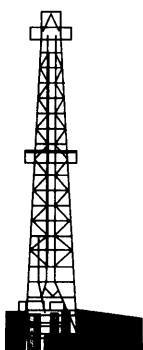




908028 001

CROFT 1

Well Completion Report



Santos

PEP 154, OTWAY BASIN
VICTORIA

SANTOS

COMPILED FOR

SANTOS LTD

(A.C.N. 000 670 575)

Petroleum Development

19 OCT 2001

CROFT 1

WELL COMPLETION REPORT

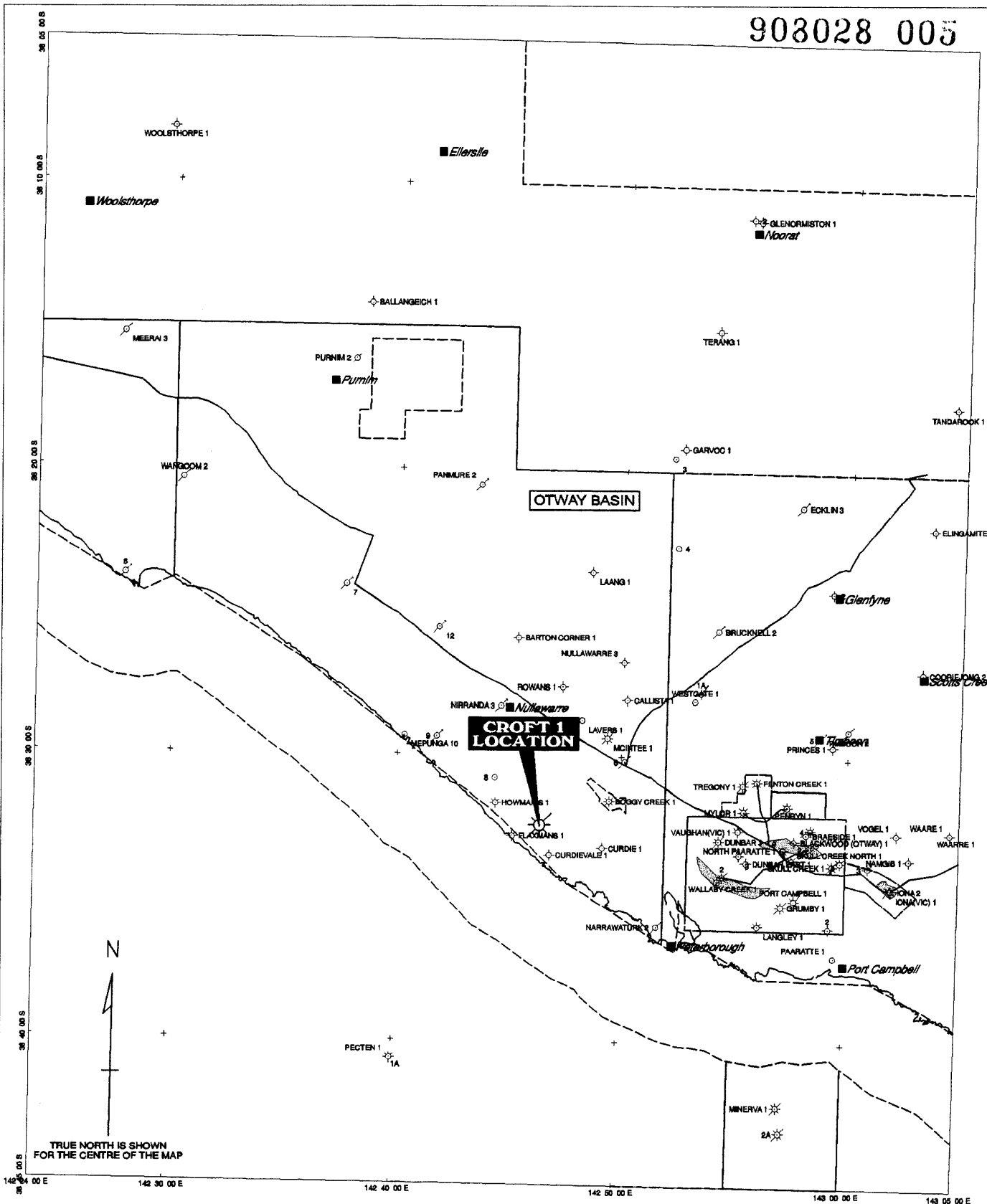
**Prepared By:
D. ZURCHER
June, 2001**

CROFT 1 WCR

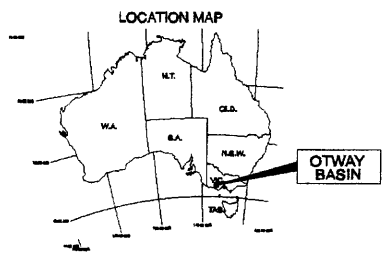
TABLE OF CONTENTS

CONTENTS		PAGE
LOCATION MAP		
WELL DATA CARD		
WELL HISTORY	1. General Data	1
	2. Drilling Data	1
	3. Drilling Summary	2
GEOLOGY	1. Pre-Drilling Summary	4
	2. Drilling Rationale	4
	3. Results of Drilling	
	(a) Stratigraphy	8
	(b) Stratigraphic Prognosis	12
	(c) Hydrocarbon Summary	13
	4. Summary	15
	5. References	16
APPENDICES	I Lithological Descriptions	
	(a) Cuttings	
	(b) Sidewall Cores	
	II Hydrocarbon Show Reports	
	III Wireline Logging Reports	
	(a) Logging Order Form	
	(b) Field Electric Log Report	
	IV Log Evaluation	
	V Pressure Survey	
	VI Drill Stem Test Data	
	VII Hydrocarbon Analysis	
	VIII Palynological Analysis	
	IX Geothermal Gradient	
	X Well Location Survey	
	XI Drilling: Final Well Report	
	XII Rig Specifications	
ENCLOSURES	I 1:200 Composite Log	
	II 1:500 Mudlog	
	III Structure Maps (Pre-Drilling)	

LOCATION MAP



TRUE NORTH IS SHOWN FOR THE CENTRE OF THE MAP



LEGEND

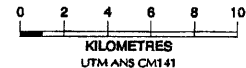
- ◊ Dry hole
- ⊕ Dry hole with gas show(s)
- ⊖ Dry hole with oil show(s)
- ⊗ Dry Hole with oil & gas show(s)
- ☀ Gas well
- ⊗ Gas well with oil show(s)
- Oil well
- ⊗ Oil and gas well
- Gas Pipeline
- - - Oil Pipeline

EXPLORATION & DEVELOPMENT



South Australia Business Unit
 Author: Jo-Anne Hart
 Date: May 6, 2001
 ENCL

CROFT 1 LOCATION MAP



SANTOS LTD A.O.N. 007 580 888

WELL CARD

WELL HISTORY

1. GENERAL DATA

Well Name:	Croft 1
Well Classification:	Exploration (Wildcat)
Interest Holders:	Santos Ltd (90%) Beach Petroleum (10%)
Participating Interests:	Santos Ltd (90%) Beach Petroleum (10%)
Operator	Santos
Block/Licence	PEP 154, Onshore Otway Basin, Victoria
Surface Location (GDA94)	Latitude: 38° 32' 19.98" South Longitude: 142° 46' 28.51" East
Surveyed Elevation	Ground Level: 55.5m Rotary Table: 60.2m
Seismic Survey	Curdievale 3D
Seismic Location	CDP 10084, LINE 2133
Total Depth	Driller: 2529m Logger: 2534m
Completion	249 joints of 3.5" 9.3 ppft J55 new NK3SB tubing, set at 2408mRT
Status	Completed Gas Well.

2. DRILLING DATA

Date Drilling Commenced	1500 hours, 30 th March 2001
Date Drilling Completed	2300 hours, 11 th April 2001
Date Rig Released	2000 hours, 20 th April 2001
Contractor	Oil Drilling & Exploration Pty Ltd (OD&E)
Rig	OD&E 30
Rig Specifications	Refer to Appendix XII

3. DRILLING SUMMARY

(a) Drilling Summary (All Depths Driller's KB)

Croft 1 was spudded at 1500 hours on the 30th March 2001. Tables I and II summarise the casing, cementing and mud systems used in this well. A more comprehensive summary is appended to this report (Appendix XI: (Drilling - Final Well Report)).

TABLE I: CASING, HOLE, AND CEMENT DETAILS

BIT SIZE	DEPTH	CSG SIZE	CSG DEPTH	JNTS	CSG TYPE	CEMENT
9.875"	476m	7-5/8"	470.9m	32	26.4ppf L80 BTC	172sx, 86.9 bbls Class 'G' Plus 92sx, 19.4 bbls 'G' tail
6.75"	2529m	3-1/2"	2408m	249	9.3ppf J55 new NK3SB	488sx, 248 bbls Class 'G' Plus 329sx, 71 bbls Class 'G' tail

TABLE II: SUMMARY OF MUD SYSTEMS

MUD TYPE	INTERVAL (m)
Spud Mud (Gel/Water)	Surface – 476
KCL/PHPA/Polymer	476 - 2529

(b) Lost Time

Lost time at Croft 1 – Please refer to Appendix XI (Drilling - Final Well Report,: Time Breakdown Data).

(c) Water Supply

No water analysis was done.

(d) Mudlogging

Mudlogging services were provided by Geoservices Ltd. Samples were collected, washed, and described at 15m intervals from the surface to 1095m, and at 3 m intervals from 1095m to total depth at 2529m. All samples were checked for oil shows using ultraviolet fluorescence. Gas levels were monitored from the surface casing shoe to TD using a total gas detector and other parameters monitored include rate of penetration, weight on hook and mud pit levels.

(e) Testing

A DST was attempted in the Eumerella Formation (2287-2336m), however a packer seat was not attained and as a result the test was cancelled.

(f) Coring

No full cores were cut in Croft 1.

(g) Wireline Logging

One suite of wireline logs was run in Croft 1, as detailed below:

TABLE III: ELECTRIC LOG SUMMARY

LOG	SUITE/ RUN	INTERVAL (m)	BHT/TIME/ REMARKS	LOG	SUITE/ RUN	INTERVAL (m)	BHT/TIME/ REMARKS
GR	1/1	2526m-surface	89°C / 7hrs	GR-RFS	3/1	2027.4m-2373.5m	100°C / 46hrs
LCS	1/1	2526m-471m	89°C / 7hrs				41 tests
DLS	1/1	2526m-471m	89°C / 7hrs	SCG-GR4	4/1	2516.5m-1985m	Shot 48, 46 rec
MRS	1/1	2526m-471m	89°C / 7hrs				
GR	2/1	2526m-1950m	100°C / 17.50hrs				
PDS	2/1	2526m-1950m	100°C / 17.50hrs				
CNS	2/1	2526m-1950m	100°C / 17.50hrs				

*Logging Contractor - REEVES

(h) Geothermal Gradient

A measured static bottom hole temperature of 108°C at 2534m is calculated. This gives a geothermal gradient of 2.88°C/100m. An ambient temperature of 20°C was employed. Data used for calculations is as follows:

89.0°C at 2526m after 7.0 hours from Logging Suite 1, Run 1.

100.0°C at 2526.0m after 17.5 hours from Logging Suite 1, Run 2.

(i) Hole Deviation

The Croft 1 well is essentially a vertical hole although minor deviation was required to reach optimum subsurface position. Directional surveys indicate a maximum deviation from vertical of 5.0°, inclination 188°T at 461mMDRT.

(j) Velocity Survey

No velocity survey was run in Croft 1.

(k) Completion Summary

Croft 1 was cased and suspended. Refer to Appendix XI (Drilling - Final Well Report) for further details.

GEOLOGY

5. REFERENCES

- Abele, C., Pettifer, G., Tabassi, A. 1995 The Stratigraphy, Structure, Geophysics, and Hydrocarbon Potential of the Eastern Otway Basin. Department of Agriculture, Energy and Minerals of Victoria. Geological Survey of Victoria, Geological Survey Report 103.
- Bain, 1961 Flaxmans 1 Well Completion Report. Frome Broken Hill Company.
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- Finlayson, D. M. (compiler), 1994 NGMA/PESA Otway Basin Symposium, Melbourne, 20 April 1994: extended abstracts. AGSO, Record 1994/14.
- Foster, J.D. and Hodgson, A.J., 1995 Port Campbell Reviewed: Methane and Champagne. APEA Journal 35(1), pp. 418-435.
- Partridge, A., 1999 Late Cretaceous – Tertiary geological evolution of the Gippsland Basin, Victoria. Unpublished Latrobe University PhD thesis.
- Partridge, A., 1997 New Upper Cretaceous Palynology of the Sherbrook Group Otway Basin. Biostrata Pty. Ltd. In PESA News, April/May, p.9.
- SANTOS Ltd., 2001 Croft 1 Raw Data Report. SANTOS Ltd. (Unpublished), prepared by Operations Geology.

APPENDIX I: LITHOLOGICAL DESCRIPTIONS

APPENDIX I (a): CUTTINGS

APPENDIX I (b): SIDE WALL CORES

APPENDIX II: HYDROCARBON SHOW REPORTS

No oil shows were seen in Croft 1

APPENDIX III: WIRELINE LOGGING REPORTS

APPENDIX III (a): LOGGING ORDER FORM

Santos

A.C.N. 007 550 923

REVISION 1.0
(DATE: 22/11/96)**LOGGING ORDER**

COMPANY: SANTOS LTD & BEACH PETROLEUM N.L.
WELL: CROFT # 1 **FIELD:** WILDCAT
RIG: OD & E 30 **STATE:** VIC
LOCATION: INLINE 2134, CDP 10084 **BLOCK:** PEP 154
CURDIEVALE 3D
LATITUDE: 38 32 25.32S **LONGITUDE:** 142 46 23.65E
ELEVATIONS: **GL:** 51.5M **RT:** 56.2M **DF:** 4.7
9 7/8" HOLE: 480m **7 5/8" CSG:** 471m **WT:** 26.4/B/FT
6 3/4" HOLE: 2529m TD **3 1/2" CSG:** 2408 **WT:** _____
TD (Drlr.): 2529m TD **TD (Logr.):** 2142m
MUD SYSTEM: KCl /PHPA/Polymer **CIRCULATION STOPPED:** 21:00 **HRS ON** 12-April
WT: 9.5 **VISC:** 45 **PV/YP:** 10/7 **PH:** 9.0 **FLUID LOSS:** 7 **CHL:** 19000
GEOLOGIST: JEFF GOODALL

INFORMATION GIVEN ABOVE IS TO BE USED ON LOG HEADING SHEETS.

HOLE CONDITIONS: (TIGHT SPOTS, DEVIATION, COALS, BARITE IN MUD, ETC)
 NO TIGHT SPOTS NOTED.
 KCl%

INTERNAL DIAMETER OF 7 5/8" CASING IS 6.969"

DRILL STEM TESTS/CORED INTERVALS:

NO DRILL STEM TESTS OR FULL HOLE CORES ARE PLANNED FOR THIS WELL

COMMENTS: (TO BE INCLUDED IN REMARKS SECTION ON HEADER SHEET)

KCl ?%

INTERNAL DIAMETER OF 7 5/8" CASING IS 6.969"

ADD COMMENT ON WHETHER ENVIRONMENT CORRECTIONS HAVE BEEN APPLIED.

LOGS:

PROGRAM CONFIRMED WITH OPERATIONS GEOLOGIST AT ?? HOURS ON 10/04/2001
 PROGRAM VARIES FROM PRE-SPUD NOTES: YES: NO:

LOG	INTERVAL	REPEAT SECTION
RUN 1 – COMBO GR-DLS-MRS-LCS	GR - TD TO SURFACE	ACQUIRE RUNNING IN HOLE
	DLS / LCS – TD TO SURFACE CASING SHOE ARRAY SONIC TD TO 1980M MSFL - TD TO SURFACE CASING SHOE	ACQUIRE RUNNING IN HOLE
RUN 2		
PDS (RHOB)	TD TO 1980M	ACQUIRE RUNNING IN HOLE
CNS (NPHI)	TD TO 1980M	ACQUIRE RUNNING IN HOLE
RUN 3		
ACOUSTIC SCANNER	TD TO 1980M	
RUN 4		
40 RFS (with 1 Sample)	TBA POST RUNS 1 & 2	TIE IN EVERY 50M
RUN 5		
RFS (1 Sample)	TBA POST RUNS 1 & 2	
RUN 6		
DIPMETER	TD TO 1980M	
RUN 7		
SCG (SIDEWALL CORE GUN). 2 FULL GUNS (48)	SWC POINTS TO BE PICKED, PALYNOLOGY AND GEOLOGY TEAM	CORRELATE DEPTH

REMARKS:

(ALL OPERATIONS ARE TO CONFORM TO CURRENT REEVES AND SANTOS OPERATING PROCEDURES)

1. TENSION CURVE - TO BE DISPLAYED ON LOG FROM T.D. TO CASING SHOE.
2. ALL CALIBRATIONS IN CASING MUST BE VERSUS DEPTH. (IF HOLE CONDITIONS PERMIT).
3. SONIC WAVEFORMS TO BE RECORDED OVER ENTIRE WAARRE SANDSTONE SECTION.
4. ALL ZONES OF SONIC CYCLE SKIPPING OR POOR QUALITY DATA TO BE REPEATED AND NOTED IN REMARKS SECTION.
5. REPEAT SECTION NOT TO BE RUN IN 6 3/4" HOLES, COMPARE DOWN LOG FOR REPEAT ANALYSIS.
6. REPEAT SECTION TO BE LOGGED PRIOR TO MAIN LOG OVER INTERVAL OF INTEREST. (IF HOLE CONDITIONS ALLOW). CONFIRM REPEAT SECTION INTERVAL WITH OPERATIONS GEOLOGIST.
7. ALL THERMOMETER READINGS TO BE RECORDED ON LOG
8. ALL SCALES AND PRESENTATIONS TO CONFIRM TO STANDARDS UNLESS OTHERWISE ADVISED.
9. THE FIELD/EDIT TAPE MUST BE A MERGED COPY OF ALL LOGS RUN. SEPARATE TAPES ARE ONLY ACCEPTABLE AS AN INTERIM MEASURE.
10. ANY CHANGE FROM STANDARD PROCEDURES/SCALES TO BE NOTED IN REMARKS SECTION.
11. RM, RMF, RMC AND BHT MUST BE ANNOTATED ON FAXED LOGS. FAXED LOGS SHOULD ALSO INDICATE IF ON-DEPTH OR NOT.LOG DATA IS TO BE TRANSMITTED AS SOON AS POSSIBLE AFTER ACQUISITION.
12. IF ANY DELAYS ARE LIKELY OR IF DATA TRANSMISSION WILL ADVERSELY EFFECT THE OPERATION THEN THE OPERATIONS GEOLOGIST MUST BE IMMEDIATELY INFORMED.
13. THE OPERATIONS GEOLOGIST MUST BE INFORMED IMMEDIATELY OF ANY TOOL OR HOLE PROBLEMS, LOST TIME OR ANY OTHER EVENT WHICH MAY AFFECT THE LOGGING OPERATIONS.

APPENDIX III (b): FIELD ELECTRIC LOG REPORT

**SANTOS LIMITED
FIELD ELECTRIC LOG REPORT**

WELL:	CROFT 1	GEOLOGIST:	JEFF GOODALL
LOGGING ENGINEER:	M.BARNES		
RUN NO.:	1 TO 7	DATE LOGGED:	12-18/4/01
DRILLERS DEPTH:	2529M	LOGGERS DEPTH:	2527M
ARRIVED ON SITE:	06:30 12/4/01		
ACTUAL LOG TIME:	37.25 HRS	LOST TIME LOGGER:	0 HRS
TOTAL TIME:	37.25 HRS	LOST TIME OTHER:	44 HRS

TYPE OF LOG	GR-DLS-MRS-LCS	GR-PDS-CNS	GR-RFS	GR-SCG
TIME CIRC. STOPPED	HRS	HRS	HRS	HRS
TIME TOOL RIG UP	0.75HR	0.5HR	0.5HR	0.5HR
TIME TOOL RIH	0.30HR to start downlog	0.30HR to start downlog	7.0HR	1HR
TIME TOOL RIG DOWN	0.25HR	0.75HR	2.0HR	0.5HR
TOTAL TIME	11HRS	5.25HR	16HRS	5HRS

TYPE OF LOG	FROM	TO	REPEAT SECTION	TIME SINCE LAST CIRCULATION	BHT
RUN 1					
GR	2529M	SURFACE	DOWNLOG	7.0HRS	89°C
LCS	2529M	471M	DOWNLOG	7.0HRS	89°C
DLS	2529M	471M	DOWNLOG	7.0HRS	89°C
MRS	2529M	471M	DOWNLOG	7.0HRS	89°C
RUN 2					
GR	2529M	1980M	DOWNLOG	17:50HRS	89°C
PDS	2529M	1980M	-	17:50HRS	89°C
CNS	2529M	1980M	DOWNLOG	17:50HRS	89°C
RUN 3					
GR-RFS	2370.5M	2027M	-		89°C
RUN 4	(ABANDONED)				
GR-RFS (1 SAMPLE)	(DID NOT REACH TARGET INTERVAL)				
RUN 5	(DID NOT REACH TARGET INTERVAL)				
RUN 6	(DID NOT REACH TARGET INTERVAL)				
RUN 7 (PACKER FAILED)					
DIPMETER					
RUN 8					
ACOUSTIC SCANNER					
RUN 7 (PACKER FAILED)	2336M	2287M			
DST					
RUN 8	2516.5M	1985M	-	-	-
SCG-GR					

MUD SYSTEM: KCL/PHPA/POLYMER

WEIGHT: 9.6 PPG

HOLE CONDITIONS:

THE HOLE CONDITIONS WERE VERY POOR IN THE LOWER BELFAST MUDSTONE AND THE FLAXMANS FORMATION. ALSO HOLE CONDITIONS DETERIORATED IN THE GELLIBRAND MARL INTERVAL. THIS CAUSED SEVERE PROBLEMS WITH THE LOGGING RUNS.

REMARKS / RECOMMENDATIONS

2 attempts at Run-1 (combo), first attempt failed because tool could not pass ledge at 1925.5m (12th April, total time first attempt 4.5hrs)

2 attempts at Run-3 (RFS), first run could not pass bridge at 1981m (13th April, total time first attempt 12hrs)

1 failed attempt to run AST (Run 6), tool could not pass bridge at 1996m (15th April, total time 5hrs)

2 failed attempts to run Dipmeter (Run 5), tool could not pass bridge at 796m (15th April, total time 4hrs) and 1926m (16th April, total time 4 hrs).

Run 4 (second RFS) cancelled due to hole conditions

DST run, failure of packer, no seal after 3 attempts. (17th April). log correlation run, (3hrs)

THE HOLE CONDITIONS WERE VERY POOR AT THE FLAXMANS/BELFAST MUDSTONE CONTACT AND IN THE GELLIBRAND MARL. THESE HOLE PROBLEMS WERE RESPONSIBLE FOR THE MULTIPLE ATTEMPTS AT LOGGING RUNS. REEVES DID A GOOD LOGGING JOB.

WELLSITE LOG QUALITY CONTROL CHECKS

LOG ORDER FORM	Y	MUD SAMPLE RESISTIVITY	Y	TOOL NO. / CODE CHECK	Y
OFFSET WELL DATA	Y	CABLE DATA CARD	Y	LOG SEQUENCE CONFIRM.	Y

LOG TYPE	LCS	GR	CAL	DLS	MLL	PDS	CNS	RFS	REMARKS
CASING CHECK	Y		Y						
SCALE CHECK	Y		Y	Y	Y	Y	Y	Y	
DEPTH Casing Total	Y	Y	Y	Y					
CALIBRATIONS OK	Y	Y	Y	Y	Y	Y	Y	Y	
REPEATABILITY	Y	Y	Y	Y	Y	Y	Y	Y	
LOGGING SPEED	Y	Y	Y	Y	Y	Y	Y	Y	
OFFSET WELL Repeatability	Y	Y	Y	Y	Y	Y	Y	Y	
NOISY / MISSING DATA	N	N	N	N	N	N	N	N	
CURVES/LOGS Depth Matched	Y	Y	Y	Y	Y	Y			
Rm MEASUREMENT				Y	Y				
LLS / LLD / CHECK				Y	Y				
PERF / RHOB CHECK						Y	Y		
LOG HEADER / TAIL	Y	Y	Y	Y	Y	Y	Y	Y	
PRINT/FILM QUALITY	Y	Y	Y	Y	Y	Y	Y	Y	

COMMENTS:

GOOD LOGGING JOB. TOOLS WORKED WELL. HOLE CONDITIONS POOR.

ENGINEERS COMMENTS (If this report has not been discussed with the Engineer state reason)

CROFT 1

LOG ANALYSIS

PE605249

This is an enclosure indicator page.
The enclosure PE605249 is enclosed within the
container PE908028 at this location in this
document.

The enclosure PE605249 has the following characteristics:

ITEM_BARCODE = PE605249
CONTAINER_BARCODE = PE908028
NAME = Croft-1 Well Evaluation Summary Log
BASIN = OTWAY
ONSHORE? = Y
DATA_TYPE = WELL
DATA_SUB_TYPE = WELL_LOG
DESCRIPTION = Croft-1 Well Evaluation Summary Log,
Scale 1:200, by Santos [BOL] Pty Ltd,
W1315, PEP154. Enclosure of Appendix IV
Log Evaluation / Analysis contained in
"Well Completion Report" [PE908028].
REMARKS =
DATE_WRITTEN =
DATE_PROCESSED = 31-MAY-2001
DATE_RECEIVED = 19-OCT-2001
RECEIVED_FROM = Santos Ltd
WELL_NAME = Croft-1
CONTRACTOR =
AUTHOR =
ORIGINATOR = Santos Ltd
TOP_DEPTH =
BOTTOM_DEPTH =
ROW_CREATED_BY = DN07_SW

(Inserted by DNRE - Vic Govt Mines Dept)

APPENDIX V: PRESSURE SURVEY

APPENDIX VI: DRILL STEM TEST DATA

BAKER HUGHES	TEST TOOL & PIPE RECORD			
	Well Name & No.		Croft # 1	
Baker Oil Tools	Date		17/04/01	
	Ticket No.		5845	
	Interval Tested		From: 2287	To: 2332
	Total Depth.		2529	Total Interval 45
	Test No.		One	

DESCRIPTION	I.D. No.	I.D.	O.D	Length	Depth	
						Drill Collars
Stick Up					-5.24	Pump Out Reversing Sub
Drill Pipe #2 to #72	71 std			2051.22	2045.98	Drill Collar
Marker Joint 6ft Pony DC				1.83	2047.81	
Drill Pipe #1+S	1 std+S			38.75	2086.56	Impact Reversing Sub
Santos NoGo Sub	210			0.61	2087.17	Drill Collar
Hevi-wate Drill Pipe	x5			45.39	2132.56	Cross Over
Drill Collars #7 to #19	x13			121.65	2254.21	
Pump Out Reversing Sub	581	2 1/3	4 3/4	0.43	2254.63	Inside Recorder Carrier
Drill Collars #6	x1			9.31	2263.94	Hydraulic Shut in Valve
Impact Reversing Sub	854	2 7/8	6	0.31	2264.25	
Drill Collars #5	x1			9.32	2273.57	Sample Chamber
Cross Over Sub	567	2 9/16	4 4/5	0.30	2273.87	Inside Recorder Carrier
Recovery Recorder Carrier	917		4 7/8	1.37	2275.24	
Hydraulic Shut in Valve	304		4 7/8	1.49	2276.73	Hydraulic Jars
Positive Control Sampler	405		5	1.04	2277.77	
Inside Recorder Carrier	921		4 7/8	1.37	2279.14	Safety Joint
Hydraulic Jars	206		5	2.01	2281.15	Inflation Pump
Safety Joint	938	2 7/16	4 3/4	0.60	2281.76	
Downhole Inflation Pump	103		5	2.38	2284.14	Screen Sub
Screen Sub Assembly	506		5	1.16	2285.29	
Top Packer Stick Up	726		5 5/8	1.71	2287	Top Packer Section
Top Packer Seal Depth					2287	
Top Packer Stick Down				0.90	2287.90	Ported Combination Sub
Port Sub	662		5	0.27	2288.17	Outside Recorder Carrier
Combination Sub	667		5	0.17	2288.34	
Outside Recorder Carrier	905		5	2.68	2291.02	Spacing Section
X/O 3 1/2FH Box 4 IF Pin	552	2 5/16	4 3/4	0.37	2291.39	
Drill Collars #1 to #4	x4			37.40	2328.79	Cross Over Sub
X/O 4 IF Box 3 1/2 FH pin	560	2 1/3	4 3/4	0.37	2329.15	Drill collars
Spacing (8ft)	88			2.44	2331.59	Cross Over Sub
Bottom Packer Stick Up	825		5 5/8	0.55	2332.14	Bottom Packer Section
Bottom Packer Seal Depth					2332.14	
Bottom Packer Stick Down				1.83	2333.97	Perforated Spacing
Perforated Spacing	941	2 9/32	4 3/4	0.61	2332.75	Drag Spring Device
Belly Spring	15	2 1/16	5	2.06	2336.03	

Pipe Tally	Length	Description	Depth
NoGo	0.61		
Drill Pipe	2089.97	Marker Joint	2047.81
Pup Joint	1.83	P.O.S.	2254.63
Hevi-wate Pipe	45.39	D.B.S.	2264.25
Drill Collars Above Interval	140.28	Rec. Recorder	2275.24
Tools above Interval	14.16	Inside Recorder	2279.14
STRING ABOVE INTERVAL	2292.24	Panex Recorder	2291.02
Top of Interval	2287.00	Outside Recorder	2291.02
Top Single Above Table	5.24		

Service Engineer
Chris Riggs

Oil Co. Rep.
Alistair Chomley

Geologist
Jeff Goodall



Drill Stem Test Field Report

Customer	Santos Ltd
Address	91 King William St, 5000
Well Name & Number	Croft # 1
Location	38.54°S 142.773°E
Test Number	One
Formation Tested	Eumerella
Interval Tested	2291 to 2336 mtrs
Test Type	Inflate Straddle DST
Test Date	17/04/01

General Information

Company Rep	Alistair Chomley	Unit Number	10
Geologist	Jeff Goodall	Field	Otway basin
Service Engineer	Chris Riggs	Area	Pep 154
Contractor	ODE # 30	Ground Elevation	57.1 mtrs
Ticket Number	5845	Rotary Table	61.8 mtrs

