W1060

APPENDIX 5 IS SEPARATE ATTACHMENT.

Esso Australia Ltd.

BA

WELL COMPLETION REPORT

KINGFISH 9

VOLUME 1

BASIC DATA

GIPPSLAND BASIN, VICTORIA

ESSO AUSTRALIA LTD

RESTECH/A:WCRCOV2:BJH/JTS

WELL COMPLETION REPORT

VOLUME 1: BASIC DATA

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WELL DATA RECORD

KINGFISH 9

LOCATION	:	Latitude : $38^{0}37'45.30"$ S : Longitude : $148^{0}08'55.1"$E X= 599981m E Y= 5723724m N Map Projection: UTM Zone 55 Geographical Location: Bass Strait, Victoria Field : Kingfish
PERMIT	:	Vic/L7
ELEVATION	:	23 m
WATER DEPTH	:	75 m
TOTAL DEPTH	:	2450m MD (Driller) 2448m MD (Logger)
PLUG BACK TYPE	:	Cement Plug
REASONS FOR PLUGGING BACK	:	Abandonment
MOVE IN	:	12/04/92 0530 hrs
SPUDDED	:	12/04/92 2400 hrs
REACHED TD	:	23/04/92 0945 hrs
RIG RELEASED	:	29/04/92 2330 hrs
OPERATOR	:	Esso Australia Resources Ltd.
PERMITTEE OR LICENCEE	:	BHP Petroleum (Bass Strait) Pty Ltd and Esso Australia Resources Ltd.
ESSO INTEREST	:	50%
OTHER INTEREST	:	50%
CONTRACTOR	:	Atwood Oceanics
RIG NAME	:	Falcon
EQUIPMENT TYPE	:	Semi-submersible
TOTAL RIG DAYS	:	18
DRILLING PROJECT NO	:	L05012001
TYPE COMPLETION	:	Plugged and abandoned
WELL CLASSIFICATION	:	Before drilling: Appraisal After drilling: Dry Hole

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KINGFISH-9 FINAL WELL REPORT

Operations Summary

Moving/Mooring

The rig was brought under tow from the Kingfish-8 location, moved into position and anchors run by the M.V Maersk Lifter and M.V. Lady Caroline. The rig was ballasted down to a drilling draft of 55 feet and the Temporary Guide Base made up and run into the sea floor at 98 mRKB (75 mSS). The 26" bit and BHA was then made up and the well spudded.

26" Hole Section

A 26" hole was drilled from 98m to 230m, with 30 barrels of high viscosity mud pumped at every connection. The hole was swept with 100 barrels of high viscosity mud and a wiper trip to the sea-floor run. The hole was then displaced with high viscosity mud and a survey taken. The drill string was subsequently pulled out of the hole to run the 20" casing. The 20" casing and Permanent Guide Base were landed in the TGB and 100 barrels of seawater circulated. The cement lines were rigged up and tested to 2000 psi, with the 20" casing then being cemented with 600 sacks of cement. The string was pulled out of hole and the BOP and riser were made up to be run. The BOP's were tested on both the blue and yellow pods in the moonpool. The kill lines were tested to 200/5000 psi and the BOP's were run in and landed. The well head connector and 20" casing were tested to 500 psi and the wear bushing run in to the hole. The wear bushing would not initially pass through the upper annular, so the BOP test plug was made up and worked through the annulars to get the packers to retract. The wear bushing then would not back off the running tool when run, so it was pulled out of the hole, run again, and successfully installed.

17 1/2" Hole Section

The 17 1/2" bit and BHA was made up and run in to the hole, tagging the top of cement at 230m. The cement and 20" shoe were drilled, the rathole cleaned out and new 17 1/2" hole drilled from 230m to 825m. A high viscosity pill was then pumped and bottoms up circulated. A survey was dropped and the string pulled out of the hole to the 20" casing shoe. The top drive was serviced and the string run back in the hole, tagging fill at 820m. The hole was washed to bottom at 825m, the mud was circulated and conditioned and the string pulled out of the hole. Schlumberger were rigged up to run gamma ray and sonic logs to the sea-floor. Loggers and drillers TD depths matched exactly. Schlumberger were then rigged down and a wiper trip was run to 825m. The string was then run in to the hole to pull the wear bushing, the cementing kelly made up and the 13 3/8" casing run to 812m. The cement job was then attempted, with the Howco motor blowing up, and the backup motor refusing to start. The backup engine was finally started and the 13 3/8" casing cemented. The casing running tool was pulled out of the hole, the wellhead flushed and the 13 3/8" seal assembly made up and run in to the hole. The upper and lower annulars, pipe variable, rams and upper and lower choke kill valves were all tested to 200/2000 psi. Eight inch drill pipe was then picked up and racked back in the derrick.

9 7/8" Hole Section

The new 9 7/8" BHA (including mud motor and MWD) was picked up and function tested. The string was then run into the hole and the cement tagged at 788m. The cement, float collar and shoe were drilled and 3m of new hole drilled to 828m. A PIT (phase II) test was then conducted to an equivalent mud weight of 15.0 ppg (850 psi).

9 7/8" hole was then drilled to 2278m, changing from a native mud to KCl/PHPA polymer mud at 1493m. Samples were circulated at 2285m, 2298m and 2307m, with the string being pulled out of the hole at 2307m. Due to tight hole a wiper trip was run and the hole washed and reamed from 2272 to 2307m. The string was pulled out of the hole, MWD laid down for servicing, and the core barrels picked up. The drill string was then run into the hole to cut core number 1, the last stand was washed to bottom and the ball dropped. Core was cut from 2307m to 2309m, when the core barrel was pulled out of the hole due to low ROP. Core number 1 (1.3m @ 65%) was recovered and the 9 7/8" bit and BHA run back in hole. The cored interval was reamed and new hole drilled to 2313m. Bottoms up were circulated and the string pulled out of hole. The core barrel was redressed and run back into the hole to cut core number 2. Core number 2 was cut from 2313m to 2331m and pulled out of hole. Core number 2 (18m @ 100%) was recovered. A new 9 7/8" bit and BHA was made up and run back into the hole. The hole was washed down from 2300m to allow for logging with MWD. New hole was drilled from 2331m to 2450m, the eventual TD. Bottoms up were circulated and the string pulled out of the hole.

Logging

Schlumberger were rigged up, and electric logs run. First run, DLL-MSFL-AS-GR from 2450m to 810m. Second run, LDT-CNL-EPS-ML-NGS-FMS, a telemetry problem was encountered so the string was pulled out of the hole and telemetry cartridges swapped out. The same string was then run back in the hole, with the same problem encountered. The string was pulled out of the hole, the FMS was removed from the string and the remaining tools run back into the hole. Minimal problems were then encountered, and the logs were run from 2448 to 2227m, and then pulled out of hole. The third run consisted of the SHDT tool, which was run from 2448m to 2227m and then pulled out of the hole. The MDT tool was then made up for the fourth run and 27 pressures measured. Twelve levels of CSAT were then shot for the fifth run. The CST tool was run in for the sixth run, 41 sidewall cores were shot and 36 recovered. Schlumberger were then rigged down.

Abandonment

A balanced cement plug was set from 2360m to 2271m, the string was pulled out of the hole and a second balanced plug set from 860m to 770m. The 13 3/8" casing was then cut and pulled, a balanced plug set from 220m to 120m and the 20" casing cut. The BOP's were recovered, the 20" casing pulled and the hole abandoned.

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KINGFISH-9 FINAL WELL REPORT
CASING DATA

OD (In.)	WEIGHT (LB/FT)	GRADE	CONNECTION	LENGTH (M)	SHOE DEPTH (mMD-RKB)	CENTRALIZER POSITION	REMARKS
20	94	X-56	JV	12.60	220.93	NONE	FLOAT SHOE JOINT
20	94	X-56	JV	87.51		NONE	7 INTERMEDIATE JOINTS
20	129	X-52	JV x ALT-2	12.61		NONE	CROSSOVER JOINT
24	670	----	ALT-2	12.21		NONE	WH S/N EP2-1-2-3 TOP OF WH @ 96m
				124.93			
13-3/8	54.5	K-55	BTC	12.05	811.87	1 ON STOP RING (@ MIDDLE)	FLOAT SHOE JOINT
	54.5	K-55	BTC	11.89		1 ACROSS COLLAR	FLOAT JOINT
	54.5	K-55	BTC	12.32		1 ON STOP RING (@ MIDDLE)	FLOAT COLLAR JOINT
	54.5	K-55	BTC	503.05		1 ACROSS FIRST SEVEN COLLARS	43 INTERMEDIATE JOINTS
	68	K-55	BTC	172.14		NONE	15 INTERMEDIATE JOINTS
	68	K-55	BTC	3.02		NONE	CASING HANGER PUP JOINT RKB TO H-OFF-97.8m 0.4m HGR ABOVE H-OFF
				714.47			

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KINGFISH-9 FINAL WELL REPORT
CEMENT DATA

DATE (1992)	TYPE JOB	INTERVAL (mMD-RKB)	TYPE CEMENT	VOLUME (SX)	SLURRY WEIGHT (PPG)	ADDITIVES	MIX WATER	REMARKS
13-APR	20" PRIMARY LEAD	230-98	CLASS "G"	600	13.2	2.2% PH-GEL	FW	CEMENT THROUGH DP STINGER. CMT VOLUME CALCULATED TO PROVIDE 150% EXCESS ABOVE GAUGE HOLE VOLUME WITH TOC @ SEAFLOOR.
13-APR	20" PRIMARY TAIL		CLASS "G"	300	15.8	----	SW	
16-APR	13-3/8" PRIMARY	811.87-310	CLASS "G"	1000	15.8	----	SW	CMT VOLUME BASED ON GAUGE HOLE HOLE DIAMETER-NO CALIPER RUN. BUMPED PLUG W/ 1500 PSI.
25-APR	P & A PLUG No.1	2360-2271	CLASS "G"	160	15.8	3 GP10BMF HR-6L	FW	SPOT ACROSS LATROBE HYDROCARBONS. TAGGED WITH 15 KIPS S/O OEDP.
25-APR	P & A PLUG No.2	860-770	CLASS "G"	210	15.8		SW	NOT TAGGED SINCE EZSV BP SET @ 700m AND P/T TO 1500 PSI-10 MINs.
25-APR	P & A PLUG No.3	220-120	CLASS "G"	370	15.8	2% CaCl2	SW	13-3/8" STUB AND SURFACE PLUG. TESTED TO 500 PSI.

SAMPLES, CONVENTIONAL CORES, SIDEWALL CORES

KINGFISH 9

Interval (m)	Type
825-2180	1 set air dried, light washed samples, 3 sets washed oven dried samples every 10m.
2180-2450	1 set air dried, lightly washed samples, 3 sets washed, oven dried samples every 5m.
2307-2309	Core number 1 (Fibreglass sleeved). Recovery of 1.3m and chip sampling every 1.2m.
2313-2331	Core number 2 (Fibreglass sleeved). Recovery at 18m. Chip sampling every 1.2m.
893-2423	CST's 41 shot, recovered and bought 36.

