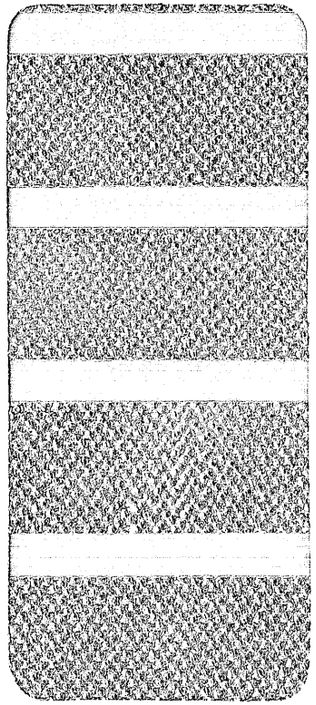
W916. EAST HALIBUT-1. VOL 1.



WELL COMPLETION REPORT

EAST HALIBUT-1

VOLUME 1

GIPPSLAND BASIN
VICTORIA

COMPILED BY : **A.B. THOMSON**

JUNE, 1987

ESSO AUSTRALIA LIMITED

EAST HALIBUT-1

WELL COMPLETION REPORT

VOLUME 1

BASIC DATA

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ESSO AUSTRALIA LTD

COMPLETION REPORT - WELL DATA RECORD

WELL	:	East Halibut-1
LOCATION	:	Latitude : 38° 24' 34.497" S Longitude : 148° 20' 58.538" E X = 617,831.62m E Y = 5,747,863.39m N Map Projection: ANS, UTM; ZONE 55 AMG; CM147° E Geographical Location: Bass Strait Victoria Field: Halibut
PERMIT	:	VIC/L5
ELEVATION	:	21m KB
WATER DEPTH	:	85m
TOTAL DEPTH	:	2721m KB
PLUG BACK TYPE	:	Bridge Plug
REASONS FOR PLUGGING BACK	:	Plugged and abandoned.
MOVE IN	:	0600 hrs September 5, 1985
SPUDDED	:	1030 hrs September 7, 1985
REACHED T.D.	:	September 24, 1985
RIG RELEASED	:	1615 hrs September 30, 1985
OPERATOR	:	Esso Exploration and Production Australia Inc.
LICENCEES	:	BHP Petroleum Pty Ltd./Esso Exploration and Production Australia Inc.
ESSO INTEREST	:	50%
OTHER INTEREST	:	50% BHP Petroleum Pty. Ltd.
CONTRACTOR	:	South Seas Drilling Company
RIG NAME	:	Southern Cross
EQUIPMENT TYPE	:	Semi submersible
TOTAL RIG DAYS	:	26 days
DRILLING AFE NO.	:	05-235010
TYPE COMPLETION	:	Plugged and abandoned
WELL CLASSIFICATION	:	Before Drilling Delineation well After Drilling Plug and abandon with oil shows

OPERATIONS SUMMARY

EAST HALIBUT-1

Moving/Mooring

The Southern Cross departed the Whiptail-1/1A location at 0445 hours September 4, 1985 and arrived in the vicinity of the East Halibut-1 location at 2400 hours September 4, 1985. Due to the proximity of the Halibut platform and Mackerel/Halibut fuel gas pipeline, mooring operations could not be undertaken at night. The well site was circled until daylight. The 56 nautical mile tow was completed in 26.5 hours at an average speed of 2.1 knots, using the Lady Sally as the towboat.

Anchor No. 1 was dropped by the rig on approach to the location at 0715 hours September 5, 1985 and the remaining anchors were run by the Swan Tide, Lady Vera and Lady Sally.

Due to the proximity of the restricted zone adjacent to the Mackerel/Halibut pipeline, an RCV deployed from the Flinders Tide monitored the setting of Anchors No. 3, 4, 5 and 6. All anchors were pretensioned to 200 kips. Final rig location was:

Latitude: 38° 24' 34.50"S
Longitude: 148° 20' 58.54"E
X = 617,832mE
Y = 5,747,863mN

AMG Zone 55, Universal Transverse Mercator Projection,
Australian Geodetic Datum.

The rig was located 0.75m at 058° from the called location and 133 kms at 157° from Lakes Entrance.

Drill 26" Hole for 20" Casing

The drilling template was run and landed at a seafloor depth of 106m RKB. Operations were suspended when the crews left the rig to attend a memorial service for Bruce Stewart, a derrickman who was fatally injured on Whiptail-1/1A.

The 26" hole was drilled to 249m using seawater and high viscosity gel slugs to clean the hole. The hole was then displaced with high viscosity gel mud and a wiper trip was made to the seafloor.

The 18-3/4" wellhead/pile joint and 20" casing were run and cemented with the casing shoe at 231m. The BOP stack and riser were run and the casing and collet connector were tested to 500 psi.

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

The cement and casing shoe were drilled out and 17-1/2" hole was drilled to 838m using a seawater/gel mud system. A wiper trip was made to the 20" casing shoe prior to running a sonic log.

The 13-3/8" casing was run and cemented with the shoe at 823m. The plug was not bumped but the floats held. A Cameron 13-3/8" Weight Set seal assembly was set and pressure tested to 200/500 psi. The BOP stack and C&K manifold were then pressure tested.

Drill 12-1/4" Hole to 2721m

The cement and float collar were drilled out to 817m and the casing was tested against the pipe rams to 1500 psi. The remaining cement and float shoe were drilled and after cleaning out the rat hole, new hole was drilled to 844m. A Phase II PIT was run to a leak-off of 1250 psi, indicating an integrity of 17.5 ppg EMW at the 13-3/8" casing shoe.

The 12-1/4" hole was drilled to 1385m before the drillstring was hung-off due to a weather alert.

After the alert was lifted, drilling continued to 1464m where a leak occurred in the swivel gooseneck. A small washout was found in the washpipe O-ring. At the same time, a small mud leak was also observed at the ball joint/riser connector. The divers were used to check the make up of the riser bolts. All bolts on the riser/ball joint connector were retorqued to 1000ft/lbs. The remaining riser joints were checked and only one bolt on joint No. 2 required retorquing. The joint/riser connector was also retorqued at the conclusion of logging operations.

Drilling resumed to 1486m where a 600 psi pump pressure loss was observed over a 90 minute period without any significant alteration to the pump strokes. While checking surface equipment for leaks 65 kips of hook load were lost. The drillstring was pulled and found parted at the crossover between the HWDP and the 8" DC's.

An 11-3/4" overshot dressed with a cut lip guide and a 6-1/2" basket grapple was run and the top of the fish (TOF) was located at 1313m. The overshot was worked over the fish, circulation established and the fish was picked up without any overpull. The fishing string was laid down and drilling continued to 1600m where a 400 psi pressure loss occurred. The drillstring was pulled wet and a crack was found in the slip area of a joint of Grade "G" drillpipe.

After drilling to 1607m, a 450 psi pressure loss occurred. The string was pulled and a circumferential crack was found in the box of a joint of HWDP. Another HWDP joint had excessive wear in the body. Both joints were laid down.

Drilling continued to 1616m where some reaming was required to eliminated a tight section in the hole. Drilling resumed to 2236m where the hole packed-off.

The drillstring was pulled to 1795m with overpull averaging 20 to 30 kips but with peaks of 100 kips at 2236m to 2050m. The string could not be rotated until the bit was pulled to 1892m. Circulation was regained at 1795m. After circulating and conditioning the mud and flushing the riser, the hole was washed and reamed back to bottom. The hole was circulated clean and the riser flushed again. Tight hole, which required 50 to 70 kips to pull through, was encountered at 1786m to 1679m and 1573m to 1544m while pulling the bit.

Before a stack test, an unsuccessful attempt was made to recover the wear bushing with overpull up to 220 kips. The wear bushing was freed by jarring with 150 kips overpull.

A Cameron 18-3/4" x 13-3/8" weight set seal assembly running and testing tool was then run. After pressuring up to 5000 psi, the pressure bled back to 0 psi instantaneously. The test tool was pulled and found parted at the welded and threaded connection between the cap and the mandrel.

A gauge ring located the top of the fish at 103.7m. An 11-3/4" overshot dressed with a 5" basket grapple recovered the fish. The stack was tested and after working through tight hole at 1872m, new hole was made to 2494m. An open hole PIT was carried out to leakoff at 1440 psi, indicating an EMW of 19.2 ppg at the 13-3/8" casing shoe. After changing out the bit, new hole was drilled to the FTD of 2721m. TD logs, which included 2 RFT's and 1 CST run, were run prior to plug and abandonment.

PLUG AND ABANDONMENT

A cementing diverter tool on 5" drillpipe set Plug No. 1 at 2500m to 2332m to isolate the Top of Latrobe from the Lakes Entrance Formation. Plug No. 2 was set across the 13-3/8" casing shoe from 860m to 770m. After making a gauge ring and junk basket run, the plug was pressure tested to 1500 psi.

A 13-3/8" EZSV cement retainer was set at 725m, and a Pengo cutter was used to cut the 13-3/8" casing at 218m. A casing spear recovered the casing.

Plug No. 3 was set from 255m to 135m. After pulling the stack. The 20" casing was explosively cut at 117m using a 3.9 kg Anzomex shaped charge. The pile joint assembly, 4 post guide base and temporary guide base were recovered with the 18-3/4" wellhead running tool.

PULL ANCHORS

Recovery of Anchors No. 3, 4, 5 and 6 was motioned by the RCV deployed from the Flinders Tide since the anchors were near the restricted zone adjacent to the Mackerel/Halibut pipeline. All anchors were recovered in 15.25 hours by the workboats Torrens Tide and Swan Tide.

The rig departed the East Halibut-1 location enroute to the Drummer-1 location at 1615 hours on September 30, 1985, under tow by the Lady Sally.

EAST HALIBUT 1 CASING DATA

CSG O.D. in.	CSG WT. ppf	CSG GRADE	CSG CONN.	CSG LGTH mtrs.	CENTRALIZER POSITION.	SHOE DPTH mRKB	REMARKS
20	94	X-52	JV	13.55		231	Float Shoe Jnt.
20	94	X-52	JV	89.05	Across Collars on First Five Jnts		7 Jnts.
20	129	X-52	JV/CC	13.00			Crossover Jnt.
24	610		CC	11.05			Pile Jnt Ass'y No. EP5-1.
13-3/8	54.5	K-55	Butt.	12.30		823	Float Shoe Jnt.
13-3/8	54.5	K-55	Butt.	12.10			Float Collar Jnt.
13-3/8	54.5	K-55	Butt.	693.80	Across Collars on First Six Jnts		59 Jnts. Csg. Hgr. No. EHW33 Seal Assy. No. ESW33.

EAST HALIBUT 1 CEMENT DATA

CEMENT JOB TYPE	CEMENT TOP mRKB	CEMENT BTM mRKB	CEMENT ADDITIVES	CEMENT VOLUME sxs	CEMENT WEIGHT ppg	REMARKS
20" Casing.	106	160	2.2% gel w/ 175 bbls seawater	750	13.3	Lead slurry. Divers confirm cmt returns.
20" Casing.	160	231	42 bbls seawater	350	15.8	Tail slurry. Displace w/ 18 bbls . Float held.
13-3/8" Casing	301	823	125 bbls seawater	1,050	15.8	Displace w/ 330 bbls. Did not bump plug.
P&A Plug No.1	2,332	2,500	0.6 % HR6L w/48 bbls seawater	409	15.8	Displace w/133 bbls mud. Tagged w/15kips.
P&A Plug No.2	770	860	36 bbls seawater	304	15.8	Displace w/43 bbls mud. Pressure tested to 1500psi.
P&A Plug No.3	135	255	68 bbls seawater	571	15.8	Displace w/7 bbls seawater. Pressure tested to 500psi.
			Total:	3,434		

CLASS 'G' CEMENT USED ON ALL JOBS. GEL ADDITIVE IS PRE-HYDRATED.

WELL: EAST HALIBUT-1

SAMPLES, CONVENTIONAL CORES, SIDEWALL CORES

INTERVAL	TYPE
250.0 - 2721.0m	Cuttings samples - 3 sets of washed and oven-dried cuttings and 1 set of bagged and air-dried cuttings. Sampled from 250-2270 m at 10 m intervals. Sampled from 2270-2721 m at 5 m intervals.
250.0 - 2721.0m	1 set of unwashed canned samples for geochemistry, collected at 15 m intervals.
2300.0 - 2721.0m	1 set of washed and air-dried canned samples every 30 m (for fission track analysis).
2393.0 - 2711.0m	Sidewall cores: Run 1 - Shot 30, recovered 29.

