre, subconchoidal fracture, hard to brittle, massive.
1816	[Grid]	[Fluor Scale]	1815 SILICEOUS CLAYSTONE: Dark brown, strong siliceous cement. trace coal fragments, conchoidal fracture, dense, very hard, massive, flinty.
1817	[Grid]	[Fluor Scale]	*NOTE* 1m Lost core has been assigned to bottom of cored interval by convention. However from coring rate and recovered core it appears coal and silcast are at bottom. Missing core possibly washed from top of cored interval.
1818	[Grid]	[Fluor Scale]	Core Barrel jammed off at 1816m.
1819	[Grid]	[Fluor Scale]	
1820	[Grid]	[Fluor Scale]	





## ESSO AUSTRALIA LTD CORE DESCRIPTION

CORE No.:	2	WELL:	Moonfish-2
Interval cored:	1816-1834m	Recovered:	18m (100%)
Cut:	18m	Bit size:	12 1/4"
Bit type:	RC412	Date:	30/12/94
Described by:	Greg Clota		

Interval	Depth & ROP	Shows	Descriptive Lithology
(m)	(m/hr)	% Fluor	
1816	168 4 2 1 0	100 0	
			1816 CLAYSTONE/SHALE: Dark brown, moderately to very siliceous, trace coal flecks, slicken sides, hard, massive to fissile in part, flinty.
1817			1817 CLAYSTONE/SHALE: Medium brown, olive grey, slightly silty, slightly to moderately siliceous, moderately hard, subfissile to fissile.
1818			1818 SHALE: Olive grey, slightly siliceous, trace carbonaceous flecks, slightly micromicaceous, moderately hard to hard, subfissile to fissile
1819			1819 SANDSTONE: Light grey, very fine to fine, subangular to subrounded, good sorting, strong siliceous cement, trace disseminated pyrite, trace glauconite, trace rock fragments, moderately hard to hard, tight, no fluorescence.
1820			1820 SANDSTONE: Light grey, very fine to fine, subangular to subrounded, good sorting, strong siliceous cement, trace carbonaceous fragments, trace muscovite, trace lithic fragments, hard, tight, no fluorescence.
1821			1821 SILTSTONE: Medium grey, grey brown, very argillaceous, slightly to moderately arenaceous, trace carbonaceous fragments/microlaminations, micromicaceous, hard, subfissile.
1822			1822 SILTSTONE: As above.
1823			1823 SILTSTONE: As above.
1824			1824 SILTSTONE: Predominantly as above, becomes very arenaceous, common lithic fragments.
1825			1825 SANDSTONE: Light to medium grey, fine to medium, subangular to subrounded, good sorting, trace calcareous cement, moderately argillaceous matrix, trace altered feldspar, trace lithic fragments, moderately hard, very poor to poor porosity. Fluorescence: 5% dull patchy pale yellow fluorescence, fast weak cut, thin ring residue.
1826			



## ESSO AUSTRALIA LTD CORE DESCRIPTION

**CORE No.:** 2  
**Interval cored:** 1816-1834m  
**Cut:** 18m  
**Bit type:** RC412  
**Described by:** Greg Clota

**WELL:** Moonfish-2  
**Recovered:** 18m (100%)  
**Bit size:** 12 1/4"  
**Date:** 30/12/94

Interval	Depth & ROP	Shows	Descriptive Lithology
	(m) (m/hr)	% Fluor	
1826	168 4 2 1 0	100 0	1826 SANDSTONE: Light grey, fine to predominantly medium. subangular to subrounded, good sorting, trace siliceous cement, trace kaolinitic matrix, trace milky/smoky quartz, trace chlorite, moderately hard, poor porosity. Fluorescence: Trace very dull patchy to pin point pale yellow fluorescence. weak fast cut, thin ring residue.
1827			1827 SANDSTONE: As above. Fluorescence: Trace as above.
1828			1828 SANDSTONE: Light grey, medium to occasionally coarse, subangular to subrounded, moderate to good sorting, trace siliceous cement, trace to moderate kaolinitic matrix, trace carbonaceous microlaminations, trace lithic fragments, friable, fair porosity. Fluorescence: 20% dull patchy pale yellow fluorescence, weak fast streaming cut, thin ring residue.
1829			1829 SANDSTONE: Light grey, fine, subangular to subrounded, good sorting, strong siliceous cement, trace altered feldspar, trace carbonaceous fragments, trace disseminated pyrite, moderately hard to hard, tight, no fluorescence.
1830			1830 SANDSTONE: Off white, light grey, very fine to fine, subangular, good sorting, abundant kaolinitic matrix, trace carbonaceous microlaminations, trace altered feldspar, moderately hard, poor porosity. Fluorescence: 60% moderately bright pale yellow fluorescence, moderately fast streaming cut, thin ring residue.
1831			1831 SANDSTONE: Light grey, fine to medium, subangular to subrounded, good sorting, moderate siliceous cement, trace carbonaceous fragments, trace nodular pyrite, moderately hard, very poor porosity. Fluorescence: 40% as above.
1832			1832 SANDSTONE: Light grey, fine to predominantly medium, subangular to subrounded, moderate to good sorting, moderate siliceous cement, trace argillaceous matrix, trace nodular pyrite, trace rock fragments, trace altered feldspar, trace smoky quartz, moderately hard to friable, poor porosity. Fluorescence: 40% moderately bright to patchy bright pale yellow fluorescence, moderately fast streaming to instant cut, moderate ring residue.
1834			1833 CARBONACEOUS SILTSTONE: Dark grey, grey black, very argillaceous, slightly coaly in part, trace arenaceous microlaminations, moderately hard, subfissile.



## ESSO AUSTRALIA LTD CORE DESCRIPTION

CORE No.:	3	WELL:	Moonfish-2
Interval cored:	1834-1852m	Recovered:	17.3m(96%)
Cut:	.18m	Bit size:	12 1/4"
Bit type:	RC412	Date:	31/12/94
Described by:	Greg Clota		

