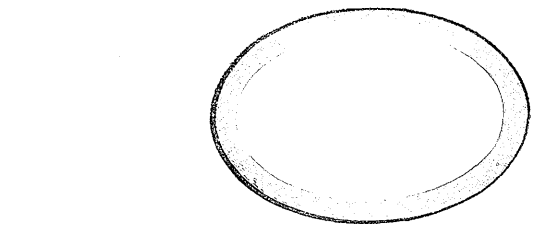
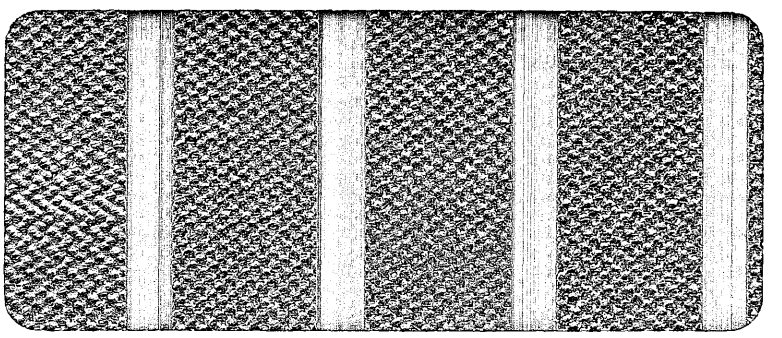
DEPT. NAT. RES & ENV
PE902256





WCR
KINGFISH-7
(W690)

ESSO EXPLORATION AND PRODUCTION AUSTRALIA INC.

153 pages
+ 8 encls.

OIL and GAS DIVISION

WELL COMPLETION REPORT

- 5 JAN 1978 KINGFISH-7

W690

GIPPSLAND BASIN, VICTORIA

L.G. Elliott

December, 1977

CONTENTS

APPENDICES

ENCLOSURES

ATTACHMENTS

ESSO STANDARD OIL (AUSTRALIA) LTD.

COMPLETION REPORT

I WELL DATA RECORD

Date July 1977

LOCATION

WELL NAME	STATE	PERMIT or LICENCE	GEOLOGICAL BASIN	FIELD
KINGFISH-7	VICTORIA	VIC/L8	GIPPSLAND	Stepout

CO-ORDINATES		MAP PROJECTION	GEOGRAPHICAL DESCRIPTION
	Lat. / Long.		
Surface	38°35'13.711"S / 148°04'59.502E	AGM ZONE 55	0.9 mile WNW of Kingfish-3 1 mile NW of Kingfish-4
	X - 594340 / Y - 5728466		

ELEVATIONS & DEPTHS

ELEVATIONS	WATER DEPTH	TOTAL DEPTH	
Ground	254'	M.D. 7923	Avg.Angle Straight Hole
KB 83'		T.V.D.	
RT	PLUG BACK DEPTH	REASONS FOR P.B.	
Braden Head	350'	Abandonment	
Top Deck Platform			

DATES

RIG RELEASED from Cobia-2	ON LOCATION	SPUDDED
24th May 1977	25th May 1977	26th May 1977
REACHED TOTAL DEPTH	RIG RELEASED	PROD.UNIT - Start Rigging Up
10th June 1977	22nd June 1977	
PROD.UNIT - Rig Down Complete		I.P. ESTABLISHED

MISCELLANEOUS

OPERATOR	PERMITTEE or LICENCEE	ESSO INTEREST	OTHER INTEREST
Esso	Esso-Hematite Petroleum P/L	50%	Hematite 50%

CONTRACTOR	RIG NAME	EQUIPMENT TYPE
Australian Odeco Pty Ltd.	"Ocean Endeavour"	Semi-submersible drilling vessel

TOTAL RIG DAYS	DRILLING AFE NO.	COMPLETION NO.	TYPE COMPLETION
29.04	237 - 004		

LAHEE WELL CLASSIFICATION

Before Drilling - Stepout

After Drilling - Plugged and abandoned Successful Oil Confirmation Well.

L.G. Elliott

Geologist

II(a) INITIAL PRODUCTION TEST - Not Applicable
II(b) FORMATION INTERVAL TESTS - for more information see Appendix 8.

Designation	Depth		Details
FIT-1	7518'	Oil Test	Rec. 3.05 ft^3 gas, 5000 cc black to dark brown oil 47° API at 63°F, 15000 cc mud filtrate.
FIT-2	7592'	Oil Test	Rec. 9.68 ft^3 gas, 8000 cc oil 49° API at 71°F, 12000 cc mud filtrate
FIT-3	7558'		Rec. dark brown oil scum, 21000 cc mud filtrate.
FIT-4	7666'	Oil Test	Rec. 18.3 ft^3 gas, 17500 cc dark brown oil 50° API at 64°F, 2500 cc mud filtrate.
FIT-5	7648'	Oil Test	Rec. 0.9 ft^3 gas, 225 cc light brown oil, 6500 cc mud filtrate.
FIT-6	7658'	Oil Test	Rec. 14.5 ft^3 gas, 9000 cc dark brown oil 49.5° API at 73°F, 10000 cc mud filtrate.
FIT-7	7634'	Oil Test	Rec. 17.0 ft^3 gas, 13500 cc dark brown oil 50° API at 68°F, 5000 cc mud filtrate.
FIT-8	7508'		Rec. tr. gas, scum of light brown oil, 20500 cc mud filtrate
FIT-9	7516'	Oil Test	Rec. 4.1 ft^3 gas, 5250 cc dark brown oil 46° API at 74°F, 15250 cc mud filtrate
FIT-10	7574'		Tight Test
FIT-11	7781'	Water Test	Rec. 0.05 ft^3 gas, 20500 cc formation water.
FIT-12	7870'	Water Test	Rec. tr. gas, 19000 cc formation water.
RFT-1	-		No Test, tool hung up
RFT-2	-		No Test, tool hung up
RFT-3	7654'		Plugged flowline.
			Pressures: Initial hydrostatic: 3964 psig, Formation pressure 3267 psig. (pretest pressure)
RFT-4	7647'		Plugged flowline
RFT-5	7658'		Lost seal
RFT-6	7660'		Plugged flowline
RFT-7	7611'		Plugged flowline
RFT-8	7610'		Plugged flowline
RFT-9	7548'		Plugged flowline
RFT-10	7653.5'		Plugged flowline
RFT-11	7652'		Plugged flowline

III PERFORATING RECORD (Prod. Test, Completion DST).

INTERVAL	HDF	TOTAL SHOTS	SERVICE COMPANY
646-648	4	8	Schlumberger for cement plug squeeze.

L.G. Elliott
Geologist

WELL KINGFISH-7 GIPPSLAND BASIN.

IV	CASING - LINER - TUBING RECORD						
Type	Size	Weight	Grade	Thread	No. Joints	Amount	Depth
Pile Joint	24"	670#	-	CC	1	32.95	358.95
Cross Over	20"	129#	X-52	JV-CC	1	41.17	400.12
Conductor Casing	20"	91#	X-52	JV	7	300.44	700.56
Float Joint	20"	91#	X-52	JV	1	45.83	746.39
Casing Hanger	18-3/4" x 10-3/4"	-	-	-	1	2.30	333.7
Pup Joint	10-3/4"	40.5#	K-55	Butt	1	5.15	338.85
Surface Casing	10-3/4"	45.5#	K-55	Butt	63	2478.61	2817.46
Float Collar	10-3/4"	-	-	Butt	1	1.70	2819.16
Float Joint	10-3/4"	40.5#	K-55	Butt	1	38.00	2857.16
Float Shoe	10-3/4"	-	-	Butt	1	2.00	2859.16

V	CEMENT RECORD			
String	20"Conductor Casing		10-3/4" Surface Casing.	
Type of Cement	Aust 'N' Neat +12% Gel	Aust 'N' Neat +2% $CaCl_2$	Aust 'N' Neat	
Number of FT^3	2322	413	1180	
Average weight of slurry	12.6	15.6	15.6	
Cement Top	Sea Floor		1360'	
Casing Tested with	500 psi		1500 psi	
Number of Centralizers	6		10	
Number of Scratchers	-		-	
Stage Collar etc.	-		-	
Remarks	-		-	

G.W. WEYBURY
Engineer

WELL KINGFISH-7

VII SAMPLES, CONVENTIONAL CORES, SW CORES

INTERVAL	TYPE	RECOVERED	INTERVAL	TYPE	RECOVERED %	RECOVERED Ft
800-6020	5 sets of Washed and dried, 1 set of unwashed cutting samples	30' intervals	90 sidewall cores were attempted, 86 were recovered. A detailed list and description is attached			
6020-7400		20' intervals				
7400-7923		10' intervals				
			7513-7533	Core-1	0	0
			7533-7581	Core-2	100	47'10"
			7581-7611	Core-3	100	3'
			7611-7654	Core-4	87	37'5"
			7654-7699	Core-5	58	26'2"
			7699-7759	Core-6	89	53'6"
800-7923	One set of Composite canned cuttings scaled at 100 feet intervals					

VIII WIRELINE LOGS AND SURVEYS Incl. FIT)

Type & Scale	From	To	Type & Scale	From	To
ISF-Sonic Run 1 2" & 5" = 100'		746-2900			
FDC-GR-Cal Run 1 2" & 5" = 100'	FDC	745-2892			
	GR	337-2892			
ISF-Sonic Run 2 2" & 5" = 100'		2856-7904	FIT's and RFT's see Part II		
FDC-CNL-GR Run 1 2" & 5" = 100'		2856-7904			
HDT Run 1		2858-7501			
Velocity Survey		2900-7898 14 levels			
CST 1		7500-7880			
CST 2		6147-7455			
CST 3		2870-6040			

L.G. ELLIOTT
Geologist

PE906037

This is an enclosure indicator page.
The enclosure PE906037 is enclosed within the container PE902256 at this location in this document.

The enclosure PE906037 has the following characteristics:

ITEM_BARCODE	= PE906037
CONTAINER_BARCODE	= PE902256
NAME	= Stratigraphic Table
BASIN	= GIPPSLAND
PERMIT	= VIC/L8
TYPE	= WELL
SUBTYPE	= STRAT_COLUMN
DESCRIPTION	= Stratigraphic Table (from WCR page IXa) for Kingfish-7
REMARKS	=
DATE_CREATED	= 31/12/77
DATE_RECEIVED	=
W_NO	= W690
WELL_NAME	= KINGFISH-7
CONTRACTOR	=
CLIENT_OP_CO	= ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

DESCRIPTION OF LITHOLOGICAL UNITS

KINGFISH-7

Gippsland Limestone (337'-6540')

337-800	No samples were collected, gamma ray log indicates limestones.
800-2060	*CALCARENITE* - white to medium grey, fine grained very fossiliferous, bryzoa, bivalves, forams, ostracod and echinoid fragments. Clasts of darker pyritized limestone. Some recrystilization, rare glauconite, firm to friable, porous.
2060-3020	*MARL* - buff to light grey, soft and gummy, containing silt to fine sand size grains of carbonate material and fossil fragments. Slight trace of glauconite. Carbonaceous flecks common.
3020-4100	*INTERBEDDED SILTSTONE AND MARL* - Siltstone - light to medium grey, very calcareous dark specks, slight trace glauconite grains, fossiliferous, sandy in part, firm to friable.
4100-4610	*INTERBEDDED SILTSTONE AND CALCARENITE* - Calcarenite - buff to light grey, very fine to fine grained, friable, trace glauconite, silty.
4610-5810	*MARL* - light to medium grey, very soft to firm, fossiliferous, rare glauconite, dark flecks. Abundant loose forams, trace pyrite.
5810-6540	*SHALE* - very calcareous, fissile, medium green/grey, firm grading from marl, rare glauconite some carbonaceous material, grading to siltstone.

Lakes Entrance Formation (6540'-7410')

6540-7410	*SHALE* - very calcareous, fissile, medium green/grey, firm grading from marl, rare glauconite some carbonaceous material, grading to siltstone.

Upper Gurnard Facies (7410'-7498')

7410-7430	*SILTSTONE* - firm to hard, very calcareous white to light tan, friable very glauconitic, some loose quartz.
7430-7498	*SANDSTONE* - dark grey, silty, dirty, friable, very glauconitic, calcareous, pyritic.

Marine Sand (7498'-7524')

7498-7524	*SANDSTONE* - quartz, fine-coarse grained, subangular-subrounded, finely sorted, loose grains.

Lower Gurnard Facies (7524'-7553')

7524-7553	*SANDSTONE* - dark green, firm fine to granular, argillaceous, poorly sorted, subangular to subrounded, very glauconitic, very pyritic, non calcareous.

Latrobe Coarse Clastics (7553'-7923')

7553-7592	*SILTSTONE* - light grey, very fine to fine, non-calcareous, rare pyrite, moderately sorted. Intensely burrowed.

7592-7719	*SANDSTONE* - medium grey, very fine to pebbly, friable, poorly to moderately sorted, trace pyrite, micaceous, conglomeratic in places becoming conglomerate with depth.
7719-7733	*SILTSTONE* - dark grey, micaceous, carbonaceous, burrowed.
7733-7823	*SANDSTONE* - loose quartz grains, very coarse, subrounded to rounded, some pyrite

GEOLOGICAL AND GEOPHYSICAL ANALYSIS

GEOLOGY

	Predicted	Actual
Latrobe Group	-7385	-7327 (7410') 58' High
Upper Sand	-	-7415 (7498')"70' High"
M-1 Reservoir	-7485	-7470 (7553') 15' High
M-1.1	-7485	-
M-1.2	-7530	-7470 (7553') 60' High
M-1.3	-7546	-7480 (7563') 66' High
OWC	-7566	-7591 (7674') 25' Low
M-1.4	-7650	-7638 (7721') 12' High

Kingfish-7 was designed to increase the confidence level of West Kingfish reserves by providing data on the structure, stratigraphy and reservoir parameters of the West Kingfish units.

The Latrobe section was expected to consist of Greensand facies, the unevaluated M-1.1 unit, which was interpreted to be of non-marine - marginal marine origin, the near shore M-1.2 and M-1.3 units, and older units. In West Kingfish the M-1.3 and younger units were predicted to have a greater westward dip than the Latrobe unconformity surface, and to subcrop at the Top of Latrobe "coarse clastics" towards the western end of the structure. The unevaluated M-1.1 unit was thought to form a wedge at the western end of the field. In fact the Greensand facies and the "coarse clastics" units thickened to the west replacing the expected wedge of M-1.1 sediments. The Greensand facies was 43' thicker than expected, and the M-1.2/M-1.3 units were 48' thicker than expected.

The (?) Upper M. diversus M-1.2 unit was sandier than anticipated due to its position closer to the shoreline, but it has poorer reservoir properties than the Upper Sand and the M-1.3 Sand.

The Lower M. diversus M-1.3 unit was thicker and of better quality than previously seen. This unit in Kingfish-7 is interpreted to be of nearshore marine to non-marine origin deposited where a braided stream system discharged into the sea forming a lobate delta. The finer grained sediments seen in the M-1.3 unit in wells further east were deposited in a lower energy offshore environment.

The non-marine M-1.4 consisted of fluvial sands interbedded with shales, silts and thin coals, while the M-1.5 consisted of marginal marine massive sand. Both these units were essentially as expected. For the first time in the Kingfish field a net oil sand was intersected in the usually tight Greensand facies. This interpreted marine sand of P. asperopolus age is 25' thick in Kingfish-7 and is limited (from well control) to the western part of the field.

RESERVOIR PARAMETERS AND HYDROCARBONS

A gross oil column of 176' was seen in the well above the oil/water contact at 7674'. This compares with an expected column of 81', and is due both to the tops being high to prediction as well as a lower than expected OWC.

../2

Gross Pay Sand Intervals

Unit	Interval	Gross Thickness	Net Sand	Net Oil Sand
Upper Sand	7498'-7523'	25'	23'	23'
M-1.2	7553'-7563'	10'	10'	10'
M-1.3	7588'-7721'	133'	133'	86'

Porosities within the oil column range from 15% to 22%, while water saturations range from 15% to 48%.

GEOPHYSICS

The uppermost Latrobe section in the West Kingfish area is seismically represented by two positive reflections. The upper cycle corresponds to the top of Latrobe Group which is the top of the Greensand facies, while the lower cycle, prior to the drilling of Kingfish-7, was correlated with the top of the Latrobe "coarse clastics" section.

Kingfish-7 encountered the top of the Latrobe Group 58' high to prediction. This error was principally due to the predicted average velocity to the Latrobe being almost 100FPS too fast. The source of this velocity error was the failure to make sufficient allowance for the distorting effect of the overlying high velocity Miocene channel on the good quality G74A move out data.

The uppermost reservoir at Kingfish-7 is a 25' thick P. asperopolus sandstone which was encountered 70' high to the predicted top of "coarse clastics". The error in this case was partly due to a mis-identification of the "low cycle" which in fact originates from the base of the Upper Sand unit at Kingfish-7.

The additional velocity and depth control provided by Kingfish-7 has led to a reinterpretation of the velocity data and to a modification of the structural mapping of the West Kingfish area. The revised structure map on the "low cycle" (Encl. 2) which was interpreted to be the "Top of M-1 reservoir" prior to drilling has been phantomed up 25' to produce a structure map on the top of the P. asperopolus sand unit. This map (Encl. 3) shows closure down to a subsea depth of -7505' which is 86' above the oil/water contact observed in the M-1.3 reservoir at Kingfish-7. The "low cycle" map has also been phantomed down some 60' to generate a structure map on the top of the M-1.3 sandstone. In this case (Encl. 4) the map is closed down to the observed oil/water contact. Thus the revised structural mapping suggests that west dipping intra-Latrobe seals between the individual reservoirs are responsible for the trapping of the major oil at West Kingfish.

Appendix 1

WELL COMPLETION REPORT

KINGFISH-7

APPENDIX 1

SAMPLE DESCRIPTIONS

L.J. BROOKS
29.5.77

SAMPLE DESCRIPTIONS

KINGFISH-7

DEPTH	%	DESCRIPTION
800-830		Limestone - white to light grey, moderately hard to friable and very porous. Very fossiliferous; bryozoa, forams, shell (bivalve) fragments, common nacre, occasional very fine crystal linings in the pores.
	~20	Cement cavings.
830-860		As above.
860-890		Skeletal limestone - white to medium grey. Grey caused by pyrite staining. Very fossiliferous. Mainly bryozoal and shell (bivalve) fragments, minor to common forams. Common aggregates of fossil debris (skeletal calcarenite). Ostracod fragments. Occasionally silt size white calcite crystal aggregates.
	Minor	Cement cavings.
890-920		As above.
920-950		As above.
950-980		As above.
980-1010		Skeletal limestone - as above, white to medium grey where stained with pyrite. Mainly aggregates of skeletal calcarenite, silt to very fine grained, friable. Abundant bryozoal and shell (bivalve) fragments and forams. Trace glauconite in pores of bryozoa. Some forams stained grey-green with pyrite and glauconite.
1010-1040		As above.
1040-1070		As above.
1070-1100		As above.
1100-1130		As above, minor echinoid spines. Abundant cement cavings.
1130-1160		Skeletal calcarenite - white to medium grey, very fine grained, very fossiliferous - bryozoa, bivalve fragments, forams, ostracod and echinoid fragments. Clasts of darker pyritized limestone. Common recrystallisation into silt size crystal aggregates. Trace golden pyrite in the limestone.
1160-1190		As above.
1190-1220		As above.
1220-1250		As above.
1250-1280		Skeletal calcarenite - buff to white with light to medium grey (stained with pyrite) fragments and clasts. Very fine grained, very abundant larger fragments of bryozoa, bivalves, forams, echinoids. Some recrystallisation giving silt size calcite crystal aggregates. Rare glauconite grains, Firm to friable, porous.
1280-1310		As above.
1310-1340		As above.

L.J. BROOKS
29.5.77

SAMPLE DESCRIPTIONS

KINGFISH-7

DEPTH	%	DESCRIPTION
1340-1370		Skeletal calcarenite - buff, very fine grained, as above. Rare medium grey fragments and rare fossil fragments.
1370-1400		As above.
1400-1430		Skeletal calcarenite - buff, very fine to fine grained, trace terrigenous material, mostly silt and clay, slight trace very fine darker grains (some glauconite). Minor fossil fragments - bryozoa, bivalves and forams. Calcarenite friable and porous.
1430-1460		As above.
1460-1490		As above.
1490-1520		As above.
1520-1550		As above.
1550-1580		Skeletal calcarenite - buff, speckled with minor medium grey carbonate clasts/grains. Very fine grained, friable, porous, slight trace terrigenous clay and silt, slight trace glauconite grains, pyrite. Minor fossil fragments of bryozoa, bivalves, forams, echinoid spines.
1580-1610		As above.
1610-1640		Skeletal calcarenite - as above, common very carbonaceous shale flecks and more common very fine to fine grained glauconite grains (very slight gas increase 50 → 300ppm C_1).
1640-1670		Skeletal calcarenite - as above, less carbonaceous shale flecks.
1670-1700		Calcarenite - skeletal - as above, slight trace carbonaceous material.
1700-1730		As above.
1730-1760		As above.
1760-1790		Skeletal calcarenite - buff, speckled with medium grey pyrite stained fossil fragments (fine grained) and carbonaceous material. Calcarenite very fine to fine grained, friable and porous, trace terrigenous insolubles, including well rounded very fine to fine grained glauconite grains. Not quite as clean as before - more finer grained matriz. Trace bryozoa, bivalve fragments, forams.
1790-1820		Skeletal calcarenite - as above
1820-1850		As above.
1850-1880		As above, slight trace soft gummy light grey marl.
1880-1910		Calcarenite - as above.
1910-1940		Skeletal calcarenite - buff to light grey, speckled with medium grey, fine grained fossil fragments and dark carbonaceous material. Firm, very fine to fine grained, larger chips than before. Trace glauconite grains. Minor bryozoa, bivalve fragments and forams.

L.J. BROOKS
29.5.77

SAMPLE DESCRIPTIONS

KINGFISH-7

DEPTH	%	DESCRIPTION
1940-1970		As above.
1970-2000		Skeletal calcarenite - as above, firm, mainly tight, trace acid insolubles
2000-2030		As above, trace light grey, soft marl
2030-2060		As above, slight trace marl
2060-2090	90	Marl - light grey, soft and sticky, speckled with the grains that make up the calcarenite - buff and medium grey, limestone grains and dark carbonaceous fragments. Considerable acid insoluble clays.
	10	Calcarenite - as above, plus some fossil fragments, as above
2090-2120	70	Marl - as above
	30	Skeletal calcarenite - as above, light grey, more fine grained matrix, very fine grained, carbonaceous and medium grey carbonate speckles, firm
	Tr	Forams
2120-2150	30	Marl - as above
	70	Calcarenite - very silty and dirty, light grey, tight, friable to firm, speckled as above
	Tr	Forams
2150-2180	60	Calcarenite - "calcisiltite" - as above
	40	Marl - as above (actually calcareous clay)
2180-2210	80	Marl - as above
	20	Very silty calcarenite - as above
	Tr	Forams
2210-2240	80	Marl - as above
	20	Calcarenite - very silty, as above
	Tr	Forams
2240-2270	90	Marl - light grey, soft and gummy, occasionally almost firm, contains abundant pelagic forams, carbonaceous flecks common, silty in part
	10	Silty calcarenite - as above, light grey, very fine, firm, trace acid insoluble residue, black carbonaceous flecks, dark carbonate grains. Abundant benthonic forams ~1mm diameter
2270-2300	95	Marl - as above
	5	Silty calcarenite - as above
		Abundant forams, as above
2300-2330	95	Marl - as above
	5	Silty calcarenite - as above
		Abundant forams, as above
2330-2360		Marl - as above, silty grading in minor part to calcisiltite, sandy
2360-2390		Sample - Marl - buff to light grey, soft and gummy containing silt to fine sand size grains of carbonaceous material, fossil fragments and globular planktonic forams. Slight trace glauconite grains. ~30% acid insoluble residue, grades to:
	Minor	"Calcisiltite" - much as for Marl but very silty, sandy and firmer, less acid insoluble. Abundant larger benthonic forams ~1mm diam.

L.J. BROOKS
29.5.77

SAMPLE DESCRIPTIONS

KINGFISH-7

DEPTH	%	DESCRIPTION
2390-2420		Marl - as above, grading in part to: 'Calcisiltite'. Abundant forams.
2420-2450		As above.
2450-2480		As above.
2480-2510		Marl - as above, grading to major portion of Sandy Calcisiltite, as above
2510-2540		Marl - as above, grading to large part of Sandy Calcisiltite, more glauconite grains than above, and sandier. Abundant benthonic forams.
2540-2570		Marl - soft, as above, minor benthonic forams
2570-2600		Marl - soft, gumbo, as above, minor benthonic forams
2600-2630		Marl - as above, common benthonic forams
2630-2660		Marl - light grey, soft and sticky, very silty and sandy, carbonaceous grains, trace glauconite, abundant globular forams, medium to occasional coarse grain size. Grading to major portion of Calcisiltite - very sandy, carbonaceou trace glauconite, firm. Trace acid insolubles.
2660-2690		Marl - as above, minor firmer calcisiltite
2690-2720		Marl - as above, minor firm calcisiltite
2720-2750		Marl - as above, large portion of firm Calcisiltite chips.
2750-2780		Marl - as above, ~40% firm Calcisiltite, as above
2780-2810		Marl - as above.
2810-2840	~70	Marl - light grey, soft and sticky "gel" holding silt and sand size fossil fragments, carbonaceous material and globular plankforams. Trace glauconite.
	~30	Calcisiltite - light grey, sandy, firm, black carbonaceous flecks, globular forams and fossil fragments. Common benthonic forams.
2840-2870	~70	Marl - as above
	~30	Calcisiltite - as above
2870-2900	80	Marl - as above
	20	Calcisiltite - as above
		Ran and cemented 10-3/4" casing. Shoe at 2858'.
		1.6.77
2900-2930		Marl - light grey, soft and 'gel' like containing silt and sand size particles of mainly limestone. Abundant planktonic forams. Trace glauconite grains, slight trace mica and significant organic ? acid insoluble residue. Contaminated with abundant cement chips.

L.J. BROOKS
1.6.77

SAMPLE DESCRIPTIONS

KINGFISH-7

DEPTH	%	DESCRIPTION
2930-2960		Marl - as above, light grey, soft and sticky 'gumbo' containing silt and fine sand size grains. Abundant forams, mainly planktonic, mainly very fine sand size grains, slight trace glauconite grains. ~30-40% medium grey to brown, clayey acid insoluble residue.
2960-2990		Marl - as above
2990-3020		Marl - as above
3020-3050		Marl - as above
	~30	Very calcareous siltstone, very friable, is firmer and slightly cleaner version of marl.
3050-3080	60	Marl - as above
	40	Very calcareous siltstone - light grey speckled with dark carbonaceous flecks, very friable to firm, sandy, fossiliferous - abundant planktonic forams, trace glauconite. ~40% acid insoluble residue, medium grey/brown, mainly clay.
	Tr	Pyrite, solid
3080-3110	55	Calcareous siltstone (or Calcisiltite) - as above, occasionally moderately hard.
	45	Marl - as above, generally firmer but still very soft
	Sl Tr	Limestone - medium grey, massive, very hard
3110-3140	40	Siltstone - calcareous, as above
	60	Marl - as above, very soft but no longer a 'gel'
3140-3170	45	Calcareous siltstone - as above, firm to hard
	55	Marl - as above
3170-3200	30	Calcareous siltstone - as above
	70	Marl - as above
3200-3230	100	Calcareous siltstone - light to medium grey, friable to mostly moderately hard, minor very fine grained globular forams and slight trace carbonaceous material (less than before). Trace glauconite grains. Acid insoluble residue, 50%+
	Tr	Benthonic forams.
3230-3260	90	Calcareous siltstone - as above
	10	Marl - very light grey, firm but friable, minor very fine grained forams (globular) and slight trace glauconite
3260-3290		As above.
3290-3320		Calcareous siltstone - as above, also lighter grey variety which is softer. Acid residue ~70%.
3320-3350		Calcareous siltstone - as above
3350-3380		Calcareous siltstone - as above Rare shell fragments
3380-3410		Calcareous siltstone - as above, grading to Calcarenite
3410-3440		Calcareous siltstone - light to medium grey, very calcareous, dark specks, slight trace glauconite grains, fossiliferous (forams, very fine grained globular), very sandy in part, grading to very dirty Calcarenite, tight. Firm and friable to moderately hard.

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SAMPLE DESCRIPTIONS

KINGFISH-7

DEPTH	%	DESCRIPTION
3440-3470		Calcareous siltstone - calcarenite, dirty, as above, common medium grains size, forams, mainly globular
3470-3500		As above.
3500-3530		As above.
3530-3560		As above.
3560-3590		As above, very fossiliferous, slight trace dark carbonaceous material.
3590-3620		Calcareous siltstone to calcarenite - light grey, friable to occasionally moderately hard, very fossiliferous, mostly very fine grained globular forams, ~60%+ acid residue. Trace carbonaceous material, glauconite.
3620-3650		Calcareous siltstone - sandy, as above.
3650-3680		Calcareous siltstone to calcarenite - light grey, as above
3680-3710		Calcareous siltstone - sandy, light grey to buff, friable and soft to firm, speckled with rare carbonaceous flecks and glauconite grains. Foraminiferous - silt to very fine sand size globular forams. ~50%+ acid insolubles. Very common, loose, fine to medium grained globular shaped forams.
3710-3740	90	Calcareous siltstone - light grey to buff, as above. Some hard chips. Rare white mica and minor forams
	10	Marl - very light grey, soft, carbonaceous flecks, slight trace glauconite.
3740-3770	80	Calcareous siltstone - as above
	20	Marl - as above Common globular forams
3770-3800	70	Calcareous siltstone - as above
	30	Marl - as above. <30% acid insolubles. Minor forams
3800-3830	50	Calcareous siltstone - light grey to buff, soft to firm and friabl fossiliferous, rare carbonaceous flecks and trace glauconite.
	50	Marl - light grey, soft and 'gel' like containing very fine sand size forams, silt and trace carbonaceous flecks and glauconite. Rare solid pyrite.
3830-3860	70	Calcareous siltstone - as above
	30	Marl - as above Minor globular forams
3860-3890	80	Calcareous siltstone - as above
	20	Marl - as above
3890-3920	90	Calcareous siltstone - as above, soft
	10	Marl - as above Common globular forams.

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SAMPLE DESCRIPTIONS

KINGFISH-7

DEPTH	%	DESCRIPTION
3920-3950		Calcareous sil-stone - light grey to buff, soft and easily crushable, foraminiferous, trace glauconite grains, sandy in part.
		Minor marl - as above
		Minor forams, mainly globular
3950-3980		Calcareous siltstone - as above, firmer to firm to occasionally moderately hard.
		Minor marl - as above
		Rare calcite, sucrosic aggregates of very fine grained crystals.
3980-4010		Calcareous siltstone - light grey to buff, firm, very friable, sparsely speckled with dark flecks and some glauconite grains. Contains forams, sandy grading to Calcarenite
		Minor marl - as above
	Tr	Pyrite; loose forams
4010-4040		Calcareous siltstone - as above, very sandy in part
4040-4070		Calcareous siltstone - as above, sandy in part
4070-4100	75	Calcareous siltstone - sandy, as above
	25	Marl - very light grey, soft to gummy, as above
		POH 4125' and RIH with NB#4 X3A 9-5/8"
		Teeth 2, bearings 7-8
4100-4130		Calcareous siltstone - light grey/brown, firm but very friable, trace glauconite, trace dark flecks, ~50% acid insolubles. Rare forams. Sandy in part
		Minor calcarenite - white to light grey, firm and friable, skeletal, trace glauconite. Minor acid insolubles
	Tr	Forams
4130-4160		Calcareous siltstone - as above, minor moderately hard - cemented.
		Minor calcarenite - as above
		Minor forams
4160-4190	60	Calcareous siltstone - as above, sandy to very sandy, grading to
	40	Calcarenite - very fine grained and silty, very friable but tight, buff.
		Minor acid insolubles, fossiliferous, rare carbonaceous flecks and glauconite grains
4190-4220	40	Calcareous siltstone - as above
	60	Calcarenite - as above
4220-4250	75	Calcarenite - as above
	25	Calcareous siltstone - as above
		Minor forams.
4250-4280	75	Calcarenite - as above
	25	Calcareous siltstone - as above
4280-4310	55	Calcareous siltstone grading to
	45	Calcarenite - as above, very silty

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SAMPLE DESCRIPTIONS

KINGFISH-7

DEPTH	%	DESCRIPTION
4310-4340	60	Calcarenite - as above, silty, slightly recrystallised but still very friable
	40	Calcareous siltstone - very sandy in part, as above. Abundant forams, mainly medium grained globular type
4340-4370	85	Calcarenite - white to buff, very fine grained, friable but tight, fossiliferous, slight trace glauconite, dark flecks (carbonaceous ?), occasionally more cemented. Little acid insoluble residue
	15	Calcareous siltstone - light grey/brown, soft, sandy, ~40% acid residue. Minor dark specks. Abundant forams, mainly medium grain size globular forams
4370-4400	70	Calcarenite - as above, more silty
	30	Calcareous siltstone - as above
		Common forams - as above
4400-4430		Calcareous siltstone - as above, quite fossiliferous, sandy, trace pyrite
		Minor Calcarenite - as above
4430-4460	70	Calcarenite - as above, very silty in parts
	30	Calcareous siltstone - as above
4460-4490	80	Calcarenite - as above
	20	Calcareous siltstone - as above
4490-4520	90	Calcarenite - as above
	10	Calcareous siltstone - as above
		Abundant forams - as above
4520-4550	85	Calcarenite - buff to light grey, very fine to fine grained, friable, dirtier than above, has ~20% acid insolubles, mainly silt and very fine sand size clastics. Fossiliferous. Trace glauconite and dark grains, silty in parts
	10	Calcareous siltstone - as above
	5	Marl - white to light grey, soft and gummy, containing floating grains of above.
4550-4580	100	Calcarenite - as above, not quite as dirty
4580-4610	80	Calcareous siltstone - light grey/brown, soft, fossiliferous, very fine sand size, round forams. Rare specks, glauconite and carbonaceous material ?. Sandy. Acid insoluble residue ~30% and is medium brown, organic ? material
	20	Marl - as above
	Tr	Calcarenite - as above
4610-4640	100	Marl - light grey, soft to 'gel' like, contains minor fine grain size round forams, trace glauconite, dark grains, <20% medium brown acid insoluble
		Minor calcareous siltstone and calcarenite
		Abundant loose forams, mainly globular type
4640-4670	100	Marl - as above, mainly very soft lumps, slight trace pyrite
4670-4700	100	Marl - light to medium grey 'gel' like to very soft to firm, ~50% acid insoluble material, fossiliferous, rare glauconite, dark flecks. Abundant loose forams

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SAMPLE DESCRIPTIONS

KINGFISH-7

DEPTH	%	DESCRIPTION
4700-4730	100 Tr Tr	Marl - as above Clear calcite crystals Pyrite Abundant forams - as above
4730-4760		Marl - as above, some of the firmer grains subfissile Abundant forams
4760-4790		Marl - light to medium grey/brown, soft and sticky 'gel' containing forams and accessories below, to firm and occasionally subfissile. Common pinpoints of pyrite, trace black carbonaceous material and rare glauconite. Fossiliferous (mainly fine grain globular forams). Abundant loose forams, mainly fine to medium grained globular types. ~30%+ mainly fine grained acid insolubles; some silt.
4790-4820		Marl - as above; abundant forams - as above
4820-4850		As above.
4850-4880		As above. Marl slightly siltier
4880-4910		As above.
4910-4940		Marl - as above, mostly medium grey/green, often subfissile. ~50% acid insoluble. Occasional lump impregnated with pyrite. Forams very common, as above
4940-4970		Marl - as above Common trace of pyrite cemented lumps Originally more porous calcarenite ?
4970-5000		Marl - light to mostly medium grey; soft and sticky, light grey 'gel' with forams, silt, dark flecks but mostly firm, often subfissile medium grey fossiliferous (forams, globular, fine grain to medium grain), specks of pyrite, rare glauconite, trace black carbonaceous matter, close to 50% acid insolubles Abundant forams, mainly fine to medium grained globular type
5000-5030		Marl - as above Trace pyrite, trace green stained marl
5030-5060		Marl - mostly light grey 'gel' - as above Trace pyrite
5060-5090		Marl - as above, very light grey 'gel' as above and light to medium gray as above but soft Tr siltstone, very calcareous, moderately hard to medium grey, fossiliferous
5090-5120		Marl to calcareous shale - light to medium grey, soft to firm, silty, subfissile, sometimes fissile, trace pyrite, fossils, dark flecks, glauconite. Common loose forams, trace pyrite
5120-5150		As above Common loose forams, trace pyrite

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SAMPLE DESCRIPTIONS

KINGFISH-7

DEPTH	%	DESCRIPTION
5150-5180	60	Marl to calcareous shale - as above, occasionally silty and massive
	40	Marl - light grey 'gel', as above Common loose forams, trace pyrite
5180-5210	80	Marl to calcareous shale - as above
	20	Marl - light grey 'gel', as above Very common forams, trace pyrite Minor siltstone/calcarenite - light to medium grey, as for Shale
5210-5240		Marl/calcareous shale - as above, soft Abundant forams - as above, trace pyrite
5240-5270		Marl/calcareous shale - light to medium grey/green, soft to firm, silty in parts, massive especially where silty to commonly subfissile to fissile. Fossiliferous, pyritic, trace glauconite, rare black carbonaceous flecks. Abundant forams, trace pyrite
5270-5300		As above.
5300-5330		As above.
5330-5360		Marl - as above, light to medium grey, soft to firm and good portion of soft unconsolidated 'gel' as above
5360-5390	90	Marl - light to medium grey/brown, soft to firm, blocky to subfissile, very calcareous, pyritic, fossiliferous, trace carbonaceous material, glauconite, silty in part, ~10% very light grey gumbo, soft and sticky
	~10	Calcarecus siltstone - light to medium grey, soft to firm, pyritic, fossiliferous, trace black specks, glauconite Common forams, trace pyrite
5390-5420		Marl - as above, light to medium grey, soft to firm, 30% of i very light grey sticky gumbo ('gel'), full of forams, fragments of firmer medium grey marl, trace glauconite, trace carbonaceous flecks Common forams, trace pyrite
5420-5450		As above.
5450-5480		Marl - as above, much of it gumbo Trace tan limestone - hard
5480-5510		Marl - medium grey, firm, often subfissile, trace pyrite, trace fossils, silty in part Minor forams Trace calcarenite - buff, black specks, friable, very fine grained
5510-5540		Marl - as above, ~30% of it very light grey gumbo
5540-5570		As above.
5570-5600	90	Marl - medium grey, as above, 20% light grey gumbo Minor forams
	10	Calcareous siltstone - medium grey, firm, fossiliferous, pyritic