WELL: EAST HALIBUT-1

WIRELINE LOGS AND SURVEYS

Type and Scale		From	To
	Suite 1		
BHC-GR	1:200 1:500	837.5	229.0m
	Suite 2		
DLTE-MSFL-GR))COMBINATION) TOOL	1:200 1:500	2720.0	823.5m
LDL-CNTH-GR)	1:200 1:500	2714.0	2350.0m
DDBHC-GR	1:200 1:500	2721	823.5m
RFT-HP	Runs 1 and 2		
RFT-GR	Runs 1 and 2		
SDT-EPT-GR	1:200 1:500	2625.0	2380.0m
WST-GR	Shot 12 levels	2720	200m
CST-GR	Shot 30 recovered 29	2711	2393m

SUMMARY OF WIRELINE FORMATION TEST PROGRAMME - EAST HALIBUT-1

TEST	SEAT	DEPTH (METRES) K.B.	RECOVERY (LITRES) CHAMBER	OIL	COND.	GAS	FORMATION WATER	MUD FILTRATE	HEWLETT-PACKARD FORMATION PRESSURE MPaa	Psia	HEWLETT-PACKARD HYDROSTATIC PRESSURE MPaa	Psia	REMARKS
			Litres	Litres	Litres	m^3	Litres	Litres					
1	1	2602	Pretest						24.96	3620.1	28.51	4135.0	Valid
1	2	2535	Pretest						24.30	3524.7	27.73	4021.7	Valid
1	3	2480	Pretest						23.69	3436.4	27.11	3931.4	Valid
1	4	2467	Pretest						23.56	3416.7	26.97	3911.4	Valid
1	5	2425	Pretest						23.13	3354.9	26.52	3846.0	Valid
1	6	2400	Pretest						22.89	3319.3	26.25	3807.4	Valid
1	7	2397	Pretest						22.87	3316.4	26.24	3806.1	Valid
2	8	2464.5	22.7	-	-	-	-		23.55	3416.3	26.97	3911.6	Chamber opened, tight. No sample.
2	9	2464.0	22.7	-	-	-	-	-	23.55	3416.3	26.97	3911.3	Chamber opened, tight. No sample.
2	10	2465.2	22.7	-	-	-	-	18.5	23.54	3414.3	26.95	3909.0	Chamber opened, closed after 66 min, tight.
			10.4	-	-	-	-	-					Chamber not opened. No sample.

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TEMPERATURE RECORD - EAST HALIBUT-1

LOGGING RUN	THERMOMETER DEPTH (m)	MAX. RECORDED TEMPERATURE (C°)	CIRCULATION TIME (t_k) (hours)	TIME AFTER CIRCULATION STOPPED (t)	HORNER TEMPERATURE (C°)	GEOTHERMAL GRADIENT (C°/km)
Suite 1						
BHC-GR	832.0m	37.0	1.0	4.0		
Suite 2						
DLTE-MSFL-SP-LDL-CNTH-GR (Combination Tool)	2720.0	82.2	1.0	5.92	105.6	36.61
DDBHC-GR	2721.5	92.2	1.0	10.75		
SDT-EPT-GR	2625.0	100.0	1.0	26.00		

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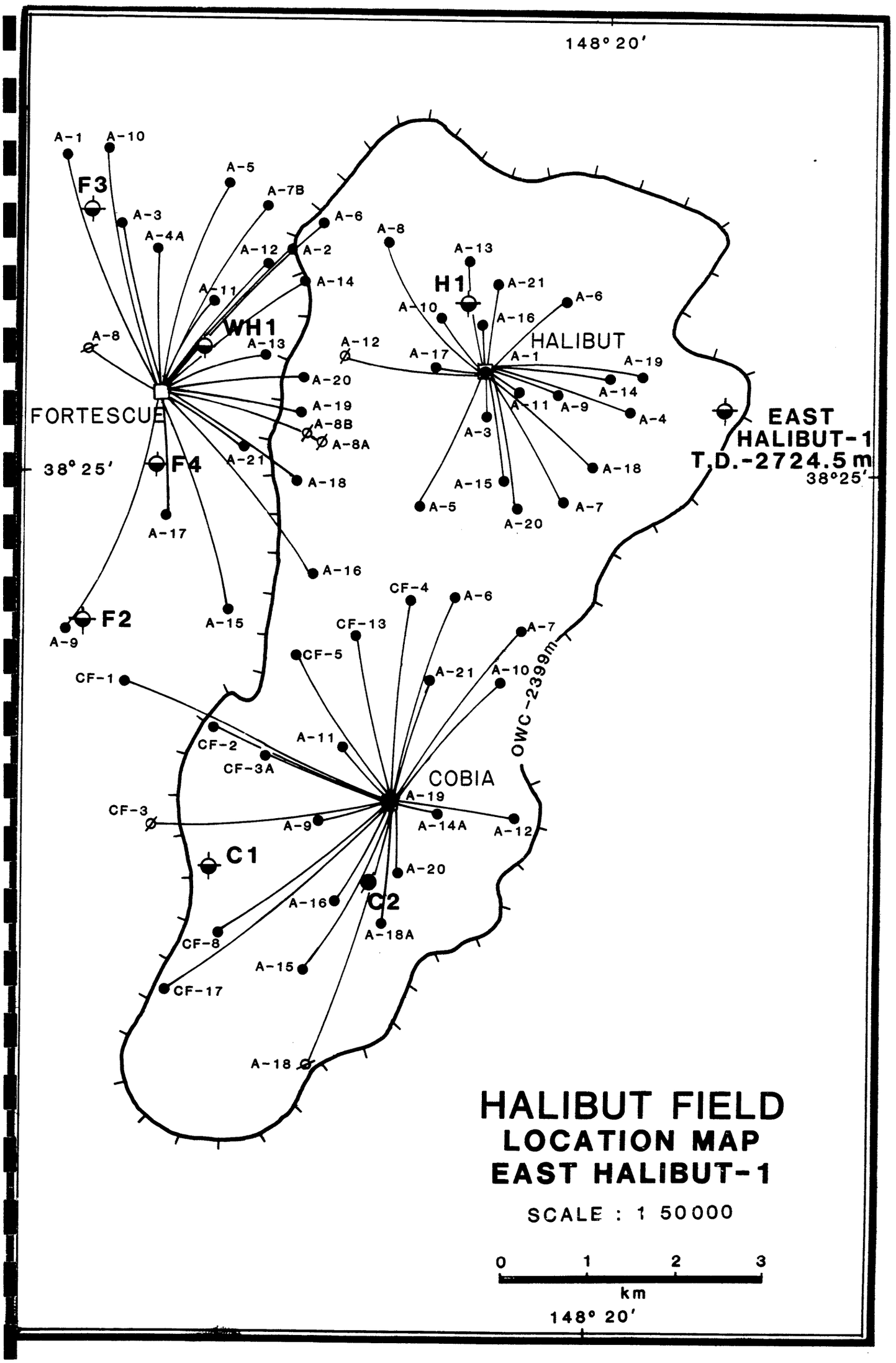
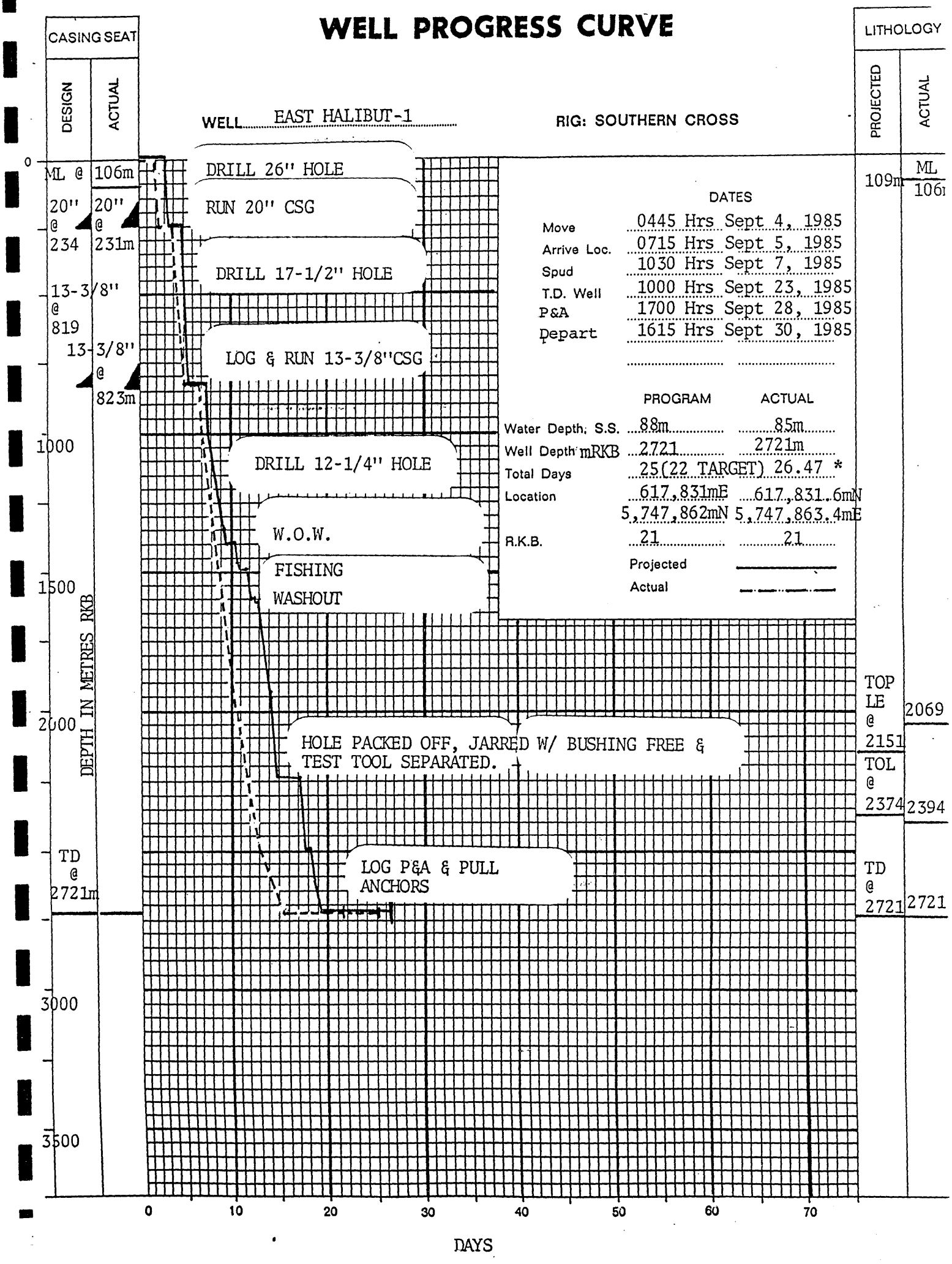
FIGURES


148° 20'
A-1
A-10
F3
A-5
A-7B
A-3
A-6
A-4A
A-12
A-2
A-14
A-11
WH1
A-8
A-13
A-20
A-19
A-8B
A-8A
FORTESCUE
38° 25'
F4
A-21
A-18
A-17
A-16
A-15
F2
A-9
A-8
A-13
H1
A-21
A-6
A-10
A-16
A-12
A-17
HALIBUT
A-1
A-19
A-14
A-11
A-9
A-4
A-3
A-18
A-15
A-5
A-20
A-7
EAST
HALIBUT-1
T.D.-2724.5 m
38°25'
CF-4
A-6
CF-13
A-7
CF-5
A-21
A-10
OWC -2399m
CF-1
A-11
CF-2
CF-3A
COBIA
A-19
CF-3
A-9
A-14A
A-12
C1
A-20
A-16
C2
A-18A
CF-8
A-15
CF-17
A-18
HALIBUT FIELD
LOCATION MAP
EAST HALIBUT-1
SCALE : 1 50000
0
1
2
3
km
148° 20'

WELL PROGRESS CURVE

WELL EAST HALIBUT-1 RIG: SOUTHERN CROSS



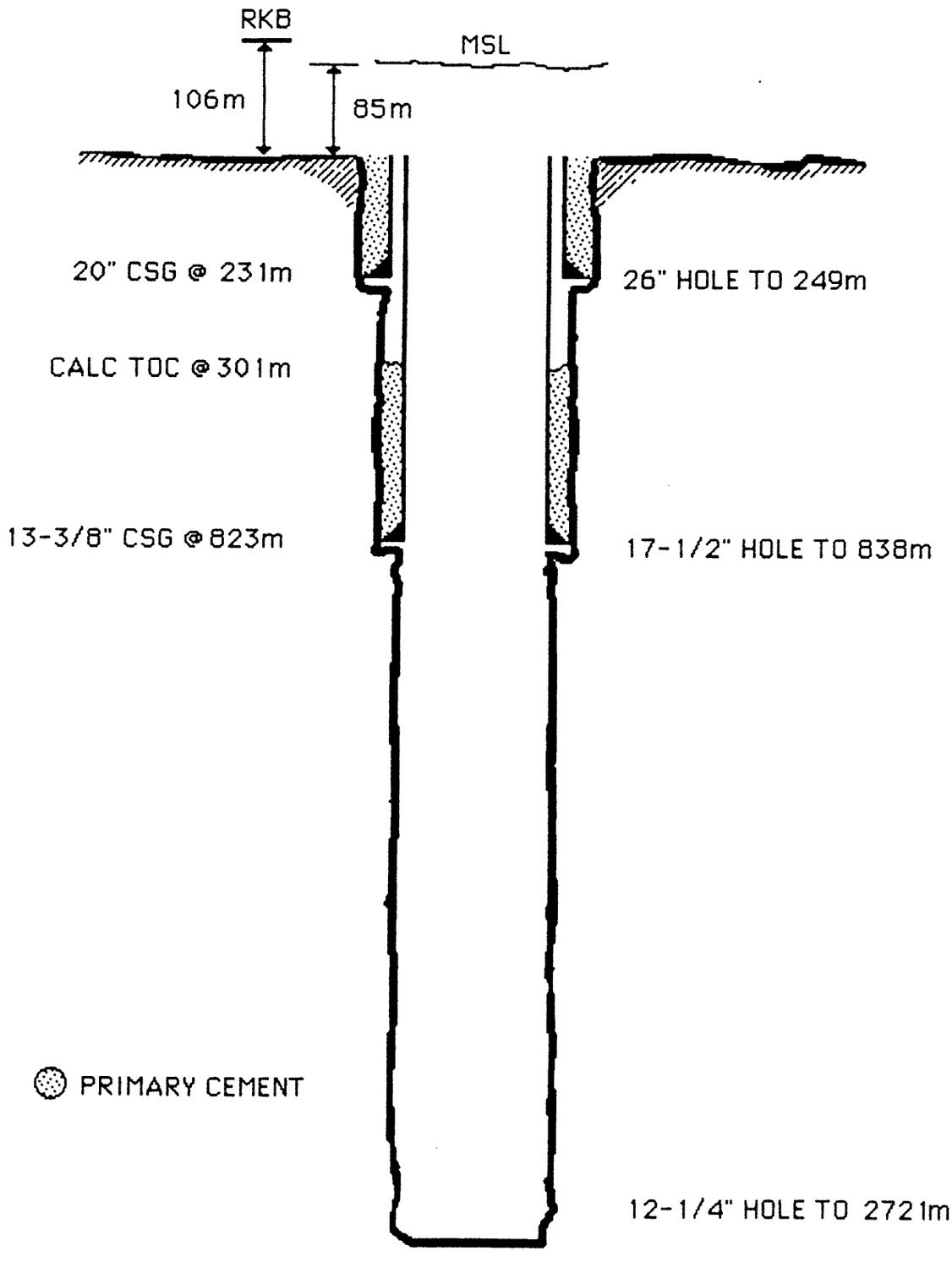
DATES	
Move	0445 Hrs Sept 4, 1985
Arrive Loc.	0715 Hrs Sept 5, 1985
Spud	1030 Hrs Sept 7, 1985
T.D. Well	1000 Hrs Sept 23, 1985
P&A	1700 Hrs Sept 28, 1985
Depart	1615 Hrs Sept 30, 1985

