## SANTOS – AWE – MITSUI

## **COMPILED FOR**

# **SANTOS LIMITED**

(A.B.N. 80 007 550 923)

# MARTHA 1 BASIC DATA REPORT

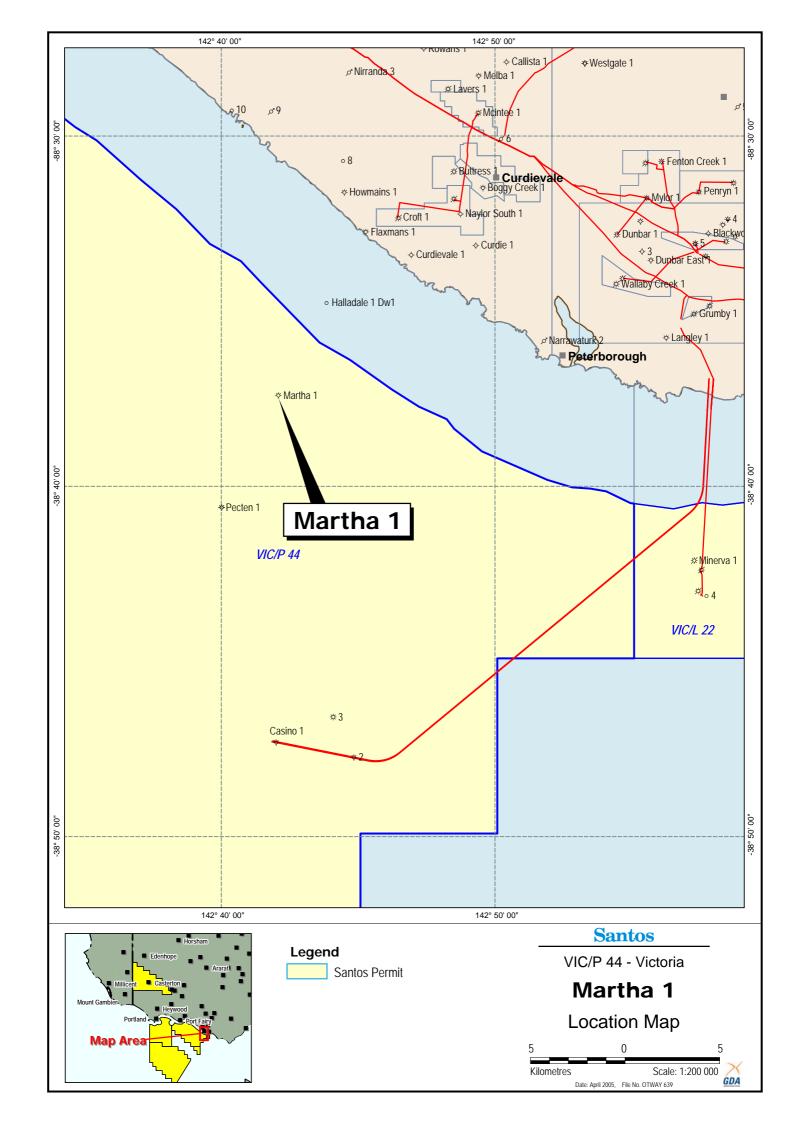
PREPARED BY: J.Pitman (Consultant) December 2004

## MARTHA-1 BASIC DATA REPORT

## **TABLE OF CONTENTS**

		<b>PAGE</b>
LOCATION MAP		
GENERAL DATA CARD		
SECTION 1:	WELL HISTORY 1.1 INTRODUCTION 1.2 GENERAL DATA 1.3 DRILLING SUMMARY	1 2 3
SECTION 2:	LITHOLOGICAL DESCRIPTIONS: 2.1 CUTTINGS DESCRIPTIONS 2.2 CORE DESCRIPTIONS 2.3 SIDEWALL CORES DESCRIPTIONS 2.4 ROTARY SIDEWALL CORE DESCRIPTIONS 2.5 CATALOGUE OF WELLSITE SAMPLES	
SECTION 3:	WIRELINE LOGGING REPORTS 3.1 LOGGING ORDER FORM 3.2 FIELD ELECTRIC LOGGING REPORT 3.3 ELECTRIC LOGGING TIME SUMMARY 3.4 RCI PRESSURE SURVEY RESULTS 3.4.1 RCI SAMPLE ANALYSES 3.5 LWD END OF WELL REPORT (SPERRY SUN) 3.6 BOREHOLE SEISMIC ANALYSIS	
SECTION 4:	PRODUCTION TEST REPORT (EXPRO)	
SECTION 5:	DAILY GEOLOGICAL REPORTS	
SECTION 6:	DAILY DRILLING REPORTS	
SECTION 7:	TIME / DEPTH CURVE	
SECTION 8:	BHA SUMMARY	
SECTION 9:	BIT RECORD AND PERFORMANCE SUMMARY	
SECTION 10:	DRILLING FLUIDS REPORT	
SECTION 11:	CASING & CEMENTING SUMMARY	
SECTION 12:	MUDLOGGING WELL REPORT	
SECTION 13:	RIG POSITIONING REPORT	
SECTION 14:	WELL ABANDONMENT AND PLUG REPORTS	
SECTION 15:	DEVIATION SUMMARY	
SECTION 16:	PALYNOLOGY REPORT	

# **LOCATION MAP**



## **GENERAL DATA CARD**

	WELL CATEO	GORY: OFFSHORE	SPUD: 2	0/10/04 <b>TD</b> R	REACHED:	29/10/04		
WELL: MARTHA-1	WELL: MARTHA-1 GAS EXP			RIG RELEASED: 5/11/04 CMPLT:				
	WELL INTEN	T: GAS	RIG: OC	CEAN PATRI	TOT			
SURFACE LOCATION	N:		STATUS	: ABANDO	NED WEL	L GAS SHOWS		
<b>LAT:</b> 38° 37′ 24.33″ S	<b>LONG:</b> 142° 42	2' 05.02" E (GDA94)		(ABGS)				
NORTHING: 5 723 638.2m EASTING: 648 109.3m				KS:				
<b>SEISMIC STATION:</b> 2001 Casino-3D, 17418 X3290								
ELEVATION SEA FLOOR: -54.7m LAT RT +21.5m LAT								
BLOCK/LICENCE: C	Otway Basin - V	TIC / P 44						
<b>TD</b> N/A n	n (Logr Extrap)	1800 m (Drlr)			-	-		
<b>PBTD</b> r	n (Logr)	m (Drlr)	HOLE	CASING	SHOE	TYPE		
TYPE STRUCTURE:	SIZE	SIZE	DEPTH					
TYPE COMPLETION:			914mm	762mm	121m	461.3 kg/m N80		
ZONE(S):	445mm	340mm	620.8	101 kg/m L80				

LOG	SUITE/	INTERVAL	BHT/TIME
	RUN	(m)	COMMENTS
GRAND - SLAM	1 / 1		
GR		1756 – Surface	66°C / 8 hours 30 minutes
DLL		1785 – 621	
MLL		1790 – 621	
ZDL		1766 – 621	
CN		1766 – 621	
SP		1747 – 621	
CAL		1790 – 621	
MAC		1771 – 621	
RCI-GR	1/2	1258.6 – 1613	71.1°C / 24 hours 35 pretests attempted, 17 normal, 9 lost seal, 2 tool plugged, 6 curtailed, 1 failure. 4 x 850cc samples @ 1488.6m, 2 x 850cc samples @ 1258.7m
VELOCITY SURVEY	1/3	1785 – Seabed	Total levels 115 at 15m intervals
RCOR-GR	1 / 4	-	Run aborted due to tool failure No cores cut
SIDEWALL CORES	1 / 5	1728.9 – 1307.2	25 cores attempted, 25 recovered (100%)

LOG (MWD)	SUITE/	INTERVAL	BHT/TIME
	RUN	(m)	COMMENTS
GR-RES-PWD-SURVEYS	1 / 1	621 – 1262	51°C BHT while circulating
GR-RES-PWD-SURVEYS	1/2	1262 – 1800	67°C BHT while circulating

**SECTION 1: WELL HISTORY** 

#### 1.1 INTRODUCTION

Martha-1 was proposed as an Otway Basin gas exploration wildcat well in the VIC/P44 Licence. The well is located approximately 26 km west of Port Campbell, 24km WNW from of the Minerva gas field, and 18 km north of the Casino gas field. The proposed location is 9.5 km from the nearest coastline in approximately 55 metres of water. The nearest well control is the onshore Flaxmans-1 (9.8 km NNE) and Pecten-1A (6.5 km SSW).

The Martha Prospect lies within the interpreted Waarre Play fairway, and is situated on the northern edge of the greater Pecten High and the western flank of the Shipwreck Trough. The prospect is partially covered by the 01Casino3D seismic survey and partially by the OH94, OH91 and OE80a 2D seismic surveys.

The primary target of Martha-1 was the Waarre Formation, which has been proven as a petroleum play in the vicinity of the Shipwreck Trough by the discoveries at Casino, Minerva and La Bella. The top Waarre Sandstone seismic reflector in the Martha Prospect exhibits a strong Class 3 AVO anomaly, which has proven a good indicator of gas accumulations within this reservoir interval throughout the region.