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SAMPLE DESCRIPTIONS

KINGFISH-7

DEPTH	%	DESCRIPTION
5600-5630		Marl - medium grey, firm often subfissile, sometimes fissile. Pin points of pyrite. Rare carbonaceous material, glauconite. Fossiliferous, silty, some very light grey gumbo, grades to calcareous siltstone in part
	Tr	Pyrite
5630-5660	90	Marl - as above, grades to
	10	Calcareous siltstone
	Tr	Pyrite
5660-5690	80	Marl - mostly grey, firm, as above, about a third very light grey, very soft, easily disintegrates - a gumbo which often holds fragments of firm marl, fossils
	20	Calcareous siltstone - medium grey, firm, fossiliferous, pyritic
5690-5720		Marl - firm, as above, minor very light grey, mare/gumbo.
	Tr	Pyrite
5720-5750		Marl - light to medium grey, speckled white with fossil fragments, silty, rare carbonaceous fragments, grades to minor Siltstone.
5750-5780	40	Marl - as above, subfissile to fissile
	60	Calcareous siltstone - medium grey, fossiliferous, firm Larger sample chips on the shaker are quite fissile - shale
5780-5810	70	Marl/calcareous shale - medium grey/green, subfissile, fossiliferous, firm, rare glauconite, dark carbonaceous grains, trace pyrite, silty, grades to
	30	Calcareous siltstone - as above
	Tr	Pyrite
5810-5840	100	Marl/calcareous shale - as above
	Tr	Pyrite; common fossils
5840-5870	69	Marl/calcareous shale - as above, grading to
	31	Calcareous siltstone - as above
5870-5900	66	Marl/calcareous shale - as above
	34	Calcareous siltstone - as above
5900-5930	70	Calcareous shale - as above, fissile, medium grey/green, firm
	30	Marl/gumbo - light grey/brown, very soft, disintegrates easily Minor calcareous siltstone - as above
5930-5960		Marl - mostly light to medium grey/brown, soft, silty, fossiliferous Minor grey/green fissile calcareous shale Common forams
5960-5990	60	Marl/calcareous shale - light to medium grey/brown, soft, silty, as above
	40	Calcareous shale - grey/green, as above Common forams
		New bit #5 X1G 6108'

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3.6.77

SAMPLE DESCRIPTIONS

KINGFISH-7

DEPTH	%	DESCRIPTION
5990-6020	70	Calcareous shale - medium grey/green, firm to moderately hard, fissile grades to calcareous mudstone (marl), blocky. Fossiliferous, silty (mainly with limestone silt fragments), specks of pyrite, slight trace glauconite, dark carbonaceous material. 50% medium brown acid residue; grades to
	30	Calcareous siltstone - medium grey/brown, firm, blocky, argillaceous, fossiliferous, specks of pyrite, slight trace glauconite, dark carbonaceous material
	Tr	Pyrite, forams
6020-6040		As above.
6040-6060	80	Calcareous shale - calcareous mudstone, as above
	20	Calcareous siltstone - as above
		Common forams, mainly fine to medium grained globular types
	Tr	Pyrite
6060-6080	60	Calcareous shale - as above
	40	Calcareous siltstone - as above
		Minor calcarenite, buff, firm to friable, fossiliferous
		Minor forams, trace pyrite
6080-6100	50	Calcareous shale/calcareous mudstone - subfissile, light to medium grey/green, firm, fossiliferous, silty, pyritic, rare carbonate flecks
	50	Calcareous siltstone - light to medium grey/brown, soft to friable, fossiliferous, pyritic, carbonaceous flecks, rare glauconite, argillaceous, very sandy in part, grades to
		Minor calcarenite - as above
		Minor forams
		Minor marl/gumbo - very light grey, soft and sticky
6100-6120	40	Calcareous shale - as above, soft to firm
	40	Calcareous siltstone - soft, as above, grading to Calcarenite
	20	Marl/gumbo - as above
6120-6140	40	Calcareous shale - as above, blocky
	40	Calcareous siltstone - as above
	20	Calcarenite - buff, friable, very fine grained, silty, fossiliferous
6140-6160	20	Calcareous shale - as above
	40	Calcareous siltstone - as above, very soft and friable, argillaceous in part
	30	Marl/gumbo - as above
		Common forams, trace pyrite
6160-6180	20	Calcareous shale - firm, medium grey/green, fossiliferous, specks of pyrite, slight trace carbonaceous material, very calcareous
	60	Calcareous siltstone - buff to medium grey/brown, friable to occasionally moderately hard when cemented, argillaceous, sandy, fossiliferous, trace pyrite, carbonaceous material, grades to
	20	Calcarenite - more vigorous reaction with acid than shale, buff, soft and friable to moderately hard where cemented, fossiliferous, trace pyrite, carbonaceous flecks
		Common forams
		No fluorescence

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4.6.77

SAMPLE DESCRIPTIONS

KINGFISH-7

DEPTH	%	DESCRIPTION
6180-6200	20	Calcareous shale - as above
	60	Calcareous siltstone - as above
	20	Marl/gumbo - as above
		Common forams
6200-20	20	Calcareous shale - as above silty grading to
	70	Calcareous siltstone - as above grading to
	10	Calcarenite - as above
		Minor gumbo light to grey - as above
		Common forams
6220-40	25	Calcareous shale silty grading to
	65	Calcareous siltstone grading to
	10	Calcarenite - as above
		Common forams
6240-60	50	Calcareous shale - as above very silty in part grade to
	50	Calcareous siltstone - as above argillaceous, sandy grades to
		Minor Calcarenite - as above
		Common loose forams
6260-80	50	Calcareous shale - medium grey/green, very Calcareous firm occasionally moderately subfissile - fissile fossiliferous trace pyrite rare carbonaceous flecks silty - very silty in parts grades to
	50	Calcareous siltstone light - occasionally medium grey/brown very calcareous, soft, occasionally moderately hard, fossiliferous, very argillaceous to sandy, rare carbonaceous flecks, frequently pyrite, grades to Minor Calcarenite, dirty, buff, friable fossiliferous very fine grained
		Common forams
6280-6300	20	Calcareous shale - as above
	60	Calcareous siltstone - as above
	15	Calcarenite - as above very friable
		Abundant forams, trace pyrite.
	15	Marl/Gumbo - very light grey soft and sticky clay
6300-20	30	Shale - as above
	70	Calcareous siltstone - as above very sandy in part grading to minor Calcareous - as above
		Abundant forams
6320-40		Calcareous siltstone - as above
		Minor Calcareous shale - as above
		Very abundant forams
6340-60	80	Calcareous siltstone - as above very sandy in part
	10	Calcarenite buff very friable dirty, considerable acid insolubles, including some silt and very fine sandy minor glauconite grains
	10	Calcareous shale - as above
		Common forams

SAMPLE DESCRIPTIONS

KINGFISH-7

DEPTH	%	DESCRIPTION
6360-80	60	Calcareous shale but light grey/brown, very silty flaggy looking
	40	Calcareous siltstone - as above, very argillaceous
		Common forams
6380-6400	70	Calcareous siltstone - fossiliferous light medium grey/brown, soft, firm, argillaceous, fossiliverous, rare glauconite grains and carbonaceous fragments to pyrite
	30	Calcareous shale - light mainly medium grey/green and some light medium grey/brown, soft-firm, subfissile, pyrite, fossiliferous, very silty in parts
		Abundent forams trace pyrite.
6400-20	70	Calcareous siltstone - as above
	20	Calcareous shale - as above
	10	Calcarenite white to buff, friable-firm, very fossiliferous (mainly forams fine grain) very argillaceous and silty. Trace glauconite, pyrite, carbonaceous fragments, very common fora trace pyrite.
6420-40		As above
6440-60	70	Calcareous shale - as above
	30	Calcareous siltstone - as above
		Common forams, minor pyrite
6460-80	75	Calcareous shale - as above
	25	Calcareous siltstone grading to Calcarenite as above
		Minor forams, minor pyrite.
6480-6500	30	Calcareous shale - as above soft grading to
	70	Calcareous mudstone - calcareous siltstone, medium grey/brown, soft, very silty, fossiliferous, pyrite, trace pyrite
6500-20		Calcareous mudstone - medium grey/green - light - medium grey/ brown, soft, silty, fossiliferous, subfissile in part - mostly grey/green fraction, trace pyrite, trace carbonaceous fragmer , very common forams.
6520-40		As above
6540-60		As above
		Trace chips of rich medium brown siltstone, very calcareous, black carbonaceous specks.
6560-80		As above.
6580-6600		Calcareous mudstone - medium, grey/green, light medium grey/ brown, firm blocky to fissile (grey/green, mainly fissile) silty, fossiliferous, pyritic, trace dark green glauconite, rare carbonaceous flecks. Pyrite impregnated lumps common. Trace dark green glauconite, Occasionally grades to siltstone. Common forams. Trace clear fibrous gypsum, trace tan limestone.
6600-20	20	As above.
6620-40		Calcareous Mudstone - as above
		Very common heavily pyritized sediment. Rare chips of light grey shale with considerable glauconite. Abundant forams.

SAMPLE DESCRIPTIONS

KINGFISH-7

DEPTH	%	DESCRIPTION
6640-60		Calcareous mudstone - as above. Mostly light grey/brown silty very soft, occasionally very fossiliferous and friable.
6660-80		As above. Common Calcareous Siltstone, and some very fossiliferous Cylindrical fossiliferous fragments pyritized. Common forams.
6680-6700		Calcareous mudstone - as above. Minor Marl/gumbo very light grey soft. Common forams.
6700-20		Calcareous mudstone - as above. Minor marl/gumbo - as above.
6720-40		Calcareous Mudstone light grey/brown-green soft firm, blocky to subfissile, trace fossiliferous, pyritized rare black carbonaceous flecks, slightly silty to very silty. Minor very light grey, very soft mudstone/clay. Minor forams. Slight trace pyrite.
6740-60		Calcareous Mudstone - as above silty. Common forams. Trace pyrite.
6760-80		As above. Rare trace glauconite.
6780-6800		As above. More pyrite than above.
6800-20		Calcareous Mudstone - as above. Common forams. Trace pyrite.
6820-40		Calcareous Mudstone grading to Calcareous shale medium, grey/green, very soft-firm, sometimes fissile, trace fossiliferous; blocky, light to medium grey/brown, silty grades to minor Siltstone. Minor forams, trace pyrite.
6840-60		As above
6860-80		As above rare glauconite.
6880-6900		As above. Very common forams.
6900-20		As above. Common forams.
6920-40		Calcareous mudstone: Medium grey/green, firm subfissile, slightly fossiliferous pinpoints and patches of pyrite, rare glauconite and dark cartonaceous grains, medium to very calcareous, light medium grey/brown, soft, silty to very silty, grading to silt stone, quite fossiliferous, trace pyrite, carbonaceous material. Very calcareous. Minor very light grey/brown, very soft and often fossiliferous mudstone/clay. Common forams. Trace pyrite.
6940-60		As above.
6960-6980		Calcareous mudstone - as above, but sample chips are smaller considerable very light grey to buff clay. Minor pyrite. (Drilling rate slowed down).
6980-7000		Calcareous mudstone - as above. Slight trace pyrite. Common forams.

SAMPLE DESCRIPTIONS

KINGFISH-7

LJB/SDG
3/6/77

DEPTH	%	DESCRIPTION
7000-20		As above - Minor siltstone.
7020-40	75 25	Calcareous mudstone - as above grading to Calcareous Siltstone, buff, dark carbonaceous specks, friable, sandy, trace glauconite but significantly more than above. Very calcareous. Minor forams, pyrite lumps.
7040-60		Calcareous Mudstone - as above. Minor Calcareous Siltstone - as above. Slight trace coal shiny, pyritic. Very abundant forams, mainly globular type.
7060-80		Calcareous Mudstone - as above. Minor siltstone - as above. Abundant forams.
7080-7100		Calcareous Mudstone; Medium grey/green, firm to medium hard subfissile grades to shale fossiliferous, pyrite needles, rare glauconite, carbonaceous matter, medium to very calcareous, very light grey to buff. Very light grey is very soft and gummy while buff mudstone is soft occasionally medium hard, silty to very silty grading to siltstone, pyrite, trace glauconite grains, carbonaceous flecks, very calcareous fossiliferous. Minor siltstone calcareous argillaceous, sandy, grades from mudstone above. Common forams.
7100-20		As above
7120-40		As above
7140-60	80 20	Calcareous mudstone - as above grading to calcareous shale, firm to medium hard fissile. Calcareous siltstone - as above, occasionally well cemented and hard. Common forams. Trace gypsum, fibrous
7160-80	80 20	Calcareous mudstone - shale medium grey and light to medium grey/brown, medium grey firm to medium hard fissile slightly fossiliferous, slight trace pyrite, occasional grain has good trace glauconite, medium calcareous light to medium grey/brown soft to firm, silty, very calcareous, trace carbonaceous matter. Calcareous Siltstone grades from light to medium grey/brown mudstone. Some hard limestone, translucent.
7180-7200		Calcareous Mudstone. Calcareous shale - as above. Minor Calcareous Siltstone - as above. Abundant forams.
7200-20	85 15	Calcareous shale - mudstone - as above fissile Calcareous Siltstone - as above Rare well frosted coarse quartz grains
7220-40	90 10	Calcareous Shale - mudstone - as above Calcareous Siltstone - as above
7240-60		Calcareous Mudstone - as above Minor forams.
7260-80	80	Calcareous Mudstone to Shale - as above

SAMPLE DESCRIPTIONS

KINGFISH-7

LJB/SDG
4/6/77

DEPTH	%	DESCRIPTION
	20	Calcareous Siltstone - as above Minor forams, slight trace glauconite
7280-7300	80	Calcareous Mudstone - as above
	20	Calcareous Siltstone - as above occasional grain with fair amount of glauconite; perhaps a trifle more pale green shale/mudstone than before.
7300-20	30	Calcareous shale muddy grey to grey/green firm to medium hard, fissile, slight trace fossiliferous, pyrite, glauconite.
	50	Calcareous Mudstone - light to medium grey/brown, soft firm, silty to very silty, trace carbonaceous matter, occasional grain with good trace glauconite, very calcareous, grades to
	20	Calcareous siltstone, light medium grey, friable to medium hard, argillaceous, trace carbonaceous specks, occasional good trace glauconite. Very calcareous. Trace pyrite lumps.
7320-40	25	Calcareous shale - grey/green - as above
	60	Calcareous Mudstone - as above
	15	Calcareous Siltstone - as above Trace pyrite lumps, minor forams, trace coarse grey rounded quartz.
7340-60	100	Calcareous mudstone - as above grey green stuff, soft too. Trace pyrite, one dark green glauconite module very common forams.
7360-80	100	Calcareous mudstone to shale - as above, both grey/green and light brown sediments blocky to fissile.
7380-7400		Calcareous Mudstone, medium grey/green to grey/brown, firm to hard, subfissile, trace carbonaceous specks, pyrite. Some chips trace glauconite, dark green, silty in part. Minor siltstone. Slow down in drill rate.
		Circulated break 7434' (to 7441').
7400-10		Calcareous Mudstone - as above glauconite grains more common. Minor Siltstone - as above, some chips very glauconite. Trace Sandstone, white green spots, very fine to fine, subangular, poor to medium sorting very glauconitic, very calcareous, friable. Trace pyrite, forams. No shows.
7410-20		Calcareous Mudstone - as above firm to quite hard. Trace siltstone to very fine siltstone, white to light tan, poorly stated, friable, very calcareous, very glauconitic. Minor forams, no fluoresence or cut.
7420-30	20	Siltstone white to grey to light tan, very fine to fine grain friable, poorly stated, subangular to subrounded, very glauconite, very calcareous.
	20	Siltstone rich dark brown sandy, friable to medium hard, calcareous, very glauconitic. Sometimes well cemented and hard.
	60	Calcareous Mudstone - as above. Trace pyrite. Common loose quartz to fine to coarse, well rounded.
7430-40	40	Sandstone mostly dark grey, silty, dirty, friable, very

SAMPLE DESCRIPTIONS

RINGFIELD-7

LJB/SDG
4/6/77

DEPTH	%	DESCRIPTION
7430-40	40	Continued... glauconitic,calcareous, pyritic some light grey to tan as above.
	50	Calcareous Mudstone - as above.
	10	Siltstone - as above Loose Quartz - as above. No shows.
7440-50		First sample after circulating, lot of cavings?
	40	Sandstone dark grey - as above to white to light tan - as above
	10	Siltstone - as above.
		Abundant fine to coarse well rounded quartz grains.
	50	Calcareous Mudstone - as above cavings?
	60	Siltstone to Mudstone, light grey to light green, very calcareous, fossiliferous (generally very small forams).
7450-60		Soft to firm.
	30	Sandstone to Siltstone to dark grey, very dirty, very glauconitic, pyrite aggregates, slightly calcareous, firm.
	10	Sandstone, medium tan, dirty, very glauconitic,very calcareous firm V.H. Trace Quartz, very fine to coarse to very coarse, subangular to subrounded, white to light yellow. Trace Fossils, generally forams benthonic, (arenaceous) and planktonic. No Shows.
7460-70	50	Siltstone to Mudstone, light grey/green - as above
	40	Sandstone to Siltstone, dark grey/black, - as above Sand loose.
7470-80		As above.
7480-90	40	Mudstone to Siltstone, light grey to light green, soft to firm, very calcareous, occasionally very fine, fossiliferous as above.
	40	Sandstone to Siltstone, dark grey, firm slightly calcareous very glauconitic,slightly pyritic (aggregates), slightly fossiliferous, sandstone to very fine medium, subangular to subrounded, poorly sorted.
	10	Quartz sand, very fine to coarse to very coarse, clear to light yellow, subangular to subrounded, loose, trace pyritic attached to grains.
	10	Sandstone, tan, firm, calcareous, very glauconitic,very pyritic firm, very dirty tight N.S. (trace mineral fluoresence).
7497		Break 30 to 50 - 60 feet per hour 7489 - 97' circulate out, As above, but up to 20% Quartz sand, subangular to subrounded very fine to coarse to very coarse.
7490-7500	80	Siltstone to mudstone, light grey to light green, very calcareous, as above.
	10	Quartz sandstone, very fine to coarse, subangular to subrounded,

SAMPLE DESCRIPTIONS

KINGFISH-7

LJB/SDG
4/6/77

DEPTH	%	DESCRIPTION
7490-7500	10	Continued... as above.
	10	Sandstone, tan, as above. No shows, abundant pyrite.
7500-7510	90	Quartz sandstone, fine to medium to coarse, subangular to subrounded, finely sorted, loose, trace bright yellow fluorescence (no cut).
	10	Siltstone, to mudstone, light green to grey, very calcareous, as above.
		Trace Sandstone to Siltstone, dark grey, glauconite - as above. DB @ 7505-7513 circulated out @ 7513'. Hot wire 10 units, up to C_5 160 ppm.
7513	90	Quartz sandstone, as above.
	10	Siltstone to mudstone, as above. P.O.H. for Core 1; Top break @ 7505'. R.I.H. with core barrel 7513-33'. Torquing up, high pump press readings. P.O.H. 100,000 lbs overpull. No recovery.
7530		Spot sample. Poor sample 90% plus cavings. Some quartz sand loose medium to very coarse, mostly very coarse angular to subrounded. Trace pyrite adhering to some grains. 1 speck of fluorescence (bright yellow) and cut? Trace Sandstone dark grey very fine - as above. Common pyrite aggregates.
7513-33		Samples from the rathole. Poor quality-mostly cavings. Quartz sand clear - white opaque, loose, medium to very coarse mainly coarse, angular to subrounded, medium to well sorted pyrite adhering to some grains. Rare aggregates medium to very coarse, cemented with carbonate cement. Very rare fluorescence and very slow yellow cut.
	95	Samples while coring C#2 - Very poor samples. plus cavings.
7533-7535		Trace sand, loose, clear to milky, medium to very coarse, mainly coarse, angular to subrounded. No fluorescence or cut. One piece coal, black and shiny, pyritic.
7535-45		Trace Sand - as above.
7545-50		Trace Sand - as above. Trace Siltstone very dark brown pyritic firm, slightly calcareous, disintegrates in acid, sandy.
7550-50		As above - very slight trace fluorescence, no cut, not calcareous either.
7555-60		As above.

SAMPLE DESCRIPTIONS

KINGFISH-7

MORTON
9/6/77

DEPTH	%	DESCRIPTION
		Cut 6 cores.

Core No.	Int.	Core Cut	Recovered	%
1	7513-7533	20	0'	0
2	7533-7581	48	48	100
3	7581-7611	30	30	100
4	7611-7654	43	39	91
5	7654-7699	45	26' 2"	58
6	7699-7759	60'	53' 6"	89
		246'	196' 8"	80

7759-7770	95	Sandstone:- Loose quartz grains, fine to very coarse, mainly coarse to medium grains, medium sorted, subrounded to rounded, quartz.
		Siltstone: Dark grey to black, firm, silty, some fine to very fine grains quartz, mica, pyrite, very carbonaceous.
	5	Trace-5% coal: black, vitreous. Trace Pyrite: trace Glauconite. Cavings: Calcareous shale. Trace Sandstone: light grey, firm, fine to very fine, poor to moderately sorted, subrounded to rounded, some silty matrix and pyrite cement in cleaner samples, trace glauconite, carbonaceous, pyrite, mica.
7770-7780'	90	Sandstone, loose quartz grains, fine-coarse-granule, mainly coarse to very coarse, moderately sorted, subrounded to rounded, quartz, pyrite.
	5	Siltstone: Black to dark grey, firm, as above. Trace Pyrite: trace coal, trace glauconite.
	5	Sandstone: Light grey, fine to very fine, silty in parts, poorly sorted, Carbonaceous - as above.
		Cavings - As above.
7780-7790'	85	Sandstone - loose quartz grains, very coarse to medium, moderate to poorly sorted, subrounded to rounded, quartz, pyrite.
	5	Sandstone - dark to medium grey, friable, fine to silty, poorly sorted, subangular to subrounded, quartz, carbonaceous, mica, pyrite, glauconitic, some dull yellow fluorescence, no cut.
	10	Siltstone - dark grey to black, friable, silty some fine to very fine grains, poorly sorted, quartz, carbonaceous, mica, pyrite, glauconitic, plant fragments.
		Trace coal - black, vitreous, trace glauconitic, trace pyrite. Cavings - calcareous shale.
7790-7800'	80	Sandstone - loose quartz grains - as above.
	5	Sandstone - fine to silty, as above.
	15	Siltstone - carbonaceous, shaley in parts, as above.
	5	Coal - as above. Cavings - as above.
7800-7810'	70	Sandstone - loose quartz grains, very coarse to medium,

SAMPLE DESCRIPTIONS

KINGFISH-7

MORTON
9/6/77

DEPTH	%	DESCRIPTION
7800-7810'	70	Continued...
		subrounded to rounded.
	10	Sandstone - fine to silty, carbonaceous, as above.
	20	Siltstone - sandy in part, poorly sorted, carbonaceous - as above.
	5	Shale - Medium brown to dark grey, firm, carbonaceous.
		Trace coal - as above, trace pyrite.
		Cavings - as above.
7810-7820'	70	Sandstone - loose quartz grains -as above.
	10	Sandstone - fine to silty, as above.
	20	Siltstone - Medium brown to dark grey, carbonaceous, as above.
		Trace Coal, trace Pyrite.
		Cavings - as above.
7820-7830'	70	Sandstone - Loose quartz grains, granule to medium, mainly medium to coarse grains, subrounded to rounded, moderately sorted, quartz, pyrite. Some pyrite cement.
	10	Sandstone - Medium brown to light grey, fraible, medium to silty, mainly fine to very fine grains, poorly sorted, subangular to subrounded, quartz, carbonaceous, mica, pyrite.
	20	Siltstone - Medium brown to light grey, finer grained variation on sandstone above, friable, silty to fine grained, poorly sorted, quartz, carbonaceous, mica, pyrite. Trace Pyrite, Cavings - calcareous shale.
7830-7840'	60	Sandstone - loose quartz grains - as above.
	10	Sandstone - Medium brown to light grey, fine to silty - as above.
	30	Siltstone - as above.
		Trace Pyrite, trace Coal, Cavings - as above.
7840-7850'	60	Sandstone - loose quartz grains as above.
	10	Sandstone - Medium brown to light grey, fine to silty as above.
	30	Siltstone - as above.
		Trace Pyrite, trace Coal, Cavings - as above.
7850-7860'	80	Sandstone - loose quartz grains as above.
	10	Sandstone - Medium brown to light grey, friable, fine to silty, some clean fine grains sand, poorly to moderately sorted, quartz, carbonaceous, pyrite.
	10	Siltstone - Medium brown, firm to soft, some fine to very fine quartz, moderately to poorly sorted, quartz, carbonaceous, mica, trace Pyrite, trace coal.
7860-7870'	100	Sandstone - loose quartz grains, granule to medium grains, mainly very coarse to granule, subrounded to rounded, moderately sorted, quartz, pyrite.
		Trace Sandstone - Medium brown to dark grey, firm to soft, very fine to fine, some silty matrix, poorly sorted, subangular to subrounded, quartz, carbonaceous, mica, pyrite.
		Trace Siltstone - Medium brown, silty, some fine grains, moderately sorted, quartz, carbonaceous, mica, pyrite.
7870-7880'	100	Sandstone - loose quartz grains, coarse-granule subrounded to rounded, moderately-well sorted, as above.

SAMPLE DESCRIPTIONS

KINGFISH-7

MORTON
9/6/77

DEPTH	%	DESCRIPTION
7870-7880'		Continued...
		Trace Sandstone - Medium brown - as above Trace Siltstone - Medium brown carbonaceous - as above.
7880-7890'	100	Sandstone - Loose quartz grains, coarse granule, some pyrite cement, subrounded to rounded, moderately sorted. Trace Sandstone - Light grey to medium brown, very fine to fine, silty matrix, moderately to poorly sorted, carbonaceous, quartz, pyrite. Trace Siltstone - Medium brown as above. Trace Pyrite.
7890-7900'	90	Sandstone - Loose quartz grains, pebble to very coarse, trace glauconite, very coarse to granule, subrounded to rounded, as above, pyrite cement.
		Sandstone - Light grey to medium brown, fine grains to silty as above.
	10	Siltstone - Medium brown, carbonaceous, quartz, pyrite, as above. Trace Pyrite.
7900-7910'	90	Sandstone - Loose quartz grains, granule to very coarse, moderately sorted, subrounded to rounded, some pyrite cement, trace glauconite.
		Trace Sandstone - Light grey to medium brown, soft to firm, fine to very fine, poorly sorted, silty matrix, quartz, pyrite, carbonaceous, mica.
	10	Siltstone - medium brown, soft to firm, silty some very fine sand, medium to poorly sorted, quartz, mica, carbonaceous pyrite. Cavings + Pyrite.
7910-7923'	80	Sandstone - loose quartz grains very coarse to medium, some pyrite cement - as above.
	10	Sandstone - light grey, soft, very fine to fine silty matrix, carbonaceous as above.
	10	Siltstone - medium brown, soft, carbonaceous, as above. Trace Pyrite, trace coal.
T.D. 7923'		P.O.H. to log.

Appendix 2

WELL COMPLETION REPORT

KINGFISH-7

APPENDIX 2

CORE DESCRIPTIONS

ESSO AUSTRALIA LTD.

CORE DESCRIPTION

WELL : KINGFISH-7

CORE No. . 1 . . . . . .

Interval Cored . 7513-33 . . . . ft., Cut . . . 20 . . . . . ft., Recovered . . . . . 0 . . . . . ft., (. . . 0 . %) Fm. LATROBE . . . .

Bit Type . . . . . C20 . . . . . , Bit Size . . 8 15/32 . . . . in., Desc. by . . L. BROOKS . . . . Date 5 June '77 . . . . .

DEPTH & CORING RATE (min./ft.)	COMPOSITION	BEDDING & STRUCTURES	ENVIRONMENT	FACIES	TEXTURE	TEXTURAL CHANGE	CONTACTS	COLOR	OIL STN.	CEMENT	REMARKS
7513 (0 4 8)		GAS (HW)	CHROM. C_1	C_2	C_3	C_4					
		2									Tight hole, required 100,000 lbs. overpull to free pipe (Jerked core loose?)
		11	5000	110	60	Tr					
		4	2000	H Tr							
		2	1000	20	Tr						Gas readings while coring
7523		2	1000	20	Tr						
		3	1300								
		3									
		14	6500	360	210	60					
		8	3800								
7533											TRIP GAS FROM CORED SECTION 23 units. Chromatograph readings from 9 unit mark C1 1368 C2 63 C3 9 C4 143 C5 120 C6 91 (Position of gas readings above approximate)

Dwg. 1107/OP/82

ESSO AUSTRALIA LTD.

CORE DESCRIPTION

WELL : KINGFISH-7

CORE No. 2 1/5

Interval Cored 7533-7581 ft., Cut 48 ft., Recovered 47' 10" ft., (100 %) Fm. LATROBE

Bit Type C-22, Bit Size 8 15/32 in., Desc. by BROOKS, GILES, MORTON Date 5 JUNE '77

DEPTH & CORING RATE (min./ft.)	COMPOSITION	BEDDING & STRUCTURES	ENVIRONMENT	FACIES	TEXTURE	TEXTURAL CHANGE	CONTACTS	COLOR	OIL STN.	CEMENT	REMARKS
0 . 10 . 20											
7533	C.A. P		MARINE	NEARSHORE	clay-vcs -gran			dk.gn -bk.			Sst, dk.gn-bk, fm, vf-gran, v.arg, p.srtd, sa-sr, v.glauc, v.pyr, comm. carb. frags., gran-pebbles floating in matrix. V.rare weak spotty yell. flour, v.weak cut. V.sl. to non.calc.
7534											
7535											
7536	C.A.										
7537	P										Burrows 1-2cm diam., sub-hor-sub-vert, pyr. walls, filled with matrix
7538											Burrows infilled with pyrite
7539	C.A.										Thin oil film while sponging clean
7540											Occ. lge (1-3cm) plant frag.
7541	P										
7542	C.A.										
7543											

Dwg. 1107/OP/62

ESSO AUSTRALIA

CORE DESCRIPTION

WELL : KINGFISH-7

CORE No. 2 ..... 2/5...

Interval Cored 7533-7581... ft., Cut ..48..... ft., Recovered .47'..10"... ft., (.100.%) Fm. LATROBE.....

Bit Type .....C22....., Bit Size ..8.1.5/32....in., Desc. by BROOKS, GILES, MORTON Date ..5 June 177...

DEPTH & CORING RATE (min./ft.)	COMPOSITION	BEDDING & STRUCTURES	ENVIRONMENT	FACIES	TEXTURE	TEXTURAL CHANGE	CONTACTS	COLOR	OIL STN.	CEMENT	REMARKS
0 10 20											
7543	·Q	U ◆			vf – gran			dk. gn – bk.			Burrows ~1cm
	·Q										sl. less floating grains
7544	·Q										
	·Q										
7545	·Q C.A.										
	·Q										
7546	·Q P										
	·Q										
7547	·Q		MARINE	NEARSHORE							
	·Q										
7548	·Q C.A.										Burrows sub-hor, 1-2cm diam x 10+cm
	·Q	U ◆									
7549	·Q	U ◆									
	·Q P										
7550	·Q	U ◆									Burrows 1-2cm
	·Q	U ◆									Patchy spotty wh-yellow flour + weak bl. wh cut
	·Q	U ◆									
7551	·Q P C.A.										
	·Q										
7552	·Q										Burrow sub-vert, 1cm x 10cm
	·Q	U ◆									
	·Q P										
7553	·Q										

Dwg. 1107/OP/82

ESSO AUSTRALIA LTD.

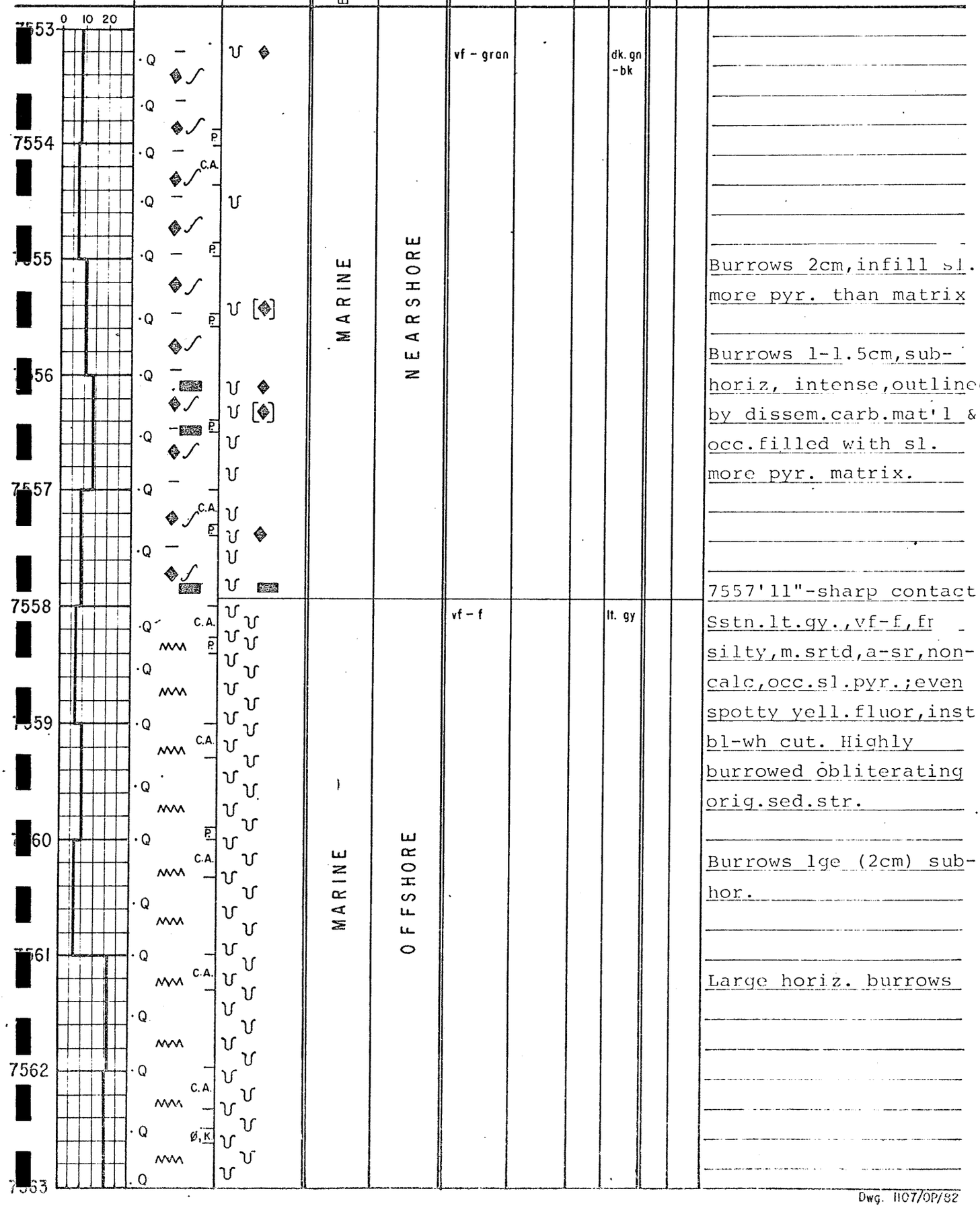
CORE DESCRIPTION

WELL : KINGFISH-7

CORE No. 2 ....3/5....

Interval Cored 7533-7581 .. ft., Cut .. 48 ..... ft., Recovered . 47' 10" .... ft., (100 %) Fm. LATROBE .....

Bit Type .....C22....., Bit Size . 8 15/32 .....in., Desc. by BROOKS, GILES, MORTON Date . 5 June '77 ....



Dwg. 1107/OP/82

ESSO AUSTRALIA LTD.

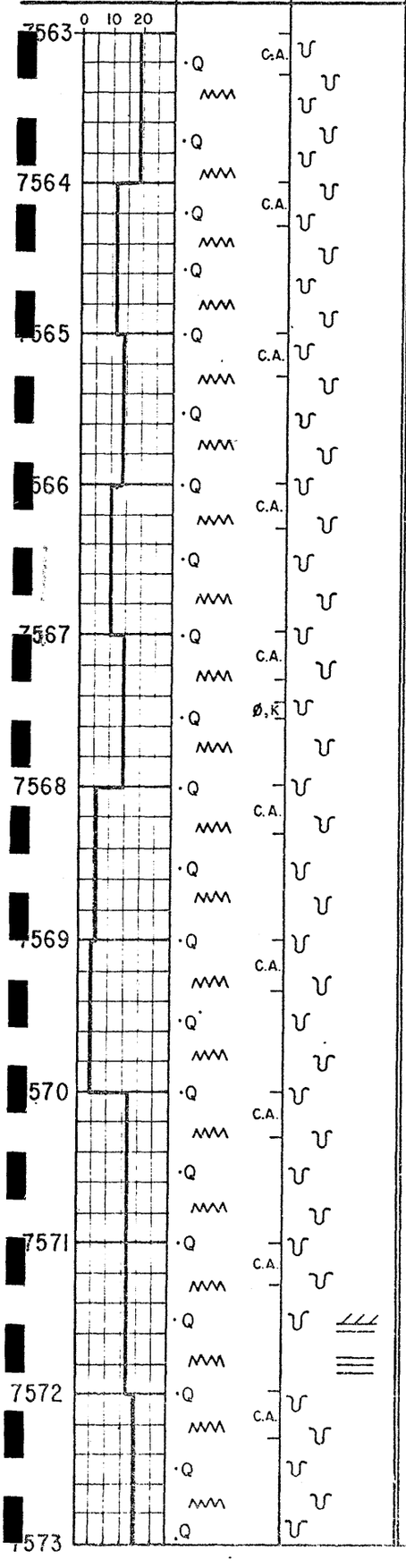
CORE DESCRIPTION

WELL : KINGFISH-7

CORE No. 2 .... 4/5 ....

Interval Cored 7533-7581 .. ft., Cut .. 48 ..... ft., Recovered . 47'10" .... ft., (100 %) Fm. .. LATROBE ...

Bit Type ..... C-22 ....., Bit Size .. 8 15/32 .... in., Desc. by BROOKS, GILES, MORTON Date 5 June '77 ....



REMARKS

Large horiz. burrow

Burrows vertical, >4cm

Low angle laminations

Intense burrowing, sand filled; sed. strs. infrequently visible

Dwg. 1107/OP/82

ESSO AUSTRALIA LTD.

CORE DESCRIPTION

WELL : KINGFISH-7

CORE No. 2 ..... 5/5 ...

Interval Cored 7533-7581 ft., Cut 48 ft., Recovered 47'10" ft., (100 %) Fm. LATROBE

Bit Type C-22, Bit Size 8 15/32 in., Desc. by BROOKS, GILES, MORTON, Date 6 June '77

DEPTH & CORING RATE (min./ft.)	COMPOSITION	BEDDING & STRUCTURES	ENVIRONMENT	FACIES	TEXTURE	TEXTURAL CHANGE	CONTACTS	COLOR	OIL STN.	CEMENT	REMARKS
0 10 20											
7573	·Q C.A.		MARINE	OFFSHORE	vf-f silty	fines sl. downwards			yellow waxy oil bleeding from between laminations		Poor graded bedding
	·Q Ø,K										
7574	·Q C.A.										
	·Q										
7575	·Q C.A.										Burrows vert., ≈4cm
	·Q										
7576	·Q C.A.										
	·Q										
7577	·Q C.A.										Sst.,lt.-m.gy,vf-occ f, silty,fm,p srtd,sa,comm pyr cmt,wh-mica,non-calc
	·Q										
7578	·Q C.A.										Bleeding oil-str.bl-wh fluor,inst bl-wh cu
	·Q										Burrows vert,sm,circular
7579	·Q C.A.										Parallel lam. to v.low angle cross bed.Rare scour
	·Q										
7580	·Q C.A.										
	·Q P										
7581											

Dwg. 1107/OP/82

ESSO AUSTRALIA LTD.

CORE DESCRIPTION

WELL : KINGFISH-7

CORE No. 3 ..... 1/3 ....

Interval Cored 7581-7611 .. ft., Cut 30 ..... ft., Recovered ....30..... ft., (100 %) Fm. LATROBE .....