	PROGRAM	ACTUAL
Water Depth: S.S.	88m	85m
Well Depth mRKB	2721	2721m
Total Days	25(22 TARGET)	26.47 *
Location	617,831mE 5,747,862mN	617,831.6mN 5,747,863.4mE
R.K.B.	21	21

Projected ———

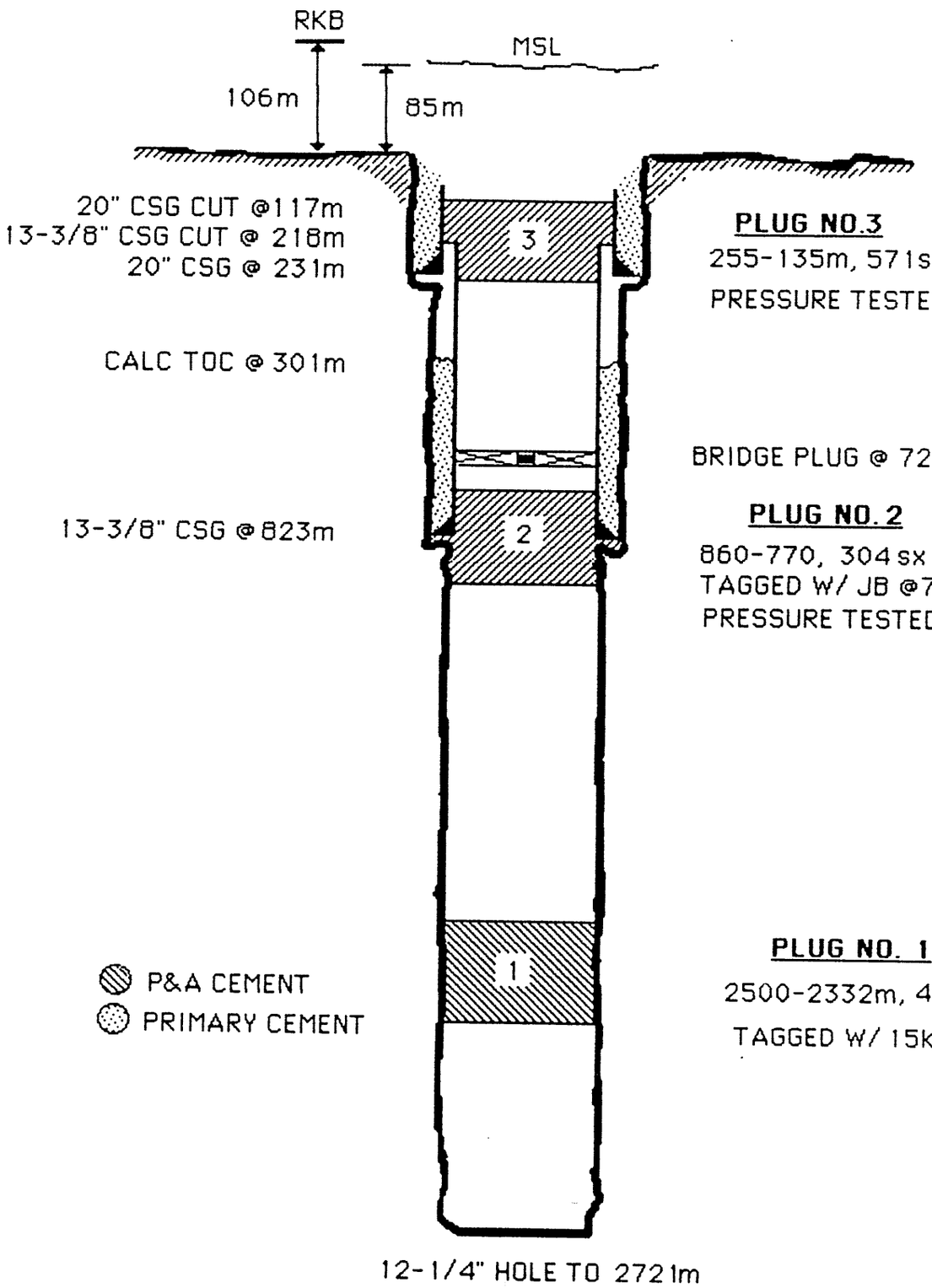
Actual —·—·—

EAST HALIBUT 1
WELLBORE SCHEMATIC

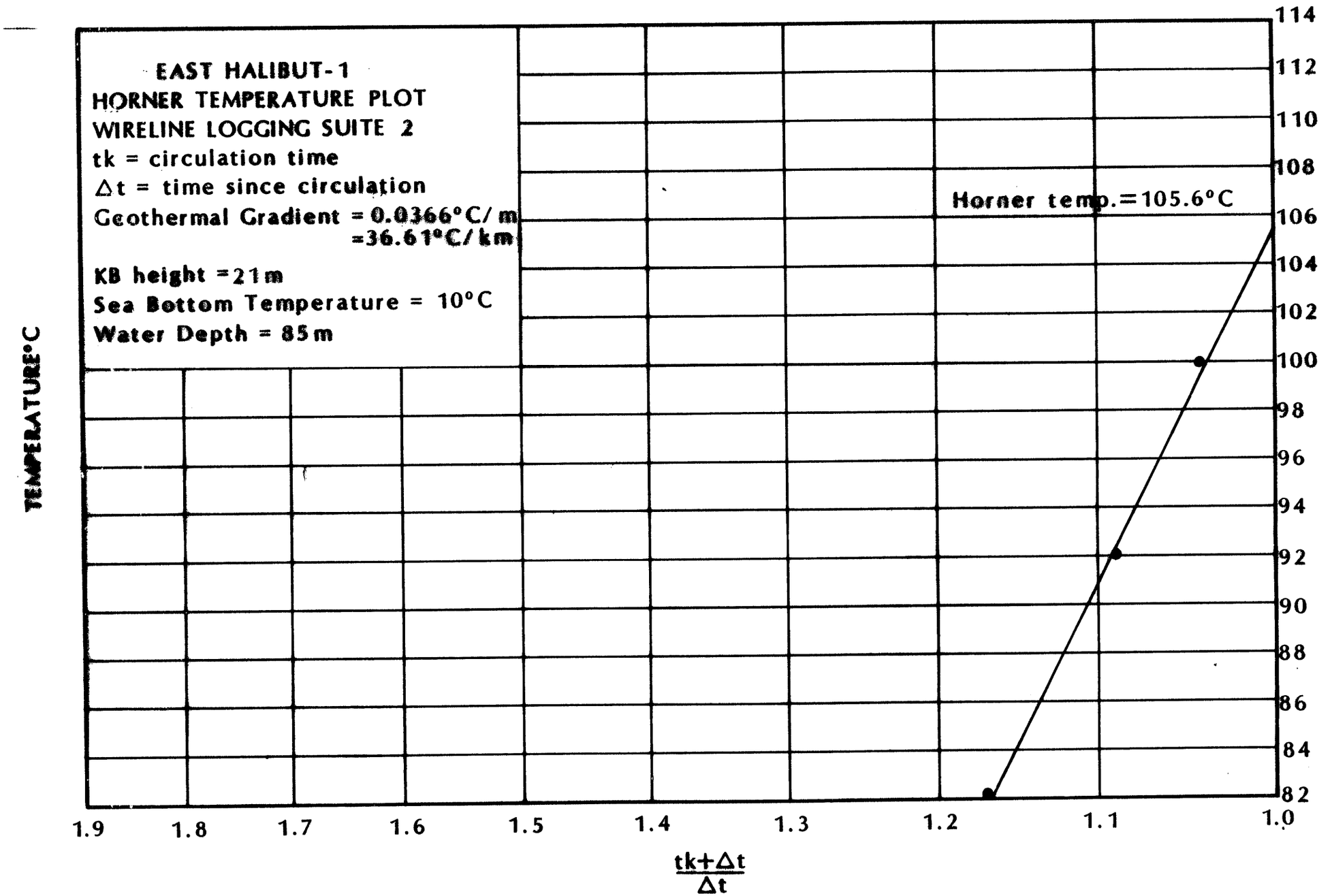


ALL DEPTHS ARE MEASURED FROM RKB

EAST HALIBUT 1
ABANDONMENT SCHEMATIC



ALL DEPTHS ARE MEASURED FROM RKB


EAST HALIBUT-1
HORNER TEMPERATURE PLOT
WIRELINE LOGGING SUITE 2
tk = circulation time
Δt = time since circulation
Geothermal Gradient = 0.0366°C/m
=36.61°C/km
KB height =21m
Sea Bottom Temperature = 10°C
Water Depth = 85m
Horner temp.=105.6°C
TEMPERATURE°C
114
112
110
108
106
104
102
100
98
96
94
92
90
88
86
84
82
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1.0
tk+Δt / Δt

APPENDIX 1

EAST HALIBUT-1

Lithology Descriptions

Depth	%	Descriptions
250-260m	50	CEMENT.
	30	FOSSILS: Shell, Coral, Bryozoa, Forams, Bivalves, Translucent white, cream, grey, brittle to moderately hard.
	5-10	QUARTZ: Sandstone, clear to white, well rounded, well sorted.
	10-15	LIMESTONE: Calcarenite, sparry, cream, white, grey brown, yellow, hard to moderately hard, brittle, fine grained, calcareous cement.
260-270m	10	CEMENT.
	30	FOSSILS Shell fragments - as above.
	60	LIMESTONE: Calcarenite, light grey, cream, brown, friable to moderately hard, fine grained, moderately well sorted. Calcite, sparite, light grey, cream, white, hard, blocky.
	Trace	QUARTZ SANDSTONE: As above.
270-330m	Trace	CEMENT.
	100	LIMESTONE: Predominantly calcarenite, white, cream, light grey. Friable to moderately hard, fine to very fine grains, angular to moderately rounded, moderately sorted, white calcareous fossils. As above.
	Trace	COAL: black, hard.
330-350m	100	LIMESTONE: Calcarenite, white to light grey, brown. Moderately hard to friable, very fine to fine grained, moderately sorted to poorly sorted. Grading to calcisiltite in part, including calcareous fossil fragments, bryozoa, shells.
350-360m	80	LIMESTONE: As above.
	Trace	FOSSILS: As above.
	20	SILTSTONE: Light to dark grey, friable to firm, grading into very fine grained sandstone, argillaceous cement, carbonaceous in part.
360-370m	100	LIMESTONE: Calcarenite, white to light grey, friable, fine to medium grained, moderately poorly sorted, silty, calcareous cement. As above. Shell fragments in parts.
370-390m	50	CALCILUTITE: light to medium grey, soft, very calcareous, limestone mud.
	30	CALCARENITE: As above.
	20	SILTSTONE: As above.
390-400m	30	CALCILUTITE: As above.
	70	CALCARENITE: As above.
400-430m	80	CALCILUTITE: Light to medium grey, soft, muddy, calcareous, grading into calcisiltite. Silty in part.
	20	CALCARENITE: As above.