The Martha structure is a tilted fault block with three way dip closure and up dip fault closure, and forms the highest point on the greater Pecten High. The Martha structure has vertical relief from crest to structural spill point of 380m over an area of up to 6,675 acres (27.0 km2) at the Waarre Formation primary target. The Martha-1 location is near crestal, and has also been located to test a seismically imaged "flatspot" which may be indicative of a gas-water contact in the primary objective.

The objectives of Martha-1 were to:

- 1. Discover a new hydrocarbon resource within the Waarre Formation
- 2. Determine whether thick, potentially good productivity Waarre Unit C sands are present as prognosed
- 3. Test whether the seismic flatspot is indicative of a gas-water contact within the Waarre Formation. DST this interval to establish productivity and gas composition
- 4. Determine whether an Intra-Belfast seismic event is indicative of a gas-charged reservoir (secondary target)

The risks on Martha-1 were:

- 1. The amplitude anomaly or the flat spot observed in the Waarre section is a function of residual gas saturations, due to seal breach
- 2. The greater closure as mapped on 2-D seismic data is not present, limiting potential pool volumes
- 3. The high productivity Waarre C interval is not as prognosed, but is thin or absent

The impact of a successful well as prognosed is:

- 1. A mean OGIP of approximately 246 BCF (133 BCF Recoverable) could be defined this equates to the deterministic volumetric mapping down to the flatspot using mean rock property parameters.
- 2. The possibility of an early tie-back into the proposed Casino development could be realised.

Martha 1 was drilled by the semi-submersible drilling rig "Diamond Offshore Ocean Patriot".

#### 1.2 GENERAL DATA

Well Name: MARTHA-1

Well Classification: Offshore Gas Exploration

Interest Holders: Santos Ltd 50%

AWE Ltd 25% Mitsui & Co Ltd 25%

Participating Interests: Santos Ltd 50%

AWE Ltd 25% Mitsui & Co Ltd 25%

Operator: Santos Ltd.

Location: Offshore Victoria – Otway Basin VIC / P44.

Surveyed Location Latitude: 38° 37' 24.33" South

(GDA94) Longitude: 142° 42' 05.02" East

Northing: 5 723638.23m Easting: 648109.28m

Seismic Location: Inline 17418 X3290

Seismic Survey: 2001 Casino 3D

Elevations: Water Depth 54.7m LAT

Rotary Table 21.5m LAT

Total Depth: Driller: 1800m RT

Logger: 1791m (9m of fill) Logger Extrapolated: 2135m RT

Status: Abandoned Well with Gas Shows (ABGS)

License: VIC/P44 Offshore Victoria

Date Drilling Commenced: 23:00 hours on 20<sup>th</sup> October 2004.

Date Drilling Completed: 22:30 hours on 29<sup>th</sup> October 2004.

Date Rig Released: 24:00 hours on 5<sup>th</sup> November 2004.

Total Well Time: 17 days

Contractor: Diamond Offshore

Rig: Ocean Patriot (Semi-submersible)

#### 1.3 DRILLING SUMMARY

#### (a) <u>Drilling Summary</u> (All Depths Driller's RT)

Martha-1 was spudded at 23:00 hrs on 20<sup>th</sup> October 2004 utilising the semi-submersible drilling facility "Ocean Patriot".

Bit 1, a 660mm (26") Smith MSDS SHC, was run with a 914mm (36") hole opener. The 914mm (36") hole section was drilled from seafloor at 76.2mRT to section total depth at 122.5m with all returns to the seafloor. Hi-vis mud sweeps were pumped at each ½ stand to aid annular cleaning. The hole was displaced to PHG mud prior to pulling out and running the surface conductor casing. A string of 762mm (30") (461.3 kg/m N80) casing was run and cemented with the shoe set at 121m.

Bit 2, a Smith XRTC was run into the hole tagging the top of cement at 114.5m. The cement and shoe track were drilled and the rat hole cleaned out to 122.5m. The 445mm (17 ½") hole section was drilled in one bit run to section total depth at 628m utilising seawater and hi-vis mud sweeps pumped every half stand. Prior to pulling out of hole the well was swept with hi-vis and displaced with PHG mud. The 340mm (13 3/8") casing string consisting of 40 joints of 101.2 kg/m L80 casing was run with the shoe set at 620.8m. The casing was successfully cemented with cement returns indicated at the seafloor.

The blow out preventer and marine riser were run and function tested. Enough drill pipe to reach total depth was picked up and made up into stands prior to making up the 311mm ( $12\frac{1}{4}$ ") bottom hole assembly.

Bit 3, a Reed TCI TD43HKPRDH, was made up with the LWD tools and run into the hole tagging the top of cement at 570m. The cement, wiper plugs, shoe track and casing shoe were drilled. The rat hole was cleaned to 628m while displacing the well to a KCl/PHPA/Glycol mud system. 3m of new formation were drilled to 631m, the hole was circulated and a leak-off test (LOT) conducted yielding an Equivalent Mud Weight (EMW) of 2.6sg (21.6ppg). Drilling 311mm (12 ½") hole was about to commence when the rig generators shut-down. The bit remained inside the casing shoe and the well was circulated utilising the cement pumps.

After rig repairs Bit 3 commenced drilling the 311mm (12½") hole from 631m to 1262m. Formations were intersected high to prognosis. The Timboon Sandstone was intersected 65.5m high to prognosis and after the percentage of pyrite in the cuttings samples decreased the bit was pulled from the hole replacing the TCI for a PDC bit.

Bit 4, a Hycalog DSX104 PDC was run into the hole drilling the remainder of the 311mm (12½") hole section to total depth at 1800m. Total depth was reached at 22:30 hours on the 29<sup>th</sup> October 2004. The hole was circulated clean and the bit was pulled from the hole to conduct Suite 1 wireline logs. While pulling from the hole tight spots were washed and reamed from 1364m to 1491m through the Belfast Mudstone.

Baker Atlas were rigged up and the following wireline logs were attempted. Run 1: DLL-MLL-ZDL-CN-GR-SP-MAC. Run 1 was run into the hole but was unable to pass 1466m. The tool was worked and the caliper opened and closed attempting to work through the obstruction without success. Run 1 tools were pulled from the hole and the Baker Atlas wireline rigged down.

A clean-out assembly was made up and run into the hole for a wiper trip. The pipe took weight at 1464m. The hole was washed and reamed from 1464m to 1507m, 1582m to 1591m, 1630m to 1651m, 1717m to 1733m and 1764m to 1790m. Bottoms up was circulated twice at total depth with a moderate volume of siltstone and sandstone cavings observed at the shale shakers. The clean out assembly was pulled from the hole with no tight spots observed in the well while tripping from the hole.

Baker Atlas were again rigged up and the following wireline logs were conducted. Run 1: DLL-MLL-ZDL-CN-GR-SP-MAC, Run 2: RCI-GR (35 pretests attempted, 17 normal, 9 lost seal, 2 tool plugged, 6 curtailed, 1 failure), Run 3: Velocity Survey 115 levels at 15m intervals, Run 4: RCOR-GR, tool failed, Run 5: SWC-GR, 25 cores attempted, 25 recovered (100%).

Following wireline logs the well was plugged and abandoned as per program. Plug 1: 1790m to 1600m, Plug 2: 1600m to 1400m and Plug 3: 1400m to 1200m, Plug 4: 655m to 570m, cement retainer set at 166m, Plug 5: 166m to 114m. The rig was released at 24:00 hours on 5<sup>th</sup> November, 2004.

#### (b) Mudlogging Services

Mudlogging services were provided by Sperry Sun Unit 197 with the following parameters monitored:

- 1. Total Gas
- 2. Chromatographic Gas Breakdown
- 3. Hydrogen Sulphide Levels
- 4. Depth/Rate of Penetration.
- 5. Pipe Speed/Block Position
- 6. Top drive RPM
- 7. Top drive Torque
- 8. Hook Load/Weight On Bit
- 9. Standpipe Pressure
- 10. Casing Shut-in Pressure
- 11. Mud Pump Rate (3 pumps)
- 12. Mud Flow Out
- 13. Mud Pit Levels (8 pits including the trip tank)
- 14. Mud Weight In and Out
- 15. Mud Temperature In and Out
- 16. Resistivity In and Out
- 17. Carbon Dioxide Detector

Ditch cuttings were collected at 5m intervals in the 311mm (12-1/4") phase from 628m to 1265m, 3m intervals from 1265m to 1620m and 5m intervals from 1620m to total depth at 1800m. In addition to microscopic examination of all drilled cuttings, samples were examined under the fluoroscope for hydrocarbon indications. Additional information pertinent to Mudlogging is presented in Sperry-Suns report in SECTION 12: MUDLOGGING WELL REPORT. Details of all wellsite samples is found in Section 2.5: CATALOGUE OF WELLSITE SAMPLES

#### (c) <u>LWD Data</u>

Logging While Drilling (LWD) was acquired by Sperry-Sun in Martha-1. LWD services consisted of Gamma Ray, Resistivity, Directional Module and Pressure While Drilling (PWD). LWD data was acquired in the 311mm (12-1/4") phase from 628m to Total Depth at 1800m in two runs. Sperry Sun's detailed report is attached in Section 3.5: LWD END OF WELL REPORT

#### (d) Testing

No post logging production tests were conducted at Martha 1.