WIRELINE LOGS AND SURVEYS

KINGFISH 9

Type and Scale		From	To
Kingfish 9			
	Suite 1		
AS-CAL-GR	1:200	221m	825m
	Suite 2		
DLL-MSFL-AS-GR	1:200	813m	2448m
LDT-CNL-NGS-EPT-ML	1:200	2240m	2448m
MDT (CQ Gauge pretests)	(27 Pretests)	2309m	2391m
SHDT-GR	1:200	2227m	2448m
CSAT (Checkshot)	(12 level)	830m	2448m
CST-GR (Sidewall Cores)	(41 shot recovered 36)		

SUMMARY OF WIRELINE FORMATION TEST PROGRAMME KINGFISH 9

Test	Depth (m)	Type	Recovery Oil (l)	Recovery Gas (ft3)	Recovery Water (l)	Recovery Filt (1)	Form Press. (Psia)	Hydro Press. (Psia)	Remarks
1/1	2309.5	Pretest	-	-	-	-	-	3701	Tight Aborted
1/2	2311.5	Pretest	-	-	-	-	3197	3705	Good Test
1/3	2314.5	Pretest	-	-	-	-	3198	3710	Good Test
1/4	2317.5	Pretest	-	-	-	-	3202	3716	Good Test
1/5	2322.5	Pretest	-	-	-	-	3210	3724	Good Test
1/6	2333.5	Pretest	-	-	-	-	-	3588	Tight-Aborted
1/7	2333.9	Pretest	-	-	-	-	-	3590	Tight-Aborted
1/8	2333.0	Pretest	-	-	-	-	-	3741	Tight-Aborted
1/9	2345.0	Pretest	-	-	-	-	-	3760	Tight-Aborted
1/10	2346.0	Pretest	-	-	-	-	-	3762	Tight-Aborted
1/11	2367.5	Pretest	-	-	-	-	-	3796	Tight-Aborted
1/12	2381.5	Pretest	-	-	-	-	-	3819	Tight-Aborted
1/13	2337.0	Pretest	-	-	-	-	-	3747	Tight-Aborted
1/14	2320.0	Pretest	-	-	-	-	-	3721	Tight
1/15	2317.5	Pretest	-	-	-	-	3203	3716	Tool check
1/16	2337.0	Pretest	-	-	-	-	-	3748	Tight-Aborted
1/17	2342.5	Pretest	-	-	-	-	3330	3756	Tight-Aborted
1/18	2343.5	Pretest	-	-	-	-	3162	3758	Tight-Aborted
1/19	2348.5	Pretest	-	-	-	-	-	3766	Tight-Aborted
1/20	2355.0	Pretest	-	-	-	-	3289	-	Tight-Aborted
1/21	2378.5	Pretest	-	-	-	-	-	3814	Tight-Aborted
1/22	2391.0	Pretest	-	-	-	-	-	3834	Tight-Aborted
1/23	2317.5	Pretest	-	-	-	-	3203	3717	Tool check
1/24	2330.0	Pretest	-	-	-	-	3222	3737	Good test
1/25	2338.0	Pretest	-	-	-	-	-	3749	Abandon - supercharged
1/26	2352.5	Pretest	-	-	-	-	-	3772	Abandon - supercharged
1/27	2371.0	Pretest	-	-	-	-	-	3802	Seal failure
1/28	2371.0	Pretest	-	-	-	-	-	3802	Seal failure
1/29	2371.1	Pretest	-	-	-	-	3280	3802	Seal Failure
									at 3280 for 90

TEMPERATURE RECORD
KINGFISH 9

LOGGING RUN	THERMO DEPTH (M)	MAX REC TEMP (C^0)	CIRCULATION TIME (t_k) (hours)	TIME AFTER CIRCULATION STOPPED (t)	HORNER TEMP (C^0)	GEOTHERMAL GRADIENT (C^0/km)
Suite 1						
AS-CAL-GR	822	41		3.75		
Suite 2						
DLL-MSFL-AS-GR	2443	87	1	8	104.8	38.2
LDT-CNL-ML-EPT-NGS	2435	95		14	104.8	38.2
SHDT-GR	2447	101		31.5	104.8	38.2
MDT-GR (PRE-TEST)	2391	95		28.5	104.8	38.2
CAST	2442	101		34	104.8	38.2
CST's						

Ref:61:KF9013.doc

KINGFISH-9
LOCALITY MAP

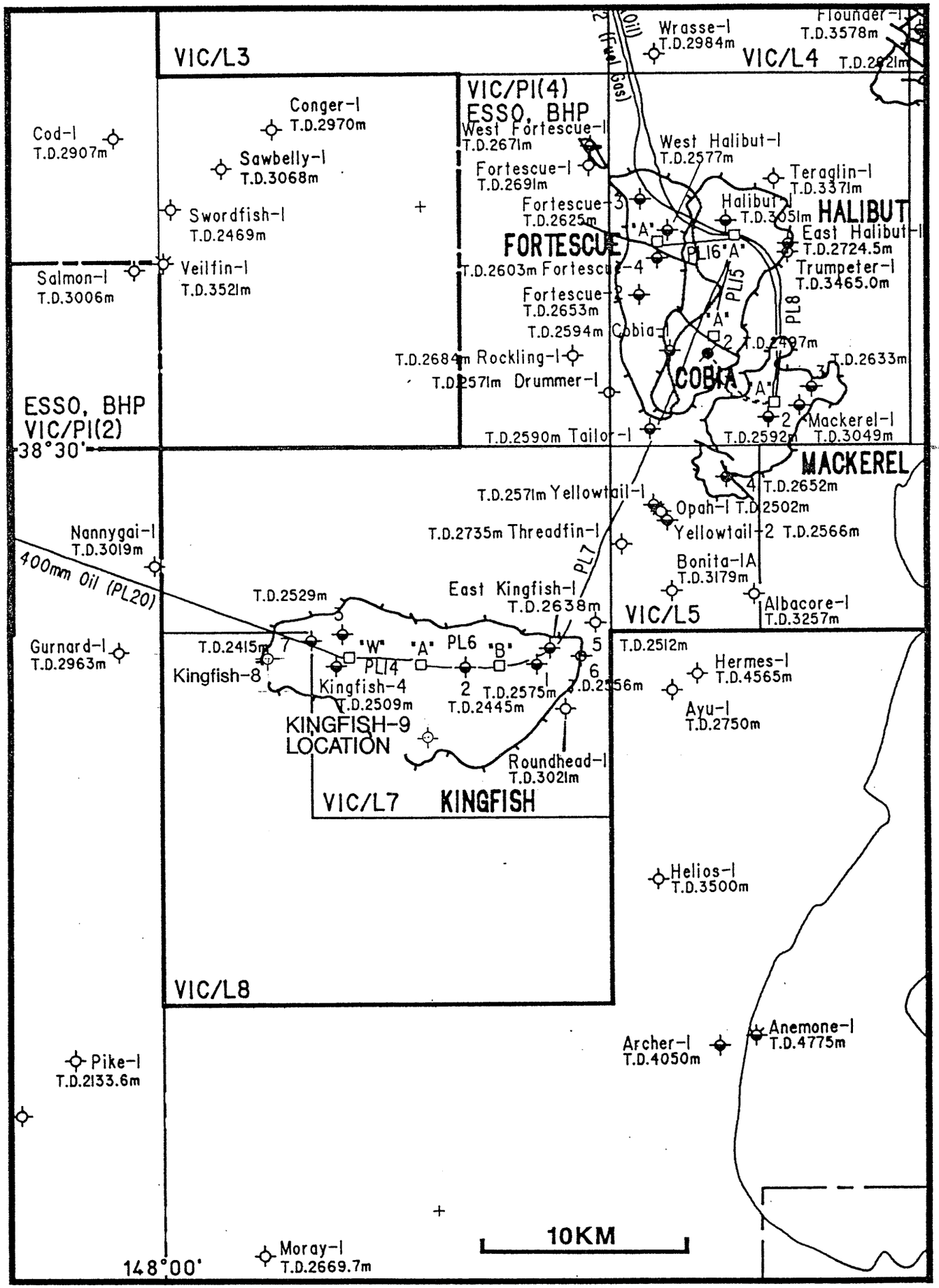

Figure 1

Dwg 2505/OP/1 6/9

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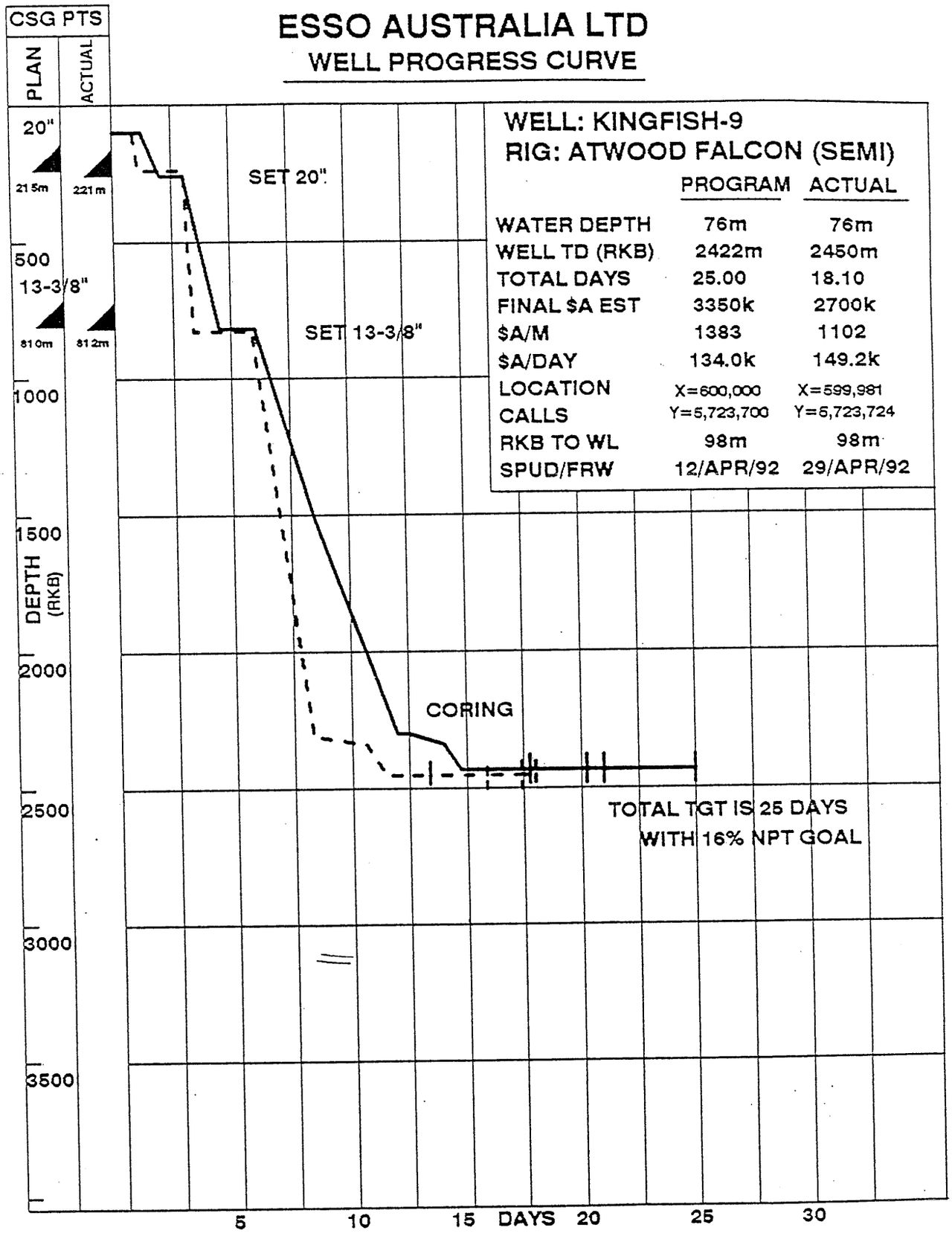
WELL PROGRESS CURVE