Mud & Hole Data

Mud Type	KCL Polymer	Calliper Log Run	Yes
Weight	9.6 lb/gl	Type Of Calliper	Reeves Single Axis
Water Loss	7	Top Packer	7.25"
Viscosity	45	Bottom Packer	7.5"
Filter Cake	1	Drag Spring	7.5"
Main Hole Size	6.75"	Hole Conditioned	Yes

Drill Pipe Size & Wt	3.5" @ 15.5 lb/ft
Drill Collars	4.75" @ 47 lb/ft
Drill Collars Run	19
Water Cushion	764 mtrs
Bottom Hole Choke	1 inch
Surface Choke Size	0.25" and 0.5 "
Element Size	5 3/8 inch
Element Length	66 inches



Drill Stem Test Field Report

Test Times

Pre-Flow		Initial Shut-In	
Final Flow		Final Shut-In	

Gas Measurements

Time	Surface Choke	Readings	Comments



Drill Stem Test Field Report

Pre-Flow / Blow Description

Final Flow / Blow Description

Sequence Of Events

Date:Time

Date:Time	Description of Events:
12/4/01	
0700	Truck mobilised from Moomba to Wellsite
13/4/01	
1530	Depart Adelaide for Wellsite, arrive Mt. Gambier @ 2230 & overnight there
14/4/01	
0730	Depart Mt. Gambier for Wellsite
1230	Arrive Wellsite & Standby
17/4/01	
1030	Hold pre-job Safety Meeting
1035	Commence making up tools
1050	Pick up drill collars for Interval spaceout
1110	Continue making up tools
1230	Finish Making up tools & RIH
1340	Install <u>no-go</u> sub
1400	Install 1.83 mtr pup joint as marker joint & RIH
1550	Finish installing Water Cushion to 19 std & D of drill pipe(2448') & continue RIH
1830	Finish RIH
2200	Rig up and conduct Reeves correlation. A 1.2mtr down-hole depth correction was required. Finish correlation, rig down Reeves, Rig up surface equipment and establish string weights, 115klbs up, 93klbs static and 90klbs down
2230	Pressure Test
2255	Slips in & rotate at 40 rpm to inflate packers, hold Safety meeting.
2326	Pull slips & pick up 10k over (125k)
2328	Come down & set 15k on tools to open
2334	Mud drops, pick up with 10k over
2336	Slips in & rotate @ 40 rpm
2346	Pick up & pull slips, pick up to 20 k over (135k)
2348	Tool indications of open with 7k bleed off, further 5k bleedoff & slip downhole 1mtr
2352	Pick up to test seat, no overpull
2355	Slips in, 1mtr uphole & rotate @ 45rpm
2358	Apply an extra winchline to control drill pipe , lift rotate speed to 65 rpm
18/4/01	
0011	Pull slips to test seat , appears good at 10 k over
0014	Pull further 10k to 135k, still good
0016	Come down with 15k to open @ 75k
0022	No indication of open, Pick up no overpull
0031	Drop bar
0034	Mud gone
0043	Water to surface, 396 strokes
0115	Break down Surface Equipment & Kelly up for conventional circulation
0130	Finish laying out Surface Equipment & POOH
0710	Break out tools
0930	Finish & compile reports



Drill Stem Test Field Report

Pressure / Temperature Recorder Data

	Panex	Kuster	Kuster	Kuster
Recorder Number	1511	24546	12395	7680
Clock Number	Battery	27245	13988	11517
Capacity	10000 psi	6125psi	5950psi	6325psi
Depth (mtrs)	2291.02	2291.02	2279.14	2275.24
Position	Interval	Interval	Inside	Recovery
Initial Hydrostatic	3777	3879	3850	1043
Pre-Flow Initial				
Pre-Flow End				
Initial Shut-In				
Final Flow Initial				
Final Flow End				
Final Shut-In				
Final Hydrostatic	3777	3879	3850	3777
Temperature	199			

Recovery Data

Test Reversed Out:	Yes
Total Fluid Recovered	
Fluid Recovered Consisted Of :	Water cushion & mud
Sample Chamber Contained	

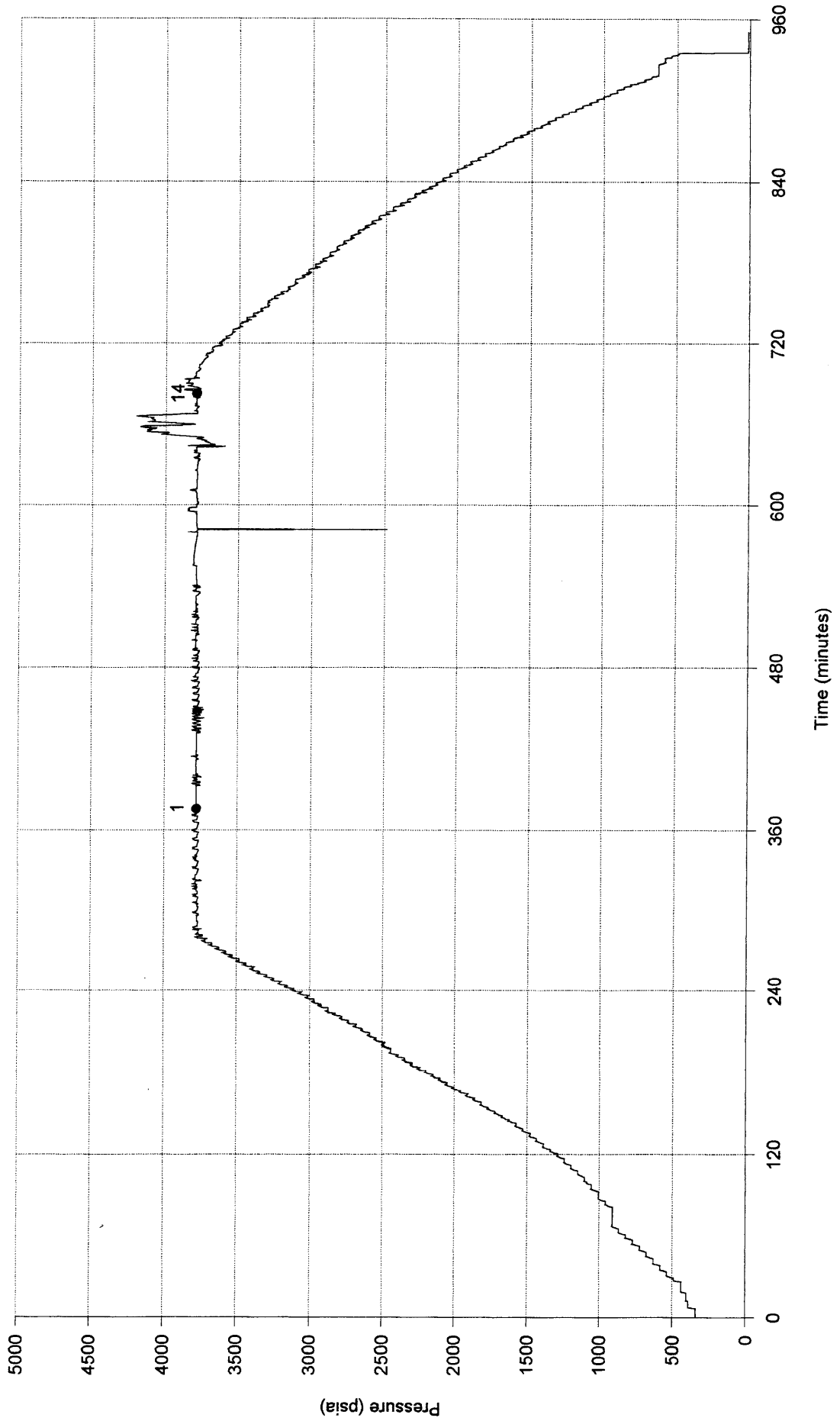
Remarks

Packer setting depths calculated using Driller's tally and confirmed using Reeves GR-CCL. A correction of 1.2mtr down-hole was required to position packers over desired test interval.
 Top & Bottom packer rubbers were both recovered.
 Both Impact pins were recovered.

Pressure (psia) at Critical Points:
1: 3778
14: 3785

Croft #1 Dst#1 17/4/01

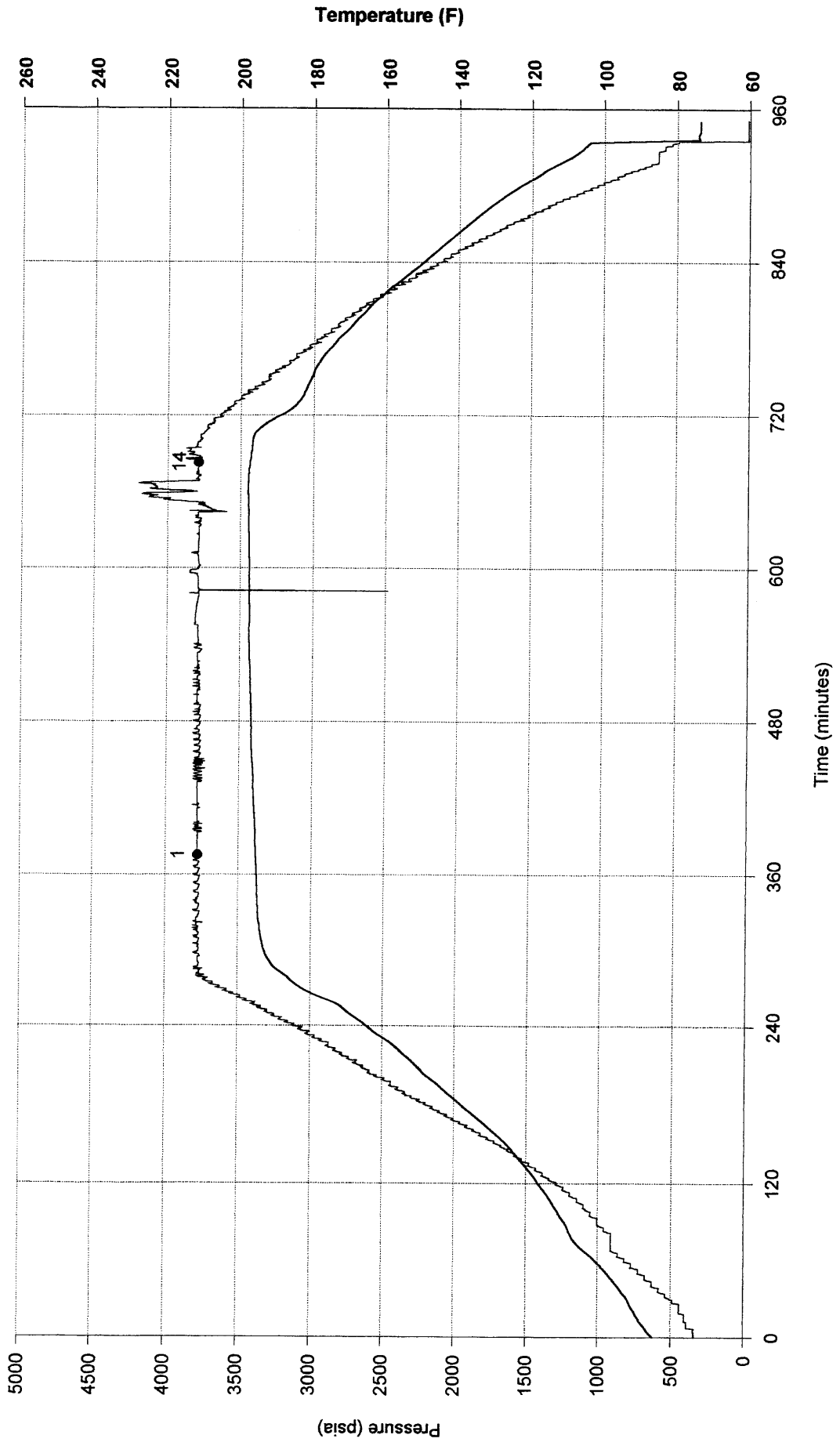
Croft #1
#1
DST #: 1
Recorder: 1511



Pressure (psia) at Critical Points:
1: 3778
14: 3785

Croft #1 Dst#1 17/4/01

Croft #1
#1
DST #: 1
Recorder: 1511





Croft # 1
00/ 38.540 / 142.773 /00
DST# 1

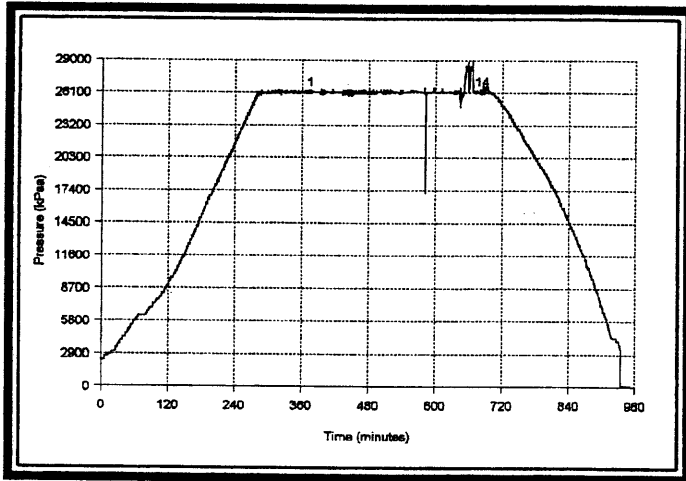
Baker Oil Tools

Formation: Eumerella
Interval - from: 2,287.00 **to:** 2,332.00 meters

Test Date: 17/4/01
Test Type : Inflate Straddle

Recorder# 1511 at 2,291.02 meters

Blow Description:
 PREFLOW: N/A



FINAL FLOW: N/A

LIQUID RECOVERY: The total liquid recovery consisted of water cushion and mud.

Remarks:

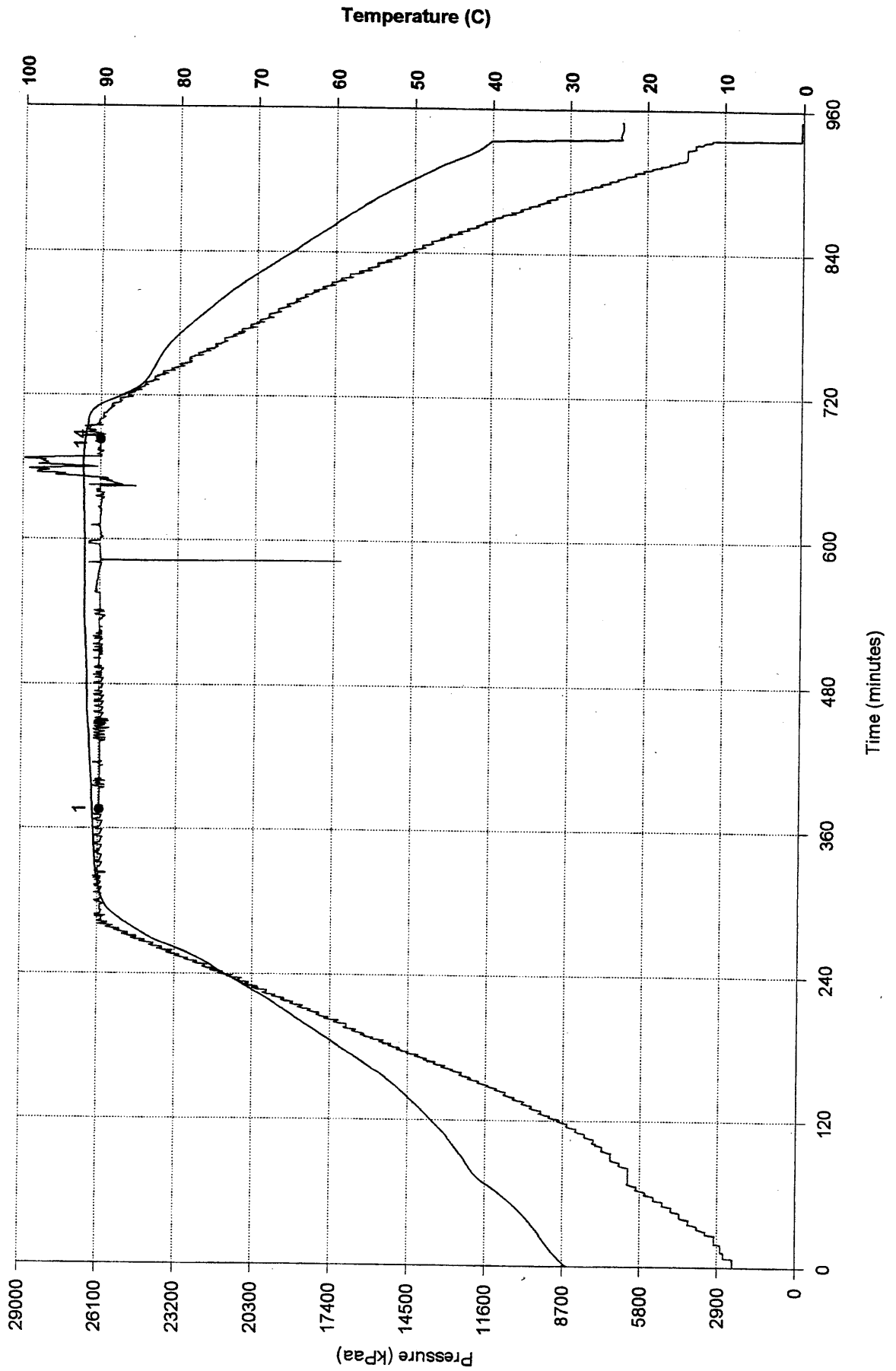
An unsuccessful test was conducted. All the pressures reported from the downhole recorders are kPaa. The packer setting depths were calculated using the Driller's tally and confirmed using Reeves GR-CCL with a correction of 1.2mtrs downhole required to position packers over desired test interval. The top and bottom packer rubbers were both retrieved. Both impact pins were recovered.

Max Btm Hole Temperature @ FSI: 199.0 C

		<i>Pressure</i> (kPaa)	<i>Time</i> (min)	<i>Extrapolated Pressure</i> (kPaa)
1	Initial Hydrostatic	26046		
14	Final Hydrostatic	26099		

Croft # 1
00/38.540 / 142.773 / 00
DST # 1
Recorder: 1511

Pressure (kPaa) at Critical Points:
1: 26046
14: 26099



Croft # 1
00/ 38.540 / 142.773 /00
DST# 1

General Information:

Operator: Santos Ltd
 c/o: Exploration and Production
 91 King William Street
 Adelaide S.A. 5000

Tester: C. Riggs

Ticket#: 5845

KB Elevation: 61.80 meters

Ground Elevat'n: 57.10 meters

Total Depth: 2,529.00 meters

Cushion: Water 763.78 meters

Mud Data:

Weight: 1379 kg/m³
 Type: KC1 PHPA Polymer
 Viscosity: 40 s/l
 Water Loss: 7.0 cc/s
 Filter Cake: 0.8 mm

Hole Data:

Drilled Hole Size: 171 mm
 Calipered Hole Size: 171 mm

Conditioned prior to this test? Y

Recorder Summary:

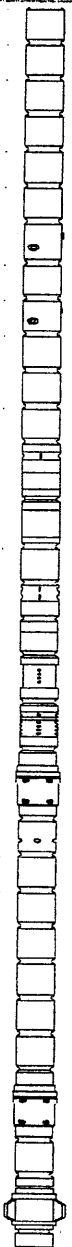
<i>Recorder#</i>	<i>Type</i>	<i>Position</i>	<i>Capacity</i>	<i>Units</i>	<i>Depth</i>	<i>Comments</i>
7680	K-3	Inside	41369	kPaa	2,275.24	
12395	K-3	Outside	41369	kPaa	2,279.14	
1511	2570	Outside	68948	kPaa	2,291.02	
24546	K-3	Outside	42230	kPaa	2,291.02	

Distributions:

Reports Sent To: N. Smith

Croft # 1
00/ 38.540 / 142.773 /00
DST# 1

Tool Sequence:

<i>Diagram</i>	<i>Description</i>	<i>Length</i>
	Drill Pipe	2,051.22 m
	Pup Joint	1.83 m
	Drill Pipe	38.75 m
	Blank Off Sub	0.61 m
	Hevi Waite Drill Pipe	45.39 m
	Drill Collar	121.65 m
	Pump Out Sub	0.43 m
	Drill Collar	9.31 m
	Impact Reversing Sub	0.31 m
	Drill Collar	9.32 m
	Cross Over Sub	0.30 m
	Recorder Carrier	1.37 m
	Hydraulic Tool	1.49 m
	Bottom Hole Sampler	1.04 m
	Recorder Carrier	1.37 m
	Hydraulic Jars	2.01 m
	Safety Joint	0.60 m
	Inflate Pump	2.38 m
	Screen	1.16 m
	Packer Stick Up	1.71 m
	Packer Stick Down	0.90 m
	Port Sub	0.27 m
	Combination Sub	0.17 m
	Recorder Carrier	2.68 m
	Cross Over Sub	0.37 m
	Drill Collar	37.40 m
	Cross Over Sub	0.37 m
	Spacing	2.44 m
	Packer Stick Up	0.55 m
	Packer Stick Down	1.83 m
Spacing	0.61 m	
Belly Spring	2.06 m	

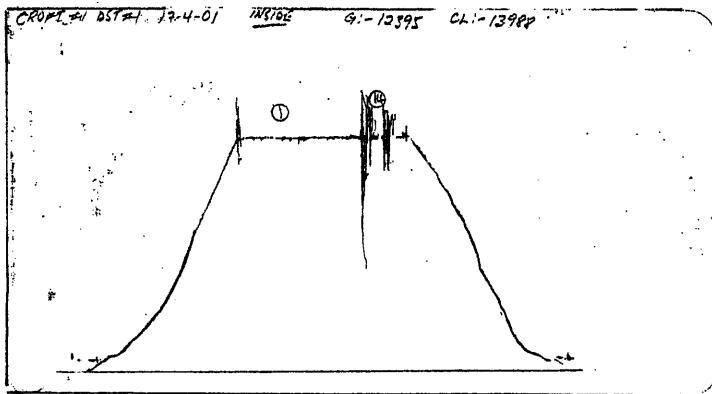
Tool String Length:	2,341.89 m
	185.67 m
	2,092.41 m
Collar Pipe Total:	2,278.08 m
Stick Up:	5.24 m
Tool Above:	14.16 m
Interval Tested:	45.00 m
Bottom Hole Choke Size:	25.40 mm

Croft # 1
00/ 38.540 / 142.773 /00
DST# 1

Recorder# 12395

Depth: 2,279.14 m
 Location: Outside

Recorder Type: K-3
 Capacity: 41,369 kPaa

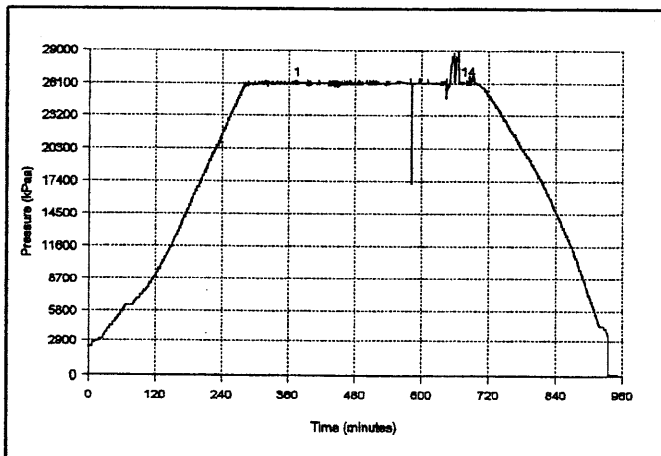


		Pressure (kPaa)	Time (min)
1	Initial Hydrostatic	26597	
14	Final Hydrostatic	26671	

Recorder# 1511

Depth: 2,291.02 m
 Temperature: 199.0 C
 Location: Outside

Recorder Type: 2570
 Capacity: 68,948 kPaa



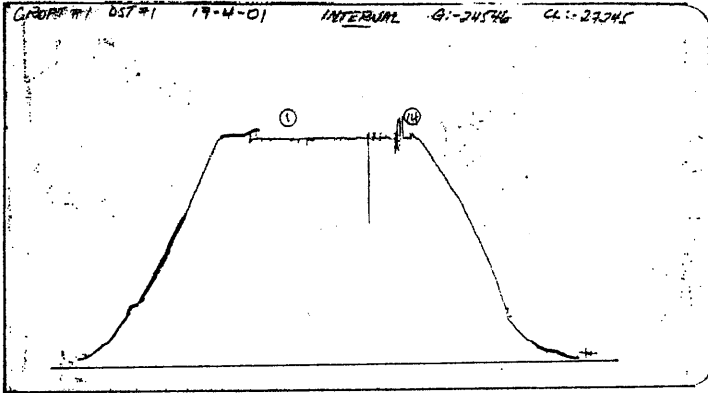
		Pressure (kPaa)	Time (min)
1	Initial Hydrostatic	26046	
14	Final Hydrostatic	26099	

Croft # 1
00/ 38.540 / 142.773 /00
DST# 1

Recorder# 24546

Depth: 2,291.02 m
 Location: Outside

Recorder Type: K-3
 Capacity: 42,230 kPaa

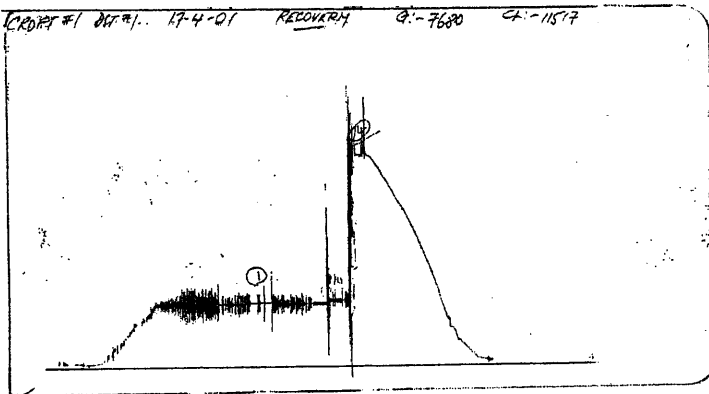


		Pressure (kPaa)	Time (min)
1	Initial Hydrostatic	26881	
14	Final Hydrostatic	26867	

Recorder# 7680

Depth: 2,275.24 m
 Location: Inside

Recorder Type: K-3
 Capacity: 41,369 kPaa



		Pressure (kPaa)	Time (min)
1	Initial Hydrostatic	7468	
14	Final Hydrostatic	26149	



Drill Stem Test Field Report

Customer	Santos Ltd
Address	91 King William St, 5000
Well Name & Number	Croft # 1
Location	38.54°S 142.773°E
Test Number	One
Formation Tested	Eumerella
Interval Tested	2291 to 2336 mtrs 2287 ^m to 2332 ^m
Test Type	Inflate Straddle DST
Test Date	17/04/01

General Information

Company Rep	Alistair Chomley	Unit Number	10
Geologist	Jeff Goodall	Field	Otway basin
Service Engineer	Chris Riggs	Area	Pep 154
Contractor	ODE # 30	Ground Elevation	57.1 mtrs
Ticket Number	5845	Rotary Table	61.8 mtrs

Mud & Hole Data

Mud Type	KCL Polymer	Calliper Log Run	Yes
Weight	9.6 lb/gl	Type Of Calliper	Reeves Single Axis
Water Loss	7	Top Packer	7.25"
Viscosity	45	Bottom Packer	7.5"
Filter Cake	1	Drag Spring	7.5"
Main Hole Size	6.75"	Hole Conditioned	Yes

Drill Pipe Size & Wt	3.5" @ 15.5 lb/ft
Drill Collars	4.75" @ 47 lb/ft
Drill Collars Run	19
Water Cushion	764 mtrs
Bottom Hole Choke	1 inch
Surface Choke Size	0.25" and 0.5"
Element Size	5 3/8 inch
Element Length	66 inches



Drill Stem Test Field Report

Pre-Flow / Blow Description

Final Flow / Blow Description

Sequence Of Events

Date:Time

<u>Date:Time</u>	<u>Description of Events:</u>
12/4/01	
0700	Truck mobilised from Moomba to Well site
13/4/01	
1530	Depart Adelaide for Well site, arrive Mt. Gambier @ 2230 & overnight there
14/4/01	
0730	Depart Mt. Gambier for Well site
1230	Arrive Well site & Standby
17/4/01	
1030	Hold pre-job Safety Meeting
1035	Commence making up tools
1050	Pick up drill collars for Interval spaceout
1110	Continue making up tools
1230	Finish Making up tools & RIH
1340	Install <u>no-go</u> sub
1400	Install 1.83 mtr pup joint as marker joint & RIH
1550	Finish installing Water Cushion to 19 std & D of drill pipe(2448') & continue RIH
1830	Finish RIH
2200	Rig up and conduct Reeves correlation. A 1.2mtr down-hole depth correction was required. Finish correlation, rig down Reeves, Rig up surface equipment and establish string weights, 115klbs up, 93klbs static and 90klbs down
2230	Pressure Test
2255	Slips in & rotate at 40 rpm to inflate packers, hold Safety meeting.
2326	Pull slips & pick up 10k over (125k)
2328	Come down & set 15k on tools to open
2334	Mud drops, pick up with 10k over
2336	Slips in & rotate @ 40 rpm
2346	Pick up & pull slips, pick up to 20 k over (135k)
2348	Tool indications of open with 7k bleed off, further 5k bleedoff & slip downhole 1mtr
2352	Pick up to test seat, no overpull
2355	Slips in, 1mtr uphole & rotate @ 45rpm
2358	Apply an extra winchline to control drill pipe , lift rotate speed to 65 rpm
18/4/01	
0011	Pull slips to test seat , appears good at 10 k over
0014	Pull further 10k to 135k, still good
0016	Come down with 15k to open @ 75k
0022	No indication of open, Pick up no overpull
0031	Drop bar
0034	Mud gone
0043	Water to surface, 396 strokes
0115	Break down Surface Equipment & Kelly up for conventional circulation
0130	Finish laying out Surface Equipment & POOH
0710	Break out tools
0930	Finish & compile reports



Drill Stem Test Field Report

Pressure / Temperature Recorder Data

	Panex	Kuster	Kuster	Kuster
Recorder Number	1511	24546	12395	7680
Clock Number	Battery	27245	13988	11517
Capacity	10000 psi	6125psi	5950psi	6325psi
Depth (mtrs)	2291.02	2291.02	2279.14	2275.24
Position	Interval	Interval	Inside	Recovery
Initial Hydrostatic	3777.6	3879.7	3850.7	4043.7
Pre-Flow Initial		3898.7	3857.6	4083.1
Pre-Flow End				
Initial Shut-In				
Final Flow Initial				
Final Flow End				
Final Shut-In	3785.3	3896.7	3868.3	3792.6
Final Hydrostatic	3777	3879	3850	3777
Temperature	199			

Recovery Data

Test Reversed Out:	Yes
Total Fluid Recovered	
Fluid Recovered Consisted Of :	Water cushion & mud
Sample Chamber Contained	

Remarks

Packer setting depths calculated using Driller's tally and confirmed using Reeves GR-CCL. A correction of 1.2mtr down-hole was required to position packers over desired test interval.
 Top & Bottom packer rubbers were both recovered.
 Both Impact pins were recovered.