#### (e) <u>Coring</u>

No full hole cores were cut at the Martha-1 location.

#### (f) Biostratigraphy

Samples were forwarded for analysis. Results can be found in Martha 1 Interpretative Data Report.

#### (g) <u>Electric Logging</u>

Electric Logging Services were provided by Baker Atlas. One suite of electric logs were conducted at Martha-1 as follows:

TABLE 1

LOG	SUITE/	INTERVAL	BHT/TIME
	RUN	(m)	COMMENTS
GRAND - SLAM	1 / 1		
GR		1756 – Surface	66°C / 8 hours 30 minutes
DLL		1785 - 621	
MLL		1790 – 621	
ZDL		1766 – 621	
CN		1766 – 621	
SP		1747 – 621	
CAL		1790 – 621	
MAC		1771 – 621	
RCI-GR	1 / 2	1258.6 – 1613	71.1°C / 24 hours
			35 pretests attempted, 17 normal, 9 lost seal, 2 tool plugged, 6 curtailed, 1 failure. 4 x 850cc samples @ 1488.6m, 2 x 850cc samples @ 1258.7m
VELOCITY SURVEY	1/3	1785 – Seabed	Total levels 115 at 15m intervals
RCOR-GR	1 / 4	-	Run aborted due to tool failure No cores cut
SIDEWALL CORES	1 / 5	1728.9 – 1307.2	25 cores attempted, 25 recovered (100%)

#### h) RCI Pressure Data

An RCI pressure survey was conducted at the Martha-1 location. A total of 35 pre-tests were attempted of which 17 were normal tests, 9 were lost seals, 6 were curtailed, 2 tool plugged and 1 tool failure. In addition, samples were collected at 1258.7m and at 1488.6m. The RCI Pressure Survey data are presented in Section 3.4: s PRESSURE SURVEY RESULTS.

#### (i) <u>Hole Deviation</u>

Martha-1 was drilled as a vertical hole. Deviation Surveys were recorded using MWD/LWD tools in the 311mm (12.25") section while drilling. Survey Data are presented in Section 15: DEVIATION SUMMARY.

At Total Depth, the estimated displacement from the wellhead was 40.54m to 112.2°(T). The TVD at total depth was calculated at 1799m (Drl).

#### (j) <u>Velocity Surveys</u>

A velocity survey was conducted by Baker Atlas during Suite 1 wireline logs at total depth. A total of 115 levels were conducted at 15m intervals from 1785m to seabed at 76.2m.

### (k) <u>Casing & Cementing Summary</u>

The following Table-3 summarises casing sizes, depths and cementing details for Martha-1. Casing and Cementing Reports for each casing run are detailed in Section 11: CASING & CEMENTING SUMMARY.

TABLE 3

HOLE SIZE	DEPTH	CASING SIZE	CASING DEPTH	JOINTS	CASING TYPE	CEMENT
914mm (36")	122.5m	762mm (30")	121m	4	461.3 kg/m N80	750 sacks class "G" cement of total volume 24.5m3 (154 bbl), 20.3m3 (128bbl) of mixwater, mixed to a slurry weight of 1.9sg (15.8ppg).
445mm (17.5")	628m	340 mm (13.375")	620.8m	40	101.2kg/m L80 BTC	Lead: 34.6 MT class "G" cement mixed to a slurry volume of 51.4 m3 at 1.5sg.  Tail: 39.1 MT class "G" cement mixed to a slurry volume of 30.05 m at 1.9sg.

**SECTION 2: LITHOLOGICAL DESCRIPTIONS** 

## **SECTION 2.1: CUTTINGS DESCRIPTIONS**

## 2.1 MARTHA-1 - LITHOLOGICAL DESCRIPTIONS

(Depths are referenced to Loggers Depth)

Depth	Depth						
From	To	%	Lithology and Shows				
(m)	(m)		oth O + 1 2004 (3) : 4 31 1 31 1 31 1 31				
Martha 1 was spudded on 20 <sup>th</sup> October 2004 utilising the semi submersible drilling facility							
"Ocean Patriot". Note: All returns were to the seafloor prior to running the 13 3/8" casing, blow out preventer and marine riser at 628m.							
628	630	100	Cement				
020	030	100	Cement				
630	635	100	CALCAREOUS CLAYSTONE: medium dark grey, medium to dark brownish grey, trace glauconite, minor forams, soft to firm, sub blocky to blocky.				
635	640	80 20	CALCAREOUS CLAYSTONE: medium grey, medium brownish grey, generally as above.  CALCARENITE: light brown to off white, very pale cream, slightly silty in part, trace fossil / shell fragments, friable to moderately hard, nil to very poor inferred porosity, blocky.				
640	645	100	CALCAREOUS CLAYSTONE: medium to dark brownish grey, rare fine grained glauconite, common fossil fragments, trace carbonaceous material, soft to firm, sub blocky to blocky.				
645	650	40 60	CALCAREOUS CLAYSTONE: med grey, light to medium brownish grey, medium dark brownish grey in part, minor fossil fragments, rare forams, trace very fine glauconite, firm, blocky to sub blocky. SANDSTONE: very light brown, very light grey white, off white, white, very fine to fine grained, trace medium, well sorted, sub round to sub angular, common moderately strong calcareous cement, minor white argillaceous matrix, moderately hard, very poor inferred porosity, no fluorescence.				
650	655	20	CALCAREOUS CLAYSTONE: medium to dark grey, generally as above.				
		80	SANDSTONE: white, off white, very light brownish grey, very fine to medium grained, moderately well sorted, sub angular to occasionally sub round, moderately strong calcareous cement, common white argillaceous matrix, trace fine carbonaceous material, friable to moderately hard aggregates, tight to very poor inferred porosity, no fluorescence.				
655	660	50	SILTSTONE: medium brownish grey, light to medium grey, arenaceous, grading to very fine sandstone in part, common fine grained glauconite, trace forams, friable, sub blocky to blocky. SANDSTONE: very light brown, off white, white, translucent and clear in part, fine to medium predominmantly fine grained, sub angular to sub round, moderately strong calcareous cement, rare off white argillaceous matrix, friable to moderately hard aggregates, very poor to poor inferred porosity, no fluorescence.				
660	665	70	SILTSTONE: as above, becoming argillaceous.				

Depth From (m)	Depth To (m)	%	Lithology and Shows
(111)	(111)	30	SANDSTONE: as above.
665	670	100	SANDSTONE: medium orange yellow, orange brown, occasionally clear - translucent, fine to medium grained, fair sorting, angular to subrounded, moderately strong calcareous cement, abundant Festaining, moderately hard aggregates, friable in part, poor inferred porosity, no fluorescence.
670	675	100	SANDSTONE: medium orange brown, occasionally clear and translucent, fine to medium grained, trace coarse, sub angular to sub round, moderately strong calcareous cement, abundant orange Fe staining, rare fine grained glauconite, moderately hard aggregates, friable in part, fair inferred porosity, no fluorescence.
675	680	100	SANDSTONE: common orange brown FE stain, translucent, clear, medium to coarse predominmantly medium grained, rare fine grained, sub angular to sub round, rare weak calcareous cement, trace light grey silty matrix, trace very fine glauconite, trace forams, rare limestone fragments, trace fine grained lithics, friable to predominmantly loose, good inferred porosity, no fluorescence.
680	685	100	SANDSTONE: as above.
685	690	100	SANDSTONE: as above, orange brown Fe stain, translucent, clear, medium to coarse trace fine grained, sub angular to sub round, occasionally well rounded, moderately sorted, trace weak calcareous cement, trace forams, trace fine glauconite, trace limestone fragments, trace fine grained lithics, loose, good inferred porosity, no fluorescence.
690	710		Shale shakers blinded out by sand. Samples lost.
710	715	100	SANDSTONE: as above.
715	720	100	SANDSTONE: as above, becoming predominmantly fine to medium grained.
720	725	100	SANDSTONE: as above, 50% clear, translucent, 50% orange brown Fe stain.
725	730	80 20	SANDSTONE: as above. orange brown, translucent, clear. CALCARENITE: white, slightly argillaceous (rock flour?), friable to moderately hard, blocky.
730	735	30 trace- 10% 70	SANDSTONE: as above. CALCARENITE: as above.  CLAYSTONE: glauconite, light to medium greenish grey, minor very fine grained glauconite, trace forams, slightly arenaceous in part, soft to firm, sub blocky to blocky.
735	740	10	CLAYSTONE: glauconitic as above.