Bit Type ..... C22FD ....., Bit Size 8 15/32 ..... in., Desc. by BROOKS, GILES MORTON ..... Date 7 June '77 ....

DEPTH & CORING RATE (min./ft.)	COMPOSITION	BEDDING & STRUCTURES	ENVIRONMENT	FACIES	TEXTURE	TEXTURAL CHANGE	CONTACTS	COLOR	OIL STN.	CEMENT	REMARKS
7581 0 10 20	Q		MARINE	OFFSHORE - SHOREFACE	vf - f			m. gy.			CORE ANALYSIS SAMPLES 4" OF EVERY FOOT
											7581-7592'10" Sandstone grading to Siltstone, m(-dk)gy, firm -hd, silty-m, mainly vf gr. poorly std, sa-sr qtz mica, pyrite, carbonaceous fragments & laminae. V low visual Ø, no fluor or cut.
7582	Q										
7583	Q										
7584	Q										Heavily burrowed, gen. sed strs. obliterated. Burrows generally in-filled with sand, often pyrtiized.
7585	Q							yell-gy.			Disseminated pyrite 7586-87'6"
7586	Q										Where seen bedding parallel or v low ...le cross beds
7587	Q										
7588	Q							m.-dk. gy.			
7589	Q										
7590	Q										Str. wh fl & instant cut in sand filled burrows
7591											

Dwg 1107/OP/82

ESSO AUSTRALIA LTD.

CORE DESCRIPTION

WELL : KINGFISH-7

CORE No. 3 ..... 2/3 ..

Interval Cored 7581-7611 .. ft., Cut ...30..... ft., Recovered ....30..... ft., (100 .%) Fm. LATROBE ....

Bit Type ..... C-22 ....., Bit Size .. 8 15/32 ..... in., Desc. by BROOKS, GILES MORTON Date 7 June '77 .....

DEPTH & CORING RATE (min./ft.)	COMPOSITION	BEDDING & STRUCTURES	ENVIRONMENT	FACIES	TEXTURE	TEXTURAL CHANGE	CONTACTS	COLOR	OIL STN.	CEMENT	REMARKS
0 10 20											
7591	Q										
	Q										Sharp bedding contacts
7592	Q				cse – v cse – pebbly						but heavily burrowed & pebbly
	Q										
7593	Q		MARINE	NEARSHORE	f-pebbly mainly m-cse massive	coarsens upwards			oil stn.		Sst. m.gy. vf-pebb. mainly m-cse, friable, poorly std-mod std., sa-r, the larger grains generally wrdd.tr pyrite, mica, carb matl. poor-good visual Ø. Good even to patchy bright wh fluor & instant cut. Oil staining & odour. 7593, finely dissem.pyr forming cement
7594	Q										
7595	Q										
7596	Q										
7597	Q										
7598	Q										
7599	Q										
7600	Q										7600-7603'6" Unconsol. sand with mod hd 'nodules' - suspect mechanical crushing only
7601											

Dwg. 1107/OP/82

ESSO AUSTRALIA LTD.

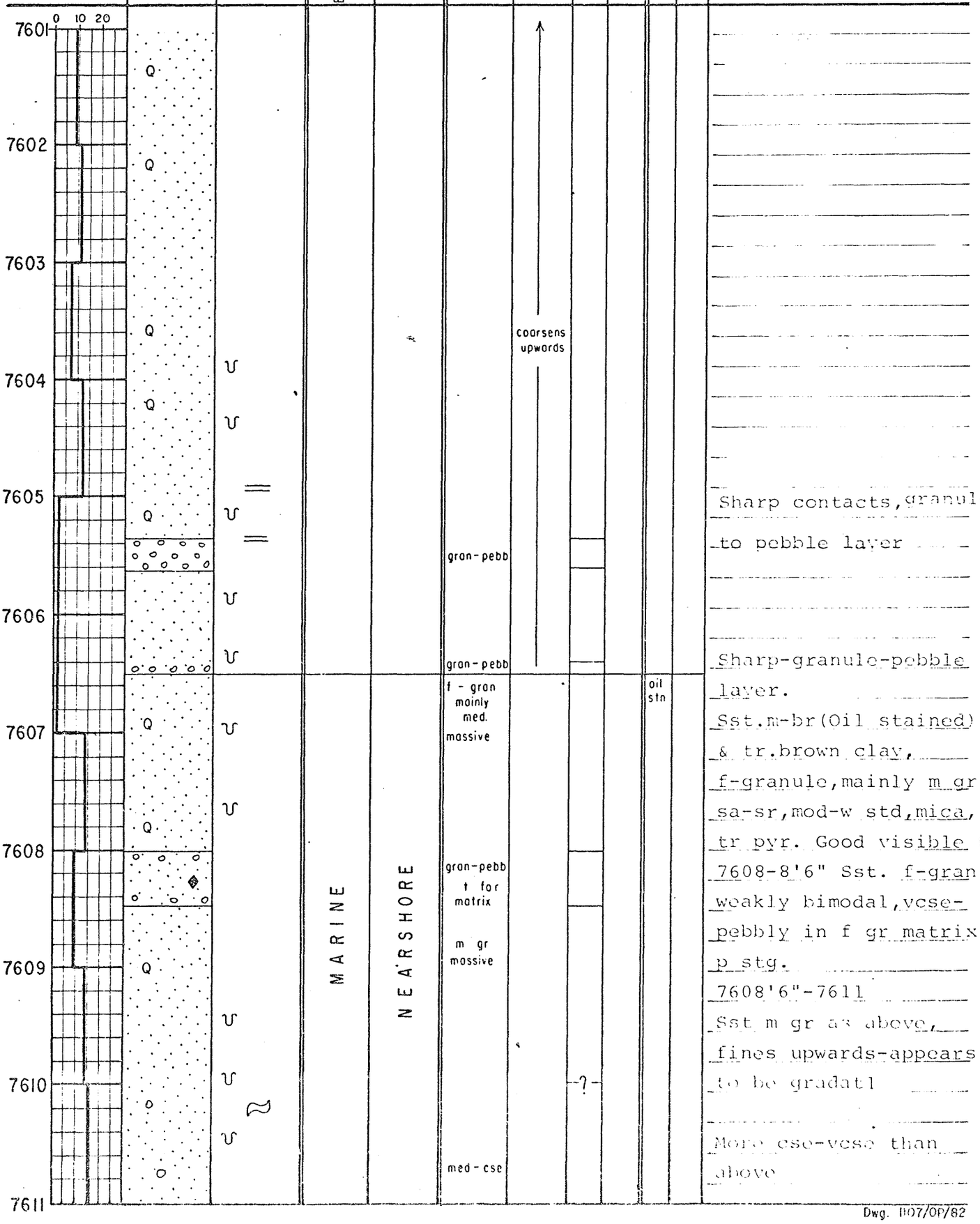
CORE DESCRIPTION

WELL : KINGFISH - 7

CORE No. 3 3/3

Interval Cored 7581-7611 ft., Cut 30 ft., Recovered 30 ft., (100 %) Fm. LATROBE

Bit Type C-22, Bit Size 8 15/32 in., Desc. by BROOKS, GILES. MORTON Date 7 June '77



Dwg. 1107/OP/82

ESSO AUSTRALIA LTD.

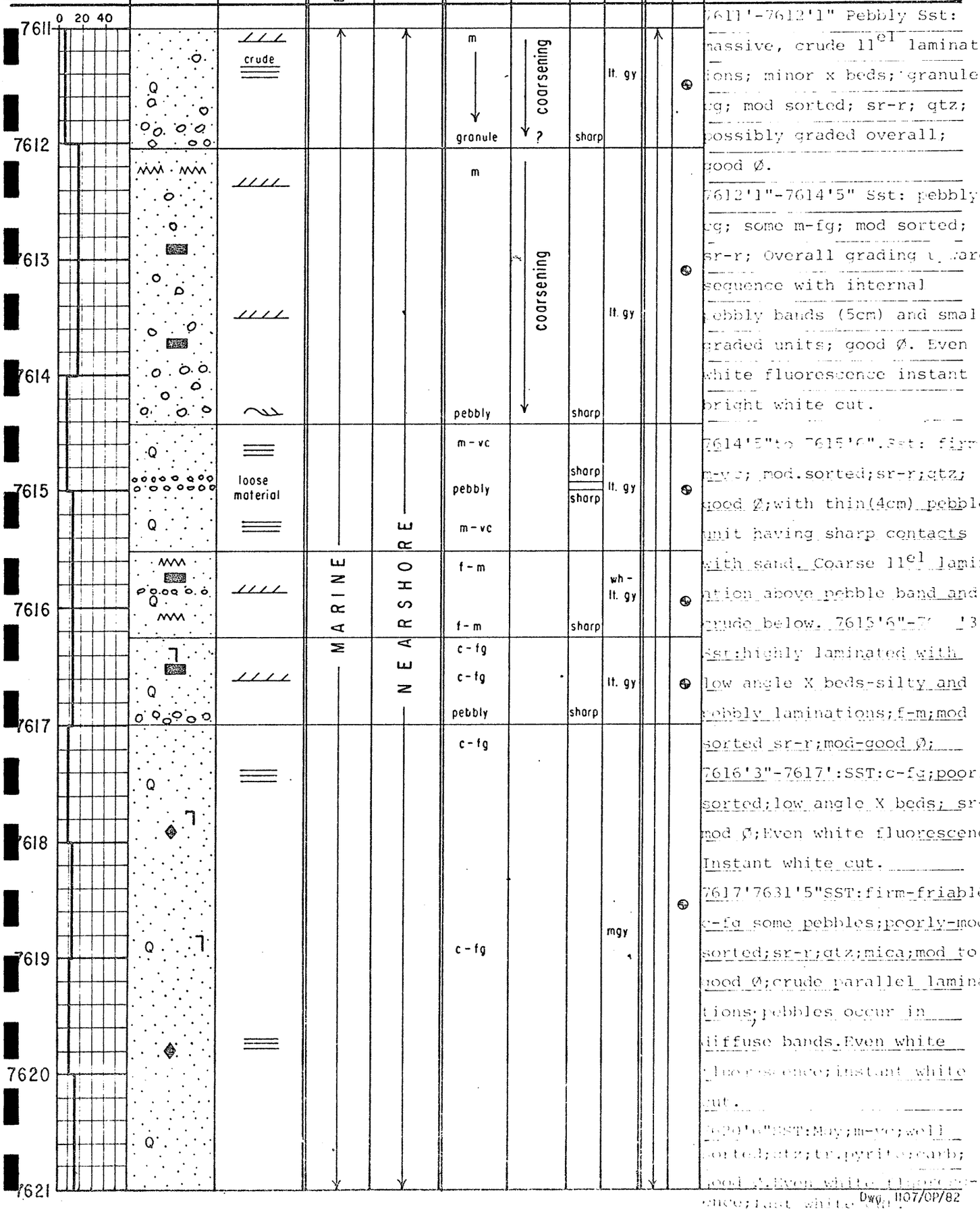
CORE DESCRIPTION

WELL : KINGFISH-7

CORE No. 4 ..... 1/5 ...

Interval Cored 7611-7654 .... ft., Cut ....43.... ft., Recovered ...36'5".... ft., (...87.%) Fm. Latrobe .....

Bit Type .....C-22....., Bit Size ..8-15/32..... in., Desc. by Morton/Brooks/Giles ... Date ..8/6/77 .....



7611'-7612'1" Pebbly Sst: massive, crude ll[el] laminations; minor x beds; granule-cg; mod sorted; sr-r; qtz; possibly graded overall; good Ø.

7612'1"-7614'5" Sst: pebbly-cg; some m-fg; mod sorted; sr-r; Overall grading upward sequence with internal pebbly bands (5cm) and small graded units; good Ø. Even white fluorescence instant bright white cut.

7614'5"to 7615'6".Sst: firm; m-vc; mod.sorted;sr-r;qtz; good Ø;with thin(4cm) pebble unit having sharp contacts with sand. Coarse ll[el] lamination above pebble band and crude below. 7615'6"-7[illegible]'3" Sst:highly laminated with low angle X beds-silty and pebbly laminations;f-m;mod sorted sr-r;mod-good Ø;

7616'3"-7617':SST:c-fg;poorly sorted;low angle X beds; sr-r mod Ø;Even white fluorescence Instant white cut.

7617'7631'5"SST:firm-friable c-fg some pebbles;poorly-mod sorted;sr-r;qtz;mica;mod to good Ø;crude parallel laminations;pebbles occur in diffuse bands.Even white fluorescence;instant white cut.

7629'6"SST:Mdy;m-vc;well sorted;qtz;tr.pyrite;carb; good Ø.Even white fluorescence;instant white [illegible]

ESSO AUSTRALIA LTD.

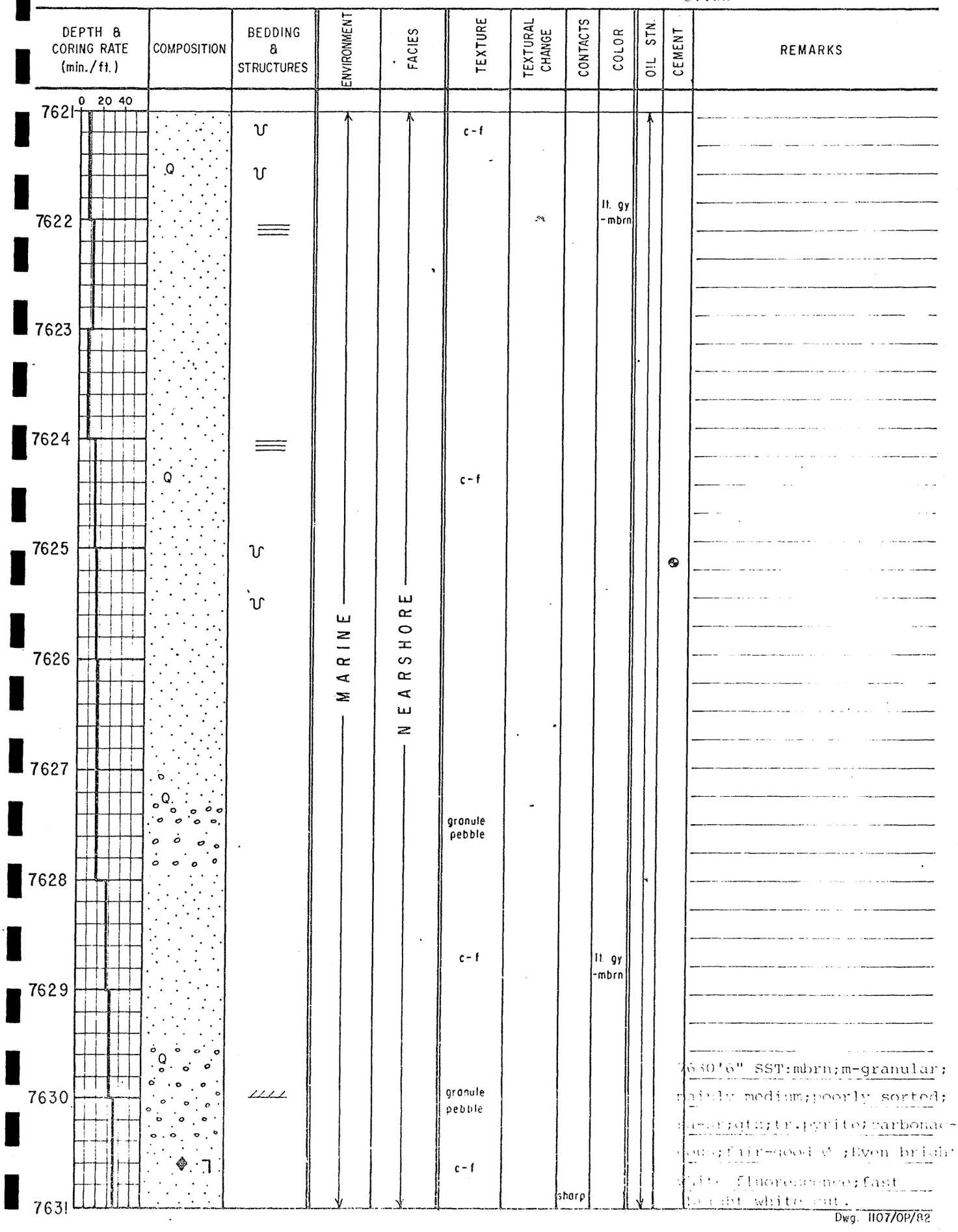
CORE DESCRIPTION

WELL : KINGFISH-7

CORE No. 4 ..... 2/5 ...

Interval Cored 7611-7654 ft., Cut 43 ft., Recovered 37'5" ft., (87 %) Fm. Latrobe

Bit Type C-22, Bit Size 8-15/32 in., Desc. by Morton/Brooks/Giles Date 8/6/77



Dwg. 1107/OP/82

ESSO AUSTRALIA LTD.

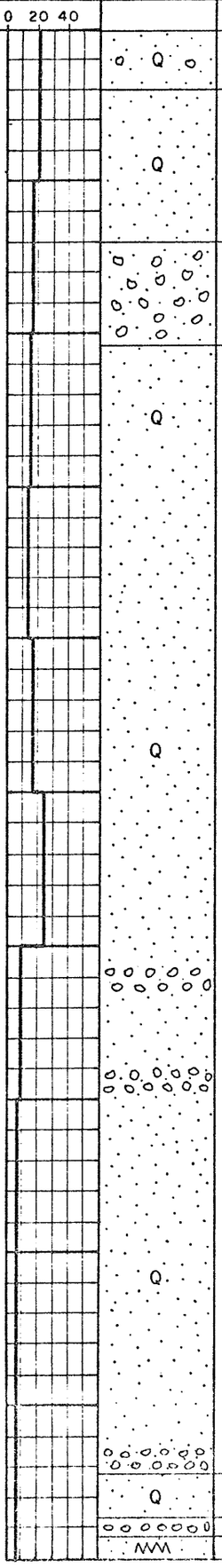
CORE DESCRIPTION

WELL : KINGFISH-7

CORE No. 4 ..... 3/5 ..

Interval Cored ..7611-7654.. ft., Cut .....43.. ft., Recovered .....37'5".. ft., (.....%) Fm. .Latrobe.....

Bit Type .....C-22....., Bit Size ..8-15/32.....in., Desc. by Morton/Brooks/Giles ... Date ...8/6/77.....



7631'5"-7632'5"SST: firm-friable f-mg; mod sorted; sr-r low angle X beds; some minor granules; good Ø. Even white fluorescence bright white instant cut. 7632'5"-7633'1" pebble conglomerate, pebble-gg; poorly sorted; sr-r massive; qtz; good Ø; fluorescence and cut a.a.

7633'1"-7640'5"SST: firm to friable; f-vc; pebble bands with sharp bedding contacts, low angle cross beds; crude parallel laminae; sr-r; mod-poorly sorted; good Ø even white fluorescence; instant bright white cut.

7640'5"-7640'9"SST: m-vf; poor-mod. sorted; sr-r; low angle X beds; silt laminae.

7640'9"-7640'11" Pebbly conglomerate

Dwg. 1107/OP/82

ESSO AUSTRALIA LTD.

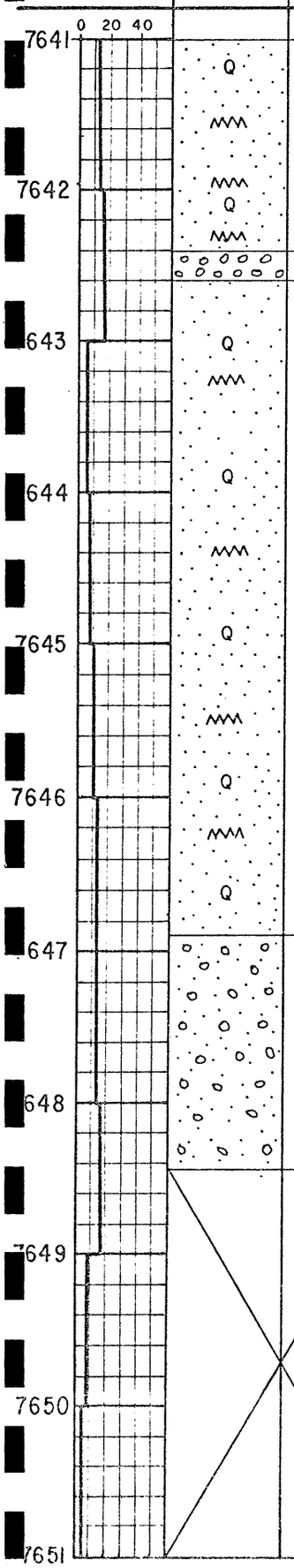
CORE DESCRIPTION

WELL : KINGFISH-7

CORE No. 4 ..... 4/5 ...

Interval Cored 7611-7654 .... ft., Cut .....43 ft., Recovered ....37'5".... ft., (..87 .%) Fm. Latrobe.....

Bit Type ..C-22....., Bit Size ....8-15/32....in., Desc. by Norton/Brooks/Gilet Date ..8/6/77.....



REMARKS

7640'11"-7642'5":SST:f-vf composed entirely of low angle cross laminae; silty bands and minor thin coarse laminae; mod-good sorting sr-r; Low Ø; even white fluorescence

7642'5"-7642'8" Pebble conglom.

7642'8"-7646'10"SST:vf-m; silty;thin laminae;both parallel and low angle X beds burrowed in parts; much siltier than other units silty layers up to 2cm thick; low Ø.Even white fluorescence instant bright white cut.

7646'10"-7648'5" Pebble conglomerate:pebble-granule some m-f sand;sr-r;poorly sorted;qtz;crude parallel laminations;mainly massive Even white fluorescence instant bright white cut.

Dwg. 1107/OP/82

ESSO AUSTRALIA LTD.

CORE DESCRIPTION

WELL : KINGFISH - 7

CORE No. 4 ..... 5/5 ...

Interval Cored 7611-7654 ... ft., Cut ..... 43 ft., Recovered ..... 37'5" ft., (... 87 %) Fm. Latrobe .....

Bit Type ..... C-22 ....., Bit Size .. 8-15/32 ..... in., Desc. by Morton/Brooks/ Giles Date 8/6/77 .....

DEPTH & CORING RATE (min./ft.)	COMPOSITION	BEDDING & STRUCTURES	ENVIRONMENT	FACIES	TEXTURE	TEXTURAL CHANGE	CONTACTS	COLOR	OIL STN	CEMENT	REMARKS
0 20 40											
7651											No Recovery.
7652											
7653											
7654											

Dwg. 1107/OP/82

ESSO AUSTRALIA LTD.

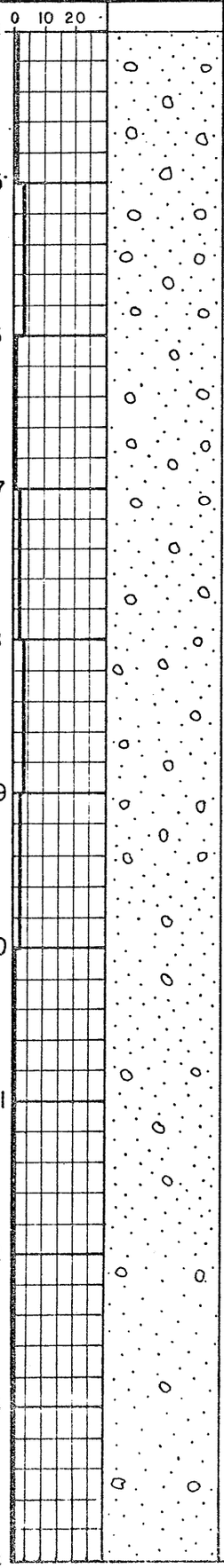
CORE DESCRIPTION

WELL : KINGFISH-7

CORE No. 5 ..... 1/5 ...

Interval Cored 7654-7699 ft., Cut 45 ft., Recovered 26'2" ft., (.....%) Fm. Latrobe.....

Bit Type C-22 ....., Bit Size 8-15/32 ..... in., Desc. by Morton/Giles ..... Date 8/6/77 .....



REMARKS

7654'-7674'2": Pebble to granule conglomerate grades to VC grained SST in parts and there is a f-mg sand fraction as a matrix throughout the core. Generally a massive conglomerate with some crude bedding interally sr-r; poorly sorted single shale clast; residual oil staining; shows an overall grainsize trend fining downwards.

Oil stain is black to dk red-brn, amorphous, soft, no fluor. Rock has weak to strong, spotty to pinpoint yellow fluorescence, mod. fast to inst milky white strong to weak cut.

Rocky v.wkly calc. at top increasing to mod. calc. at base.

Dwg. 1107/OP/82

ESSO AUSTRALIA LTD.

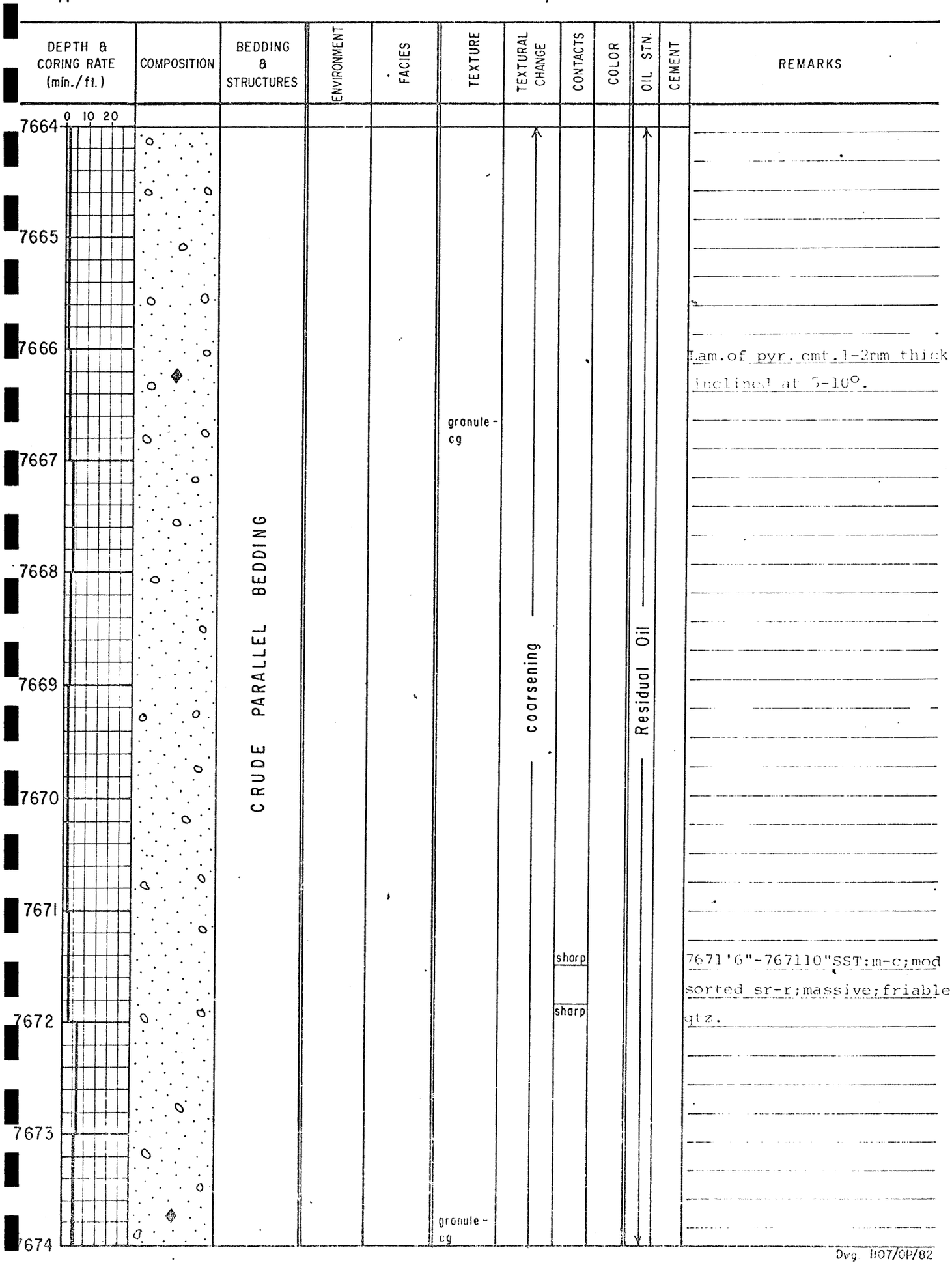
CORE DESCRIPTION

WELL : KINGFISH-7

CORE No. 5 ..... 2/5 ...

Interval Cored 7654-7699 ... ft., Cut ..... 45 ft., Recovered ... 26'2" .... ft., (..... %) Fm. Latrobe .....,

Bit Type ... C-22 ....., Bit Size .. 8-15/32 .... in., Desc. by Morton/Giles .... Date . 8/6/77 .....



Dwg 1107/OP/82

ESSO AUSTRALIA LTD.

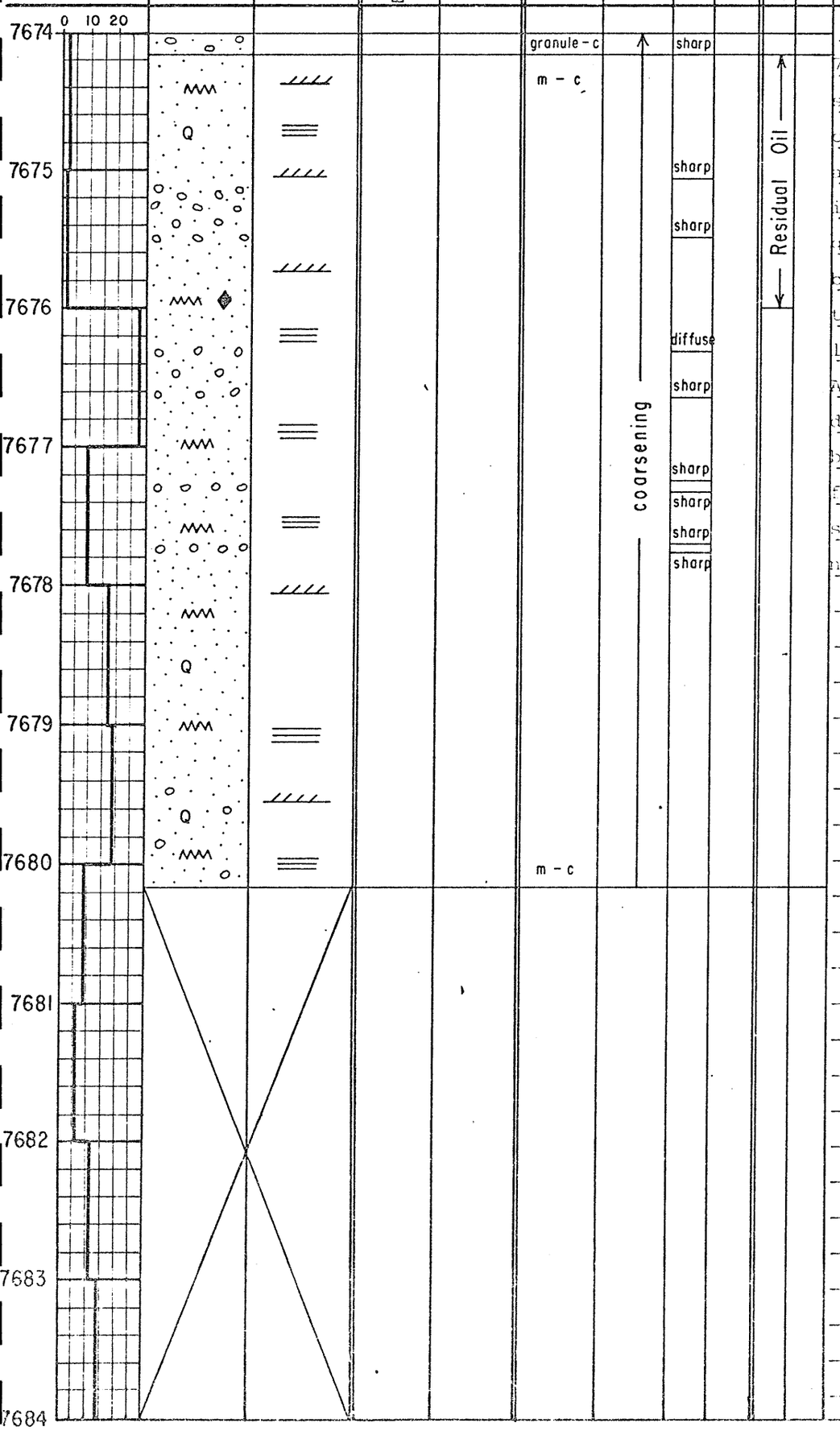
CORE DESCRIPTION

WELL : KINGFISH-7

CORE No. 5 ....3/5...

Interval Cored ..7654-7699.. ft., Cut .....45..ft., Recovered ..26'2"..... ft., (...58.%) Fm. .Latrobe.....

Bit Type ....C-22....., Bit Size ..8-15/32.....in., Desc. by Morton/Giles.... Date ..8/6/77.....



REMARKS

7674'2"-7680'2":SST;m-cg some f-vf;mod sorted;sr-r; crude parallel laminations and low angle cross laminat- ions. Several pebble- granule bands with sharp bedding contacts and sc thin (up to lcm) silty laminae and beds. At 75'10", lcm bed of disser pyr cmt traps lcm. bed of sst: ø of SST is filled with res.oil, no fluor strong cut.From 7676'0" down no fluor,stain or cut.

Dwg. 1107/OP/82

ESSO AUSTRALIA LTD.

CORE DESCRIPTION

WELL : KINGFISH-7

CORE No. 5 ..... 4/5 ...

Interval Cored 7654-7699 ft., Cut 45 ..... ft., Recovered 26 ! 2" ..... ft., (58 ..%) Fm. LATROBE .....

Bit Type C-22 ....., Bit Size 8 15/32 .... in., Desc. by MORTON, GILES Date 8 June, 1977 ..

DEPTH & CORING RATE (min./ft.)	COMPOSITION	BEDDING & STRUCTURES	ENVIRONMENT	FACIES	TEXTURE	TEXTURAL CHANGE	CONTACTS	COLOR	OIL STN.	CEMENT	REMARKS
0 10 20											
7684											
7685											
7686											
7687											
7688											
7689											
7690											
7691											
7692											
7693											
7694											

Dwg. 1107/OP/82

ESSO AUSTRALIA LTD.

CORE DESCRIPTION

WELL : KINGFISH -7

CORE No. 5 ..... 5/5 ...

Interval Cored . 7654-7699 . ft., Cut . 45 ..... ft., Recovered . . 26 ' 2" ..... ft., (. . 58 . %) Fm. LATROBE .....

Bit Type . . C-22 ....., Bit Size . 8 . 15/32 ..... in., Desc. by . . MORTON, GILES Date . . *. June . '77 . . .

DEPTH & CORING RATE (min./ft.)	COMPOSITION	BEDDING & STRUCTURES	ENVIRONMENT	FACIES	TEXTURE	TEXTURAL CHANGE	CONTACTS	COLOR	OIL STN.	CEMENT	REMARKS
0 10 20											
7694											
7695											
7696											
7697											
7698											
7699											

Dwg. 1107/OP/82

ESSO AUSTRALIA LTD.

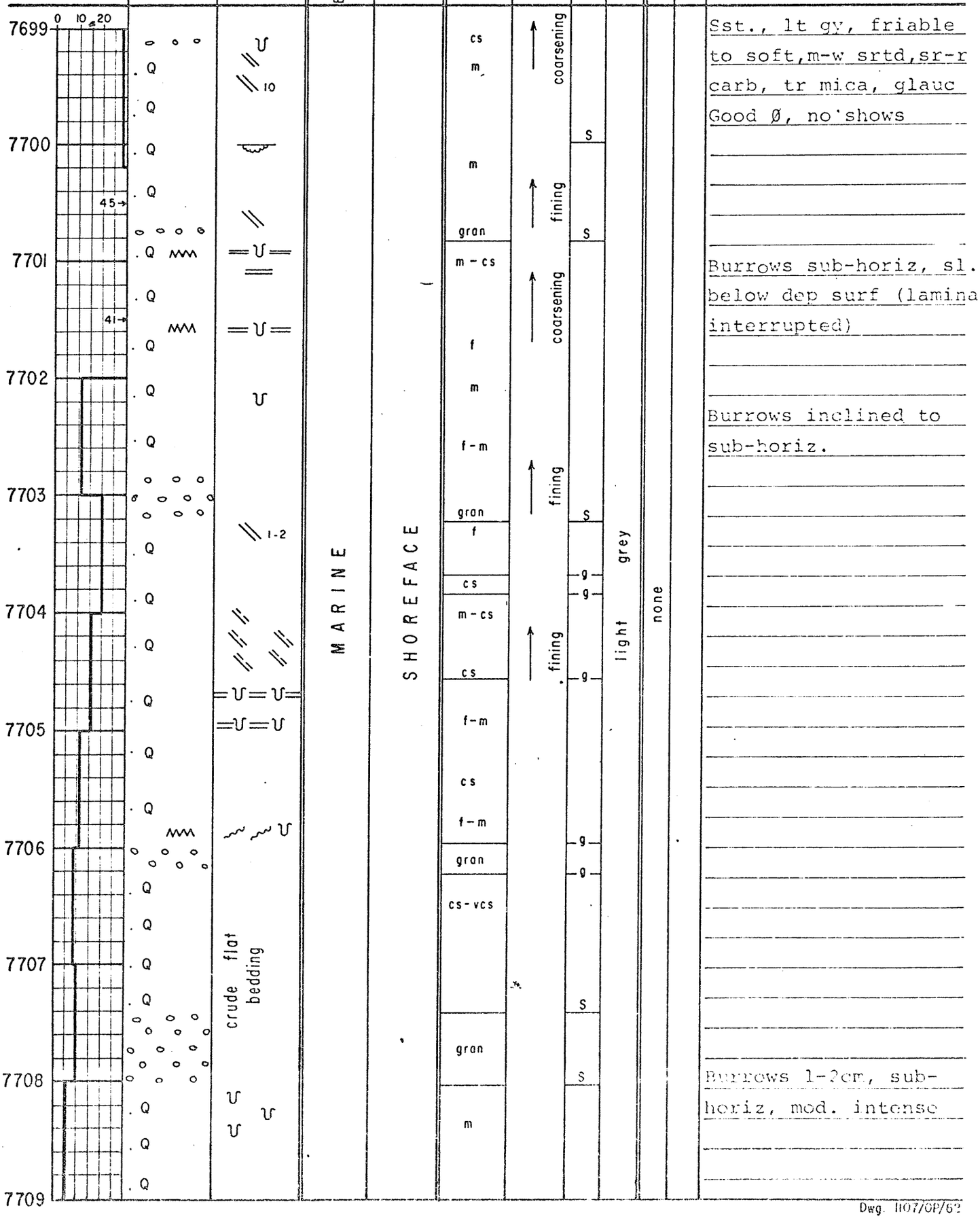
CORE DESCRIPTION

WELL : KINGFISH-7

CORE No. 6 ..... 1/6 ...

Interval Cored 7699-7759 ft., Cut 60 ..... ft., Recovered 53'6" ..... ft., (89 ..%) Fm. LATROBE .....

Bit Type C-22 ....., Bit Size 8 15/32 ....in., Desc. by GILES, MORTON Date 9 June, 1977 ..



REMARKS

Sst., lt gy, friable to soft, m-w srtd, sr-r carb, tr mica, glauc
Good Ø, no shows

Burrows sub-horiz, sl. below dep surf (laminae interrupted)

Burrows inclined to sub-horiz.

Burrows 1-2cm, sub-horiz, mod. intense

Dwg. 1107/OP/62

ESSO AUSTRALIA LTD.