430-440m	80	CALCILUTITE: Light to medium grey, very soft, occasionally firm, sticky, grading to Calcisiltite in parts, shell fragments, fossiliferous.
	20	CALCARENITE: predominantly medium to fine grained, light grey to grey.
440-450m	80	CALCILUTITE: As above.
	20	CALCARENITE: As above.
450-460m	60	CALCARENITE: Very fine to fine grained sandstone, well rounded, well sorted quartz grains, predominantly clear to white, in calcareous matrix, occasionally silty to arenaceous. Fossiliferous, bryozoas, shell fragments.
	40	CALCILUTITE: As above.
460-470m	80	CALCARENITE: light grey to grey, speckled, quartzose, very fine to fine, occasionally medium grained, subrounded to subangular, moderately sorted, sub spherical quartz grains, predominantly firm to occasionally moderately hard, grades to Calcisiltite. Blocky aggregates, calcareous matrix.
	20	CALCILUTITE: light grey, soft, sticky, silty in parts, poorly indurated, calcareous matrix. Fossiliferous, particularly in Calcarenite, bryozoas abundant, Forams abundant, less shell fragments etc.
470-480m	70	CALCARENITE: As above, occasionally coarse grained quartz, subrounded to subangular.
	30	CALCILUTITE: As above.
480-490m	80	CALCARENITE: As above, very fine to fine quartz grains to occasional medium, clear to dirty speckled appearance, quartzose, subrounded to subangular, moderately sorted, predominantly firm to moderately hard, abundant forams, bryozoas, cephalopod, shell fragments less common, trace pyrite.
	20	CALCILUTITE: As above.
490-500m	90	CALCARENITE: As above, fossils abundant.
	10	CALCILUTITE: As above.
500-510m	60	CALCARENITE: As above.
	40	CALCILUTITE: predominantly very soft, sticky, white to light grey, white clay matrix, calcareous, poorly indurated, trace pyrite.
510-520m	20	CALCARENITE: As above.
	80	CALCILUTITE: As above grading to Calcisiltite.
520-530m	30	CALCARENITE: As above.
	70	CALCILUTITE: As above grading to Calcisiltite.
530-540m	40	CALCARENITE: As above.
	60	CALCILUTITE: As above.
540-550m	30	CALCARENITE: As above.
	70	CALCILUTITE: As above.

550-560m	40	CALCARENITE: As above.
	60	CALCILUTITE: As above.
560-570m	60	CALCARENITE: As above.
	40	CALCILUTITE: As above.
570-580m	90	CALCARENITE: Light grey, grey, speckled, occasionally dirty brown, moderately well sorted, fine to very fine quartz aggregates, subangular to subrounded, sub spherical, firm to moderately hard, moderate induration, calcareous matrix, silty in parts, pyritic, fossils abundant, forams, bryozoas, occasional shell fragments.
	10	CALCILUTITE: light grey, white, soft, poorly indurated, white clay calcareous matrix, sticky, fossils.
580-590m	90	CALCARENITE: As above.
	10	CALCILUTITE: As above.
590-600m	90	CALCARENITE: As above.
	10	CALCILUTITE: As above.
600-610m	100	CALCARENITE: As above, white to light grey to grey to grey brown as above.
	Trace	CALCILUTITE: As above.
610-620m	100	CALCARENITE: As above.
	Trace	CALCILUTITE: As above.
620-630m	100	CALCARENITE: Light grey to grey occasionally white to grey brown, very fine to fine quartz aggregates, subangular to subrounded, moderately well sorted, firm to moderately well rounded, silty calcareous matrix, trace pyrite, fossiliferous, forams, bryozoas.
630-640m	100	CALCARENITE: As above.
640-650m	100	CALCARENITE: As above.
650-660m	100	CALCARENITE: As above.
660-670m	100	CALCARENITE: Light grey to grey, occasionally white, predominantly very fine to fine grained quartz, white to clear, subangular to subrounded, well sorted, quartz aggregates, moderately well rounded, occasionally soft, silty in parts, very calcareous matrix, trace pyrite, fossiliferous, forams, bryozoas. 20% dull yellow mineral fluorescence.
670-680m	100	CALCARENITE: As above, moderate induration.
680-690m	100	CALCARENITE: As above.
690-700m	100	CALCARENITE: As above, increasing soft white clay. 10% mineral fluorescence.

700-710m	100	CALCARENITE: As above, light grey, grey to occasional grey brown, speckled, predominantly very fine to fine grained quartz aggregates, subrounded to subangular, well sorted, firm to moderately hard, occasionally soft with white clay matrix, very calcareous, silty in parts, carbonaceous flecks in parts, trace pyrite, fossiliferous, forams, bryozoas. 20% dull yellow mineral fluorescence.
710-720m	100	CALCARENITE: As above.
720-730m	100	CALCARENITE: As above, increasing soft white clay matrix with loose quartz grains.
730-740m	100	CALCARENITE: As above.
740-750m	100	CALCARENITE: As above.
750-760m	100	CALCARENITE: As above.
	Trace	FORAMS.
	Trace	QUARTZ FRAGMENTS: milky white, granule sized, angular.
	Trace	BRYOZOANS.
760-770m	100	CALCARENITE: As above, increase in silty matrix.
770-780m	100	CALCARENITE: As above, 20% mineral fluorescence.
780-790m	70	CALCARENITE: As above.
	10	DOLOMITE: Light green grey, and light reddish brown, amorphous, extremely hard, angular cuttings.
	10	CALCISILTITE: light grey, soft to moderately hard, arenaceous inclusions.
	10	FOSSIL FRAGMENTS: bryozoans, possible colonial coral, assorted unidentifiable fragments.
	Trace	FORAMS.
	Trace	CALCITE.
790-800m	90	CALCARENITE: As above.
	10	CALCISILTITE: As above.
	Trace	FOSSIL FRAGMENTS: As above
	Trace	FORAMS.
	Trace	DOLOMITE.
	Trace	CALCITE.
800-810m	100	CALCARENITE: As above.
	Trace	CALCISILTITE: As above.
	Trace	FOSSIL FRAGMENTS: common bryozoan fragments.
	Trace	DOLOMITE.
	Trace	FORAMS.
810-820m	100	CALCARENITE: As above, very fine grained
	Trace	DOLOMITE.
	Trace	CALCISILTITE: As above.
	Trace	FORAMS.
820-830m	100	CALCARENITE: As above grades into calcisiltite.
	Trace	DOLOMITE.
	Trace	FORAMS.
	Trace	CALCISILTITE: As above.

830-838m	100	CALCARENITE: As above.
	Trace	DOLOMITE.
	Trace	FORAMS.
		POOH @ 838m for 13 3/8" casing.
838-850m	80	CEMENT.
	20	CALCARENITE: As above.
	Trace	DOLOMITE.
	Trace	FOSSIL FRAGMENTS.
	Trace	FORAMS.
850-860m	50	CALCARENITE: As above.
	40	CEMENT.
	10	DOLOMITE: As above.
	Trace	QUARTZ FRAGMENTS.
	Trace	CALCILUTITE: As above.
	Trace	FORAMS.
	Trace	CALCITE.
860-870m	50	CALCARENITE: As above.
	30	CEMENT.
	20	DOLOMITE.
	Trace	QUARTZ FRAGMENTS.
870-880m	80	SILTSTONE: Brownish grey, moderately hard, blocky to subrounded cuttings, minor carbonaceous flecks, very slightly to non calcareous.
	20	CALCARENITE: As above.
	Trace	CEMENT.
	Trace	DOLOMITE.
880-890m	40	CALCARENITE: As above.
	40	SILTSTONE: As above.
	20	DOLOMITE: As above.
890-900m	100	CALCARENITE: As above. Very fine grained.
	Trace	DOLOMITE.
900-910m	100	CALCARENITE: As above.
	Trace	CALCISILTITE: As above.
	Trace	DOLOMITE.
910-920m	50	CALCARENITE: As above.
	50	CALCISILTITE: light greyish brown, soft to hard, blocky cuttings, highly calcareous.
920-930m	100	CALCISILTITE: As above.
	Trace	CALCARENITE: As above.
	Trace	FORAMS.
	Trace	DOLOMITE.
930-940m	80	CALCISILTITE: As above.
	20	CALCILUTITE: light grey to light brown, very soft, sticky, highly calcareous.
	Trace	DOLOMITE.
	Trace	FORAMS.
940-950m	100	CALCISILTITE: As above.
	Trace	FORAMS.
950-960m	100	CALCISILTITE: As above.
	Trace	DOLOMITE.
	Trace	FORAMS.

960-970m	80	CALCISILTITE: As above.
	20	SILTSTONE: brownish grey to mid dark grey, firm to moderately hard, blocky to subrounded cuttings, carbonaceous in part, slightly to non calcareous.
	Trace	PYRITE.
	Trace	QUARTZ GRAINS.
970-980m	80	CALCISILTITE: As above.
	20	SILTSTONE: As above.
980-990m	70	CALCISILTITE: As above.
	30	SILTSTONE: As above, increasingly carbonaceous flecks.
	Trace	CALCILUTITE: As above.
990-1000m	50	CALCISILTITE: As above, gummy in part.
	50	SILTSTONE: As above.
	Trace	CALCILUTITE: As above.
1000-1010m	50	SILTSTONE: As above.
	50	CALCISILTITE: As above.
	Trace	CALCILUTITE: As above; or muddy limestone.
1010-1020m	90	CALCISILTITE: As above.
	10	SILTSTONE: As above.
	Trace	CALCITE.
1020-1030m	100	CALCISILTITE: As above.
	Trace	SILTSTONE: As above.
1030-1040m	100	CALCISILTITE: As above.
1040-1050m	100	CALCISILTITE: predominantly light grey to light grey-brown, soft to moderately hard, blocky to rounded cuttings, highly calcareous, carbonaceous in part.
1050-1060m	90	CALCISILTITE: As above.
	10	CALCILUTITE: light grey, sticky, very soft, calcareous.
	Trace	FOSSILIFEROUS FRAGMENTS.
1060-1070m	90	CALCISILTITE: As above.
	10	CALCILUTITE: As above.
	Trace	FORAMS.
1070-1080m	100	CALCISILTITE: As above.
	Trace	CALCISILTITE: As above.
	Trace	FORAMS.
1080-1090m	100	CALCISILTITE: As above.
	Trace	CALCISILTITE: As above.
1090-1100m	100	CALCISILTITE: light grey, grey to grey-brown, blocky, carbonaceous in parts, calcareous, fossiliferous.
	Trace	CALCILUTITE: As above.
1100-1110m	100%	CALCISILTITE: light grey, grey, grey-brown, blocky, grading to very fine Calcarenite in parts, carbonaceous in parts, soft to moderately hard, very calcareous, fossiliferous, forams.
	Trace	CALCILUTITE: light grey to white, very soft, silty in parts, forams.

1110-1120m	100	CALCISILTITE: As above.
	Trace	CALCILUTITE: As above.
1120-1130m	100	CALCISILTITE: As above.
	Trace	CALCILUTITE: As above.
1130-1140m	100	CALCISILTITE: As above.
	Trace	CALCILUTITE: As above.
1140-1150m	100	CALCISILTITE: light grey, grey to grey-brown in parts, blocky cuttings, moderately hard, occasionally soft with carbonaceous inclusions in parts, dolomitic in parts, fossiliferous, with forams.
	Trace	CALCILUTITE: As above.
1150-1160m	90	CALCISILTITE: As above, *dolomitic in parts, trace pyrite in parts.
	10	CALCILUTITE: light grey, very soft, silty in parts, dirty white clay matrix - very calcareous.
		* Note: dolomite is buff to light brown/grey, arenaceous, brittle to hard, with angular-blocky cuttings.
1160-1170m	90	CALCILUTITE: As above, dolomitic, trace pyrite, carbonaceous, sandy in parts grading to Calcarenite in parts.
	10	CALCARENITE: light grey, dirty white, very fine grained quartz aggregates, moderately hard to hard, blocky.
	Trace	CALCISILTITE: As above.
	Trace	DOLOMITE: As above.
1170-1180m	90	CALCISILTITE: As above, crystalline appearance, slightly dolomitic, Calcimetry indicates 8% dolomite.
	10	CALCARENITE: As above.
	Trace	DOLOMITE: As above.
	Trace	CALCISILTITE: As above.
1180-1190m	100	CALCISILTITE: light brown, moderately hard to very hard, sparry, decreasing micrite content, highly calcareous, occasionally dolomitic, (biosparite).
	Trace	CALCISILTITE: light grey, very soft.
1190-1200m	100	CALCISILTITE: As above, decreasing dolomitic content (about 4%).
	Trace	FORAMS: As above.
	Trace	CALCISILTITE: As above.
1200-1210m	80	CALCISILTITE: As above.
	20	CALCILUTITE: As above, sticky.
	Trace	DOLOMITE: As above.
	Trace	FORAMS: As above.
1210-1220m	70	CALCISILTITE: As above, dominantly biosparite.
	20	SILTSTONE: Dark grey brown, soft to moderately hard, occasional carbonaceous flecks, non calcareous.
	10	CALCILUTITE: light grey, very soft, highly calcareous, gummy.
	Trace	DOLOMITE: Almost 5%. As above.
	Trace	FORAMS: As above.

1220-1230m	70	CALCISILTITE: As above, becoming sandier.
	30	CALCILUTITE: As above, very gummy.
	Trace	FOSSIL FRAGMENTS.
1230-1240m	80	CALCISILTITE: As above, sparry in places, grades into biosparite.
	20	CALCILUTITE: As above.
	Trace	DOLOMITE: As above.
1240-1250m	80	CALCISILTITE: As above, sandy in parts.
	20	CALCILUTITE: As above.
	Trace	DOLOMITE: As above.
1250-1260m	90	CALCISILTITE: As above.
	10	CALCILUTITE: As above.
	Trace	DOLOMITE: As above.
1260-1270m	90	CALCISILTITE: As above.
	10	CALCILUTITE: As above.
	Trace	DOLOMITE: As above.
1270-1280m	70	CALCISILTITE: As above.
	30	CALCILUTITE: As above.
1280-1290m	100	CALCISILTITE: light grey to grey brown, moderately hard to very hard, occasionally carbonaceous flecks, grading to Biosparrite, blocky to angular cuttings, occasional ooids, calcite.
	Trace	DOLOMITE: As above.
	Trace	FOSSIL, SEA URCHIN SPINE.
	Trace	CALCILUTITE: As above.
1290-1300m	100	CALCILSILTITE: As above.
	Trace	CALCILUTITE: As above.
	Trace	DOLOMITE: As above.
1300-1310m	100	CALCISILTITE: As above, predominantly biosparite.
	Trace	CALCILUTITE: As above.
	Trace	PYRITE.
1310-1320m	100	CALCISILTITE: Increasing very fine grained sparry sand fraction. As above.
	Trace	CALCILUTITE: light grey, very soft, very calcareous, gummy.
1320-1330m	100	CALCISILTITE: predominantly biosparite as above.
	Trace	CALCILUTITE: As above.
	Trace	QUARTZ : sand, fine to coarse grained.
1330-1340m	100	CALCISILTITE: As above.
	Trace	CALCILUTITE: As above.
1340-1350m	90	CALCISILTITE: As above.
	10	CALCILUTITE: light grey, greyish white, soft, sticky, silty in parts, very calcareous.
1350-1360m	70	CALCISILTITE: As above.
	20	CALCILUTITE: As above.
	10	DOLOMITE: As above.