Drill Stem Test Field Report

Test Times

Pre-Flow		Initial Shut-In	
Final Flow		Final Shut-In	

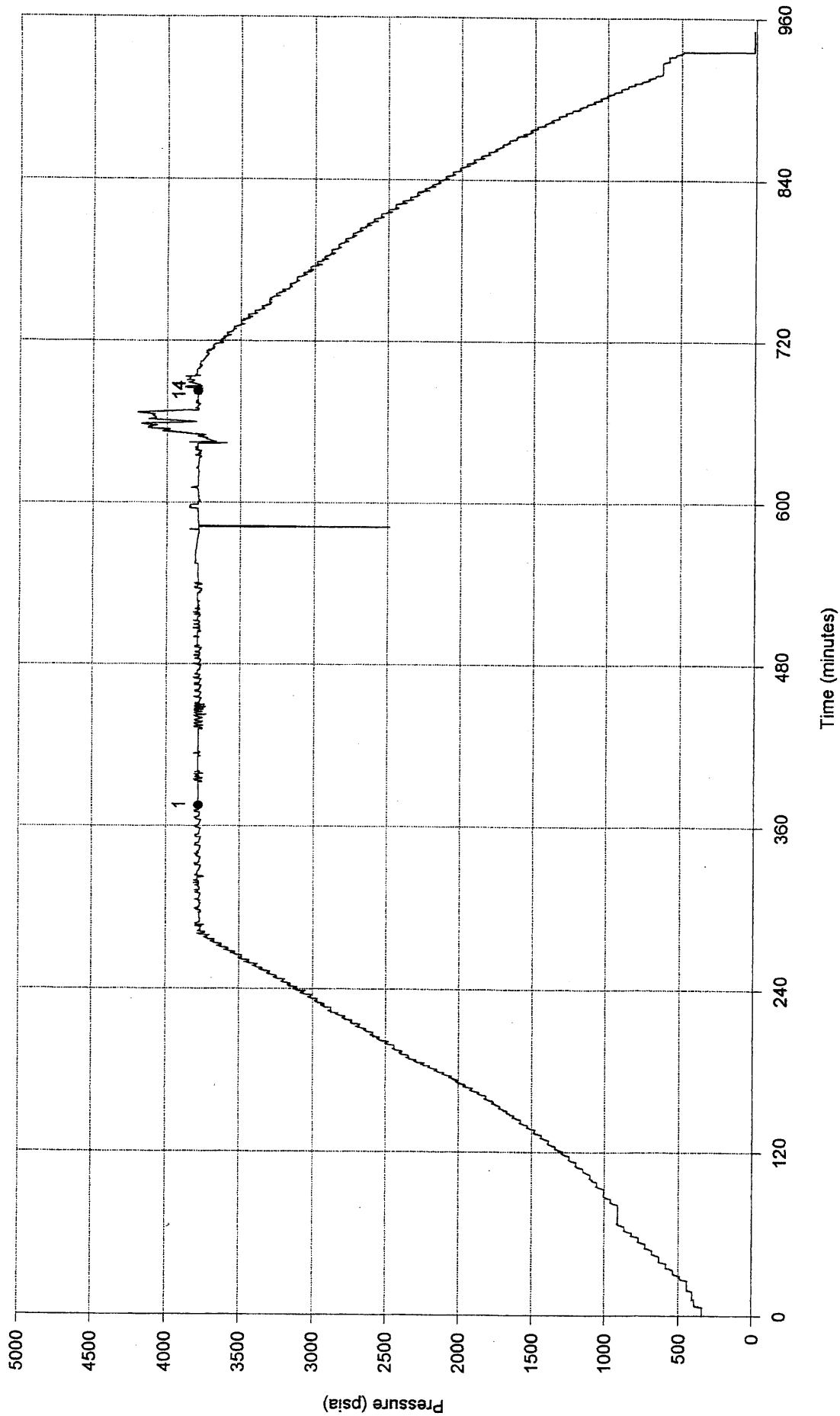
Gas Measurements

Time	Surface Choke	Readings	Comments

Pressure (psia) at Critical Points:
1: 3778
14: 3785

Croft #1 Dst#1 17/4/01

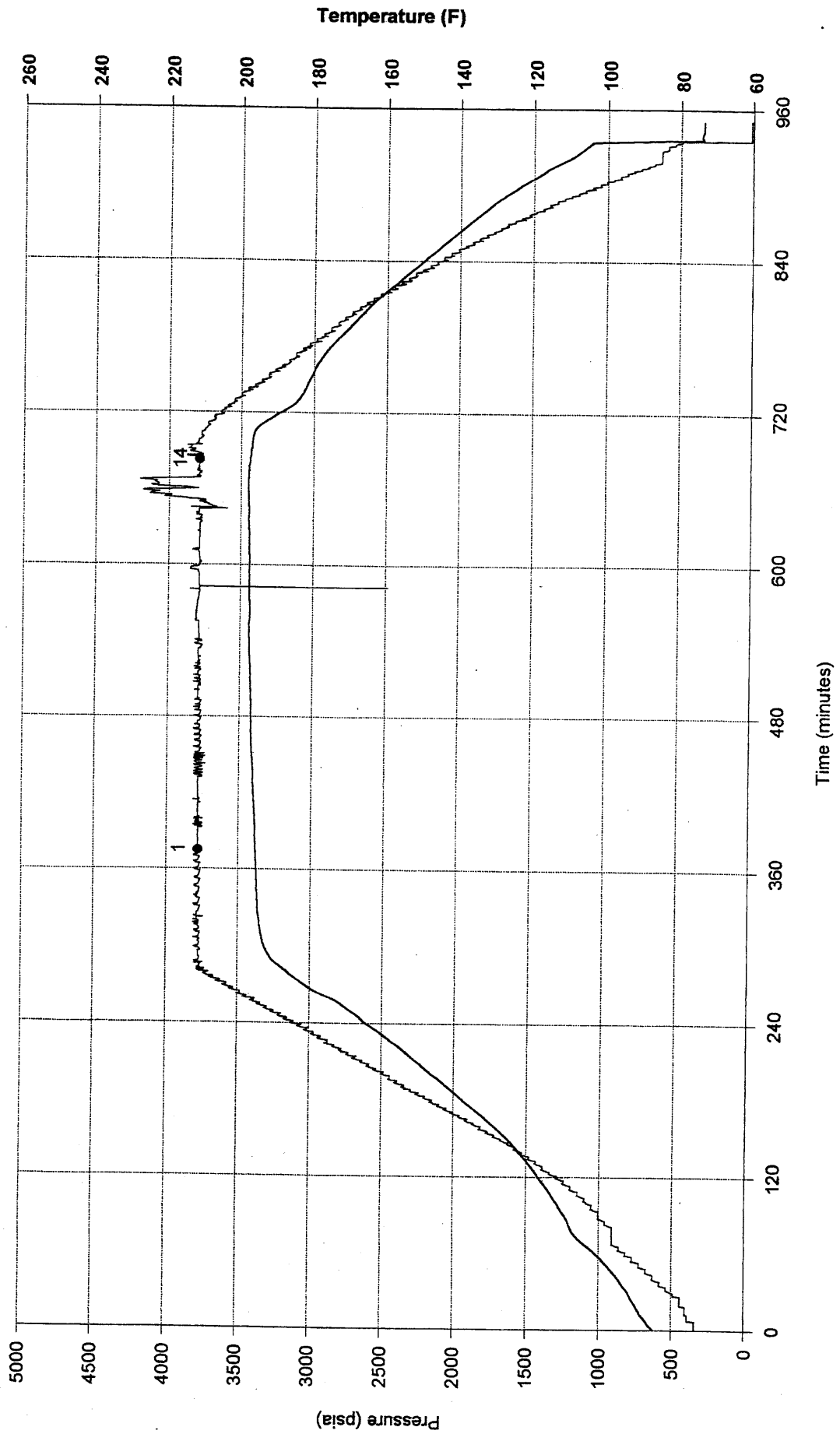
Croft #1
#1
DST #: 1
Recorder: 1511




Croft #1
#1
DST #: 1
Recorder: 1511

Croft #1 Dst#1 174/01

Pressure (psia) at Critical Points:
1: 3778
14: 3785



 Baker Oil Tools	TEST TOOL & PIPE RECORD			
	Well Name & No.		Croft # 1	
	Date		17/04/01	
	Ticket No.		5845	
	Interval Tested		From: 2287	To: 2332
	Total Depth.		2529	Total Interval 45
Test No.		One		

DESCRIPTION	I.D. No.	I.D.	O.D	Length	Depth	
						Drill Collars
Stick Up					-5.24	Pump Out Reversing Sub
Drill Pipe #2 to #72	71 std			2051.22	2045.98	Drill Collar
Marker Joint 6ft Pony DC				1.83	2047.81	Impact Reversing Sub
Drill Pipe #1+S	1 std+S			38.75	2086.56	Drill Collar
Santos NoGo Sub	210			0.61	2087.17	Cross Over
Hevi-wate Drill Pipe	x5			45.39	2132.56	Inside Recorder Carrier
Drill Collars #7 to #19	x13			121.65	2254.21	Hydraulic Shut in Valve
Pump Out Reversing Sub	581	2 1/3	4 3/4	0.43	2254.63	Sample Chamber
Drill Collars #6	x1			9.31	2263.94	Inside Recorder Carrier
Impact Reversing Sub	854	2 7/8	6	0.31	2264.25	Hydraulic Jars
Drill Collars #5	x1			9.32	2273.57	Safety Joint
Cross Over Sub	567	2 9/16	4 4/5	0.30	2273.87	Inflation Pump
Recovery Recorder Carrier	917		4 7/8	1.37	2275.24	Screen Sub
Hydraulic Shut in Valve	304		4 7/8	1.49	2276.73	Top Packer Section
Positive Control Sampler	405		5	1.04	2277.77	Ported Combination Sub
Inside Recorder Carrier	921		4 7/8	1.37	2279.14	Outside Recorder Carrier
Hydraulic Jars	206		5	2.01	2281.15	Spacing Section
Safety Joint	938	2 7/16	4 3/4	0.60	2281.76	Cross Over Sub
Downhole Inflation Pump	103		5	2.38	2284.14	Drill collars
Screen Sub Assembly	506		5	1.18	2285.29	Cross Over Sub
Top Packer Stick Up	726		5 5/8	1.71	2287	Bottom Packer Section
Top Packer Seal Depth					2287	Perforated Spacing
Top Packer Stick Down				0.90	2287.90	Drag Spring Device
Port Sub	662		5	0.27	2288.17	
Combination Sub	667		5	0.17	2288.34	
Outside Recorder Carrier	905		5	2.68	2291.02	
X/O 3 1/2FH Box 4 IF Pin	552	2 5/16	4 3/4	0.37	2291.39	
Drill Collars #1 to #4	x4			37.40	2328.79	
X/O 4 IF Box 3 1/2 FH pin	560	2 1/3	4 3/4	0.37	2329.15	
Spacing (8ft)	88			2.44	2331.59	
Bottom Packer Stick Up	825		5 5/8	0.55	2332.14	
Bottom Packer Seal Depth					2332.14	
Bottom Packer Stick Down				1.83	2333.97	
Perforated Spacing	941	2 9/32	4 3/4	0.61	2332.75	
Belly Spring	15	2 1/16	5	2.06	2336.03	

Pipe Tally	Length	Description	Depth
NoGo	0.61		
Drill Pipe	2089.97	Marker Joint	2047.81
Pup Joint	1.83	P.O.S.	2254.63
Hevi-wate Pipe	45.39	D.B.S.	2264.25
Drill Collars Above Interval	140.28	Rec. Recorder	2275.24
Tools above Interval	14.17	Inside Recorder	2279.14
STRING ABOVE INTERVAL	2292.24	Panex Recorder	2291.02
Top of Interval	2287.00	Outside Recorder	2291.02
Top Single Above Table	5.24		

Service Engineer
Chris Riggs



Oil Co. Rep.
Alistair Chomley



Geologist
Jeff Goodall

APPENDIX VII: HYDROCARBON ANALYSIS

Amdel Limited
A.C.N. 008 127 802

Petroleum Services
PO Box 338
Torrensville Plaza SA 5031

Telephone: (08) 8416 5240
Fax: (08) 8234 2933

8 May 2001

Santos Limited
GPO Box 2319
ADELAIDE SA 5001

Attention: Mike Guliano

REPORT LQ10391

CLIENT REFERENCE: Request

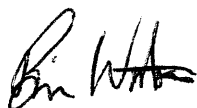
WELL NAME/RE: Croft-1

MATERIAL: RFT

WORK REQUIRED: Gas & liquid composition

AUTHOR'S NAME: Diane Cass

Please direct technical enquiries regarding this work, to the signatory below, under whose supervision the work was carried out. This report relates specifically to the sample or samples submitted for testing.



Brian L Watson
Manager
Petroleum Services

Bw.jh

G:\Secretary\petroleum\10391.doc

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APPENDIX VIII: PALYNOLOGICAL ANALYSIS

**SANTOS PALYNOLOGY SECTION
EXPLORATION SERVICES DEPARTMENT**

Palynology Report No. 2001/08

Author: J.GOODALL
Approved by: G.WOOD

**PALYNOLOGICAL REPORT NO. 2001/08
PALYNOSTRATIGRAPHICAL ANALYSIS**

CROFT-1 WELL


Santos Ltd
A.C.N. 007 550 923

Circulation: Geology Operations, Team Leader, EIC, Palynology Files

Introduction

Twenty nine sidewall core samples and from Croft-1, located in the Otway Basin, PEP 154 were examined palynologically so as to assess their palynostratigraphic position. Total hydrocarbon yield, oil proneness and maturity analysis has not been performed.

Summaries of the results of this study are presented on Table 1. The palynostratigraphic results are presented in more detail on Table 2. The known relationships of the palynological zones to the lithostratigraphy are shown on Chart 1. Range charts of the palynomorphs identified in this study are presented in Appendix 1.



J. Goodall

PE908029

This is an enclosure indicator page.
The enclosure PE908029 is enclosed within the
container PE908028 at this location in this
document.

The enclosure PE908029 has the following characteristics:

ITEM_BARCODE = PE908029
CONTAINER_BARCODE = PE908028
NAME = Croft-1 Palynology Range Chart
BASIN = OTWAY
ONSHORE? = Y
DATA_TYPE = WELL
DATA_SUB_TYPE = BIOSTRAT
DESCRIPTION = Croft-1 Palynology Range Chart, Scale
1:1500, W1315, PEP154. Enclosure of
Appendix VIII Palynological Analysis
contained within "Well Completion
Report" [PE908028].
REMARKS =
DATE_WRITTEN =
DATE_PROCESSED = 16-OCT-2001
DATE_RECEIVED = 19-OCT-2001
RECEIVED_FROM = Santos Ltd
WELL_NAME = Croft-1
CONTRACTOR =
AUTHOR =
ORIGINATOR = Santos Ltd
TOP_DEPTH = 1985
BOTTOM_DEPTH = 2500
ROW_CREATED_BY = DN07_SW

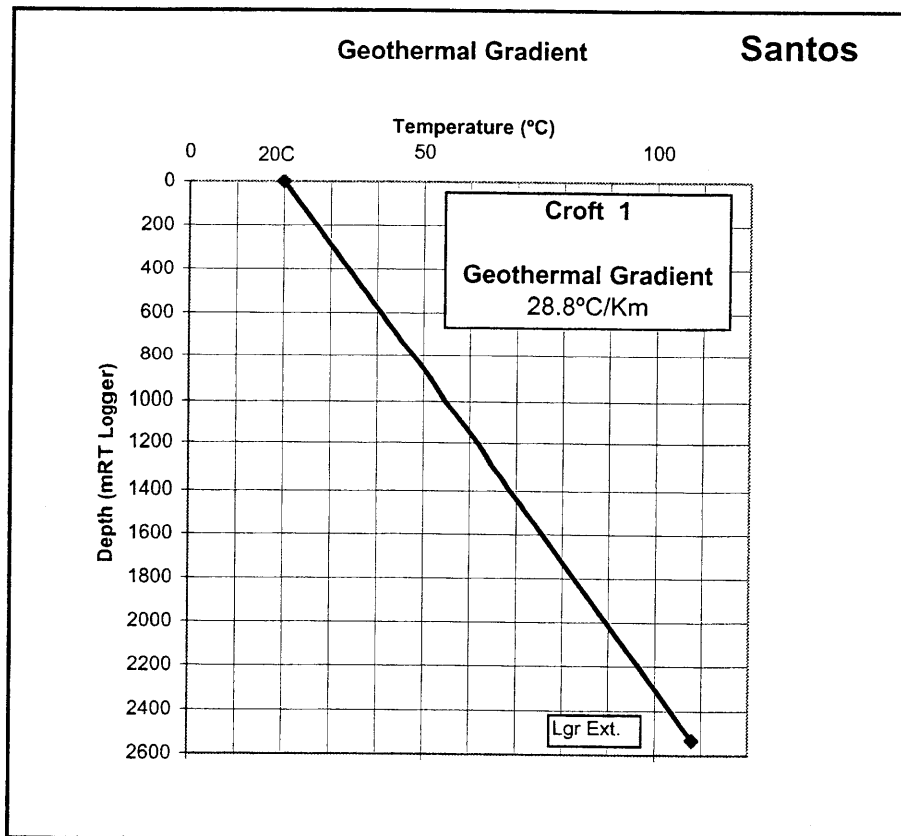
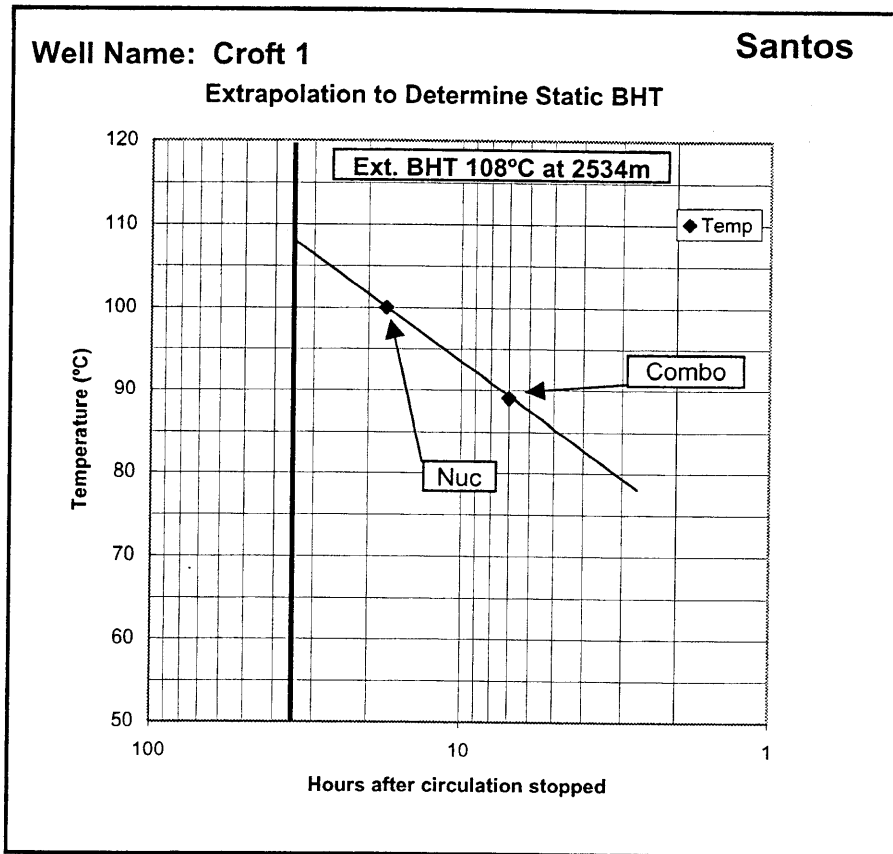
(Inserted by DNRE - Vic Govt Mines Dept)

APPENDIX IX: GEOTHERMAL GRADIENT

Assumed surface temperature = 20°C

Calculated BHT @ 2534m = 108°C

Geothermal gradient = 28.8°C/km



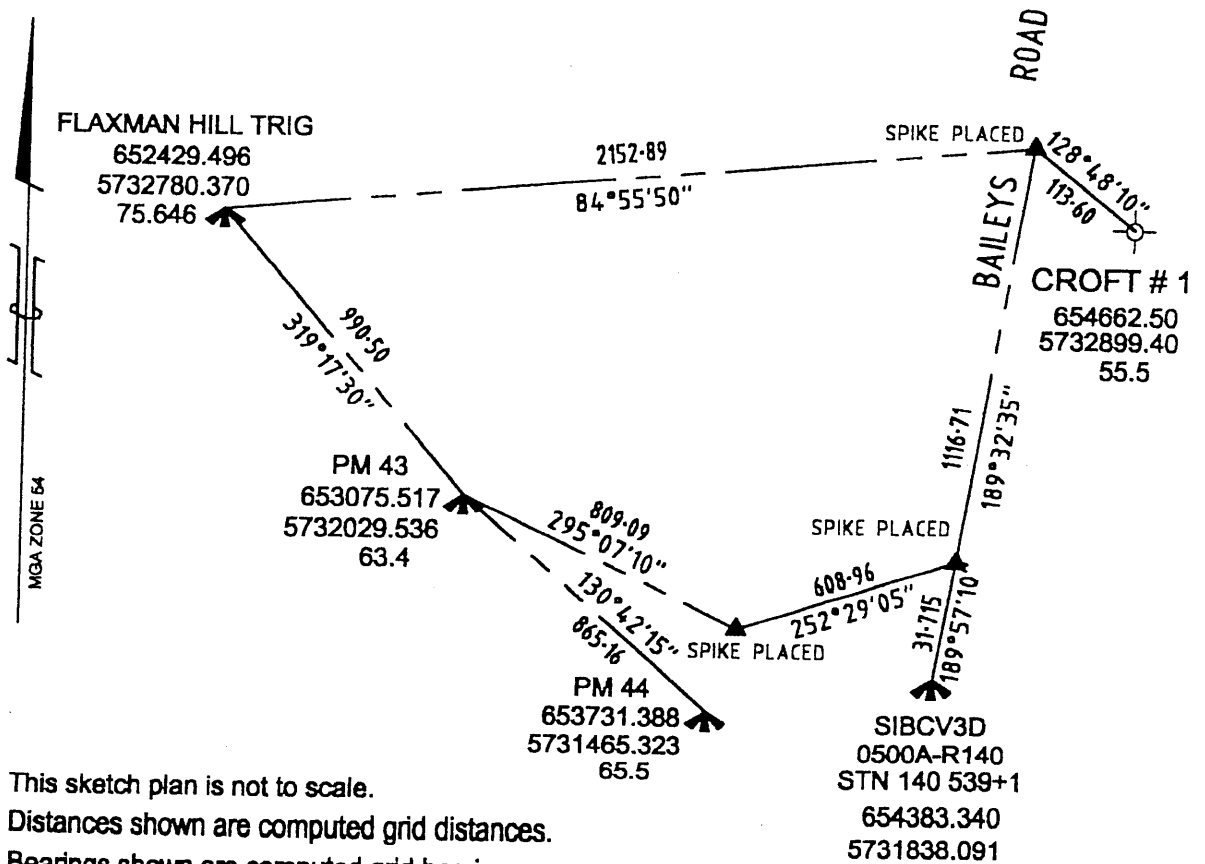
APPENDIX X: WELL LOCATION SURVEY

GAS WELL LOCATION

REFERENCE MARKS SKETCH PLAN

EXPLORATION LICENCE PEP 154

Well Name	CROFT # 1		
Map			
Spheroid	GDA94	MGA 94	ZONE 54
Latitude	S 38°32'19.98"	Measurement units	(metres)
Longitude	E 142°46'28.51"	Easting	654 662.50
Convergence	1°06'21"	Northing	5732 899.40
Scale Factor	0.99988559	Elevation	55.5 (AHD)



NOTES : This sketch plan is not to scale.
 Distances shown are computed grid distances.
 Bearings shown are computed grid bearings.
 DATUM : The origin of coordinates was Land Victoria's Survey Mark Enquiry Service (SMES) AGD66 (AMG Zone 54) then transformed to GDA94 (MGA Zone 54) using GDAit software.
 Height datum is to AHD originating from SMES.

Estimated Horizontal error is less than +/- 0.2 metre.
 Estimated Vertical error is less than +/- 0.2 metre.
 Date of Survey : 20 / 11 / 2000

Paul Crowe Surveyor ABN 59521601183 "Ambleside" 192 Koroit Street Warrnambool 3280 Ph. (03) 5561 1500	REF 969
---	-----------------------

Date 16 / 7 / 2001

Paul Crowe
 LICENSED SURVEYOR

APPENDIX XI: DRILLING - FINAL WELL REPORT

Santos Ltd

FINAL WELL REPORT

CROFT #1

Drilling Supervisor(s)	: A. Chomley
Drilling Engineer(s)	: G. Coker
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Report Supervisor	: M. Bill
Date of Issue	: 8th August 2001

PR

Table of Contents

Section 1 - Well Summary	
Time vs Depth Curve	
Activity Annotations Report	
Section 2 - Well History	
Well History Report	
Section 3 - Drilling Data	
Mud Record	
BHA Summary	
Bit Summary with Formation	
FIT/LOT Report	
Section 4 - Casing and Cementing	
Casing and Cementing Report/s	
Wellhead Installation Report	
Section 5 - Time Breakdown Data	
Overview	
Trouble Time Breakdown	
Section 6 - Survey Data	
Survey Report	
Section 7 - Well Cost Data	
Well Phase Cost Summary	

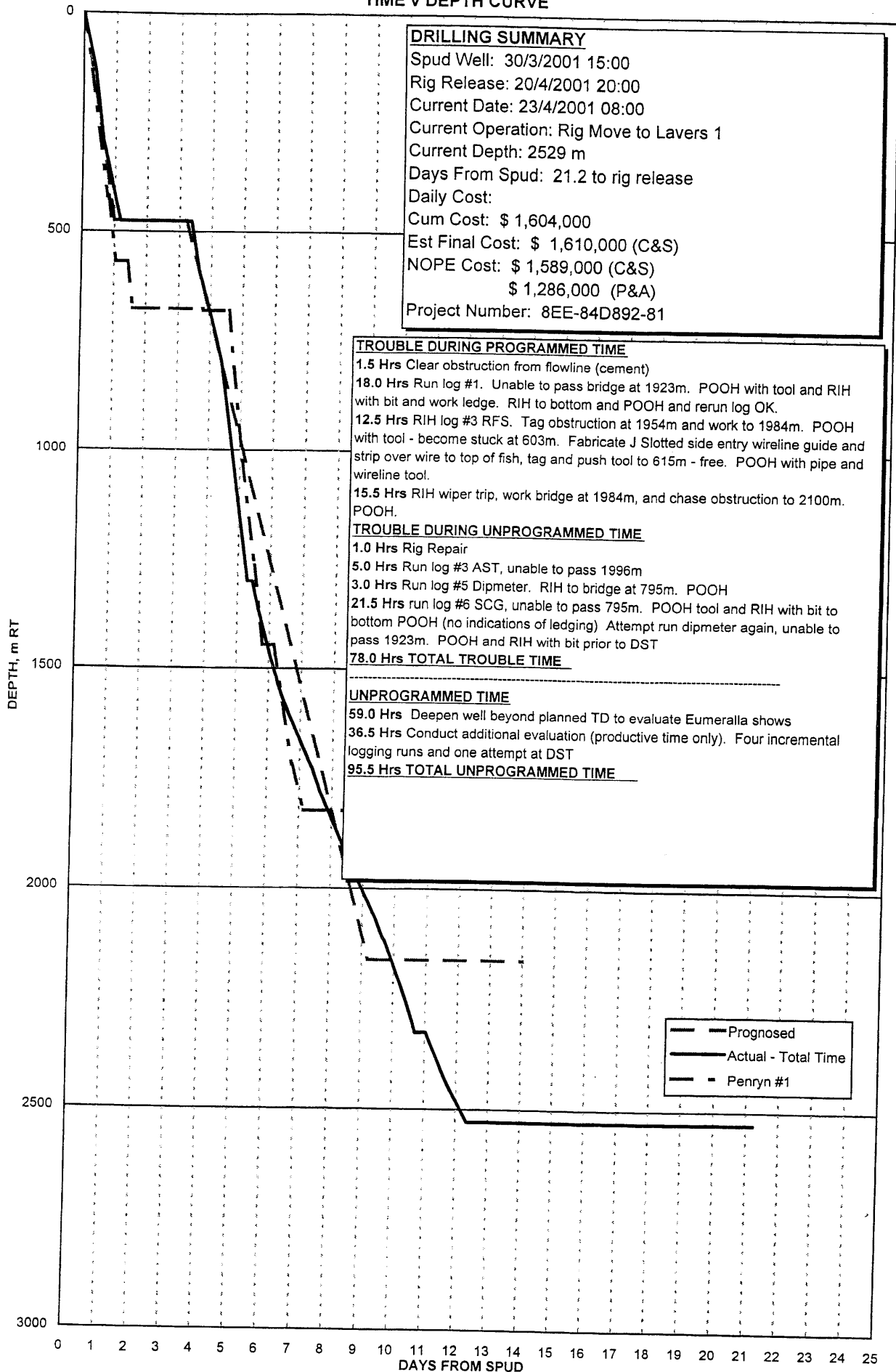
Section 1.0

Well Summary

- Time vs Depth Curve

- Activity Annotations Report

**CROFT #1
TIME v DEPTH CURVE**



RT above GL: 4 m Lat : 38 deg 32 min 25.32 sec Spud Date: 30/03/2001 Release Date: 20/04/2001
 GL above MSL : 52 m Long : 142 deg 46 min 23.65 sec Spud Time: 15:00:00 Release Time: 20:00:00

ACTIVITY ANNOTATIONS

DATE : 29 March, 2001

REPORT NUMBER : 2

Comment

Solution

Rig Down 75% Rig Move 50 % Rig Up 25% Camp
0%

NB. Time lost due to crane break down.