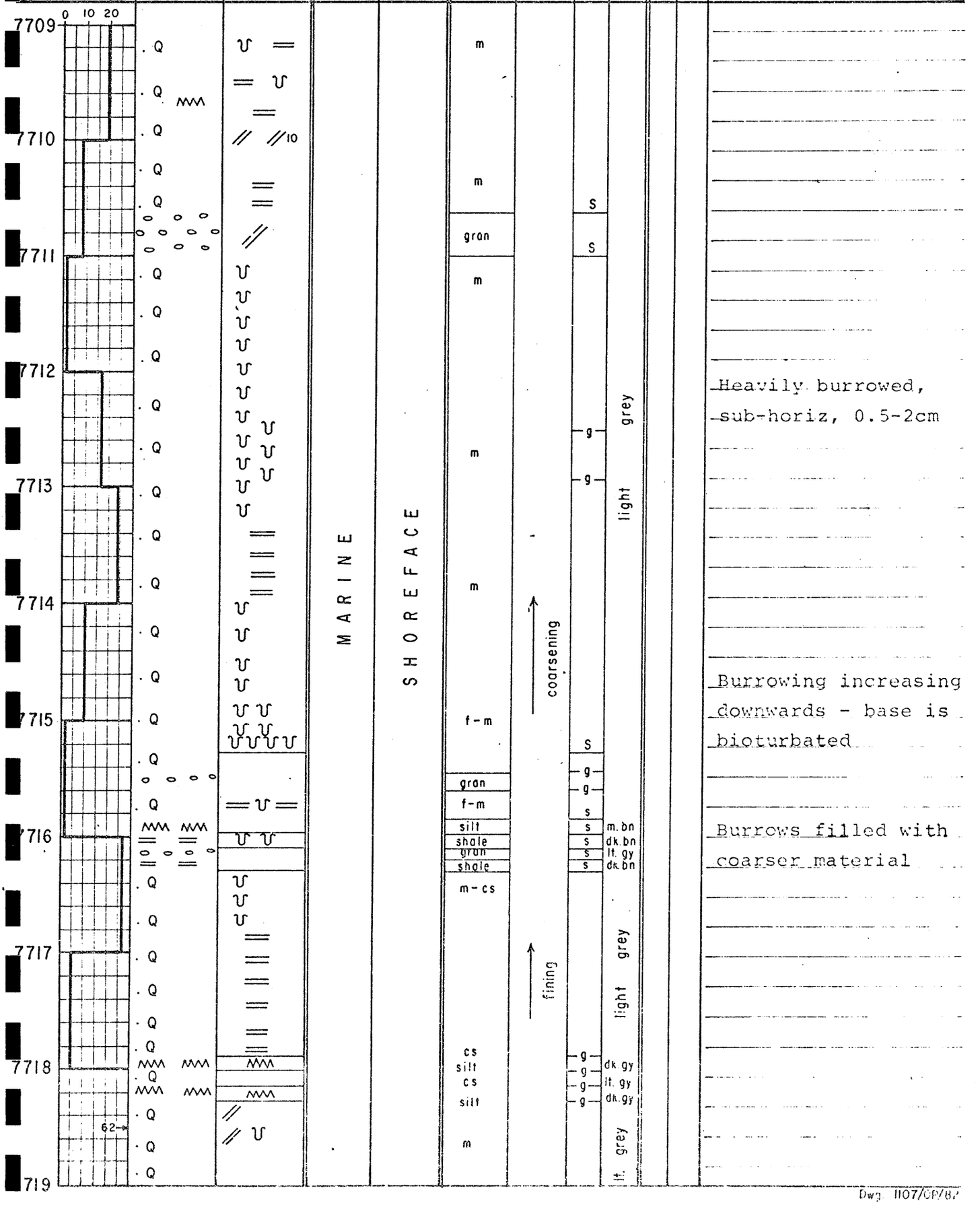
CORE DESCRIPTION

WELL : KINGFISH-7

CORE No. 6 ..... 2/6

Interval Cored 7699-7759 ft., Cut 60 ft., Recovered 53'6" ft., (89%) Fm. LATROBE

Bit Type C-22, Bit Size 8 15/32 in., Desc. by GILES, MORTON Date 9 June '77



Dwg. 1107/CP/8.

ESSO AUSTRALIA LTD.

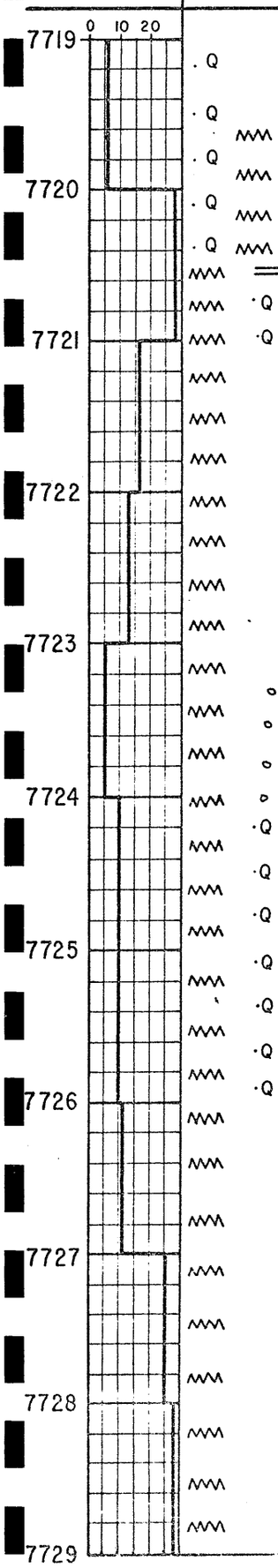
CORE DESCRIPTION

WELL : KINGFISH-7

CORE No. 6 3/6

Interval Cored 7699-7759 ft., Cut 60 ft., Recovered 53'6" ft., (89 %) Fm. LATROBE

Bit Type C-22, Bit Size 8 15/32 in., Desc. by GILES, MORTON Date 9 June '77



Dwg. H07/09/82

ESSO AUSTRALIA LTD.

CORE DESCRIPTION

WELL : KINGFISH-7

CORE No. 6 ..... 4/6 ...

Interval Cored 7699-7759 ft., Cut 60 ..... ft., Recovered 53'6" ..... ft., (89 %) Fm. LATROBE .....

Bit Type C-22 ....., Bit Size 8 15/32 ..... in., Desc. by GILES, MORTON Date 9 June, '77

DEPTH & CORING RATE (min./ft.)	COMPOSITION	BEDDING & STRUCTURES	ENVIRONMENT	FACIES	TEXTURE	TEXTURAL CHANGE	CONTACTS	COLOR	OIL STN.	CEMENT	REMARKS
0 10 20											
7729								dk. gy			
											Inc in amount of sand
7730											
7731											Sand/silt ≳ 50/50
7732								mid - grey			
7733											I/lam. vf sst/sltst flat-lying & undist-urbed
7734			MARINE	SHOREFACE	cs	coarsening	S				
7735		5									
7736		5			cs m		g				
7737		5			cs			light - grey			
7738											
7739					cs						Thin silty laminae

Dwg. HOZ/OP/82

ESSO AUSTRALIA LTD.

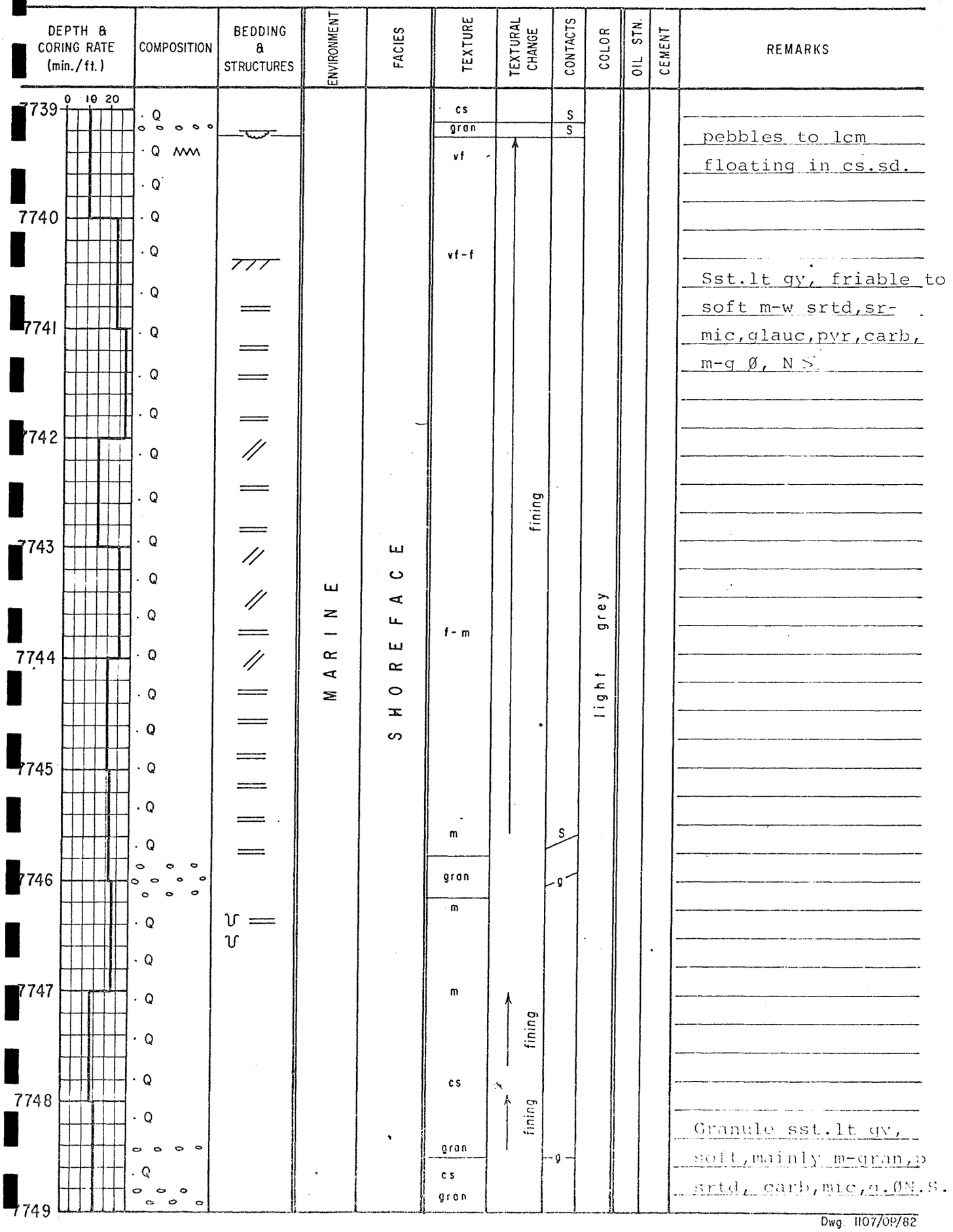
CORE DESCRIPTION

WELL : KINGFISH-7

CORE No. 6 ..... 5/6...

Interval Cored 7699-7759 ft., Cut 60 ft., Recovered 53'6" ft., (89 %) Fm. LATROBE.....

Bit Type C-22 ....., Bit Size 8 15/32 in., Desc. by GILES, MORTON Date 9 June '77..



Dwg. 1107/OP/82

ESSO AUSTRALIA LTD.

CORE DESCRIPTION

WELL : KINGFISH -7

CORE No. 6 6/6

Interval Cored 7699-7759 ft., **Cut** 60 ft., **Recovered** 53'6" ft., (89 %) **Fm** LATROBE

Bit Type C-22, **Bit Size** 8 15/32 in., **Desc. by** GILES, MORTON **Date** 9 June '77

DEPTH & CORING RATE (min./ft.)	COMPOSITION	BEDDING & STRUCTURES	ENVIRONMENT	FACIES	TEXTURE	TEXTURAL CHANGE	CONTACTS	COLOR	OIL STN.	CEMENT	REMARKS
7749	Q, Q, o o o o, Q			SHOREFACE	vcs		S				
					gran, vcs						
7750–7752.5	═ (shale)	ʋ ◆	MARINE	TIDAL FLAT				dk. brown - dk. grey			SHALE: dk bn, hd, v.carb pyr + mic. V.large (2cm) inclined to sub-vert burrow completely filled with pyrite
7752.5–7759	(no recovery)										NO RECOVERY

Depth scale: 7749, 7750, 7751, 7752, 7753, 7754, 7755, 7756, 7757, 7758, 7759

Dwg 1107/OP/87

Appendix 3

WELL COMPLETION REPORT

KINGFISH-7

APPENDIX 3

SIDEWALL CORE DESCRIPTIONS

ESSO AUSTRALIA LTD.
SIDEWALL CORE DESCRIPTIONS

WELL KINGFISH-7 | PAGE ... OF ...
GEOLOGIST GILES/MORTON | ATT 30 REC 27
SERVICE CO SCHL | DATE 19/6/77
IES RUN NO 2 | SWC RUN NO 1

NO.	DEPTH	REC	ROCK TYPE	MODIFIERS	CAL	COLOR	INDUR DEG	GRAIN SIZE	SRTG	RND	DISS CLAY	STAIN	FLOURESCENCE %	FLOURESCENCE DISTR	FLOURESCENCE INTEN	FLOURESCENCE COLOR	CUT FLUOR. INTEN	CUT FLUOR. COLOR	CUT RESIDUE QUAN	CUT RESIDUE COLOR	SHOW	PROB PROD	REMARKS - GAS
1 a	1	2	3	4	5	6	7	8	9	10	11	12	RK	14	15	16	17	18	19	20	21	22	23
18	CONTINUED/...																						
				sl pyr, sl																			
				mic, tr h.m.																			
19	7510	1	SST	sl glauc,	sl	lt gy	sft	f-m	m	sr	m-sl	-	90	even	v.str	bt yel	bt	yel-wh	-	-	oil	oil	strong petr odc
				sl pyr, sl																			
				mic,																			
20	7508	3/4	SST	tr glauc, sl	-	lt gy	fm	vf-f	m	sr	m	-	90	even	mod	bt yel	bt	"	-	-	oil	oil	strong petr odc
				pyr																			
21	7506	3/4	SST	tr glauc, sl	-	lt gy	sft	vf-f	m	sr	m	-	90	"	"	"	mod	"	-	-	oil	oil	
				pyr																			
22	7504	3/4	SST	slty, v pyr,	-	m-dk	sft	vf-m	f	sr	abd	-	40	patchy	mod	"	mod	"	-	-	oil	oil	
				v glauc		gy																	
23	7502	3/4	SST	slty, glauc	vsl	m-dk	sft	vf-m	p	sr	abd	-	40	patchy	m-wk	bt yel	m	bt yel	-	-	oil	oil	wk petr odour
				sl pyr		gy																	
24	7497	1	SST	slty, glauc	-	dk gy	fm	vf-f	p	sr	abd	-	-	-	-	-	-	-	-	-	-	-	no odour-tight
				sl pyr		bn																	
25	7490	NF																					
26	7480	1	SST	v silty,	-	dk gy	fm	vf	p	sr	abd	-	-	-	-	-	-	-	-	-	-	-	
				glauc, mic		bn																	
27	7475	1	SLTST	qtz(f),glauc	-	dk gy	fm				abd	-	-	-	-	-	-	-	-	-	-	-	
				pyr, carb		bn																	
28	7470	1	SLTST	qtz(f-cs),	-	dk gy	fm				abd	-	-	-	-	-	-	-	-	-	-	-	
				glauc pyr,		bn																	
				v carb																			
29	7465	3/4	SLTST	qtz(f-cs)	-	dk gy	fm				abd	-	-	-	-	-	-	-	-	-	-	-	
				glauc		bn																	
30	7460	3/4	SLTST	qtz,glauc,pyr	-	dk gy	fm				abd	-	-	-	-	-	-	-	-	-	-	-	

FORM R 257 3 72

gn

ESSO AUSTRALIA LTD.
SIDEWALL CORE DESCRIPTIONS

PAGE ..... OF .....
ATT ..... REC 27
DATE 19/6/77
SWC RUN NO 1
IES RUN NO 2
WELL KINGFISH-7
GEOLOGIST GILES/NORTON
SERVICE CO SCHL

NO. 1a	DEPTH 1	REC 2	ROCK TYPE 3	MODIFIERS 4	CAL 5	COLOR 6	INDUR DEG 7	GRAIN SIZE 8	SRTG 9	RND 10	DISS CLAY 11	STAIN 12	FLOURESCENCE % RK	FLOURESCENCE DISTR 14	FLOURESCENCE INTEN 15	FLOURESCENCE COLOR 16	CUT FLUOR. INTEN 17	CUT FLUOR. COLOR 18	CUT RESIDUE QUAN 19	CUT RESIDUE COLOR 20	SHOW 21	PROB PROD 22	REMARKS - GAS 23
1	7900	½	SST	-	-	ltgy	sft	vf-f	g	sr-r	Nil	-	-	----------	----------	----------	----------	----------	----------	----------	----------	water	
2	7880	½	SST	slt, pyr	vsl	dkgy	fm	vf-gran	pr	sr	sl	-	-	-	-	-	-	-	-	-	-	water	
3	7854	½	SST	-	-	mbn	sft	f gran	p	sa-sr	sl	-	-	-	-	-	-	-	-	-	-	water	whole mud inv.
4	7797	½	SLTST	sl.carb,sl mic.	-	lt gy -dkgy	sft					-	-	-	-	-	-	-	-	-	-	-	
5	7770	MF																					
6	7759	1½	SLTST	sl.mic	v	ltgy	fm				abd	-	-	-	-	-	-	-	-	-	-		poss cvgs
7	7730	3/4	SLTST	sl.mic	v	ltgy	fm-sft				abd	-	-	-	-	-	-	-	-	-	-	-	" "
8	7534	1	SST	v pyr,glauc, slty	-	dk gn bk	fm-hd	vf-gran	v.p.	sr	abd	-	-	-	-	-	-	-	-	-	-	-	
9	7530	1¼	SST,	v pyr,glauc slty	-	dkgn-bk	fm-hd	f-gran	v.p.	sa-r	abd	-	-	-	-	-	-	-	-	-	-	-	
10	7528	1¼	SST,	v pyr,glauc slty	-	dkgr-bk	fm-hd	vf-vcs	v.p.	sa-sr	abd	-	-	-	-	-	-	-	-	-	-	-	
11	7526	1	SST	v pyr,glauc slty	vsl	dkgn-bk	fm-hd	vf-vcs	v.p.	sa-sr	abd	-	-	-	-	-	-	-	-	-	-	-	
12	7524	3/4	SST	sl glauc	sl	lt bn	sft	f-gran	p	sr	mod	-	80	even	bt	bt yel	bt	bl wh	-	-	oil	oil	strong petr odo
13	7522	NR																					
14	7520	3/4	SST	sl glauc sl pyr	vsl	lt gy	sft	f-gran	p	sr	mod	-	80	even	bt,gd	bt yel	bt	bl wh	-	-	oil	oil	strong petr odo
15	7518	3/4	SST	v sl glauc vsl py	sl	lt gy	sft	f-gran	p	sr	m-ab	-	80	even	bt, gd	bt yel	bt	bl wh	-	-	oil	oil	strong petr odo
16	7516	3/4	SST	tr glauc, sl pyr	vsl	lt gy	sft	f-gran	p	sr	m-ab	-	90	even	"	"	"	"	-	-	oil	oil	" " "
17	7514	3/4	SST	tr glauc- sl pyr	vsl	m gy	sft	f-cs	p	sr	ab	-	60	patchy	str	bt yel	bt	bl wh	-	-	oil	oil	strong petr odo
18	7512	1	SST	sl glauc,	sl	lt gy	sft	f-m	f	sr	m	-	80	even	str	"	"	"	-	-	oil	oil	

FORM R 257 3 72

..../continued

PAGE ..... OF .....

ATT ..... REC .....

DATE 19/6/77

ESSO AUSTRALIA LTD.

SIDEWALL CORE DESCRIPTIONS

SWC RUN NO 2

IES RUN NO

WELL KINGFISH-7

GEOLOGIST GILES/MORTON

SERVICE CO

NO. 1a	DEPTH 1	REC 2	ROCK TYPE 3	MODIFIERS 4	CAL 5	COLOR 6	INDUR DEG 7	GRAIN SIZE 8	SRTG 9	RND 10	DISS CLAY 11	STAIN 12	FLOURESCENCE % RK	FLOURESCENCE DISTR 14	FLOURESCENCE INTEN 15	FLOURESCENCE COLOR 16	CUT FLUOR. INTEN 17	CUT FLUOR. COLOR 18	CUT RESIDUE QUAN 19	CUT RESIDUE COLOR 20	SHOW 21	PROB PROD 22	REMARKS - GAS 23
31	7455	2"	SILTY SST	Qtz, silt mica, glauc carb pyr	-	dk.gy - gn	firm	VF	Poor	sa- sr		-	-	-	-	-	-	-	-	-	-	-	
32	7450	3 1/4	SILT SST	Qtz, silt , mica, glauc carb, py	-	"	"	"	"	"		-	-	-	-	-	-	-	-	-	-	-	
33	7445	3 1/4	SILTY SST	Qtz, silt mica, glauc carb, pyr	-	"	"	"	"	"		-	-	-	-	-	-	-	-	-	-	-	
34	7440	3 1/4	SANDY SLST	Qtz, silt mica, glauc carb, pyr	Sl	"	"	silt- vf	"	"		-	-	-	-	-	-	-	-	-	-	-	
35	7435	1"	SST	Qtz, silt glauc, mica calc cement pyr	Sl	lt gy	"	m-vf	"	"		-	-	-	-	-	-	-	-	-	-	-	
36	7430	2"	SST	Qtz, silt glauc, mica pyr, carb	V	dk gy gn	"	f-vf	"	"		-	-	-	-	-	-	-	-	-	-	-	
37	7425'	3/4	SILTY SST	Qtz, v glauc silt	V	dk gy gn	"	"	"	"													
38	7420'	1"	SANDY SLST	Qtz, glauc silt , pyr	V	"	"	silty -vf	"	"													
39	7415	1¼"	SILTY SST	Qtz, glauc mica, silt	V	"	"	vf-f	"	"													
40	7410	3/4	SST	Qtz, glauc silt	V	lt gy gn	firm- soft	vf-f	Mod	sa- sr													
41	7407	2"	CALC SLST	Qtz, mica Silt	V	dk gy	soft- firm	Silty	"														

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DATE 19/6/77

SWC RUN NO .....

IES RUN NO .....

ESSO AUSTRALIA LTD.

SIDEWALL CORE DESCRIPTIONS

WELL KINGFISH-7

GEOLOGIST NORTON/GILES

SERVICE CO .....

NO. 1a	DEPTH 1	REC 2	ROCK TYPE 3	MODIFIERS 4	CAL 5	COLOR 6	INDUR DEG 7	GRAIN SIZE 8	SRTG 9	RND 10	DISS CLAY 11	STAIN 12	FLOURESCENCE % RK	FLOURESCENCE DISTR 14	FLOURESCENCE INTEN 15	FLOURESCENCE COLOR 16	CUT FLUOR. INTEN 17	CUT FLUOR. COLOR 18	CUT RESIDUE QUAN 19	CUT RESIDUE COLOR 20	SHOW 21	PROB PROD 22	REMARKS - GAS 23
42	7405	3/4	CALC	Silty, mica	V	Dk gy	Soft-	Silt	Mod														
			SLST	qtz			Firm																
43	7396	1½"	CALC	Clay, Silty	V	Lt gy	Firm	Clay	Good														
			SHALE	quartz																			
44	7386	2"	CALC	Silty, clay	V	M gy	Firm	Silt	"														
			SHALE	mica																			
45	7376	2"	"	Silty, clay	"	"	"	"	"														
				mica																			
46	7356	2"	"	"	"	"	"	"	"														
47	7336	2"	"	"	"	"	"	"	"														
48	7306	2"	CALC	Clay	"	"	"	Clay	"														
			SHALE																				
49	7256	3/4	"	" Pyrite	"	"	"	"	"														
50	7150	1"	"	" "	"	"	"	"	"														
51	7050	1"	"	" "	"	Ltg	"	"	"														
52	6950	2"	"	" "	"	M dk gy	FIRM	"	"														
53	6860	2"	"	" "	"	Dk gy	SOFT	"	"														
54	6748	2"	"	" "	"	" "	"	"	"														
55	6656	1¼	"	" "	"	M gy	"	"	"														
56	6555	3/4	CALC	Silt Pyr	"	Dk gy	FIRM	Silt	"														
			SILST																				
57	6446	2"	CALC	Clay, Pyr	"	"	"	CLAY	"														
			SHALE																				
58	6353	2"	CALC	Silt Calc	"	"	"	Silt	"														
			SLST	Pyrite																			
59	6248	1¼"	"	" "	"	"	"	"	"														
60	6147	1½"	"	" "	"	"	"	"	"														

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DATE 19/6/77

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SIDEWALL CORE DESCRIPTIONS

SWC RUN NO .....

IES RUN NO .....

WELL KINGFISH-7

GEOLOGIST MORTON/GILES

SERVICE CO .....

NO. 1a	DEPTH 1	REC 2	ROCK TYPE 3	MODIFIERS 4	CAL 5	COLOR 6	INDUR DEG 7	GRAIN SIZE 8	SRTG 9	RND 10	DISS CLAY 11	STAIN 12	FLOURESCENCE % RK	FLOURESCENCE DISTR 14	FLOURESCENCE INTEN 15	FLOURESCENCE COLOR 16	CUT FLUOR. INTEN 17	CUT FLUOR. COLOR 18	CUT RESIDUE QUAN 19	CUT RESIDUE COLOR 20	SHOW 21	PROB PROD 22	REMARKS - GAS 23
61	6040	1¼	CALC	Silt,calc	V	mgy	Fm	slt	gd														
			SILST	pyr																			
62	5950	2	"	silt calc	"	mgy	Fm	"	"														
63	5860	3 1/4	"	silt calc	"	m-lt	Fm	slt	"														
				pyr		gy																	
64	5735	1½	"	silt calc	"	mgy-lt	Hd	slt	"														
				pyr		bn																	
65	5600	2	"	silt calc	"	m-dk	sft-fm	slt	"														
				pyr		gy																	
66	5500	1½	"	" "	"	"	" "	"	"														
67	5350	2	"	" "	"	"	" "	"	"														
68	5260	NR																					
69	5150	3 1/4	CALC	Silt calc	"	lt gy	fm-hd	"	"														
			SILST	pyr																			
70	5050	1¼	CALC	Silt calc	"	lt mgy	sft	"	"														
			SILST	pyr																			
71	4950	3 1/4	CALC	Clay, calc,	"	m dk	FIRM	CLAY	"														
			SHALE	Pyr		gy																	
72	4852	2"	CALC	Silt Calc	"	M dk	FIRM	SILT	"														
			SLST	Pyr		gy																	
73	4758	2"	CALC	" "	"	" "	"	"	"														
			SLST																				
74	4650	2"	"	" "	"	" "	"	"	"														
75	4550	½"	CALC	Silt , calc	"	lt gy	"	"	"														
			SLST	glauc																			
76	4450	1"	"	Carb slt	"	lt gy	"	"	"														
				calc, Py,																			
				glauc																			

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SIDEWALL CORE DESCRIPTIONS

WELL KINGFISH-7 PAGE ... OF ...
GEOLOGIST GILES/MORTON ATT ... REC ...
SERVICE CO ... DATE 19/6/77
IES RUN NO ... 2 ... SWC RUN NO ... 3 ...

NO. 1a	DEPTH 1	REC 2	ROCK TYPE 3	MODIFIERS 4	CAL 5	COLOR 6	INDUR DEG 7	GRAIN SIZE 8	SRTG 9	RND 10	DISS CLAY 11	STAIN 12	FLOURESCENCE % RK	FLOURESCENCE DISTR 14	FLOURESCENCE INTEN 15	FLOURESCENCE COLOR 16	CUT FLUOR. INTEN 17	CUT FLUOR. COLOR 18	CUT RESIDUE QUAN 19	CUT RESIDUE COLOR 20	SHOW 21	PROB PROD 22	REMARKS - GAS 23
77	4350	1¼"	CALC	Carb	V	lt gy	FIRM	SILT	Gd														
			SILST	slt calc																			
				py, glauc																			
78	4250	1¼"	"	" "	"	" "	"	"	"														
79	4150	1¼"	"	" "	"	" "	"	"	"														
80	4050	1½"	"	" "	"	m-dk gy	Fm-Sft	"	"														
81	3950	1	"	Silt Calc	"	m-gy	FIRM	"	"														
				sl pyr, sl carb																			
82	3850	1¼"	"	Silt Calc	"	"	"	"	"														
				Pyr, carb, glauc.																			
83	3750	1	"	Silt Calc	"	lt gy	sft-fm	"	"														
				Quartz,																			
				glauc, pyr																			
84	3600	½	"	Silt Calc	"	" "	" "	"	"														
				Quartz, glauc																			
85	3500	1 3/4	"	Silty, Calc	"	lt-gy	FIRM	"	"														
				Pyr, glauc,																			
				sl mica																			
86	3350	1¼"	"	" "	"	" "	"	"	"														
87	3200	1½"	"	" "	"	" "	"	"	"														
88	3050	1½"	"	" "	"	" "	"	"	"														
89	2950	2"	"	" "	"	" "	"	"	"														
90	2870	1 3/4	"	Calc, sitst	"	" "	"	"	"														

FORM R 257 3 72

KINGFISH-7

CHROMATOGRAPH GAS ANALYSES

(SIDEWALL CORES).

SWC NO.	DEPTH	RECOVERED	DESCRIPTION
			#12 C_1 = 2.5 x 3.43 = 8 C_2 = 1 x 3.50 = 3.5 C_3 = 1.5 x 4.79 = 7 C_4 = 1.5 x 9.23 =14 C_5 = 9 x20.00 = 1.80 C_6 = 5 x45.45 = 2.27
			#15 No gas.
			#17 No gas.
			#19 C_1 Tr C_2 Tr C_3 Tr C_4 1.5 x 9.23 =14 C_5 1 x20 =20 C_6 ----
			#20 No gas.
			#21 C_1 = 27 x 3.43 = 92 C_2 = 24 x 3.50 = 84 C_3 =160 x 4.79 =766 C_4 = 8 x 88 x 9.23 = 6498 C_5 = 8 x 42 x 20 = 6720 C_6 = 8 x 12 x 45.45 = 4363 Tr of C_1 - C_5
			#26 No gas.
			#28 No gas.
			#30 No gas.
			#32 No gas.
			#33 No gas.
			#34 No gas.
			#35 No gas.
			#36 No gas.
			#38 No gas.
			#40 No gas.

KINGFISH-7

S GILES/D MORTON

SWC NO.	DEPTH	RECOVERED	DESCRIPTION
1	7900	½	Sandstone - very fine to fine, light grey, very well sorted, clear, soft, good porosity, no clay, no show.
2	7880	½	Sandstone - dark grey, very fine to granular, very pyritic, (inter-granular), very dirty, very poorly sorted, subangular to subrounded, very low porosity, no show.
3	7854	½	Sandstone - medium to brown, fine to granular clean, but very poorly sorted, silty, subangular to subrounded, fair to good porosity, no show - whole mud invasion gives colour.
4	7797	½	Siltstone - light grey to dark grey, carbonaceou laminae, generally clean, micaceous, as above, but moderately carbonaceous, no show, carbonaceo laminae - 20%.
5		MF	
6	7559	1½	Siltstone, light grey, slightly micaceous, laminae folded around core, core fractured and stuck together with mud cake. Very calcareous. Probably large cavings of Lakes Entrance formation.
7	7730	3/4	Siltstone, as above.
8	7534	1	Sandstone, dark green to black, very fine to granular, abundant pyrite, abundant glauconitic, very silty, very poorly sorted, subangular to subrounded, tight, no show, typical Gurnard formation.
9	7530	1¼	Sandstone, Gurnard, as above.
10	7528	1¼	Sandstone, Gurnard, as above, glauconite more dominant over 1 mm laminae, weak bedding.
11	7526	1	Sandstone as for 10, rare grains calcareous, (may be mud contaminated).
12	7524	3/4	Sandstone, light green, fine to granular, soft, poor to moderately sorted, subrounded, moderately clayey, slightly glauconitic, fair porosity, even good bright yellow fluorescence, blue/white cut.
13	7522	NR	
14	7520	3/4	Sandstone, as above, light grey, fair to poor porosity.
15	7518	3/4	Sandstone, as above, light grey, fair to poor porosity, sand appears bimodal - fine to medium and very coarse to granular.
16	7516	3/4	Sandstone, as above, apparent decrease in glauconite.
17	7514	3/4	Sandstone, as above more silty, porosity fair.

KINGFISH-7

S GILES/D MORTON

SWC NO.	DEPTH	RECOVERED	DESCRIPTION
18	7512	1	Sandstone, as above, cleaner, porosity, fair to good, well sorted, sign of heavy mineral including tourmaline.
19	7510	1	Sandstone, as for 18.
20	7508	3/4	Sandstone, as for 19, slightly firmer, non calcareous.
21	7506	3/4	Sandstone, as for 19, non calcareous.
22	7504	3/4	Sandstone, medium to dark grey, very fine to medium, silty, pyritic, glauconitic, poor to finely sorted, subrounded, abundant clay, poor to fine porosity, fair show, transitional to Gurnard.
23	7502	3/4	Sandstone, medium dark grey, very fine to medium, silty, slightly glauconitic, moderately pyritic, poorly sorted, subrounded, moderate to weak shows, poor porosity.
24	7497	1	Sandstone, dark grey to brown, very fine to fine, rare coarse grains, very silty, moderately to very glauconitic, slightly pyritic, poorly sorted, subrounded, poor porosity to tight, no shows.
25	7490	MF	
26	7480	1	Sandstone, dark grey to brown, very fine, rare medium to coarse grains, very silty, very glauconitic, moderately micaceous, poorly sorted, tight, no show.
27	7475	1	Siltstone, dark grey/brown, glauconitic, pyrite, carbonaceous, occasional fine quartz grains, typical fine grained facies of Gurnard. Non calcareous.
28	7470	1	Siltstone, dark grey/brown, glauconitic, pyrite, very carbonaceous, occasional fine to coarse, quartz grains.
29	7465	3/4	Siltstone, as above, quartz grains more common, and coarser.
30	7460	3/4	Siltstone, as above, quartz common, and common up to granular size.
31	7455	2"	Silty Sandstone - Dark grey/green firm, very fine to silty, poorly sorted, subangular to subrounded, quartz, mica pyritic, carbonaceous, glauconitic, silty matrix, very tight, no fluorescence.
32	7450	1 3/4"	Silty Sandstone - Dark grey/green; very fine to silty, poorly sorted, subangular to subrounded; quartz, mica, glauconitic, pyritic, carbonaceous, silty matrix, very tight.
33	7445	1 3/4"	Silty Sandstone - as above.

S GILES/D MORTON

SWC NO.	DEPTH	RECOVERED	DESCRIPTION
34	7440	1¼"	Sandy Siltstone - as above, mainly silty some disseminated very fine grains, slightly calcareous.
35	7435	1	Sandstone - Light grey, firm, medium to very fine, some silty, poorly sorted, subangular to subrounded, quartz, glauconitic, mica, pyrite, calcareous cement, tight.
36	7430	2"	Sandstone - Dark grey/green, firm, very fine to fine, silty matrix, poorly sorted, subangular to subrounded, quartz, glauconitic, mica, pyrite, carbonaceous, very tight, calcareous cement in parts.
37	7425	3/4"	Silty Sandstone - Dark grey to green, firm, very fine to medium, silty matrix, poorly sorted, quartz, very glauconitic, calcareous cement.
38	7420	1"	Sandy Siltstone - Dark grey to green, firm, silty to very fine, poorly sorted, quartz glauconitic, very calcareous, pyrite.
39	7415	1¼"	Silty Sandstone - Dark grey to green, firm, very fine to fine, silty matrix, poorly sorted, subangular to subrounded, quartz, glauconitic, pyrite, tight.
40	7410	3/4"	Sandstone - light grey to green, soft to firm, very fine to fine, moderately sorted, sucrosie, subangular to subrounded, quartz, glauconitic, minor silt, calcareous cement.
41	7407	2"	Calcareous Siltstone - Dark grey, soft to firm, silty to very fine, moderately sorted, quartz, mica, silty, very calcareous.
42	7405	1 3/4"	Calcareous Siltstone - Dark grey, firm to soft, silty, moderately sorted, some very fine quartz, mica, very calcareous.
43	7396	1½"	Calcareous Shale - Light grey, firm, clay, calcareous, quartz, some silty, well sorted.
44	7386	2"	Calcareous Siltstone, Medium grey, firm, silty, shaley, good sorting, very calcareous, mica.
45	7376	2"	Calcareous Siltstone - as above.
46	7356	2"	Calcareous Siltstone - as above.
47	7336	2"	Calcareous Siltstone - as above.
48	7306	2"	Calcareous Shale - Medium grey, soft, clay, well sorted, calcareous.
49	7256	1 3/4"	Calcareous shale - As above with pyrite.
50	7150	1	Calcareous shale - Medium grey as above.
51	7050	1"	Calcareous shale - Light grey, soft, clay, pyrite well sorted.

KINGFISH-7

S GILES/D MORTON

SWC NO.	DEPTH	RECOVERED	DESCRIPTION
52	6950	2"	Calcareous shale - Medium dark grey, firm, clay, pyrite, well sorted.
53	6860	2"	Calcareous shale - Dark grey firm, clay, pyrite, well sorted.
54	6748	2"	Calcareous shale - Dark grey, firm, clay, pyrite, silty, moderately sorted.
55	6656	1¼"	Calcareous shale - Medium grey as above.
56	6555	1 3/4"	Calcareous siltstone - Dark grey, firm, silty, well sorted, some fossiliferous fragements, pyrite, very calcareous.
57	6446	2"	Calcareous shale - Dark grey, firm, well sorted, very calcareous.
58	6353	2"	Calcareous Siltstone - Dark grey, firm, silty, calcareous, pyrite, well sorted.
59	6248	1¼"	Calcareous Siltstone - as above.
60	6147	1½"	Calcareous Siltstone - as above.
61	6040	1¼"	Calcareous Siltstone- medium grey, firm, very calcareous, silty, trace pyrite, well sorted.
62	5950	2"	Calcareous Siltstone - as above, no pyrite.
63	5860	1 3/4"	Calcareous Siltstone - as above slightly pyrite.
64	5735	1½"	Calcareous Siltstone - as above, quite hard, some degree of recrystallisation.
65	5600	2"	Calcareous Siltstone - soft to firm, medium to dark grey, but more pyrite, and occasionally fossiliferous (benthonic forams).
66	5500	1½"	Calcareous Siltstone - as above, soft to firm, slightly pyrite, occasionally rare fossiliferous.
67	5350	2"	Calcareous Siltstone - as above.
68	5260	NR	
69	5150	1 3/4"	Calcareous Siltstone - light grey, firm to hard, very calcareous, very silty, occasional stringer of pyrite.
70	5050	1¼"	Calcareous Siltstone - as above.
71	4950	1 3/4"	Calcareous Shale - Medium dark grey, firm, clay, pyrite, forams, very calcareous.
72	4852	2"	Calcareous Siltstone - Medium dark grey, firm, silty, pyrite, very calcareous, well sorted.
73	4758	2"	Calcareous Siltstone - as above with forams.
74	4650	2"	Calcareous Siltstone - as above.