1360-1370m	70	CALCISILTITE: As above.
	30	CALCILUTITE: As above.
	Trace	SILTSTONE: As above.
	Trace	PYRITE.
	Trace	MINERAL FLUORESCENCE.
1370-1380m	90	CALCISILTITE: As above.
	10	CALCILUTITE: As above.
1380-1390m	100	CALCISILTITE: As above, grading into calcarenite in parts.
1390-1400m	100	CALCISILTITE: As above, becoming sandy.
	Trace	CALCARENITE: As above.
	Trace	DOLOMITE: As above.
1400-1410m	60	CALCISILTITE: As above.
	40	CALCARENITE: Pale brown, moderately hard to soft, very fine grained, highly calcareous.
	Trace	DOLOMITE: As above.
1410-1420m	60	CALCARENITE: As above, pelletal and sparry.
	40	CALCISILTITE: As above.
	Trace	DOLOMITE: As above.
1420-1430m	60	CALCARENITE: As above.
	40	CALCISILTITE: As above.
	Trace	DOLOMITE: As above.
1430-1440m	70	CALCARENITE: As above with sparry cement.
	20	CALCISILTITE: As above.
	10	CALCILUTITE: light grey, very soft, very calcareous, gummy.
1440-1450m	80	CALCARENITE: As above.
	20	CALCISILTITE: As above.
	Trace	CALCILUTITE: As above.
1450-1460m	60	CALCARENITE: Pale brown, occasionally grey, moderately soft and friable to moderately hard, very fine grained, highly calcareous, pelletal with sparry cement, slightly argillaceous
	40	CALCISILTITE: Light to medium grey, grey brown, moderately soft to moderately hard, angular cuttings grading into calcarenite, very sparry cement and matrix.
	Trace	GLAUCONITE: and mica.
1460-1470m	70	CALCARENITE: As above, very sparry grains.
	30	CALCISILTITE: As above.
	Trace	DOLOMITE: As above.
1470-1480m	80	CALCARENITE: As above.
	20	CALCISILTITE: As above.
	Trace	GLAUCONITE: mica.
	Trace	DOLOMITE: As above.
1480-1490m	50	CALCARENITE: As above.
	50	CALCISILTITE: As above.
	Trace	DOLOMITE: As above.
	Trace	CALCILUTITE: As above.

1490-1500m	50	CALCARENITE: As above.
	50	CALCISILTITE: As above.
	Trace	DOLOMITE: As above.
	Trace	CALCILUTITE: As above.
1500-1510m	100	CALCISILTITE: Mid grey to brown grey, moderately hard to moderately soft, angular cuttings, very fine grain quartz in part, very calcareous, sparry matrix, argillaceous in parts.
	Trace	CALCARENITE: As above.
1510-1520m	90	CALCISILTITE: As above.
	10	CALCILUTITE: light grey, very soft, very calcareous, sticky.
	Trace	CALCARENITE: As above.
1520-1530m	100	CALCISILTITE: As above.
	Trace	CALCARENITE: As above.
1530-1540m	100	CALCISILTITE: As above.
	Trace	CALCARENITE: As above.
	Trace	CALCILUTITE: As above.
1540-1550m	100	CALCISILTITE: As above.
	Trace	CALCARENITE: As above.
	Trace	SILTSTONE: As above.
1550-1560m	100	CALCISILTITE: As above, becoming sandy in part.
	Trace	CALCARENITE: As above.
1560-1570m	80	CALCISILTITE: As above.
	20	CALCARENITE: light grey brown, mid grey brown, soft to moderately hard, angular cuttings, very fine grained grading into calcisiltite, very calcareous, sparry.
	Trace	GLAUCONITE.
	Trace	CALCILUTITE: As above.
1570-1580m	70	CALCISILTITE: As above.
	30	CALCARENITE: As above.
	Trace	CALCILUTITE: As above.
1580-1590m	50	CALCISILTITE: As above.
	50	CALCARENITE: As above.
1590-1600m	50	CALCISILTITE: As above.
	40	CALCARENITE: As above.
	10	CALCILUTITE: As above.
1600-1610m	50	CALCARENITE: As above.
	40	CALCISILTITE: As above.
	10	CALCILUTITE: As above.
1610-1620m	70	CALCISILTITE: mid grey - brown grey, moderately soft to moderately hard, calcareous, very argillaceous, grading into siltstone, angular cuttings.
	20	CALCILUTITE: As above.
	10	CALCARENITE: As above.

1620-1630m	70	CALCISILTITE: As above.
	20	CALCARENITE: As above.
	10	CALCILUTITE: As above.
1630-1640m	70	CALCISILTITE: As above.
	30	CALCILUTITE: light grey, very soft, poorly indurated, arenaceous in parts, water sensitive, sticky, silty in parts.
	Trace	CALCARENITE: As above.
1640-1650m	70	CALCISILTITE: As above.
	30	CALCILUTITE: As above.
1650-1660m	60	CALCISILTITE: As above.
	40	CALCILUTITE: As above.
1660-1670m	70	CALCISILTITE: As above.
	30	CALCILUTITE: As above.
1670-1680m	70	CALCISILTITE: As above.
	30	CALCILUTITE: As above.
1680-1690m	90	CALCISILTITE: As above.
	10	CALCILUTITE: As above.
1690-1700m	100	CALCISILTITE: Grey, grey brown, predominantly firm to moderately hard, moderately well indurated, occasionally soft, grading to Calcarenite in parts with very fine quartz grains.
	Trace	CALCILUTITE: As above.
1700-1710m	100	CALCISILTITE: As above.
	Trace	CALCILUTITE: As above.
1710-1720m	100	CALCISILTITE: As above.
	Trace	CALCILUTITE: As above.
1720-1730m	90	CALCISILTITE: grey to occasionally light grey, firm to moderately hard, grading to very fine. Calcarenite in parts, arenaceous, blocky cuttings.
	10	CALCILUTITE: light grey, very soft, sticky, silty in parts.
1730-1740m	80	CALCISILTITE: As above.
	20	CALCILUTITE: As above.
1740-1750m	70	CALCISILTITE: As above.
	30	CALCILUTITE: As above.
1750-1760m	70	CALCISILTITE: As above.
	30	CALCILUTITE: As above.
1760-1770m	90	CALCISILTITE: As above.
	10	CALCILUTITE: As above.
1770-1780m	80	CALCISILTITE: As above.
	20	CALCILUTITE: As above.
	Trace	GLAUCONITE.

1780-1790m	80	CALCISILTITE: grey to grey brown, occasionally light grey, arenaceous, blocky argillaceous cuttings, firm to moderately hard, occasionally soft, occasional fossils, grading to very fine grained Calcarenite in parts, very occasional loose quartz grains, very fine, well rounded, argillaceous.
	20	CALCILUTITE: light grey, very soft, water sensitive, silty in parts, sticky, very calcareous.
	Trace	GLAUCONITE.
1790-1800m	80	CALCISILTITE: As above, increase in carbonaceous material.
	20	CALCILUTITE: As above.
1800-1810m	80	CALCISILTITE: As above, carbonaceous.
	20	CALCARENITE: As above.
	Trace	GLAUCONITE.
1810-1820m	80	CALCISILTITE: As above, occasionally pelletal.
	20	CALCILUTITE: As above.
	Trace	GLAUCONITE.
	Trace	PYRITISED FOSSILS: Forams.
1820-1830m	80	CALCISILTITE: As above, very argillaceous.
	20	CALCILUTITE: As above.
	Trace	GLAUCONITE.
	Trace	FOSSILS: As above.
1830-1840m	60	CALCISILTITE: As above.
	20	CALCARENITE: light grey to light brown grey, firm to very hard, very fine grained, sparry, calcareous, glauconite, slightly argillaceous, carbonaceous in part, angular to blocky cuttings.
	20	CALCARENITE: As above.
1840-1850m	50	CALCISILTITE: As above.
	30	CALCARENITE: As above - with ooids
	20	CALCILUTITE: As above.
1850-1860m	40	CALCARENITE: As above.
	40	CALCISILTITE: As above.
	20	CALCILUTITE: As above.
1860-1870m	40	CALCISILTITE: As above.
	40	CALCARENITE: As above.
	20	CALCILUTITE: As above.
1870-1880m	40	CALCILUTITE: As above.
	30	CALCISILTITE: As above.
	30	CALCARENITE: As above.
1880-1890m	60	CALCARENITE: light brown, grey, moderately hard to hard, angular, blocky cuttings, very fine grained, argillaceous in parts, occasionally dolomitic sparry. Bioclastic, glauconitic, ooids. Fossiliferous, calcite.
	40	CALCISILTITE: As above.
	Trace	FOSSIL: Forams, bryozoans, urchin spines.

1890-1900m	60	CALCISILTITE: As above.
	20	CALCARENITE: As above.
	20	CALCILUTITE: light grey, very soft, water sensitive, occasionally firm, with silty inclusions in parts.
1900-1910m	70	CALCISILTITE: As above.
	20	CALCILUTITE: As above.
	10	CALCARENITE: As above.
1910-1920m	70	CALCISILTITE: As above.
	30	CALCILUTITE: As above.
1920-1930m	70	CALCISILTITE: As above.
	30	CALCILUTITE: As above.
1930-1940m	60	CALCILUTITE: light grey, soft to firm, predominantly soft, water sensitive in parts, silty in parts.
	40	CALCISILTITE: grey, grey brown, moderately hard to hard, argillaceous, very fine grained quartz inclusions, grading to calcarenite in parts, trace glauconite, angular to blocky cuttings, fossiliferous in parts, bryzoans, forams.
1940-1950m	60	CALCISILTITE: As above.
	40	CALCILUTITE: As above.
	Trace	DOLOMITE: As above.
1950-1960m	60	CALCISILTITE: As above.
	40	CALCILUTITE: As above.
1960-1970m	50	CALCISILTITE: As above.
	50	CALCILUTITE: As above.
1970-1980m	60	CALCISILTITE: As above.
	40	CALCILUTITE: As above.
1980-1990m	60	CALCILUTITE: As above.
	40	CALCISILTITE: As above.
1990-2000m	70	CALCISILTITE: As above.
	30	CALCILUTITE: As above.
2000-2010m	90	CALCISILTITE: As above.
	10	CALCILUTITE: As above.
2010-2020m	70	CALCISILTITE: As above.
	30	CALCILUTITE: As above.
2020-2030m	70	CALCISILTITE: As above.
	30	CALCILUTITE: As above.
2030-2040m	70	CALCISILTITE: As above.
	30	CALCILUTITE: As above.
2040-2050m	70	CALCISILTITE: As above.
	30	CALCILUTITE: As above.
2050-2060m	60	CALCILUTITE: As above.
	40	CALCISILTITE: As above.

2060-2070m	70	CALCISILTITE: As above.
	30	CALCILUTITE: As above.
	Trace	FORAMS: As above.
	Trace	FOSSIL FRAGMENTS: As above.
2070-2080m	70	CALCISILTITE: As above.
	30	CALCILUTITE: As above.
2080-2090m	70	CALCISILTITE: As above.
	30	CALCILUTITE: As above.
2090-2100m	70	CALCISILTITE: As above.
	30	CALCILUTITE: As above.
	Trace	PYRITE.
2100-2110m	50	CALCILUTITE: As above, very sticky.
	50	CALCISILTITE: As above.
	Trace	PYRITE.
2110-2120m	50	CALCILUTITE: As above, very sticky.
	50	CALCISILTITE: As above.
	Trace	PYRITE.
	Trace	GLAUCONITE.
2120-2130m	50	CALCILUTITE: As above.
	50	CALCISILTITE: As above.
	Trace	PYRITE: common.
2130-2140m	50	CALCILUTITE: light grey, very soft, calcareous, gummy.
	50	CALCISILTITE: predominantly medium grey, soft to moderately hard, blocky cuttings, calcareous, sandy in parts, grades into mudstone.
	Trace	FORAMS: As above.
	Trace	PYRITE.
2140-2150m	50	CALCILUTITE: As above.
	30	CALCAREOUS MUDSTONE: medium to light grey, soft to occasionally hard, occasional carbonaceous flecks, moderately to predominantly very calcareous, subfissile.
	20	CALCISILTITE: As above.
	Trace	PYRITE.
2150-2160m	50	CALCAREOUS MUDSTONE: As above.
	50	CLAYSTONE: As above.
	Trace	FORAMS: As above.
	Trace	PYRITE.
2160-2170m	50	CALCAREOUS MUDSTONE: light to medium grey, occasionally grey, soft to moderately hard, moderately to predominantly very calcareous, occasional carbonaceous flecks, common microcrystalline pyrite.
	50	CLAYSTONE: light to occasionally medium grey, very soft, blocky cuttings, gummy, highly calcareous.
	Trace	CALCISILTITE: As above.
	Trace	FOSSIL FRAGMENTS: As above.
	Trace	FORAMS: As above.
	Trace	PYRITE: becoming abundant.