Interval	Depth & ROP	Shows	Descriptive Lithology
	(m) (m/hr)	% Fluor	
1834	20 5 0 5 0	100 0	1834 SANDSTONE: Light grey, fine to occasionally medium, subangular to subrounded, moderate to good sorting, trace kaolinitic matrix, trace smoky quartz, trace lithic fragments, friable, fair porosity. Fluorescence: 60% moderately bright pale yellow patchy fluorescence, moderately fast streaming cut, thin to moderate ring residue. Weak petroliferous odour.
1835			1835 SANDSTONE: Light grey, off white to pale brown, medium to coarse, angular to subrounded, moderate to good sorting, trace kaolinitic matrix, trace to common coal fragments and microlaminations, trace smoky quartz, friable, fair to good porosity. Fluorescence: 20% dull to patchy moderately bright pale yellow fluorescence, instant weak cut, thin ring residue.
1836			1836 COAL: Black, bituminous, vitreous lustre in part, subconchoidal fracture, hard, brittle, massive.
1837			1837 COAL: As above.
1838			1838 COAL: Predominantly as above, trace medium to coarse quartz grains.
1839			1839 CLAYSTONE: Medium brown grey, olive grey, slightly siliceous cement, slightly micromicaceous, trace coal fragments, hard, massive to subfissile.
1840			1840 CLAYSTONE: As above.
1841			1841 CLAYSTONE: Predominantly as above, slightly silty in part, micromicaceous.
1842			1841.75 CLAYSTONE: Predominantly as above, slightly silty, moderately siliceous cement, moderately micromicaceous.
1843			1843 CLAYSTONE: Predominantly as above, trace carbonaceous fragments.
1844			



## ESSO AUSTRALIA LTD CORE DESCRIPTION

CORE No.:	3	WELL:	Moonfish-2
Interval cored:	1834-1852m	Recovered:	17.3m (96%)
Cut:	.18m	Bit size:	12 1/4"
Bit type:	RC412	Date:	31/12/94
Described by:	Greg Clota		

Interval	Depth & ROP	Shows	Descriptive Lithology
	(m)	(m/hr)	% Fluor
1844	20 5 0 5 0	100 0	1844 CLAYSTONE: Predominantly as above, trace carbonaceous fragments and microlaminations.
1845			1845 CLAYSTONE: Medium to dark grey, olive grey, moderately to very silty, slightly arenaceous, slightly siliceous, moderately carbonaceous, micromicaceous, hard, massive to subfissile.
1846			1846 SANDSTONE: Off white to light grey, medium to predominantly coarse, subangular to subrounded, moderate to good sorting, moderate silty/kaolinitic matrix, common smoky quartz, trace rock fragments, friable, good porosity, no fluorescence.
1847			1847 SANDSTONE: Off white to light grey, coarse to very coarse, angular to subangular, poor sorting, trace siliceous cement, trace kaolinitic matrix, common milky/smoky quartz, trace coal fragments, friable, good porosity, no fluorescence.
1848			1848 SANDSTONE: Off white to light grey, coarse, angular to subrounded, moderate sorting, silty matrix, trace coal fragments, common milky quartz, trace rock fragments, friable to moderately hard, fair porosity, no fluorescence.
1849			1849 SANDSTONE: Off white to light grey, medium to coarse, subangular to subrounded, moderate to good sorting, slight siliceous cement, common nodular pyrite, trace granular milky quartz, trace smoky quartz, friable to moderately hard, fair porosity. Fluorescence: Trace dull patchy yellow green fluorescence, very weak instant cut, trace to nil ring residue.
1850			1850 SANDSTONE: Light grey to light brown grey, medium, subangular to subrounded, good sorting, common silty matrix, trace kaolinitic matrix, trace carbonaceous fragments, trace smoky/milky quartz, friable to moderately hard, fair porosity. Fluorescence: 80% moderately bright to patchy bright pale yellow fluorescence, instant to fast streaming cut, moderate ring residue. Faint petroliferous odour.
1851			1851 SANDSTONE: Light brown, fine to medium, occasionally coarse, subangular to subrounded, poor to moderate sorting, trace siliceous cement, trace kaolinitic matrix, trace smoky quartz, friable to moderately hard, fair to good porosity. Fluorescence: 100% bright pale yellow solid fluorescence, instant cut, thick ring residue, faint petroliferous odour.
1852			

**APPENDIX 3**

APPENDIX 3

**APPENDIX 3**

**Moonfish-2**

**Sidewall Core Descriptions**

## Moonfish-2 Sidewall Core Descriptions

No.	Depth (m)	Rec. (mm)	Bought /Rejected	Description
1	2272	40	B	<u>SILTSTONE</u> : Medium to dark grey, slightly argillaceous, very arenaceous, common carbonaceous fragments, slightly micromicaceous, hard, massive.
2	2265	25	B	<u>CLAYSTONE</u> : Dark brown grey, slightly silty, very carbonaceous, slightly micromicaceous, trace fine nodular pyrite, moderately hard, subfissile to fissile.
3	2257	20	B	<u>SANDSTONE</u> : Off white to white, fine to predominantly medium, subangular to subrounded, moderate to good sorting, common to abundant kaolinitic matrix, trace nodular pyrite, slightly chloritic in part, trace carbonaceous fragments, trace feldspar, friable to moderately hard, very poor to poor porosity. Fluorescence: 10% dull blue white patchy fluorescence, very weak crush cut, nil to trace ring residue.
4	2204	30	B	<u>CLAYSTONE</u> : Medium grey, olive grey, trace silt in part, moderately carbonaceous in part, micromicaceous, waxy texture, moderately hard to hard, massive to subfissile.
5	2184	10	B	<u>SANDSTONE</u> : Off white, light grey, fine, subangular to subrounded, good sorting, weak siliceous cement, abundant argillaceous/silty matrix, trace disseminated pyrite, friable to firm, very poor porosity, no fluorescence.
6	2147	15	B	<u>SANDSTONE</u> : Light brown, medium, subangular to subrounded, good sorting, trace siliceous cement, rare kaolinitic matrix, trace smoky quartz, trace rock fragments, friable, fair to good porosity. Fluorescence: 100% moderately bright to patchy bright pale yellow fluorescence, fast to instant cut, moderate to thin ring residue.
7	2121	35	B	<u>SHALE</u> : Dark brown, brown black, slightly siliceous in part, very carbonaceous, slightly micromicaceous, moderately hard, subfissile to fissile.
8	2107	20	B	<u>WEATHERED VOLCANICS</u> : Buff, light brown, coarse grains in fine groundmass, common coarse chlorite, calcareous, trace pyritic inclusions, altered, firm, massive.
9	2104.5	10	B	<u>VOLCANICS</u> : Light brown, off white, siliceous, cryptocrystalline, trace pyritic inclusions, common feldspar, slightly micaceous, very hard, massive.
10	2092	35	B	<u>CLAYSTONE</u> : Medium grey, olive grey, slightly silty, common disseminated pyrite in part, very carbonaceous, slightly micromicaceous, firm to plastic in part, massive to subfissile.
11	2030	15	B	<u>SANDSTONE</u> : Light brown grey, fine to occasionally very fine, subangular, good sorting, weak calcareous cement, trace siliceous cement, common argillaceous/silty matrix, trace carbonaceous fragments, trace lithic fragments, hard to moderately hard, poor porosity. Fluorescence: 30% moderately bright to predominantly dull pale yellow fluorescence, weak instant cut, thin spotty ring residue.
12	2026	20	B	<u>SANDSTONE</u> : Medium brown, fine to very coarse, angular to subrounded, poor sorting, weak siliceous cement, trace silty matrix, trace quartz overgrowths, common milky quartz, friable to crumbly, good porosity. Fluorescence: 100% bright pale yellow solid fluorescence, moderate to strong instant cut, moderately thick ring residue. Moderate petroliferous odour and stain.