S GILES/D MORTON

SWC NO.	DEPTH	RECOVERED	DESCRIPTION
75	4550	½"	Calcareous Siltstone - medium to light grey as above with glauconite.
76	4450	1"	Calcareous Siltstone - medium to light grey, fir. carbonaceous, calcareous, glauconitic, pyritic, well sorted.
77	4350	1¼"	Calcareous Siltstone - medium to light grey as above.
78	4250	1¼"	Calcareous Siltstone - medium to light grey, glauconitic as above.
79	4150	1¼"	Calcareous Siltstone - as above with some carbonaceous laminae.
80	4050	1½"	Calcareous Siltstone - medium to dark grey, firm to soft, silty, well sorted, glauconitic, calcareous, pyrite, carbonaceous.
81	3950	1"	Calcareous Siltstone - medium grey, firm, silty, slightly carbonaceous, slightly pyritic.
82	3850	1¼"	Calcareous Siltstone - as above, glauconitic.
83	3750	1"	Calcareous Siltstone - light grey, soft to firm, silty, fine to medium, firm grain quartz common. (to 10% rock), glauconitic, pyritic.
84	3600	½"	Calcareous Siltstone - as above.
85	3500	1 3/4"	Calcareous Siltstone - light grey, firm, very calcareous, pyritic, slightly micaceous, no sand size fraction.
86	3350	1¼"	Calcareous Siltstone - light grey, firm, very calcareous, as above.
87	3200	2"	Calcareous Siltstone - light grey, firm, silty to very fine granular, calcareous, carbonaceous, mica, pyrite, glauconitic.
88	3050	1¼"	Calcareous Siltstone - as above, glauconitic.
89	2950	2"	Calcareous Siltstone - as above, very calcareous.
90	2870	1 3/4"	Calcareous Siltstone - medium to light grey, silty, well sorted, very calcareous.

Appendix 4

WELL COMPLETION REPORT

KINGFISH-7

APPENDIX 4

PALYNOLOGICAL ANALYSIS OF

KINGFISH-7, GIPPSLAND BASIN

by

A.D. Partridge

PALYNOLOGICAL ANALYSIS

KINGFISH-7, GIPPSLAND BASIN

BY

ALAN D. PARTRIDGE
ESSO AUSTRALIA LTD

PALAEONTOLOGY REPORT 1977/25 NOVEMBER 8th, 1977.

INTRODUCTION

Twenty-eight sidewall core, twenty core samples and one cuttings sample were examined from Kingfish-7. The zones recognised in the well are summarised below while all samples examined are listed on Table-1 and confidence ratings for the zone intervals are given on the accompanying Data Sheet.

SUMMARY

UNIT	SPORE-POLLEN ZONES	DINOFLAGELLATE ZONES
Lakes Entrance Formation	P. tuberculatus 7407'-7410'	
Upper Gurnard Facies 7410'-7524'	Upper N. asperus 7415'-7420'	P. coreoides 7415'
	Middle N. asperus 7425'-7440'	D. extensa Zone equivalent 7425'-7540'
	Lower N. asperus 7445'-7475'	D. heterophylcta 7445'-7455'
		W. echinosuturata 7465'
		A. diktyoplokus 7470'-7475'
	P. asperopolus 7480'-7497'	W. edwardsii 7497'
Marine Sand 7498'-7524'	P. asperopolus 7502'	W. edwardsii 7502' (Interval not zoned 7502'-7524')
Lower Gurnard Facies 7524'-7553'	P. asperopolus 7526'-7553'	W. thompsonae 7526'-7552'
	UNCONFORMITY	
Latrobe Coarse Clastics 7553'-7923'	Lower M. diversus 7575'-7797'	
T.D. 7923'		

GEOLOGICAL COMMENTS

Kingfish-7 is the first well to intersect a significant reservoir sand intercalated with greensands which lithologically have to be correlated with the Gurnard Formation. The deposition of "greensand" at Kingfish-7 commenced in the Early Eocene (probably as early as the Wetzeliella waipawaensis Dinoflagellate Zone in the lower part of the Upper M. diversus Zone) and continued throughout the Middle and Late Eocene and ceased in the Early Oligocene (Upper N. asperus Zone). The "greensand" environment was interupted only once by the deposition of 26 feet of fine to coarse sand which is lithologically typical of the Latrobe coarse clastics. The sand was deposited during the P. asperopolus Zone at the boundary between the Wetzeliella thompsonae and W. edwardsii Dinoflagellate Zones (see Partridge 1976, Fig. 2).

Although lithologically the "greensand" in Kingfish-7 is indistinguishable from the Gurnard Formation the "greensand" sampled in Core-2 (from 7524 to 7553 feet on log depths) is older than the main developments of greensand to the west and north of Kingfish-7. In Gurnard-1 the "type locality" the base of the Gurnard Formation lies within the Lower N. asperus Zone. In essence the Gurnard Formation is really a facies and both its base and top are time transgressive.

The lower greensand unit between 7524 to 7553 feet is placed in the W. thompsonae Dinoflagellate Zone on the basis of both spore-pollen and dinoflagellates including the common occurrence of the nominated zone species. The presence of the dinoflagellates Wetzeliella waipawaensis and W. ornata within this section suggests that greensand deposition actually started in the Upper M. diversus Zone. These latter Wetzeliella species are not known to have overlapping ranges with W. thompsonae in the thicker Flounder Formation or in New Zealand where they were originally described (Wilson, 1967). Their presence together with W. thompsonae in Kingfish-7 is interpreted to be insitue recycling or reworking. The lower greensand unit is only represented by 29 feet, and core 2 within this interval displays abundant burrowing. Assuming continuous deposition this 29 feet would have been deposited in a minimum time of one million years (equivalent to W. thompsonae Zone only) or a maximum of three and a half million years (from W. waipawaensis to W. thompsonae Zones assuming recycling). This represents depositional rates from 8.8 mm/1000 years to 3.5 mm/1000 years. These rates are so low that reworking is likely to be the rule rather than the exception! The upper greensand unit between 7410 to 7524 feet has even slower depositional rates of between 1.5 mm/1000 years to 7.3 mm/1000 years.

The intercalated reservoir sand between 7498 to 7524 feet obviously had a much higher rate of deposition. Its stratigraphic position of lying at the boundary between the W. edwardsii and W. thompsonae Dinoflagellate Zones suggests that its deposition may be related to a eustatic change in sea level. Palaeogeographic reconstructions suggest that the lower greensand unit was deposited in water depths of between 600 and 1000 feet.

DISCUSSION OF ZONES

Species identified from the samples examined are given on the eight attached distribution sheets. The basis for choosing the zone intervals is discussed in the following:

Lower Malvacepollis diversus Zone 7575 to 7797 feet

Kingfish-7 appears to have reached total depth while still within the Lower M. diversus Zone, although no age diagnostic samples were obtained

3/....

from the final 118 feet intersected in the well. The zone is identified on the common occurrence of Proteacidites grandis and presence of species such as Malvacepollis diversus, Intratriporopollenites notabilis, Tetracolporites multistrixus, Tricolpites gillii and Myrtaceoipollenites australis Harris (the last at 7724 feet only). Most asemblages are of low diversity as is typical of the zone. Likewise the dinoflagellates present are neither diverse nor very age diagnostic.

Proteacidites asperopolus Zone 7480 to 7553 feet

The lower greensand unit which was extensively sampled from Core-2 is placed in the P. asperopolus Zone on the presence of the spore-pollen species Conbaculites apiculatus, Helciporites astrus, Proteacidites asperopolus and Santalumidites cainozoicus, all of which appear near the base of the greensand. This age is strongly reinforced by the dinoflagellates especially the sporadic occurrence of Wetzeliella thompsonae.

The lower part of core-2 was originally misidentified as belonging to the Upper M. diversus Zone in provisional palynological reports. These early determinations were based on the identification of the dinoflagellate Wetzeliella ornata which is normally not found above the Upper M. diversus Zone. Its occurrence in Kingfish-7 is interpreted as insitue recycling of the very slowly accummulating greensand facies.

The top of the P. asperopolus Zone is picked above the top of the major sands between 7498 and 7524 feet, on the highest occurrences or extinction points of the spore-pollen species Intratriporopollenites notabilis, Myrtaceidites tenuis and Conbaculites apiculatus and the dinoflagellate species Wetzeliella edwardsii and Homotryblium tasmanense.

Nothofagidites asperus Zones 7415 to 7475 feet

The 13 million years represented by the Lower, Middle and Upper N. asperus Zones are represented in Kingfish-7 by a maximum of 65 feet. This represents an accumulation rate of 5 feet/million years of 1.5 millimetres per 1000 years. Obviously the section cannot represent continuous sedimentation at this slow rate without continual reworking of the sediment leading to complete masking of any zone boundaries. That differentiation into three spore-pollen zones and a number of dinoflagellate zones can be made implies that sediments were delivered to the Kingfish-7 location in discrete packages of sediment which are separated by very substantial hiatuses. A minimum of a five-fold subdivision can be recognised in the section based on dinoflagellates.

It is also on the basis of the dinoflagellates that the section is actually age dated. In most samples the spore-pollen diversity is too low, because of the low yields obtained from the sidewall cores, to differentiate the spore-pollen zones. Instead the spore-pollen zones are extrapolated from knowledge of how the spore-pollen and dinoflagellate zones correlate elsewhere in the basin.

This upper greensand unit in Kingfish-7 shows the same sequence of dinoflagellate zones or events as in Swordfish-1 (Partridge 1977). The lowest and oldest zone recognised is termed the Areosphaeridium diktyoplokus Zone (7470 to 7475 feet) and is based on the association of this species with Deflandrea oebisfeldensis. Above this is the Wetzeliella echinosuturata Zone based on the occurrence of the nominated species. Its occurrence in Kingfish-7 is only the second time it has been found in the Gippsland Basin. The next zone is based on the first occurrence followed by a short acme of the species Deflandre heterophylcta. The top of this zone is placed at the last appearance of A. diktyoplokus. These three zones are correlated with the Lower N. asperus Zone which correlates with the total range of A. diktyoplokus.

4/....

The Middle N. asperus Zone is based on Browns Creek Clays style dinoflagellate assemblages between 7425 and 7440 feet. The best sample which is at 7430 feet contains Eisenackia ornata.

The Upper N. asperus Zone is based on negative evidence. It is restricted to two samples at 7415 and 7420 feet. The underlying sample contains the last occurrence of the dinoflagellate Corrudinium incompositum one of the best indicator species for the Browns Creek Clays, while the overlying sample contains the lowest occurrence of the spore Cyatheacidites annulata which is used to mark the base of the Proteacidites tuberculatus Zone documented in samples at 7407 and 7410 feet.

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BASIN GIPPSLAND BASIN DATE

WELL NAME KINGFISH-7 ELEVATION K.B. +83 feet

AGE	PALYNOLOGIC ZONES	HIGHEST DATA					LOWEST DATA				
		Preferred Depth	Rtg.	Alternate Depth	Rtg.	2 way time	Preferred Depth	Rtg.	Alternate Depth	Rtg.	2 way time
OLIG-MIO.	P. tuberculatus	7407	0				7410	1			
EOCENE	U. N. asperus	7415	2				7420	2			
	M. N. asperus	7425	1				7440	2	7430	0	
	L. N. asperus	7445	1				7475	1			
	P. asperopolus	7480	2	7497	0		7553*	2	7552*	0	
	U. M. diversus										
	M. M. diversus										
	L. M. diversus	7575*	2	7586*	1		7797	1			
PALEOCENE	U. L. balmei										
	L. L. balmei										
	T. longus										
LATE CRETACEOUS	T. lilliei										
	N. senectus										
	C. trip./T.pach.										
	C. distocarin.										
	T. pannosus										
EARLY CRETACEOUS											
PRE-CRETACEOUS											

COMMENTS: W. echinosuturata Dinoflagellate Zone 7465 feet

W. edwardsii Dinoflagellate Zone 7497-7502 feet

W. thompsonae Dinoflagellate Zone 7526-7552* feet

*Convention core samples, depth corrected to E-logs.

T.D. 7923 feet

RATINGS:
0; SWC or CORE, EXCELLENT CONFIDENCE, assemblage with zone species of spores, pollen and microplankton.
1; SWC or CORE, GOOD CONFIDENCE, assemblage with zone species of spores and pollen or microplankton.
2; SWC or CORE, POOR CONFIDENCE, assemblage with non-diagnostic spores, pollen and/or microplankton.
3; CUTTINGS, FAIR CONFIDENCE, assemblage with zone species of either spore and pollen or microplankton, or both.
4; CUTTINGS, NO CONFIDENCE, assemblage with non-diagnostic spores, pollen and/or microplankton.

NOTE: If a sample cannot be assigned to one particular zone, then no entry should be made. Also, if an entry is given a 3 or 4 confidence rating, an alternate depth with a better confidence rating should be entered, if possible.

DATA RECORDED BY: A.D. Partridge DATE September, 1977

DATA REVISED BY: A.D. Partridge DATE 5th November, 1977

FORM No R 315 12/72

SAMPLE and DEPTH (in feet)		ZONE	AGE	CONFIDENCE RATING	YIELD	DIVERSITY	COMMENT
SWC 41	7407'	P. tuberculatus	Early Oligocene	0	Moderate	High	
SWC 40	7410'	P. tuberculatus	" "	1	Low	Moderate	
SWC 39	7415'	Upper N. asperus	" "	2	Low	Fair	
SWC 38	7420'	" " "	" "	2	Low	Fair	
SWC 37	7425'	Middle N. asperus	Late Eocene	1	Very Low	Fair	
SWC 36	7430'	" " "	" "	0	Low	High	
SWC 35	7435'	" " "	" "	2	Very Low	Fair	
SWC 34	7440'	" " "	" "	2	High	Low	
SWC 33	7445'	Lower N. asperus	Middle Eocene	1	Moderate	High	Top occurrence of A. diktyoplokus
SWC 32	7450'	" " "	" "	2	High	Moderate	
SWC 31	7455'	" " "	" "	1	Low	High	Base occurrence of D. heterophylcta
SWC 30	7460'	" " "	" "	1	High	Low	
SWC 29	7465'	" " "	" "	1	Low	Fair	Occurrence of W. echinosuturata
SWC 28	7470'	" " "	" "	1	Low	Fair	
SWC 27	7475'	" " "	" "	1	Moderate	Fair	Base occurrence of A. diktyoplokus
SWC 26	7480'	P. asperopolus	Early Eocene	2	Moderate	Fair	
Cuttings	7480'-90'	Indeterminant		-	Low	Fair	
SWC 24	7497'	P. asperopolus	Early Eocene	0	Moderate	High	W. edwardsii Dino. Zone
SWC 22	7502'	P. asperopolus	" "	0	Moderate	High	W. edwardsii Dino. Zone
SWC 21	7506'	Indeterminant	" "	-	Very Low	Very Low	
SWC 20	7508'	Barren	" "	-	-	-	
SWC 11	7526'	P. asperopolus	" "	1	Very Low	Very Low	W. thompsonae Dino. Zone top
SWC 10	7528'	" "	" "	0	Moderate	Fair	
SWC 9	7530'	" "	" "	0	Low	Moderate	
Core 2	7533' (7528')	" "	" "	0	Moderate	Moderate	
Core 2	7537' (7532')	" "	" "	0	Low	High	Reworked? W. waiparaensis
Core 2	7540' (7535')	" "	" "	0	Moderate	Moderate	
Core 2	7545'11" (7540'11")	" "	" "	0	Moderate	High	Reworked? W. ornata
Core 2	7549' 7" (7544' 7")	" "	" "	0	Low	High	
Core 2	7550'10" (7545'10")	" "	" "	0	Moderate	High	Reworked? W. ornata
Core 2	7552' (7547')	" "	" "	0	High	High	Reworked? W. ornata
Core 2	7552' 6" (7547' 6")	" "	" "	0	Moderate	High	
Core 2	7553'11" (7548'11")	" "	" "	0	Moderate	High	
Core 2	7554'10" (7549'10")	" "	" "	0	Low	High	
Core 2	7555' 6" (7550' 6")	" "	" "	0	Moderate	High	
Core 2	7556' 5" (7551' 5")	" "	" "	0	Moderate	High	
Core 2	7557' 4" (7552' 4")	" "	" "	0	Moderate	High	Lowest occurrence W. thompsonae
Core 2	7558' (7553')	" "	" "	2	Moderate	Fair	
Core 2	7559'11" (7554'11")	Indeterminant	" "	-	Very Low	Very Low	
Core 2	7580' (7575')	Lower M. diversus	Early Eocene	2	Low	Low	
Core 3	7591' (7586')	" " "	" "	1	Low	Moderate	
Core 4	7643' (7638')	Indeterminant	" "		Very Low	Very Low	
Core 6	7724' (7725')	Lower M. diversus	" "	1	Moderate	Moderate	
SWC 7	7730'	" " "	" "	1	Low	Moderate	Contaminated from drilling mud.
Core 6	7751' (7752')	" " "	" "	0	High	High	With D. dartmooria
SWC 6	7759'	Indeterminant	" "	-	Low	Fair	Contaminated by Oligocene dinoflagellates from drilling mud.
SWC 4	7797'	Lower M. diversus	" "	1	Low	Fair	
SWC 2	7880'	Barren					
SWC 1	7900'	Indeterminant or Barren		-	-	-	Contamination from Lakes Entrance Fm. only thing identified.

NB: E-log adjusted conventional core depths are given in brackets.

TABLE-1: SUMMARY OF PALYNOLOGICAL ANALYSES, KINGFISH-7, GIPPSLAND BASIN

Well Name KINGFISH-7 Basin GIPPSLAND Sheet No. 1 of 8

SAMPLE TYPE *	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	C	C	C	C	C	C
DEPTHS / PALYNOMORPHS	7407'	7410'	7415'	7420'	7425'	7430'	7435'	7440'	7445'	7450'	7455'	7460'	7465'	7470'	7475'	7480'	7497'	7504'	7506'	7526'	7528'	7550'	7553'	7537'	7540'	7545'11"	7549'7"	7550'10"
A. qualumis																												
A. acutullus																												
A. luteoides																												
A. oculatus																												
A. sectus																												
A. triplaxis																												
A. obscurus																												
B. disconformis																												
B. arcuatus																												
B. elongatus																												
B. mutabilis																												
B. otwayensis																												
B. elegansiformis																												
B. trigonalis																												
B. verrucosus																												
B. bombaxoides																												
B. emaciatus																												
C. bullatus																												
C. heskermensis																												
C. horrendus																												
C. meleosus																												
C. apiculatus																												
C. leptos																												
C. striatus																												
C. vanraadshoovenii																												
C. orthoteichus/major																												
C. annulatus																												
C. gigantis																												
C. splendens																												
D. australiensis																												
D. granulatus																												
D. tuberculatus																												
D. delicatus																												
D. semilunatus																												
E. notensis																												
E. crassiexinus																												
F. balteus																												
F. crater																												
F. lucunosus																												
F. palaequetrus																												
G. edwardsii																												
G. rudata																												
G. divaricatus																												
G. gestus																												
G. catathus																												
G. cranwellae																												
G. wahooensis																												
G. bassensis																												
G. nebulosus																												
H. harrisii																												
H. astrus																												
H. elliottii																												
I. anguloclavatus																												
I. antipodus																												
I. notabilis																												
I. gremius																												
I. irregularis																												
J. peiratus																												
K. waterbolkii																												
L. amplus																												
L. crassus																												
L. ohaiensis																												
L. bainii																												
L. lanceolatus																												
L. balmei																												
L. florinii																												
M. diversus																												
M. duratus																												
M. grandis																												
M. perimagnus																												

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

Well Name KINGFISH-7 Basin GIPPSLAND Sheet No. 2 of 8

SAMPLE TYPE *	C	C	C	C	C	C	C	C	C	C	C	C	C	C	S	C	S	S	S
DEPTHS / PALYNOMORPHS	7552'	7552'6"	7553'11"	7554'10"	7555'6"	7556'5"	7557'4"	7558'	7559'11"	7580'	7591'	7643'	7724'	7730'	7751'	7759'	7797'	7900'	
A. qualumis																			
A. acutullus	/				/										/				
A. luteoides																			
A. oculatus																			
A. sectus																			
A. triplaxis																			
A. obscurus																			
B. disconformis					/														
B. arcuatus				/															
B. elongatus														/	/				
B. mutabilis																			
B. otwayensis																			
B. elegansiformis																			
B. trigonalis																			
B. verrucosus																			
B. bombaxoides																			
B. emaciatus																			
C. bullatus																			
C. heskermensis																			
C. horrendus																			
C. meleosus																			
C. apiculatus			/																
C. leptos																			
C. striatus																			
C. vanraadshoovenii																			
C. orthoteichus/major	/						/	/											
C. annulatus																		C	
C. gigantis																			
C. splendens					/		/				/		/	/			/		
D. australiensis																			
D. granulatus	/	/			/	/		/			/	/			/		/		
D. tuberculatus	/					/		/							/			/	
D. delicatus																			
D. semilunatus																			
E. notensis																			
E. crassiexinus																			
F. balteus	/																		
F. crater																			
F. lucunosus																			
F. palaequetrus																			
G. edwardsii																			
G. rudata			RW/																
G. divaricatus																			
G. gestus																			
G. catathus																			
G. cranwellae															/				
G. wahooensis																			
G. bassensis																			
G. nebulosus																			
H. harrisii	/	/		/	/	/	/	/	/	/			/	/	A		/	/	
H. astrus		/																	
H. elliottii																			
I. anguloclavatus														/	/				
I. antipodus																			
I. notabilis			/			/							/						
I. gremius	/																		
I. irregularis																	/		
J. peiratus																			
K. waterbolkii	/													/					
L. amplus																			
L. crassus							/												
L. ohaiensis																			
L. bainii																			
L. lanceolatus																			
L. balmei																			
L. florinii	/		/		/	/	/	/			/		/	/	/		/	C	
M. diversus	/	/				/	/	/			/		/	/	/				
M. duratus																			
M. grandis																			
M. perimagnus																			

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

Well Name KINGFISH-7 Basin GIPPSLAND Sheet No. 3 of 8

SAMPLE TYPE *	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	C	C	C	C	C	C
DEPTHS / PALYNOMORPHS	7407'	7410'	7415'	7420'	7425'	7430'	7435'	7440'	7445'	7450'	7455'	7460'	7465'	7470'	7475'	7480'	7497'	7504'	7506'	7526'	7528'	7530'	7533'	7537'	7540'	7545'11"	7549'7"	7550'10"
M. subtilis																												
M. ornamentalis																												
M. hypolaenoides																												
M. homeopunctatus																												
M. parvus/mesonesus																												
M. tenuis									RW																			
M. verrucosus																												
M. australis																												
N. asperus																												
N. asperoides																												
N. brachyspinulosus																												
N. deminutus																												
N. emarcidus/heterus																												
N. endurus																												
N. falcatus																												
N. flemingii																												
N. goniatus																												
N. senectus																												
N. vansteenisii																												
O. sentosa																												
P. ochesis																												
P. catastus																												
P. demarcatus																												
P. magnus																												
P. polyoratus																												
P. vesicus																												
P. densus																												
P. velosus																												
P. morganii/jubatus °																												
P. mawsonii		A																										
P. reticulosaccatus																												
P. verrucosus																												
P. crescentis																												
P. esobalteus																												
P. langstonii																												
P. reticulatus																												
P. simplex																												
P. varus																												
P. adenanthoides (Prot.)																												
P. alveolatus																												
P. amolosexinus																												
P. angulatus																												
P. annularis																												
P. asperopolus																												
P. biornatus																												
P. clarus																												
P. cleinei																												
P. confragosus																												
P. crassis																												
P. delicatus																												
P. formosus																												
P. grandis																												
P. grevillaensis																												
P. incurvatus																												
P. intricatus																												
P. kopiensis																												
P. lapis																												
P. latrobensis																												
P. leightonii																												
P. obesolabrus																												
P. obscurus																												
P. ornatus																												
P. otwayensis																												
P. pachypolus			RW														A	A							A	A		
P. palisadus																												
P. parvus																												
P. plemmelus																												
P. prodigus																												
P. pseudomoides																												
P. recavus																												

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

Well Name KINGFISH-7 Basin GIPPSLAND Sheet No. 4 of 8

SAMPLE TYPE *	C	C	C	C	C	C	C	C	C	C	C	C	C	S	C	S	S	S
DEPTHS / PALYNOMORPHS	7552'	7552'6"	7553'11"	7554'10"	7555'6"	7556'5"	7557'4"	7558'	7559'11"	7580'	7591'	7643'	7724'	7730'	7751'	7759'	7797'	7900'
M. subtilis	/		/		/	/	/	/		/				/	/			
M. ornamentalis																		
M. hypolaenoides																		
M. homeopunctatus																		
M. parvus/mesonesus	/		/															
M. tenuis	/		/	/	A		/											
M. verrucosus																		
M. australis													/					
N. asperus																/		
N. asperoides																		
N. brachyspinulosus						/												
N. deminutus																		
N. emarcidus/heterus	/	/	/				/			/			/	/	/			
N. endurus																		
N. falcatus																		
N. flemingii	/		/			/	/	/		/			/	/	/		/	
N. goniatus																		
N. senectus																		
N. vansteenisii																		
O. sentosa																		
P. ochesis																		
P. catastus														/				
P. demarcatus	/					/		/						/	/			
P. magnus																		
P. polyoratus															/			
P. vesicus																		
P. densus																		
P. velosus																		
P. morganii/jubatus																		
P. mawsonii	/		/					/		/			/	/	/		/	
P. reticulosaccatus																		
P. verrucosus																		
P. crescentis																		
P. esobalteus							/											
P. langstonii																		
P. reticulatus																		
P. simplex																		
P. varus																		
P. adenanthoides (Prot.)	/					/	/						/	/	/			
P. alveolatus																		
P. amolosexinus																		
P. angulatus																		
P. annularis	/				/	/		/						/	/			
P. asperopolus						/												
P. biornatus	/					/	/											
P. clarus																		
P. cleinei																		
P. confragosus																		
P. crassis					/													
P. delicatus																		
P. formosus																		
P. grandis	/	/			/	/	A	/		A	/	/	A	A	A	/	A	
P. grevillaensis																		
P. incurvatus														/				
P. intricatus																		
P. kopiensis																		
P. lapis	/														/			
P. latrobensis						/												
P. leightonii	/				/													
P. obesolabrus																		
P. obscurus	/												/	/	/			
P. ornatus		/				/												
P. otwayensis																		
P. pachypolus	A		A		A		/											
P. palisadus																		
P. parvus																		
P. plemmelus																		
P. prodigus								/						/	/		/	
P. pseudomoides										/				/				
P. recavus			/															

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

Well Name KINGFISH-7 Basin GIPPSLAND Sheet No. 5 of 8

SAMPLE TYPE *	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	C	C	C	C	C	C
DEPTHS / PALYNOMORPHS	7407'	7410'	7415'	7420'	7425'	7430'	7435'	7440'	7445'	7450'	7455'	7460'	7465'	7470'	7475'	7480'	7497'	7504'	7506'	7526'	7528'	7530'	7533'	7537'	7540'	7545'11"	7549'7"	7550'10"
P. rectomarginis			A																									
P. reflexus																												
P. reticulatus																												
P. reticuloconcavus																												
P. reticuloscabratus																												
P. rugulatus																												
P. scitus																												
P. stipplatus																												
P. tenuiexinus																												
P. truncatus																												
P. tuberculatus																												
P. tuberculiformis																												
P. tuberculotumulatus																												
P. xestoformis (Prot.)																												
O. brossus																												
R. boxatus																												
R. stellatus																												
R. mallatus																												
R. trophus																												
S. cainozoicus																												
S. rotundus																												
S. digitatoides																												
S. marlinensis																												
S. rarus																												
S. meridianus																												
S. prominatus																												
S. uvatus																												
S. punctatus																												
S. regium																												
T. multistrixus (CP4)																												
T. textus																												
T. verrucosus																												
T. securus																												
T. confessus (C3)																												
T. gillii																												
T. incisus																												
T. longus																												
T. phillipsii																												
T. renmarkensis																												
T. sabulosus																												
T. simatus																												
T. thomasii																												
T. waiparaensis																												
T. adelaidensis (CP3)																												
T. angurium																												
T. delicatus																												
T. geraniodes																												
T. leuros																												
T. lilliei																												
T. marginatus																												
T. moultonii																												
T. paenestriatus																												
T. retequetrus																												
T. scabratus																												
T. sphaerica																												
T. magnificus (P3)																												
T. spinosus																												
T. ambiguus																												
T. chnosus																												
T. helosus																												
T. scabratus																												
T. sectilis																												
V. attinatus																												
V. cristatus																												
V. kopukuensis																												

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

Well Name KINGFISH-7 Basin GIPPSLAND Sheet No. 6 of 8

SAMPLE TYPE *	C	C	C	C	C	C	C	C	C	C	C	C	C	C	S	C	S	S	S
DEPTHS / PALYNOMORPHS	7552'	7552'6"	7553'11"	7554'10"	7555'6"	7556'5"	7557'4"	7558'	7559'11"	7580'	7591'	7643'	7724'	7730'	7751'	7759'	7797'	7900'	
P. rectomarginis																			
P. reflexus																			
P. reticulatus																			
P. reticuloconcavus																			
P. reticuloscabratus	/		/			/	/												
P. rugulatus																			
P. scitus																			
P. stipplatus																			
P. tenuiexinus	/							/							/		/		
P. truncatus																			
P. tuberculatus																			
P. tuberculiformis		/					/												
P. tuberculotumulatus											/								
P. xestoformis (Prot.)																			
Q. brossus																			
R. boxatus		/																	
R. stellatus																			
R. mallatus											/			/	/				
R. trophus																			
S. cainozoicus																			
S. rotundus																			
S. digitatoides																			
S. marlinensis																			
S. rarus																			
S. meridianus	/				/	/	/	/	/				/	/	/		/		
S. prominatus																			
S. uvatus																			
S. punctatus																			
S. regium																			
T. multistrixus (CP4)													/	/	/				
T. textus																			
T. verrucosus															/				
T. securus																			
T. confessus (C3)																			
T. gillii															/ A				
T. incisus	/																		
T. longus																			
T. phillipsii							/								/				
T. renmarkensis																			
T. sabulosus																			
T. simatus																			
T. thomasii																			
T. waiparaensis																			
T. adelaidensis (CP3)		/						/					/	/	/				
T. angurium																			
T. delicatus																			
T. geraniodes																			
T. leuros																			
T. lilliei																			
T. marginatus																			
T. moultonii					/	/	/												
T. paenestriatus				/	/	/		/											
T. retequetrus																			
T. scabratus														/					
T. sphaerica													/	/					
T. magnificus (P3)																			
T. spinosus																			
T. ambiguus															/				
T. chnosus																			
T. helosus			/		/														
T. scabratus																			
T. sectilis																			
V. attinatus																			
V. cristatus																			
V. kopukuensis							/				/			/					

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

Well Name KINGFISH-7 Basin GIPPSLAND Sheet No. 7 of 8

SAMPLE TYPE *	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	C	C	C	C	C	C
DEPTHS / PALYNOMORPHS	7407'	7410'	7415'	7420'	7425'	7430'	7435'	7440'	7445'	7450'	7455'	7460'	7465'	7470'	7475'	7480'	7497'	7504'	7506'	7526'	7528'	7530'	7533'	7537'	7540'	7545'11"	7549'7"	7550'10"
Chiro. dispersum																												
Dinos. mamilatus																												
plys. fibrosum																												
Dinos. scabroellipticus																												
Penta. laticinctum																												
Dinos. simplex									cf			C						C		C		C						
H-kolp. rigaudae																												
Nemat. balcombiana																												
System. placacantha																												
Leptodinium spp.																												
Scrin. australiense																												
Operc. centrocarpum				A								C																
Hemicystidinium spp.																		A										
Spinif. ramosus																												
Lingu. solarum																												
Phthan. delicatum																												
Phthan. coreoides																												
Tectat. marlum																												
Corru. incompositum																												
Dinos. pontus																					?C							
Balti. nanum				cf																								
Defla. extensa					cf																							
Eisen. ornata																												
Diphy. ariensis																												
Neoten. dentalia																												
Corru. corrugatum																												
Samlan. reticulifera																												
Phthan. eocenicum																												
Phthan. rotundum																												
Emmat. urnaformis																												
Defl. leptodermata									A																			
System. capricornum																												
Wetz. glabra																												
Delf. heterophyleta											A																	
Hystio. variata																												
Areos. diktyoplokus									A			A	A	A	A													
Defl. oebisfeldensis									cf			cf		A														
Reticulodimum spp.																												
Lingu. machaerophorum																												
Spinidinium spp.																												
Pareo. indentata																												
Kolpom. tuberculoides																												
Wetz. echinosuturata																												
Cordos. inodes																												
Thalas. pelagica																												
Defl. flounderensis															cf	cf					cf		A		A	A		
Areoligera sp.															A	A												
Wetz. edwardsii																												
Kenelyia spp.																												
Homot. tasmanense																												
Wetz. symmetricus																												
Wetz. thompsonae																												
Defl. longispinosa																												
Hetera. paxilla																												
Defl. asymmetricum																												
Senoni. morayensis																												
Wetz. waiparaensis																								RW				
Wetz. homomorpha																												
Wetz. ornata																										RW		RW
Spinif. crassipellis																												
Tubios. filosa																												cf
H-kolp. varispinosum																												cf
Adnat. retiintextum																												
Wetz. hyperacantha																												
Diphy. colligerum																												
Palaeoc. australinum																												
Defl. dartmooria																												
FORAM LINERS	A																											

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

A = Abundant or Common
C = Caved or contamination
RW = Reworked or recycled

Well Name KINGFISH-7 Basin GIPPSLAND Sheet No. 8 of 8

SAMPLE TYPE *	C	C	C	C	C	C	C	C	C	C	C	C	C	C	S	C	S	S	S
DEPTHS / PALYNOMORPHS	7552'	7552'6"	7553'11"	7554'10"	7555'6"	7556'5"	7557'4"	7558'	7559'11"	7580'	7591'	7643'	7724'	7730'	7751'	7759'	7797'	7900'	
Chiro. dispersum																			
Dinos. mamilatus																			
Polys. fibrosum																			
Dinos. scabroellipticus																			
Penta. laticinctum																			
Dinos. simplex								C											
H-kolp. rigaudae																			
Namat. balcombiana																			
System. placacantha																			
Leptodinium spp.																			
Scrin. australiense																			
Operc. centrocarpum																			
Hemicystidinium spp.																			
Spinif. ramosus																			
Lingu. solarum																			
Phthan. delicatum																			
Phthan. coreoides																			
Tectat. marlum																			
Corru. incompositum																			
Dinos. pontus																			
Balti. nanum																			
Defla. extensa																			
Eisen. ornata																			
Diphy. ariensis																			
Neoten. dentalia																			
Corru. corrugatum																			
Samlan. reticulifera																			
Phthan. eocenicum																			
Phthan. rotundum			cf	cf		cf					cf								
Emmat. urnaformis																			
Defl. leptodermata																			
System. capricornum																			
Wetz. glabra																			
Delf. heterophyleta																			
Hystio. variata																			
Areos. diktyoplokus																			
Defl. oebisfeldensis																			
Reticulodimum spp.																			
Lingu. machaerophorum																			
Spinidinium spp.																			
Pareo. indentata																			
Kolpom. tuberculoides																			
Wetz. echinosuturata																			
Cordos. inodes																			
Thalas. pelagica																			
Defl. flounderensis																			
Areoligera sp.																			
Wetz. edwardsii																			
Kenelyia spp.																			
Homot. tasmanense	A																		
Wetz. symmetricus																			
Wetz. thompsonae					A														
Defl. longispinosa																			
Hetera. paxilla																			
Defl. asymmetricum																			
Senoni. moravensis																			
Wetz. waiparaensis																			
Wetz. homomorpha																			
Wetz. ornata	RW																		
Spinif. crassipellis																			
Tubios. filosa																			
H-kolp. varispinosum																			
Adnat. retiintextum																			
Wetz. hyperacantha																			
Diphy. colligerum																			
Palaeoc. australinum																			
Defl. dartmooria															A				

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

Appendix 5

WELL COMPLETION REPORT

KINGFISH-7

APPENDIX 5

FORAMINIFERAL SEQUENCE - KINGFISH-7

by

David Taylor

FORAMINIFERAL SEQUENCE

KINGFISH # 7

by DAVID TAYLOR

Consultant

Esso Australia Ltd.

Paleontology Report 1977/23 October 13, 1977.

SUMMARY

The Oligocene to early Miocene faunas in Kingfish # 7 comprises the normal sequence of events of the deep water deposition in the Gippsland Basin. The mid Oligocene hiatus, "The Cobia Event" *is recognised both in Kingfish # 6 and # 7. In # 7 a speculated 500 feet water depth increase immediately after the hiatus may suggest that the event may have been partially due to a eustatic sea level decline.*

The samples between 6040 and 4650 were submitted in a labelled order which does not conform to the established faunal sequence of biostratigraphy and environmental events during the mid Miocene of Gippsland. The reason for this muddling is inexplicable at present. It may be coincidental, but 3 out of 9 Kingfish sequences were found to deviate from the norm, whilst only 3 of 61 other Gippsland offshore sequences showed any disorder.

INTRODUCTION

Five samples of conventional core # 2 and sixty four sidewall core samples were submitted for examination from KINGFISH # 7. No fauna was found in any of the conventional core samples whilst the twelve sidewall core samples between 7480 and 7420 were either barren of fauna or contained no diagnostic fauna (see Sample Data Sheets).

It is important to note that the data in this report and accompanying data sheets is related to the depths (in feet) and sample numbers as written on the sidewall core jars on the drilling ship immediately after retrieval of the sidewall cores.

Upon examination it was realized that thirteen sidewall cores between 6040 and 4650 were biostratigraphically muddled, in that the upwards zonal sequence was D-1 to E-1 to D-2, instead of the established sequence of E-1 to D-2 to D-1. Moreover the normal environmental sequence from a dominantly pelagic carbonate at the base of the slope to a canyon fill carbonate at the top of the slope was reversed. The reason for this apparent confusion is inexplicable and for the present unresolvable. The possibility of disturbance of the sequence by some geological phenomena has been considered and dismissed by Esso geologists. The suggestion that the sidewall cores were inadvertently mislabelled, either on the rig or during my processing, cannot be substained logically, as the foraminiferal evidence gives no pattern which can be corrected by straight substitution of depths and sidewall core numbers. This leads to the third possibility that my biostratigraphic scheme is "busted".

I could vehemently argue that my biostratigraphic sequence is firmly established by observation over southern Australia and that it correlates closely, if not exactly, with that in New Zealand. In the seventy Gippsland offshore wells examined, only four of the sequences have deviated from the established norm (including Kingfish # 7); i.e. 5.7% deviation. This percentage deviation of the biostratigraphic scheme is increased to 8.6%, if Kingfish # 1 & # 4 are included as they were in proper sequence yet could not be reconciled with the E-log correlations. Either figure is low and places more emphasis on the possibility of

of geological distrubance in Kingfish # 7 or of muddling at some stage during collection and processing of the samples.

However, when the nine wells from the Kingfish structure are considered, a 33.33% aberration is apparent, as Kingfish # 1, # 4 and # 7 do not conform biostratigraphically with E-log and seismic correlations. Upon comparison this is much greater than in the sixty one other Gippsland sequences where the deviation is only 4.9%. Unless this comparative unorthodoxy of the Kingfish structure is dismissed as sampling and/or labelling errors, then for some reason this structure is geologically anomalous.

Apart from the factual determinations (i.e. not reconciled) on the Sample Data Sheets, no data has been collated for samples above 6147 on the following attached data sheets:-

Distribution Chart Sheet 1 - showing distribution of planktonic foraminifera and the basis of biostratigraphic breakdown.

Distribution Chart Sheet 2 - giving the distribution of benthonic foraminifera and relative specimen count.