2170-2180m	70	CLAYSTONE: As above, calcareous, gummy.
	30	CALCAREOUS MUDSTONE: As above.
2180-2190m	70	CALCAREOUS MUDSTONE: As above, tight to greenish grey, predominantly soft to moderately hard, subfissile, occasionally carbonaceous flecks, highly calcareous.
	30	CLAYSTONE: As above.
	Trace	FORAMS: As above.
	Trace	PYRITE.
2190-2200m	80	CALCAREOUS MUDSTONE: As above.
	20	CLAYSTONE: As above.
	Trace	FORAMS: Gastropods.
	Trace	PYRITE.
2200-2210m	80	CALCAREOUS MUDSTONE: As above.
	20	CALCARENITE: As above.
2210-2220m	90	CALCAREOUS MUDSTONE: As above. Becoming more fissile.
	10	CLAYSTONE: As above.
	Trace	GLAUCONITIC MUDSTONE: Dark green.
	Trace	PYRITE.
	Trace	FOSSIL FRAGMENTS.
		TRIP FOR BIT CHANGE.
2220-2230m Logged after stuck in hole	90	CALCAREOUS MUDSTONE: As above.
	10	CLAYSTONE: As above.
	Trace	GLAUCONITE: Mudstone & glauconite.
	Trace	PYRITE.
	Trace	FORAMS: As above.
	Trace	Loose quartz grains.
2230-2240m	100	CALCAREOUS MUDSTONE: Medium dark grey, soft to moderately hard, angular to blocky cuttings, highly calcareous, occasionally silty, pyritized in parts.
	Trace	CALCARENITE: light grey, very soft, highly calcareous.
	Trace	CALCARENITE: Cavings.
2240-2250m	90	CALCAREOUS MUDSTONE: As above, occasionally glauconite inclusions.
	10	CLAYSTONE: As above.
	Trace	GLAUCONITE.
2250-2260m	60	CALCAREOUS MUDSTONE: As above, occasional glauconite inclusions.
	40	CLAYSTONE: As above.
	Trace	FORAMS: As above.
2260-2270m	70	CALCAREOUS MUDSTONE: As above, soft and more clayey.
	30	CLAYSTONE: As above.
2270-2275m	60	CALCAREOUS MUDSTONE: As above, subfissile.
	40	CLAYSTONE: As above.
2275-2280m	70	CALCAREOUS MUDSTONE: As above, slightly glauconitic in parts.
	30	CLAYSTONE: As above.
	Trace	PYRITIZED FOSSIL FRAGMENTS.

2280-2285m	70	CALCAREOUS MUDSTONE: As above.
	30	CLAYSTONE: As above.
	Trace	FORAMS.
2285-2290m	60	CLAYSTONE: As above.
	40	CALCAREOUS MUDSTONE: As above.
2290-2295m	50	CLAYSTONE: As above.
	50	CALCAREOUS MUDSTONE: As above. Sandy and glauconitic in parts.
	Trace	PYRITE: Microcrystalline.
2295-2300m	50	CLAYSTONE: As above.
	50	CALCAREOUS MUDSTONE: As above.
	Trace	PYRITE.
2300-2305m	60	CALCAREOUS MUDSTONE: Olive grey, pale brown, medium dark grey, predominantly soft to occasionally moderately hard, moderately to highly calcareous, subfissile.
	40	CLAYSTONE: As above except light grey to yellow brown.
2305-2310m	70	CLAYSTONE: light brown, very soft, highly calcareous.
	30	CALCAREOUS MUDSTONE: As above.
2310-2315m	50	CLAYSTONE: As above.
	50	CALCAREOUS MUDSTONE: As above.
	Trace	PYRITE: As above.
2315-2320m	50	CLAYSTONE: As above.
	50	CLAYSTONE: As above.
	Trace	FORAMS: As above.
2320-2325m	70	CLAYSTONE: As above.
	30	CALCAREOUS MUDSTONE: As above.
	Trace	GLAUCONITE: rare.
2325-2330m	50	CLAYSTONE: As above.
	50	CALCAREOUS MUDSTONE: As above.
2330-2335m	50	CLAYSTONE: As above.
	50	CALCAREOUS MUDSTONE: As above, subfissile to occasionally fissile.
2335-2340m	70	CLAYSTONE: As above.
	30	CALCAREOUS MUDSTONE: As above.
	Trace	PYRITE: As above.
2340-2345m	80	CLAYSTONE: As above.
	20	CALCAREOUS MUDSTONE: becoming less calcareous.
2345-2350m	50	CLAYSTONE: As above.
	50	CALCAREOUS MUDSTONE: As above.
2350-2355m	50	CLAYSTONE: As above.
	50	CALCAREOUS MUDSTONE: As above, occasionally glauconitic.

2355-2360m	60	CALCAREOUS MUDSTONE: As above.
	40	CLAYSTONE: As above.
2360-2365m	50	CALCAREOUS MUDSTONE: As above.
	50	CLAYSTONE: As above.
	Trace	GLAUCONITE.
2365-2370m	60	CLAYSTONE: light brown to occasionally light grey, very soft, sticky, highly calcareous.
	40	CALCAREOUS MUDSTONE: Pale brown, medium dark grey, soft to occasionally firm, blocky to angular cuttings, highly calcareous, micromicaceous in parts.
2370-2375m	50	CLAYSTONE: As above.
	50	CALCAREOUS MUDSTONE: As above.
2375-2380m	80	CALCAREOUS MUDSTONE: As above.
	20	CLAYSTONE: As above.
	Trace	GLAUCONITE.
	Trace	FORAMS: As above.
2380-2385m	70	CALCAREOUS MUDSTONE: As above.
	30	CLAYSTONE: As above.
2385-2390m	70	CALCAREOUS MUDSTONE: As above.
	30	CLAYSTONE: As above.
	Trace	PYRITE: As above.
2390-2395m	80	CALCAREOUS MUDSTONE: As above.
	20	CLAYSTONE: As above.
	Trace	FORAMS: As above.
2395-2400m	50	CLAYSTONE: As above.
	45	CALCAREOUS MUDSTONE: As above.
	5	SANDSTONE: Loose grains, translucent to clear, medium to coarse grained, subrounded, moderately well sorted, excellent inferred porosity, trace bright white fluorescence, slow diffuse white cut.
2400-2405m	40	CLAYSTONE: As above.
	30	CALCAREOUS MUDSTONE: As above.
	30	SANDSTONE: loose grains, medium to predominantly very coarse grained, subrounded to occasionally rounded, 10% bright yellowish white fluorescence, slow diffuse white cut, no visible oil stain.
	Trace	GLAUCONITE.
2405-2410m	40	MUDSTONE: Olive grey to medium dark grey, soft to firm, subfissile to fissile, slightly to highly calcareous, occasional carbonaceous flecks, grades into shale.
	30	SILTSTONE: Pale brown to light brown, soft, highly calcareous, sandy in parts, carbonaceous flecks in parts.
	30	SANDSTONE: As above except subangular to subrounded, 10-20% bright yellowish white fluorescence, very slow, weak diffuse yellowish white cut on few grains, commonly no cut, no stain, no residue, excellent visible porosity.
	Trace	CLAYSTONE: white, very soft, highly calcareous.
	Trace	GLAUCONITE.
	Trace	COAL: Dark brown black, earthy to occasionally vitreous lustre, angular cuttings.

2410-2415m	80	MUDSTONE: Olive grey to pale brown, soft to firm, subfissile to fissile, non calcareous to highly calcareous, grades into shale, rare carbonaceous flecks.
	20	SANDSTONE: loose grains, milky white to clear, medium to very coarse grained, subangular to rounded, moderately well sorted, probably little matrix or cement, excellent inferred porosity, 20% bright yellow fluorescence with no cut, visible crush cut in only one aggregate, no stain, no residue.
	Trace	CLAYSTONE: As above.
2415-2420m	60	SILTSTONE: Olive grey, pale brown, brown grey, soft to moderately hard, subfissile, occasionally carbonaceous flecks, subangular cuttings, slightly to predominantly very calcareous.
	30	SANDSTONE: Loose grains as above. 10% dull to moderately bright yellow fluorescence (not mineral fluorescence), no cut, moderately strong white crush cut, no stain, no residue.
	10	COAL: Black, hard, brittle, vitreous lustre.
	Trace	CLAYSTONE: As above.
2420-2425m	50	SILTSTONE: As above.
	50	SANDSTONE: As above, coarse to very coarse grained, 20% dull to moderately bright yellow fluorescence, no cut, weak white crush cut, no stain, no residue.
	Trace	COAL: As above.
	Trace	CLAYSTONE: As above.
2425-2430m	60	SANDSTONE: Loose grains, predominantly translucent to occasionally milky white, coarse to very coarse grained, subrounded to rounded, well sorted, excellent visible porosity, 10% moderately bright yellow fluorescence, no cut, very weak yellowish cut, no stain, likely residual oil show.
	40	SILTSTONE: As above, calcareous.
	Trace	PYRITE: As above.
	Trace	CLAYSTONE: white, very soft, non calcareous.
	Trace	GLAUCONITE.
2430-2435m	80	SANDSTONE: As above except pyrite cement, 10% dull to moderately bright yellowish-white fluorescence, no cut, strong yellow crush cut, no stain.
	20	SILTSTONE: As above.
	Trace	PYRITE: As above.
	Trace	COAL: As above.
	Trace	GLAUCONITE.
2435-2440m	80	SANDSTONE: As above, 10% dull yellow to moderately bright white fluorescence, no cut, weak crush cut.
	20	SILTSTONE: As above, calcareous.
	Trace	COAL: As above.
	Trace	CARBONACEOUS SILTSTONE: Dark brown-reddish brown, moderately hard, carbonaceous, micaceous.
	Trace	PYRITE: As above.

2440-2445m	80	SANDSTONE: As above, excellent visible porosity. 10% bright yellow and bright white fluorescence, no cut, very weak crush cut.
	20	SILTSTONE: As above, varies between non calcareous and highly calcareous.
	Trace	PYRITE: mainly as sandstone cement.
	Trace	CARBONACEOUS SILTSTONE: As above.
2445-2450m	90	SANDSTONE: As above, except angular to subrounded, still excellent visible porosity. 5-10% yellowish white fluorescence, no cut, weak crush cut, probable residual oil shows.
	10	SILTSTONE: As above.
	Trace	PYRITE: As above.
2450-2455m	90	SANDSTONE: As above very coarse grained, 5% dull to moderately bright yellow fluorescence, no cut or crush cut.
	10	SILTSTONE: As above.
	Trace	PYRITE: As above.
2455-2460m	90	SANDSTONE: As above, shows as above.
	10	SILTSTONE: As above.
	Trace	PYRITE.
		CBU @ 2464.3m.
2460-2465m	100	SANDSTONE: As above, trace of shows as above, no cut or crush cut. Also trace bright bluish white/fluorescence, no cut or crush cut.
	Trace	SILTSTONE: As above, still moderately to highly calcareous.
2465-2470m	100	SANDSTONE: As above, 5% shows as above.
	Trace	SILTSTONE: As above, becoming carbonaceous.
	Trace	COAL: As above.
2470-2475m	100	SANDSTONE: Loose grains, translucent to milky white, coarse to very coarse, subrounded to rounded, very well sorted, excellent inferred porosity, no visible cement or matrix, trace dull to moderately bright white fluorescence, no cut, no stain.
	Trace	SILTSTONE: As above.
	Trace	PYRITE: As above.
2475-2480m	100	SANDSTONE: As above, excellent inferred porosity, trace bright white fluorescence, no cut.
	Trace	SILTSTONE: occasionally carbonaceous.
	Trace	COAL: Pyrite laminae.
2480-2485m	100	SANDSTONE: As above, except subangular to well rounded, trace fluorescence, no cut, as above.
	Trace	SILTSTONE: As above.
2485-2490m	100	SANDSTONE: As above, no shows.
	Trace	SILTSTONE: As above.
	Trace	PYRITE: As above.
2490-2495m	100	SANDSTONE: As above, excellent inferrred porosity, trace bright bluish white fluorescence, no cut or crush cut.
	Trace	SILTSTONE: As above, carbonaceous in parts.
	Trace	PYRITE: As above.