Depth From (m)	Depth To (m)	%	Lithology and Shows
	()	90	SANDSTONE: (1) 50% orange brown translucent, clear as above. SANDSTONE: (2) white, very light grey white, fine to medium grained, sub angular to predominmantly sub round, moderately strong calcareous cement, minor white argillaceous matrix, friable to moderately hard aggregates, tight visual porosity, no fluorescence.
740	745	80	SILTSTONE: medium to dark brown, medium to dark brownish grey, very finely arenaceous in part, argillaceous in part grading to CLAYSTONE, trace very fine glauconite, trace fine lithics, firm, sub
		20	blocky to blocky.  SANDSTONE: white, off white, very light grey, translucent, very fine to fine grained, trace medium, moderately well sorted, sub angular to sub round, common calcareous cement, minor white argillaceous matrix, trace very fine glauconite, friable to moderately hard aggregates, very poor inferred porosity, no fluorescence.
745	750	30 70	CLAYSTONE: glauconite, light to medium greenish grey, minor very fine grained glauconite, trace forams, slightly arenaceous in part, soft to firm, sub blocky to blocky.  SILTSTONE: medium to dark brown, medium to dark brownish grey, very finely arenaceous in part, argillaceous in part grading to CLAYSTONE, trace very fine glauconite, trace fine lithics, firm, sub blocky to blocky.
750	755	10 90	SILTSTONE: medium to dark brown, medium to dark brownish grey, very finely arenaceous in part, argillaceous in part grading to CLAYSTONE, trace very fine glauconite, trace fine lithics, firm, sub blocky to blocky.  SANDSTONE: clear, translucent, fine to coarse predominmantly medium to coarse, fair sorting, sub angular to predominmantly sub
			round, predominmantly loose clean quartz grains, good inferred porosity, no fluorescence.
755	760	20	SILTSTONE: medium to dark brown, medium to dark brownish grey, very finely arenaceous in part, argillaceous in part grading to CLAYSTONE, trace very fine glauconite, trace fine lithics, firm, sub blocky to blocky.
		80	SANDSTONE: clear, translucent, fine to coarse predominmantly medium to coarse, fair sorting, sub angular to predominmantly sub round, predominmantly loose clean quartz grains, good inferred porosity, no fluorescence.
760	765	100	SANDSTONE: clear, translucent, fine to coarse predominmantly medium to coarse, fair sorting, sub angular to predominmantly sub round, trace mica, predominmantly loose clean quartz grains, trace calcareous grains / fragments, good inferred porosity, no fluorescence.
765	770	80	SILTSTONE: medium to dark brown, dark brownish grey, very finely arenaceous, trace very fine glauconite, trace very fine glauconite, soft to firm, blocky.
		20	SANDSTONE: as above.

Depth From	Depth To	%	Lithology and Shows
(m)	(m)		
770	775	40	SILTSTONE: medium to dark brown, dark brownish grey, very finely arenaceous, trace very fine glauconite, trace very fine glauconite, soft to firm, blocky.  SANDSTONE: clear, translucent, fine to predominmantly medium, moderately well sorted, sub angular to predominmantly sub round, minor nodular pyrite, predominmantly loose clean quartz grains, trace calcareous grains / fragments, good inferred porosity, no fluorescence.
775	780	100	SANDSTONE: clear, translucent, fine to coarse predominmantly medium to coarse, fair sorting, sub angular to predominmantly sub round, predominmantly loose clean quartz grains, trace calcareous grains / fragments, good inferred porosity, no fluorescence.
780	785	100	SANDSTONE: clear, translucent, fine to coarse predominmantly medium, sub angular to sub round, predominmantly loose clean quartz grains, good inferred porosity, no fluorescence.
785	790	100	SANDSTONE: as above, trace nodular pyrite, trace mica.
790	795	30	SANDSTONE: clear, translucent, very light grey, fine to predominmantly very coarse, sub angular to sub round, moderately sorted, predominmantly loose quartz grains, minor nodular pyrite, good inferred porosity, no fluorescence.  SILTSTONE: medium to dark brownish grey, argillaceous in part, arenaceous, trace very fine glauconite, trace fine grained lithics, firm, sub blocky to blocky.
795	800	100 trace	SANDSTONE: clear translucent, fine to very coarse as above. SILTSTONE: as above.
800	805	80	SANDSTONE: translucent, clear, light grey in part, very fine to medium grained, trace coarse, sub angular to sub round, trace weak siliceous cement, rare mica, trace nodular pyrite, trace very fine lithics, predominmantly loose quartz grains, good inferred porosity, no fluorescence.  SILTSTONE: as above.
805	810	100	SANDSTONE: as above, minor coarse to very coarse.
810	815	90 10	SANDSTONE: as above. SILTSTONE: as above.
815	820	100	SANDSTONE: clear, translucent, very fine to medium trace coarse grains, moderately sorted, sub angular to sub round, trace weak siliceous cement, rare light brownish grey silty matrix, trace very fine glauconite, minor nodular pyrite, trace fossil fragments, rare mica, trace lithics, friable to predominmantly loose, fair to good inferred porosity, no fluorescence.
820	825	100	SANDSTONE: generally as above, predominmantly medium grained, loose clean quartz grains.

Depth From	Depth To	%	Lithology and Shows
(m) 825	(m) 830	100	SANDSTONE: clear, translucent, very fine to medium, trace coarse grained, sub angular to sub round, moderately sorted, trace light grey silty matrix, trace calcareous fragments, trace fine grained glauconite, trace very fine lithics, friable to predominmantly loose, good inferred porosity, no fluorescence.
830	835	100	SANDSTONE: clear, translucent, very fine to medium, trace coarse grained, predominmantly medium grained, sub angular to round, moderately sorted, rare light grey silty matrix, trace to common calcareous fragments, trace fine grained glauconite, trace very fine lithics, rare pyrite, friable to predominmantly loose, good inferred porosity, no fluorescence.
835	840	90	SANDSTONE: clear, translucent, very fine to medium, trace coarse grained, sub angular to round, moderately sorted, rare light grey silty matrix, trace to common calcareous fragments, trace fine grained glauconite, trace very fine lithics, rare pyrite, friable to predominmantly loose, good inferred porosity, no fluorescence.
840	845	10 60	SILTSTONE: medium dark grey, brownish grey to olive grey, dark green grey, argillaceous, weak to moderately calcareous, trace very fine glauconite, trace carbonaceous specks, firm, sub blocky to blocky. SANDSTONE: clear, translucent, very fine to medium, trace coarse
			grained, sub angular to round, moderately sorted, rare light grey silty matrix, trace to common calcareous fragments, trace fine grained glauconite, trace very fine lithics, rare pyrite, friable to predominmantly loose, good inferred porosity, no fluorescence.
		40	SILTSTONE: medium dark grey, brownish grey to olive grey, dark green grey, argillaceous, weak to moderately calcareous, trace very fine glauconite, trace carbonaceous specks, firm, sub blocky to blocky.
845	850	100	SANDSTONE: clear, translucent, fine to coarse grained, predominmantly medium to coarse grained, sub angular to round, moderately sorted, rare light grey to white silty matrix, trace to common calcareous fragments, rare fine grained glauconite, trace very fine lithics, trace carbonaceous inclusions, friable to predominmantly loose, good inferred porosity, no fluorescence.
850	855	100	SANDSTONE: clear, translucent, fine to coarse grained, predominmantly medium to coarse grained, sub angular to round, moderately sorted, rare light grey silty matrix, trace to common calcareous fragments, rare fine grained glauconite, trace very fine lithics, trace carbonaceous inclusions, rare pyrite, friable to predominmantly loose, good inferred porosity, no fluorescence.
855	860	100	SANDSTONE: clear, translucent, fine to coarse grained, predominmantly medium to coarse grained, sub angular to sub round, common rounded grains, moderately sorted, rare light grey silty matrix, trace to common calcareous fragments, rare fine grained glauconite, trace very fine lithics, trace carbonaceous inclusions, friable to predominmantly loose, good inferred porosity, no fluorescence.