DATE : 29 March, 2001

REPORT NUMBER : 3

Comment

Solution

Rig Down 100% Rig Move 100% Rig Up 65%
Camp 0%

DATE : 30 March, 2001

REPORT NUMBER : 4

Comment

Solution

Rig Down 100% Rig Move 100% Rig Up 85%
Camp 100%

1. Crews being tested and certified for fork truck
operation.

DATE : 01 April, 2001

REPORT NUMBER : 7

Comment

Solution

**All crew members have been instructed and
certified for Fork Truck operation.

DATE : 02 April, 2001

REPORT NUMBER : 8

Comment

Solution

1. The lack of any real BOP handling system and
requirement to remove catwalk and V-Door to access
is rig time costly. (16 Hrs to N/U BOPs)
2. Requested change out of Survey wire due to
condition of same.

DATE : 09 April, 2001

REPORT NUMBER : 14

Comment

Solution

Gas peaks in Waarre Formation to 3464 units.

RT above GL: 4 m Lat : 38 deg 32 min 25.32 sec Spud Date: 30/03/2001 Release Date: 20/04/2001
GL above MSL : 52 m Long : 142 deg 46 min 23.65 sec Spud Time: 15:00:00 Release Time: 20:00:00

ACTIVITY ANNOTATIONS**DATE : 13 April, 2001****REPORT NUMBER : 19**

Comment**Solution**

The fabricated "J" Slot Wire Guide was utilised due to the short open hole section and clearance available in casing. It is a simpler, less time consuming and safer operation than the conventional "Cut & Thread" alternative. In this case it resulted in nil damage to wire or tool.

Section 2.0

Well History

- IDS Well History Report

RT above GL: 4 m Lat : 38 deg 32 min 25.32 sec Spud Date: 30/03/2001 Release Date: 20/04/2001
 GL above MSL : 52 m Long : 142 deg 46 min 23.65 sec Spud Time: 15:00:00 Release Time: 20:00:00

Well History

#	DATE	DEPTH	WELL HISTORY (24 Hr Summary)
1	26/03/2001	0	Rig release at 07:00 Hrs 26th March, rig down rig, lay down Derrick, wait on daylight.
2	27/03/2001	0	Rig down and move rig from Dunbar to Croft #1.
3	28/03/2001	0	Wait on Dylight, Rig Move and Rig Up Rig, Wait on daylight.
4	29/03/2001	0	Wait on daylight, prepare and raise derrick, move camp, rig up, M/U kelly, Wait on Crews.
5	30/03/2001	130	Final R/U over Croft #1, Pre-Spud meeting and Spud Croft #1 @ 15:00 Hrs, Jet, Drill & Survey 9 7/8" hole from 15m - 130m.
6	31/03/2001	476	Jet, Drill & Survey from 130m to section TD 476m, circ, wiper trip, circ.
7	01/04/2001	476	POOH and L/O DCs, Rig Up and Run 7 5/8" casing, circulate and cement casing, WOC, Install "A" Section, N/U BOPs.
8	02/04/2001	476	N/U & Test BOPs, Slip & Cut, M/U Bit & BHA and RIH, Drill float and shoe track, drill 6 3/4" hole from 476 - 480m.
9	03/04/2001	798	LOT, Drill & Survey 6 3/4" hole from 476m - 798m.
10	04/04/2001	1,300	Drill & Survey 6 3/4" hole from 798m - 1300m, wiper trip to shoe.
11	05/04/2001	1,555	RIH Wiper trip, Drill & Survey 6 3/4" hole from 1300m to 1555m.
12	06/04/2001	1,726	Drill & Survey 6 3/4" hole from 1555m to 1726m.
13	07/04/2001	1,904	Drill & Survey 6 3/4" hole from 1726m - 1904m.
14	08/04/2001	2,063	Drill & Survey 6 3/4" hole from 1904m to 2063m.
15	09/04/2001	2,253	Drill from 2063m to 2253m. (TD extended from programmed)
16	10/04/2001	2,388	Drill 6 3/4" hole from 2253m - 2328m, circ, survey, wiper trip out, Slip drill line, wiper trip in, drill 6 3/4" hole from 2328m - 2388m.
17	11/04/2001	2,529	Drill 6 3/4" hole from 2388m to 2529m, Circulate.
18	12/04/2001	2,529	POOH, Logging Run #1 (Unable to pass 1923m) RIH wiper trip (Work obstruction area), circ, POOH wiper trip.
19	13/04/2001	2,529	POOH wiper, Reeves Log Run #1, Run #2, Run #3 unable to pass bridge at 1984m. POOH Reeves, tool stuck at 603m, M/U and strip over wire to 180m.
20	14/04/2001	2,529	Strip over Reeves Wire and push tool free, POOH wire guide, Reeves POOH and R/D, Wiper trip (Work Belfast formation), circ, POOH wiper (Slick), Reeves logging.
21	15/04/2001	2,529	Reeves Logging Run #3 - Accoustic Scanner (No Pass 1995m) Run #4 - RFS in Waarre & Eumerella formations (36 stations), Run #5 - Dipmeter, Run #6 - SCG.
22	16/04/2001	2,529	Reeves logging (No pass 795m), RIH wiper, circ, POOH wiper, Reeves Logging (No Pass 1923m), R/D Reeves, Wiper trip prior to DST #1.
23	17/04/2001	2,529	POOH Wiper trip, M/U DST #1 tools with 45m interval and RIH, attempt DST -NoGo.
24	18/04/2001	2,529	Reverse circ. DST, POOH and L/O, Reeves Logging 48 SWCs and R/D, RIH Wiper Trip, Circ.
25	19/04/2001	2,529	POOH L/D Pipe, Rig Up to and Run 3 1/2" Casing.
26	20/04/2001	2,529	Run & Cement casing, WOC, Set Slips, N/D BOPs, Install Adaptor flange / Wellhead. Rig Release at 20:00 Hrs 20th April 2001.

CROFT #1

Drilling Co.: OD&E

Rig: OD&E #30

RT above GL: 4 m Lat : 38 deg 32 min 25.32 sec Spud Date: 30/03/2001 Release Date: 20/04/2001
 GL above MSL : 52 m Long : 142 deg 46 min 23.65 sec Spud Time: 15:00:00 Release Time: 20:00:00

ACTIVITY REPORT

Date : 26/03/2001

Progress : 0

Depth @ 24:00 hrs : 0

Depth	Phase Class	Operation	Hrs	Activity
0	PS P	RIG DOWN (THE RIG)	6.00	Rig down rig floor and equipment. Prepare to lower derrick.
0	PS P	RIG DOWN (THE RIG)	5.50	Rig down mud pits and pumps. Lower derrick and bundle lines. Lay down monkey board.
0	PS P	WAIT ON	5.50	Unspool drilling line. Rig down air, water and electrical. Load out mud chemicals to Croft #1. Wait on Daylight.

Date : 27/03/2001

Progress : 0

Depth @ 24:00 hrs : 0

Depth	Phase Class	Operation	Hrs	Activity
0	PS P	WAIT ON	6.50	Wait on Daylight.
0	PS P	RIG DOWN (THE RIG)	12.00	Safety Meeting, RigDown- Stairs, Poorboy Degasser, Gen & SCR shacks, Lower doghouse, Unpin A-Legs and split derrick. LOAD OUT & SPOT- Matting, pits, sub, pumps, Gen & SCR shacks, Mech shack, junk box.
0	PS P	WAIT ON	5.50	Wait on Daylight.

Date : 28/03/2001

Progress : 0

Depth @ 24:00 hrs : 0

Depth	Phase Class	Operation	Hrs	Activity
0	PS P	WAIT ON	7.00	Wait on Daylight.
0	PS P	RIG UP (THE RIG)	11.50	Safety Meeting, Complete load out from Dunbar, Spot all rig equipment, Pin derrick sections, String blocks, power up rig. Load in Surface casing.
0	PS P	WAIT ON	5.50	Wait on Daylight.

Date : 29/03/2001

Progress : 0

Depth @ 24:00 hrs : 0

Depth	Phase Class	Operation	Hrs	Activity
0	PS P	WAIT ON	6.50	Wait on Daylight.
0	PS P	RIG UP (THE RIG)	4.50	Safety Meeting, Prepare to raise derrick. Rig Down-Move & Rig up camp. Geoservices Rig Up.
0	PS P	RIG UP (THE RIG)	10.00	Raise Derrick and rig up lines. Install cat walk and V-Door. Dowell Rig Up Unit and bulky. Load in chemicals Spud list. Prepare BHA. Rig up rig, pits and pumps. Mix Spud Mud, P/U Kelly.
0	PS P	WAIT ON	3.00	Wait On Crews.

Date : 30/03/2001

Progress : 130

Depth @ 24:00 hrs : 130

Depth	Phase Class	Operation	Hrs	Activity
0	PS P	RIG UP (THE RIG)	15.00	Torq Kelly, Install kelly spinner, Run Geograph & Survey Lines. Service Mud Pumps, M/U 12 1/4" Bit and drill/set Rat hole & mouse Hole sock. Prepare BHA and final R/U and House keeping and safety issues. Press. test lines 2000psi.
130	SH P	CONTROL DRILL - DEV	9.00	Hold Pre-Spud meeting and Hazard identification tour. Spud Croft #1 and Drill & Jet & Survey from 15m to 130m.

Date : 31/03/2001

Progress : 97

Depth @ 24:00 hrs : 476

Depth	Phase Class	Operation	Hrs	Activity
379	SH P	CONTROL DRILL - DEV	9.50	Drill, Jet & Survey from 130m to 379m.
379	SH TP	CIRCULATE & CONDITION	1.50	Clear obstruction from flow line that resulted in clay build up and blockage. Flush same.
476	SH P	CONTROL DRILL - DEV	8.50	Drill, Jet & Survey from 379m to section TD 476m.
476	SH P	CIRCULATE & CONDITION	0.50	Circulate hole clean.
476	SH P	SURVEY	0.50	Survey at 458m 5 deg Inc 188 deg Az

CROFT #1

Drilling Co.: OD&E

908028 113

Rig: OD&E #30

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 GL above MSL : 52 m Long : 142 deg 46 min 23.65 sec Spud Time: 15:00:00 Release Time: 20:00:00

ACTIVITY REPORT

Date : 31/03/2001

Progress : 97

Depth @ 24:00 hrs :476

Depth	Phase Class	Operation	Hrs	Activity
476	SC P	WIPER TRIP	2.50	POOH for wiper trip from 476m to surface. Double work DCs and Inspect bit. RIH to 476m. Hole slick.
476	SC P	CIRCULATE & CONDITION	1.00	Circulate hole clean.

Date : 01/04/2001

Progress : 0

Depth @ 24:00 hrs :476

Depth	Phase Class	Operation	Hrs	Activity
476	SC P	TRIP-OUT	4.50	Pump pill and POOH from 476m, double work DCs to condition hole. L/O 6 1/2" DCs and BHA.
476	SC P	RIG RUN TO CASING	2.00	Rig up to run 7 5/8" Surface Casing.
476	SC P	RUN CASING	4.00	Hold pre job safety meeting, Make Up Float & Shoe track, test floats -OK, Run 7 5/8" Surface casing.
476	SC P	CIRCULATE CASING	1.00	Make up circulating swage and circulate casing. Rig pump 40 bbls water pre-flush. Hold pre-cementing safety meeting.
476	SC P	HEAD-UP FOR CMT OPS	0.50	Make up Cement head and Dowell test lines.
476	SC P	CEMENT CASING	0.50	Drop bottom plug, Dowell mix and pump 87 bbls Lead cement at 11.5 ppg & 19 bbls Tail cement at 15.6 ppg.
476	SC P	CEMENT CASING	0.50	Drop top plug and displace 10 bbls water. Rig displace cement with mud and bump plug to 1000 psi. (13 bbls cement returns)
476	SC P	CEMENT CASING	0.50	Dowell pressure test casing to 3000 psi / 10 min -OK.
476	SC P	WAIT ON CEMENT	4.00	Bleed back 0.5 bbls - Floats holding. Conduct top up. WOC - Prepare for BOP nipple up. Pressure test choke manifold. Dump & Clean mud pits, Mix KCI / PHPA Mud system.
476	SC P	WELL-HEAD	2.00	Stage slack off casing, back out land joint and lay out surface riser. Clean threads and install "A" Section
476	SC P	N/U & TEST BOP's	5.00	Bradenhead and torq - Orientate same. Nipple up BOPs.

Date : 02/04/2001

Progress : 4

Depth @ 24:00 hrs :480

Depth	Phase Class	Operation	Hrs	Activity
476	SC P	N/U & TEST BOP's	10.00	Nipple up BOPs, Choke manifold and lines. Function test BOPs.
476	SC P	N/U & TEST BOP's	4.00	M/U Test joint assembly and Test BOPs, casing, lines and kelly valves as per Santos Specs - OK.
476	SC P	N/U & TEST BOP's	1.50	R/U Modified Bell Nipple, run on new wire to Survey Unit as per Santos request.
476	SC P	WELL-HEAD	1.00	Run Wear Bushing and L/O test joint assembly.
476	SC P	SLIP/CUT DRILL LINE	1.00	Slip & Cut drilling line (Excessive line wear)
476	SC P	TRIP-IN	3.50	M/U 6 3/4" Bit #2 and BHA and RIH to 254m.
476	SC P	LAY DOWN PIPE	1.00	RIH stands drill pipe, R/U and L/O excess singles.
476	SC P	TRIP-IN	0.50	RIH from 254m to 435m and wash to tag TOC @ 445m.
476	SC P	DRILL FLOAT / SHOE TRAC	1.25	Drill cement from 445m, float @ 447m, cement and shoe @ 472m and shoe track to 476m.
480	PH P	DRILLING AHEAD	0.25	Drill 6 3/4" hole from 476m to 480m.

Date : 03/04/2001

Progress : 318

Depth @ 24:00 hrs :798

Depth	Phase Class	Operation	Hrs	Activity
480	PH P	LOT / FIT	1.50	Circulate to balanced mud system and conduct LOT to 16.2 EMW
588	PH P	DRILLING AHEAD	4.00	Drill ahead 6 3/4" hole from 480m. (Pump 40 bbl water spacer and displace to KCI/PHPA mud system). Drill to 588m.
588	PH P	SURVEY	0.50	Circulate & Survey @ 578m - 4.5 deg Inc 183 deg Az
634	PH P	CONTROL DRILL - DEV	4.50	Drill 6 3/4" hole from 588m to 634m. (Control drill for deviation)
334	PH P	SURVEY	0.50	Circulate & Survey @ 625m - 3 deg Inc 190 deg Az
693	PH P	CONTROL DRILL - DEV	4.00	Drill 6 3/4" hole from 634m to 693m. (Control drill for deviation)
693	PH P	SURVEY	0.50	Circulate & Survey @ 684m - 1.5 deg Inc 206 deg Az

CROFT #1

Drilling Co.: OD&E

Rig: OD&E #30

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ACTIVITY REPORT

Date : 03/04/2001

Progress : 318

Depth @ 24:00 hrs : 798

Depth	Phase Class	Operation	Hrs	Activity
750	PH P	CONTROL DRILL - DEV	3.00	Drill 6 3/4" hole from 693m to 750m. (Control drill for deviation)
750	PH P	RIG SERVICE	0.50	Service Rig.
750	PH P	SURVEY	0.50	Circulate & Survey @ 741m - 1.1 deg Inc 222 deg Az
798	PH P	CONTROL DRILL - DEV	4.00	Drill 6 3/4" hole from 750m to 798m (Control drill for deviation)
798	PH P	SURVEY	0.50	Circulate & Survey @ 789m - 0.25 deg Inc 227 deg Az

Date : 04/04/2001

Progress : 424

Depth @ 24:00 hrs : 1,300

Depth	Phase Class	Operation	Hrs	Activity
876	PH P	DRILLING AHEAD	2.50	Drill 6 3/4" hole from 798m to 876m.
876	PH P	SURVEY	0.50	Circulate & Survey @ 867m - 3/8 .375 deg Inc 117 deg Az
972	PH P	DRILLING AHEAD	4.50	Drill 6 3/4" hole from 876m to 972m.
972	PH P	SURVEY	0.50	Circulate & Survey @ 963m - 0.1 deg Inc 162 deg Az
1,087	PH P	DRILLING AHEAD	3.50	Drill 6 3/4" hole from 972m to 1087m.
1,087	PH P	SURVEY	0.50	Circulate & Survey @ 1078m - 0.3 deg Inc 112 deg Az
1,194	PH P	DRILLING AHEAD	3.50	Drill 6 3/4" hole from 1087m to 1194m.
1,194	PH P	SURVEY	0.50	Circulate & Survey @ 1185m - 1.0 deg Inc 162 deg Az
1,290	PH P	DRILLING AHEAD	5.00	Drill 6 3/4" hole from 1194m to 1290m.
1,290	PH P	SURVEY	0.50	Circulate & Survey @ 1281m - 1.1 deg Inc 212 deg Az
1,300	PH P	DRILLING AHEAD	0.50	Drill 6 3/4" hole from 1290m to 1300m.
1,300	PH P	CIRCULATE & CONDITION	0.50	Circulate hole clean, flow check -Static. Pump pill.
1,300	PH P	WIPER TRIP	1.50	POOH for wiper trip from 1300m to shoe at 472m. (Hole slick)

Date : 05/04/2001

Progress : 255

Depth @ 24:00 hrs : 1,555

Depth	Phase Class	Operation	Hrs	Activity
1,300	PH P	WIPER TRIP	1.50	RIH wiper trip from shoe at 472m to 1300m. (Hole slick and nil fill)
1,406	PH P	DRILLING AHEAD	8.00	Drill 6 3/4" hole from 1300m to 1406m.
1,406	PH P	SURVEY	0.50	Circulate & Survey @ 1397m - 0.9 deg Inc 230 deg Az
1,484	PH P	DRILLING AHEAD	7.00	Drill 6 3/4" hole from 1406m to 1484m. (Several stringers drilled at <1 m/hr)
1,484	PH P	RIG SERVICE	0.50	Service Rig.
1,513	PH P	DRILLING AHEAD	2.50	Drill 6 3/4" hole from 1484m to 1513m. (Several stringers drilled at <1 m/hr)
1,513	PH P	SURVEY	0.50	Circulate & Survey @ 1504m - 1.0 deg Inc 230 deg Az
1,555	PH P	DRILLING AHEAD	3.50	Drill 6 3/4" hole from 1513m to 1555m.

Date : 06/04/2001

Progress : 106

Depth @ 24:00 hrs : 1,726

Depth	Phase Class	Operation	Hrs	Activity
1,620	PH P	DRILLING AHEAD	8.00	Drill 6 3/4" hole from 1555m to 1620m.
1,620	PH P	SURVEY	0.50	Circulate & Survey @ 1611m - 2.25 deg Inc 237 deg Az
1,667	PH P	DRILLING AHEAD	7.00	Drill 6 3/4" hole from 1620m to 1667m.
1,667	PH P	SURVEY	0.50	Circulate & Survey @ 1658m - 1 deg Inc 266 deg Az
1,726	PH P	DRILLING AHEAD	7.50	Drill 6 3/4" hole from 1667m to 1726m.
1,726	PH P	SURVEY	0.50	Circulate & Survey @ 1716m - 0.9 deg Inc 299 deg Az

Date : 07/04/2001

Progress : 111

Depth @ 24:00 hrs : 1,904

Depth	Phase Class	Operation	Hrs	Activity
1,793	PH P	DRILLING AHEAD	7.50	Drill 6 3/4" hole from 1726m to 1793m.
1,793	PH P	SURVEY	0.50	Circulate & Survey @ 1784m - 2.3 deg Inc 242 deg Az
1,851	PH P	DRILLING AHEAD	7.50	Drill 6 3/4" hole from 1793m to 1851m.
1,851	PH P	RIG SERVICE	0.50	Service Rig
1,851	PH P	SURVEY	0.50	Circulate & Survey @ 1842m - 2.8 deg Inc 239 deg Az

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ACTIVITY REPORT

Date : 07/04/2001				Progress : 111	Depth @ 24:00 hrs :1,904
Depth	Phase	Class	Operation	Hrs	Activity
1,889	PH	P	DRILLING AHEAD	4.50	Drill 6 3/4" hole from 1851m to 1889m.
1,889	PH	P	SURVEY	0.50	Circulate & Survey @ 1880m - 2.25 deg Inc 245 deg Az
1,904	PH	P	DRILLING AHEAD	2.50	Drill 6 3/4" hole from 1889m to 1904m.

Date : 08/04/2001				Progress : 108	Depth @ 24:00 hrs :2,063
Depth	Phase	Class	Operation	Hrs	Activity
1,955	PH	P	DRILLING AHEAD	7.00	Drill 6 3/4" hole from 1904m to 1955m.
1,955	PH	P	SURVEY	0.50	Circulate & Survey @ 1946m - 1.1 deg Inc 212 deg Az
2,003	PH	P	DRILLING AHEAD	7.00	Drill 6 3/4" hole from 1955m to 2003m.
2,003	PH	P	SURVEY	0.50	Circulate & Survey @ 1994m - 2.0 deg Inc 227 deg Az
2,063	PH	P	DRILLING AHEAD	9.00	Drill 6 3/4" hole from 2003m to 2063m. (Flow check drill breaks and gas peaks to 3450 units)

Date : 09/04/2001				Progress : 136	Depth @ 24:00 hrs :2,253
Depth	Phase	Class	Operation	Hrs	Activity
2,117	PH	P	DRILLING AHEAD	8.00	Drill 6 3/4" hole from 2063m to 2117m. (Flow check Hi Gas peaks & Drill breaks)
2,117	PH	P	RIG SERVICE	0.50	Service Rig
2,156	PH	P	DRILLING AHEAD	5.50	Drill 6 3/4" hole from 2117m to provisional TD 2156m.
2,156	PH	U	CIRCULATE & CONDITION	0.50	Circulate, - TD of well extended.
2,253	PH	U	DRILLING AHEAD	9.50	Drill 6 3/4" hole from provisional TD 2156m to 2253m.

Date : 10/04/2001				Progress : 60	Depth @ 24:00 hrs :2,388
Depth	Phase	Class	Operation	Hrs	Activity
2,328	PH	U	DRILLING AHEAD	7.50	Drill 6 3/4" hole from 2253m to 2328m. (Gas of 40% from 2294 - 2297m)
2,328	PH	U	CIRCULATE & CONDITION	1.00	Circulate hole clean, flow check - static. Pump pill.
2,328	PH	U	SURVEY	0.50	Survey at 2310m - 6.25 deg Inc 197 deg Az.
2,328	PH	P	WIPER TRIP	2.50	POOH for wiper trip from 2328m to shoe at 471m.
2,328	PH	P	SLIP/CUT DRILL LINE	0.50	Slip drilling line.
2,328	PH	P	WIPER TRIP	3.50	RIH wiper trip from shoe at 471m to 2316m. (Tight spot at 1990m) Wash from 2316m to 2328m (3m fill)
2,388	PH	U	DRILLING AHEAD	8.50	Drill 6 3/4" hole from 2328m to 2388m.

Date : 11/04/2001				Progress : 86	Depth @ 24:00 hrs :2,529
Depth	Phase	Class	Operation	Hrs	Activity
2,443	PH	U	DRILLING AHEAD	8.00	Drill 6 3/4" hole from 2388m to 2443m.
2,443	PH	U	RIG SERVICE	0.50	Service Rig.
2,529	PH	U	DRILLING AHEAD	14.50	Drill 6 3/4" hole from 2443m to 2529m. (Weight indicator failure at 2520m -investigate same)
2,529	PH	TU	RIG REPAIR	1.00	Circulate hole clean.- Investigate Weight Indicator failure)

Date : 12/04/2001				Progress : 0	Depth @ 24:00 hrs :2,529
Depth	Phase	Class	Operation	Hrs	Activity
2,529	PH	U	SURVEY	1.00	survey at 2511m - 7 deg Inc 214 deg Az.
2,529	EP	P	TRIP-OUT	5.50	Flow check, Pump pill and POOH with alternate weight indicator from 2529m to shoe at 471m. (Hole slick).
2,529	EP	TP	LOGGING	4.50	Flow check static. Continue POOH and break bit. Hold pre-job safety meeting, R/U Reeves logging and Run #1 Tools and RIH. Casing test tools and RIH to bridge at 1923m. Attempt to work thru -NoGo. POOH and R/D Reeves.

CROFT #1

903028 116
Drilling Co.: OD&E

Rig: OD&E #30

RT above GL: 4 m Lat : 38 deg 32 min 25.32 sec Spud Date: 30/03/2001 Release Date: 20/04/2001
GL above MSL : 52 m Long : 142 deg 46 min 23.65 sec Spud Time: 15:00:00 Release Time: 20:00:00

ACTIVITY REPORT

Date : 12/04/2001

Progress : 0

Depth @ 24:00 hrs :2,529

Depth	Phase Class	Operation	Hrs	Activity
2,529	EP TP	WIPER TRIP	1.50	L/O Monel DC and worn stb, M/U Bit #RR3 and BHA and RIH to shoe at 471m.
2,529	EP TP	SLIP/CUT DRILL LINE	0.50	Slip drilling line.
2,529	EP TP	WIPER TRIP	5.00	RIH from 471m to 1923m, work and ream stringer ledge, cont RIH pushing obstruction to 2500m.
2,529	EP TP	WIPER TRIP	1.00	Wash & Ream from 2500m to TD 2529m.
2,529	EP TP	CIRCULATE & CONDITION	1.00	Circulate hole clean and low gas count. Flow check and pump pill.
2,529	EP TP	WIPER TRIP	4.00	POOH wiper trip from 2529m and rack BHA.

Date : 13/04/2001

Progress : 0

Depth @ 24:00 hrs :2,529

Depth	Phase Class	Operation	Hrs	Activity
2,529	EP TP	WIPER TRIP	0.50	Cont. POOH wiper trip and rack BHA.
2,529	EP P	LOGGING	11.50	Hold pre-job safety meeting, R/U Reeves logging and Run #1 Tools GR- DLS- MRS- LCS and RIH. Casing test tools and RIH to TD 2529m and log.
2,529	EP P	LOGGING	5.00	Reeves M/U Run #2 PDS- CNS and RIH to TD. Log to 1950m, apparent failure of caliper giving fluctuating readings. POOH and L/O tools.
2,529	EP TP	LOGGING	5.00	Reeves M/U Log tools Run #3 RFS and RIH. Tag obstruction at 1954m and work to 1984m. Full bridge off. Attempt to clear thru -NoGo. POOH for wiper trip, tool stuck at 603m. Attempt to work free -NoGo.
2,529	EP TP	LOGGING	2.00	Hold safety meeting, rearrange Reeves Top Sheave, Fabricate "J" slotted side entry wire guide and RIH stripping over Reeves Wire to 180m.

Date : 14/04/2001

Progress : 0

Depth @ 24:00 hrs :2,529

Depth	Phase Class	Operation	Hrs	Activity
2,529	EP TP	LOGGING	2.00	Hold safety meeting with new crew and RIH stripping over Reeves Wire from 180m to tag top of tool at 594m and push until tool free at 615m. Reeves RIH to 635m.
2,529	EP TP	LOGGING	2.00	Work pipe from 615m to 625m, POOH from 625m to 435m with Reeves tailing behind on each stand pulled. Reeves POOH to inside shoe at 465m. POOH pipe from 435m to surface. "T" bar wire, unthread from "J" slot guide.
2,529	EP TP	LOGGING	1.50	Reeves function test tool -OK, POOH from 465m, L/O RFS tools and R/D. ***Nil Tool or wire damage.
2,529	EP TP	WIPER TRIP	9.50	M/U Bit and BHA and RIH for wiper trip. Work any indications of hang up, work bridge at 1984m and chase obstruction to 2100m.(Triple work all stands in Belfast formation) Cont RIH and ream from 2509m to 2529m.
2,529	EP TP	CIRCULATE & CONDITION	1.50	Circulate hole clean and condition mud. Spot 5 x 3 bbl LCM sweeps. Flow check -Static. Pump pill and rack kelly.
2,529	EP TP	WIPER TRIP	4.50	POOH Wiper trip from 2529m. (Hole slick but double work stands- shoe to 570m). Rack BHA.
2,529	EP TU	WIPER TRIP	0.50	R/U Reeves and hold pre-job safety meeting.
2,529	EP TU	LOGGING	2.50	Reeves M/U Log Run #3 AST and RIH.

Date : 15/04/2001

Progress : 0

Depth @ 24:00 hrs :2,529

Depth	Phase Class	Operation	Hrs	Activity
2,529	EP TU	LOGGING	2.00	Reeves RIH Log Run #3 AST to unpassable hole at 1996m. (Belfast formation) POOH.
2,529	EP P	LOGGING	18.00	Reeves M/U Log run #4 RFS and RIH. Work through hang-ups in Belfast formation from 1950m to 2005m and Cont. RIH. Correlate from 2070m to 2020m. Conduct Pressure tests in Waarre/Eumerella stations. (Programmed 36 stations). POOH.

CROFT #1

Drilling Co.: OD&E

Rig: OD&E #30

RT above GL: 4 m Lat : 38 deg 32 min 25.32 sec Spud Date: 30/03/2001 Release Date: 20/04/2001
 GL above MSL : 52 m Long : 142 deg 46 min 23.65 sec Spud Time: 15:00:00 Release Time: 20:00:00

ACTIVITY REPORT

Date : 15/04/2001

Progress : 0

Depth @ 24:00 hrs :2,529

Depth	Phase	Class	Operation	Hrs	Activity
2,529	EP	TU	LOGGING	3.00	Reeves M/U Run #5 - DIPMETER and RIH to bridge at 795m. Attempt to work through -NoGo. POOH.
2,529	EP	TU	LOGGING	1.00	Reeves M/U Log Run #6 - SCG Side Wall Cores and RIH.