WELL: KINGFISH-9
RIG: ATWOOD FALCON (SEMI)

	PROGRAM	ACTUAL
WATER DEPTH	76m	76m
WELL TD (RKB)	2422m	2450m
TOTAL DAYS	25.00	18.10
FINAL $A EST	3350k	2700k
$A/M	1383	1102
$A/DAY	134.0k	149.2k
LOCATION CALLS	X=600,000 Y=5,723,700	X=599,981 Y=5,723,724
RKB TO WL	98m	98m
SPUD/FRW	12/APR/92	29/APR/92

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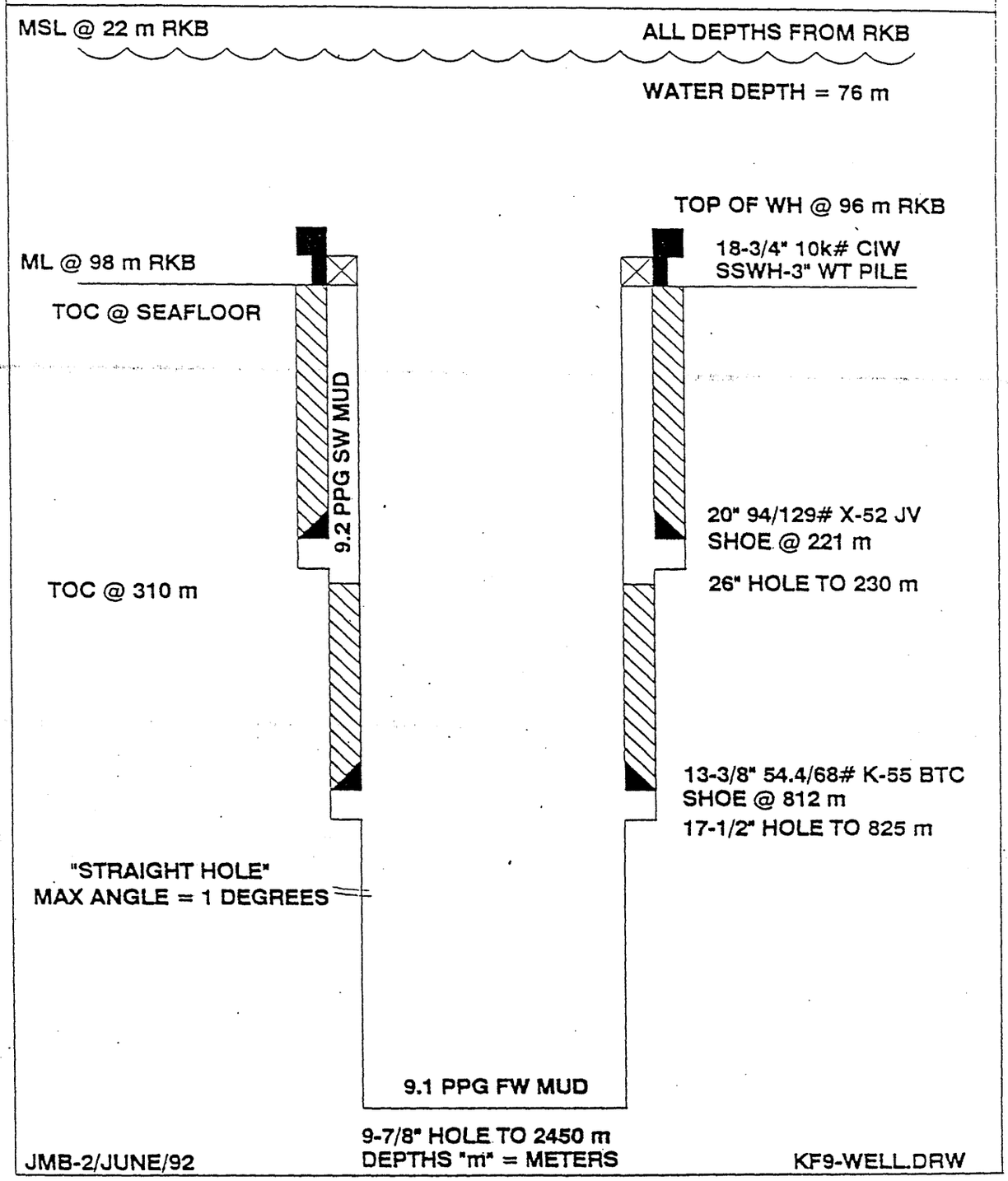
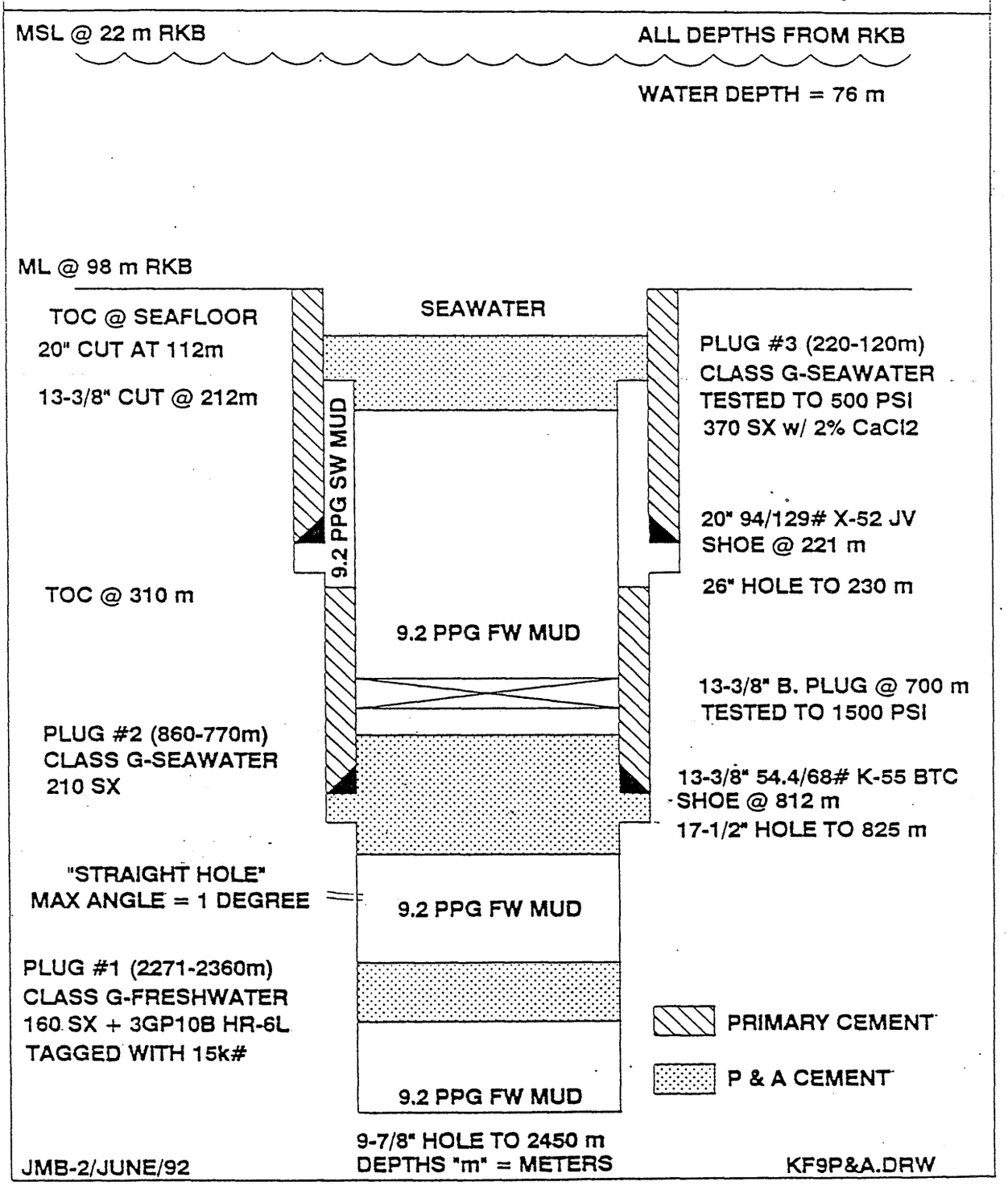
KINGFISH-9 FINAL WELLBORE SKETCH