Depth From (m)	Depth To (m)	%	Lithology and Shows
860	865	100	SANDSTONE: clear, translucent, fine to coarse grained, predominmantly medium to coarse grained, sub angular to sub round, common rounded grains, moderately sorted, rare light grey silty matrix, trace to common calcareous fragments, rare fine grained glauconite, trace very fine lithics, trace carbonaceous inclusions, rare friable aggregates, predominmantly loose, good inferred porosity, no fluorescence.
865	870	100	SANDSTONE: clear, translucent, fine to coarse grained, predominmantly medium to coarse grained, sub angular to sub round, common rounded grains, moderately sorted, rare light grey silty matrix, trace to common calcareous fragments, rare fine grained glauconite, trace very fine lithics, trace carbonaceous inclusions, rare friable aggregates, predominmantly loose, good inferred porosity, no fluorescence.
870	875	100	SANDSTONE: clear, translucent, fine to coarse grained, predominmantly medium to coarse grained, sub angular to sub round, common rounded grains, moderately sorted, rare light grey silty matrix, trace to common calcareous fragments, rare fine grained glauconite, trace very fine lithics, trace carbonaceous inclusions, rare friable aggregates, predominmantly loose, good inferred porosity, no fluorescence.
875	880	100	SANDSTONE: clear, translucent, fine to coarse grained, predominmantly medium to coarse grained, sub angular to sub round, common rounded grains, moderately sorted, rare light grey silty matrix, trace to common calcareous fragments, rare fine grained glauconite, trace very fine lithics, trace carbonaceous inclusions, rare friable aggregates, predominmantly loose, good inferred porosity, no fluorescence.
880	885	100	SANDSTONE: clear, translucent, fine to coarse grained, predominmantly medium to coarse grained, sub angular sub round, common rounded grains, moderate to well sorted, rare light grey silty matrix, trace to common calcareous fragments, trace very fine lithics, trace carbonaceous inclusions, rare pyrite, loose, good inferred porosity, no fluorescence.
885	890	100	SANDSTONE: clear, translucent, fine to coarse grained, predominmantly medium to very coarse grained, sub angular to rounded grains, moderate to well sorted, rare light grey silty matrix, trace to common calcareous fragments, trace very fine lithics, trace carbonaceous inclusions, loose, good inferred porosity, no fluorescence.
890	895	100	SANDSTONE: clear, translucent, fine to coarse grained, predominmantly medium to very coarse grained, sub angular to rounded grains, moderate to well sorted, rare light grey silty matrix, trace to common calcareous fragments, trace very fine lithics, trace carbonaceous inclusions, loose, good inferred porosity, no fluorescence.

Depth From	Depth To	%	Lithology and Shows
(m)	(m)		
895	900	100	SANDSTONE: clear, translucent, fine to coarse grained, predominmantly medium to very coarse grained, sub angular to rounded grains, moderate to well sorted, rare light grey silty matrix, trace to common calcareous fragments, trace very fine lithics, trace carbonaceous inclusions, loose, good inferred porosity, no fluorescence.
900	905	100	SANDSTONE: clear, translucent, fine to coarse grained, predominantly medium to coarse, sub angular to rounded, fair to moderately sorted, trace light grey silty matrix, trace calcareous fragments, trace lithics, rare nodular pyrite, trace carbonaceous material, loose, good inferred porosity, no fluorescence.
905	910	100	SANDSTONE: as above, predominantly coarse grained.
910	915	100	SANDSTONE: as above, predominantly coarse grained.
915	920	100	SANDSTONE: as above, predominantly medium to coarse.
920	925	100	SANDSTONE: translucent, clear, white, fine to very coarse, poor sorting, sub angular to rounded, trace nodular pyrite, trace fine grained glauconite, predominantly loose clean quartz grains, good inferred porosity, no fluorescence.
925	930	100 trace	SANDSTONE: as above, trace forams. SILTSTONE: medium brownish grey, arenaceous, trace very fine lithics, soft to firm, blocky.
930	935	100 trace	SANDSTONE: as above, coarse – very coarse. SILTSTONE: medium brownish grey, arenaceous, trace very fine lithics, soft to firm, blocky.
935	940	100	SANDSTONE: translucent, clear, white, light grey in part, fine to very coarse, predominantly coarse to very coarse, sub rounded to rounded, predominantly loose clean quartz grains, good inferred porosity, no fluorescence.
940	945	100	SANDSTONE: translucent, clear, fine to very coarse predominantly medium to coarse.
945	950	90 10	SANDSTONE: predominantly medium to coarse as above. SILTSTONE: medium to dark brownish grey, arenaceous, trace very fine lithics, trace calcareous fragments, friable to soft, sub blocky to blocky.
950	955	100 trace	SANDSTONE: as above. SILTSTONE: as above.
955	960	90	SANDSTONE: translucent, clear, light yellow brown Fe stain in part, fine to very coarse predominantly medium to coarse, sub angular to sub rounded, trace light grey silty matrix, predominantly loose clean quartz grains, good inferred porosity, no fluorescence.

Depth From (m)	Depth To (m)	%	Lithology and Shows
	()	10	SILTSTONE: medium to predominantly dark grey, medium to dark brownish grey, arenaceous, trace very fine lithics, firm to occasionally moderately hard, sub blocky to blocky.
960	965	90 10	SANDSTONE: as above. SILTSTONE: as above.
965	970	100	SANDSTONE: as above.
970	975	100	SANDSTONE: translucent, clear, light yellow brown Fe stain in part, fine to very coarse predominantly medium to coarse, sub angular to sub rounded, trace light grey silty matrix, predominantly loose clean quartz grains, good inferred porosity, no fluorescence.
975	980	100	SANDSTONE: clear, translucent, light grey, white, fine to very coarse predominantly medium to coarse, sub angular to sub rounded, trace light grey silty matrix, trace nodular pyrite, predominantly loose clean quartz grains, good inferred porosity, no fluorescence. SILTSTONE: medium to predominantly dark brownish grey, arenaceous in part, trace very fine lithics, moderately hard, sub blocky to blocky.
980	985	100 trace	SANDSTONE: as above. SILTSTONE: as above.
985	990	60 40	SANDSTONE: predominantly medium to coarse as above. SILTSTONE: medium to predominantly dark brownish grey, arenaceous in part, trace very fine lithics, moderately hard, sub blocky to blocky, occasionally soft and dispersive.
990	995	70 30	SANDSTONE: as above. SILTSTONE: as above, trace very fine glauconite, rare nodular pyrite.
995	1000	70 30	SANDSTONE: as above. SILTSTONE: as above, trace very fine glauconite, rare nodular pyrite.
1000	1005	50	SILTSTONE: medium to dark brownish grey, very finely arenaceous, interlaminated with very fine SANDSTONE, friable, blocky. SANDSTONE: clear, translucent, very fine to medium predominantly fine grained, sub angular to sub rounded, interlaminated with siltstone as above, predominantly loose quartz grains, poor inferred porosity, no fluorescence.
1005	1010	70 30	SILTSTONE: medium to dark brownish grey, very finely arenaceous, rare nodular pyrite, trace very fine glauconite, interlaminated with very fine SANDSTONE, friable, blocky.  SANDSTONE: clear, translucent, very fine to medium predominantly fine grained, sub angular to sub rounded, interlaminated with siltstone as above, predominantly loose quartz grains, poor inferred porosity, no fluorescence.
1010	1015	70	SILTSTONE: as above.

Depth From (m)	Depth To (m)	%	Lithology and Shows
(111)	(111)	30	SANDSTONE: fine grained as above.
1015	1020	20	SILTSTONE: medium to dark brownish grey, very finely arenaceous, rare nodular pyrite, trace very fine glauconite, interlaminated with very fine SANDSTONE, friable, blocky.  SANDSTONE: clear, translucent, very fine to medium predominantly fine grained, sub angular to sub rounded, interlaminated with siltstone as above, predominantly loose quartz grains, poor inferred porosity, no fluorescence.
1020	1025	70 30	SILTSTONE: as above. SANDSTONE: fine grained as above.
1025	1030	50 50	SILTSTONE: as above. SANDSTONE: fine grained as above.
1030	1035	60 40	SILTSTONE: as above. SANDSTONE: fine grained as above.
1035	1040	30 70	SILTSTONE: medium to dark brownish grey, very finely arenaceous, rare nodular pyrite, trace very fine glauconite, interlaminated with very fine SANDSTONE, friable, blocky.  SANDSTONE: clear, translucent, very fine to medium predominantly fine grained, sub angular to sub rounded, interlaminated with siltstone as above, rare moderately strong siliceous cement, predominantly loose quartz grains, poor inferred porosity, no fluorescence.
1040	1045	40	SANDSTONE: clear, translucent, light olive grey to brown grey, fine to coarse grained, dominantly medium to coarse grained, common very coarse grains, poor to moderately sorted, sub angular to sub rounded, common rounded, trace to common glauconite, trace carbonaceous specks, rare pyrite, trace lithics, rare friable to firm aggregates, dominantly loose, fair inferred porosity, no fluorescence.  SILTSTONE: medium to dark grey, olive black to green black, brown grey, argillaceous, moderately calcareous, trace very fine glauconite, trace carbonaceous specks, firm to moderately hard, sub blocky to blocky.
1045	1050	90	SANDSTONE: clear, translucent, light olive grey to brown grey, very fine to coarse grained, dominantly medium to coarse grained, common very coarse grains, poor to moderately sorted, moderate siliceous cement, sub angular to sub rounded, common rounded, trace to common glauconite, trace carbonaceous specks, rare pyrite, trace lithics, rare friable to firm aggregates, dominantly loose, fair inferred porosity, no fluorescence.  SILTSTONE: medium to dark grey, olive black to green black, brown grey, argillaceous, moderately calcareous, trace very fine glauconite, trace carbonaceous specks, firm to moderately hard, sub blocky to blocky.