<u>No.</u>	<u>Depth</u> (m)	<u>Rec.</u> (mm)	<u>Bought</u> <u>/Rejected</u>	<u>Description</u>
13	1995	35	B	<u>CLAYSTONE</u> : Medium dark brown, trace arenaceous inclusions, slightly carbonaceous, carbonaceous microlaminations, slightly micromicaceous, firm, massive to subfissile.
14	1967	30	B	<u>SILTSTONE</u> : Olive grey, grey brown, very argillaceous common kaolinite, slightly siliceous, trace carbonaceous fragments and microlaminations, trace mica, firm, massive to subfissile.
15	1954	25	B	<u>SILTSTONE</u> : Medium to dark brown, very argillaceous, micromicaceous, common very fine quartz sand, trace carbonaceous fragments, moderately hard, massive to blocky.
16	1915	25	B	<u>CLAYSTONE</u> : Light grey, slightly silty, common kaolinite, trace carbonaceous dendrites and microlaminations, common arenaceous inclusions, trace lithic fragments, firm, massive.
17	1889	20	B	<u>SANDSTONE</u> : Off white, light grey, fine to medium, subangular to subrounded, moderate sorting, common kaolinitic/silty matrix, trace muscovite (from LCM pill?), trace lithic and carbonaceous fragments, trace smoky quartz, friable to moderately hard, poor to fair porosity, no fluorescence.
18	1871	35	B	<u>CLAYSTONE</u> : Light brown grey medium grey, slightly silty in part, slightly siliceous, trace carbonaceous fragments, moderately hard, massive to subfissile.
19	1790	20	B	<u>CLAYSTONE</u> : Light to medium grey, slightly silty, slightly micromicaceous, waxy texture, soft to firm, massive.
20	1782	20	B	<u>SILTSTONE</u> : Medium brown, very carbonaceous, slightly micromicaceous, common coaly microlaminations, common white arenaceous inclusions and laminations, moderately hard, massive to subfissile.
21	1775	25	B	<u>CLAYSTONE</u> : Medium to dark brown, slightly silty, slightly micromicaceous, trace carbonaceous fragments, firm, subfissile.
22	1758	20	B	<u>SANDSTONE</u> : Off white, predominantly medium, occasionally coarse to very coarse, angular to subrounded, moderate to poor sorting, common silty matrix, trace smoky quartz, trace carbonaceous specks, friable, good porosity. Fluorescence: trace dull blue white fluorescence, very weak slow streaming cut, trace to nil ring residue.
23	1742.5	35	B	<u>SANDSTONE</u> : Off white, very fine to predominantly fine, subangular, good sorting, abundant kaolinitic matrix, trace biotite, trace carbonaceous specks, firm to friable, very poor porosity. Fluorescence: Trace very dull blue white fluorescence, no cut, no stain.
24	1677.5	45	B	<u>CLAYSTONE</u> : Light to medium grey, micromicaceous, waxy texture, firm to plastic, subfissile.
25	1660	30	B	<u>SANDSTONE</u> : Light grey, light grey brown, fine, subangular, good sorting, common argillaceous matrix and microlaminations, common kaolinite in part, micromicaceous, trace coaly fragments, moderately hard to hard in part, very poor porosity, no fluorescence.



<u>No.</u>	<u>Depth</u> <u>(m)</u>	<u>Rec.</u> <u>(mm)</u>	<u>Bought</u> <u>/Rejected</u>	<u>Description</u>
26	1623	25	B	<u>SILTSTONE</u> : Medium grey, grey brown, slightly argillaceous, common arenaceous inclusions grades to arenaceous siltstone, common carbonaceous microlaminations, trace lithic fragments, common muscovite, moderately hard, massive.
27	1614	35	b	<u>SANDSTONE</u> : Off white to light grey, fine, subangular, moderate to good sorting, moderate calcareous cement in part, common silty/argillaceous matrix, common dark brown argillaceous inclusions, trace lithic fragments, moderately hard, very poor to nil porosity, no fluorescence.
28	1596.5	20	B	<u>SANDSTONE</u> : Off white, light grey, fine, subangular, good sorting, abundant kaolinitic matrix, trace argillaceous microlaminations, trace lithic fragments, trace smoky quartz, trace muscovite, tight, no fluorescence.
29	1568	35	B	<u>CLAYSTONE</u> : Dark grey, dark green grey, moderately calcareous cement, common arenaceous inclusions, common very coarse quartz float, locally common very fine glauconite, trace limonite stained clay, firm, massive.
30	1564	30	B	<u>CLAYSTONE</u> : Predominantly as above, grades to siltstone, becomes slightly arenaceous.

APPENDIX 4

**APPENDIX 4**

**Moonfish-2**

**RFT Results**

### RFT PRESSURE DATA

WELL: Moonfish-2  
DATE: 17/01/95

GEOLOGIST-ENGINEER: Paul S Kwon

RFT No. RUN-SEAT	DEPTH		INITIAL HYDROSTATIC HP/RFT GAUGE		TIME SET	MINIMUM FLOWING PRESSURE psi (PRETEST)	FORMATION PRESSURE HP/RFT GAUGE		TEMP deg C	TIME RETRACT	FINAL HYDROSTATIC HP/RFT GAUGE		COMMENTS (INCLUDE PROBE TYPES)
	m MDRT	m TVDSS RT = 25	psia	psig			ppg	psia			psig	ppg	
1/1 PT	1646.00	1566.68	2854.60		0825		2199.25		62.3	0829	2854.60		good test - tool stuck in hole
2/1 PT	1813.50	1722.70	3122.50		1837	2359.74	2422.90		62.1	1846	3119.70		good test