ESSO AUSTRALIA LTD.
KINGFISH-9 P & A WELLBORE SKETCH



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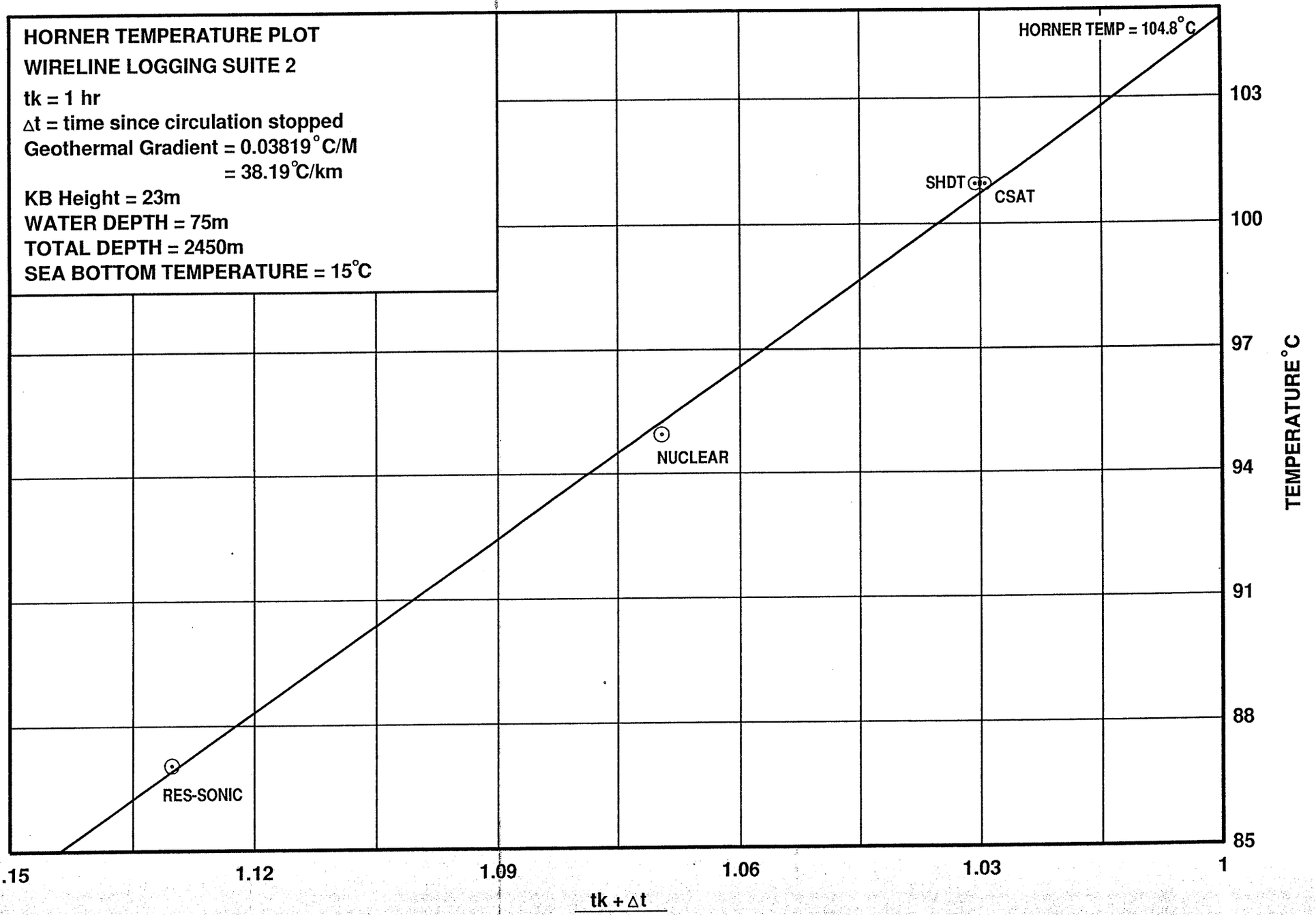
HORNER TEMPERATURE PLOT
WIRELINE LOGGING SUITE 2
tk = 1 hr
Δt = time since circulation stopped
Geothermal Gradient = 0.03819°C/M
= 38.19°C/km
KB Height = 23m
WATER DEPTH = 75m
TOTAL DEPTH = 2450m
SEA BOTTOM TEMPERATURE = 15°C
HORNER TEMP = 104.8°C
SHDT
CSAT
NUCLEAR
RES-SONIC
103
100
97
94
91
88
85
TEMPERATURE °C
1.15
1.12
1.09
1.06
1.03
1
tk + Δt

APPENDIX 1

APPENDIX 1

LITHOLOGY DESCRIPTIONS

KINGFISH 9

Lithology Descriptions

Depth	%	Description
825-830	15	LIMESTONE Medium grey, calcsiltite, moderately argillaceous, occasionally subangular, medium grain quartz sand, common forams, common fossil fragments, firm, blocky.
	85	Cement.
830-40	90	LIMESTONE Medium grey, brown grey, light grey, calcsiltite, moderately argillaceous, trace subangular to subrounded fine quartz sand, common forams, common fossil fragments, trace carbonaceous flecks, firm, blocky.
	10	Cement
840-50	95	LIMESTONE Pale grey, light brown grey, off white, calcsiltite grades to calcilutite, moderate to very argillaceous, trace fine quartz sand, common lithics, common fossil fragments, occasional carbonaceous flecks, firm to soft, blocky.
	5	Cement.
850-60	100	LIMESTONE As above, predominantly calcilutite.
860-70	100	LIMESTONE Light to medium grey, light brown grey, calcilutite, moderate to very argillaceous, trace fine calcite sand, common carbonaceous flecks and fragments, common forams and common fossil fragments, soft to predominantly medium-hard, platey-blocky.
870-80	100	LIMESTONE As above, trace nodular Pyrite, micromicaceous
880-90	100	LIMESTONE As above.
890-900	100	LIMESTONE Light medium grey, brown grey, olive grey, calcilutite, occasional calcsiltite, trace fine calcite and quartz sand, common carbonaceous flecks and fragments, common lithics, occasional forams, medium hard, blocky-massive.
900-10	100	LIMESTONE Light grey, light brown, olive grey, calcilutite, trace fine calcite sand, common carbonaceous specks and fragments, moderate to very argillaceous, common fossil fragments, common lithics, firm to moderately hard, massive to blocky.
910-20	100	LIMESTONE As above.
920-30	100	LIMESTONE As above, micromicaceous, occasional disseminated pyrite.

KINGFISH 9

Depth	%	Description
930-40	100	LIMESTONE Light grey, olive grey, light brown grey, calcilutite with occasional calcsiltite, common carbonaceous specks, very argillaceous, common fossil fragments, trace micromicaceous, trace disseminated pyrite, firm to moderately hard, massive.
940-50	100	LIMESTONE As above.
950-60	100	LIMESTONE As above, trace nodular pyrite.
960-70	100	LIMESTONE As above, trace glauconite, trace lithic fragments.
970-80	100	LIMESTONE As above.
980-90	100	LIMESTONE Light to medium grey, occasional olive grey, calcsiltite, trace fine calcite sand, common carbonaceous specks, occasional lithic fragments, moderately argillaceous, micromicaceous, firm to hard, massive.
990-1000	100	LIMESTONE As above, occasional crystalline calcite grains.
1000-1010	100	LIMESTONE As above, trace disseminated pyrite, blocky to platey.
1010-1020	100	LIMESTONE As above.
1020-1030	100	LIMESTONE Medium to light grey, light brown grey, olive grey, calcilutite, moderately to occasionally very argillaceous, trace of fine to medium calcarcous sand, occasional crystalline calcareous fragments, occasional fossil fragments, common carbonaceous specks, trace lithic fragments, micromicaceous, moderate to very hard, blocky, massive.
1030-1040	100	LIMESTONE As above.
1040-1050	100	LIMESTONE As above, trace disseminated pyrite.
1050-1060	100	LIMESTONE Medium to light grey, light brown grey, olive grey, calcilutite, moderately argillaceous, trace fine calcareous sand, trace carbonaceous specks, occasional crystalline calcite, micromicaceous, moderate to very hard, platey to blocky.
1060-1070	100	LIMESTONE As above, trace glauconite.
1070-1080	100	LIMESTONE As above
1080-1090	100	LIMESTONE Medium to light grey, olive grey, light brown grey, calcilutite grades to calcsiltite, moderately to very argillaceous, common carbonaceous flecks, trace fine calcareous sand, trace glauconite, trace disseminated pyrite, occasional fossil fragments, trace crystalline carbonate fragments, moderate to very hard, blocky to platey.

Depth	%	Description
1090-1100	100	LIMESTONE As above, predominantly calcilutite.
1100-1110	100	LIMESTONE Light grey, light brown grey, occasional olive grey, calcilutite, moderately to very argillaceous, trace carbonaceous specks, trace lithic fragments, trace glauconite, occasional hard crystalline calcite fragments, firm to moderately hard, blocky.
1110-1120	100	LIMESTONE As above, trace fossil fragments.
1120-1130	100	LIMESTONE As above.
1130-1140	100	LIMESTONE Light grey, medium grey, olive grey, light brown grey, calcilutite, moderately to very argillaceous, occasional lithic fragments, trace glauconite, occasional carbonaceous flecks, common fossil fragments, firm to moderately hard, blocky.
1140-1150	100	LIMESTONE As above.
1150-1160	100	LIMESTONE Light to medium grey, olive grey, light brown grey, calcsiltite, occasional calcilutite, trace fine calcareous sand, moderately to very argillaceous, occasional lithic fragments, common carbonaceous flecks, common fossil fragments, spheroids, firm to moderately hard and blocky.
1160-1170	100	LIMESTONE As above.
1170-1180	100	LIMESTONE As above, predominantly calcsiltite.
1180-1190	100	LIMESTONE Light grey, off-white, olive grey, calcsiltite, moderately to very argillaceous, occasional lithic fragments, common carbonaceous flecks, common fossil fragments, micromicaceous, firm to moderately hard, blocky
1190-1200	100	LIMESTONE As above.
1200-1210	100	LIMESTONE As above, trace fine calcareous sand.
1210-1220	100	LIMESTONE As above, grades to calcilutite.
1220-1230	100	LIMESTONE As above, predominantly calcsiltite, occasional hard crystalline calcite fragments.
1230-1240	100	LIMESTONE Pale grey, light grey, olive grey, calcsiltite, grades to calcilutite, moderately argillaceous, common carbonaceous flecks, trace fine calcareous sand, trace fossil fragments, soft to moderately hard, blocky.
1240-1250	100	LIMESTONE As above, trace glauconite.
1250-1260	100	LIMESTONE Pale grey, light grey, light brown grey, olive grey, calcsiltite, moderately argillaceous, trace carbonaceous flecks, trace glauconite, firm to moderately hard, blocky, massive.

KINGFISH 9

Depth	%	Description
1260-1270	100	LIMESTONE As above, moderately to very argillaceous, trace fossils (gastropods, forams).
1270-1280	100	LIMESTONE As above.
1280-1290	100	LIMESTONE Light brown grey, light grey, medium grey, calcsiltite, moderately to very argillaceous, occasional carbonaceous flecks, trace glauconite, trace fossil fragments, occasional crystalline calcareous fragments, moderately hard, blocky.
1290-1300	100	LIMESTONE As above.
1300-1310	100	LIMESTONE As above, grades to calcareous siltstone.
1310-1320	95	LIMESTONE Light brown grey, light grey, medium grey, calcsiltite to calcilutite, moderately to very argillaceous, occasional carbonaceous flecks and fragments, trace fossil fragments, trace glauconite, firm to moderately hard, blocky.
	5	CLAYSTONE dark grey, very calcareous, trace glauconite, trace disseminated pyrite, moderately hard, platey.
1320-1330	100	LIMESTONE As above.
1330-1340	95	LIMESTONE As above, very argillaceous.
	5	CLAYSTONE As above.
1340-1350	100	LIMESTONE Light grey, pale grey, light brown grey, calcilutite, occasional calcsiltite, occasional fine calcareous sand, trace carbonaceous flecks, occasional glauconite, trace fossils, firm to moderately hard, blocky.
1350-1360	100	LIMESTONE As above, predominantly calcsiltite.
1360-1370	100	LIMESTONE As above, predominantly calcsiltite with abundant micro fossils.
1370-1380	100	LIMESTONE Very light grey to light grey, occasionally streaked grey, predominantly calcsiltite, very argillaceous, trace carbonaceous specks, abundant micro fossils, occasionally pyritised, firm to moderately hard, blocky.
1380-1390	90	LIMESTONE As above, with pyritised, trace fossils (burrows), grading to calcareous claystone.
	10	CLAYSTONE Grey to dark grey, calcareous, carbonaceous specks, common micro fossils, firm, subfissile.
1390-1400	100	LIMESTONE As above, with trace glauconite, grading to calcareous claystone.
1400-1410	90	LIMESTONE As above.
	10	CLAYSTONE As above (Flushed Riser)
1410-1420	100	LIMESTONE As above, very argillaceous, predominantly calcilutite with abundant micro fossils.