Date : 16/04/2001

Progress : 0

Depth @ 24:00 hrs :2,529

Depth	Phase	Class	Operation	Hrs	Activity
2,529	EP	TU	LOGGING	1.50	Reeves RIH Log Run #6 - SCG Side Wall Cores to bridge at 795m, attempt to work through -NoGo. POOH and R/D Reeves and clear rig floor.
2,529	EP	TU	WIPER TRIP	1.50	M/U Bit and RIH wiper trip to shoe at 471m.
2,529	EP	TU	SLIP/CUT DRILL LINE	1.00	Slip & Cut Drilling Line.
2,529	EP	TU	WIPER TRIP	5.00	Cont. RIH wiper trip from shoe at 471m. (Nil indications at 795m) and cont RIH washing last single to TD 2529m.
2,529	EP	TU	CIRCULATE & CONDITION	1.00	Circulate hole clean and low gas.
2,529	EP	TU	WIPER TRIP	4.50	Flow check, pump pill and POOH wiper trip from 2529m. Rack BHA.
2,529	EP	TU	LOGGING	6.00	Reeves R/U and M/U tools - Dipmeter and RIH to bridge at 1923m. Attempt to work through -NoGo. POOH and L/O tools. Abort Side Wall Core run.
2,529	EP	U	WIPER TRIP	3.50	M/U Bit #3RR4 and RIH wiper trip to 1800m.

Date : 17/04/2001

Progress : 0

Depth @ 24:00 hrs :2,529

Depth	Phase	Class	Operation	Hrs	Activity
2,529	EP	U	WIPER TRIP	4.00	Cont. RIH Wiper trip from 1800m to obstruction at 1920m and work clean. Work each stand twice from 1920m to top of fill at 2520m.
2,529	EP	U	CIRCULATE & CONDITION	1.00	Circulate hole clean and low gas. Condition mud and build volume. Flow check - static. Pump pill.
2,529	EP	U	WIPER TRIP	5.00	POOH wiper trip from 2520m, rack BHA as per DST requirements, break bit and L/O stbs. Clear rig floor.
2,529	EP	U	DST	8.50	Safety meeting and M/U Tools DST #1 for interval 2287m - 2332m (Drillers Depth) and RIH filling for 746m water cushion. Cont. RIH to 2336m.
2,529	EP	U	DST	3.50	R/U Reeves and RIH. Correlate string on depth with a 1.2m down correction. POOH and R/D.
2,529	EP	U	DST	2.00	R/U Baker Oiltools pressure head, lines and manifold. Pressure test. Inflate packers, hold safety meeting. Test seat and attempt to open tool - Slippage. Reinflate and test seat- NoGo.

Date : 18/04/2001

Progress : 0

Depth @ 24:00 hrs :2,529

Depth	Phase	Class	Operation	Hrs	Activity
2,529	EP	U	DST	1.50	Attempt to reinflate packers, test seat - free string movement. Drop bar and reverse circulate string to 9.6ppg mud. Nil indications of contamination. R/D Baker Oiltools head and manifold.
2,529	EP	U	DST	8.00	Flow check - Static. Pump pill and POOH with DST tools from 2336m and L/O and inspect tools. Full recovery.
2,529	EP	U	LOGGING	7.00	R/U Reeves, hold Radio Silence / Explosives safety meeting, M/U Tools Run #8 Side Wall Cores and RIH to 2508m. taking 48 samples to 1985m (Eumerella - Waarre Formation) POOH and Rig Down.
2,529	EP	P	WIPER TRIP	1.50	M/U Bit # 3RR5 and BHA. RIH to shoe at 471m.
2,529	EP	P	SLIP/CUT DRILL LINE	0.50	Slip Drilling Line.
2,529	EP	P	WIPER TRIP	3.50	Continue to RIH from shoe at 471m to 2510m.
2,529	EP	P	CIRCULATE & CONDITION	1.00	Circulate hole clean and low gas count.
2,529	PC	P	LAY DOWN PIPE	1.00	Pump pill and POOH laying down pipe from 2510m.

CROFT #1

908028 118

Drilling Co.: OD&E

Rig: OD&E #30

RT above GL: 4 m Lat : 38 deg 32 min 25.32 sec Spud Date: 30/03/2001 Release Date: 20/04/2001
 GL above MSL : 52 m Long : 142 deg 46 min 23.65 sec Spud Time: 15:00:00 Release Time: 20:00:00

ACTIVITY REPORT

Date : 19/04/2001

Progress : 0

Depth @ 24:00 hrs :2,529

Depth	Phase	Class	Operation	Hrs	Activity
2,529	PC	P	LAY DOWN PIPE	5.00	Cont. POOH laying down pipe to shoe at 471m.
2,529	PC	P	LAY DOWN PIPE	1.00	P/U Kelly and soft break connections.
2,529	PC	P	LAY DOWN PIPE	4.00	Cont. POOH laying down pipe from shoe at 471m. Break bit and L/O stbs. Clear rig floor.
2,529	PC	P	WELL-HEAD	0.50	Retreive Wear Bushing and L/O assembly.
2,529	PC	P	RIG RUN TO CASING	2.00	Rig Up PCS and equipment to run 3 1/2" Production Casing. Hold Pre-Job safety meeting.
2,529	PC	P	RUN CASING	11.50	M/U Shoe Track, test floats -Ok and RIH 3 1/2" Production Casing.

Date : 20/04/2001

Progress : 0

Depth @ 24:00 hrs :2,529

Depth	Phase	Class	Operation	Hrs	Activity
2,529	PC	P	RUN CASING	2.00	Continue to RIH 3 1/2" Production Casing to 2408m. (Differentially sticking)
2,529	PC	P	CIRCULATE CASING	1.50	Circulate casing treating 100bbls mud with biocide and caustic to Ph 10.
2,529	PC	P	HEAD-UP FOR CMT OPS	0.50	M/U Cementhead and test lines 4000 psi -OK.
2,529	PC	P	CEMENT CASING	1.50	Dowel drop Bottom Plug, Mix and Pump 248 bbls Lead Cmt @ 11.5ppg and 70 bbls Tail Cmt @ 15.8 ppg. Flush lines. Drop Top Plug and pump 10 bbls water.
2,529	PC	P	CEMENT CASING	0.50	Rig displace Cmt with 59 bbls 2% KCL and bump plug to 2000 psi. Dowell pressure to 3000 psi / 10 min -OK. Bleed back 1/2 bbls, Floats holding.
2,529	PC	P	WAIT ON CEMENT	4.00	WOC and flush BOPs and Choke manifold. Dump & clean mud pits.
2,529	PC	P	N/U & TEST BOP's	3.00	N/D Choke / Kill Lines and BOP flange and raise BOPs.
2,529	PC	P	N/U & TEST BOP's	5.00	Rough cut landing joint and lay out same. Set down BOPs. Lay out Kelly, remove cat walk & V-Door, N/D and Lay down BOPs.
2,529	PC	P	WELL-HEAD	1.75	Final cut, dress and bevel casing stump, N/U adaptor flange and Well-head.
2,529	PC	P	WELL-HEAD	0.25	RIG RELEASE CROFT #1 @ 20:00 Hrs FRIDAY 20th APRIL 2001.

Section 3.0

Drilling Data

- **Mud Record**
- **BHA Summary**
- **Bit Summary by Formation**
- **FIT/LOT Report**

Drilling Co.: UD&E
 Rig: OD&E #30
 Mud Cr: Baroid
 RT above GL : + m
 Lat : 38 deg 32 min 25.32 sec
 Spud Date: 30/03/2001
 Release Date: 20/04/2001
 GL above MSL : 52 m
 Long : 142 deg 46 min 23.65 sec
 Spud Time: 15:00
 Release Time: 20:00
 Total Cost: \$ 38,357

MUD RECAP

R#	DATE	TYPE	DEPTH F	TMP F	MW ppg	VIS secs/qt	PV cps	YP lbs/100ft2	Gel10s lbs/100ft2	Gel10m lbs/100ft2	F.L. API (cm3/30min)	F.L. ht/tp (cm3/30min)	Sols %	Sand %	MBT %	PH	CI ppm	HARD /Ca ppm	KCI %	DAILY \$
5	30/03/2001	GEL SPUD MUD	99	66	8.9	41	10	8	7	15	16.0		4.5	.25	20.0	9.5	800	40	0	1,400
6	31/03/2001	GEL SPUD MUD	476	80	8.8	40	4	20	15	17	32.0		3.8	tr	10.0	8.5	3,000	80	0	8
7	01/04/2001	GEL SPUD MUD	476	0	9.0	45	7	23	19	22	30.0		4.9	tr	10.0	8.5	2,500	80	0	254
8	02/04/2001	GEL SPUD MUD	476	0	9.0	45	7	23	19	22	30.0		4.9	tr	10.0	8.5	2,500	80	0	2,456
9	03/04/2001	KCL/PHPA/POLYMER	769	94	8.6	33	4	2	0	1	15.0		.1	tr	0.0	9.0	18,000	360	4	947
10	04/04/2001	KCL/PHPA/POLYMER	1,252	104	9.0	35	5	4	0	1	8.5		3.9	.4	0.5	9.0	19,500	360	4	4,184
11	05/04/2001	KCL/PHPA/POLYMER	1,494	110	9.0	34	5	8	1	2	7.6		3.9	.5	0.5	9.0	20,000	400	4	4,487
12	06/04/2001	KCL/PHPA/POLYMER	1,719	116	9.0	35	6	6	1	2	8.8		3.9	.25	2.5	9.0	20,000	320	4	2,522
13	07/04/2001	KCL/PHPA/POLYMER	1,889	114	9.2	35	7	6	1	2	8.0		5.8	.25	2.0	9.0	21,000	240	4	4,450
14	08/04/2001	KCL/PHPA/POLYMER	2,047	122	9.3	36	7	6	1	2	7.5		6.4	.25	2.5	9.0	19,000	280	4	1,212
15	09/04/2001	KCL/PHPA/POLYMER	2,228	116	9.3	35	9	8	1	2	7.0		6.4	.25	2.5	9.5	19,500	160	4	2,693
16	10/04/2001	KCL/PHPA/POLYMER	2,367	112	9.5	36	9	9	1	2	7.0		9	.5	2.5	9.0	18,500	280	4	1,904
17	11/04/2001	KCL/PHPA/POLYMER	2,514	128	9.5	38	10	8	1	2	7.0		9	.5	2.5	9.0	19,000	320	4	3,387
18	12/04/2001	KCL/PHPA/POLYMER	2,514	128	9.5	38	10	8	1	2	7.0		9	.5	2.5	9.0	19,000	320	4	2,950
19	13/04/2001	KCL/PHPA/POLYMER	2,514	128	9.5	38	10	8	1	2	7.0		9	.5	2.5	9.0	19,000	320	4	169
20	14/04/2001	KCL/PHPA/POLYMER	2,529	92	9.6	43	10	11	3	4	7.4		9	.5	3.0	9.0	17,000	240	3	801
21	15/04/2001	KCL/PHPA/POLYMER	2,529	92	9.6	43	10	11	3	4	7.4		9	.5	3.0	9.0	17,000	240	3	0
22	16/04/2001	KCL/PHPA/POLYMER	2,529	92	9.7	43	10	11	3	4	7.4		9	.5	3.0	9.0	17,000	240	3	2,110
23	17/04/2001	KCL/PHPA/POLYMER	2,529	0	9.6	45	10	7	2	3	7.0		8	TR	2.0	9.0	19,000	360	4	169
24	18/04/2001	KCL/PHPA/POLYMER	2,529	0	9.6	45	10	7	2	3	7.0		8	TR	2.0	9.0	19,000	360	4	169
25	19/04/2001	KCL/PHPA/POLYMER	2,529	0	9.6	45	10	7	2	3	7.0		8	TR	2.0	9.0	19,000	360	4	169
26	20/04/2001	KCL/PHPA/POLYMER	2,529	0	9.6	45	10	7	2	3	7.0		8	TR	2.0	9.0	19,000	360	4	1,916

CROFT #1

Drilling Co.: OD&E

Rig: OD&E #30

RT above GL 4 m
GL above MSL 52 m

Lat : 38 deg 32 min 25.32 sec
Long : 142 deg 46 min 23.65 sec

Spud Date: 30/03/2001
Spud Time: 15:00
Release Date: 20/04/2001
Release Time: 20:00

BHA SUMMARY

#	Length (m)	Weight (k-lbs)	Weight bhw/Jars (k-lbs)	String Weight (k-lbs)	Pick-Up Weight (k-lbs)	Slack-Off Weight (k-lbs)	Torque Max (ft-lbs)	Torque on bottom (ft-lbs)	Torque off bottom (ft-lbs)	BHA DESCRIPTION
1	163	35		51	52	50	4,300	4,000	2,500	BIT, BIT SUB, X/O, 9 7/8 STB, X/O, UBHO, MDC, X/O, 11 x DCs, X/O, 5 x HWDP=163.43m
2	255	31	26	125	145	113	7,500	7,000	4,200	BIT, BIT SUB, MDC, STB, DC, STB, 16xDCs, JAR, 3xDCs, 5xHWDP = 254.92m
3	246	30	25	125	145	115	7,500	7,000	4,200	BIT, BIT SUB, STB, DC, STB, 16xDCs, JAR, 3xDCs, 5xHWDP = 245.77m
4	249	35								DST Tools with 45m interval = 249.47m

903028 121

CROFT # 1

Drilling Co.: OD&E

Rig : OD&E #30

RT above GL : 4 mtrs.
 GL above MSL : 52 mtrs

Lat : 38 deg 32 min 25.32 sec
 Long : 142 deg 46 min 23.65 sec

Spud Date: 30/03/2001
 Spud Time: 15:00:00

BIT RECORD

DATE	BIT#	SIZE "	IADC	SER	MFR	TYPE	JETS	D.IN mtrs	D.OUT mtrs	MTRG	HRS IADC	SPP psi	FLW gpm	WOB k-lbs	RPM	MW ppg	TFA sq.in	VEL mps	HHP /sq"	ROP m/hr	I O1	D L	B B	G G	O2 O2	R	
31/03/2001	RR1	9.88	117	LY9255	SMITH	FGSS+2C	2x0,1x22	0	476	476	20.8	2018	470	8.6	110	8.8	0.371	132	0.00	22.9	2	WT	A	E	I	NO	TD
11/04/2001	2	6.75		S1C0272	OTHER	SPL419	4x11	476	2,529	2,053	181.1	1675	292	6.4	110	9.1	0.371	75	2.44	11.3	2	WT	A	X	I	WO	TD
12/04/2001	3RR	6.75	437	D85YU	HUGHES	STR09D	3x24	2,529	2,529	0	0.0	2700	325	0.0	70	9.5	1.326	24	0.28		1	WT	A	E	I	JD	LOG

LEAK OFF TEST / FORMATION INTEGRITY TEST

WELL: CROFT #1 **RIG:** ODE #30 **DATE:** 03-Apr-01

CASING SIZE: 7 5/8 (inch) **SANTOS SUPERVISOR:** ALISTAIR CHOMLEY

- A. MUD DENSITY IN USE:
- B. HOLE DEPTH:
- C. SHOE DEPTH:
- D. FIT PRESSURE (GRAPH):
- E. EQUIVALENT DENSITY:

8.6	(ppg)
480	(m)
471	(m)
660	(psi)

- PRESSURE (D) (psi)**
- SHOE DEPTH (C) m x 3.2808 x 0.052
- F. STABILIZED PRESSURE RECORDED:
- G. VOLUME PUMPED:
- H. VOLUME REGAINED:

+ MUD DENSITY IN USE (A) (ppg) 16.2 (ppg) (EMW)

500	(psi)
0.35	(bbl)
0.2	(bbl)

MAX. PRESSURE AT PUMP UNIT CALCULATION

DESIRED EMW=	15.5
MUD WT. IN USE	8.6
SHOE DEPTH (m)	471

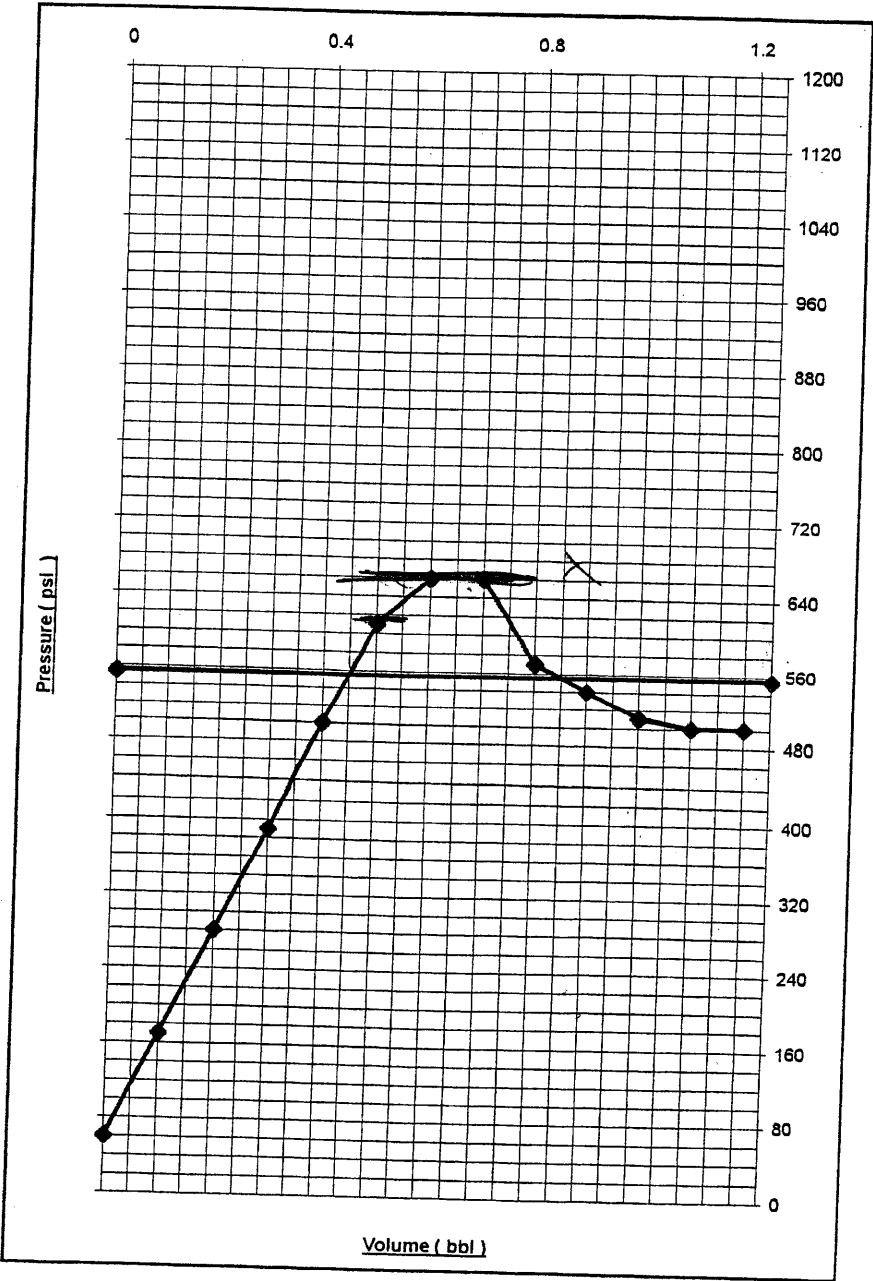
*** UNIT PRESSURE FOR DESIRED EMW

554

CASING PRESSURE CHARTT
 OPEN
 HOLE
 LOT
 PRESS
 AXS

Volume (BBLs)	Pressure (psi)
0.1	
0.2	
0.3	
0.4	
0.5	
0.6	
0.7	
0.8	
0.9	
1	
1.1	
1.2	
1.3	
1.4	
1.5	
1.6	
1.7	
1.8	
0	60
0.1	170
0.2	280
0.3	390
0.4	500
0.5	610
0.6	660
0.7	660
0.8	570
0.9	540
1	510
1.1	500
1.2	500
1.3	
1.4	
1.5	
1.6	
1.7	
1.8	
0	554
1.25	554

I.S.I.P
 1 min
 2min
 3 min
 4 min
 5 min
 6 min



Section 4.0

Casing and Cementing

- **Casing and Cementing Reports**
- **Wellhead Installation Report or**
- **Plug and Abandonment Report**

<h1 style="margin:0;">Santos</h1> <p style="font-size: small; margin: 5px 0;">Santos Ltd C.N. 007 550 923</p>	<h2 style="margin:0;">CASING AND CEMENTING REPORT</h2>	<h2 style="margin:0;">FORM</h2>
	Well Name: CROFT #1	CROFT #1

Casing type: X Surface casing	Intermediate Casing	Production Casing	Completion tubing
Originated by: ALISTAIR CHOMLEY		Checked by: GEOFF COKER	
Date: 01-Apr-01		Date: 01-Apr	
Hole Size: 9-7/8"		T.D.: 476m MD	
PRE-FLUSH 40 bbls. @ 8.4 ppg.		SPACER 10 bbls@ 8.34 ppg.	
Additives:		Water Source: CROFT #1 Water Bore	

CEMENT		Mixwater: 80.5 bbls		ADDITIVES	
LEAD SLURRY:	172	sacks Class	G	D 020	4% BWOC
Slurry Yield:	2.84	cu.ft./sack		S001 CaCl	1.5% BWOC
Mixwater Req't:	17.442	gal./sack		D047	.01 gal/sx
Actual Slurry Pumped:	86.9	bbls @	11.5 ppg		
Planned TOC:	0	m RT @	55 % o/g hole		
Actual est. TOC:	0	m RT @	% o/g hole		
TAIL SLURRY:	92	sacks Class	G	D145A	.05 gal/sx
Slurry Yield:	1.19	cu.ft./sack		S001 CaCl	0.50%
Mixwater Req't:	5.299	gal./sack		D047	.01 gal/sx
Actual Slurry Pumped:	19.4	bbls @	15.6 ppg		
Planned top tail:	379.6	m RT @	20 % o/g hole		
Actual est. top tail:		m RT @	% o/g hole		

DISPLACEMENT		Fluid: 10bbl Water 59.8bbl Mud @ 9 ppg	
Theoretical Displ.:	69.3	bbl.	
Actual Displ.	69.8	bbl @	5.5 bpm
Displaced via	RIG PUMP		
			Bumped plug with 500 psi Pressure Tested to: 3000 psi Bleed back: 0.5 bbls

ACTIVITY	Date/Time	Returns to Surface:	160	bbls mud	13	bbls cnt.
Start Running csg.	1-Apr-01 6:30	Reciprocate / Rotate Casing:		Reciprocate till plug bump.		
Casing on Bottom	1-Apr-01 10:25	Top Up Job run: Yes / No	Yes	10	sx class	G
Start Circulation	1-Apr-01 10:30	Plug Set Make / Type:	Weatherford Model-303 (FS), Model-402NP (FC)			
Start Pressure Test	1-Apr-01 11:40	Centraliser Placement, type/depth:	Weatherford 468m, 458m, 442m, 415m, 17m.			
Pump Preflush	1-Apr-01 11:15	Remarks:				
Start Mixing	1-Apr-01 11:50					
Finish Mixing	1-Apr-01 12:25					
Start Displacing	1-Apr-01 12:35					
Stop Displ./Bump	1-Apr-01 12:35					
Press. test	1-Apr-01 12:40					

No. JOINTS	SIZE OD	WT lb/ft	GRADE	THREAD	METER	FROM	TO	
Stick Up at RT					(Enter as negative number-do not include stretch, RT = 0)	-0.87	-0.87	0.00
Rotary table to top of Bradenhead					(Enter for surface casing only)	4.70	0.00	4.70
Bradenhead : WG-22-L, 7-5/8"BTC x 9-5/8"BTC x 11"5K					(Enter for surface casing only)	0.72	4.70	5.42
Rotary table to top of cut jt					(Enter for int. or production casing only)			
1	Cut Jt							
38	Jts	7-5/8"	26.4	L80	BTC	441.40	5.42	446.82
	Jts					0.00	446.82	446.82
	marker					0.00	446.82	446.82
	Jts					0.00	446.82	446.82
	marker					0.00	446.82	446.82
	Jts					0.00	446.82	446.82
	Float Collar	W'ford Model-402NP				0.00	446.82	446.82
2	Jts	7-5/8"	26.4	L80	BTC	0.40	446.82	447.22
	Float Shoe	W'ford Model-303				23.25	447.22	470.47
						0.44	470.47	470.91
Total Jts Run		40						
1 Jts On Location		42						
Jts not run		2						

Theoretical Bouyed wt of casing(klb): 32	Bradenhead Height above GL: 0.00
Actual wt of casing (last joint run-block wt, klb): 30	Casing wt just prior to landing csg/: 22
Landing WT (after cementing and pressure bleed off): 25	setting slips (indicator wt - blocks = wt)

Santos

Santos Ltd
A.C.N. 007 550 923

CASING & CEMENTING REPORT

Well Name: **CROFT #1**

FORM

DQMS F-220

Casing type: Surface casing Intermediate Casing Production Casing Completion tubing

Originated by: Alistair Chomley Checked by: Geoff Coker Date: 20-Apr-2001

Hole Size: 6 3/4" T.D.: 2529 mMD Date: 20/04/2001 Contractor: Schlumberger

PRE-FLUSH 40 bbls @ 8.5 ppg. SPACER 10 bbls @ 8.4 ppg.

Additives: Aldacide = 0.5 dr
S.A.P.P. = 8 lb/bbl

CEMENT		ADDITIVES		Product	%	Amount
LEAD SLURRY:	488	488	G	D066 Silica Flour	BWOC	lbs
Slurry Yield:	2.85	2.85		D020 Bentonite	5.00 BWOC	2294 lbs
Mixwater Req't:	17.518	17.518		D167 UniFLAC	BWOC	lbs
Actual Slurry Pumped:	248	248	11.5 ppg	S001 Calc. Chloride	BWOC	lbs
				D110 Retarder	0.04 gal/sk	19.5 gal
				D047 Antifoam	0.01 gal/sk	4.9 gal
TAIL SLURRY:	329	329	G	D066 Silica Flour	BWOC	lbs
Slurry Yield:	1.15	1.15		D167 UniFLAC	BWOC	lbs
Mixwater Req't:	5.074	5.074		D080 Dispersant	0.05 gal/sk	16.5 gal
Actual Slurry Pumped:	71	71	15.8 ppg	D153 Antisettling	BWOC	lbs
				D110 Retarder	0.03 gal/sk	9.9 gal
				D047 Antifoam	0.01 gal/sk	3.3 gal

DISPLACEMENT Fluid: 2% KCL @ 8.6 ppg
 Theoretical Displ.: 68.4 bbl. Bumped plug with 2000 psi
 Actual Displ. 68.5 bbl @ 5 bpm Pressure Tested to: 3000 psi
 Displaced via Rig / Truck Pump Bleed back: 0.5 bbls

ACTIVITY	Time	Returns to Surface:	197 bbls mud	bbls cmt.
Start Running csg.	12:30	Reciprocate / Rotate Casing:	Reciprocate until string stuck with 50 bbls cement in annulus	
Casing on Bottom	02:00	Top Up Job run: Yes / No	No sx class	
Start Circulation	02:05	Plug Set Make / Type:	Davis-Lynch : Bottom + Ball + Top	
Start Pressure Test	03:50	Centraliser Placement, type/depth:	Float & Shoe, 1 each 4th to 2166m, 1 each 3rd to 1971m, 1 at shoe 460m.	
Pump Preflush	03:20			
Start Mixing	04:03			
Finish Mixing	05:15	Remarks:	String became differentially stuck several times on second last joint run, and several times during preparation to circulate and M/U cement head.	
Start Displacing	05:20			
Stop Displ./Bump	05:42			
Start Press. test	05:45			

No. JOINTS	SIZE OD	WT lb/ft	GRADE	THREAD	MTS	FROM	TO
Stick Up (Enter as negative number)					-0.82	-0.82	
Rotary table to top of Bradenhead					4.70		4.70
Bradenhead / Tubing Hanger or Slip and Seal				WG-22 11" x 3-1/2"		4.70	4.70
						4.70	4.70
						4.70	4.70
						4.70	4.70
						4.70	4.70
Part Land Jt.	3.5	9.3	J55	New NK3SB	4.10	4.70	8.80
207 Jts	3.5	9.3	J55	New NK3SB	1991.34	8.80	2000.14
1 marker	3.5	9.3	J55	New NK3SB	3.01	2000.14	2003.15
41 Jts	3.5	9.3	J55	New NK3SB	394.46	2003.15	2397.61
Float Collar	3.5		P110	New NK3SB, Davis-Lynch	0.36	2397.61	2397.97
1 Joint	3.5	9.3	J55	New NK3SB	9.62	2397.97	2407.59
Float Shoe	3.5		P110	New NK3SB, Davis-Lynch	0.41	2407.59	2408.00

Theoretical Bouyed wt of casing(klb): 63.000 klbs Bradenhead Height above GL m
 Actual wt of casing (last joint run-block wt, klb) 65.000 klbs Casing wt just prior to landing casing 115.000 klbs
 Landing WT (after cementing and pressure bleed off) 65.000 klbs setting slips (overpull) 50.000 klbs

FORM

DQMS F-130

WELLHEAD INSTALLATION REPORT

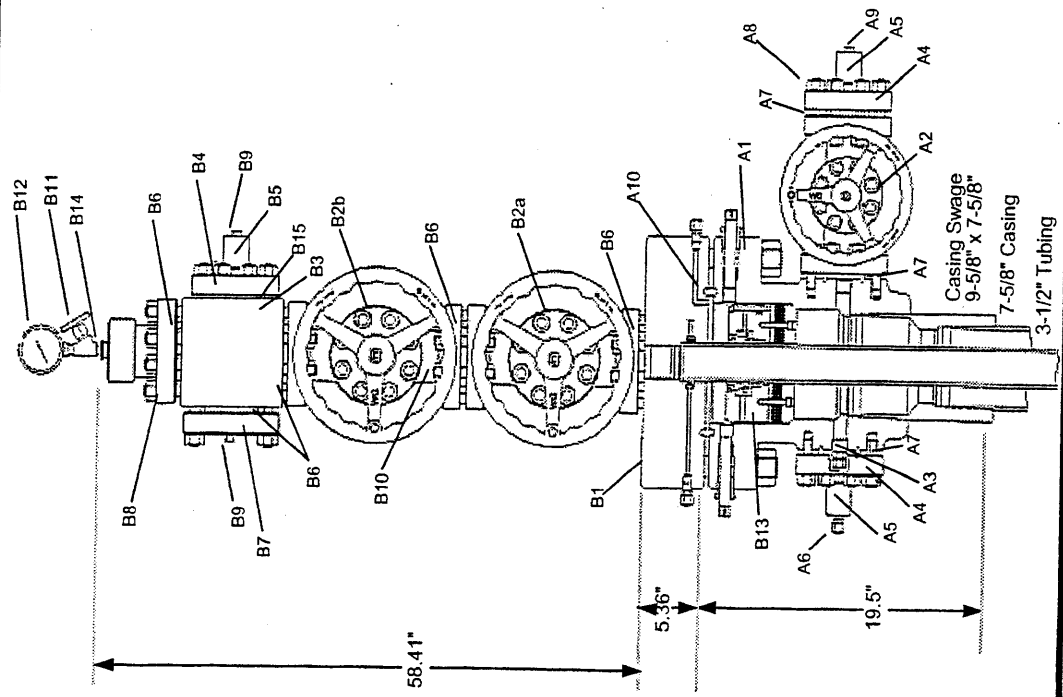
2 STRING MONOBORE (7-5/8" SURFACE CASING)

Santos

Well: CROFT #1

Supervisor: Alistair Chomley

Date: 22-Apr-2001



COMPONENT	DESCRIPTION	No USED
A1. Casing Head	11" 5k x 7-5/8" 5k c/w BTC Box (WG-22-L, PSL-1, PR-2, AA, U)	1
A2. Gate Valve	2-1/16" 5k Model 2200 (Type 'FE', PSL-1, PR-1, BB, U)	1
A3. Plug	1-1/2" line pipe c/w 1-1/4" hex	1
A4. Companion Flange	2-1/16" 5k x 2" line pipe, (AA, U)	2
A5. Bull Plug	2" line pipe tapped c/w 1/2" NPT, XX-H	2
A6. Test Fitting	1/2" NPT	1
A7. Ring Gasket	RX-24 Stainless Steel	3
A8. Studs	7/8" x 6-1/4" long c/w nuts	8
A9. Pipe Plug	1/2" NPT male	1
A10. Ring Gasket	RX-54 Stainless Steel	1
B13. Slip & Seal Assy	11" x 3-1/2" (WG-22, PSL-1, PR-2, AA, U)	1
B1. Adaptor Flange	11" x 3-1/8" 5k, 3.5" P seal, 3" H BPV (WG-A4-P, PSL-1, CC, U)	1
B2a. Gate Valve	3-1/8" 5k Model 2200 (6A, PSL-2, PR-1, CC, PU, 410/NITRO)	1
B2b. Gate Valve	3-1/8" 5k Model 2200 (6A, PSL-1, PR-2, BB, U, AS/NITRO)	1
B3. Flow Cross	3-1/8" x 3-1/8" x 3-1/8" x 2-1/16" 5k (PSL-1, PR-2, CC, U)	1
B4. Companion Flange	2-1/16" 5k x 2" line pipe, (AA, U)	1
B5. Bull Plug	2" line pipe tapped c/w 1/2" NPT, XX-H	1
B6. Ring Gasket	RX-35 Stainless Steel	5
B7. Blind Flange	3-1/8" 5k tapped 1/2" NPT (CC, U)	1
B8. Tree Cap	3-1/8" 5k c/w Bowen union, 3.5" lift thread, tapped 1" NPT	1
B9. Pipe Plug	1/2" NPT male	1
B10. Studs	7-1/4" x 1-1/8" w/ nuts	8
B11. Needle Valve	1/2" NPT 5k Stainless Steel	0
B12. Pressure Gauge	1/2" NPT 0-5000psi	0
B14. Reducer	1" male x 1/2" female NPT Reducer	1
B15. Ring Gasket	RX-24 Stainless Steel	1
Notes:	3-1/2" Tubing stub cut off 3" above top flange on bradheadhead. 1/2" NPT male Pipe plug fitted in lieu of Items B11 & B12 at this time.	