PT=PRETEST  
SPT=SAMPLE

L=LONG NOSE PROBE  
M=MARTINEAU PROBE

## RFT PRESSURE DATA

WELL: Moonfish-2  
DATE: 17/01/95

GEOLOGIST-ENGINEER: Paul S Kwon

RFT No. RUN-SEAT	DEPTH		INITIAL HYDROSTATIC HP/RFT GAUGE		TIME SET	MINIMUM FLOWING PRESSURE psi (PRETEST)	FORMATION PRESSURE HP/RFT GAUGE		TEMP deg C	TIME RETRACT	FINAL HYDROSTATIC HP/RFT GAUGE		COMMENTS (INCLUDE PROBE TYPES)
	m MDRT	m TVDSS RT = 25	psia	psig			ppg	psia			psig	ppg	
3/1 PT	1752.00	1665.03	3019.20		0140	2345.90	2348.20		72.3	0142	3019.20		Good
3/2 PT	1763.00	1675.29	3037.90		0148	2306.10	2350.20		72.1	0150	3037.90		Good
3/3 PT	1802.30	1712.15	3103.30		0158	2406.40	<b>2416.00</b>		74.2	0201	<b>3103.00</b>		Good
3/4 PT	1805.50	1715.16	3108.10		0206	2412.40	2416.30		74.2	0209	3108.10		Good
3/5 PT	1808.30	1717.80	3112.70		0214	2413.70	2418.20		74.3	0216	3112.70		Good
3/6 PT	1813.50	1722.70	3121.80		0222	2288.30	2423.70		74.3	0225	3121.80		Good
3/7 PT	1810.50	1719.87	3116.80		0231	2305.30	2420.90		74.3	0234	3116.80		Good
3/8 PT	1828.50	1736.84	3147.20		0240	2330.00	2438.80		74.7	0242	<b>3147.10</b>		Good
3/9 PT	1853.50	1760.49	3188.60		0251	2468.10	2472.20		74.3	0254	<b>3188.60</b>		Good
3/10 PT	2025.50	1958.52	3487.10		0316	2599.70	2747.50		80.0	0318	<b>3486.10</b>		Good
3/11 PT	2138.00	2039.63	3679.70		0353	2879.40	2892.60		85.4	0356	<b>3679.40</b>		Good
3/12 PT	2143.60	2045.21	3690.70		0402	2796.30	2901.40		85.8	0407	<b>3692.00</b>		Good
3/13 PT	2140.20	2041.82	3685.70		0413	2061.90	2897.70		85.6	0415	3685.70		Good
3/14 PT	2147.00	2048.60	3697.80		0422	2904.40	2905.50		85.9	0424	<b>3697.60</b>		Good
3/15 PT	2188.00	2089.52	3771.50		0432	2936.00	2964.40		86.4	0435	<b>3771.00</b>		Good
3/16 SPT	1814.50	1723.60	3122.70		0517	2422.30	<b>2426.50</b>			0531	<b>3122.70</b>		6 gal - did not wait for full build

PT=PRETEST  
SPT=SAMPLE

L=LONG NOSE PROBE  
M=MARTINEAU PROBE

## RFT PRESSURE DATA

WELL: Moonfish-2  
DATE: 17/01/95

PAGE 3 OF 4

GEOLOGIST-ENGINEER: Paul S Kwon

RFT No.	DEPTH		INITIAL HYDROSTATIC HP/RFT GAUGE		TIME SET	MINIMUM FLOWING PRESSURE psi (PRETEST)	FORMATION PRESSURE HP/RFT GAUGE		TEMP deg C	TIME RETRACT	FINAL HYDROSTATIC HP/RFT GAUGE		COMMENTS (INCLUDE PROBE TYPES)
	RUN-SEAT RFT TYPE	m MDRT	m TVDSS RT = 25	psia			psig	psia			psig	psia	
4/1		2138.00	2039.60	3677.20	1043	2866.5	2894.10			1050	3677.10		
	SPT												
5/1		1815.30	1724.40	2121.70	0759	2422.2	2424.50		74.4	0819	3121.90		
	SPT												
6/1		1748.00	1661.30	3008.20	1232	2340.6	2347.40			1236	3008.60		
	SPT												

PT=PRETEST  
SPT=SAMPLE

L=LONG NOSE PROBE  
M=MARTINEAU PROBE

## RFT PRESSURE DATA

WELL: Moonfish-2  
DATE: 17/01/95

GEOLOGIST-ENGINEER: Paul S Kwon

RFT No. RUN-SEAT	DEPTH		INITIAL HYDROSTATIC HP/RFT GAUGE		TIME SET	MINIMUM FLOWING PRESSURE psi (PRETEST)	FORMATION PRESSURE HP/RFT GAUGE		TEMP deg C	TIME RETRACT	FINAL HYDROSTATIC HP/RFT GAUGE		COMMENTS (INCLUDE PROBE TYPES)
	m MDRT	m TVDSS RT = 25	psia	psig			ppg	psia			psig	ppg	
7/1 SPT	1805.30	1715.00	3101.20		1753	2414.7	2416.50			1802	3101.30		good test
7/2 SPT	1808.00	1717.50	3105.30		1808	2350.5	2417.60				3105.30		good test
7/3 PT	1802.30	1717.20	3095.80		1835	2391.9	2415.30			1837	3095.70		good test
7/4 PT	1849.00	1756.21	3174.30		1844	2461.9	2470.90			1847	3174.40		good test
7/5 PT	1852.70	1759.71	3180.70		1851	2468.6	2471.60			1853	3181.00		good test
7/7 PT	1859.00	1765.70	3190.20		1908	2420.8	2478.30			1912	3191.20		good test
7/8 PT	1918.00	1822.90	3293.30		1928	2529.3	2554.10			1932	3292.50		good test
7/9 PT	2040.50	1942.60	3503.90		1957	2737.4	2763.30			1959	3503.40		good test

PT=PRETEST  
SPT=SAMPLE

L=LONG NOSE PROBE  
M=MARTINEAU PROBE

**APPENDIX 5**

APPENDIX 5



**APPENDIX 5**

**Moonfish-2**

**Velocity Survey Report**

**APPENDIX 5**

**Moonfish-2**

**Velocity Survey Report**

**Will be forwarded separately at a later date**

APPENDIX 6

**APPENDIX 6**

**Moonfish-2**

**Deviation Survey Report**

# Halliburton Australia Pty Ltd - Drilling Systems

## Survey Report

Date: 6/02/95  
 Time: 6:57 pm  
 Wellpath ID: mf2  
 Date Created: 29/12/94  
 Last Revision: 6/02/95

Calculated using the Minimum Curvature Method  
 Computed using WIN-CADDS REV2.1.B  
 Vertical Section Plane: 30.16 deg.