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Depth	%	Description
1420-1430	100	LIMESTONE Light grey, occasionally very light grey, predominantly calcilutite, very argillaceous, abundant micro fossils, rare carbonaceous specks, trace glauconite, trace pyrite, firm to hard, blocky.
1430-1440	100	LIMESTONE As above.
1440-1450	100	LIMESTONE As above, very argillaceous, grading to calcareous claystone.
1450-1460	90	LIMESTONE As above, very argillaceous, grading to calcareous claystone.
	10	CLAYSTONE Light grey to grey, calcareous, trace pyrite, trace glauconite, abundant micro fossils, subfissile.
1460-1470	100	LIMESTONE Very light grey to light grey, calcilutite, very argillaceous, trace pyrite, abundant micro fossils, firm to moderately hard, blocky.
1470-1480	90	LIMESTONE As above, trace glauconite, grading to calcareous claystone.
	10	CLAYSTONE As above.
1480-1490	90	LIMESTONE As above.
	10	CLAYSTONE As above (Displace seawater gel mud to KCL mud)
1490-1500	90	LIMESTONE As above, predominantly calcilutite.
	10	CLAYSTONE Grey to light grey, occasional dark grey, slightly calcareous, trace carbonaceous specks, subplatey to subfissile.
1500-1510	85	LIMESTONE As above, becoming soft.
	15	CLAYSTONE As above.
1510-1520	80	LIMESTONE As above.
	20	CLAYSTONE As above.
1520-1530	80	LIMESTONE Light grey, off white, calcsiltite, very argillaceous, common disseminated pyrite, common fossil fragments, trace calcareous fragments, firm to moderately hard, blocky.
	20	CLAYSTONE Medium grey, occasional light grey, very common disseminated pyrite, occasional nodular pyrite, firm, subfissile.
1530-1540	80	LIMESTONE As above, trace calcite fragments.
	20	CLAYSTONE As above, common nodular pyrite.
1540-1550	80	LIMESTONE As above, light brown grey, very common fossil fragments.
	20	CLAYSTONE As above.
1550-1560	70	LIMESTONE As above, common calcareous (dolomite?) fragments.

Depth	%	Description
	30	CLAYSTONE As above.
1560-1570	70	LIMESTONE Light grey, off-white, calcsiltite, very argillaceous, common disseminated pyrite, occasional pyrite laminae, common fossil fragments, trace calcareous (dolomite?) fragments, firm to moderately hard, blocky, massive.
	30	CLAYSTONE Medium grey, very common disseminated pyrite, common nodular pyrite, very calcareous, firm, subfissile.
1570-1580	70	LIMESTONE As above.
	30	CLAYSTONE As above.
1580-1590	70	LIMESTONE As above.
	30	CLAYSTONE As above.
1590-1600	70	LIMESTONE As above.
	30	CLAYSTONE As above.
1600-1610	70	LIMESTONE light grey, pale grey, off-white, calcsiltite, very argillaceous, grades to calcareous argillite, common pyrite, occasional glauconite, occasional fossil fragments, soft to medium hard, blocky
	30	CLAYSTONE light to medium grey, very calcareous, common disseminated pyrite, occasional nodular pyrite, moderately hard, subfissile, platey.
1610-1620	60	LIMESTONE As above.
	40	CLAYSTONE As above, occasional glauconite.
1620-1630	80	LIMESTONE As above.
	20	CLAYSTONE As above.
1630-1640	60	LIMESTONE As above.
	40	CLAYSTONE As above.
1640-1650	60	LIMESTONE As above.
	40	CLAYSTONE As above.
1650-1660	60	LIMESTONE Light grey, off-white, calcsiltite, very argillaceous, common pyrite, occasional glauconite, occasional fossil fragments, soft to moderately hard, blocky, massive.
	40	CLAYSTONE As above, trace of nodular pyrite.
1660-1670	60	LIMESTONE As above.
	40	CLAYSTONE As above.
1670-1680	60	LIMESTONE Light grey, medium grey, light brown grey, calcsiltite, very argillaceous, common pyrite laminae, occasional glauconite, occasional fossil fragments, trace calcareous fragments, soft to moderately hard, blocky.
	40	CLAYSTONE medium grey, very calcareous, disseminated pyrite, occasional nodular pyrite, trace glauconite, moderately hard, platey, blocky.

Depth	%	Description
1680-1690	60	LIMESTONE As above.
	40	CLAYSTONE As above.
1690-1700	60	LIMESTONE As above.
	40	CLAYSTONE As above.
1700-1710	60	LIMESTONE Light to medium grey, brown grey, calcsiltite, very argillaceous, grades to calcareous claystone, common disseminated pyrite, occasional fossil fragments, occasional glauconite, trace calcareous fragments, soft to moderately hard, blocky, massive.
	40	CLAYSTONE As above.
1710-1720	60	LIMESTONE As above.
	40	CLAYSTONE As above.
1720-1730	60	CLAYSTONE As above, grades to very argillaceous, calcsiltite.
	40	LIMESTONE As above
1730-1740	60	CLAYSTONE As above.
	40	LIMESTONE As above.
1740-1760	60	CLAYSTONE Light grey, very calcareous, trace mica, occasional pyrite nodules, rare carbonaceous specks, trace micro fossils, streaky, slight hygroturgid, soft to moderately hard, blocky, subfissile.
	40	LIMESTONE Off-white to light grey, calcilutite, very argillaceous, trace pyrite, trace micro fossils, rare trace glauconite, soft to moderately hard, blocky, grading to calcareous claystone.
1760-1780	70	CLAYSTONE As above, becoming predominantly very light grey.
	30	LIMESTONE As above.
1780-1800	70	CLAYSTONE As above, trace glauconite.
	30	LIMESTONE As above.
1800-1820	90	CLAYSTONE Light grey, occasionally very light grey to grey, very calcareous, trace carbonaceous, streaks and specks, trace disseminated pyrite and nodular pyrite, soft to firm, blocky, trace micro fossils.
	10	LIMESTONE Light grey, calcilutite, very argillaceous, trace pyrite, trace micro fossils.
1820-1840	90	CLAYSTONE As above.
	10	LIMESTONE As above, grades to calcareous claystone.
1840-1860	80	CLAYSTONE As above.
	20	LIMESTONE As above.
1860-1880	80	CLAYSTONE Generally as above, brown and light brownish grey in part, subfissile in part.
	20	LIMESTONE As above.

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Depth	%	Description
1880-1900	80	CLAYSTONE As above.
	20	LIMESTONE As above, off-white to light grey calcilutite.
1900-1910	70	CLAYSTONE As above, very calcareous, grading to argillaceous limestone.
	30	LIMESTONE Off-white to light grey, calcilutite, very argillaceous, trace micro fossils, blocky.
1910-1920	60	CLAYSTONE As above, moderately hard.
	40	LIMESTONE As above, calcilutite, trace common carbonaceous specks.
1920-1930	70	CLAYSTONE As above.
	30	LIMESTONE As above.
1930-1940	80	CLAYSTONE Light grey, locally very light grey to grey, moderately to very calcareous, scattered glauconite in part, trace micro fossils, occasional carbonaceous specks, trace disseminated and nodular pyrite, firm to moderately hard, occasionally slightly hygroturgid, blocky, subfissile in part.
	20	LIMESTONE As above, grading to calcareous claystone.
1940-1950	80	CLAYSTONE As above, brownish in part.
	20	LIMESTONE As above, calcilutite, very argillaceous.
1950-1960	80	CLAYSTONE As above.
	20	LIMESTONE Off-white to light grey, brownish in part, very argillaceous, calcilutite to calcsiltite, trace micro fossils, trace glauconite, firm to hard, blocky.
1960-1970	90	CLAYSTONE As above.
	10	LIMESTONE As above.
1970-1980	75	CLAYSTONE As above.
	25	LIMESTONE Very light grey, calcilutite, soft to firm, very argillaceous, trace glauconite, trace disseminated pyrite, sub-blocky.
1980-1990	70	CLAYSTONE As above.
	30	LIMESTONE As above, becoming very finely crystalline in part, hard to very hard.
1990-2000	90	CLAYSTONE As above.
	10	LIMESTONE As above.
2000-2010	90	CLAYSTONE As above.
	10	LIMESTONE As above.
2010-2020	100	CLAYSTONE Light brownish, light grey, very calcareous to moderately calcareous, trace glauconite, rare carbonaceous specks and micro flecks, trace disseminated and nodular pyrite, trace micro fossils, trace echinoid and pelycepod fragments, soft to moderately hard, dispersive in part, blocky.
2020-2030	100	CLAYSTONE As above

Depth	%	Description
	TR	LIMESTONE As above, very sparitic.
2030-2040	100	CLAYSTONE As above, very calcareous.
2040-2050	100	CLAYSTONE As above.
	TR	LIMESTONE As above, very sparitic.
2050-2060	100	CLAYSTONE As above, trace lithic fragments, occasional nodular pyrite.
2060-2070	100	CLAYSTONE As above, trace pyrite nodules, dispersive in part.
	TR	LIMESTONE As above, very sparitic, hard.
2070-2080	100	CLAYSTONE Light brown grey, light grey, occasional medium grey, very to moderately calcareous, trace glauconite, rare carbonaceous and mica flecks, trace lithic fragments, occasional nodular and disseminated pyrite, trace micro fossils, soft to moderately hard, dispersive in part, blocky.
	TR	LIMESTONE As above.
2080-2090	100	CLAYSTONE As above.
2090-2100	100	CLAYSTONE As above, very calcareous.
2100-2110	100	CLAYSTONE As above, very calcareous.
2110-2120	100	CLAYSTONE As above, moderately calcareous.
2120-2130	100	CLAYSTONE As above, moderately calcareous.
2130-2140	100	CLAYSTONE Generally as above, but becoming predominantly very light to light brownish grey, occasional light grey.
2140-2150	100	CLAYSTONE very light to light brownish grey, occassionally light grey to medium grey, moderately to occasionally very calcareous, trace carbonaceous specks, rare mica, trace glauconite, in part, trace disseminated and nodular pyrite, dispersive and hygroturgid in part, soft to moderately hard, blocky - subfissile.
2150-2160	100	CLAYSTONE As above.
2160-2170	100	CLAYSTONE As above, with occasional micro fossils.
2170-2180	100	CLAYSTONE As above with occasional micro fossils.
2180-2190	100	CLAYSTONE As above, moderately calcareous.
2190-2195	100	CLAYSTONE As above, becoming slightly to moderately calcareous.
2195-2200	100	CLAYSTONE As above, moderately calcareous.