Section 5.0

Time Breakdown Data

- Overview

- Trouble Time Breakdown

CROFT #1

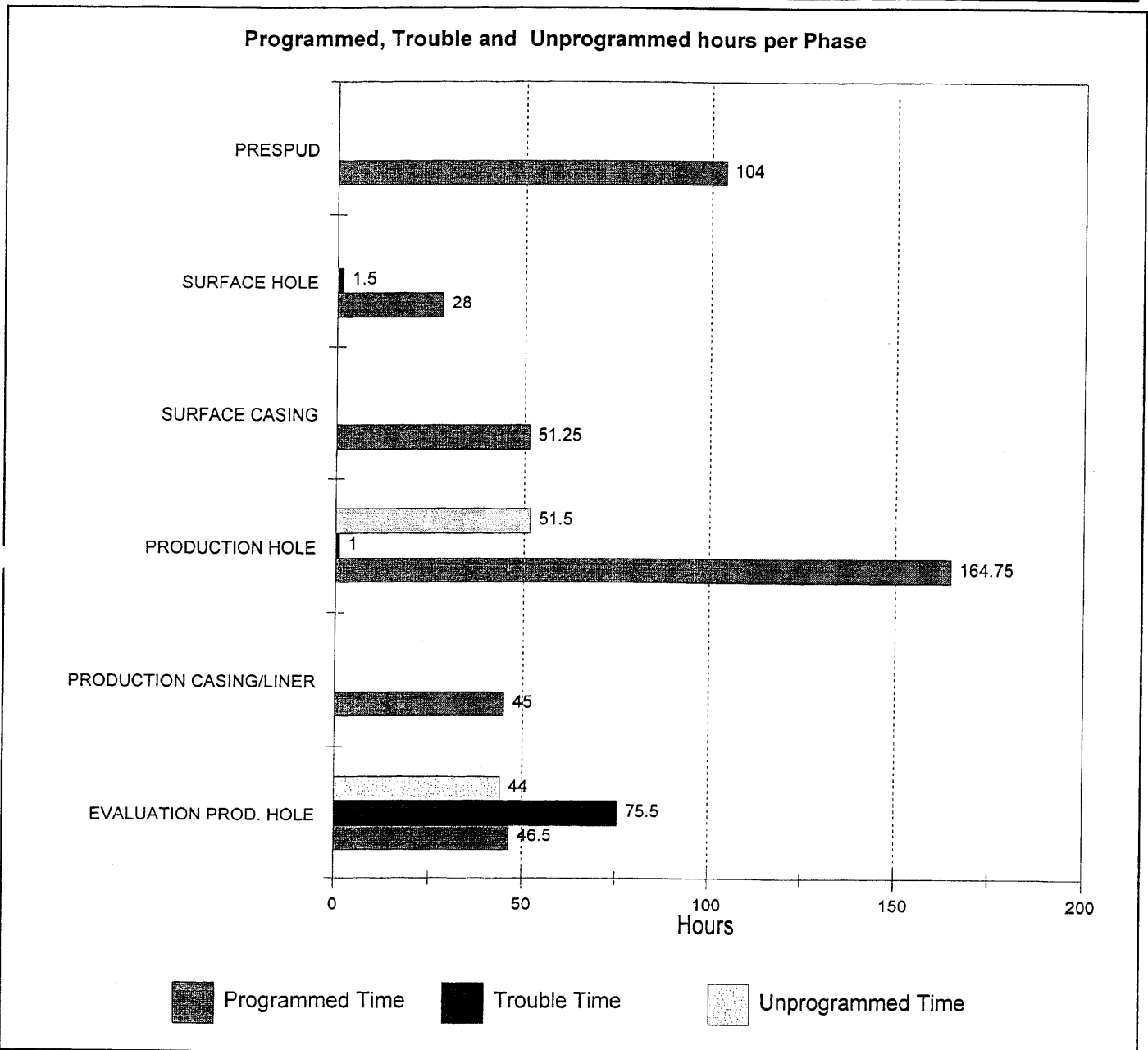
Drilling Co.: OD&E

Rig: OD&E #30

RT above GL: 4 m Lat : 38 deg 32 min 25.32 sec Spud Date: 30/03/2001 Release Date: 20/04/2001
 GL above MSL : 52 m Long : 142 deg 46 min 23.65 sec Spud Time: 15:00:00 Release Time: 20:00:00

Time Breakdown by Phase
CROFT #1

TOTAL HRS ON WELL :	613.00
TOTAL PROGRAMMED HRS :	439.50
TOTAL TROUBLE HRS :	78.00
TOTAL UNPROGRAMMED HRS :	95.50



CODE	PHASE	PROG	TROUB	UNPROG
PS	PRESPUD	104.00		
SH	SURFACE HOLE	28.00	1.50	
SC	SURFACE CASING	51.25		
PH	PRODUCTION HOLE	164.75	1.00	51.50
PC	PRODUCTION CASING/LINER	45.00		
EP	EVALUATION PROD. HOLE	46.50	75.50	44.00

Well : CROFT #1

Drilling Co : OD&E

Rig : OD&E #30

RT above GL: 4 m Lat : 38 deg 32 min 25.32 sec Spud Date: 30/03/2001 Release Date: 20/04/2001
 GL above MSL : 52 m Long : 142 deg 46 min 23.65 sec Spud Time: 15:00:00 Release Time: 20:00:00

TIME BREAKDOWN DATABASE - single well overview

Spud date : 30/03/2001
 TD Depth : 2,529.0
 Final Depth : 2,529.0
 Total Time (hrs) - Spud/Release : 509.00
 Total Time (hrs) - Rig Move : 0.00
 Total NPT (hrs) : 78.00

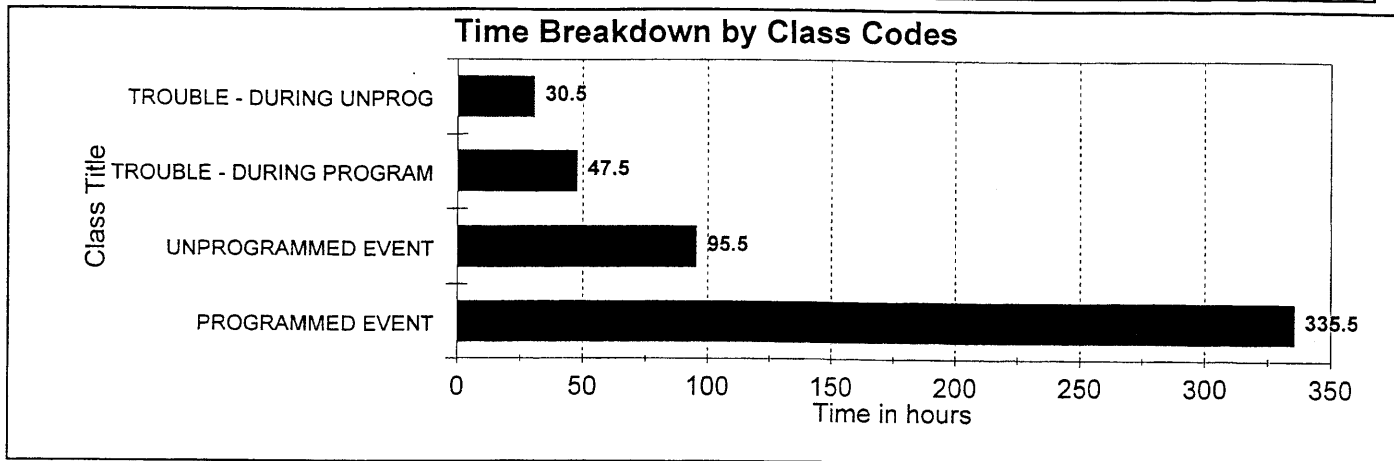
Time-Breakdown : Times by Class and Operation

Class	Hrs
PROGRAMMED EVENT	335.5
UNPROGRAMMED EVENT	95.5
TROUBLE - DURING PROGRAM	47.5
TROUBLE - DURING UNPROG	30.5

Operation	Hrs
DRILLING AHEAD	173.8
LOGGING	74.5
WIPER TRIP	66.5
CONTROL DRILL - DEV	42.5
TOT. CSG/CMT	36.3
N/U & TEST BOP's	28.5
DST	23.5
TOT. TRIPPING	14.0
LAY DOWN PIPE	12.0
SURVEY	12.0
CIRCULATE & CONDITION MUD	10.5
WELL-HEAD	5.5
SLIP/CUT DRILL LINE	3.5
RIG SERVICE	2.5
LOT / FIT	1.5
HEAD-UP FOR CMT OPS	1.0
RIG REPAIR	1.0

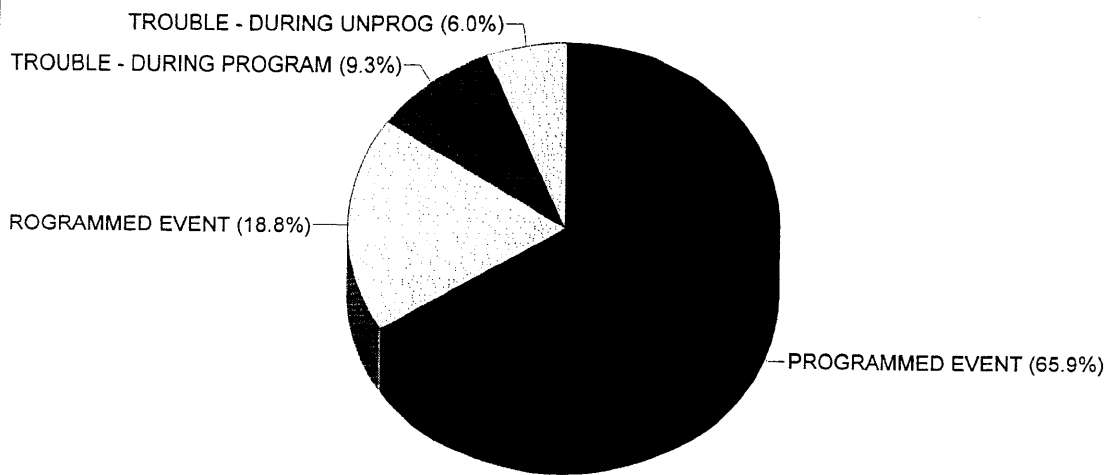
WELL : CROFT #1

Pacesetter : none selected



Time Analysis by Class Codes

Class	Hrs
PROGRAMMED EVENT	335.5
UNPROGRAMMED EVENT	95.5
TROUBLE - DURING PROG	47.5
TROUBLE - DURING UNPR	30.5

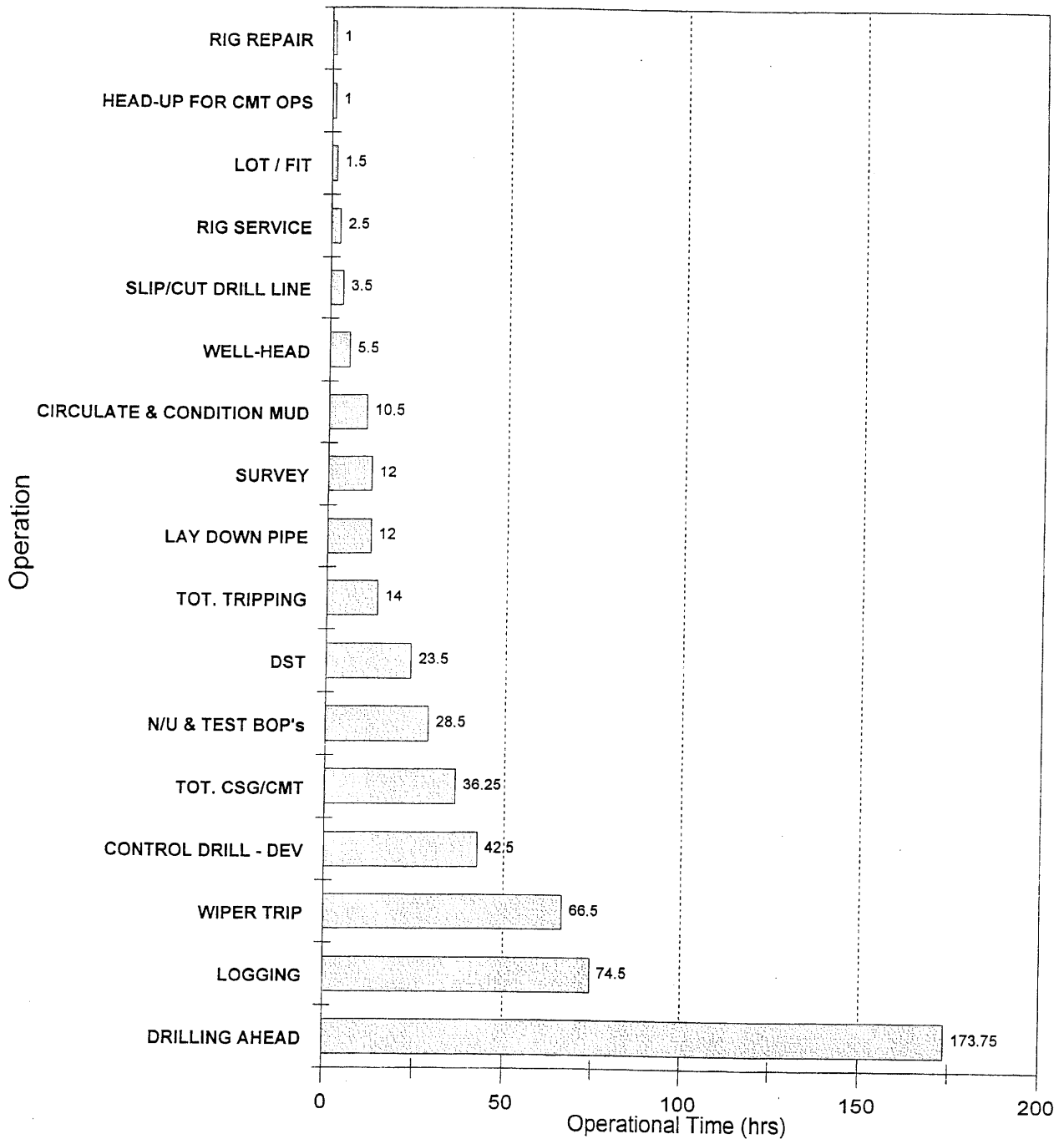


TIME BREAKDOWN DATABASE - single well overview

WELL : CROFT #1

Pacesetter : none selected

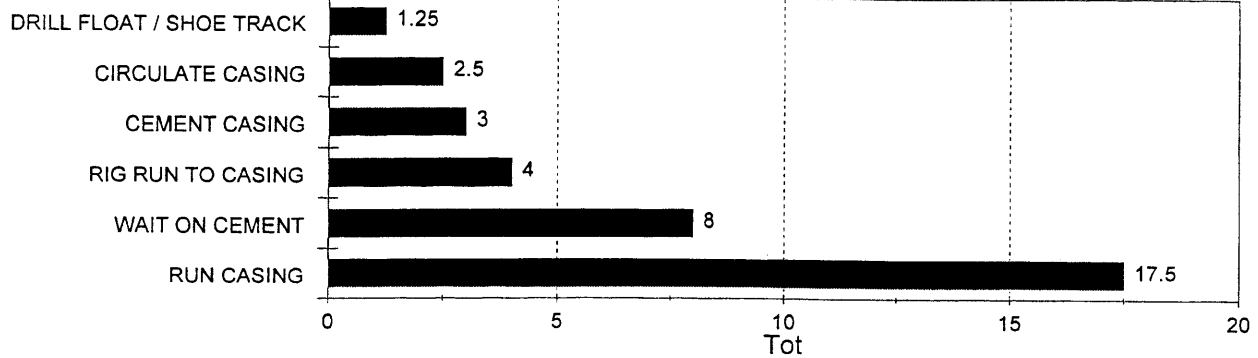
Time Breakdown by Operational Code



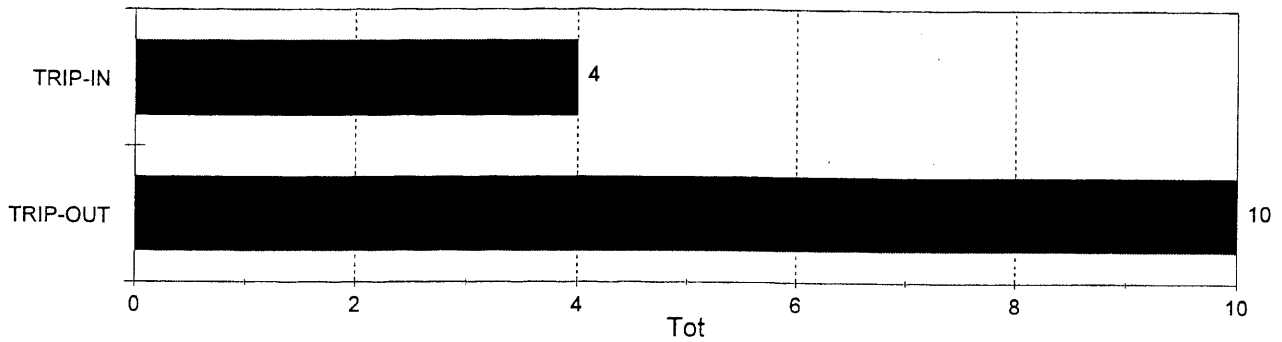
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Breakdown of Total Csg & Cmtng Time

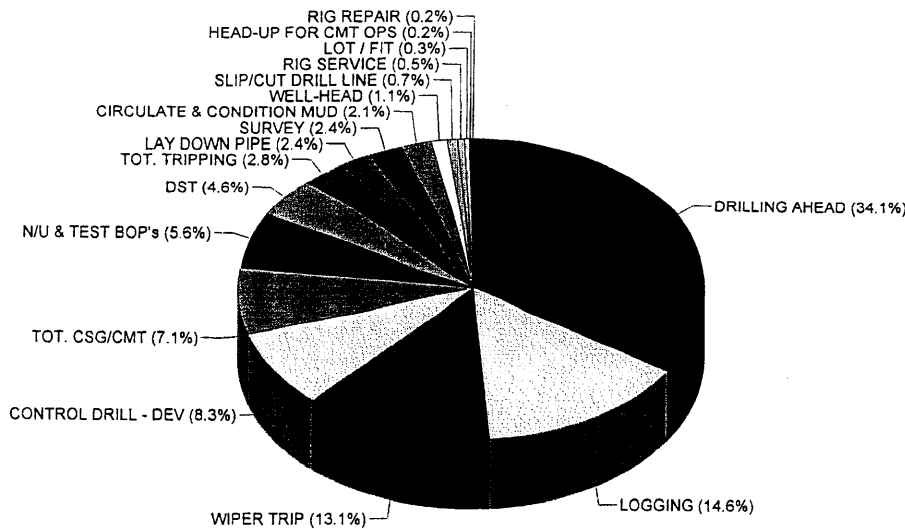


Breakdown of Total Tripping Time



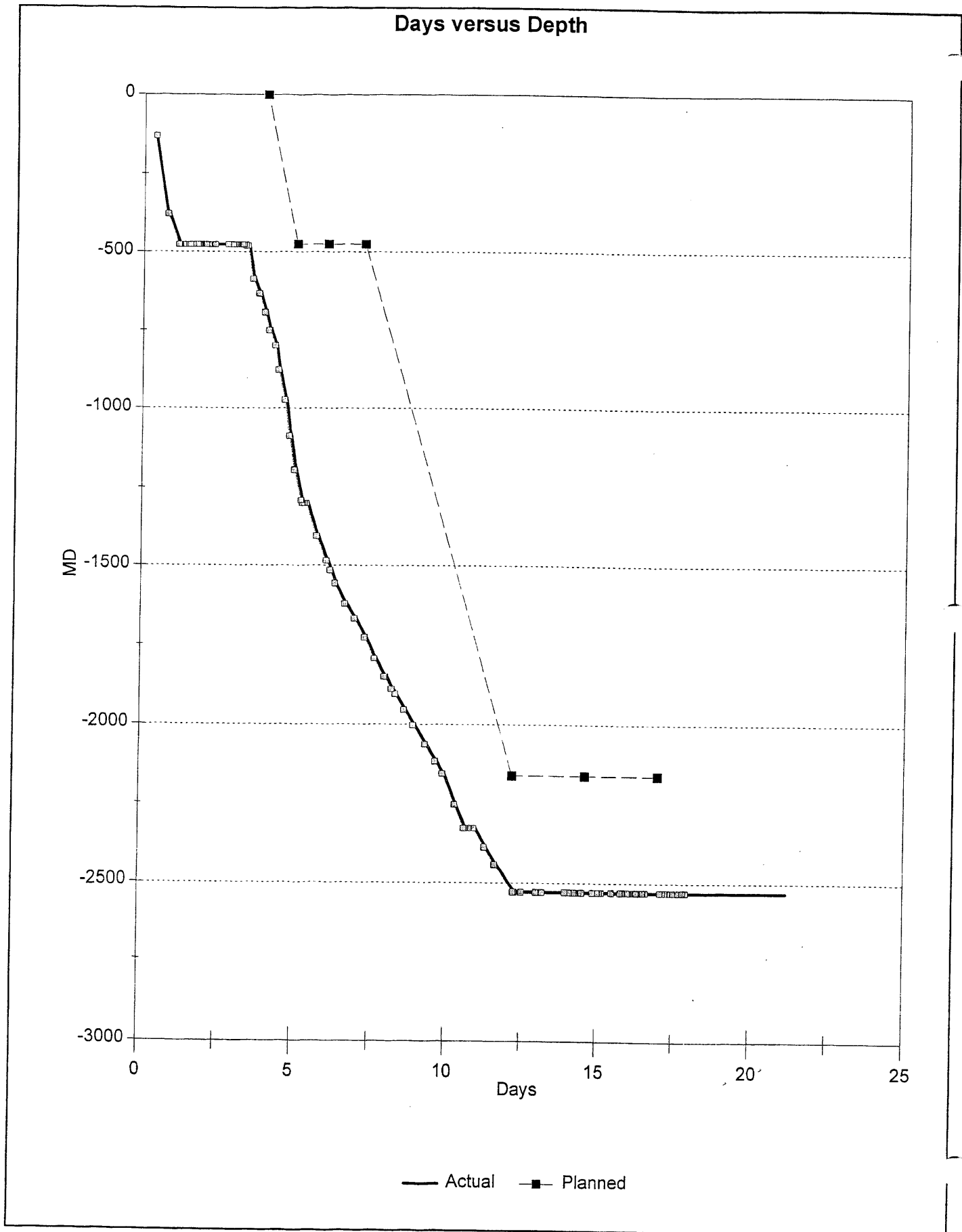
Time Analysis by Operational Codes

Operation	hrs
DRILLING AHEAD	173.8
LOGGING	74.5
WIPER TRIP	66.5
CONTROL DRILL - DE	42.5
TOT. CSG/CMT	36.3
N/U & TEST BOP's	28.5
DST	23.5
TOT. TRIPPING	14.0
LAY DOWN PIPE	12.0
SURVEY	12.0
CIRCULATE & CONDIT	10.5
WELL-HEAD	5.5
SLIP/CUT DRILL LINE	3.5
RIG SERVICE	2.5
LOT / FIT	1.5
HEAD-UP FOR CMT O	1.0
RIG REPAIR	1.0



WELL : CROFT #1

Pacesetter : none selected



RT above GL: 4 m Lat : 38 deg 32 min 25.32 sec Spud Date: 30/03/2001 Release Date: 20/04/2001
 GL above MSL: 52 m Long : 142 deg 46 min 23.65 sec Spud Time: 15:00:00 Release Time: 20:00:00

TIME BREAKDOWN DATABASE Non-Productive Time Analysis (NPT)
 (Pre-Spud time excluded)

Total Time on Well (hrs) 509.0 (days 21.21 Spud Date : 30/03/2001
 Total Trouble Time (hrs) 78.0 (days 3.25 Total Depth : 2,529
 Trouble Time (%) 15.32) Final Depth : 2,529

Total NPT Hours per Phase

PHASE	HOURS
SURFACE HOLE	1.5
PRODUCTION HOLE	1.0
EVALUATION PROD. HOLE	46.0
EVALUATION PROD. HOLE	29.5

NPT during programmed time

DATE	PHS	OPERATION	NPT hrs	DEPTH m	DESCRIPTION OF PROGRAMMED TROUBLE TIME
31/03/2001	SH	CIRCULATE & CONDITION MUD	1.5	379	Clear obstruction from flow line that resulted in clay build up and blockage. Flush same.
12/04/2001	EP	LOGGING	4.5	2,529	Hold pre-job safety meeting, R/U Reeves logging and Run #1 Tools and RIH. Casing test tools and RIH to bridge at 1923m. Attempt to work thru -NoGo. POOH and R/D Reeves.
12/04/2001	EP	WIPER TRIP	1.5	2,529	L/O Monel DC and worn stb, M/U Bit #RR3 and BHA and RIH to shoe at 471m.
12/04/2001	EP	SLIP/CUT DRILL LINE	0.5	2,529	Slip drilling line.
12/04/2001	EP	WIPER TRIP	5.0	2,529	RIH from 471m to 1923m, work and ream stringer ledge, cont RIH pushing obstruction to 2500m.
12/04/2001	EP	WIPER TRIP	1.0	2,529	Wash & Ream from 2500m to TD 2529m.
12/04/2001	EP	CIRCULATE & CONDITION MUD	1.0	2,529	Circulate hole clean and low gas count. Flow check and pump pill.
12/04/2001	EP	WIPER TRIP	4.0	2,529	POOH wiper trip from 2529m and rack BHA.
13/04/2001	EP	WIPER TRIP	0.5	2,529	Cont. POOH wiper trip and rack BHA.
13/04/2001	EP	LOGGING	5.0	2,529	Reeves M/U Log tools Run #3 RFS and RIH. Tag obstruction at 1954m and work to 1984m. Full bridge off. Attempt to clear thru -NoGo. POOH for wiper trip, tool stuck at 603m. Attempt to work free -NoGo.
13/04/2001	EP	LOGGING	2.0	2,529	Hold safety meeting, rearrange Reeves Top Sheave, Fabricate "J" slotted side entry wire guide and RIH stripping over Reeves Wire to 180m.
14/04/2001	EP	LOGGING	2.0	2,529	Hold safety meeting with new crew and RIH stripping over Reeves Wire from 180m to tag top of tool at 594m and push until tool free at 615m. Reeves RIH to 635m.
14/04/2001	EP	LOGGING	2.0	2,529	Work pipe from 615m to 625m, POOH from 625m to 435m with Reeves tailing behind on each stand pulled. Reeves POOH to inside shoe at 465m. POOH pipe from 435m to surface. "T" bar wire, unthread from "J" slot guide.
14/04/2001	EP	LOGGING	1.5	2,529	Reeves function test tool -OK, POOH from 465m, L/O RFS tools and R/D. ***Nil Tool or wire damage.
14/04/2001	EP	WIPER TRIP	9.5	2,529	M/U Bit and BHA and RIH for wiper trip. Work any indications of hang up, work bridge at 1984m and chase obstruction to 2100m.(Triple work all stands in Belfast formation) Cont RIH and ream from 2509m to 2529m.
14/04/2001	EP	CIRCULATE & CONDITION MUD	1.5	2,529	Circulate hole clean and condition mud. Spot 5 x 3 bbl LCM sweeps. Flow check -Static. Pump pill and rack kelly.
14/04/2001	EP	WIPER TRIP	4.5	2,529	POOH Wiper trip from 2529m. (Hole slick but double work stands-shoe to 570m). Rack BHA.