Survey Reference: STRUCTURE ORIGIN  
 Reference World Coordinates: Lat. 38.08.58 S - Long. 148.01.19 E  
 Reference GRID System: Australian (UTM) Zone: 55, Cent. Merid: 147.00.00 E  
 Reference GRID Coordinates: (m): 5777104.94 N 589541.59 E  
 North Aligned To: GRID NORTH  
 Offset, Reference To WellHead: (m): 0.00 N 0.00 E 0.00 TVD  
 Vertical Section Reference: STRUCTURE ORIGIN  
 Closure Reference: STRUCTURE ORIGIN  
 TVD Reference: STRUCTURE ORIGIN

ESSO AUSTRALIA LTD  
 MOONFISH #2  
 BASS STRAIT  
 VICTORIA

Measured Depth (m)	Incl (deg.)	Drift Dir. (deg.)	TVD (m)	Subsea Depth (m)	TOTAL Rectangular Offsets (m)		GRID Coordinates (m)		Vertical Section (m)	Build Rate (dg/30m)	Walk Rate (dg/30m)	DLS (dg/30m)	Cum. Dogleg (deg)	Survey Tool
					Northing	Easting	Northing	Easting						
TIE IN														
0.00	0.00	0.00	0.00	-30.78	0.00 N	0.00 E	5777104.94	589541.59	0.00	0.00	0.00	0.00	0.0	NO ERROR
Mud Line - Assumed vertical to here														
84.60	0.00	149.00	84.60	53.82	0.00 N	0.00 E	5777104.94	589541.59	0.00	0.00	0.00	0.00	0.0	NO ERROR
309.00	0.50	149.00	309.00	278.22	0.84 S	0.50 E	5777104.10	589542.09	-0.47	0.07	0.00	0.07	0.5	MSS
593.00	0.50	74.00	592.99	562.21	1.56 S	2.33 E	5777103.38	589543.92	-0.18	0.00	-7.92	0.06	1.1	MSS
821.00	0.50	200.00	820.98	790.20	2.22 S	2.95 E	5777102.72	589544.54	-0.44	0.00	16.58	0.12	2.0	MSS
858.00	0.60	174.70	857.98	827.20	2.57 S	2.91 E	5777102.37	589544.50	-0.75	0.08	-20.51	0.21	2.3	MWD
888.00	1.40	81.20	887.98	857.20	2.67 S	3.29 E	5777102.27	589544.88	-0.65	0.80	-93.50	1.56	3.8	MWD
917.00	5.90	52.70	916.92	886.14	1.71 S	4.83 E	5777103.23	589546.42	0.95	4.66	-29.48	4.88	8.5	MWD
945.00	8.40	46.40	944.70	913.92	0.58 N	7.45 E	5777105.52	589549.04	4.24	2.68	-6.75	2.80	11.1	MWD
974.00	9.80	40.40	973.33	942.55	3.92 N	10.59 E	5777108.86	589552.18	8.70	1.45	-6.21	1.75	12.8	MWD
1003.00	11.50	35.10	1001.83	971.05	8.16 N	13.85 E	5777113.10	589555.44	14.01	1.76	-5.48	2.03	14.8	MWD
1032.00	13.70	32.30	1030.13	999.35	13.43 N	17.35 E	5777118.37	589558.94	20.33	2.28	-2.90	2.36	17.1	MWD
1058.00	15.70	29.90	1055.28	1024.50	19.08 N	20.74 E	5777124.02	589562.33	26.92	2.31	-2.77	2.41	19.2	MWD
1087.00	17.80	29.90	1083.05	1052.27	26.33 N	24.91 E	5777131.27	589566.50	35.28	2.17	0.00	2.17	21.3	MWD
1116.00	20.00	33.00	1110.48	1079.70	34.33 N	29.82 E	5777139.27	589571.41	44.67	2.28	3.21	2.50	23.7	MWD
Lakes Entrance Formation														
1136.50	21.20	31.77	1129.67	1098.89	40.42 N	33.68 E	5777145.36	589575.27	51.87	1.76	-1.80	1.87	25.0	INTERPOLATE
1145.00	21.70	31.30	1137.58	1106.80	43.07 N	35.31 E	5777148.01	589576.90	54.98	1.76	-1.66	1.87	25.5	MWD