2495-2500m	70	SANDSTONE: Loose grains, milky white to clear, very coarse to granule sized, subrounded to very well rounded, very well sorted, excellent visual porosity, little inferred matrix or cement, no shows.
	30	SILTSTONE: Pale brown, light reddish brown, olive grey, soft to firm, micromicaceous, slightly to predominantly moderately calcareous, occasional carbonaceous flecks.
	Trace	PYRITE: possibly as pyrite cement in sandstone.
2500-2505m	50	SANDSTONE: As above, excellent inferred porosity. No shows.
	50	SILTSTONE: As above.
	Trace	CARBONACEOUS SILTSTONE: As above.
	Trace	COAL: As above.
	Trace	PYRITE: As above.
2505-2510m	50	SANDSTONE: As above, excellent inferred porosity, no shows.
	50	SILTSTONE: As above, still calcareous.
	Trace	CARBONACEOUS SILTSTONE.
	Trace	COAL.
	Trace	PYRITE.
2510-2515m	80	SILTSTONE: 2 types: Type 1: As above, slightly to highly calcareous. Type 2: Dark brown black, red brown, firm, highly carbonaceous, highly micaceous.
	20	SANDSTONE: As above, very coarse loose grains, excellent inferred porosity, no shows.
	Trace	COAL: As above.
	Trace	PYRITE: As above.
2515-2520m	80	SILTSTONE: As above, Type 1: and Type 2: present.
	20	SANDSTONE: As above, no shows.
	Trace	PYRITE: As above.
2520-2525m	60	SILTSTONE: As above, both types present in equal proportions.
	30	SANDSTONE: As above, trace dull yellowish white fluorescence, no cut, no stain.
	10	COAL: Black, firm to hard, vitreous lustre, grades into carbonaceous siltstone in parts.
	Trace	CLAYSTONE: cream, very soft, calcareous.
	Trace	PYRITE: As above.
2525-2530m	70	SILTSTONE: As above, Type 2: rare.
	20	SANDSTONE: As above, very good inferred porosity, no shows.
	10	COAL: As above, grades into carbonaceous siltstone.
	Trace	PYRITE: As above.
2530-2535m	70	SILTSTONE: As above, Type 1: dominant.
	30	SANDSTONE: As above except medium to very coarse grained, moderately well sorted, no shows.
	Trace	CLAYSTONE: white, very soft, carbonaceous laminae.
	Trace	COAL: As above.
	Trace	PYRITE: As above.

2535-2540m	70	SILTSTONE: As above, Type 1: and Type 2: in equal proportions.
	30	SANDSTONE: As above, except subangular to rounded, moderate inferred porosity.
	Trace	CLAYSTONE: As above.
	Trace	COAL: As above.
	Trace	PYRITE: As above.
2540-2545m	60	SILTSTONE: As above Type 1: Pale brown, greenish grey, brownish grey, firm, angular to blocky cuttings, moderately calcareous, subfissile in parts. Type 2: Medium grey, red brown, brownish black, soft to firm, moderately to highly carbonaceous, micromicaceous, blocky cuttings.
	40	SANDSTONE: Clear to milky white, loose grains, medium to very coarse grained, occasionally granule sized, subangular to rounded, moderately sorted, good inferred porosity, slight remnant matrix, pyrite cement in parts. No shows.
	Trace	CLAYSTONE: As above.
	Trace	COAL: As above.
	Trace	PYRITE: As above.
2545-2550m	60	SANDSTONE: As above, moderate porosity, no shows.
	40	SILTSTONE: As above Type 2: dominant.
	Trace	PYRITE: As above.
	Trace	CLAYSTONE: As above.
2550-2555m	60	SANDSTONE: As above, no shows.
	40	SILTSTONE: As above.
	Trace	PYRITE: cementing sandstone in parts.
	Trace	CLAYSTONE: As above.
2555-2560m	70	SANDSTONE: As above, no shows, poor to moderate inferred porosity.
	30	SILTSTONE: As above.
	Trace	CLAYSTONE: As above.
	Trace	PYRITE: As above.
2560-2565m	50	SILTSTONE: As above, Type 2: dominant.
	40	SANDSTONE: fine to very coarse grained, moderate inferred porosity, otherwise as above, no shows.
	10	CLAYSTONE: white, carbonaceous flecks, very soft blocky cuttings.
	Trace	PYRITE: As above.
2565-2570m	60	SANDSTONE: As above with occasional, very fine grained, friable aggregates, no shows.
	30	SILTSTONE: As above, Type 1: and Type 2: in equal proportions.
	10	CLAYSTONE: As above.
2570-2575m	70	SANDSTONE: As above, medium to very coarse grained, moderately sorted, no aggregates, no shows.
	20	SILTSTONE: As above.
	10	CLAYSTONE: As above.
	Trace	PYRITE: As above.
2575-2580m	80	SANDSTONE: As above, moderately sorted, subangular to subrounded, no shows.
	20	SILTSTONE: As above.
	Trace	CLAYSTONE: As above.
	Trace	PYRITE: As above.

2580-2585m	90	SANDSTONE: As above, probably pyrite cement, no shows.
	10	SILTSTONE: As above, Type 1: and Type 2: present in equal amounts.
	Trace	PYRITE: As above.
	Trace	CLAYSTONE: As above.
	Trace	COAL: As above.
2585-2590m	90	SANDSTONE: As above, coarse to very coarse grained, good inferred porosity. Also occasional fine grained aggregates, argillaceous matrix, weak silica cement. No shows.
	10	SILTSTONE: As above.
	Trace	CLAYSTONE: As above.
	Trace	PYRITE: cement on loose sand grains.
2590-2595m	100	SANDSTONE: clear to milky white, medium to very coarse grained, loose grains, angular to subrounded, moderately well sorted, possible pyrite cement, moderate to good inferred porosity, no shows.
	Trace	SILTSTONE: Type 1: dominant.
	Trace	PYRITE: As above.
2595-2600m	100	SANDSTONE: As above. No shows.
	Trace	SILTSTONE: As above.
	Trace	COAL: As above.
2600-2605m	100	SANDSTONE: As above, no shows.
	Trace	SILTSTONE: As above.
	Trace	PYRITE: As above.
	Trace	CLAYSTONE: As above.
2605-2610m	100	SANDSTONE: Clear to milky white, coarse to very coarse grained, subrounded to well sorted, loose grains, very good inferred porosity. No shows.
	Trace	SILTSTONE: As above.
	Trace	PYRITE: cement on surface of sand grains.
2610-2615m	100	SANDSTONE: As above, no shows.
	Trace	SILTSTONE: As above.
2615-2620m	100	SANDSTONE: As above, no shows, weak pyrite cement.
	Trace	SILTSTONE: As above.
2620-2625m	100	SANDSTONE: As above, no shows.
	Trace	SILTSTONE: As above.
	Trace	PYRITE: As above.
2625-2630m	100	SANDSTONE: As above, no shows.
	Trace	SILTSTONE: As above.
	Trace	PYRITE: As above.
	Trace	COAL: As above.
2630-2635m	100	SANDSTONE: As above, no shows. Occasional light grey sand grains.
	Trace	SILTSTONE: As above.
	Trace	GLAUCONITE: possibly cavings.
2635-2640m	100	SANDSTONE: As above, no shows.
	Trace	SILTSTONE: As above.
	Trace	PYRITE: As above.

2640-2645m	100	SANDSTONE: As above, no shows.
	Trace	SILTSTONE: As above.
	Trace	CLAYSTONE: As above.
	Trace	COAL: As above.
2645-2650m	100	SANDSTONE: As above, no shows.
	Trace	SILTSTONE: As above.
2650-2655m	100	SANDSTONE: As above, no shows.
	Trace	SILTSTONE: As above.
	Trace	PYRITE: As above.
2655-2660m	100	SANDSTONE: As above, no shows.
	Trace	SILTSTONE: As above.
2660-2665m	100	SANDSTONE: As above, no shows. Still very good inferred porosity.
	Trace	SILTSTONE: As above.
2665-2670m	100	SANDSTONE: As above, no shows.
	Trace	SILTSTONE: As above.
	Trace	CLAYSTONE: As above.
2670-2675m	100	SANDSTONE: As above, no shows.
	Trace	SILTSTONE: As above.
2675-2680m	100	SANDSTONE: As above, no shows.
	Trace	SILTSTONE: As above.
2680-2685m	100	SANDSTONE: As above, no shows.
	Trace	SILTSTONE: As above.
2685-2690m	100	SANDSTONE: As above, no shows.
	Trace	SILTSTONE: As above.
	Trace	PYRITE: As above.
2690-2695m	100	SANDSTONE: As above except subangular grains no shows.
	Trace	SILTSTONE: As above.
2695-2700m	100	SANDSTONE: As above, no shows.
	Trace	SILTSTONE: As above.
	Trace	CLAYSTONE: As above.
2700-2705m	100	SANDSTONE: As above except medium to very coarse grained, moderately sorted, no shows.
	Trace	SILTSTONE: As above.
2705-2710m	95	SANDSTONE: As above.
	5	COAL: Black, firm, vitreous lustre, grades into carbonaceous siltstone.
	Trace	SILTSTONE: As above.
	Trace	CLAYSTONE: As above.
2710-2715m	95	SANDSTONE: As above, no shows.
	5	COAL: As above.
	Trace	SILTSTONE: As above.
	Trace	CLAYSTONE: As above.
2715-2720m	90	SANDSTONE: As above, no shows.
	10	COAL: Black, hard, brittle, vitreous lustre, conchoidal fracture.
	Trace	SILTSTONE: As above.

APPENDIX 2

EAST HALIBUT #1

SIDEWALL CORE DESCRIPTIONS

No.	Depth (m)	Rec. (mm)	Rock Type	Description
1	2711.5	35	COAL	black, brittle; earthy-vitreous lustre; grades into carbonaceous shale.
2	2696.6	35	SANDSTONE	medium grey, very fine to fine grained, poorly sorted, subangular, friable; slightly to moderately calcareous; silt and clay matrix, carbonaceous in part.
3	2655.0	30	SANDSTONE	white to medium light grey, very fine to coarse grained, very poorly sorted, subangular, soft; moderately calcareous; extensive clay matrix.
4	2633.0		NO RECOVERY	
5	2578.1	30	SANDSTONE	light grey, very fine to occasionally medium grained, poorly sorted, subangular to subrounded, soft; slightly calcareous, extensive clay matrix; about 60% clay; in part possible heavy minerals.
6	2546.5	30	SANDSTONE	light grey, very fine to coarse grained, very poorly sorted, subangular to subrounded, soft; extensive clay matrix; stringers of highly calcareous siltstone.
7	2530.0	35	SANDSTONE	red brown, very fine to fine grained, very poorly sorted, subangular, friable; slightly to moderately calcareous; brown clay matrix.
8	2526.0	30	CARBONACEOUS SILTSTONE	dark brown to black, soft; slightly calcareous, sandy in part, pyrite; poorly sorted sandstone, thin sandstone laminae.
9	2524.5	30	SILTSTONE	dark grey, very fine sandstone, very poorly sorted, subangular; highly carbonaceous in part; grades into carbonaceous sandstone in part.
10	2512.0	40	CARBONACEOUS SHALE	dark brown, soft to firm, moderately calcareous; fissile to subfissile; clayey, highly carbonaceous.
11	2508.1	35	SILTY SANDSTONE	pale brown, very fine to coarse, very poorly sorted, subangular to subrounded, firm; moderately hard, calcareous; traces of claystone.
12	2504.0	30	CARBONACEOUS SHALE	dark brown, firm; slightly calcareous, highly carbonaceous; fissile to subfissile.
13	2499.5	35	SANDSTONE	pale brown, very fine to medium grained, poorly sorted, subangular; clay matrix, silty in part.

14	2475.0	35	SANDY SILTSTONE	dark grey, very fine to coarse grained, poorly sorted, subangular to subrounded, firm; slightly to moderately calcareous, carbonaceous in part.
15	2472.1	28	SANDSTONE	grey to brown, fine to very coarse grained, poorly sorted, subangular to well rounded; slightly calcareous; clay matrix, carbonaceous in part.
16	2464.5	28	SILTSTONE	light to medium grey, very fine to fine grained, very poorly sorted, subangular; very slightly calcareous, white and grey clay matrix grades into sandstone in part.
17	2453.1	25	SILTY SANDSTONE	medium to dark grey, very fine to fine grained, poorly sorted, subangular to rounded; carbonaceous, micaceous.
18	2435.0	28	SANDSTONE	light grey, fine to medium grained, poorly sorted, subrounded, friable; clay matrix.
19	2424.0	25	SANDSTONE	pale brown, fine to coarse grained, very poorly sorted, subrounded; moderately calcareous, clay matrix; carbonaceous flecks.
20	2422.1	25	SANDSTONE	light brown, fine to coarse grained, poorly sorted, subangular to subrounded, friable; slightly calcareous, weak calcareous cement; 70% even dull yellow fluorescence; very slow weak diffuse cut; light brown oil stain, silty inclusions.
21	2419.2	15	SANDSTONE	light grey, fine to very coarse, poorly sorted, subangular to rounded, friable; slightly to moderately calcareous; carbonaceous inclusions; trace spotty, moderately bright to bright yellow fluorescence; commonly no cut, some slow weak diffuse cut, no oil stain.
22	2418.5	38	CARBONACEOUS SILTSTONE	black, brittle; coaly stringers; subfissile to fissile, vitrinite bands.
23	2417.5	26	SILTY SANDSTONE	grey brown, fine to coarse grained, poorly sorted, subangular to rounded, friable; slightly calcareous; dirty appearance; clay matrix, carbonaceous inclusions.
24	2415.5	30	SILTSTONE	light to dark grey, moderately hard, very slightly calcareous, graded bedding; carbonaceous banding.
25	2412.1	25	SANDSTONE	clear to milky, fine to very coarse grained, poorly sorted, clay matrix; 100% even bright yellow fluorescence; instantaneously but weak diffuse, streaming yellow cut, light brown residual oil stain.