Depth From	Depth To	%	Lithology and Shows
(m)	(m)		
1050	1055	20	SANDSTONE: clear, translucent, light olive grey to brown grey, fine to coarse grained, dominantly medium to coarse grained, common very coarse grains, moderate siliceous cement, poor to moderately sorted, sub angular to sub rounded, common rounded, trace to common glauconite, trace carbonaceous specks, rare pyrite, trace lithics, rare friable to firm aggregates, dominantly loose, fair inferred porosity, no fluorescence.  SILTSTONE: medium to dark grey, olive black to green black, brown grey, argillaceous, moderately calcareous, trace very fine glauconite,
1055	1060	90	trace carbonaceous specks, firm to moderately hard, sub blocky to blocky.  SANDSTONE: clear, translucent, light olive grey to brown grey, fine to coarse grained, dominantly medium to coarse grained, common very coarse grains, moderate to strong siliceous cement, trace pyritic
		10	cement, moderately sorted, sub angular to sub rounded, common rounded, weak to moderately siliceous cement, weak calcareous cement, trace to common glauconite, trace carbonaceous specks, trace pyrite, trace fossile fragments, trace lithics, moderately hard aggregates, dominantly loose, fair inferred porosity, no fluorescence. SILTSTONE: medium to dark grey, olive black to green black, brown grey, argillaceous, moderately calcareous, trace very fine glauconite, trace carbonaceous specks, firm to moderately hard, sub blocky to blocky.
1060	1065	70	SANDSTONE: clear, translucent, light olive grey to brown grey, fine to medium grained, common coarse to very coarse grained, moderately sorted, sub angular to sub rounded, common rounded, weak calcareous cement, weak to moderate siliceous cement, rare pyritic cement, trace light brown argillaceous to silty matrix, trace very fine glauconite, trace to locally common pyrite, trace carbonaceous specks, moderately hard aggregates, predominmantly loose, poor to fair inferred and visual porosity, no fluorescence.  SILTSTONE: medium to dark grey, olive black to green black, brown
		30	grey, argillaceous, moderately calcareous, trace very fine glauconite, trace carbonaceous specks, firm to moderately hard, sub blocky to blocky.
1065	1070	60	SANDSTONE: clear, translucent, light olive grey to brown grey, fine to coarse grained, common very coarse grained, poor to moderately sorted, sub angular to sub rounded, common rounded, weak calcareous cement, weak to moderate siliceous cement, rare pyritic cement, trace light brown argillaceous to silty matrix, trace very fine glauconite, trace pyrite, trace carbonaceous specks, moderately hard aggregates, predominmantly loose, poor to fair inferred and visual porosity, no fluorescence.
		40	SILTSTONE: olive grey to olive black, brown black, medium to dark grey, arenaceous, loc grading to a very fine Sandstone, weakly calcareous, trace glauconite, trace to common carbonaceous specks, trace pyrite, firm to loc moderately hard, sub blocky to blocky.

Depth From	Depth To	%	Lithology and Shows
(m) 1070	(m) 1075	60	SANDSTONE: clear, translucent, light olive grey to brown grey, fine to coarse grained, common very coarse grained, poor to moderately sorted, sub angular to sub rounded, common rounded, weak calcareous cement, weak to moderate siliceous cement, rare pyritic cement, trace light brown argillaceous to silty matrix, trace very fine glauconite, trace pyrite, trace carbonaceous specks, moderately hard aggregates, predominmantly loose, poor to fair inferred and visual porosity, no fluorescence.  SILTSTONE: olive grey to olive black, brown black, medium to dark grey, arenaceous, loc grading to a very fine Sandstone, weakly calcareous, trace glauconite, trace to common carbonaceous specks, trace to locally common pyrite, firm to loc moderately hard, sub blocky
1075	1080	60	to blocky.  SANDSTONE: clear, translucent, fine to coarse grained, poor to moderately sorted, sub angular to sub round, rare weak siliceous and calcareous cement, trace light brown grey siliceous matrix, trace to common glauconite, trace pyrite, trace carbonaceous specks, loose, rare moderately hard aggregates, poor to fair inferred porosity, no fluorescence.
		40	SILTSTONE: olive grey to olive black, brown black, medium to dark grey, arenaceous, locally grading to a very fine Sandstone, weakly calcareous, trace glauconite, trace to common carbonaceous specks, trace to locally common pyrite, firm to loc moderately hard, sub blocky to blocky.
1080	1085	40	SANDSTONE: clear, translucent, fine to coarse grained, poor to moderately sorted, sub angular to sub round, rare weak siliceous and calcareous cement, trace light brown grey siliceous matrix, trace to common glauconite, trace to common pyrite, trace carbonaceous specks, loose, rare moderately hard aggregates, poor to fair inferred porosity, no fluorescence.  SILTSTONE: olive grey to olive black, brown black, medium to dark grey, arenaceous, locally grading to a very fine Sandstone, weakly calcareous, trace glauconite, trace to common carbonaceous specks, trace to locally common pyrite, firm to loc moderately hard, sub blocky to blocky.
1085	1090	20	SANDSTONE: clear, translucent, light brown to light olive grey, fine to very coarse grained, dominantly medium to coarse grained, poor to moderately sorted, sub angular to rounded, weak to moderate calcareous cement, trace weak siliceous cement, trace siliceous cement, trace to common pyrite, trace to common very fine to fine glauconite, trace carbonaceous specks, trace lithics, predominmantly loose, trace moderately hard aggregates, poor to fair inferred and visual porosity, no fluorescence.  SILTSTONE: olive grey to olive black, brown black, medium to dark grey, arenaceous, locally grading to a very fine Sandstone, weakly calcareous, trace glauconite, trace to common carbonaceous specks, trace to locally common pyrite, firm to loc moderately hard, sub blocky to blocky.

Depth From	Depth To	%	Lithology and Shows
(m)	(m)	70	Enthology and Shows
1090	1095	70	SANDSTONE: clear, translucent, light brown to light olive grey, fine to very coarse grained, dominantly medium to coarse grained, poor to moderately sorted, sub angular to rounded, weak to moderate calcareous cement, trace weak siliceous cement, trace siliceous cement, trace to common pyrite, trace to common very fine to fine glauconite, trace carbonaceous specks, trace lithics, predominmantly loose, trace moderately hard aggregates, poor to fair inferred and visual porosity, no fluorescence.  SILTSTONE: olive grey to olive black, brown black, medium to dark grey, arenaceous, locally grading to a very fine Sandstone, in part moderately calcareous, trace to common pyrite, trace carbonaceous specks, trace glauconite, firm to moderately hard, sub blocky to blocky.
1095	1100	90	SANDSTONE: clear, translucent, light brown to light olive grey, fine to very coarse grained, dominantly medium to coarse grained, poor to moderately sorted, sub angular to rounded, weak to moderate calcareous cement, trace weak siliceous cement, trace siliceous matrix, trace to common pyrite, trace to common very fine to fine glauconite, trace carbonaceous specks, trace lithics, predominmantly loose, trace moderately hard aggregates, poor to fair inferred and visual porosity, no fluorescence.  SILTSTONE: olive grey to olive black, brown black, medium to dark grey, arenaceous, locally grading to a very fine Sandstone, in part moderately calcareous, trace pyrite, trace carbonaceous specks, trace glauconite, firm to moderately hard, sub blocky to blocky.
1100	1105	20	SANDSTONE: clear, translucent, light brown to light olive grey, very fine to fine grained, common medium to coarse grained, poor to moderately sorted, sub angular to rounded, weak to moderate calcareous cement, trace weak siliceous cement, trace siliceous matrix, trace to common pyrite, trace to common very fine to fine glauconite, trace carbonaceous specks, trace lithics, rare fossile fragments, predominmantly loose, trace moderately hard aggregates, poor to fair inferred and visual porosity, no fluorescence.  SILTSTONE: olive grey to olive black, brown black, medium to dark grey, arenaceous, locally grading to a very fine Sandstone, in part moderately calcareous, trace pyrite, trace carbonaceous specks, trace glauconite, firm to moderately hard, sub blocky to blocky.
1105	1110	40	SANDSTONE: clear, translucent, light brown to light olive grey, very fine to fine grained, common medium to coarse grained, poor to moderately sorted, sub angular to rounded, weak to moderate calcareous cement, trace weak siliceous cement, trace siliceous matrix, trace to common pyrite, trace to common very fine to fine glauconite, trace carbonaceous specks, trace lithics, rare fossile fragments, predominmantly loose, trace moderately hard aggregates, poor to fair inferred and visual porosity, no fluorescence.  SILTSTONE: olive grey to olive black, brown black, medium to dark grey, arenaceous, locally grading to a very fine Sandstone, in part moderately calcareous, trace pyrite, trace carbonaceous specks, trace glauconite, firm to moderately hard, sub blocky to blocky.