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Depth	%	Description
2200-2205	100	CLAYSTONE light to very light brown grey, very light brown to tan in part, slightly to moderately calcareous, trace carbonaceous specks, trace glauconite in part, occasional trace of pyrite, dispersive and hygroturgid in part, soft to moderately hard, silty texture in part, blocky - subfissile.
2205-2210	100	CLAYSTONE As above, very pyritic in part.
2210-2215	100	CLAYSTONE Medium to light brown, light brown grey, pale grey in part, slightly to moderately calcareous, trace glauconite, trace carbonaceous specks, trace to common pyrite in part, dispersive in part, soft to moderately hard, subfissile, blocky.
2215-2220	100	CLAYSTONE As above.
2220-2225	100	CLAYSTONE As above, occasional pyrite nodules.
2225-2230	100	CLAYSTONE As above, generally moderately hard.
2230-2235	100	CLAYSTONE As above, slightly calcareous.
2235-2240	100	CLAYSTONE Light grey, light brown grey, pale grey, slightly to moderately calcareous, silty texture, calcareous granures, trace glauconite, trace pyrite, dispersive in part, moderately hard, blocky.
2240-2250	100	CLAYSTONE As above, moderately calcareous, moderately hard.
2250-2255	100	CLAYSTONE light brown to light grey brown to light brown grey, slightly calcareous, trace glauconite, trace pyrite, moderately hard to hard, blocky.
2255-2260	100	CLAYSTONE As above, no glauconite.
2260-2265	100	CLAYSTONE As above, trace glauconite, occasional pyrite.
2265-2270	100	CLAYSTONE As above, trace glauconite, occasional nodular pyrite, trace micro fossils.
2270-2275	100	CLAYSTONE As above, trace pyrite.
2275-2280	100	CLAYSTONE As above.
2280-2285	100	CLAYSTONE As above.
2285-2290	100	CLAYSTONE light to medium grey, brownish in parts, slightly calcareous, trace carbonaceous specks, rare glauconite, traces of pyrite, micromicaceous, moderately hard to hard, blocky.
2290-2295	100	CLAYSTONE As above with hard nodular pyrite.
2295-2300	30	CLAYSTONE As above.

Depth	%	Description
	50	SANDY CLAYSTONE off-white to light grey, mottled green and yellow, abundant fine quartz and glauconite, traces of pyrite, trace carbonaceous specks, slightly dolomitic, firm, dispersive, grading to sandstone.
	20	SANDSTONE Off-white, mottled light grey, green and yellow, very fine to fine grain, with sort, sub-rounded to well-rounded, weak dolomite, amount, abundant white clay matrix, abundant glauconite, altered in part to limonite, poor porosity, friable, no show.
2300-2307	60	SANDY CLAYSTONE As above.
	40	SANDSTONE As above. SHOW: 50-80% patchy to uniform dull yellow fluorescence, no cut, weak whitish crush cut, no visible residue, traces of white fluorescent residue ring.

CORE CHIP DESCRIPTIONS

2307m		SANDSTONE Black to dark green, with brown patches, very fine to very coarse, poor sorting, sub-rounded to well-rounded, predominantly glauconite with 20% quartz, glauconitic cement, silty matrix in part, trace pyrite, trace biotite, glauconite weathered to limonite in places, hard and dense, no porosity, no show, medium to coarse glauconite. appears to be oolitic in character.
2307.8m		SANDSTONE As above, silty matrix becoming dominate with increasing mica, grading to glauconitic siltstone.
2308.3m		SANDSTONE Black to dark green, predominantly moderate to very coarse oolitic glauconitic grains, moderate sorting, abundant glauconite and argillaceous matrix, common inter oolitic fine quartz, trace of mica, traces of pyrite, glauconite weathered in part to limonite, hard and dense, no porosity, no show, becoming glauconitic, sandy claystone.
2309-2313	70	SANDSTONE Off-white to light grey, very coarse to granular, well-rounded, well sorted, pyrite cement in part, becomes unconsolidated with depth, traces interstitial grey clay, quartz sand, predomoninantly loose grains, poor to very poor inferred porosity, 20% bright patchy fluorescence, no visible oil stain, slow streaming milky cut, trace ring residue.
	30	CLAYSTONE Dark green grey to dark green, grades to sandy claystone as above.
2313.0	100	SANDSTONE Light grey, opaque to translucent, very coarse, predominantly 4mm diameter granules, well sorted, rare well-rounded, traces calcite, clean, common inter granular, pyrite and scattered pyrite coating on granules, quartz, friable, excellent porosity and permeability. SHOW 100% Patchy bright yellow-white fluorescence, no visible stain, instant to very fast, strong yellow/white cut, fluorescent moderate light brown ring residue, strong petroliferous odour.

Depth	%	Description
2314.2	100	SANDSTONE As above. SHOW As above.
2315.4	100	SANDSTONE As above, grainsize decreasing to predominately 2-3mm granules. Pyritic cement becoming more common and stronger. Friable, occasionally hard, excellent porosity and permeability. SHOW As above, but very fast streaming cut.
2316.6	100	SANDSTONE Light grey, translucent to opaque, quartz, fine to granular, up to 6mm in diameter, very coarse, 4mm granules, poor to moderately sorted, sub-round to well-rounded, weak to moderate pyrite becoming locally common interstitial, very fine sand and silt, rare glauconite grains, friable, occasionally hard, good porosity and permeability. SHOW 100% spotty to patchy bright yellow white fluorescence, no visible stain, fast streaming yellow white cut fluorescent, thin to moderately light brown ring residue, strong petroliferous odour.
2317.8	100	SANDSTONE As above, predominantly 2mm granules, moderately well sorted, weak pyrite cement, traces interstitial silt and very fine sand, friable, good porosity and permeability. SHOW As above.
2319.0	100	SANDSTONE As above, predominantly very coarse sand grading to granular, good sphericity, weak pyrite and calcareous cement, friable, good porosity and permeability. SHOW As above.
		CORE 2 CHIP DESCRIPTIONS
2320.2	100	SANDSTONE Off-white to light grey quartz, very coarse sand to 2-3mm granules, predominantly granular, well sorted, well-rounded - rounded, moderate to poor sphericity, weak dolomite cement, weak secondary pyrite cement, predominantly clean, traces of silt, good porosity and permeability, friable. SHOW 100% patchy to spotty, bright yellow/white fluorescence, no visible stain, fast to instant streaming cut, thin to moderate light brown residual ring.
2321.4m	100	SANDSTONE As above, but with sand to 4mm granules, poor sorting, locally well cemented by pyrite, clean, good porosity, friable, locally hard. SHOW As above, thin residue ring.
2321.8	100	CONGLOMERATE Light grey to off-white, 1-14mm granules to pebbles, predominantly 3-4mm granules, quartz, moderate to well sorted, well rounded, predominantly good sphericity, weak to moderate Dolomitic cement, secondary pyrite cement, clean, good to excellent porosity and permeability.

Depth	%	Description
		SHOW As above.
2323.0		SANDSTONE Light grey to off-white translucent - opaque, quartz, very coarse to medium pebbles, predominantly 2-3mm granules, moderately sorted, well rounded, fair sphericity, weakly Dolomitic, traces secondary pyrite cement, clean, local traces interstitial silt, friable, very poorly consolided, good to excellent porosity and permeability. SHOW 100% spotty bright yellow-white cut, no visible stain, thin ring residue.
2324.2	100	SANDSTONE Light grey, very fine to fine quartz, predominantly fine, well sorted, angular, moderate silica cement, common streaks and bands with secondary pyrite cement, clean, firm to hard, nil to very poor porosity. SHOW 100% medium bright yellow/white, uniform fluorescence, no visible stain, slow streaming, yellow-white cut, thin light brown, residue ring.
2325.4	100	SANDSTONE As above, fine to predominantly medium sand, trace mica, nil to poor porosity, friable, hard. SHOW 80% streaky fluorescence as above, cut and residue as above.
2326.6	100	SANDSTONE Light grey, very fine to very coarse quartz sand, predominantly moderate sorting, predominantly fine to medium grained, angular to sub-rounded, good sphericity, moderate silica cement, pyrite absent, trace black lithic grains, friable, hard, generally poor porosity, locally good. SHOW 100% Moderately bright uniform, yellow-white fluorescence, locally bright yellow/white patches with light brown oil stains, fast streaming yellow-white cut, thin to moderately light brown residue ring.
2327.8	100	SANDSTONE As above, predominantly 100% quartz sand, very well sorted, sub-angular, moderate silica cement, trace biotite, friable, poor - locally good porosity. SHOW 20% uniform patchy, moderately bright yellow-white fluorescence, slow streaming yellow with white cut, trace residue.
2329.0	100	SANDSTONE White to light grey, very fine to fine quartz, well sorted, sub-angular to angular, fair sphericity, moderate silica cement, light grey argillaceous matrix in patches, traces mica, traces dark lithic grains, friable to hard, nil to locally fair porosity, no show.
2330.2	100	SANDSTONE Light grey to off-white, very fine to coarse grains, very poor sorting, angular to well-rounded, with increasing grain size, variable sphericity, moderate silica cement, secondary dolomite cement, trace interstitial white clay, trace coarse brown mica, trace weathered mica, trace lithic grains, friable, locally hard, fair to good porosity, no show.