## Halliburton Australia Pty Ltd - Drilling Systems

Page 2  
Date: 6/02/95  
Wellpath ID: mf2

## Survey Report

Measured Depth (m)	Incl (deg.)	Drift Dir. (deg.)	TVD (m)	Subsea Depth (m)	TOTAL Rectangular Offsets (m)		GRID Coordinates Northing (m) Easting (m)		Vertical Section (m)	Build Rate (dg/30m)	Walk Rate (dg/30m)	DLS (dg/30m)	Cum. Dogleg (deg)	Survey Tool
1173.00	22.70	30.60	1163.51	1132.73	52.14 N	40.75 E	5777157.08	589582.34	65.56	1.07	-0.75	1.11	26.5	MWD
1201.00	23.30	27.40	1189.28	1158.50	61.71 N	46.05 E	5777166.65	589587.64	76.49	0.64	-3.43	1.49	27.9	MWD
1230.00	23.40	26.70	1215.91	1185.13	71.95 N	51.27 E	5777176.89	589592.86	87.97	0.10	-0.72	0.31	28.2	MWD
1258.00	23.30	26.70	1241.61	1210.83	81.86 N	56.26 E	5777186.80	589597.85	99.05	-0.11	0.00	0.11	28.3	MWD
1286.00	23.20	26.70	1267.34	1236.56	91.74 N	61.23 E	5777196.68	589602.82	110.08	-0.11	0.00	0.11	28.4	MWD
1315.00	23.00	26.40	1294.01	1263.23	101.91 N	66.31 E	5777206.85	589607.90	121.44	-0.21	-0.31	0.24	28.6	MWD
1344.00	23.10	26.40	1320.70	1289.92	112.09 N	71.36 E	5777217.03	589612.95	132.77	0.10	0.00	0.10	28.7	MWD
1372.00	24.00	28.50	1346.37	1315.59	122.01 N	76.52 E	5777226.95	589618.11	143.94	0.96	2.25	1.32	30.0	MWD
1401.00	24.10	28.50	1372.85	1342.07	132.40 N	82.16 E	5777237.34	589623.75	155.75	0.10	0.00	0.10	30.1	MWD
1429.00	24.10	28.10	1398.41	1367.63	142.46 N	87.58 E	5777247.40	589629.17	167.18	0.00	-0.43	0.17	30.2	MWD
1457.00	23.80	28.10	1424.00	1393.22	152.49 N	92.93 E	5777257.43	589634.52	178.54	-0.32	0.00	0.32	30.5	MWD
1486.00	23.80	28.50	1450.53	1419.75	162.79 N	98.48 E	5777267.73	589640.07	190.23	0.00	0.41	0.17	30.7	MWD
1514.00	23.80	28.10	1476.15	1445.37	172.74 N	103.84 E	5777277.68	589645.43	201.53	0.00	-0.43	0.17	30.9	MWD
1542.00	23.90	28.50	1501.76	1470.98	182.71 N	109.21 E	5777287.65	589650.80	212.84	0.11	0.43	0.20	31.0	MWD
Top of Latrobe														
1558.60	23.96	28.27	1516.93	1486.15	188.63 N	112.41 E	5777293.57	589654.00	219.57	0.11	-0.42	0.20	31.2	INTERPOLATE
1571.00	24.00	28.10	1528.26	1497.48	193.08 N	114.79 E	5777298.02	589656.38	224.61	0.10	-0.41	0.19	31.2	MWD
Top of Coarse Clastics														
1571.30	23.98	28.10	1528.54	1497.76	193.18 N	114.85 E	5777298.12	589656.44	224.73	-2.00	0.00	2.00	31.3	INTERPOLATE
1588.00	23.00	28.10	1543.85	1513.07	199.06 N	117.98 E	5777304.00	589659.57	231.38	-1.76	0.00	1.76	32.2	MWD
1619.00	22.70	27.40	1572.42	1541.64	209.71 N	123.59 E	5777314.65	589665.18	243.41	-0.29	-0.68	0.39	32.6	MWD
1648.00	22.20	26.00	1599.22	1568.44	219.60 N	128.56 E	5777324.54	589670.15	254.46	-0.52	-1.45	0.76	33.4	MWD
1677.00	21.90	26.70	1626.10	1595.32	229.36 N	133.39 E	5777334.30	589674.98	265.33	-0.31	0.72	0.41	33.8	MWD
1704.00	21.80	25.70	1651.16	1620.38	238.37 N	137.83 E	5777343.31	589679.42	275.35	-0.11	-1.11	0.43	34.2	MWD
1728.00	21.40	25.00	1673.48	1642.70	246.36 N	141.61 E	5777351.30	589683.20	284.16	-0.50	-0.88	0.59	34.6	MWD
N-1.9 Coal top														
1729.30	21.40	25.00	1674.69	1643.91	246.79 N	141.81 E	5777351.73	589683.40	284.63	0.00	0.00	0.00	34.6	INTERPOLATE
N-1.9 Mid-Coal Marker														
1732.80	21.38	25.00	1677.95	1647.17	247.94 N	142.35 E	5777352.88	589683.94	285.90	-0.17	0.00	0.17	34.7	INTERPOLATE
N-1.9 Gas Sand top														
1743.00	21.35	25.00	1687.44	1656.66	251.31 N	143.92 E	5777356.25	589685.51	289.60	-0.09	0.00	0.09	34.7	INTERPOLATE
1756.00	21.30	25.00	1699.55	1668.77	255.60 N	145.92 E	5777360.54	589687.51	294.31	-0.12	0.00	0.12	34.7	MWD
1788.00	20.00	24.60	1729.50	1698.72	265.84 N	150.66 E	5777370.78	589692.25	305.54	-1.22	-0.37	1.23	36.0	MWD
M-2 Reservoir top														
1800.80	19.80	24.14	1741.53	1710.75	269.81 N	152.45 E	5777374.75	589694.04	309.88	-0.47	-1.08	0.60	36.3	INTERPOLATE
1826.00	19.40	23.20	1765.27	1734.49	277.55 N	155.85 E	5777382.49	589697.44	318.28	-0.48	-1.12	0.61	36.8	MWD

Halliburton Australia Pty Ltd - Drilling Systems  
Survey Report

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Date: 6/02/95  
Wellpath ID: mf2

Measured Depth (m)	Incl (deg.)	Drift Dir. (deg.)	TVD (m)	Subsea Depth (m)	TOTAL Rectangular Offsets		GRID Coordinates		Vertical Section (m)	Bulld Rate (dg/30m)	Walk Rate (dg/30m)	DLS (dg/30m)	Cum. Dogleg (deg)	Survey Tool
					(m)	(m)	Northing (m)	Easting (m)						
M-2 Coal top														
1838.10	19.10	23.03	1776.70	1745.92	281.22 N	157.42 E	5777386.16	589699.01	322.24	-0.74	-0.42	0.76	37.1	INTERPOLATE
1854.00	18.70	22.80	1791.74	1760.96	285.96 N	159.42 E	5777390.90	589701.01	327.35	-0.75	-0.43	0.77	37.5	MWD
1883.00	15.80	25.30	1819.43	1788.65	293.82 N	162.91 E	5777398.76	589704.50	335.89	-3.00	2.59	3.10	40.5	MWD
1911.00	14.50	26.00	1846.46	1815.68	300.42 N	166.08 E	5777405.36	589707.67	343.19	-1.39	0.75	1.41	41.8	MWD
1939.00	13.40	27.10	1873.63	1842.85	306.46 N	169.09 E	5777411.40	589710.68	349.92	-1.18	1.18	1.21	43.0	MWD
1967.00	11.70	26.40	1900.96	1870.18	311.89 N	171.83 E	5777416.83	589713.42	356.00	-1.82	-0.75	1.83	44.7	MWD
1996.00	10.30	26.70	1929.43	1898.65	316.84 N	174.30 E	5777421.78	589715.89	361.52	-1.45	0.31	1.45	46.1	MWD
2024.00	9.00	29.20	1957.03	1926.25	320.99 N	176.50 E	5777425.93	589718.09	366.21	-1.39	2.68	1.46	47.4	MWD
2052.00	6.80	30.90	1984.77	1953.99	324.32 N	178.42 E	5777429.26	589720.01	370.05	-2.36	1.82	2.37	49.6	MWD
2085.00	4.70	40.80	2017.60	1986.82	327.02 N	180.30 E	5777431.96	589721.89	373.34	-1.91	9.00	2.10	52.0	MWD
Top of Volcanics (Basalt)														
2100.00	4.69	45.66	2032.55	2001.77	327.91 N	181.14 E	5777432.85	589722.73	374.53	-0.02	9.72	0.80	52.4	INTERPOLATE
2110.00	4.70	48.90	2042.51	2011.73	328.47 N	181.75 E	5777433.41	589723.34	375.31	0.03	9.72	0.80	52.6	MWD
Subvolcanics Reservoir top														
2134.00	4.35	54.82	2066.44	2035.66	329.64 N	183.23 E	5777434.58	589724.82	377.07	-0.44	7.40	0.73	53.2	INTERPOLATE
2138.00	4.30	55.90	2070.43	2039.65	329.81 N	183.48 E	5777434.75	589725.07	377.35	-0.38	8.10	0.72	53.3	MWD
2166.00	3.80	61.90	2098.36	2067.58	330.84 N	185.17 E	5777435.78	589726.76	379.08	-0.54	6.43	0.70	54.0	MWD
2193.00	3.30	61.90	2125.31	2094.53	331.62 N	186.64 E	5777436.56	589728.23	380.50	-0.56	0.00	0.56	54.5	MWD
2221.00	3.20	75.20	2153.26	2122.48	332.20 N	188.11 E	5777437.14	589729.70	381.74	-0.11	14.25	0.81	55.2	MWD
2251.00	2.90	83.70	2183.22	2152.44	332.50 N	189.67 E	5777437.44	589731.26	382.78	-0.30	8.50	0.54	55.8	MWD
2278.00	2.80	105.50	2210.19	2179.41	332.40 N	190.99 E	5777437.34	589732.58	383.36	-0.11	24.22	1.20	56.8	MWD
Projection to T.D.														
2318.00	2.80	105.50	2250.14	2219.36	331.88 N	192.87 E	5777436.82	589734.46	383.85	0.00	0.00	0.00	56.8	PROJECTED