Depth From (m)	Depth To (m)	%	Lithology and Shows
1110	1115	90	SANDSTONE: clear, translucent, light brown to light olive grey, very fine to fine grained, common medium to coarse grained, poor to moderately sorted, sub angular to rounded, weak to moderate calcareous cement, trace weak siliceous cement, trace siliceous matrix, trace to common pyrite, trace to common very fine to fine glauconite, trace carbonaceous specks, trace lithics, rare fossile fragments, predominmantly loose, trace moderately hard aggregates, poor to fair inferred and visual porosity, no fluorescence.  SILTSTONE: olive grey to olive black, brown black, medium to dark grey, arenaceous, locally grading to a very fine Sandstone, in part moderately calcareous, trace pyrite, trace carbonaceous specks, trace glauconite, firm to moderately hard, sub blocky to blocky.
1115	1120	30	SANDSTONE: clear, translucent, light brown to light olive grey, very fine to fine grained, common medium to coarse grained, poor to moderately sorted, sub angular to rounded, weak to moderate calcareous cement, trace weak siliceous cement, trace siliceous matrix, trace to common pyrite, trace to common very fine to fine glauconite, trace carbonaceous specks, trace lithics, rare fossile fragments, trace Limestone fragments, predominmantly loose, trace moderately hard aggregates, poor to fair inferred and visual porosity, no fluorescence. SILTSTONE: olive grey to olive black, brown black, medium to dark grey, arenaceous, locally grading to a very fine Sandstone, in part moderately calcareous, trace pyrite, trace carbonaceous specks, trace glauconite, firm to moderately hard, sub blocky to blocky.
1120	1125	40	SANDSTONE: clear, translucent, light brown to light olive grey, very fine to medium grained, common coarse grained, moderately sorted, sub angular to rounded, weak to moderate calcareous cement, trace weak siliceous cement, trace glauconitic matrix, common to abundant glauconite, trace pyrite, trace carbonaceous specks, trace lithics, rare fossile fragments, predominmantly loose, trace moderately hard aggregates, poor to fair inferred and visual porosity, no fluorescence. SILTSTONE: olive grey to olive black, brown black, medium to dark grey, arenaceous, locally grading to a very fine Sandstone, in part moderately calcareous, trace pyrite, trace carbonaceous specks, trace glauconite, firm to moderately hard, sub blocky to blocky.
1125	1130	20	SANDSTONE: clear, translucent, light brown to light olive grey, very fine to medium grained, common coarse grained, moderately sorted, sub angular to rounded, weak to moderate calcareous cement, trace weak siliceous cement, trace glauconitic matrix, common to abundant glauconite, trace pyrite, trace carbonaceous specks, trace lithics, rare fossile fragments, predominmantly loose, trace moderately hard aggregates, poor to fair inferred and visual porosity, no fluorescence. SILTSTONE: olive grey to olive black, brown black, medium to dark grey, arenaceous, locally grading to a very fine Sandstone, in part moderately calcareous, trace pyrite, trace carbonaceous specks, trace glauconite, firm to moderately hard, sub blocky to blocky.

Depth From (m)	Depth To (m)	%	Lithology and Shows
1130	1135	70	SANDSTONE: clear, translucent, light brown to light olive grey, fine to medium grained, common coarse grained, moderately sorted, sub angular to sub round, moderate calcareous cement, common argillaceous to siliceous matrix, trace to locally common pyrite, common glauconite, trace carbonaceous specks, trace lithics, common moderately hard aggregates, predominmantly loose, poor to fair inferred porosity, no fluorescence.  SILTSTONE: olive grey to olive black, brown black, medium to dark grey, arenaceous, locally grading to a very fine Sandstone, in part moderately calcareous, trace pyrite, trace carbonaceous specks, trace glauconite, firm to moderately hard, sub blocky to blocky.
1135	1140	20	SANDSTONE: clear, translucent, light brown to light olive grey, fine to medium grained, common coarse grained, moderately sorted, sub angular to sub round, moderate calcareous cement, common argillaceous to siliceous matrix, trace to locally common pyrite, common glauconite, trace carbonaceous specks, trace lithics, common moderately hard aggregates, predominmantly loose, poor to fair inferred porosity, no fluorescence.  SILTSTONE: olive grey to olive black, brown black, medium to dark grey, arenaceous, locally grading to a very fine Sandstone, in part moderately calcareous, trace pyrite, trace carbonaceous specks, trace glauconite, firm to moderately hard, sub blocky to blocky.
1140	1145	40	SANDSTONE: clear, translucent, light brown, very fine to medium grained, predominmantly fine to medium grained, poorly sorted, sub angular to sub round, weak siliceous cement, common to abundant argillaceous to siliceous cement, loc grading to a Siltstone, trace glauconite, trace pyrite, trace to common carbonaceous specks, rare lithics, predominmantly loose, rare friable to moderately hard aggregates, poor visual and inferred porosity, no fluorescence.  SILTSTONE: medium to medium dark grey, olive grey, brown grey, argillaceous to arenaceous, locally grading a very fine Sandstone, trace carbonaceous specks, trace glauconite, firm to moderately hard, sub blocky to blocky.
1145	1150	60	SANDSTONE: clear, translucent, light brown, very fine to medium grained, predominmantly fine to medium grained, poorly sorted, sub angular to sub round, weak siliceous cement, common to abundant argillaceous to siliceous cement, loc grading to a Siltstone, trace glauconite, trace pyrite, trace to common carbonaceous specks, rare lithics, predominmantly loose, rare friable to moderately hard aggregates, poor visual and inferred porosity, no fluorescence. SILTSTONE: medium to medium dark grey, olive grey, brown grey, argillaceous to arenaceous, locally grading a very fine Sandstone, trace carbonaceous specks, trace glauconite, firm to moderately hard, sub blocky to blocky.

Depth From	Depth To	%	Lithology and Shows
( <b>m</b> ) 1150	(m) 1155	60	SANDSTONE: clear, translucent, light brown, very fine to medium grained, predominmantly fine to medium grained, poorly sorted, sub angular to sub round, weak siliceous cement, common to abundant argillaceous to siliceous cement, loc grading to a Siltstone, trace glauconite, trace pyrite, trace to common carbonaceous specks, rare lithics, predominmantly loose, rare friable to moderately hard aggregates, poor visual and inferred porosity, no fluorescence.  SILTSTONE: medium to medium dark grey, olive grey, brown grey, argillaceous to arenaceous, locally grading a very fine Sandstone, trace carbonaceous specks, trace glauconite, firm to moderately hard, sub blocky to blocky.
1155	1160	50	SANDSTONE: clear, translucent, light brown, very fine to medium grained, predominmantly fine to medium grained, poorly sorted, sub angular to sub round, weak siliceous cement, common to abundant argillaceous to siliceous cement, loc grading to a Siltstone, trace glauconite, trace pyrite, trace to common carbonaceous specks, rare lithics, predominmantly loose, rare friable to moderately hard aggregates, poor visual and inferred porosity, no fluorescence.  SILTSTONE: medium to medium dark grey, olive grey, brown grey, argillaceous to arenaceous, locally grading a very fine Sandstone, trace carbonaceous specks, trace glauconite, firm to moderately hard, sub blocky to blocky.
1160	1165	60	SANDSTONE: clear, translucent, light brown, very fine to medium grained, predominmantly fine to medium grained, poorly sorted, sub angular to sub round, weak siliceous cement, common to abundant argillaceous to siliceous cement, loc grading to a Siltstone, trace glauconite, trace pyrite, trace to common carbonaceous specks, rare lithics, predominmantly loose, rare friable to moderately hard aggregates, poor visual and inferred porosity, no fluorescence.  SILTSTONE: medium to medium dark grey, olive grey, brown grey, argillaceous to arenaceous, locally grading a very fine Sandstone, trace carbonaceous specks, trace glauconite, firm to moderately hard, sub blocky to blocky.
1165	1170	70	SANDSTONE: clear, translucent, light brown, very fine to medium grained, predominmantly fine to medium grained, poorly sorted, sub angular to sub round, weak siliceous cement, common to abundant argillaceous to siliceous cement, loc grading to a Siltstone, trace glauconite, trace pyrite, trace to common carbonaceous specks, rare lithics, predominmantly loose, rare friable to moderately hard aggregates, poor visual and inferred porosity, no fluorescence.  SILTSTONE: medium to medium dark grey, olive grey, brown grey, argillaceous to arenaceous, locally grading a very fine Sandstone, trace carbonaceous specks, trace glauconite, firm to moderately hard, sub blocky to blocky.