Four Sample Data Sheets - listing all samples, giving zonal entity and quality and summarizing residue grain character.

Biostratigraphic Data Sheet

BIOSTRATIGRAPHY

The Eocene/Oligocene/early Miocene sequence from 7435 to 6248 in Kingfish # 7 is a normal one in that all events occur in the established order, including the hiatus within the late Oligocene between 7386 and 7376. The muddled sequence above 6248 will be discussed in a separate section after the environmental discussion of the normal sequence.

LATE EOCENE - ? to 7435 to ?:- Occasional sample between 7465 and 7415 contain nondescript foraminiferal fauna, but the sidewall core at 7430 has a purely planktonic fauna consisting of *"Globigerina" ampliapertura*,

Subbotina angiporoides, S. linaperta and *Globorotalia insolita*. The first three listed species define a Zone K association, whilst the later species, a new record for southern Australia, has been found only in the *S. linaperta* Zone in New Zealand (Jenkins, 1971). This sample is believed to correlate with the top of the *S. linaperta* Zone in New Zealand.

EARLY OLIGOCENE - ? to 7410 to 7386:- The sample at 7415 contains *Subbotina angiporoides* and the benthonic nodosarid *Vaginulopsis gippslandica* which Crespin (1950) described from the basal part of the Lakes Entrance Formation. I have only observed it in this stratigraphic position and believe it to be restricted to the "Greensand" and the very basal level of the "marl". Although it is really a lithological correlation, the sample at 7415 is probably basal Oligocene as it shows all the faunal and sediment grain characters of the Lakes Entrance "Greensand".

Globigerina brevis was associated with the fauna at 7410 indicating the early Oligocene Zone J-2. A more diverse and characteristic (high quality) J-2 planktonic association was present at 7407. At 7405 the presence of *Globoquadrina tripartita tripartita* and *G. tripartita tapuriensis* was diagnostic of Zone J-1. The top of Zone J-1, which was the top of the early Oligocene is placed at the range top of *Subbotina angiporoides* at 7386. Although this sample is of low diversity and thus of poor quality, the selected biostratigraphic event is consistent with correlation of the top of J throughout the Basin.

MID OLIGOCENE HIATUS "THE COBIA EVENT" - 7386 to 7376:- Although the sample spacing was not as close as in Cobia # 2, a biostratigraphic gap is evident in Kingfish # 7 by the fact that the base of *Globoquadrina dehiscens* (S.L.) was only ten feet above the range top of *Subbotina angiporoides*. Other elements associated with *G. dehiscens* (S.L.) support a placement high in Zone I-1 for the sample at 7376. Therefore, as in Cobia # 2 (Taylor, 1977), Zone I-2, and the lower portion of Zone I-1 was missing.

A similar situation was reported by Taylor (1975) in Kingfish # 6 between 7589 and 7581.

LATE OLIGOCENE - 7376 to 7256:- As already stated, the association of *G. dehiscens* (S.L.) with *Globigerina euapertura* and *G. ciperoensis* places the sample at 7376 in the upper part of Zone I-1. The highest appearance of *G. euapertura* and *Globorotalia opima opima* marked the top of I-1 at 7356 and the incoming of *Globigerina woodi woodi* at 7336 the base of H-2.

EARLY MIOCENE - 7150 to 6248:- The base of the early Miocene and Zone H-1 in Kingfish # 7 was represented by numerically sparse, low diversity planktonic fauna so that the only diagnostic species was *G. woodi connecta*. The base was nowhere near as distinct as in other Kingfish wells (e.g. Kingfish # 6 - Taylor, 1975). This will be discussed in the section on environment. The only diverse planktonic fauna was at 6950 where a complete H-1 association, including *Globorotalia kugleri*, was present.

The normal Zone H-1 to G to F to E-2 sequence was recognised between 6950 and 6298 with the top of the early Miocene (=Zone E-2) being designated on the presence of *Praeorbulina glomerosa curva* at 6248.

ENVIRONMENT

This discussion is restricted to the normal Eocene/Oligocene/early Miocene sequence from 7435 to 6248. The confused section above 6248 is commented on in the succeeding section.

Benthonic foraminifera are so sparse in the probable late Eocene interval that no comment can be made. As mentioned, the sample at 7415 is regarded as an equivalent of the Lakes Entrance "Greensand", both faunally and sedimentologically. If this is correct then deposition would have been in relatively shallow water. However, the glauconite and solitary specimen of *Vaginulopsis gippslandica* could have been displaced into deeper water as the early Oligocene fauna at 7407 was certainly a deep water one in excess of 2000 feet of water.

The basal pure carbonate sample at 7410 is almost completely recrystalized as is common at the base of the carbonate sequence in most Gippsland

offshore sections. Immediately above, at 7407 there is a numerically rich and diverse planktonic fauna with dominantly arenaceous benthonic fauna which includes *Discammina compressa* and *Karreriella bradyi* with the calcareous benthonic species *Cibicides wuellerstorfi*. Such a fauna has a minimal depth of 1200 feet on the modern sea floor off Gippsland and is not noticeably abundant till 2000 feet (see discussion in Cobia # 2 report, p. 6-9 - Taylor, 1977). A continental rise situation is envisaged for the early Oligocene at 7407 in Kingfish # 7.

Between 7407 and 7386 the faunas fluctuate both numerically and in specific diversity with planktonic specimens being dominant (over 95%). At 7396 the total residue contained 70% juvenile and/or depauperate planktonic foraminifera (i.e. indeterminate). The fluctuations suggest changing circumstances in the physico-chemistry of the water mass which appears to have heralded the hiatus of "The Cobia Event" (refer Taylor, 1977, p.3-4) at or just above 7386 in Kingfish # 7, where a deep water sedimentation is evident.

After "The Cobia Event" (at 7376 in the late Oligocene) resumption of sedimentation was still in a deep water situation on the continental rise with a minimal depth, analagous with the present, of at least 2500 feet, assumed from the occurrence of *Osangularia* cf. *bengalensis* and *Epistominella exigua* (refer Taylor & Mee, 1970). Thus with an assumed water depth of 2000 feet below the hiatus and an assumed water depth of at least 2500 feet above the hiatus there could have been a eustatic sea level rise corresponding with the resumption of sedimentation. Although this is speculative a eustatic sea level decline may have been a causal phenomenon of"The Cobia Event". This postulated water depth increase after "The Cobia Event" is not apparent from the benthonic faunas in Kingfish # 6 or Cobia # 2 (Taylor 1975 & 1977).

The sharp decline in numerical frequency of planktonic foraminifera at the top of the Oligocene and basal Miocene is indicative of progressive paleotemperature drop. The benthonic components are the same as those at 7376 (late Oligocene) suggesting a maintenance of minimal water depth at 2500 feet. Paleotemperature warming is evident by a diverse H-1 fauna in the early Miocene at 6950. The benthonic fauna demonstrates a shallowing

with the initial appearance of the bathyal species *Euuvigerina maynei*. A modern analogue of this costate uvigerinid is not present off Gippsland today, but by comparative method it is believed to have been a continental slope inhabitant during the Neogene of southern Australia and New Zealand. A depositional situation at the base of the slope or on the lower slope could be interpreted with a minimal depth of 2000 feet, based on associated species. However, an appreciable increase in paleotemperature is apparent from the planktonic fauna, which could imply the lowering of the lysocline and the lowering of the minimal depth range of *E. maynei*. Thus the assumed water depth decrease may not have been real. Similar benthonic fauna continued to the top of the early Miocene, suggesting environmental maintenance with increasing sedimentation rate. But there were eposodic changes in the composition of the water mass, as shown by fluctuations in specimen numbers and the dominance of juvenile and/or depauperate planktonics during Zone G. This may have been a function of degree of penetration of a surface warm water mass rather than paleotemperature fluctuations.

THE CONFUSED SECTION

Thirteen side wall cores appear to have been biostratigraphically and environmentally muddled as discussed in the introduction and listed below:-

Side wall core #	Depth as on jar	Zone	Quality	Environment
74	4650	D-2	0	base of slope
73	4750	D-2	0	mid slope
72	4852	D-2	0	base of slope
71	4950	D-2	0	base of slope
70	5050	D-2	1	slope
69	5150	D-2	0	base of slope
68	No return			
67	5350	D-2	0	mid slope
66	5500	E-1	1	base of slope
65	5600	D-1	0	mid slope
64	5735	D-1	0	mid slope
63	5860	D-1	1	upper slope
62	5960	D-1	1	upper slope
61	6040	D-1	2	canyon

Above 4650 and below 6040 there are no obvious anomalies as the sequence of events are normal for the Kingfish structure.

Biostratigraphic disorder from 6040 to 4650 is immediately apparent as the up sequence events from E-2 to D-1, back to E-1 thence into D-2 suggests muddling. However, this cannot be explained easily by a model of sediment slumping down a slope or canyon as the quality and depositional environment of each of the samples in the Zone D-2 and D-1 groups are muddled and not in the established order of other Gippsland sequences.

(1) Normally the earliest D-1 samples are of high quality and the quality decreased upwards. The reverse is demonstrated in Kingfish # 7.

(2) The environmental trend on the Kingfish structure, during D-1 times was from a mid continental slope situation upwards into a submarine canyon carbonate fill. The reverse trend is interpreted for Kingfish # 7, using the same criteria as applied to other Kingfish sequences.

(3) Depositional environments during D-2 in Kingfish # 7, were haphazard and do not demonstrate a clear transition from a continental rise situation to one on the continental slope as would be expected from experience.

Therefore if the sediment had been slumped down the slope it would have occurred a number of times and not just once. But the major difficulty in the validity of this explanation is how deeper water deposits of Zones D-2 and E-1 came to be superimposed on the younger shallower water deposits of Zone D-1, without a major tectonic upheaval for which there is no other evidence on the Kingfish structure or elsewhere in Gippsland.

The sediment at and above 4550 was normal carbonate canyon fill, probably deposited in Zone D-1 times; planktonic fauna being as usual mostly indeterminate. At 3200 feet the Zone C planktonic fauna was associated with an outer continental shelf benthonic fauna.

A possible reconciliation to achieve the normal and established sequence of events over the muddled section between 6040 and 4650 could be as tabulated on page 8.

Side wall cores			# 61	
"	"	"	# 63 & # 62	D-1
"	"	"	# 64 & # 65	D-1
"	"	"	# 69, # 71, # 72 & # 74	D-2
"	"	"	# 67, # 70 & # 73	D-2
"	"	"	# 66	E-1
"	"	"	# 59	E-2
"	"	"	# 58 & # 57	F

REFERENCES

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TAYLOR, D., 1975 - Foraminiferal biostratigraphy and environmental analysis of Kingfish # 6. *Esso Aust. Paleont. Rep.*, 1975/2.

TAYLOR, D., 1977 - Foraminiferal sequence - Cobia # 2. *ibid*, 1977/21.

TAYLOR, D.J. & MEE, V.M., 1970 - Study of modern Gippsland sea floor. *ibid ?* .

MICROPALEONTOLOGICAL MATERIAL

WELL NAME AND NO: KINGFISH # 7 *DATE:* September 12, 7

PREPARED BY: DAVID TAYLOR *SHEET NO:* 1 of 4

DRAW:

DEPTH	*SAMPLE TYPE*	*SLIDES*	*ADDITIONAL INFORMATION*

WARNING

Side wall cores from 6147 to 4650 are biostratigraphically and environmentally disordered. They are listed factually according to depths and numbers on side wall core jars which may have been inadvertently mislabelled. The possibility of muddling due to sedimentary processes, such as slumping, cannot be considered from the evidence as the displaced D-2 faunas were originally deposited in deeper water than the D-1 faunas - see report.

7533	CC # 2	N.F.F. Dom f-c ang qtz, 20% py with ? glauc, 10% coal.
7545	CC # 2	N.F.F. Dom m-c ang qtz, 10% py with ? glauc, r c subr qtz.
7550' 10"	CC # 2	N.F.F. Dom c-m ang qtz, c subr qtz.
7555' 5"	CC # 2	N.F.F. Dom py silst, ? glauc, c ang qtz.
7556	CC # 2	N.F.F. Dom f-m ang qtz sdst, r c ang qtz.
7480	SWC 26	N.F.F. Dom m ang qtz sdst, r c ang qtz, r mica
7475	SWC 27	N.F.F. 50-50 m ang qtz sdst & lim slst, rc ang qtz, r mica
7470	SWC 28	N.F.F. ibid + r ? glauc
7465	SWC 29	U.C. indet, ibid.
7460	SWC 30	indet, ibid
7455	SWC 31	N.F.F. Dom m ang qtz with glauc clay, r mica
7450	SWC 32	N.F.F. Dom m-f ang qtz sdst wh clay
7445	SWC 33	N.F.F. ibid + r. py + r ? glauc
7440	SWC 34	N.F.F. Dom m-f ang qtz sdst with glauc lim clay + r mica
7435	SWC 35	K (1) ibid

MICROPALEONTOLOGICAL MATERIAL

WELL NAME AND NO: KINGFISH # 7 *DATE:* 13.9.77

PREPARED BY: DAVID TAYLOR *SHEET NO:* 2 of 4

DRAW:

DEPTH	*SAMPLE TYPE*	*SLIDES*	*ADDITIONAL INFORMATION*
7430	SWC 36	N.F.F. Dom m-f ang qtz sdst with wh clay, r glauc r c ang qtz	
7425	SWC 37	N.F.F. Dom m-f ang qtz sdst with lim clay, 10% gla	
7420	SWC 38	indet Dom m-f ang qtz sdst with wh clay, 10% glauc	
7415	SWC 39	J-2(5) ? L.E. "Greensand" 60-40 m ang qtz & pel glauc	
7410	SWC 40	J-2(1) Most planks gone through recrylst,10% glauc	
7407	SWC 41	J-2(O) 50-50 fair planks & calc sh, lim staining	
7405	SWC 42	J-1(O) 60-40 calc sh & poor planks	
7396	SWC 43	J-1(1) 70-30 poor planks & calc sh, lim staining	
7386	SWC 44	J-1(2) Dom calc sh, lim staining	
7376	SWC 45	High I-1(1) Dom calc sh, lim staining	
7356	SWC 46	I-1(O) 60-40 planks & calc sh, lim staining	
7336	SWC 47	H-2(1) Dom calc sh	
7306	SWC 48	H-2(1) Dom calc sh, lim staining	
7256	SWC 49	H-2(1) Dom planks, lim staining	
7150	SWC 50	H-1(1) Dom calc sh, lim staining	
7050	SWC 51	H-1(1) Dom calc sh	
6950	SWC 52	H-1(O) 70-30 planks & calc sh, lim stain	
6860	SWC 53	High H-1(1) Dom calc sh	
6743	SWC 54	G(1) 60-40 Planks & calc sh	
6656	SWC 55	G(1) Dom planks	
6555	SWC 56	High G(1) V small res of calc sh & planks + r c ang qtz	
6445	SWC 57	F(1) Dom planks, r c ang qtz	
6353	SWC 58	F(O) 70-30 calc sh & planks	
6248	SWC 59	E-2(O) Dom planks	
6147	SWC 60	D-1(2) V small res, Dom mic	

MICROPALEONTOLOGICAL MATERIAL

WELL NAME AND NO: KINGFISH # 7 *DATE:* 13.9.77 ~~20.12.74~~

PREPARED BY: DAVID TAYLOR *SHEET NO:* 3 of 4

DRAW:

DEPTH	*SAMPLE TYPE*	*SLIDES*	*ADDITIONAL INFORMATION*
6040	SWC 61	D-1(2)	Dom mic lim staining, r c ang qtz
5950	SWC 62	D-1(1)	70-30 calc sh & planks
5860	SWC 63	D-1(1)	Dom mic lim staining, r m ang qtz
5735	SWC 64	D-1(O)	70-30 planks & mic
5600	SWC 65	? D-1(O)	Dom planks, r c ang qtz
5500	SWC 66	E-1(1)	V small res, Dom plank
5350	SWC 67	D-2(O)	Sharp colour transition from mgy to lgy - both portions sampled. 70-30 planks & mic, lim staining.
5150	SWC 69	D-2(O)	80 planks, 10 mic, 10 *Bathysiphon* sp A, spic, r subrd qtz
5050	SWC 70	D-2(1)	V small res, Dom planks
4950	SWC 71	D-2(O)	planks
4852	SWC 72	D-2(O)	60 planks, 30 mic modules, 10 mic flakes lim staining
4758	SWC 73	D-2(O)	60-40 planks & mic,r c ang qtz
4650	SWC 74	D-2(O)	Abundant planks ? ooze
4550	SWC 75	indet, U.C.	Dom gy mic V. small juvenile or depauperate planks
4450	SWC 76	indet	*ibid*
4350	SWC 77	indet	*ibid*
4250	SWC 78	indet	*ibid*
4150	SWC 79	indet	*ibid*
4050	SWC 80	indet	*ibid*
3950	SWC 81	indet U.C.	*ibid*
3850	SWC 82	indet	*ibid*
3750	SWC 83	D/C(2)	Dom wh mic, V small juvenile or depauperate plank

MICROPALEONTOLOGICAL MATERIAL

WELL NAME AND NO: KINGFISH # 7 *DATE:* 13.9.77

PREPARED BY: DAVID TAYLOR *SHEET NO:* 4 of 4

DRAW:

DEPTH	*SAMPLE TYPE*	*SLIDES*	*ADDITIONAL INFORMATION*
3600	SWC 84	indet *ibid*	
3500	SWC 85	D/C(2) *ibid*	
3350	SWC 86	indet *ibid*	
3200	SWC 87	C(1) 50-50 planks & mic	
3050	SWC 88	C(1) 80-20 mic & planks	
2950	SWC 89	C(O) Dom planks & benths	
2870	SWC 90	C(O) Dom mic	

ABBREVIATION KEY used by David Taylor on summary date sheets.

R.C.	= rotary cuttings
S.W.C.	= side wall core
C.C.	= conventional core
U.C.	= unable to clean sample of drilling mud before washing, thus result may be spurious.
N.F.F.	= no fauna found
indet	= specifically indeterminate and/or biostratigraphically non diagnostic
J-2 (O)	= Zone J-2 planktonic fauna present and identification is of highest level of confidence.
B-1 (4)	= Zone B-1 suspected but lowest confidence indicated
Dom	= Dominant grain type - at least 90% of washed sample
r	= rare - less than 10 grains
60-40	= proportion of components
qtz	= quartz
py	= pyrite
glauc	= glauconite
lim	= limonite
sdst	= sandstone
siltst	= siltstone
mdst	= mudstone
calc sh	- calcareous shale
lst	= limestone
mic	= micritic limestone
calcar	= calcarenite
bio	= biogenic
bry	= bryozoa
moll	= molluscan fragments
plank	= planktonic foraminifera
calc benth	= calcarcous benthonic foraminifera
aren	= arenaceous foraminifera
ost	= ostracods
spic	= siliceous sponge spicules
ech	= echnioid spines

...2/

f	= fine grade
m	= medium grade
c	= coarse grade
f-c	= whole spectrum of grades
ang	= angular shape
subrd	= subround shape
rd	= round shape
ibid	= sample identical to that listed immediately above.

Form R 193 3/71

BASIN GIPPSLAND BY David Taylor

WELL NAME KINGFISH # 7 DATE 12.9.77 ELEV. _____

Foram Zonules

		Highest Data	Quality	2 Way Time	Lowest Data	Quality	2 Way Time
MIOCENE	A						
		Alternate					
	B						
		Alternate					
	C	2870	0		3200	1	
		Alternate					
	D_1						
		Alternate					
	D_2						
		Alternate					
	E				6248	0	
		Alternate					
	F	6353	0		6445	1	
		Alternate					
	G	6555	1		6743	1	
		Alternate					
	H_1	6860	1		7150	1	
		Alternate 6950	0				
	H_2	7256	1		7336	1	
		Alternate					
OLIGOCENE	I_1	7356	0		7376*	1	
		Alternate					
	I_2						
		Alternate					
	J_1	7386*	2		7405	0	
		Alternate 7396	1				
	J_2	7407	0		7415	4	
		Alternate			7410	1	
EOC.	K	7435	1		7435	1	
		Alternate					
	Pre K						

Side wall cores from 6147 to 4650 were biostratigraphically and environmentally disordered; in that 6147 to 5600 were D-1 from a continental slopesituation; 5550 was continental rise E-1 whilst 5350 - 4650 were D-2 at the base of the slope. Inadvertent mislabelling on side wall core jars is suspected. Samples 4550 to 3350, though indeterminate, were of canyon sediment and in place when compared with other Kingfish sequences. *All I-2 and ½ I-1 absent. Despite low confidence for J-1 at 7386 the highest appearance of *S. angiporoides* marks top J. This is the "Cobia Event" - it is also present in Kingfish # 6.

COMMENTS:

Note: If highest or lowest data is a 3 or 4, then an alternate 0, 1, 2 highest or lowest data will be filled in if control is available.

If a sample cannot be interpreted to be one zonule, as apart from the other, no entry should be made.

0 SWC or Core - Complete assemblage (very high confidence).
1 SWC or Core - Almost complete assemblage (high confidence).
2 SWC or Core - Close to zonule change but able to interpret (low confidence).
3 Cuttings - Complete assemblage (low confidence).
4 Cuttings - Incomplete assemblage, next to uninterpretable or SWC with depth suspicion (very low confidence).

Date Revised 13.10.77

By David Taylor.

KINGFISH # 7

Sheet 1 of 2 sheets

(does not include "muddled section" above 6248*)

Depth in feet not to scale
Sidewall cores

	6248 T	6353 T	6445 T	6555 T	6656 T	6743 T	6860 T	6950 T	7050 T	7150 T	7256 T	7306 T	7336 T	7356 T	7376 T	7386 T	7396 T	7405 T	7407 T	7410 T	7415 T	7420 T	7435 T	7460 T	7465 T
PLANKTONICS																									
1. *Praeorbulina glomerosa curva*	I																								
2. *Globigerinoides bisphericus*	I	I	°																						
3. *G. trilobus*	I	I	I	I	I	I																			
4. *Globorotalia praemenardii*	°																								
5. *G. miozea miozea*	I	I	I																						
6. *Globoquadrina dehiscens (S.S.)*	I				I			I																	
7. *Globigerina bulloides*	I	I	I																						
8. *G. woodi woodi*	I	I	I	I		I	I	I	I	I	I	I	I												
9. *Globorotalia praescitula*		°	°				°																		
10. *G. opima nana*		°					°	°					°												
11. *G. bella*		°		I		I		I																	
12. *Globigerinoides ruber*		°																							
13. *G. trilobus* - elongate		°																							
14. *Globorotalia zealandica*			°		°	°		°																	
15. *Globigerina praebulloides*			I	I	I	I	°	I	I	I	I	I	I	I	I	I	I	I	I	°					
16. *G. woodi connecta*				I		I	I	I	°	°															
17. *G. ciperoensis*						I	°	I			°				°										
18. *Globoquadrina altispira*							°																		
19. *G. dehiscens (S.L.)*								I				°	°	I	°										
20. *G. advena*								°				°		°	°										
21. *Globorotalia kugleri*								°																	
22. *Globigerina angulisuturalis*								I						I	°										
23. *Globigerina euapertura*														I	I	I	I	I							
24. *Catapsydrax unicavus*														°											
25. *Globorotalia opima opima*														°											
26. *Subbotina angiporoides*																I	I	I	I	°	°	°	°		
27. *Globoquadrina tripartita tripartita*																	°	I							
28. *G. tripartita tapuriensis*																		°							
29. *Globigerina trilocularis*																		I	I						
30. *G. ampliapertura euapertura*																			I						
31. *G. brevis*																			I	°					
32. *Tenuitella munda*																			°						
33. *T. gemma*																			°						
34. *"Globigerina" ampliapertura*																							°		
35. *"Globorotalia" insolita*																							°		
36. *Subbotina linaperta*																							°		
37. JUVENILE and/or DEPAUPERATE SPECIMENS					D												D								

Depth in feet to base of ZONE	6248	6445	6743	7150	7336	7376	7405	7410	7435
	E-2	F	G	H-1	H-2	I-1	J-1	J-2	? ? K ? ?

° = 1-20 specimens
I = 20
D = Dominant 70% total fauna

*refer Esso Aust. Paleont. Rep. 1977/23

KINGFISH # 7

(does not include "muddled section" above 6248*)

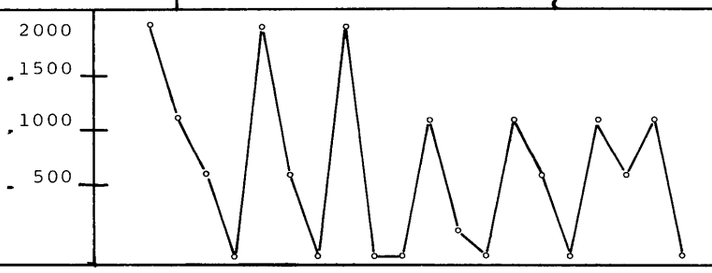
Depth in feet not to scale

Sidewall cores

	6248	6353	6445	6555	6656	6743	6860	6950	7050	7150	7256	7306	7336	7356	7376	7386	7396	7405	7407	7410	7415	7420	7435	7460	7465
CALCAREOUS BENTHONICS																									
38. *Lenticulina spp.*	I		°	°	°	°				°		°							°						
39. *L. mamilligera*	°																								
40. *Nodosaria spp.*	I	°	°	°		°		°			°				°		°				°				
41. *Pyrgo spp.*	°				°						I														
42. *Masalina sp.*	°							°		°															
43. *Anomalina aotea*	°																								
44. *Cassidulina subglobosa*	°	°				°	°															°			
45. *Cibicides pseudoungerianus*	°		I																						
46. *Euuvigerina maynei*	°							°																	
47. *Lagena spp.*		°													°										
48. *Osangularis cf. bengalensis*		°									I				°										
50. *Epistominella exigua*		°										°			I										
51. *Cibicides novozelandicus*		°									°				°										
52. *C. thiara*			I																						
53. *C. mediocris*			°																						
54. *Oridorsalis cf, tenera*			°		°	°	°																		
55. *Melonis barleeanum*			°																						
56. *Siphonina australis*				°		°							°						°						
57. *Sphaeroidina bulloides*					°				°	°	°		°												
58. *Gyroidinoides soldani*										°															
59. *G. zelandica*											°							°							
60. *Spiroloculina sp.*											°														
61. *Cibicides oerforatus*													°												
62. *Anomalinoides procolligera*													°												
63. *Cibicides wuellerstorfii*															°				°						
64. *Bolivina noblis*																°									
65. *B. robusta*																	°								
66. *Cibicides ihungia*																	°								
67. *Vaginulopsis gippslandicus*																					°				
68. *Discorbis cf. balcombensis*																						°			
69. Mould of *Nonionella* or *Florilus*																									°
ARENACEOUS BENTHONICS																									
70. *Bathysiphon sp. B.*	°	°	I	I		I																			
71. *Vulvulina granulosa*		°				°		°																	
72. *Bathysiphon sp. A.*			°	°				I		I			I												
73. *"Cyclammina" cf. incisa*			°																						
74. *Discammina compressa*			°			°		°			°		°		°				°						
75. *Ammobaculites agglutinans*					°							°	°												
76. *A. cylindricus*						°																			
77. *Saccammina sp.*						°																			
78. *Karreriella bradyi*											°				°				°						
79. *Rhabdammina abyssorum*													°	°											
80. *Reophax agglutinatus*													°												
81. *Ammodiscus mestayeri*													°												
82. *Brachysiphon corbuliformis*														°											
83. *"Cyclammina" cf. paupera*																			°						
84. *? Reophax sp.*																								°	

estimated Minimum water depth in feet: 1500 | 2000 | HIATUS 2000 | = THE COBIA EVENT 1500 1500 ?

RELATIVE SPECIMEN COUNT



*refer Esso Aust., Paleont. Rep. 1977/23.

Appendix 6

WELL COMPLETION REPORT

KINGFISH-7

APPENDIX 6

WELL LOG ANALYSIS

WELL LOG ANALYSIS REPORT

TO Well File c.c. B.R. Griffith
B.G. McKay

OPERATOR Esso Australia WELL Kingfish #7 DATE 13th July 1977

STATE Victoria ELEV. 83' KB

DEPTH INTERVAL	POROSITY ESTIMATE	WATER SAT. ESTIMATE	REMARKS
7498-7502(4	15-18	-	Two thin for resolution
7504-12(8	20-24	20-30	Oil productive
7512-17(5	20-22	15-20	Oil productive
7517-23(6	17-20	15-20	Oil productive
7554-59(5	18-22	34-40	Oil productive
7559-64(5	17-20	40-48	Oil productive
7588-90(2	16-17	30?	Oil productive
7590-95(5	20-22	20-25	Oil productive
7595-7600(5	16-19	34-40	Oil productive
7600-42(42	20-22	15-20	Oil productive
7642-51(9	16-19	36-40	Oil productive
7651-61(10	18-20	27-33	Oil productive
7661-74(13	18-20	35-45	Oil productive
7674-78(4	18-19	80-100	Water productive
7678-95(17	19-21	100	Water productive
ISF:MD			

TESTS:

See FIT results

FORMATION:

Latrobe

LOGS:

ISF-SCT
GR-CNL-FDC
HDT

COMMENTS:

It is believed that porosity is underestimated and as a result water saturation is overestimated in the interval 7642-7678. No objective solution to this problem is available at present.

R.B. King

Appendix 7

WELL COMPLETION REPORT

KINGFISH-7

APPENDIX 7

VELOCITY SURVEY

VELOCITY SURVEY

Well .....KINGFISH-7.....

Basin .....GIPPSLAND BASIN.....

INTRODUCTION

Esso personnel .M. LYNN.....

Contractor .....VELOCITY DATA PTY. LTD.....

Supplied (1) Instruments

(2) Personnel

Seismic Observer ..J. Larsen.....

Marine Shooter ....R. Doyle.....

Dynamite .....

(3) Seismic Souce

Gas Gun

Gas Pressures .....

Oxygen .....45 psi.....

Propane .....90 psi.....

(3) Licenced Shooting Boat

name .....

date loaded .....

date released .....

Agent .....

.....

amount of powder ..... lbs

size of cans ..... lbs

number of cans .....

number of caps .....

number of boosters .....

Personnel and Instruments

assembled at ..Melbourne..... .....date ....8/6/77.....

boarded (rig)...Ocean Endeavour.. date....10/6/77.....

date of survey..11/6/77.....

casing depth....2859'K.B.....

T.D. when shot.7923'K.B..... FTD ..7923'K.B.....

water depth.....254'.....

SURVEY PROCEDURE

Weather: sea ..moderate-rough.....

rig movement ..moderate.....

rig noise .....considerable.....

Hydrophones: number .....three.....

depth below sea level 35.ft

position .....2 approx 5' above bottom of gun

.....1 in moon pool.....

Shot Positioning and Charges:

marker buoys (number .....

(distance .....

(direction .....

charge depth ..... ft

number of shots .....charge size..... lbs.

number of shots .....charge size ..... lbs.

number of misfires .....

Gas gun amount of powder used .....lbs

amount of poweder dumped.....--.....lbs.

Well-phone positioning:

T-bar.....-.....

number of depths.....21.....

Time: first shot.....0305.....

last shot.....0615.....

rig time.....4 hours.....

RESULTS

Quality of records (good.....33.....
(fair.....14.....
(poor.....2.....
(not used...-.....

Comparison of Interval Times
with sonic log

/ /average.....5.29.....microsec/foot

/ max/.....14.7.....microsec/foot

CONCLUSION

Reliability of T-D curve.....Good.....

COMMENTS

The survey went very smoothly taking 4 hours total rig time. Eight levels were shot running into the hole while the rest were shot coming out. Record 41 at 5590'K.B. shows a very poor break as a large noise spike interfers with the trace just before the actual break. None-the-less, a time comparable with the other record at this depth can be picked from this distorted trace.

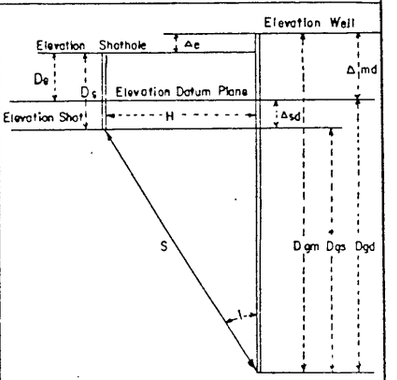
Record numbers 22, 25, + 26 were recorded for approximately 4 seconds in order to discern later arrivals that result from multiples and reflections etc.

Shothole information: - Elevation, Distance & Direction from Well

Company: ESSO EXPLORATION AUSTRALIA INC.
Well: KINGFISH-7
Elevation (Derrick Floor): 83'
Total Depth: 7923' K.B.

LOCATION
Coordinates | Section, Township, Range | County | Area or Field
GIPPSLAND BASIN VICTORIA
DATUM: M.S.L.

Record Number	Shothole Number	Time of Shot	Dgm	Ds	tus	tr	T Reading	T Polarity	T Grade	Dgs	H	TAN i	Cos i	Tgs	Δsd	Δsd/V	Tgd	Tgd Average	Dgd	Δ Dgd	ΔTgd	Vi Interval Velocity	Va Average Velocity
1		0305	2900	40	.008	.031	.363	D	G	2777	150	.0540	.9985	.363	40	.008	.371	.371	2817				7593
2		0306	2900	"	"		.363	D	F	"							.371			514	.051	10078	
																							7893
48		0614	3414	"	"		.413	D	G	Offset not significant							.421	.422	3331				
49		0615	3414	"	"		.414	D	G								.422			454	.042	10810	
																							8157
46		0605	3868	"	"		.456	D	G								.464	.464	3785				
47		0606	3868	"	"		.456	D	G								.464			275	.025	11000	
																							8303
44		0558	4143	"	"		.480	D	G								.480	.489	4060				
45		0559	4143	"	"		.481	D	G								.489			498	.043	11581	
																							8568
3		0320	4641	"	"		.524	D	G								.532	.532	4558				
4		0321	4641	"	"		.524	D	G								.532			502	.056	8964	
																							8605
42		0550	5143	"	"		.579	D	F								.587	.588	5060				
43		0551	5143	"	"		.580	D	G								.588			447	.053	8434	
																							8591
40		0541	5590	"	"		.633	D	G								.641	.641	5507				
41		0542	5590	"	"		.633	D	VP								.641			446	.052	8577	
																							8590
5		0332	6036	"	"		.685	D	G								.693	.693	5953				
6		0333	6036	"	"		.685	D	G								.693			304	.031	9807	
																							8642
37		0529	6340	"	"		.717	D	PF								.725	.724	6257				
38		0530	6340	"	"		.715	D	PF								.723						
39		0531	6340	"	"		.716	D	EG								.724			290	.030	9667	
																							8683
35		0517	6630	"	"		.746	D	G								.754	.754	6547				
36		0518	6630	"	"		.746	D	EG								.754			218	.026	8385	
																							8673
33		0510	6848	"	"		.772	D	G								.780	.780	6765				
34		0511	6848	"	"		.771	D	EG								.779			292	.027	10815	
																							8745
31		0500	7140	"	"		.800	D	PF								.808	.807	7057	276	.028	9857	
32		0501	7140	"	"		.799	D	F								.807						



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

Surveyed by: M. Lynn
Date: 11/6/77
Weathering Data:

Casing Record
2859' K.B.

DWG. 1107/OP/3

Shothole information:- Elevation, Distance & Direction from Well

Company: ESSO EXPLORATION AUSTRALIA INC.

Well: KINGFISH-7

Elevation (Derrick Floor): 83'

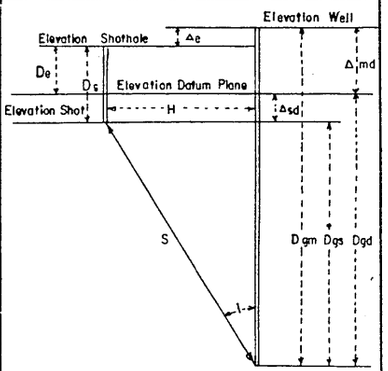
Total Depth: 7923 K.B.

LOCATION

Coordinates | Section, Township, Range | County | Area or Field: GIPPSLAND BASIN, VICTORIA.

DATUM : M.S.L.

Record Number	Shothole Number	Time of Shot	Dgm	Ds	tus	tr	T Reading	T Polarity	T Grade	Dgs	H	TAN i	Cos i	Tgs	Δsd	Δsd/V	Tgd	Tgd Average	Dgd	ΔDgd	ΔTgd	Vi Interval Velocity	Va Average Velocity
7		0343	7416	40	.008		.826	D	G								.834	.835	7333				8782
8		0344	7416	"	"		.827	D	G								.835						
9		0345	7416	"	"		.827	D	G								.835						
																				64	.006	10667	
29		0451	7480	"	"		.833	D	G								.841	.841	7397				8796
30		0452	7480	"	"		.833	D	G								.841						
																				74	.007	10571	
10		0352	7554	"	"		.841	D	F								.847	.848	7471				8810
11		0353	7554	"	"		.840	D	G								.848						
12		0354	7554	"	"		.840	D	G								.848						
																				34	.004	8500	
27		0444	7588	"	"		.843	D	F								.851	.852	7505				8809
28		0445	7588	"	"		.844	D	F								.852						
																				52	.004	13000	
13		0359	7640	"	"		.848	D	G								.856	.856	7557				8828
14		0400	7640	"	"		.848	D	F-G								.856						
15		0401	7640	"	"		.847	D	F								.855						
																				36	.003	12000	
23		0433	7676	"	"		.851	D	G								.859	.859	7593				8839
24		0434	7676	"	"		.850	D	G								.858						
25		0436	7676	"	"		.851	D	F								.859						
26		0437	7676	"	"		.851	D	G								.859						
																				46	.003	15333	
16		0407	7722	"	"		.854	D	F								.862	.862	7639				8862
17		0415	7722	"	"		.854	D	F								.862						
																				100	.009	11111	
20		0423	7822	"	"		.864	D	F								.872	.871	7739				8885
21		0424	7822	"	"		.863	D	F-G								.871						
22		0426	7822	"	"		.863	D	P								.871						
																				76	.006	12667	
18		0415	7898	"	"		.869	D	G								.877	.877	7815				8911
19		0416	7898	"	"		.868	D	G								.876						



Dgm = Geophone depth measured from well elevation

Dgs = " " " " shot "

Dgd = " " " " datum "

Ds = Depth of shot

De = Shothole elevation to datum plane

H = Horizontal distance from well to shotpoint

S = Straight line travel path from shot to well geophone

tus = Uphole time at shotpoint

T = Observed time from shotpoint to well geophone.

tr = " " to reference geophone.

Δe = Difference in elevation between well & shotpoint.

Δsd = " " " " shot & datum plane

Δsd = Ds - De

Dgs = Dgm - Ds ± Δe ; $\tan i = \frac{H}{Dgs}$

Tgs = cos i T = Vert. travel time from shot elev. to geophone

Tgd = $Tgs \pm \frac{\Delta sd}{V}$ = " " " " datum plane " "

Dgd = Dgm - Δmd

Vi = Interval velocity = $\frac{\Delta Dgd}{\Delta Tgd}$

Va = Average = $\frac{D\,gd}{T\,gd}$

Surveyed by: M. Lynn

Date: 11.6.77

Weathering Data:

Casing Record

2859' K.B.