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Depth	%	Description
2331.0	100	SANDSTONE Off-white grey, fine grained, well sorted, angular, moderate silica cement, clean, trace brown interstitial clay in part, trace mica, good porosity, no show.
2331.4	100	SANDSTONE Light grey, fine to coarse grained quartz, angular to well rounded with increasing grain size, very poor sorting, weak calcareous cement, trace mica, trace dark lithic grains, friable to hard, poor porosity. SHOW 20% pin prick dull yellow-white fluorescence, weak, milky, very slow cut, trace residue ring.
		CUTTINGS DESCRIPTIONS
2331-2340	100	SANDSTONE Light grey, translucent to opaque, very coarse sand to granular, rounded, well sorted, weak calcareous cement, trace interstitial white and grey clay, loose quartz, no show.
2340-2345	80 20	SANDSTONE As above, no show. CLAYSTONE white, streaky, light to dark grey, very soft to sticky, plastic, silty, non calcareous.
2345-2355	30 70	SANDSTONE As above, no show. CLAYSTONE light to dark grey, soft, streaky, soluble, trace calcareous, silty, trace mica.
2355-2360	90 10	CLAYSTONE As above, trace pyrite nodules. SANDSTONE As above, no show.
2360-2365	100	CLAYSTONE As above, becoming very silty and sandy in parts, firm to moderately hard in places, subfissile.
2365-2375	30 70	CLAYSTONE As above. SANDSTONE Light grey, off-white, translucent to opaque, coarse sand to granules, sub-round to well-rounded, moderately sorted, weak silica and calcareous cement, abundant interstitial very fine quartz, traces of pyrite, traces lithic fragments, loose quartz, good inferred porosity, no show.
2375-2380	80 20	SANDSTONE As above, predominantly very coarse sand to granules, common pyritic quartz grains, trace lithic grains. CLAYSTONE White, spotted light to dark grey, firm to soft, silty, sticky, soluble, non calcareous.
2380-2390	100	SANDSTONE As above, fine to very coarse, poor sorting, sub rounded to well-rounded, quartz with common pyrtic quartz and lithic grains.
2390-2395	70 30	SANDSTONE Light grey, translucent to opaque, very coarse sand, to granules, sub-round to well-round, moderately sorted, weak calcareous cement, occasional pyrite nodules, common lithic grains, loose quartz, no show. CLAYSTONE As above

Depth	%	Description
2395-2400	70	SANDSTONE As above, predominantly well-rounded, good sorting.
	30	CLAYSTONE As above.
2400-2410	60	SANDSTONE As above, very fine to coarse sand, poor sorting.
	40	CLAYSTONE As above.
2410-2420	70	SANDSTONE As above, very fine to coarse sand, weak calcareous cement, occasional silt, common lithic fragments, loose quartz.
	30	CLAYSTONE As above.
2420-2430	90	SANDSTONE Light grey, fine to coarse sand, round to well-rounded, good sorting, occasional pyrite nodules, translucent to opaque, occasional lithic grains, trace metallic lustre (black aggregates - rutile?), loose quartz, no show.
	10	CLAYSTONE As above.
2430-2440	95	SANDSTONE As above.
	5	CLAYSTONE As above.
2440-2450	95	SANDSTONE As above, fine to moderately coarse sand, sub-round to predominantly well rounded, moderate sorting, trace lithic fragments.
	5	CLAYSTONE As above.

APPENDIX 2

APPENDIX 2

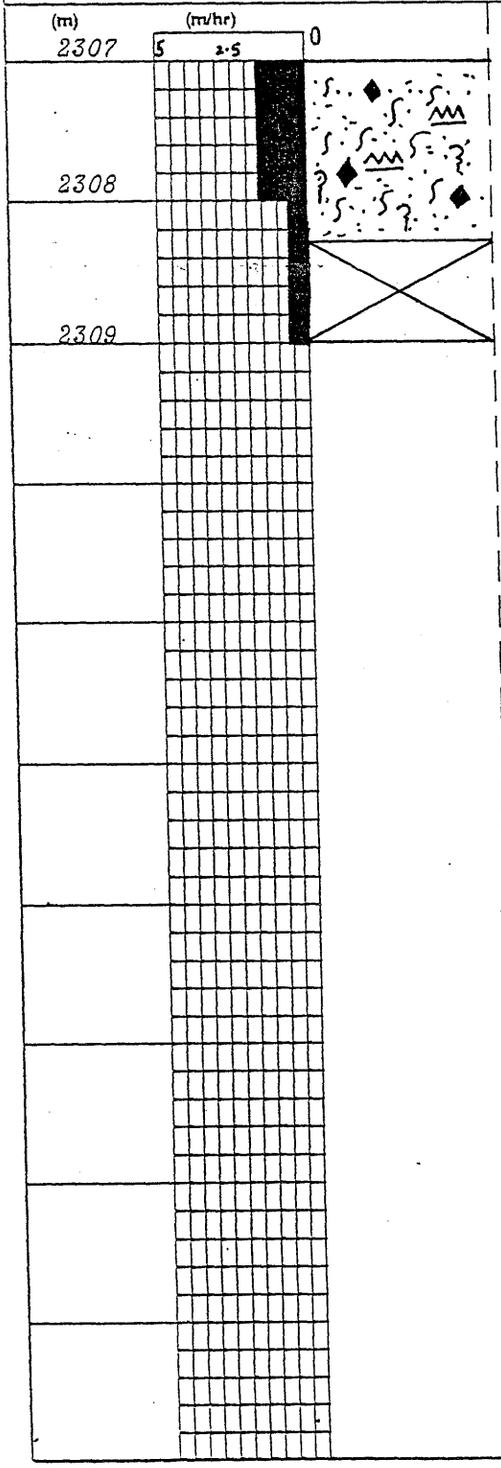
CORE DESCRIPTIONS

ESSO AUSTRALIA LTD

CORE DESCRIPTION

CORE No.:	1	WELL:	Kingfish 9
Interval cored:	2307-2309m	Recovered:	1.3m (65%)
Cut:	2m	Bit Size:	9 5/8"
Bit type:	RC412	Date:	21st April 1992
Described by:	Jon Reeve		

Interval	Depth & ROP	Graphic	Shows	Descriptive Lithology



2307m SANDSTONE: Glauconite, black to dark green with occasional brown patches, very fine to very coarse, poor becoming moderately sorted with depth, subrounded to well rounded, predominantly glauconite with 20% quartz, glauconite and silty matrix becoming argillaceous with depth, trace pyrite, trace biotite, glauconite grains commonly weathered to limonite, hard and dense, no porosity, no show.

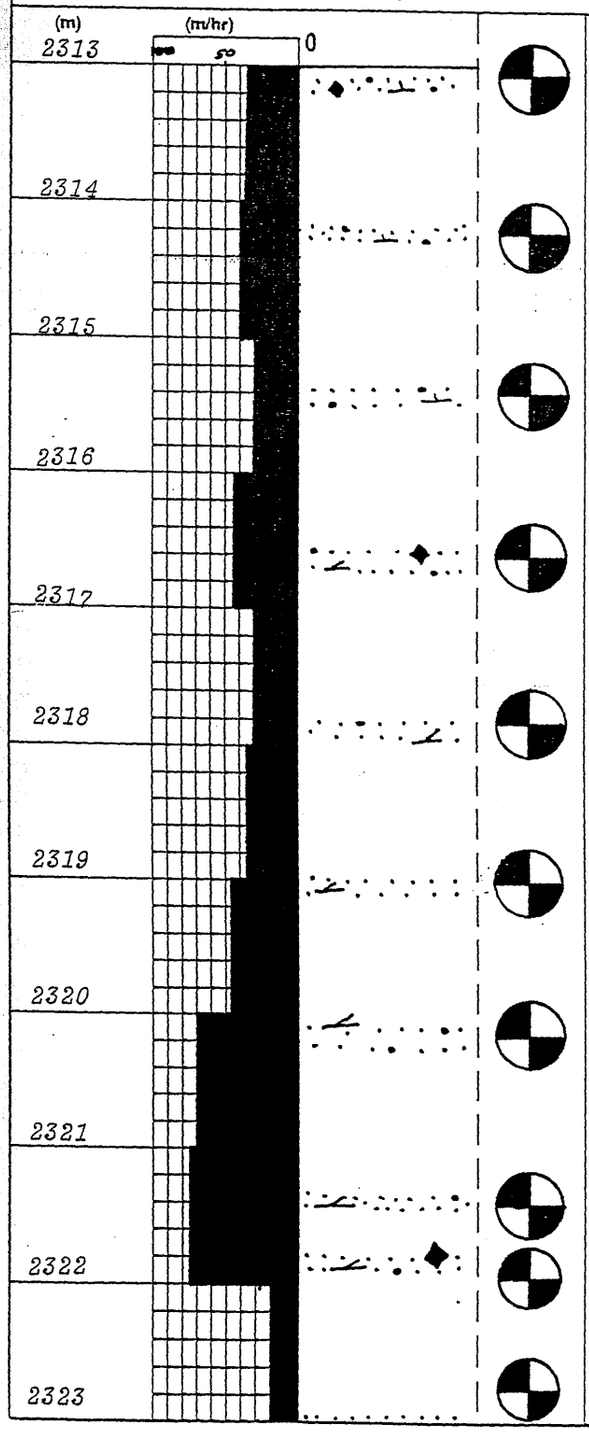
Coarse to medium glauconitic grains appear to be oolites.

Grades with depth to glauconitic sandy claystone.

ESSO AUSTRALIA LTD

CORE DESCRIPTION

CORE No.:	2	WELL:	Kingfish 9
Interval cored:	2313-2331.4m	Recovered:	18m (100%)
Cut:	18m	Bit Size:	9 5/8"
Bit type:	RC412	Date:	21st April 1992
Described by:	Jon Reeve		



Descriptive Lithology

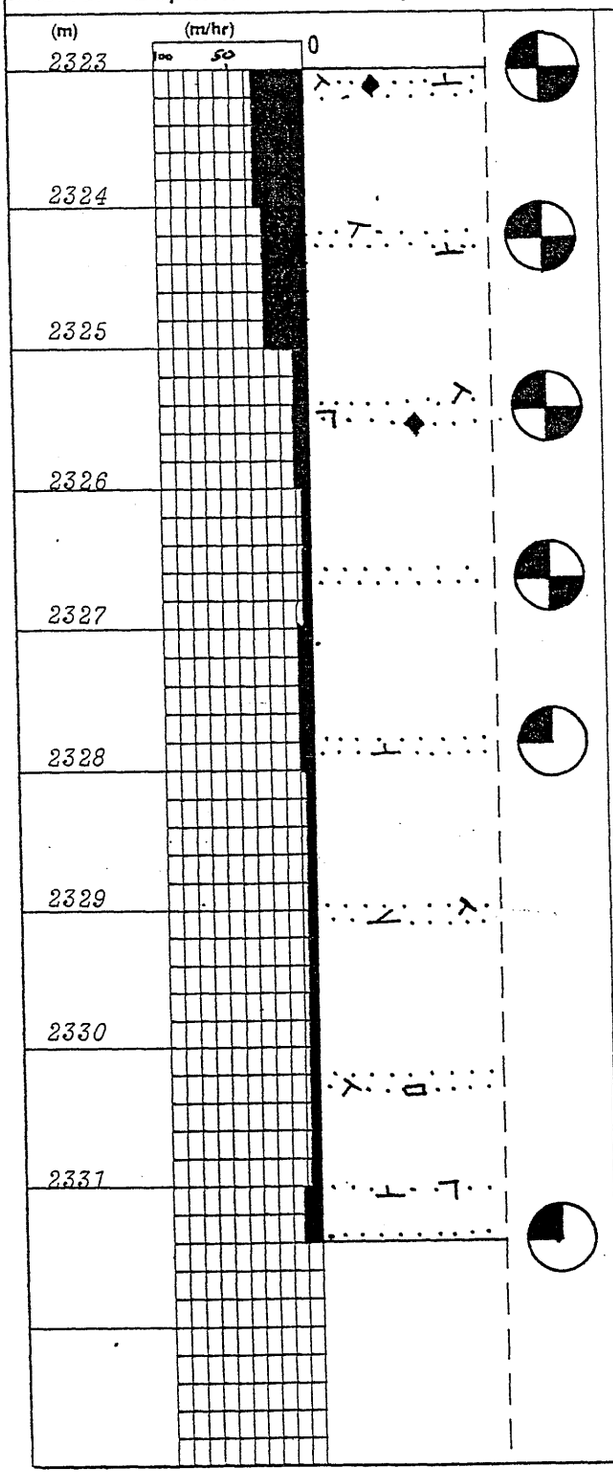
2313-2314.2 SANDSTONE: Light grey, opaque to translucent, very coarse to predominantly 4mm diameter quartz grains, well sorted, rounded to well rounded, trace calcareous and pyrite cement, clean, pyrite commonly scattered on grains as a coating, friable, excellent porosity and permeability. Show: 100% moderate uniform to patchy bright yellow white fluorescence, no stain, strong petroliferous odour, instant to very fast streaming yellow white cut. Fluorescent, moderately light brown ring residue.