NPT during unprogrammed time

DATE	PHS	OPERATION	NPT hrs	DEPTH m	DESCRIPTION OF UNPROGRAMMED TROUBLE TIME
11/04/2001	PH	RIG REPAIR	1.0	2,529	Circulate hole clean.- Investigate Weight Indicator failure)
14/04/2001	EP	WIPER TRIP	0.5	2,529	R/U Reeves and hold pre-job safety meeting.
14/04/2001	EP	LOGGING	2.5	2,529	Reeves M/U Log Run #3 AST and RIH.
15/04/2001	EP	LOGGING	2.0	2,529	Reeves RIH Log Run #3 AST to unpassable hole at 1996m. (Belfast formation) POOH.
15/04/2001	EP	LOGGING	3.0	2,529	Reeves M/U Run #5 - DIPMETER and RIH to bridge at 795m. Attempt to work through -NoGo. POOH.
15/04/2001	EP	LOGGING	1.0	2,529	Reeves M/U Log Run #6 - SCG Side Wall Cores and RIH.
16/04/2001	EP	LOGGING	1.5	2,529	Reeves RIH Log Run #6 - SCG Side Wall Cores to bridge at 795m, attempt to work through -NoGo. POOH and R/D Reeves and clear rig floor.
16/04/2001	EP	WIPER TRIP	1.5	2,529	M/U Bit and RIH wiper trip to shoe at 471m.
16/04/2001	EP	SLIP/CUT DRILL LINE	1.0	2,529	Slip & Cut Drilling Line.
16/04/2001	EP	WIPER TRIP	5.0	2,529	Cont. RIH wiper trip from shoe at 471m. (Nil indications at 795m) and cont RIH washing last single to TD 2529m.
16/04/2001	EP	CIRCULATE & CONDITION MUD	1.0	2,529	Circulate hole clean and low gas.

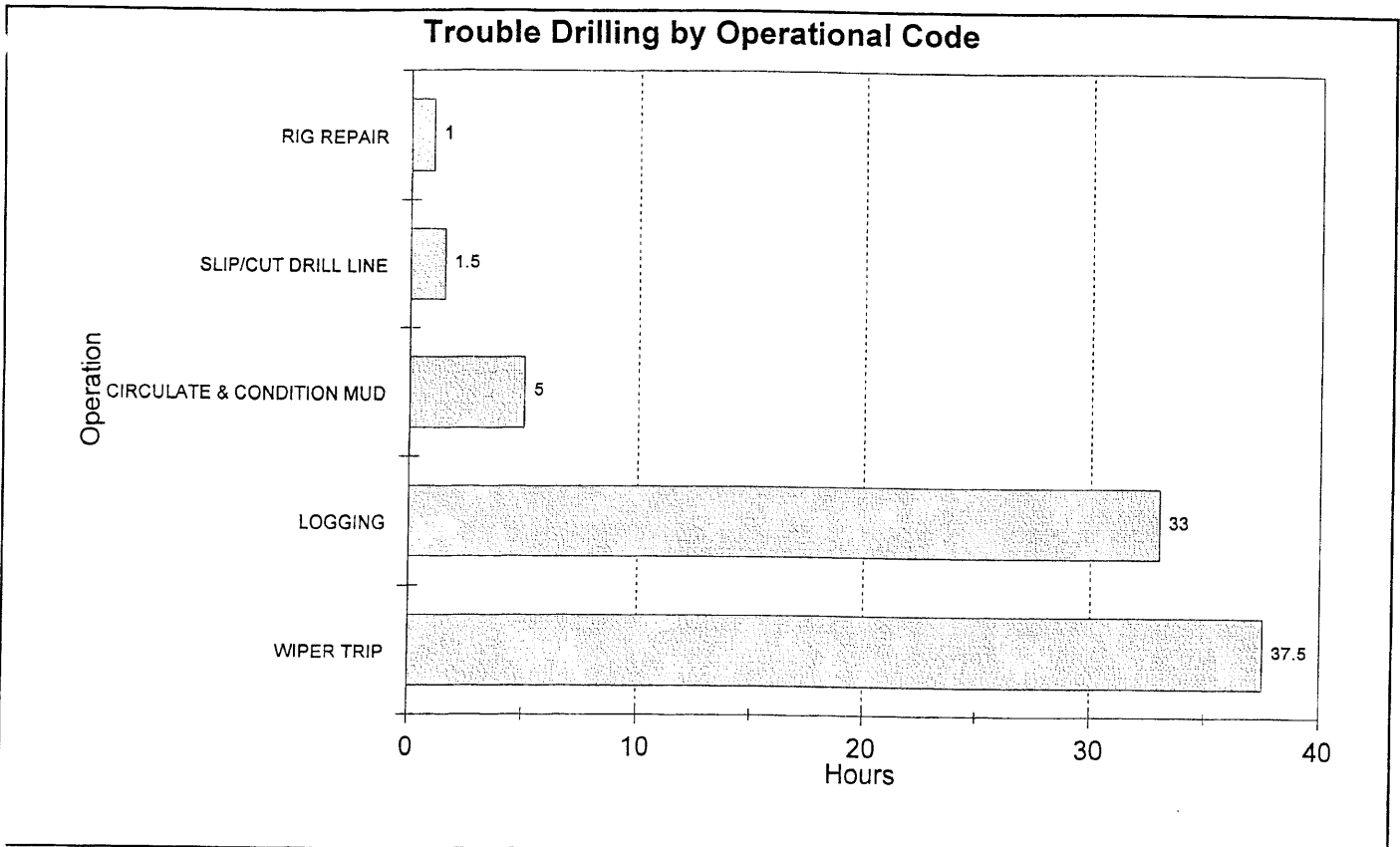
RT above GL: 4 m Lat : 38 deg 32 min 25.32 sec Spud Date: 30/03/2001 Release Date: 20/04/2001
 GL above MSL: 52 m Long : 142 deg 46 min 23.65 sec Spud Time: 15:00:00 Release Time: 20:00:00

TIME BREAKDOWN DATABASE Non-Productive Time Analysis (NPT)
 (Pre-Spud time excluded)

DATE	PHS	OPERATION	NPT hrs	DEPTH m	DESCRIPTION OF UNPROGRAMMED TROUBLE TIME
16/04/2001	EP	WIPER TRIP	4.5	2,529	Flow check, pump pill and POOH wiper trip from 2529m. Rack BHA. Reeves R/U and M/U tools - Dipmeter and RIH to bridge at 1923m. Attempt to work through -NoGo. POOH and L/O tools. Abort Side Wall Core run.
16/04/2001	EP	LOGGING	6.0	2,529	

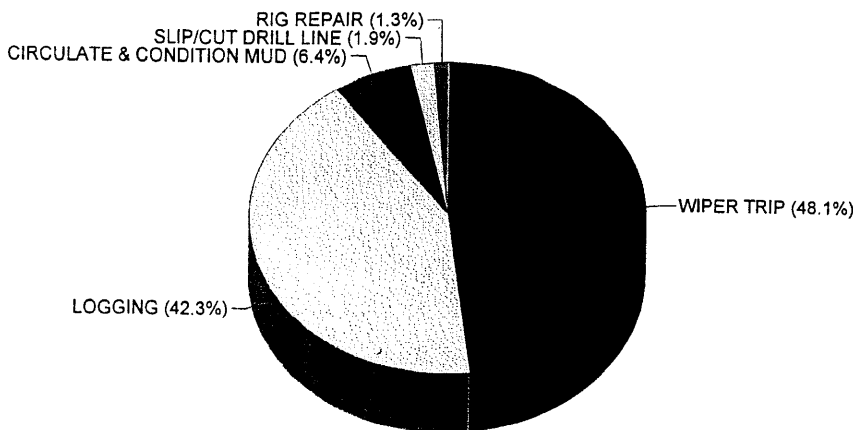
RT above GL: 4 m Lat : 38 deg 32 min 25.32 sec Spud Date: 30/03/2001 Release Date: 20/04/2001
 GL above MSL: 52 m Long : 142 deg 46 min 23.65 sec Spud Time: 15:00:00 Release Time: 20:00:00

TIME BREAKDOWN DATABASE Non-Productive Time Analysis (NPT)
 (Pre-Spud time excluded)



Trouble Drilling by Operational Code

OPERATION	HRS
WIPER TRIP	37.5
LOGGING	33.0
CIRCULATE & CONDITION MUD	5.0
SLIP/CUT DRILL LINE	1.5
RIG REPAIR	1.0



TIME BREAKDOWN DATABASE - Unprogrammed Time Analysis

WELL :
 Drilling Co :
 Rig :
 Spud Date :

CROFT #1
 OD&E
 OD&E #30
 09/04/2001

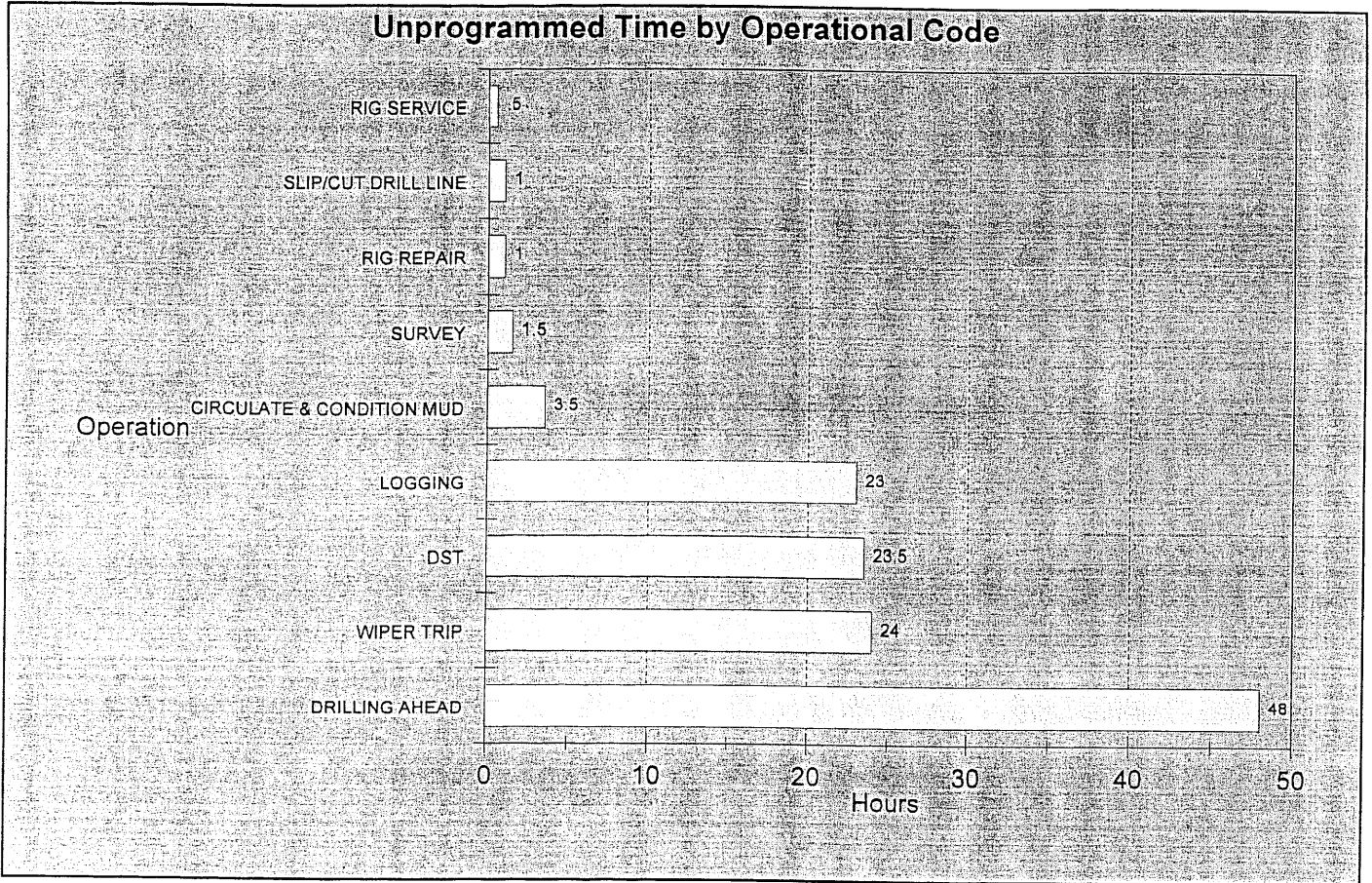
Total Unprogrammed Time on Well 126.00
 Total Unprogrammed Trouble Time 30.50
 % Unprogrammed Trouble Time 24.21

Unprogrammed time (Productive)

PHASE	OPERATION	NPT Hrs	DEPTH	DESCRIPTION OF UNPROGRAMMED PRODUCTIVE TIME
PH	CIRCULATE & CONDITION MU	0.50	2,156.0	Circulate, - TD of well extended.
PH	DRILLING AHEAD	9.50	2,253.0	Drill 6 3/4" hole from provisional TD 2156m to 2253m.
PH	DRILLING AHEAD	7.50	2,328.0	Drill 6 3/4" hole from 2253m to 2328m. (Gas of 40% from 2294 - 2297m)
PH	CIRCULATE & CONDITION MU	1.00	2,328.0	Circulate hole clean, flow check - static. Pump pill.
PH	SURVEY	0.50	2,328.0	Survey at 2310m - 6.25 deg Inc 197 deg Az.
PH	DRILLING AHEAD	8.50	2,388.0	Drill 6 3/4" hole from 2328m to 2388m.
PH	DRILLING AHEAD	8.00	2,443.0	Drill 6 3/4" hole from 2388m to 2443m.
PH	RIG SERVICE	0.50	2,443.0	Service Rig.
PH	DRILLING AHEAD	14.50	2,529.0	Drill 6 3/4" hole from 2443m to 2529m. (Weight indicator failure at 2520m - investigate same)
PH	SURVEY	1.00	2,529.0	survey at 2511m - 7 deg Inc 214 deg Az.
EP	WIPER TRIP	3.50	2,529.0	M/U Bit #3RR4 and RIH wiper trip to 1800m.
EP	WIPER TRIP	4.00	2,529.0	Cont. RIH Wiper trip from 1800m to obstruction at 1920m and work clean. Work each stand twice from 1920m to top of fill at 2520m.
EP	CIRCULATE & CONDITION MU	1.00	2,529.0	Circulate hole clean and low gas. Condition mud and build volume. Flow check - static. Pump pill.
EP	WIPER TRIP	5.00	2,529.0	POOH wiper trip from 2520m, rack BHA as per DST requirements, break bit and L/O stbs. Clear rig floor.
EP	DST	8.50	2,529.0	Safety meeting and M/U Tools DST #1 for interval 2287m - 2332m (Drillers Depth) and RIH filling for 746m water cushion. Cont. RIH to 2336m.
EP	DST	3.50	2,529.0	R/U Reeves and RIH. Correlate string on depth with a 1.2m down correction. POOH and R/D.
EP	DST	2.00	2,529.0	R/U Baker Oiltools pressure head, lines and manifold. Pressure test. Inflate packers, hold safety meeting. Test seat and attempt to open tool - Slippage. Reinflate and test seat- NoGo.
EP	DST	1.50	2,529.0	Attempt to reinflate packers, test seat - free string movement. Drop bar and reverse circulate string to 9.6ppg mud. Nil indications of contamination. R/D Baker Oiltools head and manifold.
EP	DST	8.00	2,529.0	Flow check - Static. Pump pill and POOH with DST tools from 2336m and L/O and inspect tools. Full recovery.
EP	LOGGING	7.00	2,529.0	R/U Reeves, hold Radio Silence / Explosives safety meeting, M/U Tools Run #8 Side Wall Cores and RIH to 2508m. taking 48 samples to 1985m (Eumerella - Waarre Formation) POOH and Rig Down.

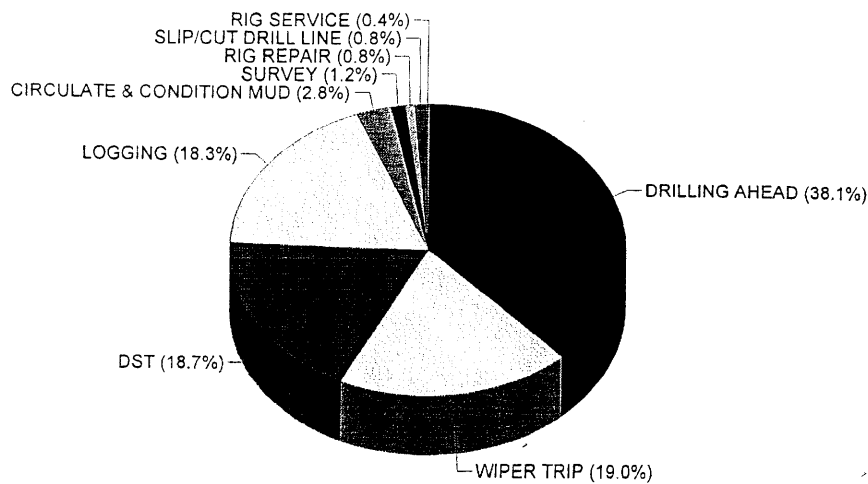
Unprogrammed time (NPT)

PHASE	OPERATION	NPT hrs	DEPTH	DESCRIPTION OF UNPROGRAMMED TROUBLE TIME
PH	RIG REPAIR	1.00	2,529.00	Circulate hole clean. - Investigate Weight Indicator failure)
EP	WIPER TRIP	0.50	2,529.00	R/U Reeves and hold pre-job safety meeting.
EP	LOGGING	2.50	2,529.00	Reeves M/U Log Run #3 AST and RIH.
EP	LOGGING	2.00	2,529.00	Reeves RIH Log Run #3 AST to unpassable hole at 1996m. (Belfast formation) POOH.
EP	LOGGING	3.00	2,529.00	Reeves M/U Run #5 - DIPMETER and RIH to bridge at 795m. Attempt to work through -NoGo. POOH.
EP	LOGGING	1.00	2,529.00	Reeves M/U Log Run #6 - SCG Side Wall Cores and RIH.
EP	LOGGING	1.50	2,529.00	Reeves RIH Log Run #6 - SCG Side Wall Cores to bridge at 795m, attempt to work through -NoGo. POOH and R/D Reeves and clear rig floor.
EP	WIPER TRIP	1.50	2,529.00	M/U Bit and RIH wiper trip to shoe at 471m.
EP	SLIP/CUT DRILL LINE	1.00	2,529.00	Slip & Cut Drilling Line.
EP	WIPER TRIP	5.00	2,529.00	Cont. RIH wiper trip from shoe at 471m. (Nil indications at 795m) and cont RIH washing last single to TD 2529m.
EP	CIRCULATE & CONDITION MU	1.00	2,529.00	Circulate hole clean and low gas.
EP	WIPER TRIP	4.50	2,529.00	Flow check, pump pill and POOH wiper trip from 2529m. Rack BHA.
EP	LOGGING	6.00	2,529.00	Reeves R/U and M/U tools - Dipmeter and RIH to bridge at 1923m. Attempt to work through -NoGo. POOH and L/O tools. Abort Side Wall Core run.



Unprogrammed Time by Operational Code

OPERATION	HRS
DRILLING AHEAD	48.00
WIPER TRIP	24.00
DST	23.50
LOGGING	23.00
CIRCULATE & CONDITION MUD	3.50
SURVEY	1.50
RIG REPAIR	1.00
SLIP/CUT DRILL LINE	1.00
RIG SERVICE	0.50



Section 6.0

Survey Data

- IDS Survey Report

RT above GL: 4 m Lat : 38 deg 32 min 25.32 sec Spud Date: 30/03/2001 Release Date: 20/04/2001
 GL above MSL : 52 m Long : 142 deg 46 min 23.65 sec Spud Time: 15:00:00 Release Time: 20:00:00

Magnetic Declination (degs): 12.00

Projection:

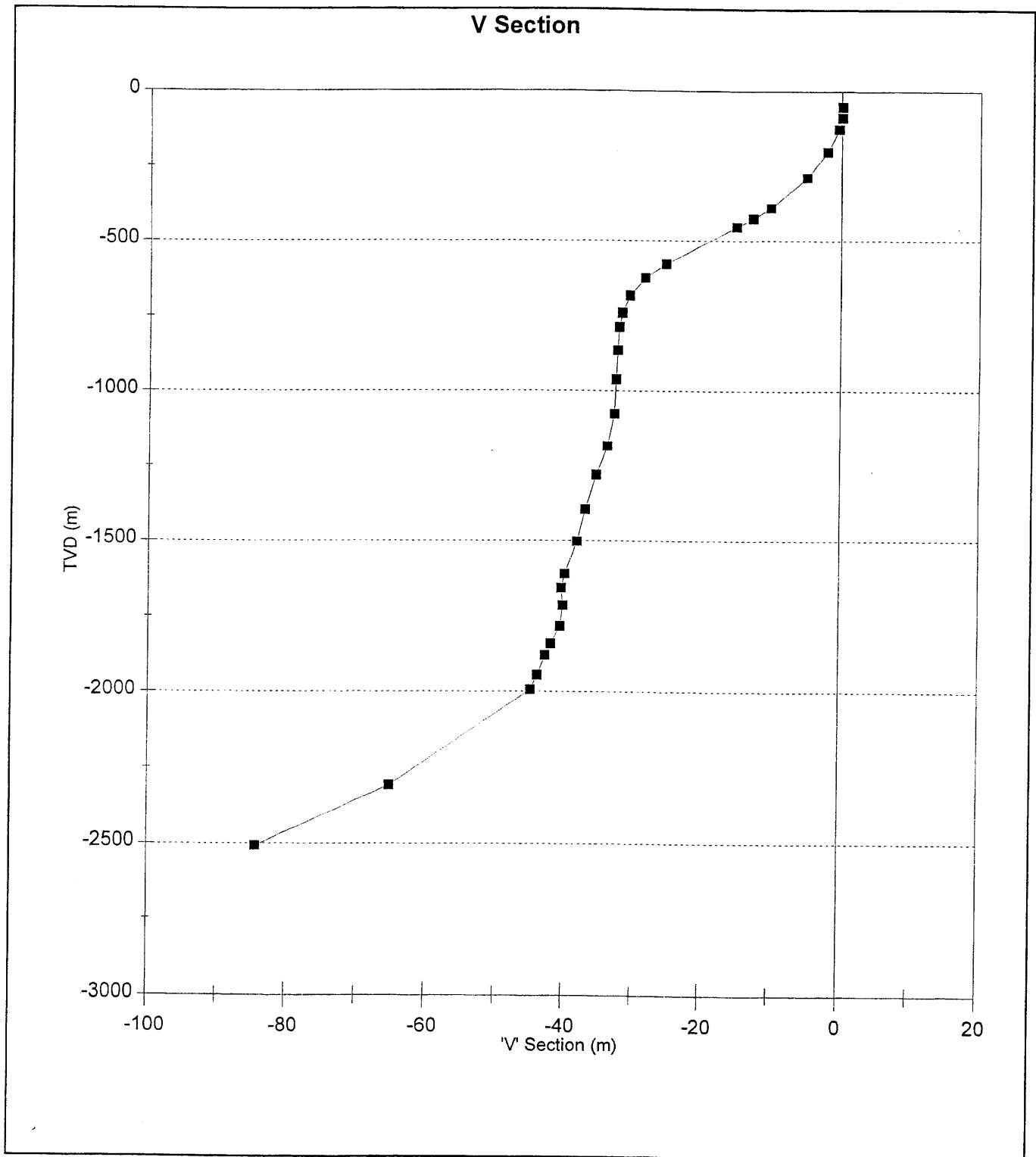
DEVIATION SURVEY

MD (m)	TVD (m)	INCL (deg)	AZIMUTH (deg)	CORRECT. AZ (deg)	DOGLEG (deg/30m)	'V' SECT (m)	N/S (m)	E/W (m)	CLOSURE (m)
52	52	0.75	58	70	0.4	0	0	0	0
88	88	0.75	110	122	0.6	0	0	1	1
126	126	1.25	132	144	0.5	-0	-0	1	1
201	201	1.50	155	167	0.2	-2	-2	2	3
288	288	2.50	167	179	0.4	-5	-5	2	5
388	388	3.50	171	183	0.3	-10	-10	2	10
425	425	4.50	176	188	0.9	-13	-13	2	13
454	454	5.00	176	188	0.5	-15	-15	1	15
578	577	4.50	173	185	0.1	-25	-25	0	25
625	624	3.00	178	190	1.0	-28	-28	-0	28
684	683	1.50	194	206	0.8	-31	-31	-1	31
741	740	1.10	210	222	0.3	-32	-32	-1	32
789	788	0.25	215	227	0.5	-32	-32	-2	32
867	866	0.38	105	117	0.2	-32	-32	-2	32
963	962	0.10	150	162	0.1	-33	-33	-1	33
1,078	1,077	0.30	100	112	0.1	-33	-33	-1	33
1,185	1,184	1.00	150	162	0.2	-34	-34	-0	34
1,281	1,280	1.10	200	212	0.3	-35	-35	-1	35
1,396	1,395	0.90	218	230	0.1	-37	-37	-2	37
1,504	1,503	1.10	224	236	0.1	-38	-38	-4	38
1,611	1,610	2.25	225	237	0.3	-40	-40	-6	40
1,658	1,657	1.00	264	276	1.0	-40	-40	-7	41
1,716	1,715	0.90	287	299	0.2	-40	-40	-8	41
1,784	1,783	2.30	230	242	0.9	-40	-40	-10	41
1,842	1,841	2.80	227	239	0.3	-42	-42	-12	43
1,880	1,879	2.25	233	245	0.5	-43	-42	-14	44
1,946	1,945	1.10	200	212	0.7	-44	-43	-15	46
1,994	1,993	2.00	215	227	0.6	-45	-44	-16	47
2,310	2,308	6.25	185	197	0.4	-65	-65	-25	69
2,511	2,508	7.00	214	226	0.5	-84	-84	-37	91

RT above GL: 4 m Lat : 38 deg 32 min 25.32 sec Spud Date: 30/03/2001 Release Date: 20/04/2001
GL above MSL : 52 m Long : 142 deg 46 min 23.65 sec Spud Time: 15:00:00 Release Time: 20:00:00
Magnetic Declination (degs): 12.00

Projection:

DEVIATION SURVEY



Section 7.0

Well Cost Information

- Well Phase Cost Summary

This is Page Number **908028_144X**

This is an enclosure indicator page.

The page that follows this page is an uncatalogued fold-out with page number:

908028_144Y

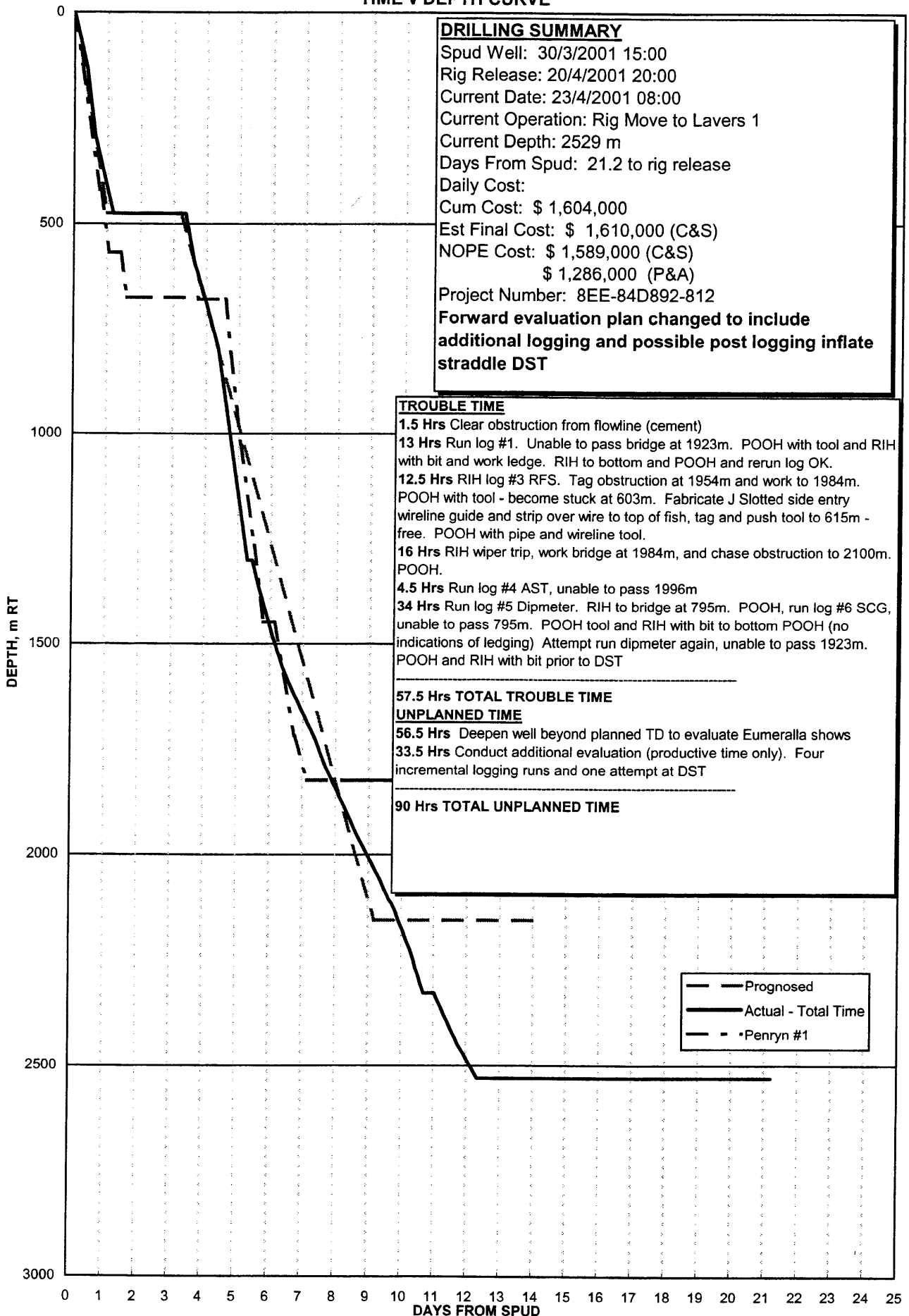
and is enclosed within the document PE908028 at this page.