# Halliburton Australia Pty Ltd - Drilling Systems

## Survey Report

Date: 6/02/95  
 Time: 7:05 pm  
 Wellpath ID: mf2\_wol  
 Date Created: 29/12/94  
 Last Revision: 6/02/95

Calculated using the Minimum Curvature Method  
 Computed using WIN-CADDS REV2.1.B  
 Vertical Section Plane: 30.16 deg.

Survey Reference: STRUCTURE ORIGIN  
 Reference World Coordinates: Lat. 38.08.58 S - Long. 148.01.19 E  
 Reference GRID System: Australian (UTM) Zone: 55, Cent. Merid: 147.00.00 E  
 Reference GRID Coordinates: (m): 5777104.94 N 589541.59 E  
 North Aligned To: GRID NORTH  
 Offset, Reference To WellHead: (m): 0.00 N 0.00 E 0.00 TVD  
 Vertical Section Reference: STRUCTURE ORIGIN  
 Closure Reference: STRUCTURE ORIGIN  
 TVD Reference: STRUCTURE ORIGIN

ESSO AUSTRALIA LTD  
 MOONFISH #2  
 BASS STRAIT  
 VICTORIA

Measured Depth (m)	Incl (deg.)	Drift Dir. (deg.)	TVD (m)	Subsea Depth (m)	TOTAL Rectangular Offsets (m)		GRID Coordinates (m)		Vertical Section (m)	Build Rate (dg/30m)	Walk Rate (dg/30m)	DLS (dg/30m)	Cum. Dogleg (deg)	Survey Tool
							Northing	Easting						
Mud Line														
0.00	0.00	0.00	0.00	-30.78	0.00 N	0.00 E	5777104.94	589541.59	0.00	0.00	0.00	0.00	0.0	NO ERROR
Mudline - Assumed vertical to here														
84.60	0.00	149.00	84.60	53.82	0.00 N	0.00 E	5777104.94	589541.59	0.00	0.00	0.00	0.00	0.0	NO ERROR
309.00	0.50	149.00	309.00	278.22	0.84 S	0.50 E	5777104.10	589542.09	-0.47	0.07	0.00	0.07	0.5	MSS
593.00	0.50	74.00	592.99	562.21	1.56 S	2.33 E	5777103.38	589543.92	-0.18	0.00	-7.92	0.06	1.1	MSS
821.00	0.50	200.00	820.98	790.20	2.22 S	2.95 E	5777102.72	589544.54	-0.44	0.00	16.58	0.12	2.0	MSS
858.00	0.60	174.70	857.98	827.20	2.57 S	2.91 E	5777102.37	589544.50	-0.75	0.08	-20.51	0.21	2.3	MWD
888.00	1.40	81.20	887.98	857.20	2.67 S	3.29 E	5777102.27	589544.88	-0.65	0.80	-93.50	1.56	3.8	MWD
917.00	5.90	52.70	916.92	886.14	1.71 S	4.83 E	5777103.23	589546.42	0.95	4.66	-29.48	4.88	8.5	MWD
945.00	8.40	46.40	944.70	913.92	0.58 N	7.45 E	5777105.52	589549.04	4.24	2.68	-6.75	2.80	11.1	MWD
974.00	9.80	40.40	973.33	942.55	3.92 N	10.59 E	5777108.86	589552.18	8.70	1.45	-6.21	1.75	12.8	MWD
1003.00	11.50	35.10	1001.83	971.05	8.16 N	13.85 E	5777113.10	589555.44	14.01	1.76	-5.48	2.03	14.8	MWD
1032.00	13.70	32.30	1030.13	999.35	13.43 N	17.35 E	5777118.37	589558.94	20.33	2.28	-2.90	2.36	17.1	MWD
1058.00	15.70	29.90	1055.28	1024.50	19.08 N	20.74 E	5777124.02	589562.33	26.92	2.31	-2.77	2.41	19.2	MWD
1087.00	17.80	29.90	1083.05	1052.27	26.33 N	24.91 E	5777131.27	589566.50	35.28	2.17	0.00	2.17	21.3	MWD
1116.00	20.00	33.00	1110.48	1079.70	34.33 N	29.82 E	5777139.27	589571.41	44.67	2.28	3.21	2.50	23.7	MWD
1145.00	21.70	31.30	1137.58	1106.80	43.07 N	35.31 E	5777148.01	589576.90	54.98	1.76	-1.76	1.87	25.5	MWD
1173.00	22.70	30.60	1163.51	1132.73	52.14 N	40.75 E	5777157.08	589582.34	65.56	1.07	-0.75	1.11	26.5	MWD
1201.00	23.30	27.40	1189.28	1158.50	61.71 N	46.05 E	5777166.65	589587.64	76.49	0.64	-3.43	1.49	27.9	MWD



## Halliburton Australia Pty Ltd - Drilling Systems

## Survey Report

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Date: 6/02/95  
Wellpath ID: mf2\_wol