2314.2-2323.0 SANDSTONE: Locally grading to conglomerate: off white to light grey coarse sand to 14mm quartz pebbles, predominantly 2-3mm granules, generally well sorted, but locally poor sorting, subrounded to well rounded, predominantly rounded to well rounded, generally fair sphericity, weak calcareous/dolomite cement, common weak secondary pyrite cement, generally clean, local insterstitial very fine sand and silt, friable, excellent to good porosity and permeability. Show: 100% dim to moderate uniform yellow white fluorescence with bright yellow spots and patches, no visual stain, strong odour, fast to occasionally instant streaming yellow white cut. Fluorescent, thin to occasionally moderate light brown ring residue.

ESSO AUSTRALIA LTD

CORE DESCRIPTION

CORE No.:	2	WELL:	Kingfish 9
Interval cored:	2313-2331.4m	Recovered:	18m (100%)
Cut:	18m	Bit Size:	9 5/8"
Bit type:	RC412	Date:	22nd April 1992
Described by:	Jon Reeve		



Descriptive Lithology

2323-2327.8m SANDSTONE: Light grey, very fine to medium, occasionally coarse, predominantly fine to medium, predominantly angular, becoming round when coarse, predominantly well sorted, good sphericity, moderately silica cemented, trace secondary pyrite cement to 2325.4m, predominantly clean, trace biotite, trace black lithic grains, friable to hard, nil to poor porosity, Show: 100% moderately bright uniform yellow white fluorescence becoming very patchy at base, no visual stain, predominantly slow, occasionally fast streaming yellow white cut. Fluorescent, thin light brown ring residue.

2327.8m-2331m SANDSTONE: Light grey to off white, very fine to fine and well sorted, occasionally very fine to coarse and poorly sorted, angular becoming rounded when coarse, variable sphericity, moderate silica cement, secondary dolomite cement when poorly sorted, trace interstitial white clay, trace mica, trace weathered feldspar in part, trace lithic grains, friable to locally hard, fair to good porosity, no shows.

2331-2331.4m SANDSTONE: Light grey, fine sand to coarse granules, angular to well rounded with increasing grain size, very poor sorting, weak calcareous cement, trace mica, trace dark lithic grains, friable to hard, poor porosity. Show: 20% Dull pinpoint yellow white fluorescence, no visual stain, very slow weak milky white cut, trace ring residue.

APPENDIX 3

APPENDIX 3

SIDEWALL CORE DESCRIPTIONS

KINGFISH-9

Sidewall Core Descriptions

No.	Depth (m)	Rec. (mm)	Description (Gas C1/C2/C3/C4/C5)
1	2423	20	SANDSTONE: Light grey to off white, streak grey, fine grained, well sorted, subrounded to rounded, weak silica cement, trace to common argillaceous matrix, trace carbonaceous specks, friable, trace to poor porosity, no show.
2	2412.5	25	SANDSTONE: Light grey to off white, very fine to very coarse, poor sorting, subangular to subrounded, weak silica cement, abundant white clay matrix, trace biotite, friable, trace to poor porosity, no show.
3	2410	25	SANDSTONE: As above speckled with grey to dark grey clay.
4	2365.5	25	SILTSTONE: Grey brown to olive brown, abundant fine quartz sand, trace mica, clay clasts, friable to hard, no show.
5	2364	25	SANDSTONE: Olive brown, streaked grey to grey brown, very fine to silty, subangular, weak to moderate sorting, weak silica cement, abundant clay matrix, trace mica, friable, laminated, nil to trace porosity, no show.
6	2358.5	30	SANDSTONE: As above, predominantly grey, laminated, with occasional pyrite laminae, nil porosity, no show.
7	2357	30	SANDSTONE: Grey mottled brown and olive brown, very fine grain, well sorted, subrounded to rounded, weak silica cement, abundant clay matrix, trace biotite, trace disseminated pyrite, nil porosity, no show.
8	2328.5	35	SANDSTONE: Light grey to off white, very fine to fine quartz sand, occasionally scattered very coarse quartz, subrounded, well sorted, weak silica cement, abundant white grey clay matrix, trace lithic grains and biotite, friable, nil porosity, no show.
9	2320	0	Empty.
10	2317	35	SANDSTONE: Light to medium grey, fine to coarse quartz sand, subangular to subrounded, poor sorting, weak calcareous cement, common white clay matrix, interstitial fine quartz sand, trace biotite, pyrite cement occasionally, friable, poor porosity, Show: 50% patchy moderately bright yellow white

Sidewall Core Descriptions

No.	Depth (m)	Rec. (mm)	Description (Gas C1/C2/C3/C4/C5)
			fluorescence, very slow streaming cut, weak crush cut, trace residue. GAS: 0.0164/0.328/0.287/0.237/0.131% RATIO: 2/32/29/24/13
11	2313	30	SANDSTONE: Grey to dark grey, coarse to granular, poor sorting, subangular to well rounded with increasing grain size, weak dolomite cement, abundant grey interstitial clay, common pyrite, friable, poor porosity, Show: 100% bright yellow white fluorescence, instant to fast streaming cut, medium ring residue in UV. GAS: 0.038/0.645/0.575/0.555/0.294% RATIO: 2/31/27/26/14
12	2312	30	SANDSTONE: Light grey to grey, fine to coarse, poor sorting, subangular to well rounded, weak dolomite cement, fine interstitial quartz, common white interstitial clay, poor porosity. Show: Uniform moderately bright 100% yellow white fluorescence, weak crush cut, trace residue. GAS: 0.0766/0.626/0.8059/1.155/0.556 RATIO: 3/19/25/36/17
13	2311		Not recovered - bullet lost.
14	2310	35	SANDSTONE: Mottled white to dark grey brown, very fine to granular quartz, poor sorting, subangular, trace calcareous cement, abundant hygroturgid clay matrix, trace pyrite, trace mica, poor porosity. Show: 50% bright yellow white patchy fluorescence, instant white cut, thin ring residue. GAS: 0.03285/0.44/0.607/0.798/0.425 RATIO: 2/19/26/35/18
15	2307.5	40	CLAYSTONE: Black to dark green, firm, common very coarse to very fine quartz grains, glauconite or green volcanic, crumbly.
16	2305	45	SILTSTONE: Mottled olive brown, yellow brown, green grey, off white, argillaceous streaks, trace mica, common volcanic tuffaceous, green, oxidised yellow brown, firm to friable, no show.
17	2300.5	40	CLAYSTONE: Light grey, firm to moderately hard, very calcareous, trace silt, trace disseminated pyrite, common microfossils, subfissile.
18	2297	30	CLAYSTONE: Pale brownish grey, as above.
19	2291.5	45	CLAYSTONE: Grey to light grey, hard, very calcareous, trace mica, subfissile to fissile.

Sidewall Core Descriptions

No.	Depth (m)	Rec. (mm)	Description (Gas C1/C2/C3/C4/C5)
20	2290	25	CLAYSTONE: Pale brown, rare green specks, firm to hard, slightly to moderately calcareous, trace pyritic microfossils, trace fossils, trace glauconite, laminated, subfissile.
21	2285.5	35	CLAYSTONE: Brown grey, firm to moderately hard, moderately calcareous, trace mica, laminated, subfissile.
22	2284.5	30	CLAYSTONE: Light brown, brown grey, moderately hard, moderately to very calcareous, common mica, trace pyrite, trace fossil, laminated, subfissile.
23	2278		Not recovered, bullet lost.
24	2197		Not recovered, bullet lost.
25	2082	45	CLAYSTONE: Brown grey, dark brown, moderately hard, weak to moderately calcareous, trace fine calcareous sand, common mica, trace pyrite, trace fossils, laminated, subfissile.
26	2078.5		Not recovered, bullet lost.
27	1897		Not recovered, bullet lost.
28	1847	35	CLAYSTONE: Light brown, trace glauconite, firm to moderately hard, moderate to very calcareous, common mica, trace pyrite, trace fine calcareous sand, trace fossils, massive.
29	1693	60	CLAYSTONE: Brown grey, firm to moderately hard, trace mica, rare pyrite, very calcareous, trace fine calcareous sand, trace fossils, granular appearance.
30	1687.5	45	CLAYSTONE: Light grey, moderately calcareous, trace pyrite, trace fossils, moderately to very hard, massive.
31	1638	50	CLAYSTONE: Light brown grey, very calcareous, trace pyrite, rare fossil fragments, very hard, massive, grades to argillaceous limestone.
32	1473	45	CLAYSTONE: Light brown grey, very calcareous, trace pyrite, moderately to very hard, hygroturgid, grades to argillaceous limestone.
33	1429	40	LIMESTONE: Light grey, micritic, scattered fine to medium quartz grains, slightly argillaceous, trace disseminated pyrite, hard.

Sidewall Core Descriptions

No.	Depth (m)	Rec. (mm)	Description (Gas C1/C2/C3/C4/C5)
34	1278	35	SILTSTONE: Pale green grey, firm to hard moderately calcareous, argillaceous, common micro fossils.
35	1269	30	CLAYSTONE: Light greenish grey, very calcareous, silty, trace carbonaceous specks , bioturbated micro fossils, hard, laminated.
36	1212	40	LIMESTONE: Pale greenish grey to pale brownish grey, very argillaceous, laminated, trace very fine quartz, trace micro fossils, hard, micritic, grades to calcareous claystone.
37	1205.5	25	LIMESTONE: Light grey, greenish, calclutite, trace claystone, rare carbonaceous specks, hard, subfissile.
38	1163	30	LIMESTONE: Light grey, laminated, very calcareous, common very fine glauconite grains, trace micro fossils, hard.
39	1076	30	CLAYSTONE: As above.
40	1033	30	CLAYSTONE: As above.
41	893	35	LIMESTONE: Light grey, calclutite, minor claystone, carbonaceous specks, trace microfossils, hard, subfissile.

APPENDIX 4

APPENDIX 4

RFT RESULTS

No samples were taken in this well.

APPENDIX 5

APPENDIX 5

VELOCITY SURVEY REPORT

See Kimgfish 9, Schlumberger Sonic Callibratio & Geogram Processing Report.

SEPARATE ATTACHMENT PE 906041