DAILY DRILLING COST TRACKING SHEET

Table with columns: WELL: TYPE: RIG:, Account #, DESCRIPTION, NOPE (\$A), C&S TOTAL, PreSpud (\$A), Top hole (\$A), Surface Casing (\$A), Intermediate Hole (\$A), Intermediate Casing (\$A), Prod Hole (\$A), Total Evaluation (\$A), Prod.Casing (\$A), Spud to TD drilling ONLY, PAA (\$A), Completion (\$A). Includes rows for Gas Exploration Monobore OD&E 30 and various cost categories like DRILLING COSTS, LOGISTICS, MATERIALS, and CONTRACT SERVICES.

SUMMARY ROWS: TOTAL, NOPE COST PER PHASE, DIFFERENCE (Actual - Assumtd). Includes values for Total Cum Costs, C&S TOTAL, PreSpud, Top hole, Surface Casing, Intermediate Hole, Intermediate Casing, Prod Hole, Total Evaluation, Prod.Casing, Spud to TD drilling ONLY, PAA, and Completion.

**CROFT #1
TIME v DEPTH CURVE**



DRILLING SUMMARY
 Spud Well: 30/3/2001 15:00
 Rig Release: 20/4/2001 20:00
 Current Date: 23/4/2001 08:00
 Current Operation: Rig Move to Lavers 1
 Current Depth: 2529 m
 Days From Spud: 21.2 to rig release
 Daily Cost:
 Cum Cost: \$ 1,604,000
 Est Final Cost: \$ 1,610,000 (C&S)
 NOPE Cost: \$ 1,589,000 (C&S)
 \$ 1,286,000 (P&A)
 Project Number: 8EE-84D892-812
Forward evaluation plan changed to include additional logging and possible post logging inflate straddle DST

TROUBLE TIME
 1.5 Hrs Clear obstruction from flowline (cement)
 13 Hrs Run log #1. Unable to pass bridge at 1923m. POOH with tool and RIH with bit and work ledge. RIH to bottom and POOH and rerun log OK.
 12.5 Hrs RIH log #3 RFS. Tag obstruction at 1954m and work to 1984m. POOH with tool - become stuck at 603m. Fabricate J Slotted side entry wireline guide and strip over wire to top of fish, tag and push tool to 615m - free. POOH with pipe and wireline tool.
 16 Hrs RIH wiper trip, work bridge at 1984m, and chase obstruction to 2100m. POOH.
 4.5 Hrs Run log #4 AST, unable to pass 1996m
 34 Hrs Run log #5 Dipmeter. RIH to bridge at 795m. POOH, run log #6 SCG, unable to pass 795m. POOH tool and RIH with bit to bottom POOH (no indications of ledging) Attempt run dipmeter again, unable to pass 1923m. POOH and RIH with bit prior to DST

57.5 Hrs TOTAL TROUBLE TIME

UNPLANNED TIME
 56.5 Hrs Deepen well beyond planned TD to evaluate Eumeralla shows
 33.5 Hrs Conduct additional evaluation (productive time only). Four incremental logging runs and one attempt at DST

90 Hrs TOTAL UNPLANNED TIME

--- Prognosed
 — Actual - Total Time
 - · - Penryn #1

Santos		CASING & CEMENTING REPORT				FORM	
Santos Ltd A.C.N. 007 550 923		Well Name: CROFT #1				DQMS F-220	
Casing type: <input type="checkbox"/> Surface casing <input type="checkbox"/> Intermediate Casing <input checked="" type="checkbox"/> Production Casing <input type="checkbox"/> Completion tubing							
Originated by: Alistair Chomley		Checked by: Geoff Coker		Date: 20-Apr-2001			
Hole Size: 6 3/4"	T.D.: 2529	mMD		Date: 20/04/2001	Contractor: Schlumberger		
PRE-FLUSH 40 bbls. @ 8.5 ppg.				SPACER 10 bbls@ 8.4 ppg.			
Additives: Aldacide = 0.5 dr S.A.P.P. = 8 lb/bbl							
CEMENT				ADDITIVES			
LEAD SLURRY: 488 sx class G				Product % Amount			
Slurry Yield: 2.85 cu.ft./sack				D066 Silica Flour BWOC lbs			
Mixwater Req't: 17.518 gal./sack				D020 Bentonite 5.00 BWOC 2294 lbs			
Actual Slurry Pumped: 248 bbls @ 11.5 ppg				D167 UniFLAC BWOC lbs			
				S001 Calc.Chloride BWOC lbs			
				D110 Retarder 0.04 gal/sk 19.5 gal			
				D047 Antifoam 0.01 gal/sk 4.9 gal			
TAIL SLURRY: 329 sx class G				D066 Silica Flour BWOC lbs			
Slurry Yield: 1.15 cu.ft./sack				D167 UniFLAC BWOC lbs			
Mixwater Req't: 5.074 gal./sack				D080 Dispersant 0.05 gal/sk 16.5 gal			
Actual Slurry Pumped: 71 bbls @ 15.8 ppg				D153 Antisettling BWOC lbs			
				D110 Retarder 0.03 gal/sk 9.9 gal			
				D047 Antifoam 0.01 gal/sk 3.3 gal			
DISPLACEMENT Fluid: 2% KCL @ 8.6 ppg							
Theoretical Displ.: 68.4 bbl.		Bumped plug with 2000 psi					
Actual Displ. 68.5 bbl @ 5 bpm		Pressure Tested to: 3000 psi					
Displaced via Rig / Truck Pump		Bleed back: 0.5 bbls					
ACTIVITY		Time		Returns to Surface: 197 bbls mud bbls cmt.			
Start Running csg.		12:30		Reciprocate / Rotate Casing: Reciprocate until string stuck with 50 bbls cement in annulus			
Casing on Bottom		02:00		Top Up Job run: Yes / No No sx class			
Start Circulation		02:05		Plug Set Make / Type: Davis-Lynch : Bottom + Ball + Top			
Start Pressure Test		03:50		Centraliser Placement, type/depth: Float & Shoe, 1 each 4th to 2166m, 1 each 3rd to 1971m, 1 at shoe 460m.			
Pump Preflush		03:20					
Start Mixing		04:03					
Finish Mixing		05:15		Remarks: String became differentially stuck several times on second last joint run, and several times during preparation to circulate and M/U cement head.			
Start Displacing		05:20					
Stop Displ./Bump		05:42					
Start Press. test		05:45					
No. JOINTS	SIZE OD	WT lb/ft	GRADE	THREAD	MTS	FROM	TO
Stick Up (Enter as negative number)					-0.82	-0.82	
Rotary table to top of Bradenhead					4.70		4.70
Bradenhead / Tubing Hanger or Slip and Seal						4.70	4.70
						4.70	4.70
						4.70	4.70
						4.70	4.70
						4.70	4.70
						4.70	4.70
Part Land Jt.	3.5	9.3	J55	New NK3SB	4.10	4.70	8.80
207 Jts	3.5	9.3	J55	New NK3SB	1991.34	8.80	2000.14
1 marker	3.5	9.3	J55	New NK3SB	3.01	2000.14	2003.15
41 Jts	3.5	9.3	J55	New NK3SB	394.46	2003.15	2397.61
Float Collar	3.5		P110	New NK3SB, Davis-Lynch	0.36	2397.61	2397.97
1 Joint	3.5	9.3	J55	New NK3SB	9.62	2397.97	2407.59
Float Shoe	3.5		P110	New NK3SB, Davis-Lynch	0.41	2407.59	2408.00
Theoretical Bouyed wt of casing(klb):			63.000 klbs	Bradenhead Height above GL m			
Actual wt of casing (last joint run-block wt, klb)			65.000 klbs	Casing wt just prior to landing casing 115.000 klbs			
Landing WT (after cementing and pressure bleed off)			65.000 klbs	setting slips (overpull) 50.000 klbs			

<h1 style="margin:0;">Santos</h1> <p style="font-size: small; margin: 5px 0;">Santos Ltd A.C.N. 007 550 923</p>	<h2 style="margin:0;">CASING AND CEMENTING REPORT</h2>	<h2 style="margin:0;">FORM</h2>
	Well Name: CROFT #1	CROFT #1

Casing type: X Surface casing Intermediate Casing Production Casing Completion tubing

Originated by: ALISTAIR CHOMLEY **Checked by:** GEOFF COKER **Date:** 01-Apr-01

Hole Size: 9-7/8"	T.D.: 476m MD	Date: 01-Apr	Contractor: Schlumberger
PRE-FLUSH 40 bbls. @ 8.4 ppg.		SPACER 10 bbls@ 8.34 ppg.	
Additives: Water Source: CROFT #1 Water Bore		Water Source: CROFT #1 Water Bore	

CEMENT	Mixwater:	80.5 bbls	ADDITIVES
LEAD SLURRY:	172 sacks Class	G	Product % or gps
Slurry Yield:	2.84 cu.ft./sack		D 020 4% BWOC
Mixwater Req't:	17.442 gal./sack		S001 CaCl 1.5% BWOC
Actual Slurry Pumped:	86.9 bbls @	11.5 ppg	D047 .01 gal/sx
Planned TOC:	0 m RT @	55 % o/g hole	
Actual est. TOC:	0 m RT @	% o/g hole	
TAIL SLURRY:	92 sacks Class	G	D145A .05 gal/sx
Slurry Yield:	1.19 cu.ft./sack		S001 CaCl 0.50%
Mixwater Req't:	5.299 gal./sack		D047 .01 gal/sx
Actual Slurry Pumped:	19.4 bbls @	15.6 ppg	
Planned top tail:	379.6 m RT @	20 % o/g hole	
Actual est. top tail:	m RT @	% o/g hole	

DISPLACEMENT Fluid: 10bbl Water 59.8bbl Mud @ 9 ppg

Theoretical Displ.: 69.3 bbl. Bumped plug with 500 psi

Actual Displ. 69.8 bbl @ 5.5 bpm Pressure Tested to: 3000 psi

Displaced via RIG PUMP Bleed back: 0.5 bbls

ACTIVITY	Date/Time	Returns to Surface:	160 bbls mud	13 bbls cmt.
Start Running csg.	1-Apr-01 6:30	Reciprocate / Rotate Casing:	Reciprocate till plug bump.	
Casing on Bottom	1-Apr-01 10:25	Top Up Job run: Yes / No	Yes 10 sx class G	
Start Circulation	1-Apr-01 10:30	Plug Set Make / Type:	Weatherford Model-303 (FS), Model-402NP (FC)	
Start Pressure Test	1-Apr-01 11:40	Centraliser Placement, type/depth:	Weatherford 468m, 458m, 442m, 415m, 17m.	
Pump Preflush	1-Apr-01 11:15	Remarks:		
Start Mixing	1-Apr-01 11:50			
Finish Mixing	1-Apr-01 12:25			
Start Displacing	1-Apr-01 12:35			
Stop Displ./Bump	1-Apr-01 12:35			
Press. test	1-Apr-01 12:40			

No. JOINTS	SIZE OD	WT lb/ft	GRADE	THREAD	METER	FROM	TO
Stick Up at RT (Enter as negative number-do not include stretch, RT = 0)					-0.87	-0.87	0.00
Rotary table to top of Bradenhead (Enter for surface casing only)					4.70	0.00	4.70
Bradenhead : WG-22-L, 7-5/8"BTC x 9-5/8"BTC x 11"5K (Enter for surface casing only)					0.72	4.70	5.42
Rotary table to top of cut jt (Enter for int. or production casing only)							
1 Cut Jt							
38 Jts	7-5/8"	26.4	L80	BTC	441.40	5.42	446.82
marker Jts					0.00	446.82	446.82
marker Jts					0.00	446.82	446.82
marker Jts					0.00	446.82	446.82
marker Jts					0.00	446.82	446.82
Float Collar	W'ford Model-402NP			BTC	0.40	446.82	447.22
2 Jts	7-5/8"	26.4	L80	BTC	23.25	447.22	470.47
Float Shoe	W'ford Model-303			BTC	0.44	470.47	470.91
Total Jts Run	40						
Total Jts On Location	42						
Jts not run	2						

Theoretical Bouyed wt of casing(klb):	32	Bradenhead Height above GL	0.00
Actual wt of casing (last joint run-block wt, klb)	30	Casing wt just prior to landing csg/	22
Landing WT (after cementing and pressure bleed off)	25	setting slips	(indicator wt - blocks = wt)

APPENDIX XII: RIG SPECIFICATIONS

Rig Inventory for ODE RIG # 30

- DRAWWORKS** : Ideco Hydrair H-725-D double drum with V-80 Parmac hydromatic brake, Martin Decker satellite automatic drilling control.
Max. single line pull - 50,000 lbs.
Main drum grooved for 1-1/8" drilling line.
- SUBSTRUCTURE** : One piece substructure 14' high x 13'6" wide x 50' long with 12' BOP clearance.
Setback area loading: 250,000 lbs
Casing area loading: 275,000 lbs
- ENGINES** : Four (4) Caterpillar Model 3412 PCTA diesel engines.
- BRAKE** : V-80 Parmac hydromatic brake,
- MAST** : Drecro Model #: M12713-510 Floor Mounted Cantilever Mast designed in accordance with API Specification 4E Drilling & Well Servicing Structures.
Hook load Gross Nominal Capacity - 510,000 lbs with:-
10 lines strung - 365,000 lbs
8 lines strung - 340,000 lbs
Clear working height of 127'.
Base width of 13'6".
Adjustable racking board with capacity for
i) 108 stands of 4.1/2" drill pipe,
ii) 10 stands of 6.1/2" drill collars,
iii) 3 stands of 8" drill collars
Designed to withstand an API windload of 84 mph with pipe racked and 100 mph with no pipe racked.
- CATHEADS** : One (1) Foster Model 37 make-up spinning cathead mounted on drillers side.
One (1) Foster Model 24 break-out cathead mounted off drillers side.
- TRAVELLING BLOCK/HOOK** : One (1) 667 Crosby McKissick 250 ton combination block hook Web Wilson. 250 ton Hydra hook Unit 5 - 36" sheaves.
- WINCHES** : One (1) Ingersol Rand HU-40 with 5/8" wireline.
Capacity 2,000 lb.
One (1) ANSI B30.7 with 3/8' wire capacity 4000lbs @ 70 fpm
- SWIVEL** : One (1) Oilwell PC-300 ton swivel
- RIG LIGHTING** : Explosive proof fluorescent. As per approved State Specifications.
- KELLY DRIVE** : One (1) 27 HDP Varco kelly drive bushing.

- MUD PUMPS : Two (2) Gardner Denver mud pumps Model PZH-8 each driven by 750 HP EMD D-79 motors.
8" stroke with liner size 6" through to 5".
6" liner maximum pressure 2387 psi
5.1/2" liner maximum pressure 2841 psi
5" liner maximum pressure 3437 psi
6" liner maximum volume 412 gpm
5.1/2" liner maximum volume 345 gpm
5" liner maximum volume 280 gpm
- MIXING PUMP : Two (2) Mission Magnum 5" x 6" x 14" centrifugal pump complete with 50 HP, 600 Volt, 60 Hz, 3 phase explosion proof electric motors.
- MUD AGITATORS : Five (5) Geograph/Pioneer 40TD - 15" 'Pitbull' mud agitators with 15 HP, 60 Volt, 60 HZ, 3 phase electric motors.
- LINEAR MOTION SHALE SHAKERS : Two (2) DFE SCR-01 Linear motion shale shakers.
- DEGASSER : 48" Dia Poor Boy Degasser
- DESILTER : One (1) DFE - Harrisburg style 12 cone desilter 12 x 5" cones. Approximate output of 960 gpm. Driven by Mission Magnum 5" x 6" x 11" centrifugal pump complete with 50 hp 600 volt 60 Hz 3 phase explosion proof motor.
- GENERATORS : Four (4) Brown Boveri 600 volt, 600 Kw, 750 kva , 3 phase, 60 HZ AC generators. Powered by four (4) Cat 3412 PCTA diesel engines.
- BOP's & ACCUMULATOR : One (1) Wagner Model 20-160 3 BND 160 gallon accumulator consisting of:
Sixteen (16) 11 gallon bladder type bottles
One (1) 20 HP electric driven triplex pump 600 volts, 60 HZ, 3 phase motor and controls.
One (1) Wagner Model A 60 auxiliary air pump 4.5 gals/minute.

- BOP's & ACCUMULATOR
(Cont'd) : One (1) Wagner Model UM2SCB5S mounted hydraulic control panel with five (5) 1" stainless steel fitted selector valves and two (2) stripping controls and pressure reducing valves.
Three (3) 4" hydraulic readout gauges:- one for annular pressure- one for accumulator pressure one for manifold pressure.
One (1) Stewart & Stevenson 5 station remote drillers control with air cable umbilical with three pressure gauges, increase and decrease control for annular pressure.
One (1) Shaffer 13.5/8" x 3,000 psi spherical annular BOP,
One (1) Shaffer 13.5/8" x 5,000 psi LWS studded, double gate autolock B.O.P.
- KELLY COCK (UPPER) : Two (2) Upper Kelly Cock 7.3/4"OD with 6.5/8" API connections (1 x M&M, 1 x Hydril).
- KELLY COCK (LOWER) : Three (3) M&M Lower Kelly Cocks 6.1/2" OD with 4" IF connections
- DRILL PIPE SAFETY VALVE : One (1) Hydril 6.1/2" stabbing valve (4" IF).
One (1) Gray inside BOP with 4.3/4" OD and 2.1/4" ID with 3.1/2" IF connections c/w releasing tool and thread protectors.
- AIR COMPRESSORS
AND RECEIVERS : Two (2) LeRoi Dresser Model 660A air compressor packages c/w 10 HP motors rated at 600 Volts, 60 HZ, 3 phase. Receivers each 120 gallon capacity and fitted with relief valves.
- POWER TONGS : One (1) Farr 13.5/8" - 5.1/2" hydraulic casing tongs c/w hydraulic power pack and hoses and torque gauge assembly.
One (1) Foster hydraulic kelly spinner with 6.5/8" LH connection.
- TORQUE WRENCH : Yutani c/w drive sockets 1 1/8" through to 2 3/8"
- SPOOLS : One (1) set double studded adaptor flanges to mate 13.5/8" 5,000 psi. API BOP flange to following wellhead flange
13.5/8" x 3,000 series,
11" x 3,000 series,
11" x 5,000 series
7.1/16" x 3,000 series,
7.1/16" x 5,000 series
4 1/16" 5000 x 3 1/16" 5000
3 1/16" 5000 x 2 1/16" 5000

SPOOLS (Cont'd)	:	1 double studded adaptor flange 4 1/16" 5K x 3 1/16" 5K 1 double studded adaptor flange 3 1/16" 5K x 2 1/16" 5K 1 only 14" - BOP mud cross (drilling spool) 13.5/8" 5,000 x 13.5/8" 5,000 BX160. with 2 x 3 1/16" 5K outlets. 1 only BOP spacer spool 13 5/8" 3,000 x 13 5/8" 3,000 1 only BOP spacer .spool 11" 3,000 x 13.5/8" 5,000 .
ROTARY TABLE	:	One (1) Oilwell A 20.1/2" rotary table torque tube driven from drawworks complete with Varco MASTER bushings and Insert Bowls.
MUD TANKS	:	SHAKER Active No 1. 277 BBL Desilter 73 BBL Sand Trap 50 BBL Trip Tank 29 BBL Total <u>429 BBL</u> SUCTION Active No 2 174 BBL Pre-Mix 146 BBL Pill Tank 63 BBL Total <u>383 BBL</u>
TRIP TANK	:	Trip Tank <u>29 BBL</u> One (1) Mission Magnum 2" x 3" centrifugal pump complete with 20 HP, 600 Volts, 60 HZ, 3 phase explosion proof motors
KILL LINE VALVE	:	2 x 3 1/8" Cameron FL 5K gate valves
CHOKE LINE VALVES	:	1 x 4 1/16 Cameron FC 5K hydraulic operated gate valve 1 x 4 1/16 5K manual gate valve
CHOKE MANIFOLD	:	One (1) McEvoy choke and kill manifold 3" 5,000 psi with hydraulic Swaco "super" choke.
DRILL PIPE	:	240 joints (2270 m) - 3.1/2" 13.30lb/ft drill pipe Grade 'G' 105 with 3 1/2" IF conn
PUP JOINTS	:	One (1) - 10'(3.65 m) 3.1/2" OD Grade 'G' with 3.1/2" IF conn
HEVI-WATE DRILL PIPE	:	6 joints of 3.1/2" H.W.D.P. with 3.1/2" IF conn
DRILL COLLARS	:	12 x 6.1/2" OD drill collars (113 m) with 4" IF conn 24 x 4 3/4" O.D. drill collars (227 m) with 3.1/2" IF conn 1 x 4.3/4" OD Pony Drill Collar
KELLIES	:	Two (2) Square Kelly drive 4.1/4" x 40' complete with Scabbard and 55 ft x 3 1/2" kelly hose

- FISHING TOOLS : One (1) only 8.1/8" Bowen series 150 FS overshot
 One (1) 5.3/4" SH Bowen 150 Overshot c/w grapples and packoffs to fish contractors downhole equipment.
 One (1) only Reverse circulating junk basket 4" IF box
 One (1) only 6.1/2" OD Griffith Fishing Jars One (1) only 4 3/4" O.D. Bowen Type "Z" Fishing Jar
 One (1) only Bumper Sub 6.1/2" OD 4" IF pin & box.
 One (1) 5" R.C.J.B.
 One (1) 5" Junk Sub with 4.3/4" OD x 1.1/2" ID.
- WIRELINE SURVEY UNIT : Gearmatic hydraulic drive Model 5 c/w .092" line
- SUBSTITUTES : Two (2) Bit Sub - 7.5/8" reg x 6.5/8" reg double box.
 Two (2) Bit Subs - 6.5/8" reg double box.
 Two (2) Bit Sub - 6.5/8" reg box. x 4 1/2" IF box
 Two (2) Bit Subs - 4.1/2" reg x 4" IF double box.
 Two (2) 4.3/4" bit subs (36" long) with 3.1/2" IF box x 3.1/2" reg box bored for float.
 One (1) Float Sub 6.5/8" reg box (FC) x 6.5/8" reg pin
 Two (2) XO Sub - 4" IF box x 4.1/2" IF pin.
 Two (2) XO Sub - 4 1/2" IF box x 4." IF pin.
 One (1) XO Sub - 4.1/2" reg x 4" IF double pin.
 Two (2) XO Sub - 6.5/8" reg pin x 4" IF box.
 One (1) Junk Sub - 6.5/8" reg pin x 6.5/8" reg box
 One (1) Junk Sub - 4.1/2" reg box x 4.1/2" reg pin.
 One (1) XO Sub - 4.1/2" IF box x 4" IF box.
 Two (2) Kelly Saver Subs c/w rubber 4" IF pin & box.
 Two (2) Kelly Saver Subs 4" IF pin & box
 One (1) Kelly Saver Subs 4 1/2" IF pin & box.
 Two (2) 4 IF box x 3.1/2" IF pin Saver Subs.
 One (1) Circulating Subs - 4" IF x 2" 1502 hammer union.
 One (1) Circulating Subs - 4" IF x 2" 602 hammer union.
 Eleven (11) Lifting Subs - 18" Taper 4.1/2" pick up neck and 4" IF pin.
 Eight (8) Lift Subs with 3.1/2" OD D.P. neck and 3.1/2" IF pin connections.
- HANDLING TOOLS : 2 only 4.1/2" BJ 250 ton 18 degree taper D/P elevators.
 1 only 3.1/2" BJ 200 ton 18 degree taper D/P elevators.
 1 only 3.1/2" BJ type MGG 18° centre latch Elevators.
 1 only 4.1/2" Varco SDXL D/P slips.
 1 only 4.1/2" Varco SDML D/P slips
 2 only 8" - 6.1/2" DCS-R drill collar slips.
 1 only 3.1/2" Varco SDML Slips
 1 only 4.3/4" Varco DCS-S Drill Collar Slips

CASING RUNNING TOOLS	:	1 only 13.3/8" Webb Wilson 150 ton side door elevator. 1 only 13.3/8" single joint P.U. elevators. 1 only 9.5/8" Webb Wilson 150 ton side door elevators. 1 only 9.5/8 single joint P.U. elevator. 1 only 7" BJ 150 ton side door elevators. 1 only 7" single joint P.U. elevators. 1 only 5.½" BJ 200 ton S11 1 only 2.7/8" BJ 100 ton tubing elevator. 1 only 2.3/8" BJ 100 ton tubing elevator. (all P.U. elevators c/w slings & swivel) 1 only 13.3/8" Varco CMS-XL casing slips 1 only 9.5/8" Varco CMS-XL casing slips. 1 only 7" Varco CMS-XL casing slips. 1 only 3.1/2" Varco SDML tubing slips.
CASING / TUBING DRIFTS	:	9 5/8, 7", 5 ½", 3 ½"
THREAD PROTECTORS	:	9 5/8, 7".
KELLY SPINNER	:	One (1) Foster hydraulic kelly spinner with 6.5/8" LH connection.
PIPE SPINNER	:	One (1) International 850H hydraulic pipe spinner
WELDING EQUIPMENT	:	1 - Miller 400 amp welding machine. 1 - oxy acetylene set.
DOGHOUSE	:	1 Doghouse 5m x 2.4m x 2.3m
GENERATOR HOUSE	:	Ross Hill SCR
UTILITY HOUSE	:	1 Utility and Mechanics House
CATWALKS	:	2 catwalks total 18.6m long x 1.6m wide x 1.08m high
PIPE RACKS	:	8 - 9m tumble racks.
DAY FUEL TANK	:	1 only 19,000 ltrs
WATER/FUEL TANK	:	WATER 1 only 320 bbls. 1 only brake cooling tank 80 bbl FUEL 1 only 27,500 litres
OIL STORAGE	:	drums
DRILLING RATE RECORDER	:	1 only 6 pen Pioneer Geograph drill sentry recorder to record: weight (D) penetration (feet) pump pressure (0-6,000 psi) electric rotary torque rotary speed (rpm) pump spm (with selector switch)

DEVIATION RECORDER : 1 set Totco 'Double Shot' deviation instrument 0□-8□.

INSTRUMENTS & INDICATORS : 1 only Martin Decker Sealtite.
 1 only Martin Decker Deadline type.
 1 only drillers console including the following equipment.
 Martin Decker Weight Indicator type'D'
 Electric rotary torque gauge.
 MD Totco Mud Watch Instrumentation c/w display and
 alarms.
 Rotary rpm gauge

MUD TESTING : 1 set Baroid mud testing laboratory (standard kit

RATHOLE DRILLER : One (1) fabricated rotary table chain driven.

MUD SAVER : Okeh unit

CELLAR PUMP : Cellar jet from No 1 pump

WATER PUMP : Three (3) Mission Magnum 2" x 3" centrifugal pumps c/w
 20 HP, 600 Volts, 60 HZ, 3 phase explosion proof motors

FIRE EXTINGUISHERS : Dry Chemical Rig 22 Camp 20
 CO2 Rig 3 Camp 0
 Foam Rig 1 Camp 1

PIPE BINS : 5 units

CUP TESTER : Two (2) Grey Cup Tester c/w test cups for 9.5/8" &
 13.3/8".

DRILLING LINE : 5,000' 1.1/8" - E.I.P.S

TRANSPORT EQUIPMENT AND MOTOR VEHICLES

One (1) International 530 Forklift
One (1) Tray Top Utility
One (1) Crew Bus

CAMP EQUIPMENT

Four (4) x 8-Man Bunkhouses (12 man emergency)
One (1) x Recreation/Canteen unit
One (1) x Ablution/Laundry/Freezer unit
One (1) x Kitchen/Cooler/Diner unit
One (1) x Toolpushers unit
One (1) x Meeting / Smoko unit
One (1) x Combined Water/Fuel Tank unit
Two (2) x CAT 3304PC generator sets each 106 kVa, 86 KW, 50 HZ.

NOTE: At Contractor's discretion any of the foregoing items may be replaced by equipment of equivalent or greater capacity.

ENCLOSURE I: 1 : 200 COMPOSITE LOG

PE605250

This is an enclosure indicator page.
The enclosure PE605250 is enclosed within the
container PE908028 at this location in this
document.

The enclosure PE605250 has the following characteristics:

ITEM_BARCODE = PE605250
CONTAINER_BARCODE = PE908028
NAME = Encl.1 Croft-1 Composite Well Log
BASIN = OTWAY
ONSHORE? = Y
DATA_TYPE = WELL
DATA_SUB_TYPE = COMPOSITE_LOG
DESCRIPTION = Encl.1 Croft-1 Composite Well Log,
Scale 1:200, by Santos [BOL] Pty Ltd,
W1315, PEP154. Enclosure 1 contained
within "Well Completion Report"
[PE908028].
REMARKS =
DATE_WRITTEN =
DATE_PROCESSED = 31-JUL-2001
DATE_RECEIVED = 19-OCT-2001
RECEIVED_FROM = Santos Ltd
WELL_NAME = Croft-1
CONTRACTOR =
AUTHOR =
ORIGINATOR = Santos Ltd
TOP_DEPTH =
BOTTOM_DEPTH =
ROW_CREATED_BY = DN07_SW

(Inserted by DNRE - Vic Govt Mines Dept)

ENCLOSURE II: 1 : 500 MUDLOG

PE605251


This is an enclosure indicator page.
The enclosure PE605251 is enclosed within the
container PE908028 at this location in this
document.

The enclosure PE605251 has the following characteristics:

ITEM_BARCODE = PE605251
CONTAINER_BARCODE = PE908028
NAME = Encl.2 Croft-1 Mud Log
BASIN = OTWAY
ONSHORE? = Y
DATA_TYPE = WELL
DATA_SUB_TYPE = MUD_LOG
DESCRIPTION = Encl.2Croft-1 Mud Log, Scale 1:100, by
Santos [BOL] Pty Ltd, W1315, PEP154.
Enclosure 2 contained within "Well
Completion Report" [PE908028].
REMARKS =
DATE_WRITTEN =
DATE_PROCESSED =
DATE_RECEIVED = 19-OCT-2001
RECEIVED_FROM = Santos Ltd
WELL_NAME = Croft-1
CONTRACTOR = Santos Ltd
AUTHOR =
ORIGINATOR = Santos Ltd
TOP_DEPTH = 0
BOTTOM_DEPTH = 2529
ROW_CREATED_BY = DN07_SW

(Inserted by DNRE - Vic Govt Mines Dept)

ENCLOSURE III: STRUCTURE MAPS



This is Page Number **908028_162X**

This is an enclosure indicator page.

The page that follows this page is an uncatalogued
fold-out with page number:

908028_162Y

and is enclosed within the document PE908028 at
this page.