Measured Depth (m)	Incl (deg.)	Drift Dir. (deg.)	TVD (m)	Subsea Depth (m)	TOTAL		GRID Coordinates		Vertical Section (m)	Bulld Rate (dg/30m)	Walk Rate (dg/30m)	DLS (dg/30m)	Cum. Dogleg (deg)	Survey Tool
					Rectangular (m)	Offsets (m)	Northing (m)	Easting (m)						
1230.00	23.40	26.70	1215.91	1185.13	71.95 N	51.27 E	5777176.89	589592.86	87.97	0.10	-0.72	0.31	28.2	MWD
1258.00	23.30	26.70	1241.61	1210.83	81.86 N	56.26 E	5777186.80	589597.85	99.05	-0.11	0.00	0.11	28.3	MWD
1286.00	23.20	26.70	1267.34	1236.56	91.74 N	61.23 E	5777196.68	589602.82	110.08	-0.11	0.00	0.11	28.4	MWD
1315.00	23.00	26.40	1294.01	1263.23	101.91 N	66.31 E	5777206.85	589607.90	121.44	-0.21	-0.31	0.24	28.6	MWD
1344.00	23.10	26.40	1320.70	1289.92	112.09 N	71.36 E	5777217.03	589612.95	132.77	0.10	0.00	0.10	28.7	MWD
1372.00	24.00	28.50	1346.37	1315.59	122.01 N	76.52 E	5777226.95	589618.11	143.94	0.96	2.25	1.32	30.0	MWD
1401.00	24.10	28.50	1372.85	1342.07	132.40 N	82.16 E	5777237.34	589623.75	155.75	0.10	0.00	0.10	30.1	MWD
1429.00	24.10	28.10	1398.41	1367.63	142.46 N	87.58 E	5777247.40	589629.17	167.18	0.00	-0.43	0.17	30.2	MWD
1457.00	23.80	28.10	1424.00	1393.22	152.49 N	92.93 E	5777257.43	589634.52	178.54	-0.32	0.00	0.32	30.5	MWD
1486.00	23.80	28.50	1450.53	1419.75	162.79 N	98.48 E	5777267.73	589640.07	190.23	0.00	0.41	0.17	30.7	MWD
1514.00	23.80	28.10	1476.15	1445.37	172.74 N	103.84 E	5777277.68	589645.43	201.53	0.00	-0.43	0.17	30.9	MWD
1542.00	23.90	28.50	1501.76	1470.98	182.71 N	109.21 E	5777287.65	589650.80	212.84	0.11	0.43	0.20	31.0	MWD
1571.00	24.00	28.10	1528.26	1497.48	193.08 N	114.79 E	5777298.02	589656.38	224.61	0.10	-0.41	0.20	31.2	MWD
1588.00	23.00	28.10	1543.85	1513.07	199.05 N	117.98 E	5777303.99	589659.57	231.38	-1.76	0.00	1.76	32.2	MWD
1619.00	22.70	27.40	1572.42	1541.64	209.71 N	123.59 E	5777314.65	589665.18	243.41	-0.29	-0.68	0.39	32.6	MWD
1648.00	22.20	26.00	1599.22	1568.44	219.60 N	128.56 E	5777324.54	589670.15	254.46	-0.52	-1.45	0.76	33.4	MWD
1677.00	21.90	26.70	1626.10	1595.32	229.36 N	133.39 E	5777334.30	589674.98	265.33	-0.31	0.72	0.41	33.8	MWD
1704.00	21.80	25.70	1651.16	1620.38	238.37 N	137.83 E	5777343.31	589679.42	275.35	-0.11	-1.11	0.43	34.2	MWD
1728.00	21.40	25.00	1673.48	1642.70	246.36 N	141.61 E	5777351.30	589683.20	284.15	-0.50	-0.88	0.59	34.6	MWD
1756.00	21.30	25.00	1699.55	1668.77	255.59 N	145.92 E	5777360.53	589687.51	294.31	-0.11	0.00	0.11	34.7	MWD
1788.00	20.00	24.60	1729.50	1698.72	265.84 N	150.66 E	5777370.78	589692.25	305.54	-1.22	-0.37	1.23	36.0	MWD
1826.00	19.40	23.20	1765.27	1734.49	277.55 N	155.85 E	5777382.49	589697.44	318.28	-0.47	-1.11	0.60	36.8	MWD
1854.00	18.70	22.80	1791.74	1760.96	285.96 N	159.42 E	5777390.90	589701.01	327.34	-0.75	-0.43	0.76	37.5	MWD
1883.00	15.80	25.30	1819.43	1788.65	293.82 N	162.91 E	5777398.76	589704.50	335.89	-3.00	2.59	3.10	40.5	MWD
1911.00	14.50	26.00	1846.46	1815.68	300.41 N	166.07 E	5777405.35	589707.66	343.18	-1.39	0.75	1.41	41.8	MWD
1939.00	13.40	27.10	1873.63	1842.85	308.45 N	169.09 E	5777411.39	589710.68	349.92	-1.18	1.18	1.21	43.0	MWD
1967.00	11.70	26.40	1900.96	1870.18	311.88 N	171.83 E	5777416.82	589713.42	355.99	-1.82	-0.75	1.83	44.7	MWD
1996.00	10.30	26.70	1929.43	1898.65	316.83 N	174.30 E	5777421.77	589715.89	361.52	-1.45	0.31	1.45	46.1	MWD
2024.00	9.00	29.20	1957.03	1926.25	320.98 N	176.50 E	5777425.92	589718.09	366.20	-1.39	2.68	1.46	47.4	MWD
2052.00	8.80	30.90	1984.77	1953.99	324.32 N	178.42 E	5777429.26	589720.01	370.05	-2.36	1.82	2.37	49.8	MWD
2085.00	4.70	40.80	2017.60	1986.82	327.02 N	180.30 E	5777431.96	589721.89	373.33	-1.91	9.00	2.10	52.0	MWD
2110.00	4.70	48.90	2042.52	2011.74	328.47 N	181.74 E	5777433.41	589723.33	375.31	0.00	9.72	0.80	52.0	MWD
2138.00	4.30	55.90	2070.43	2039.65	329.81 N	183.48 E	5777434.75	589725.07	377.34	-0.43	7.50	0.73	53.3	MWD
2166.00	3.80	61.90	2098.36	2067.58	330.83 N	185.17 E	5777435.77	589726.76	379.08	-0.54	6.43	0.70	54.0	MWD
2193.00	3.30	61.90	2125.31	2094.53	331.62 N	186.64 E	5777436.56	589728.23	380.50	-0.56	0.00	0.56	54.5	MWD

# Halliburton Australia Pty Ltd - Drilling Systems

## Survey Report

Measured Depth (m)	Incl (deg.)	Drift Dir. (deg.)	TVD (m)	Subsea Depth (m)	TOTAL		GRID Coordinates		Vertical Section (m)	Build Rate (dg/30m)	Walk Rate (dg/30m)	DLS (dg/30m)	Cum. Dogleg (deg)	Survey Tool
					Rectangular (m)	Offsets (m)	Northing (m)	Easting (m)						
2221.00	3.20	75.20	2153.26	2122.48	332.20 N	188.11 E	5777437.14	589729.70	381.74	-0.11	14.25	0.81	55.2	MWD
2251.00	2.90	83.70	2183.22	2152.44	332.50 N	189.67 E	5777437.44	589731.26	382.78	-0.30	8.50	0.54	55.8	MWD
2278.00	2.80	105.50	2210.19	2179.41	332.40 N	190.98 E	5777437.34	589732.57	383.35	-0.11	24.22	1.20	56.8	MWD
Projection to T.D.														
2318.00	2.80	105.50	2250.14	2219.36	331.88 N	192.87 E	5777436.82	589734.46	383.85	0.00	0.00	0.00	56.8	PROJECTED