DWG 1107/OP/3

VELOCITY SURVEY ERROR CHECK

Depth el. S.L.	Av. Vertical Travel Time (check shots)	Ti Check Shots (Sec.)	Ti Sonic Log (Sec.)	(Millisecs)	Depth Interval (ft.)	Error (Microsec per ft.)
2817	.371	.051	.0492	+1.8	514	3.5
3331	.422					
3331	.422	.042	.0406	+1.4	454	3.1
3785	.464					
3785	.464	.025	.0249	+0.1	275	0.4
4060	.489					
4060	.489	.043	.0430	0.0	498	0.0
4558	.532					
4558	.532	.056	.0542	+1.8	502	3.6
5060	.588					
5060	.588	.053	.0504	+2.6	447	5.8
5507	.641					
5507	.641	.052	.0501	+1.9	446	4.3
5953	.693					
5953	.693	.031	.0303	+0.7	304	2.3
6257	.724					
6257	.724	.030	.0300	0.0	290	0.0
6547	.754					
6547	.754	.026	.0228	+3.2	218	14.7
6765	.780					
6765	.780	.027	.0280	-1.0	292	3.4
7057	.807					
7057	.807	.028	.0296	-1.6	276	5.8
7333	.835					
7333	.835	.006	.0057	+0.3	64	4.7
7397	.841					
7397	.841	.007	.0062	+0.8	74	10.8
7471	.848					
7471	.848	.004	.0038	+0.2	34	5.9
7505	.852					
7505	.852	.004	.0043	-0.3	52	5.8
7557	.856					

Depth el. S.L.	Av. Vertical Travel Time (check shots)	Ti Check Shots (Sec.)	Ti Sonic Log (Sec.)	(Millisecs)	Depth Interval (ft.)	Error (Microsec per ft.)
7557	.856	.003	.0030	0.0	36	0.0
7593	.859					
7593	.859	.003	.0040	-1.0	46	21.7
7639	.862					
7639	.862	.009	.0085	+0.5	100	5.0
7739	.871					
7739	.871	.006	.0066	-0.6	76	7.9
7815	.877					

KINGFISH-7

DATA USED IN CONSTRUCTION OF CALIBRATION CURVE

DEPTH (FT.) K.B.	DEPTH (FT.) MSL	TIME SONIC (SECS)	TIME CHECKSHOT(SECS)	ΔT $T_L - T_{CS}$(MSecs)
2900	2817	.3819	.371	+10.9
3414	3331	.4311	.422	+ 9.1
3868	3785	.4717	.464	+ 7.7
4143	4060	.4966	.489	+ 7.6
4641	4558	.5396	.532	+ 7.6
5143	5060	.5938	.588	+5.8
5590	5507	.6442	.641	+ 3.2
6036	5953	.6943	.693	+ 1.3
6340	6257	.7246	.724	+ 0.6
6630	6547	.7546	.754	+ 0.6
6848	6765	.7774	.780	- 2.6
7140	7057	.8054	.807	- 1.6
7416	7333	.8350	.835	0.0
7480	7397	.8407	.841	- 0.3
7554	7471	.8469	.848	- 1.1
7588	7505	.8507	.852	- 1.3
7640	7557	.8550	.856	- 1.0
7676	7593	.8580	.859	- 1.0
7722	7639	.8620	.862	0.0
7822	7739	.8705	.871	- 0.5
7898	7815	.8771	.877	+ 0.1

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

DATE OF SURVEY 11-6-77

CLIENT ESSO AUSTRALIA Ltd

WELL KINGFISH #7

OBSERVERS REPORT

ENERGY SOURCE GUNS GUN RECORDING INSTRUMENTS RS-444 LOGGER SCHLUMBERGER

GEOPHONES: WELL INTS - 1000 REFERENCE MF-SB SEA FLOOR HS-1 4"SH 2 REFRACTION

REFERENCE SENSOR OFFSET ADD 15% DEPTH 35 ft DRILL SHIP SHIP HEADING

WEATHER Fine / Windy SEAS Moderate To Rough

KB DEPTH	Record ~~BEARING~~	CHARGE	SHOT DEPTH	SHOT LOCATION	SHOT OFFSET	AMPLIFIER GAIN Amp	AMPLIFIER GAIN HT	TIME	COMMENTS
2900 ft	1	10 gm	40 ft		150 ft	2-1	-25	0305	
"	2	"	"		"	"	-25	0307	
4641	3	10 gm	"		"	"	-10	0320	
"	4	"	"		"	"	-10	0322	
6036	5	15	"		"	"	-10	0335	
"	6	15	"		"	"	-10	0337	
7416	7	15	"		"	"	-C	0345	
"	8-9	15	"		"	"	-C	0347	
7554	10	15	"		"	"	-5	0355	
"	11	"	"		"	"	-5	0357	
"	12	"	"		"	"	-5	0359	
7640	13	15	"		"	"	-5	0405	
"	14	"	"		"	"	-5	0407	
"	15	"	"		"	"	-5	0409	
7722	16	15	"		"	"	-5	0410	
"	17	"	"		"	"	-5	0412	
7894	18	15	"		"	"	-5	0415	
"	19	"	"		"	"	-C	0417	
7822	20	15	"		"	"	-5	0423	
"	21	"	"		"	"	-5	0427	
"	22	10	"		"	"	-5	0429	(4 second record.)
7676	23	15	"		"	"	-5	0435	
"	24	"	"		"	"	-5	0437	
7676	25	15	"		"	"	-5	0439	} 4 second records
"	26	15	"		"	"	-5	0441	
7588	27	15	"		"	"	-5	0445	
"	28	15	"		"	"	-5	0447	
7450	29	15	"		"	"	-5	0450	
"	30	15	"		"	"	-5	0452	
7140	31	15	"		"	"	-5	0500	
"	32	15	"		"	"	-5	0502	
6548	33	15	"		"	"	-5	0515	
6548	34	15	"		"	"	-5	0517	
6622	35	15	"		"	"	-C	0520	
"	36	15	"		"	"	-C	0522	
6340	37	15	"		"	"	-5	0530	
"	38	15	"		"	"	-5	0532	
"	39	15	"		"	"	-5	0534	
5390	40	15	"		"	"	-10	0540	
"	41	15	"		"	"	-5	0542	
5143	42	15	"		"	"	-10	0550	
"	43	15	"		"	"	-10	0552	

SHOOTER R Doyle.

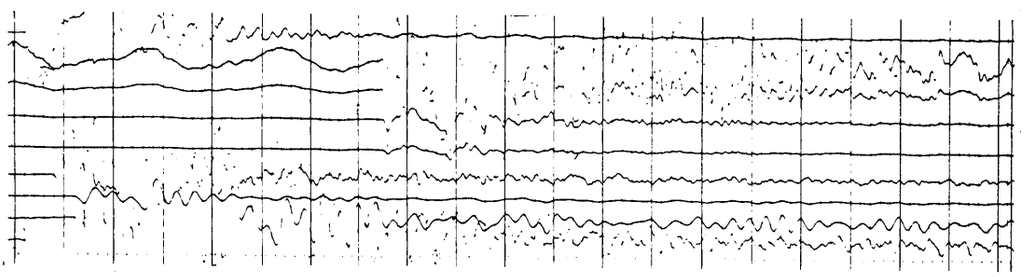
NUMBER OF RECORDS 43 EXPLOSIVES USED: CAPS — PRIMERS — EXPLOSIVE —

DEPART BRISBANE 1600 hrs / 8th June RETURN BRISBANE 1300 hrs / 12th June OBSERVER

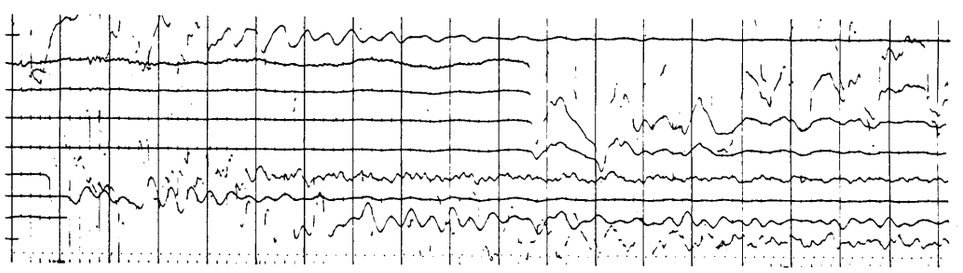
KINGFISH - 7

WELL VELOCITY RECORD 11-6-1977

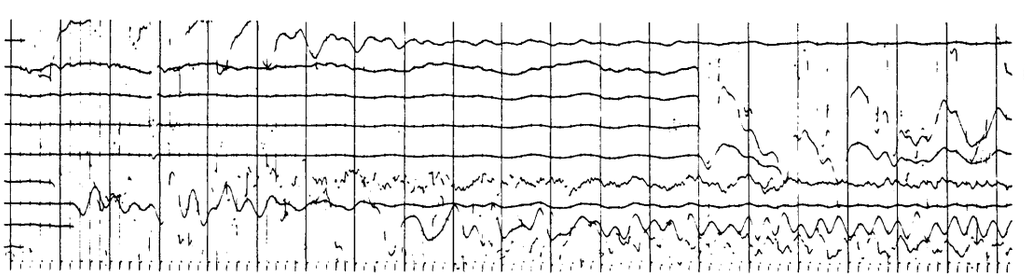
Rec. No 1
2900' KB
T 0305 hrs



Rec. No 4
4641' KB
T 0321 hrs

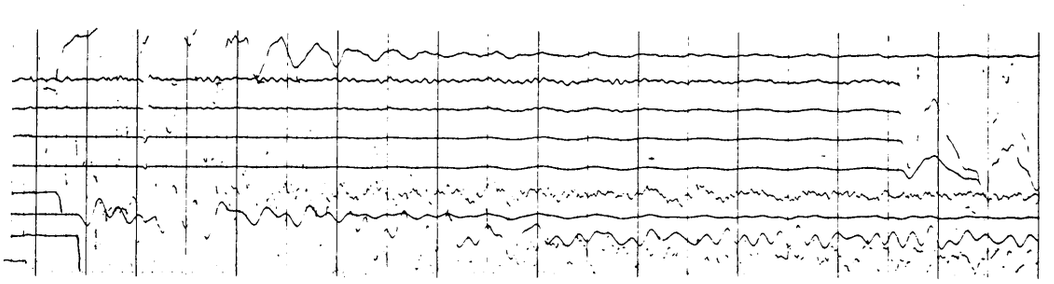


Rec. No 6
6036' K.B.
T 0333 hrs



Rec. No 8
7416' K.B.
T 0344 hrs

Rec. No 18
7898' KB
T 0415 hrs.



Appendix 8

APPENDIX 8

WELL COMPLETION REPORT

KINGFISH-7

APPENDIX 8

FORMATION INTERVAL TESTS RECORD

SUMMARY OF FORMATION INTERVAL TEST RESULTS

Designation	Depth	Details
FIT-1	7518'	Recovered 3.05 ft^3 gas, 5000cc oil, black to dark brown waxy, 47° API at 63°F, 15000 cc of mud filtrate, 8000 ppm Cl, 162 ppm NO_3. Pressures: Initial hydrostatic; 3623 psig. Final: 3616.5 psig. Sampling: 2770-2330 psig. Formation pressure: 3265 psig. The chamber filled in 9 minutes and was left open for a further 9 minutes for build up. K + 660 md.
FIT-2	7592'	Recovered 9.68 ft^3 gas, 8000 cc oil, 49° API at 71°F, 12000 cc of filtrate, 6000 ppm Cl 220 ppm NO_3. Pressures: Initial hydrostatic: 3664 psig, Final hydrostatic: 3641 psig; sampling: 3097-2765 psig. Formation pressure: 3244.8 psig. The chamber filled in 6 min.45 sec. and was left open for a further 24 min. 30 sec, segregator full in 8 sec.
FIT-3	7558'	Recovered dark brown oil scum, 21000 cc mud filtrate, 4000 ppm Cl , 270 ppm NO_3. Pressures: Initial hydrostatic: 3853 psig, Final hydrostatic: 3895 psig, Sampling Pressure: 430-465 psig, Formation Pressure: 3268.2 psig. The chamber filled in 17 minutes 21 seconds and was left open for a further 11 min. 29 sec. for build up. The segregator filled in 1 min. 49 sec. and was open for a further 8 min. for build up. K = 70 md.
FIT-4	7666'	Recovered 18.3 ft^3 gas, 17500 cc dark brown oil 50° API at 64°F, 2500 cc mud filtrate, 2000-2500 ppm Cl, 180 ppm NO_3. Pressures: Initial hydrostatic: 3986.6 psig, Final hydrostatic: 3938 psig, Sampling Pressure: 3060 psig, Formation Pressure: 3268 psig. The chamber filled in 6 min. 8 sec. and was open for a further 21 min 23 sec for build up. The segregator filled in 13 sec and was open for a further 4 min 16 sec. K = 2650 md
FIT-5	7648'	Recovered 0.9 ft^3 gas, 225 cc light brown oil, 6500 cc mud filtrate, 6000 ppm Cl, 160 ppm NO_3. Pressures: Initial hydrostatic: 3964 psig, Final hydrostatic: 3906 psig, Sampling Pressure: 19-52 psig, Formation Pressure: 3239 psig. The chamber appeared to fill in 20 min. 1 sec and was open for a further 8 min 22 sec for build up. The segregator was not opened and K not interpreted as a valid test.

FIT-6	7658'	Recovered 14.5 ft^3 gas, 9000 cc of dark brown oil 49.5° API at 73°F, 10,000 cc mud, 6000 ppm Cl, 240 ppm NO_3. Pressures: Initial hydrostatic 3973.2 psig, Final hydrostatic: 3925.7 psig, Sampling Pressure: 1200-900 psig, Formation Pressure: 3265.2 psig. The chamber filled in 10 min. 41 sec. and was open for a further 27 min 10 sec. for build up.. The segregator filled in 14 sec. and was open for a further 1 min 27 sec. K = 230 md.
FIT-7	7634'	Recovered 17.0 ft^3 gas, 13500 cc dark brown oil 50° API at 68°F, 5000 cc mud filtrate 6000 ppm Cl, 180 ppm NO_3. Pressures: Initial hydrostatic: 4066.1 psig, Final hydrostatic: 3927 psig, Sampling Pressure: 2800-2680 psig, Formation Pressure: 3259 psig. The chamber filled in 8 min. and was open for a further 23 min. for build up. The segregator did not open. K = 1450 md.
FIT-8	7508'	Recovered trace of gas, scum of light brown oil, 20500 cc mud filtrate, 4000 ppm Cl, 100 ppm NO_3. Pressures: Initial hydrostatic: 3953.7 psig, Final hydrostatic: 3848 psig, Sampling Pressure: 1250-950 psig, Formation Pressure: 3255.8 psig. The chamber filled in 10 min 13 sec. and was open for a further 24 min for build up. The segregator did not open. K = 480 md.
FIT-9	7516'	Recovered 4.1 ft^3 of gas, 5250 cc of dark brown oil 46° API at 74°F, 15250 cc mud filtrate 4500 ppm Cl, 185 ppm NO_3. Pressures: Initial hydrostatic: 3868.6 psig, Final hydrostatic: 3859.8 psig, Sampling Pressure: 2880-2400 psig, Formation Pressure: 3255.5 psig. The chamber filled in 6 min 42 sec. and was open for a further 13 min 16 sec for build up. The segregator filled in 31 sec and was open for a further 3 min 28 sec for build up. K = 870 md.
FIT-10	7574'	Tight Test. Pressures: Initial hydrostatic: 3908.5 psig, Final hydrostatic: 3894 psig, Sampling Pressure: 0-1.2 psig. The main chamber was open for 13 min 4 sec.
FIT-11	7781'	Recovered 0.05 ft^3 gas, 20500 cc formation water 11500 cc Cl, 0 ppm NO_3. Pressures: Initial hydrostatic: 4066 psig, Final hydrostatic: 4044 psig, Sampling Pressure: 3300 psig, Formation Pressure: 3314.18 psig. The chamber filled in 5 min 41 sec and was open for a further 16 min 49 sec for build up. The segregator filled in 6 sec and was open for a further 3 min 51 sec for build up. K = 3200 md.

FIT-12	7870'	Recovered trace of gas, 19000 cc formation water 5800 ppm Cl, 44 ppm NO_3. Pressures: Initial hydrostatic: 4273 psig, Sampling Pressure: 3280-2460 psig, Formation Pressure: 3360.3 psig. The chamber filled in 6 min. 25 sec and was open for a further 18 min 39 sec for build up. The segregator was not run. K = 715 md.
RFT-1	-	No Test, tool hung up
RFT-2	-	No Test, tool hung up
RFT-3	7654'	Plugged flowline Pressures: Initial hydrostatic: 3964 psig, Formation pressure 3267 psig. (pretest pressure)
RFT-4	7647'	Plugged flowline
RFT-5	7658'	Lost seal
RFT-6	7660'	Plugged flowline
RFT-7	7611'	Plugged flowline
RFT-8	7610'	Plugged flowline
RFT-9	7548'	Plugged flowline
RFT-10	7653.5'	Plugged flowline
RFT-11	7652'	Plugged flowline

F.I.T. RECORD

GEOLOGIST MORTON/GILES

WELL: KINGFISH-7 F.I.T. No. 1 @ 7518' ft. (G.R. Depth) DATE 11/6/77

VALID TEST : Yes/No

FIRING METHOD NORMAL CHOKE SIZES 1x'030

TIMES : Tool Set 14:44:30 Tool Open 14:46:15 Min. Open 1Min,45 Secs Full After 9 Minutes

Shaped Charge Shot: ~~Yes~~/No at

Segregator Open 15:02:13 Mins. Open 9 Min 11 Secs Full After 30 seconds

Tool Closed 15:11:02 Tool Off 15:11:29

MUD DATA :

Rmf 0.637 @ 64 °F, Equiv. Cl^- 5000 ppm (Resistivity)

Cl^- 6000 ppm NO^-3 170 ppm (Titration)

SAMPLE TAKEN AT END OF LAST CIRCULATION

RECOVERY - MAIN CHAMBER

100 p.s.i. SURFACE PRESSURE	15000cc Filtrate cc WATER
3.05 cft. GAS	cc MUD
5000 cc. OIL	~~cc SAND~~

PROPERTIES - MAIN CHAMBER

GAS	C_1	C_2	C_3	C_4	C_5	H_2S
	147,517	161,280	235,438	114,599	23,360	3,363
	21.5%	23.5%	34.3%	16.7%	35%	0.5%
			No H_2S or CO_2			

OIL 47 °API @ 63 °F; Pour Point °F

Black,Drk Brown Colour; Yellow Fluorescent Colour

100 G.O.R.

WATER Rrf @ °F, Equiv. Cl^- ppm (Resistivity)

Cl^- 8000 ppm NO_3^- 160 ppm (Titration)

PRESSURES - MAIN CHAMBER

	Schlumberger	Amerada	Agnew Amerada	Hewlett Packard*
Sampling (psi)				3559-3284
Final Shut-in (psi)				
Hydrostatic (psi)			3653(initial) 3646.5(final)	
Sampling Time (Min)				
Shut-in Time (Min)				

(*Corrected for Atmospheric pressure)

TEMPERATURES : (max recorded) 188 °F, 190 °F

MAX. DEPTH TOOL REACHED: 7540 Ft.

TIME SINCE CIRCULATION : Hrs.

REMARKS : OFFSET ERROR IN HP PRESSURE RECORDER (= - 30 psi)

F.I.T. SEGREGATOR REPORT

GEOLOGIST MORTON/GILES

WELL : KINGFISH-7 F.I.T. No. 1 @ 7518 ft.(G.R. Depth) DATE 11/6/77

SEGREGATOR TYPE _____ NUMBER _____ DATE OPENED _____

RECOVERY - SEGREGATOR

_____ p.s.i. SURFACE PRESSURE _____ cc WATER

_____ cft. GAS _____ cc MUD

_____ cc. OIL _____ cc SAND

PROPERTIES - SEGREGATOR

GAS	C_1	C_2	C_3	C_4	C_5	H_2S

OIL _____ °API @ _____ °F; Pour Point _____ °F

_____ Colour; _____ Fluorescent Colour

_____ G.O.R.

WATER Rrf _____ @ _____ °F, Equiv. Cl^- _____ ppm (Resistivity)

Cl^- _____ ppm NO_3^- _____ ppm (Titration)

PRESSURES - SEGREGATOR

	Schlumberger	Amerada	Agnew Amerada	Hewlett Packard*
Sampling (psi)				
Final Shut-in (psi)				3285
Hydrostatic (psi)				3646
Sampling Time (Min)				
Shut-in Time (Min)				

(*Corrected for Atmospheric pressure)

REMARKS :

F.I.T. RECORD

GEOLOGIST MORTON/GILES

WELL: KINGFISH-7 F.I.T. No. 2 @ 7592 ft. (G.R. Depth) DATE 11/6/77

VALID TEST : Yes/~~No~~

FIRING METHOD NORMAL CHOKE SIZES 1 x.0.030

TIMES : Tool Set 17:35:56 Tool Open 17:37:23 Min. Open 31 Mins Full After 6 Mins 44 seconds

Shaped Charge Shot: ~~Yes~~/No at _____ 12 seconds

Segregator Open 18:07:08 Mins. Open 3 Mins 59 secs Full After 8 seconds

Tool Closed 18:11:09 Tool Off 18:12:44

MUD DATA :

Rmf .637 @ 64 °F, Equiv. Cl^- 5000 ppm (Resistivity)

Cl^- 6000 ppm NO^-3 170 ppm (Titration)

SAMPLE TAKEN AT END OF LAST CIRCULATION

RECOVERY - MAIN CHAMBER

250 p.s.i. SURFACE PRESSURE	12,000cc Filtrate cc WATER
9.7 cft. GAS	cc MUD
8000 cc. OIL	cc SAND

PROPERTIES - MAIN CHAMBER

GAS	C_1	C_2	C_3	C_4	C_5	C_6 ~~+~~
M	179.1	93.2	66.2	23.6	10.2	11.6
	172.1	64.5	44.1	14.2	5.1	2.9

OIL 49 °API @ 71 °F; Pour Point _____ °F

LIGHT BROWN Colour; YELLOW Fluorescent Colour

200 G.O.R.

WATER Rrf 0.59 @ 66 °F, Equiv. Cl^- 5500 ppm (Resistivity)

Cl^- 6000 ppm NO_3^- 220 ppm (Titration)

PRESSURES - MAIN CHAMBER

	Schlumberger	Amerada	Agnew Amerada	Hewlett Packard*
Sampling (psi)				3097-2765
Final Shut-in (psi)				3244
Hydrostatic (psi)				(Initial) 3664-(Final) 3641
Sampling Time (Min)				
Shut-in Time (Min)				

(*Corrected for Atmospheric pressure)

TEMPERATURES : (max recorded) 190 °F, 212 °F

MAX. DEPTH TOOL REACHED: 7630 Ft.

TIME SINCE CIRCULATION : _____ Hrs.

REMARKS :

F.I.T. SEGREGATOR REPORT

GEOLOGIST MORTON/GILES

WELL : KINGFISH-7 F.I.T. No. 2 @ 7592 ft.(G.R. Depth) DATE 11/6/77

SEGREGATOR TYPE _____ NUMBER _____ DATE OPENED _____

RECOVERY - SEGREGATOR

_____ p.s.i. SURFACE PRESSURE _____ cc WATER

_____ cft. GAS _____ cc MUD

_____ cc. OIL _____ cc SAND

PROPERTIES - SEGREGATOR

GAS	C_1	C_2	C_3	C_4	C_5	H_2S

OIL _____ °API @ _____ °F; Pour Point _____ °F

_____ Colour; _____ Fluorescent Colour

_____ G.O.R.

WATER Rrf _____ @ _____ °F, Equiv. Cl^- _____ ppm (Resistivity)

Cl^- _____ ppm NO_3^- _____ ppm (Titration)

PRESSURES - SEGREGATOR

	Schlumberger	Amerada	Agnew Amerada	Hewlett Packard*
Sampling (psi)				
Final Shut-in (psi)				3244
Hydrostatic (psi)				3641
Sampling Time (Min)				
Shut-in Time (Min)				

(*Corrected for Atmospheric pressure)

REMARKS :

F.I.T. RECORD

GEOLOGIST MORTON

WELL: KINGFISH-7 F.I.T. No. 3 @ 7558 ft. (G.R. Depth) DATE 15/6/77 to 16/6/77

VALID TEST : Yes/~~No~~

FIRING METHOD NORMAL CHOKE SIZES 1 x 0.030

TIMES : Tool Set 23:41:34 Tool Open 23:43:04 Min. Open 36:14 Full After 17 mins 21 secs

Shaped Charge Shot: Yes/~~No~~ at _____ .

Segregator Open 23:29:18 Mins. Open 8 minutes Full After 1 min 49 secs

Tool Closed 00:37:18 Tool Off 00:37:42

Off at 3500 lbs pull

MUD DATA :

Rmf 0.87 @ 64 °F, Equiv. Cl^- 3750 ppm (Resistivity)

Cl^- 3500 ppm NO^-3 280 ppm (Titration)

SAMPLE TAKEN AT END OF LAST CIRCULATION

RECOVERY - MAIN CHAMBER

0 p.s.i. SURFACE PRESSURE	21,000 Filtrate cc WATER
0 cft. GAS	_____ cc MUD
- cc. OIL OIL SCUM	_____ cc SAND

PROPERTIES - MAIN CHAMBER

GAS	C_1	C_2	C_3	C_4	C_5	H_2S

OIL - °API @ - °F; Pour Point - °F

DARK BROWN Colour; YELLOW Fluorescent Colour

_____ G.O.R.

WATER Rrf .788 @ 64 °F, Equiv. Cl^- 4250 ppm (Resistivity)

Cl^- 4000 ppm NO_3^- 270 ppm (Titration)

PRESSURES - MAIN CHAMBER

	Schlumberger	Amerada	Agnew	Amerada 2285	Hewlett Packard*
Sampling (psi)				400-488	430-465
Final Shut-in (psi)				3260	3268.24
Hydrostatic (psi)				3849/3891	3852.8 - 3895

Sampling Time (Min) 17 mins 21 seconds

Shut-in Time (Min) ~~11:29:18~~ (36 mins 14 secs)

(*Corrected for Atmospheric pressure)

TEMPERATURES : (max recorded) 185 °F, 190 °F

MAX. DEPTH TOOL REACHED: 7560 Ft.

TIME SINCE CIRCULATION : 5.2 Hrs.

REMARKS : CIRCULATION STOPPED 1830 hours on 15/6/77
SCUM OF OIL RECOVERED.

F.I.T. SEGREGATOR REPORT

GEOLOGIST MORTON

WELL : KINGFISH-7 F.I.T. No. 3 @ 7558 ft.(G.R. Depth) DATE 15/6/77

SEGREGATOR TYPE _____ NUMBER _____ DATE OPENED to 16/6/77

RECOVERY - SEGREGATOR

_____ p.s.i. SURFACE PRESSURE _____ cc WATER

_____ cft. GAS _____ cc MUD

_____ cc. OIL _____ cc SAND

PROPERTIES - SEGREGATOR

GAS	C_1	C_2	C_3	C_4	C_5	H_2S

OIL _____ °API @ _____ °F; Pour Point _____ °F

_____ Colour; _____ Fluorescent Colour

_____ G.O.R.

WATER Rrf _____ @ _____ °F, Equiv. Cl^- _____ ppm (Resistivity)

Cl^- _____ ppm NO_3^- _____ ppm (Titration)

PRESSURES - SEGREGATOR

	Schlumberger	Amerada	Agnew Amerada	Hewlett Packard*
Sampling (psi)				3.8 - 300
Final Shut-in (psi)				3668.24
Hydrostatic (psi)				3852.8 - 3895
Sampling Time (Min)	1 min 49 seconds			
Shut-in Time (Min)	00:37:18 (8 minutes)			

(*Corrected for Atmospheric pressure)

REMARKS :

F.I.T. RECORD

GEOLOGIST MORTON

WELL: KINGFISH-7 F.I.T. No. 4 @ 7666 ft. (G.R. Depth) DATE 16/6/77

VALID TEST : Yes/~~No~~

FIRING METHOD NORMAL CHOKE SIZES 1 x 0.030

TIMES : Tool Set 03:27:52 Tool Open 3:29:52 Min. Open 27:31 Full After 6 mins 8 seconds

Shaped Charge Shot: ~~Yes~~/No at

Segregator Open 3:57:23 Mins. Open 4 min 29 secs Full After 13 seconds

Tool Closed 4:01:52 Tool Off 4:02:40

MUD DATA :

Rmf 0.87 @ 64 °F, Equiv. Cl^- 3750 ppm (Resistivity)

Cl^- 3500 ppm NO^-3 280 ppm (Titration)

SAMPLE TAKEN AT END OF LAST CIRCULATION

RECOVERY - MAIN CHAMBER

250 p.s.i. SURFACE PRESSURE	cc WATER
18.3 cft. GAS	2500 cc MUD
17,500 cc. OIL	cc SAND

Mud weight of recovered mud 7.9 (oil contaminated)

PROPERTIES - MAIN CHAMBER

GAS	C_1	C_2	C_3	C_4	C_5	C_6	H_2S
	140493ppm	68096	73574	25991	7680	Tr	3.3
	158054	66304	73574	26582	5760	727	-

OIL 50 °API @ 64 °F; Pour Point °F

DARK BROWN Colour; BRIGHT YELLOW Fluorescent Colour

166 G.O.R.

WATER Rrf 1.67 @ 66 °F, Equiv. Cl^- 1900 ppm (Resistivity)

oil contaminated Cl^- 2000-2500 ppm NO_3^- 180 ppm (Titration) Wt 7.9

PRESSURES - MAIN CHAMBER

	Schlumberger	Amerada	Agnew Amerada	Hewlett Packard*
Sampling (psi)			CLOCK	3060
Final Shut-in (psi)			STOPPED	3268
Hydrostatic (psi)				3986.6-3938

Sampling Time (Min) 6 mins 8 seconds

Shut-in Time (Min) 3:57:23

(*Corrected for Atmospheric pressure)

TEMPERATURES : (max recorded) 185 °F, 190 °F

MAX. DEPTH TOOL REACHED: 7680 Ft.

TIME SINCE CIRCULATION : 9 Hrs.

REMARKS : G.R. not functioning - depth set from FIT#3 depth calibration - likely to be ±5' max off depth. Checked on FIT#5 and found to be 2' too deep. Amerada clock stopped.

F.I.T. SEGREGATOR REPORT

GEOLOGIST MORTON

WELL : KINGFISH-7 F.I.T. No. 4 @ 7666 ft.(G.R. Depth) DATE 16/6/77

SEGREGATOR TYPE _____ NUMBER _____ DATE OPENED _____

RECOVERY - SEGREGATOR

_____ p.s.i. SURFACE PRESSURE _____ cc WATER

_____ cft. GAS _____ cc MUD

_____ cc. OIL _____ cc SAND

PROPERTIES - SEGREGATOR

GAS	C_1	C_2	C_3	C_4	C_5	H_2S

OIL _____ °API @ _____ °F; Pour Point _____ °F

_____ Colour; _____ Fluorescent Colour

_____ G.O.R.

WATER Rrf _____ @ _____ °F, Equiv. Cl^- _____ ppm (Resistivity)

Cl^- _____ ppm NO_3^- _____ ppm (Titration)

PRESSURES - SEGREGATOR

	Schlumberger	Amerada	Agnew	Amerada		Hewlett Packard*
Sampling (psi)						3265
Final Shut-in (psi)						3268
Hydrostatic (psi)						3986.6-3938
Sampling Time (Min)	13 seconds					
Shut-in Time (Min)	4:01:52					

(*Corrected for Atmospheric pressure)

REMARKS :

F.I.T. RECORD

GEOLOGIST MORTON

WELL: KINGFISH-7 F.I.T. No. 5 @ 7648 ft. (G.R. Depth) DATE 16/6/77

VALID TEST : Yes/No

FIRING METHOD NORMAL CHOKE SIZES 1 x 0.030

TIMES : Tool Set 6:58:52 Tool Open 7:00:52 Min. Open 20:01 Full After N/A

Shaped Charge Shot: ~~Yes~~/No at _____

Segregator Open - Mins. Open - Full After -

Tool Closed 07:20:53 Tool Off 07:29:15

MUD DATA :

Rmf 0.87 @ 64 °F, Equiv. Cl^- 3750 ppm (Resistivity)

Cl^- 3500 ppm NO^-3 280 ppm (Titration)

SAMPLE TAKEN AT END OF LAST CIRCULATION

RECOVERY - MAIN CHAMBER

— p.s.i. SURFACE PRESSURE	_____ cc WATER
0.9 cft. GAS	6500 cc MUD
225 cc. OIL	_____ cc SAND

PROPERTIES - MAIN CHAMBER

GAS	C_1	C_2	C_3	C_4	C_5	H_2S

OIL _____ °API @ _____ °F; Pour Point _____ °F

LIGHT BROWN Colour; BRIGHT YELLOW Fluorescent Colour

_____ G.O.R.

WATER Rrf 0.57 @ 65 °F, Equiv. Cl^- 6000 ppm (Resistivity)

Cl^- _____ ppm NO_3^- 160 ppm (Titration)

PRESSURES - MAIN CHAMBER

	Schlumberger	Amerada	Agnew Amerada	Hewlett Packard*
Sampling (psi)	_____	_____	101-55	19 - 52
Final Shut-in (psi)	_____	_____	3239	3264
Hydrostatic (psi)	_____	_____	3964/3906	3968.8
Sampling Time (Min)	20:01			
Shut-in Time (Min)	8:22			

(*Corrected for Atmospheric pressure)

TEMPERATURES : (max recorded) 184 °F, 184 °F

MAX. DEPTH TOOL REACHED: 7700 Ft.

TIME SINCE CIRCULATION : 12½ Hrs.

REMARKS :

F.I.T. RECORD

GEOLOGIST MORTON

WELL: KINGFISH-7 F.I.T. No. 6 @ 7658 ft. (G.R. Depth) DATE 16/6/77

VALID TEST : Yes/~~No~~

FIRING METHOD NORMAL CHOKE SIZES 1 x 0.030

TIMES : Tool Set 13:43:25 Tool Open 13:44:43 Min. Open 37.51 (14.22.44) Full After 10.41 (13.55.24)

Shaped Charge Shot: ~~Yes~~/No at

Segregator Open 14.22.44 Mins. Open 41 seconds Full After 14 seconds

Tool Closed 14.25.25 Tool Off 14.26.11

MUD DATA :

Rmf 0.87 @ 64 °F, Equiv. Cl^- 3750 ppm (Resistivity)

Cl^- 3500 ppm NO^-3 280 ppm (Titration)

SAMPLE TAKEN AT END OF LAST CIRCULATION

RECOVERY - MAIN CHAMBER

300# p.s.i. SURFACE PRESSURE	10,000 cc WATER
14.5 cft. GAS	cc MUD
9,000 cc. OIL	cc SAND

PROPERTIES - MAIN CHAMBER

GAS	C_1	C_2	C_3	C_4	C_5	C_6 ~~Hexs~~	H_2S	CO_2
	137.0	130.8	230.5	122.9	17.9	2.9	0	0
	165.1	111.1	130.0	61.4	20.5	1.3	0	0

OIL 49.5 °API @ 73 °F; Pour Point °F

DARK BROWN Colour; BRIGHT YELLOW Fluorescent Colour

256 G.O.R.

WATER Rrf 0.57 @ 66 °F, Equiv. Cl^- 6000 ppm (Resistivity)

Cl^- 5000 ppm NO_3^- 240 ppm (Titration)

PRESSURES - MAIN CHAMBER

	Schlumberger	Amerada	Agnew Amerada	Hewlett Packard*
Sampling (psi)				1200-900
Final Shut-in (psi)				3265.2 (extr)
Hydrostatic (psi)			Initial	3973.3 Final 3925.7

Sampling Time (Min) 10.41 minutes

Shut-in Time (Min) 27.10 minutes

(*Corrected for Atmospheric pressure)

TEMPERATURES : (max recorded) 189 °F, 192 °F

MAX. DEPTH TOOL REACHED: 7611 Ft.

TIME SINCE CIRCULATION : 19 Hrs.

REMARKS : At depth 13.43.22
On bottom 13.07.00

F.I.T. SEGREGATOR REPORT

GEOLOGIST MORTON

WELL : KINGFISH-7 F.I.T. No. 6 @ 7658 ft.(G.R. Depth) DATE 16/6/77

SEGREGATOR TYPE _____ NUMBER _____ DATE OPENED _____

RECOVERY - SEGREGATOR

_____ p.s.i. SURFACE PRESSURE _____ cc WATER

_____ cft. GAS _____ cc MUD

_____ cc. OIL _____ cc SAND

PROPERTIES - SEGREGATOR

GAS	C_1	C_2	C_3	C_4	C_5	H_2S

OIL _____ ^{o}API @ _____ ^{o}F; Pour Point _____ ^{o}F

_____ Colour; _____ Fluorescent Colour

_____ G.O.R.

WATER Rrf _____ @ _____ ^{o}F, Equiv. Cl^- _____ ppm (Resistivity)

Cl^- _____ ppm NO_3^- _____ ppm (Titration)

PRESSURES - SEGREGATOR

	Schlumberger	Amerada	Agnew _____ Amerada _____	Hewlett Packard*
Sampling (psi)				
Final Shut-in (psi)				
Hydrostatic (psi)				
Sampling Time (Min)				
Shut-in Time (Min)				

(*Corrected for Atmospheric pressure)

REMARKS :

F.I.T. RECORD

GEOLOGIST MORTON

WELL: KINGFISH-7 F.I.T. No. 7 @ 7634 ft. (G.R. Depth) DATE 16/6/77

VALID TEST : Yes/~~No~~

FIRING METHOD NORMAL CHOKE SIZES 1 x 0.030"

TIMES : Tool Set 16.26.58 Tool Open 16.28.58 Min. Open 31.06 Full After 7.57 (16.35.55)

Shaped Charge Shot: ~~Yes~~/No at

Segregator Open DID NOT OPEN Mins. Open - Full After -

Tool Closed 17.00.04 Tool Off 17.02.14

MUD DATA :

Rmf 0.87 @ 64 °F, Equiv. Cl^- 3750 ppm (Resistivity)

Cl^- 3500 ppm NO^-3 280 ppm (Titration)

SAMPLE TAKEN AT END OF LAST CIRCULATION

RECOVERY - MAIN CHAMBER

300 p.s.i. SURFACE PRESSURE	5,000 cc WATER
17.0 cft. GAS	cc MUD
13,500 cc. OIL	cc SAND

PROPERTIES - MAIN CHAMBER

GAS	C_1	C_2	C_3	C_4	C_5	C_6 ~~Hxs~~ ~~Hxx~~	H_2S	CO_2
	165.1	93.2	103.0	56.7	20.5	1.5	0.25	-
	161.6	98.6	103.0	52.0	16.0	2.2	0.25	0.5%

OIL 50 °API @ 68 °F; Pour Point °F

DARK BROWN Colour; BRIGHT YELLOW Fluorescent Colour

200 G.O.R.

WATER Rrf 0.89 @ 68 °F, Equiv. Cl^- 3500 ppm (Resistivity)

Cl^- 6000 ppm NO_3^- 180 ppm (Titration)

PRESSURES - MAIN CHAMBER

	Schlumberger	Amerada	Agnew Amerada	Hewlett Packard*
Sampling (psi)				2800-2680
Final Shut-in (psi)				3259
Hydrostatic (psi)	Initial			4066.1
	Final			3927
Sampling Time (Min)	8 minutes			
Shut-in Time (Min)	23 minutes			

(*Corrected for Atmospheric pressure)

TEMPERATURES : (max recorded) 189 °F, 192 °F

MAX. DEPTH TOOL REACHED: 7674 Ft.

TIME SINCE CIRCULATION : 22 Hrs.