26	2411.1	30	SANDSTONE	dark to milky, very fine to fine grained, moderately sorted, subangular; unconsolidated; clay matrix; 80% patchy moderately bright yellow fluorescence; instantaneously but weak diffuse, streaming yellow cut, no visible oil stain or residue.
27	2408.0	35	SANDSTONE	milky, very fine to fine grained, moderately sorted, subangular, friable; clay matrix; 100% even bright yellow fluorescence; moderately fast, moderately strong diffuse to streaming cut, no stain or residue.
28	2405.0	17	SANDSTONE	clear to milky, medium to very coarse grained, moderately to poorly sorted, subrounded; good visual porosity; 100% even dull yellow fluorescence; no cut, weak diffuse crush cut, no stain or residue.
29	2401.0	15	SANDSTONE	clear, medium grained, well sorted, subrounded to rounded, slightly calcareous, very good visual porosity, clay matrix; 100% even moderately bright yellow fluorescence, very slow, very weak, diffuse cut, often no cut, no residue, weak light brown stain.
30	2393.0	40	CLAYSTONE	medium grey, fine to coarse grained, poorly sorted, subangular; slightly calcareous; sandy in part, pyrite rich.

APPENDIX 3

EAST HALIBUT #1

SIDEWALL CORE GAS ANALYSIS

NO.	DEPTH	C1 PPM	C2 PPM	C3 PPM	C4 PPM	C5 PPM	C6 PPM
1	2711.51						
2	2696.55						
3	2655.04						
4	2633.02						
5	2578.06						
6	2546.54						
7	2530.00						
8	2525.96						
9	2524.51						
10	2511.97						
11	2508.05						
12	2503.95						
13	2499.51						
14	2475.02						
15	2472.07						
16	2464.50						
17	2453.05						
18	2434.99						
19	2424.02						
20	2422.06	147.50	48.30	136.90	250.12	131.00	57.90
21	2419.20	129.80	42.46	117.36	209.56	123.76	59.80
22	2418.52						
23	2417.46						
24	2415.49						
25	2412.06	41.30	32.80	138.55	219.70	116.48	52.10
26	2411.07	359.90	432.32	1956.00	2514.72	1397.76	555.84
27	2408.03	159.30	138.96	599.84	703.04	349.44	77.20
28	2405.03	82.60	104.22	365.12	459.68	298.48	135.10
29	2400.99	731.60	370.56	886.72	824.72	351.00	123.52
30	2393.02						

28641/27

APPENDIX 4

RFT SAMPLE TEST REPORT

Well : East Halibut #1

OBSERVER : S. Watts DATE : 24 September 85 RUN NO. : Two

	CHAMBER 1 (22.7 lit.)		CHAMBER 2 (10.4 lit.)	
SEAT NO.	2/10		NOT OPENED	
DEPTH	2465.2			
A. RECORDING TIMES				
Tool Set				
Pretest Open	10.57			
Time Open				
Chamber Open	1100			
Chamber Full	-			
Fill Time	-			
Start Build Up	-			
Finish Build Up	-			
Build Up Time				
Seal Chamber	1206			
Tool Retract	1211			
Total Time	1 hour 14 mins.		mins.	
B. SAMPLE PRESSURE				
IHP	3909.0 psia			psig
ISIP	3414.3 psia			psig
Initial Flowing Press.	17 psig			psig
Final Flowing Press.	215 psia			psig
Sampling Press. Range	17-215			psig
FSIP	3415.3 psia			psig
FHP	3905.9 psia			psig
Form.Press.(Horner)				psig
C. TEMPERATURE				
Depth Tool Reached		m		m
Max. Rec. Temp		deg C		deg C
Time Circ. Stopped	1200 23/9/85	hrs.	hrs	
Time since Circ.		hrs		hrs
Form.Temp.(Horner)				psig
D. SAMPLE RECOVERY				
Surface Pressure	less than 100	psig		psig
Amt Gas	-	cu ft		cu ft
Amt Oil	-	lit		lit
Amt Water	18.5	lit		lit
Amt Others	-	cc		cc
E. SAMPLE PROPERTIES				
Gas Composition				
C1	-	ppm		ppm
C2	-	ppm		ppm
C3	-	ppm		ppm
TC4/nC4	-	ppm		ppm
C5	-	ppm		ppm
C6+	-	ppm		ppm
CO2/H2S	-	%/ppm		%/ppm
Oil Properties	- API@	deg C	API@	deg C
Colour	-			
Fluorescence	-			
GOR	-			
Water Properties				
Resistivity	0.275 @ 23	deg C	ohm@	deg C
NaCl Equivalent	23000	ppm		ppm
Cl-titrated	17000	ppm		ppm
tr (in 3350 DPM)	2254 DPM			ppm
Est. Water Type	FILTRATE			
Mud Properties				
Resistivity	0.265 @ °C 24	deg C	ohm@	deg C
NaCl Equivalent	23000	ppm		ppm
Cl-titrated	17500	ppm		ppm
Calibration				
Calibration Press.		ppm		ppm
Calibration Temp.				
Hewlett Packard No.	791			ppg
Mud Weight	9.2			ppg
Calc.Hydrostatic	9.2			
RFT Chokesize	20000			
REMARKS	TIGHT		NOT OPENED	

RFT SAMPLE TEST REPORT

Well : East Halibut #1

OBSERVER : S. Watts DATE : 24 September 85 RUN NO. : Two

	CHAMBER 1 (22.7 lit.)		CHAMBER 2 (10.4 lit)	
SEAT NO.	2/8 reopened		NOT OPENED	
DEPTH	2464.5			
A. RECORDING TIMES				
Tool Set	09.45			
Pretest Open	09.45			
Time Open				
Chamber Open	09.51			
Chamber Full	-			
Fill Time	-			
Start Build Up	-			
Finish Build Up	-			
Build Up Time	-			
Seal Chamber	09.59			
Tool Retract	10.03			
Total Time	18 mins		mins.	
B. SAMPLE PRESSURE				
IHP	3914.6	psia		psig
ISIP	3416.3	psia		psig
Initial Flowing Press.	28	psig		psig
Final Flowing Press.	21	psia		psig
Sampling Press. Range	28-21			psig
FSIP	3414.7	psia		psig
FHP	3912.6	psia		psig
Form.Press.(Horner)				psig
C. TEMPERATURE				
Depth Tool Reached		m		m
Max. Rec. Temp		deg C		deg C
Time Circ. Stopped		hrs.	hrs	
Time since Circ.		hrs		hrs
Form.Temp.(Horner)				psig
D. SAMPLE RECOVERY				
Surface Pressure		psig		psig
Amt Gas		cu ft		cu ft
Amt Oil		lit		lit
Amt Water		lit		lit
Amt Others		cc		cc
E. SAMPLE PROPERTIES				
Gas Composition				
C1	-	ppm		ppm
C2	-	ppm		ppm
C3	-	ppm		ppm
TC4/nC4	-	ppm		ppm
C5	-	ppm		ppm
C6+	-	ppm		ppm
CO2/H2S	-	%/ppm		%/ppm
Oil Properties	- API@	deg C	API@	deg C
Colour	-			
Fluorescence	-			
GOR	-			
Water Properties				
Resistivity		deg C	ohm@	deg C
NaCl Equivalent		ppm		ppm
Cl-titrated		ppm		ppm
tr (in 3350 pm)				ppm
Est. Water Type				
Mud Properties				
Resistivity		deg C	ohm@	deg C
NaCl Equivalent		ppm		ppm
Cl-titrated		ppm		ppm
Calibration				
Calibration Press.		ppm		ppm
Calibration Temp.				
Hewlett Packard No.				ppg
Mud Weight				ppg
Calc.Hydrostatic				
RFT Chokesize				
REMARKS	TIGHT, V. POOR FLOW BUILD UP, ABANDONED		NOT OPENED	

RFT SAMPLE TEST REPORT

Well : East Halibut #1

OBSERVER : S. Watts DATE : 24 September 85 RUN NO. : Two

	CHAMBER 1 (10.4/t.)		CHAMBER 2 (10 lit.)	
SEAT NO.	2/9	REOPENED	NOT OPENED	
DEPTH	2464.0	2464.0		
A. RECORDING TIMES				
Tool Set	10.08	-		
Pretest Open	10.08	-		
Time Open		-		
Chamber Open	10.11	10.21		
Chamber Full	-	-		
Fill Time	-	-		
Start Build Up	-	-		
Finish Build Up	-	-		
Build Up Time	-	-		
Seal Chamber	10.17	10.35		
Tool Retract		10.39		
Total Time		31 min.	mins.	
B. SAMPLE PRESSURE				
IHP	3911.3 psia	-		psig
ISIP	3416.3 psia	-		psig
Initial Flowing Press.	21 psig	11 psig		psig
Final Flowing Press.	22 psig	23 psig		psig
Sampling Press. Range	28-21	11-23		psig
FSIP				psig
FHP		3905.9 psia		psig
Form.Press.(Horner)				psig
C. TEMPERATURE				
Depth Tool Reached		m		m
Max. Rec. Temp		deg C		deg C
Time Circ. Stopped		hrs.	hrs	
Time since Circ.		hrs		hrs
Form.Temp.(Horner)				psig
D. SAMPLE RECOVERY				
Surface Pressure		psig		psig
Amt Gas		cu ft		cu ft
Amt Oil		lit		lit
Amt Water		lit		lit
Amt Others		cc		cc
E. SAMPLE PROPERTIES				
Gas Composition				
C1	-	ppm		ppm
C2	-	ppm		ppm
C3	-	ppm		ppm
TC4/nC4	-	ppm		ppm
C5	-	ppm		ppm
C6+	-	ppm		ppm
CO2/H2S	-	%/ppm		%/ppm
Oil Properties	- API@	deg C	API@	deg C
Colour	-			
Fluorescence	-			
GOR	-			
Water Properties				
Resistivity		deg C	ohm@	deg C
NaCl Equivalent		ppm		ppm
Cl-titrated		ppm		ppm
tr (in 3350 pm)				ppm
Est. Water Type				
Mud Properties				
Resistivity		deg C	ohm@	deg C
NaCl Equivalent		ppm		ppm
Cl-titrated		ppm		ppm
Calibration				
Calibration Press.		ppm		ppm
Calibration Temp.				
Hewlett Packard No.				ppg
Mud Weight				ppg
Calc.Hydrostatic				
RFT Chokesize				
REMARKS	TIGHT, V. POOR BUILD UP, SEAL CHAMBER TO CHECK BUILD UP, REOPENED, ABANDONED		NOT OPENED	

RFT PRESSURE DATA

WELL: EAST HALIBUT-1
DATE: 24/9/85

GEOLOGIST/ENGINEER: S. WATTS/ KATHY FAGG

RFT No. Run/Seat	Depth m MDKB	Depth m TVDSS KB=21m	Initial Hydrostatic HP (psia) / RFT gauge (psig) ppg	Time Set	Minimum Flowing Pressure psia (Pretest)	Formation Pressure HP (psia) / RFT gauge (psig) ppg	Temp °C	Time Retract	Final Hydrostatic HP psia ppg	Comments (include Probe type) L = Long nose probe M = Martineau probe
										N.B: RFT STRAIN GAUGE MALFUNCTION THEREFORE ONLY HP PRESSURES
1/1	2602.0	2581.0	4135.0 / 9.2 ppg	03:55	3608.0	3620.1 / 8.2 ppg	90.4	04:08	4131.0 / 9.2 ppg	Valid pretest L
1/2	2535.0	2514.0	4021.7 / 9.2 ppg	04:23	3444.0	3524.7 / 8.2 ppg	90.6	04:37	4021.3 / 9.2 ppg	Valid L
1/3	2480.0	2459.0	3931.4 / 9.2 ppg	04:50	3429.0	3436.4 / 8.1 ppg	89.1	05:00	3933.5 / 9.2 ppg	Valid L
1/4	2467.0	2446.0	3911.4 / 9.2 ppg	05:10	3410.0	3416.7 / 8.1 ppg	88.5	05:29	3913.2 / 9.2 ppg	Valid L
1/5	2425.0	2404.0	3846.4 / 9.2 ppg	05:41	-	3354.9 / 8.1 ppg	87.7	05:57	3848.1 / 9.2 ppg	Valid L
1/6	2400.0	2379.0	3807.4 / 9.2 ppg	06:02	3305.0	3319.3 / 8.1 ppg	85.5	06:18	3810.3 / 9.3 ppg	Valid L

RFT PRESSURE DATA

WELL: EAST HALIBUT-1
DATE: 24/9/85

GEOLOGIST/ENGINEER: S. WATTS/ KATHY FAGG

RFT No. Run/Seat	Depth m MDKB	Depth m TVDSS KB=21m	Initial Hydrostatic HP (psia) / RFT gauge (psig) ppg	Time Set	Minimum Flowing Pressure psia (Pretest)	Formation Pressure HP (psia) / RFT gauge (psig) ppg	Temp °C	Time Retract	Final Hydrostatic HP psia	Comments (include Probe type) L = Long nose probe M = Martineau probe
1/7	2397.0	2376.0	3806.1 9.3 ppg	06:32	3302.0	3316.4 8.1 ppg	85.5	06:45	3807.0 9.3 ppg	Valid L
2/8	2464.5	2443.5	3911.6/3912.0 9.3 ppg	09:45	543.7	3416.3/ - 8.1 ppg	90.3	09:51	3912.6/ - 9.3 ppg	Tight, opened 6 gal. Pressure didn't build M
2/9	2464.0	2443.0	3911.3/3912.0 9.3 ppg	10:08	820.0	3416.3/ - 8.1 ppg	90.3	10:03	3912.6/ - 9.3 ppg	Tight, opened 6 gal. No build up, abandoned M
2/10	2465.2	2444.2	3909.0/3916.0 9.3 ppg	10:57	-	3416.3/3422.0 8.1 ppg	90.6	12:11	3905.9/3912.0 9.3 ppg	Tight, opened 6 gal. Closed after 65 mins M