REMARKS :

RIH	15.30.00	
OB	15.55.00	(7674')
MW	10.27 ppg	(7630-surf)
At depth	16.26.00	

Appears segregator did not open.

F.I.T. RECORD

GEOLOGIST MORTON/GILES

WELL: KINGFISH-7 F.I.T. No. 8 @ 7508 ft. (G.R. Depth) DATE 16/6/77

VALID TEST : Yes/~~No~~

FIRING METHOD Normal CHOKE SIZES 1 x.030"

TIMES : Tool Set 19.15.20 Tool Open 19.16.53 Min. Open 35.00 Full After 10.13 (19.27.06)

Shaped Charge Shot: ~~Yes~~/No at _____

Segregator Open _____ Mins. Open _____ Full After _____

Tool Closed 19.51.53 Tool Off 19.55.21

MUD DATA :

Rmf 0.87 @ 64 °F, Equiv. Cl^- 3750 ppm (Resistivity)

Cl^- 3500 ppm NO^-3 280 ppm (Titration)

SAMPLE TAKEN AT END OF LAST CIRCULATION

RECOVERY - MAIN CHAMBER

25 p.s.i. SURFACE PRESSURE	20,000 cc WATER
Trace cft. GAS	_____ cc MUD
Scum cc. OIL	_____ cc SAND

PROPERTIES - MAIN CHAMBER

GAS	C_1	C_2	C_3	C_4	C_5	C_6 ~~+~~	H_2S	CO_2

OIL _____ °API @ _____ °F; Pour Point _____ °F

LIGHT BROWN Colour; BRIGHT YELLOW Fluorescent Colour

\- G.O.R.

WATER Rrf 0.76 @ 68 °F, Equiv. Cl^- 4000 ppm (Resistivity)

Cl^- 4000 ppm NO_3^- 100 ppm (Titration)

PRESSURES - MAIN CHAMBER

	Schlumberger	Amerada	Agnew Amerada	Hewlett Packard*
Sampling (psi)				1250-950
Final Shut-in (psi)				3255.8 (extr)
Hydrostatic (psi) Initial				3953.7
Hydrostatic (psi) Final				3848

Sampling Time (Min) 10.13 minutes

Shut-in Time (Min) 24 minutes

(*Corrected for Atmospheric pressure)

TEMPERATURES : (max recorded) 186 °F, 187 °F

MAX. DEPTH TOOL REACHED: 7680 Ft.

TIME SINCE CIRCULATION : 24 Hrs.

REMARKS :

RIH	18.13.00	
MW	10.26	(7325-surf)
OB	18.40.00	
On depth	19.15.00	

Appears segregator did not open - tool sealed instead. Amerada clock stopped 20 minutes after start - no readings.

F.I.T. RECORD

GEOLOGIST MORTON

WELL: KINGFISH-7 F.I.T. No. 9 @ 7516 ft. (G.R. Depth) DATE 17/6/77

VALID TEST : Yes/~~No~~

FIRING METHOD _____ CHOKE SIZES _____

TIMES : Tool Set 11:36:03 Tool Open 11:38:42 Min. Open 22:37 Full After 6:42 (11.45:24)

Shaped Charge Shot: ~~Yes~~/No at _____

Segregator Open 11:58:40 Mins. Open 3:59 Full After 31 seconds

Tool Closed 12:02:39 Tool Off 12:03:13

MUD DATA :

Rmf 0.85 @ 66 °F, Equiv. Cl^- 3750 ppm (Resistivity)

Cl^- 3000 ppm NO^-3 210 ppm (Titration)

SAMPLE TAKEN AT END OF LAST CIRCULATION

RECOVERY - MAIN CHAMBER

250 p.s.i. SURFACE PRESSURE	15,250 cc WATER
4.1 cft. GAS	_____ cc MUD
5250 cc. OIL	_____ cc SAND

PROPERTIES - MAIN CHAMBER

GAS	C_1	C_2	C_3	C_4	C_5	C_6 ~~Hxs~~ ~~xxx~~	H_2S	CO_2
M	144.0	93.2	127.5	85.1	23.0	3.4	0	0.25%

OIL 46 °API @ 74 °F; Pour Point _____ °F

DARK BROWN Colour; BRIGHT YELLOW Fluorescent Colour

124 G.O.R.

WATER Rrf 0.88 @ 64 °F, Equiv. Cl^- 3500 ppm (Resistivity)

Cl^- 4500 ppm NO_3^- 188 ppm (Titration)

PRESSURES - MAIN CHAMBER

	Schlumberger	Amerada	Agnew Amerada		Hewlett Packard*
Sampling (psi)	_____	_____	_____		2880-2400
Final Shut-in (psi)	_____	_____	_____		3254.96
Hydrostatic (psi)	Initial _____	_____	_____		3868.6
	Final _____	_____	_____		3859.8

Sampling Time (Min) 6½ minutes

Shut-in Time (Min) 20 minutes

(*Corrected for Atmospheric pressure)

TEMPERATURES : (max recorded) 158 °F, 159 °F

MAX. DEPTH TOOL REACHED: 7780 Ft.

TIME SINCE CIRCULATION : 4½ Hrs.

REMARKS :

On bottom	10.57.00	Temp	158,159 °F
At Depth	11.35.30	Max Depth	7780'
Mud Wt	9.9 (TD-Surf)	Time circ.	4½ Hours
Seg #	28		

Oil gravity 45.5 °API @ 79 °F 15 minutes after recovery

46 °API @ 73.5 °F 1½ hours after recovery

F.I.T. SEGREGATOR REPORT

GEOLOGIST MORTON

WELL : KINGFISH-7 F.I.T. No. 9 @ 7516 ft.(G.R. Depth) DATE 17/6/77

SEGREGATOR TYPE _____ NUMBER _____ DATE OPENED _____

RECOVERY - SEGREGATOR

_____ p.s.i. SURFACE PRESSURE _____ cc WATER

_____ cft. GAS _____ cc MUD

_____ cc. OIL _____ cc SAND

PROPERTIES - SEGREGATOR

GAS	C_1	C_2	C_3	C_4	C_5	H_2S

OIL _____ °API @ _____ °F; Pour Point _____ °F

_____ Colour; _____ Fluorescent Colour

_____ G.O.R.

WATER Rrf _____ @ _____ °F, Equiv. Cl^- _____ ppm (Resistivity)

Cl^- _____ ppm NO_3^- _____ ppm (Titration)

PRESSURES - SEGREGATOR

	Schlumberger	Amerada	Agnew Amerada	Hewlett Packard*
Sampling (psi)				
Final Shut-in (psi)				3255.07 (extr)
Hydrostatic (psi)				
Sampling Time (Min)				
Shut-in Time (Min)				

(*Corrected for Atmospheric pressure)

REMARKS :

F.I.T. RECORD

GEOLOGIST MORTON

WELL: KINGFISH-7 F.I.T. No. 10 @ 7574 ft. (G.R. Depth) DATE 17/6/77

VALID TEST : ~~XXX~~/No

FIRING METHOD _____ CHOKE SIZES _____

TIMES : Tool Set 14:02:21 Tool Open 14:03:47 Min. Open 13:04 Full After NOT FILLED

Shaped Charge Shot: ~~XXXX~~/No at _____

Segregator Open NOT USED Mins. Open - Full After -

Tool Closed 14:16:51 Tool Off 14:20:27

MUD DATA :

Rmf 0.85 @ 66 °F, Equiv. Cl^- 3750 ppm (Resistivity)

Cl^- 3000 ppm NO^-3 210 ppm (Titration)

SAMPLE TAKEN AT END OF LAST CIRCULATION

RECOVERY - MAIN CHAMBER

_____ p.s.i. SURFACE PRESSURE _____ cc WATER

0 cft. GAS _____ cc MUD

0 cc. OIL _____ cc SAND

PROPERTIES - MAIN CHAMBER

GAS	C_1	C_2	C_3	C_4	C_5	C_6 ~~XXX~~	H_2S	CO_2

OIL _____ °API @ _____ °F; Pour Point _____ °F

_____ Colour; _____ Fluorescent Colour

_____ G.O.R.

WATER Rrf _____ @ _____ °F, Equiv. Cl^- _____ ppm (Resistivity)

Cl^- _____ ppm NO_3^- _____ ppm (Titration)

PRESSURES - MAIN CHAMBER

	Schlumberger	Amerada	Agnew _____	Amerada _____	Hewlett Packard*
Sampling (psi)	_____	_____	_____	_____	0-1.2
Final Shut-in (psi)	_____	_____	_____	_____	2.5
Hydrostatic (psi)	Initial- ~~Final -~~	_____	_____	_____	3908.5 / 3894
Sampling Time (Min)	13 minutes				
Shut-in Time (Min)	~~4 minutes~~				

(*Corrected for Atmospheric pressure)

TEMPERATURES : (max recorded) 169 °F, 172 °F

MAX. DEPTH TOOL REACHED: 7675 Ft.

TIME SINCE CIRCULATION : 7 Hrs.

REMARKS :

RIH	13.05.00	Temp	169,172 °F
OB	13:25:00	Max Depth	7675
MW	10.1 (7700-surf)	Time circ	7 hours
At depth	14.01.40		
Tight test.			

F.I.T. RECORD

GEOLOGIST MORTON

WELL: KINGFISH-7 F.I.T. No. 11 @ 7781 ft. (G.R. Depth) DATE 17/6/77

VALID TEST : Yes/~~No~~

FIRING METHOD _____ CHOKE SIZES _____

TIMES : Tool Set 16:27:30 Tool Open 16:29:22 Min. Open 22:30 Full After 5:41 (16:35:03)

Shaped Charge Shot: ~~Yes~~/No at _____

Segregator Open 16:51:52 Mins. Open 3 mins 57 sec Full After 6 seconds

Tool Closed 17:55 :49 Tool Off 17:56:28

MUD DATA :

Rmf 0.85 @ 66 °F, Equiv. Cl^- 3750 ppm (Resistivity)

Cl^- 3000 ppm NO^-3 210 ppm (Titration)

SAMPLE TAKEN AT END OF LAST CIRCULATION

RECOVERY - MAIN CHAMBER

100 p.s.i. SURFACE PRESSURE	20,500 cc WATER
0.05 cft. GAS	- cc MUD
- cc. OIL	- cc SAND

PROPERTIES - MAIN CHAMBER

GAS	C_1	C_2	C_3	C_4	C_5	C_6 ~~XXX~~	H_2S	CO_2
M	101.9	39.4	54.0	26.0	4.5	0.4	-	-

OIL _____ °API @ _____ °F; Pour Point _____ °F

_____ Colour; _____ Fluorescent Colour

_____ G.O.R.

WATER Rrf _____ @ _____ °F, Equiv. Cl^- _____ ppm (Resistivity)

Cl^- 11,500 ppm NO_3^- 0 ppm (Titration)

PRESSURES - MAIN CHAMBER

	Schlumberger	Amerada	Agnew Amerada	Hewlett Packard*
Sampling (psi)				3300
Final Shut-in (psi)				3314.18
Hydrostatic (psi)	Initial- ~~4066~~ Final - ~~4044~~			
Sampling Time (Min)	6 minutes			
Shut-in Time (Min)	16 minutes			

(*Corrected for Atmospheric pressure)

TEMPERATURES : (max recorded) 180°F, 184°F

MAX. DEPTH TOOL REACHED: 7620Ft.

TIME SINCE CIRCULATION : 9½ Hrs.

REMARKS :

RIH	15:15:00	Temp	180°, 184°F
OB	15:40	Max depth	7620
MW	9.91 (7600-surf)	Time circ	9½ hours
At depth	16:25:00		

F.I.T. SEGREGATOR REPORT

GEOLOGIST ~~MORTON~~

WELL : KINGFISH-7 F.I.T. No. 11 @ 7781 ft.(G.R. Depth) DATE 17/6/77

SEGREGATOR TYPE _____ NUMBER _____ DATE OPENED _____

RECOVERY - SEGREGATOR

_____ p.s.i. SURFACE PRESSURE _____ cc WATER

_____ cft. GAS _____ cc MUD

_____ cc. OIL _____ cc SAND

PROPERTIES - SEGREGATOR

GAS	C_1	C_2	C_3	C_4	C_5	H_2S

OIL _____ ^{o}API @ _____ ^{o}F; Pour Point _____ ^{o}F

_____ Colour; _____ Fluorescent Colour

_____ G.O.R.

WATER Rrf _____ @ _____ ^{o}F, Equiv. Cl^- _____ ppm (Resistivity)

Cl^- _____ ppm NO_3^- _____ ppm (Titration)

PRESSURES - SEGREGATOR

	Schlumberger	Amerada	Agnew _____ Amerada _____	Hewlett Packard*
Sampling (psi)				
Final Shut-in (psi)				3314.20
Hydrostatic (psi)				
Sampling Time (Min)				
Shut-in Time (Min)				

(*Corrected for Atmospheric pressure)

REMARKS :

F.I.T. RECORD

GEOLOGIST MORTON

WELL: KINGFISH-7 F.I.T. No. 12 @ 7870 ft. (G.R. Depth) DATE 17/6/77

VALID TEST : Yes/~~No~~

FIRING METHOD _____ CHOKE SIZES 1x.030

TIMES : Tool Set 19:04:52 Tool Open 19:06:17 Min. Open 25:04 Full After 6:25

Shaped Charge Shot: ~~Yes~~/No at _____ (19:12:42)

Segregator Open NOT RUN Mins. Open - Full After -

Tool Closed 19:31:21 Tool Off see below

MUD DATA :

Rmf 0.85 @ 66 °F, Equiv. Cl^- 3750 ppm (Resistivity)

Cl^- 3000 ppm NO^-3 210 ppm (Titration)

SAMPLE TAKEN AT END OF LAST CIRCULATION

RECOVERY - MAIN CHAMBER

0 p.s.i. SURFACE PRESSURE	19,000 cc WATER
Trace cft. GAS	19,000 cc MUD
0 cc. OIL	- cc SAND

PROPERTIES - MAIN CHAMBER

GAS	C_1	C_2	C_3	C_4	C_5	C_6 ~~+~~	H_2S	CO_2

OIL _____ °API @ _____ °F; Pour Point _____ °F

_____ Colour; _____ Fluorescent Colour

_____ G.O.R.

WATER Rrf 0.79 @ 60 °F, Equiv. Cl^- 4000 ppm (Resistivity)

Cl^- 5800 ppm NO_3^- 44 ppm (Titration)

PRESSURES - MAIN CHAMBER

	Schlumberger	Amerada	Agnew Amerada	Hewlett Packard*
Sampling (psi)				3280-2460
Final Shut-in (psi)				3359.9 (3360.3)
Hydrostatic (psi)	Initial- Final -			4273 not available
Sampling Time (Min)	6½ minutes			
Shut-in Time (Min)	18½ minutes			

(*Corrected for Atmospheric pressure)

TEMPERATURES : (max recorded) - °F, - °F

MAX. DEPTH TOOL REACHED: 7908 Ft.

TIME SINCE CIRCULATION : 12 Hrs.

REMARKS :

RIH	17:57	Temp	
OB	18:29	Max depth	7908
MW	10.08 (7692-Surf)	Time circ	12 hours
At depth	19:00		(21½ hours)

Cable key-sealed - Tool stuck - cut line and stripped to 5177', pulled free at 0430 hours 18/6/77.

R.F.T. RECORD

GEOLOGIST MORTON

WELL: KINGFISH-7 R.F.T. No. 3 @ 7654 ft. (G.R. Depth) DATE 16/6/77

VALID TEST : Yes/~~No~~

FIRING METHOD _____ CHOKE SIZES _____

TIMES : Tool Set 10.07.13 Tool Open 10.11.05 Min. Open _____ Full After _____

Shaped Charge Shot: Yes/No at _____

Segregator Open _____ Mins. Open _____ Full After _____

Tool Closed 10.17.37 Tool Off _____

MUD DATA :

Rmf _____ @ _____ ^{o}F, Equiv. Cl^- _____ ppm (Resistivity)

Cl^- _____ ppm NO^-3 _____ ppm (Titration)

SAMPLE TAKEN AT END OF LAST CIRCULATION

RECOVERY - MAIN CHAMBER

_____ p.s.i. SURFACE PRESSURE _____ cc WATER

_____ cft. GAS _____ cc MUD

_____ cc. OIL _____ cc SAND

PROPERTIES - MAIN CHAMBER

GAS	C_1	C_2	C_3	C_4	C_5	H_2S

OIL _____ ^{o}API @ _____ ^{o}F; Pour Point _____ ^{o}F

_____ Colour; _____ Fluorescent Colour

_____ G.O.R.

WATER Rrf _____ @ _____ ^{o}F, Equiv. Cl^- _____ ppm (Resistivity)

Cl^- _____ ppm NO_3^- _____ ppm (Titration)

PRESSURES - MAIN CHAMBER

	Schlumberger	Amerada	Agnew _____ Amerada _____	Hewlett Packard*
Sampling (psi)				21 - Decided no good
Final Shut-in (psi)				3267 (pretest)
Hydrostatic (psi)				3964
Sampling Time (Min)				
Shut-in Time (Min)				

(*Corrected for Atmospheric pressure)

TEMPERATURES : (max recorded) _____ ^{o}F, _____ ^{o}F

MAX. DEPTH TOOL REACHED: _____ Ft.

TIME SINCE CIRCULATION : _____ Hrs.

REMARKS :

R.F.T. RECORD

GEOLOGIST MORTON

WELL: KINGFISH-7 R.F.T. No. 4 @ 7647 ft. (G.R. Depth) DATE 16/6/77

VALID TEST : ~~XXX~~/No

FIRING METHOD _____ CHOKE SIZES _____

TIMES : Tool Set _____ Tool Open 21:51:00 Min. Open _____ Full After _____

Shaped Charge Shot: Yes/No at _____

Segregator Open _____ Mins. Open _____ Full After _____

Tool Closed 10:25:01 Tool Off _____

MUD DATA :

Rmf _____ @ _____ ^{o}F, Equiv. Cl^{-} _____ ppm (Resistivity)

Cl^{-} _____ ppm $NO^{-}3$ _____ ppm (Titration)

SAMPLE TAKEN AT END OF LAST CIRCULATION

RECOVERY - MAIN CHAMBER

_____ p.s.i. SURFACE PRESSURE _____ cc WATER

_____ cft. GAS _____ cc MUD

_____ cc. OIL _____ cc SAND

PROPERTIES - MAIN CHAMBER

GAS	C_1	C_2	C_3	C_4	C_5	H_2S

OIL _____ ^{o}API @ _____ ^{o}F; Pour Point _____ ^{o}F

_____ Colour; _____ Fluorescent Colour

_____ G.O.R.

WATER Rrf _____ @ _____ ^{o}F, Equiv. Cl^{-} _____ ppm (Resistivity)

Cl^{-} _____ ppm NO_3^{-} _____ ppm (Titration)

PRESSURES - MAIN CHAMBER

	Schlumberger	Amerada	Agnew _____ Amerada	_____ Hewlett Packard*
Sampling (psi)				23
Final Shut-in (psi)				
Hydrostatic (psi)				

Sampling Time (Min) _____

Shut-in Time (Min) _____

(*Corrected for Atmospheric pressure)

TEMPERATURES : (max recorded) _____ ^{o}F, _____ ^{o}F

MAX. DEPTH TOOL REACHED: _____ Ft.

TIME SINCE CIRCULATION : _____ Hrs.

REMARKS : BLOCKED

R.F.T. RECORD

GEOLOGIST MORTON

WELL: KINGFISH-7 R.F.T. No. 5 @ 7658 ft. (G.R. Depth) DATE 16/6/77

VALID TEST : ~~YES~~/No

FIRING METHOD _____ CHOKE SIZES _____

TIMES : Tool Set _____ Tool Open _____ Min. Open _____ Full After _____

Shaped Charge Shot: Yes/No at _____

Segregator Open _____ Mins. Open _____ Full After _____

Tool Closed _____ Tool Off _____

MUD DATA :

Rmf _____ @ _____ ^{o}F, Equiv. Cl^{-} _____ ppm (Resistivity)

Cl^{-} _____ ppm $NO^{-}3$ _____ ppm (Titration)

SAMPLE TAKEN AT END OF LAST CIRCULATION

RECOVERY - MAIN CHAMBER

_____ p.s.i. SURFACE PRESSURE _____ cc WATER

_____ cft. GAS _____ cc MUD

_____ cc. OIL _____ cc SAND

PROPERTIES - MAIN CHAMBER

GAS	C_1	C_2	C_3	C_4	C_5	H_2S

OIL _____ ^{o}API @ _____ ^{o}F; Pour Point _____ ^{o}F

_____ Colour; _____ Fluorescent Colour

_____ G.O.R.

WATER Rrf _____ @ _____ ^{o}F, Equiv. Cl^{-} _____ ppm (Resistivity)

Cl^{-} _____ ppm NO_3^{-} _____ ppm (Titration)

PRESSURES - MAIN CHAMBER

	Schlumberger	Amerada	Agnew _____ Amerada _____	Hewlett Packard*
Sampling (psi)				
Final Shut-in (psi)				
Hydrostatic (psi)				

Sampling Time (Min) _____

Shut-in Time (Min) _____

(*Corrected for Atmospheric pressure)

TEMPERATURES : (max recorded) _____ ^{o}F, _____ ^{o}F

MAX. DEPTH TOOL REACHED: _____ Ft.

TIME SINCE CIRCULATION : _____ Hrs.

REMARKS : LOST SEAL

R.F.T. RECORD

GEOLOGIST MORTON

WELL: KINGFISH-7 R.F.T. No. 6 @ 7660 ft. (G.R. Depth) DATE 16/6/77

VALID TEST : ~~XXX~~/No

FIRING METHOD _____ CHOKE SIZES _____

TIMES : Tool Set _____ Tool Open 10:31:37 Min. Open _____ Full After _____

Shaped Charge Shot: Yes/No at _____

Segregator Open _____ Mins. Open _____ Full After _____

Tool Closed 10:44:52 Tool Off 10:45:22

MUD DATA :

Rmf _____ @ _____ ^{o}F, Equiv. Cl^{-} _____ ppm (Resistivity)

Cl^{-} _____ ppm $NO^{-}3$ _____ ppm (Titration)

SAMPLE TAKEN AT END OF LAST CIRCULATION

RECOVERY - MAIN CHAMBER

_____ p.s.i. SURFACE PRESSURE _____ cc WATER

_____ cft. GAS _____ cc MUD

_____ cc. OIL _____ cc SAND

PROPERTIES - MAIN CHAMBER

GAS	C_1	C_2	C_3	C_4	C_5	H_2S

OIL _____ ^{o}API @ _____ ^{o}F; Pour Point _____ ^{o}F

_____ Colour; _____ Fluorescent Colour

_____ G.O.R.

WATER Rrf _____ @ _____ ^{o}F, Equiv. Cl^{-} _____ ppm (Resistivity)

Cl^{-} _____ ppm NO_3^{-} _____ ppm (Titration)

PRESSURES - MAIN CHAMBER

	Schlumberger	Amerada	Agnew Amerada	Hewlett Packard*
Sampling (psi)				238
Final Shut-in (psi)				
Hydrostatic (psi)				

Sampling Time (Min) _____

Shut-in Time (Min) _____

(*Corrected for Atmospheric pressure)

TEMPERATURES : (max recorded) _____ ^{o}F, _____ ^{o}F

MAX. DEPTH TOOL REACHED: _____ Ft.

TIME SINCE CIRCULATION : _____ Hrs.

REMARKS : BLOCKED

R.F.T. RECORD

GEOLOGIST MORTON

WELL: KINGFISH-7 R.F.T. No. 7 @ 7611 ft. (G.R. Depth) DATE 16/6/77

VALID TEST : ~~XXX~~No

FIRING METHOD _____ CHOKE SIZES _____

TIMES : Tool Set _____ Tool Open 10:48:10 Min. Open _____ Full After _____

Shaped Charge Shot: Yes/No at _____

Segregator Open _____ Mins. Open _____ Full After _____

Tool Closed 10:49:30 Tool Off _____

MUD DATA :

Rmf _____ @ _____ ^{o}F, Equiv. Cl^- _____ ppm (Resistivity)

Cl^- _____ ppm NO^-3 _____ ppm (Titration)

SAMPLE TAKEN AT END OF LAST CIRCULATION

RECOVERY - MAIN CHAMBER

_____ p.s.i. SURFACE PRESSURE _____ cc WATER

_____ cft. GAS _____ cc MUD

_____ cc. OIL _____ cc SAND

PROPERTIES - MAIN CHAMBER

GAS	C_1	C_2	C_3	C_4	C_5	H_2S

OIL _____ ^{o}API @ _____ ^{o}F; Pour Point _____ ^{o}F

_____ Colour; _____ Fluorescent Colour

_____ G.O.R.

WATER Rrf _____ @ _____ ^{o}F, Equiv. Cl^- _____ ppm (Resistivity)

Cl^- _____ ppm NO_3^- _____ ppm (Titration)

PRESSURES - MAIN CHAMBER

	Schlumberger	Amerada	Agnew _____ Amerada	_____ Hewlett Packard*
Sampling (psi)				
Final Shut-in (psi)				
Hydrostatic (psi)				
Sampling Time (Min)				
Shut-in Time (Min)				

(*Corrected for Atmospheric pressure)

TEMPERATURES : (max recorded) _____ ^{o}F, _____ ^{o}F

MAX. DEPTH TOOL REACHED: _____ Ft.

TIME SINCE CIRCULATION : _____ Hrs.

REMARKS : BLOCKED

R.F.T. RECORD

GEOLOGIST MORTON

WELL: KINGFISH-7 R.F.T. No. 8 @ 7610 ft. (G.R. Depth) DATE 16/6/77

VALID TEST : ~~Yes~~/No

FIRING METHOD _____ CHOKE SIZES _____

TIMES : Tool Set _____ Tool Open _____ Min. Open _____ Full After _____

Shaped Charge Shot: Yes/No at _____

Segregator Open _____ Mins. Open _____ Full After _____

Tool Closed _____ Tool Off _____

MUD DATA :

Rmf _____ @ _____ ^{o}F, Equiv. Cl^{-} _____ ppm (Resistivity)

Cl^{-} _____ ppm $NO^{-}3$ _____ ppm (Titration)

SAMPLE TAKEN AT END OF LAST CIRCULATION

RECOVERY - MAIN CHAMBER

_____ p.s.i. SURFACE PRESSURE _____ cc WATER

_____ cft. GAS _____ cc MUD

_____ cc. OIL _____ cc SAND

PROPERTIES - MAIN CHAMBER

GAS	C_1	C_2	C_3	C_4	C_5	H_2S

OIL _____ ^{o}API @ _____ ^{o}F; Pour Point _____ ^{o}F

_____ Colour; _____ Fluorescent Colour

_____ G.O.R.

WATER Rrf _____ @ _____ ^{o}F, Equiv. Cl^{-} _____ ppm (Resistivity)

Cl^{-} _____ ppm NO_3^{-} _____ ppm (Titration)

PRESSURES - MAIN CHAMBER

	Schlumberger	Amerada	Agnew _____ Amerada _____	Hewlett Packard*
Sampling (psi)				
Final Shut-in (psi)				
Hydrostatic (psi)				

Sampling Time (Min) _____

Shut-in Time (Min) _____

(*Corrected for Atmospheric pressure)

TEMPERATURES : (max recorded) _____ ^{o}F, _____ ^{o}F

MAX. DEPTH TOOL REACHED: _____ Ft.

TIME SINCE CIRCULATION : _____ Hrs.

REMARKS : BLOCKED

R.F.T. RECORD

GEOLOGIST MORTON

WELL: KINGFISH-7 R.F.T. No. 9 @ 7548 ft. (G.R. Depth) DATE 16/6/77

VALID TEST : ~~XXX~~/No

FIRING METHOD _____ CHOKE SIZES _____

TIMES : Tool Set _____ Tool Open _____ Min. Open _____ Full After _____

Shaped Charge Shot: Yes/No at _____

Segregator Open _____ Mins. Open _____ Full After _____

Tool Closed _____ Tool Off _____

MUD DATA :

Rmf _____ @ _____ ^{o}F, Equiv. Cl^{-} _____ ppm (Resistivity)

Cl^{-} _____ ppm $NO^{-}3$ _____ ppm (Titration)

SAMPLE TAKEN AT END OF LAST CIRCULATION

RECOVERY - MAIN CHAMBER

_____ p.s.i. SURFACE PRESSURE _____ cc WATER

_____ cft. GAS _____ cc MUD

_____ cc. OIL _____ cc SAND

PROPERTIES - MAIN CHAMBER

GAS	C_1	C_2	C_3	C_4	C_5	H_2S

OIL _____ ^{o}API @ _____ ^{o}F; Pour Point _____ ^{o}F

_____ Colour; _____ Fluorescent Colour

_____ G.O.R.

WATER Rrf _____ @ _____ ^{o}F, Equiv. Cl^{-} _____ ppm (Resistivity)

Cl^{-} _____ ppm NO_3^{-} _____ ppm (Titration)

PRESSURES - MAIN CHAMBER

	Schlumberger	Amerada	Agnew _____ Amerada _____	Hewlett Packard*
Sampling (psi)				
Final Shut-in (psi)				
Hydrostatic (psi)				

Sampling Time (Min) _____

Shut-in Time (Min) _____

(*Corrected for Atmospheric pressure)

TEMPERATURES : (max recorded) _____ ^{o}F, _____ ^{o}F

MAX. DEPTH TOOL REACHED: _____ Ft.

TIME SINCE CIRCULATION : _____ Hrs.

REMARKS : BLOCKED

R.F.T. RECORD

GEOLOGIST MORTON

WELL: KINGFISH-7 R.F.T. No. 10 @ 7653.5'ft. (G.R. Depth) DATE 16/6/77

VALID TEST : ~~Yes~~/No

FIRING METHOD _____ CHOKE SIZES _____

TIMES : Tool Set 11:02:46 Tool Open _____ Min. Open _____ Full After _____

Shaped Charge Shot: Yes/No at _____

Segregator Open _____ Mins. Open _____ Full After _____

Tool Closed _____ Tool Off _____

MUD DATA :

Rmf _____ @ _____ ^{o}F, Equiv. Cl^- _____ ppm (Resistivity)

Cl^- _____ ppm NO^-3 _____ ppm (Titration)

SAMPLE TAKEN AT END OF LAST CIRCULATION

RECOVERY - MAIN CHAMBER

_____ p.s.i. SURFACE PRESSURE _____ cc WATER

_____ cft. GAS _____ cc MUD

_____ cc. OIL _____ cc SAND

PROPERTIES - MAIN CHAMBER

GAS	C_1	C_2	C_3	C_4	C_5	H_2S

OIL _____ ^{o}API @ _____ ^{o}F; Pour Point _____ ^{o}F

_____ Colour; _____ Fluorescent Colour

_____ G.O.R.

WATER Rrf _____ @ _____ ^{o}F, Equiv. Cl^- _____ ppm (Resistivity)

Cl^- _____ ppm NO_3^- _____ ppm (Titration)

PRESSURES - MAIN CHAMBER

	Schlumberger	Amerada	Agnew _____ Amerada _____	Hewlett Packard*
Sampling (psi)				
Final Shut-in (psi)				
Hydrostatic (psi)				

Sampling Time (Min) _____

Shut-in Time (Min) _____

(*Corrected for Atmospheric pressure)

TEMPERATURES : (max recorded) _____ ^{o}F, _____ ^{o}F

MAX. DEPTH TOOL REACHED: _____ Ft.

TIME SINCE CIRCULATION : _____ Hrs.

REMARKS : BLOCKED

R.F.T. RECORD

GEOLOGIST MORTON

WELL: KINGFISH-7 R.F.T. No. 11 @ 7652 ft. (G.R. Depth) DATE 16/6/77

VALID TEST : XXX/No

FIRING METHOD _____ CHOKE SIZES _____

TIMES : Tool Set _____ Tool Open _____ Min. Open _____ Full After _____

Shaped Charge Shot: Yes/No at _____

Segregator Open _____ Mins. Open _____ Full After _____

Tool Closed _____ Tool Off _____

MUD DATA :

Rmf _____ @ _____ ^{o}F, Equiv. Cl^{-} _____ ppm (Resistivity)

Cl^{-} _____ ppm $NO^{-}3$ _____ ppm (Titration)

SAMPLE TAKEN AT END OF LAST CIRCULATION

RECOVERY - MAIN CHAMBER

_____ p.s.i. SURFACE PRESSURE _____ cc WATER

_____ cft. GAS _____ cc MUD

_____ cc. OIL _____ cc SAND

PROPERTIES - MAIN CHAMBER

GAS	C_1	C_2	C_3	C_4	C_5	H_2S

OIL _____ ^{o}API @ _____ ^{o}F; Pour Point _____ ^{o}F

_____ Colour; _____ Fluorescent Colour

_____ G.O.R.

WATER Rrf _____ @ _____ ^{o}F, Equiv. Cl^{-} _____ ppm (Resistivity)

Cl^{-} _____ ppm NO_3^{-} _____ ppm (Titration)

PRESSURES - MAIN CHAMBER

	Schlumberger	Amerada	Agnew _____ Amerada _____	Hewlett Packard*
Sampling (psi)				
Final Shut-in (psi)				
Hydrostatic (psi)				
Sampling Time (Min)				
Shut-in Time (Min)				

(*Corrected for Atmospheric pressure)

TEMPERATURES : (max recorded) _____ ^{o}F, _____ ^{o}F

MAX. DEPTH TOOL REACHED: _____ Ft.

TIME SINCE CIRCULATION : _____ Hrs.

REMARKS : BLOCKED

Enclosures

PE902257

This is an enclosure indicator page.
The enclosure PE902257 is enclosed within the container PE902256 at this location in this document.

The enclosure PE902257 has the following characteristics:

ITEM_BARCODE	= PE902257
CONTAINER_BARCODE	= PE902256
NAME	= West & South Kingfish True Velocity to Low Cycle Latrobe
BASIN	= GIPPSLAND
PERMIT	= VIC/L8
TYPE	= SEISMIC
SUBTYPE	= VELOCITY_CNTR
DESCRIPTION	= West & South Kingfish True Velocity to Low Cycle Latrobe, plate 1, (enclosure from WCR) for Kingfish-7
REMARKS	=
DATE_CREATED	= 31/08/1977
DATE_RECEIVED	=
W_NO	= W690
WELL_NAME	= Kingfish-7
CONTRACTOR	= ESSO
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE601421

This is an enclosure indicator page.
The enclosure PE601421 is enclosed within the container PE902256 at this location in this document.

The enclosure PE601421 has the following characteristics:

ITEM_BARCODE	= PE601421
CONTAINER_BARCODE	= PE902256
NAME	= Structure Map Low Cycle Latrobe & High Cycle Latrobe
BASIN	= GIPPSLAND
PERMIT	= VIC/L8
TYPE	= SEISMIC
SUBTYPE	= HRZN_CONTR_MAP
DESCRIPTION	= Structure Map Low Cycle Latrobe & High Cycle Latrobe, plate 2, (enclosure from WCR) for Kingfish-7
REMARKS	=
DATE_CREATED	= 31/08/77
DATE_RECEIVED	=
W_NO	= W690
WELL_NAME	= Kingfish-7
CONTRACTOR	= ESSO
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE902258

This is an enclosure indicator page.
The enclosure PE902258 is enclosed within the container PE902256 at this location in this document.

The enclosure PE902258 has the following characteristics:

ITEM_BARCODE	= PE902258
CONTAINER_BARCODE	= PE902256
NAME	= Structure Map on Top of M-1.3 Clean Sand
BASIN	= GIPPSLAND
PERMIT	= VIC/L8
TYPE	= SEISMIC
SUBTYPE	= HRZN_CONTR_MAP
DESCRIPTION	= Structure Map on Top of M-1.3 Clean Sand, plate 4, (enclosure from WCR) for Kingfish-7
REMARKS	=
DATE_CREATED	= 30/11/1977
DATE_RECEIVED	=
W_NO	= W690
WELL_NAME	= Kingfish-7
CONTRACTOR	= ESSO
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE902259

This is an enclosure indicator page.
The enclosure PE902259 is enclosed within the container PE902256 at this location in this document.

The enclosure PE902259 has the following characteristics:

ITEM_BARCODE	= PE902259
CONTAINER_BARCODE	= PE902256
NAME	= Structure Map on top of P asperopolus Sand
BASIN	= GIPPSLAND
PERMIT	= VIC/L8
TYPE	= SEISMIC
SUBTYPE	= HRZN_CONTR_MAP
DESCRIPTION	= Structure Map on top of P asperopolus Sand, plate 3, (enclosure from WCR) for Kingfish-7
REMARKS	=
DATE_CREATED	= 30/11/1977
DATE_RECEIVED	=
W_NO	= W690
WELL_NAME	= Kingfish-7
CONTRACTOR	= ESSO
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE902260

This is an enclosure indicator page.
The enclosure PE902260 is enclosed within the container PE902256 at this location in this document.

The enclosure PE902260 has the following characteristics:

ITEM_BARCODE	= PE902260
CONTAINER_BARCODE	= PE902256
NAME	= Structural Cross Section A-A'
BASIN	= GIPPSLAND
PERMIT	= VIC/L8
TYPE	= WELL
SUBTYPE	= CROSS_SECTION
DESCRIPTION	= Structural Cross Section A-A', plate 5, (enclosure from WCR) for Kingfish-7
REMARKS	=
DATE_CREATED	= 31/07/1977
DATE_RECEIVED	=
W_NO	= W690
WELL_NAME	= Kingfish-7
CONTRACTOR	= ESSO
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE902262

This is an enclosure indicator page.
The enclosure PE902262 is enclosed within the container PE902256 at this location in this document.

The enclosure PE902262 has the following characteristics:

ITEM_BARCODE	= PE902262
CONTAINER_BARCODE	= PE902256
NAME	= Sonic Calibration Curve
BASIN	= GIPPSLAND
PERMIT	= VIC/L8
TYPE	= WELL
SUBTYPE	= VELOCITY_CHART
DESCRIPTION	= Sonic Calibration Curve, plate 7, (enclosure from WCR) for Kingfish-7
REMARKS	=
DATE_CREATED	= 08/07/1977
DATE_RECEIVED	=
W_NO	= W690
WELL_NAME	= Kingfish-7
CONTRACTOR	= ESSO
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE902261

This is an enclosure indicator page.
The enclosure PE902261 is enclosed within the container PE902256 at this location in this document.

The enclosure PE902261 has the following characteristics:

ITEM_BARCODE	= PE902261
CONTAINER_BARCODE	= PE902256
NAME	= Time Depth Curve
BASIN	= GIPPSLAND
PERMIT	= VIC/L8
TYPE	= WELL
SUBTYPE	= VELOCITY_CHART
DESCRIPTION	= Time Depth Curve, plate 6, (enclosure from WCR) for Kingfish-7
REMARKS	=
DATE_CREATED	= 11/06/1977
DATE_RECEIVED	=
W_NO	= W690
WELL_NAME	= Kingfish-7
CONTRACTOR	= ESSO
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE601422

This is an enclosure indicator page.
The enclosure PE601422 is enclosed within the container PE902256 at this location in this document.

The enclosure PE601422 has the following characteristics:

ITEM_BARCODE	= PE601422
CONTAINER_BARCODE	= PE902256
NAME	= Well Completion Log
BASIN	= GIPPSLAND
PERMIT	= VIC/L7
TYPE	= WELL
SUBTYPE	= COMPLETION_LOG
DESCRIPTION	= Well Completion Log (enclosure from WCR) for Kingfish-7
REMARKS	=
DATE_CREATED	= 10/06/1977
DATE_RECEIVED	=
W_NO	= W690
WELL_NAME	= Kingfish-7
CONTRACTOR	= ESSO
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)