Depth From (m)	Depth To (m)	%	Lithology and Shows
1170	1175	20	SANDSTONE: clear, translucent, light brown, very fine to medium grained, predominmantly fine grained, poorly sorted, sub angular to sub round, weak siliceous cement, common to abundant argillaceous to siliceous cement, locally grading to a Siltstone, trace glauconite, trace pyrite, trace to common carbonaceous specks, rare lithics, predominmantly loose, rare friable to moderately hard aggregates, poor visual and inferred porosity, no fluorescence.  SILTSTONE: medium to medium dark grey, olive grey, brown grey, argillaceous to arenaceous, locally grading a very fine Sandstone, trace carbonaceous specks, trace glauconite, firm to moderately hard, sub blocky to blocky.
1175	1180	70	SANDSTONE: clear, translucent, light brown, very fine to medium grained, predominmantly fine grained, poorly sorted, sub angular to sub round, weak siliceous cement, common to abundant argillaceous to siliceous cement, locally grading to a Siltstone, trace glauconite, trace pyrite, trace to common carbonaceous specks, rare lithics, predominmantly loose, rare friable to moderately hard aggregates, poor visual and inferred porosity, no fluorescence.  SILTSTONE: medium to medium dark grey, olive grey, brown grey, argillaceous to arenaceous, locally grading a very fine Sandstone, trace carbonaceous specks, trace glauconite, firm to moderately hard, sub blocky to blocky.
1180	1185	60	SANDSTONE: clear, translucent, light brown, very fine to medium grained, predominmantly fine grained, occasionally coarse grained, poorly sorted, sub angular to sub round, weak siliceous cement, common to abundant argillaceous to siliceous cement, locally grading to a Siltstone, trace to common glauconite, trace pyrite, trace to common carbonaceous specks, rare lithics, predominmantly loose, rare friable to moderately hard aggregates, poor visual and inferred porosity, no fluorescence.  SILTSTONE: medium to medium dark grey, olive grey, brown grey, argillaceous to arenaceous, locally grading a very fine Sandstone, trace carbonaceous specks, trace glauconite, firm to moderately hard, sub blocky to blocky.
1185	1190	70	SANDSTONE: clear, translucent, light brown, very fine to medium grained, predominmantly fine grained, occasionally coarse grained, poorly sorted, sub angular to sub round, weak siliceous cement, common to abundant argillaceous to siliceous cement, locally grading to a Siltstone, trace to common glauconite, trace to common carbonaceous specks, rare lithics, predominmantly loose, rare friable to moderately hard aggregates, poor visual and inferred porosity, no fluorescence.  SILTSTONE: medium to medium dark grey, olive grey, brown grey, argillaceous to arenaceous, locally grading a very fine Sandstone, trace carbonaceous specks, trace glauconite, firm to moderately hard, sub blocky to blocky.

Depth From	Depth To	%	Lithology and Shows
( <b>m</b> )	( <b>m</b> ) 1195	70	SANDSTONE: clear, translucent, light brown, very fine to coarse
1190	1193	30	grained, dominantly fine to medium grained, poorly sorted, sub angular to sub round, weak siliceous cement, common to abundant argillaceous to siliceous cement, locally grading to a Siltstone, trace to common glauconite, trace to common carbonaceous specks, trace fossile fragments, rare lithics, predominmantly loose, rare friable to moderately hard aggregates, poor visual and inferred porosity, no fluorescence.  SILTSTONE: medium to medium dark grey, olive grey, brown grey,
			argillaceous to arenaceous, locally grading a very fine Sandstone, trace carbonaceous specks, trace glauconite, firm to moderately hard, sub blocky to blocky.
1195	1200	70	SANDSTONE: clear, translucent, light brown, very fine to coarse grained, dominantly fine to medium grained, poorly sorted, sub angular to sub round, weak siliceous cement, common to abundant argillaceous to siliceous cement, locally grading to a Siltstone, trace to common glauconite, trace to common carbonaceous specks, trace to common pyrite, trace fossile fragments, rare lithics, predominmantly loose, rare friable to moderately hard aggregates, poor visual and inferred porosity, no fluorescence.
		30	SILTSTONE: medium to medium dark grey, olive grey, brown grey, argillaceous to arenaceous, locally grading a very fine Sandstone, trace carbonaceous specks, trace glauconite, firm to moderately hard, sub blocky to blocky.
1200	1205	60	SANDSTONE: clear, translucent, light brown, very fine to coarse grained, dominantly fine to medium grained, poorly sorted, sub angular to sub round, common angular, weak siliceous cement, common to abundant argillaceous to siliceous cement, locally grading to a Siltstone, trace to common glauconite, trace to common carbonaceous specks, trace to common pyrite, trace fossile fragments, rare lithics, predominmantly loose, rare friable to moderately hard aggregates, poor visual and inferred porosity, no fluorescence.
		40	SILTSTONE: medium to medium dark grey, olive grey, brown grey, argillaceous to arenaceous, locally grading a very fine Sandstone, trace carbonaceous specks, trace glauconite, trace pyrite, firm to moderately hard, sub blocky to blocky.
1205	1210	50	SANDSTONE: clear, translucent, light brown, very fine to coarse grained, dominantly fine to medium grained, poorly sorted, sub angular to sub round, common angular, weak siliceous cement, common to abundant argillaceous to siliceous cement, locally grading to a Siltstone, trace to common glauconite, trace to common carbonaceous specks, trace to common pyrite, trace fossile fragments, rare lithics, predominmantly loose, rare friable to moderately hard aggregates, poor visual and inferred porosity, no fluorescence.
		50	SILTSTONE: medium to medium dark grey, olive grey, brown grey, argillaceous to arenaceous, locally grading a very fine Sandstone, trace carbonaceous specks, trace glauconite, trace pyrite, firm to moderately hard, sub blocky to blocky.

Depth From (m)	Depth To (m)	%	Lithology and Shows
1210	1215	70 30	SANDSTONE: clear, translucent, light brown, very fine to coarse grained, dominantly fine to medium grained, poorly sorted, sub angular to sub round, common angular, weak siliceous cement, common to abundant argillaceous to siliceous cement, locally grading to a Siltstone, trace to common glauconite, trace to common carbonaceous specks, trace pyrite, trace fossile fragments, rare lithics, predominmantly loose, rare friable to moderately hard aggregates, poor visual and inferred porosity, no fluorescence.  SILTSTONE: medium to medium dark grey, olive grey, dark brown grey, argillaceous to arenaceous, locally grading a very fine Sandstone, trace carbonaceous specks, trace glauconite, trace pyrite, firm to moderately hard, sub blocky to blocky.
1215	1220	40	SANDSTONE: clear, translucent, light brown, very fine to coarse grained, dominantly fine to medium grained, poorly sorted, sub angular to sub round, common angular, weak siliceous cement, common to abundant argillaceous to siliceous cement, locally grading to a Siltstone, trace to common glauconite, trace to common carbonaceous specks, trace pyrite, trace fossile fragments, rare lithics, predominmantly loose, rare friable to moderately hard aggregates, poor visual and inferred porosity, no fluorescence.  SILTSTONE: medium to medium dark grey, olive grey, dark brown grey, argillaceous to arenaceous, locally grading a very fine Sandstone, trace carbonaceous specks, trace glauconite, trace pyrite, firm to moderately hard, sub blocky to blocky.
1220	1225	20	SANDSTONE: clear to translucent, light brown to light olive grey, fine to coarse grained, predominmantly medium grained, moderately sorted, weak to moderately calcareous cement, trace argillaceous to siliceous matrix, trace very fine glauconite, trace pyrite, trace carbonaceous inclusions, loose, rare friable aggregates, poor to fair inferred porosity, no fluorescence.  SILTSTONE: light to medium brown grey, dark olive grey, medium to medium dark grey, argillaceous to arenaceous, trace carbonaceous specks and micro laminations, trace glauconite, rare pyrite, firm to moderately hard, sub blocky to blocky.
1225	1230	70 30	SANDSTONE: clear to translucent, light brown to light olive grey, fine to coarse grained, predominmantly medium grained, poor to moderately sorted, weak to moderately calcareous cement, trace argillaceous to siliceous matrix, trace very fine glauconite, trace pyrite, trace carbonaceous inclusions, loose, rare friable aggregates, poor to fair inferred porosity, no fluorescence.  SILTSTONE: light to medium brown grey, dark olive grey, medium to medium dark grey, argillaceous to arenaceous, trace carbonaceous specks and micro laminations, trace glauconite, rare pyrite, firm to moderately hard, sub blocky to blocky.

Depth	Depth		
From	To	%	Lithology and Shows
(m)	(m)		
1230	1235	30	SANDSTONE: clear to translucent, light brown to light olive grey, very fine to medium grained, common coarse grained, predominmantly very fine to fine grained, poor to moderately sorted, weak to moderately calcareous cement, trace to common argillaceous to siliceous matrix, trace very fine glauconite, rare pyrite, trace carbonaceous inclusions, loose, trace friable aggregates, poor to fair inferred porosity, no fluorescence.  SILTSTONE: light to medium brown grey, dark olive grey, medium to medium dark grey, argillaceous to arenaceous, trace carbonaceous specks and micro laminations, trace glauconite, rare pyrite, firm to moderately hard, sub blocky to blocky.
1235	1240	30	SANDSTONE: clear to translucent, light brown to light olive grey, very fine to medium grained, common coarse grained, predominmantly very fine to fine grained, poor to moderately sorted, weak to moderately calcareous cement, trace to common argillaceous to siliceous matrix, trace very fine glauconite, rare pyrite, trace carbonaceous inclusions, loose, trace friable aggregates, poor to fair inferred porosity, no fluorescence.  SILTSTONE: light to medium brown grey, dark olive grey, medium to dark grey, argillaceous to arenaceous, trace carbonaceous specks and micro laminations, trace glauconite, rare pyrite, firm to moderately hard, sub blocky to blocky.
1240	1245	40	SANDSTONE: clear to translucent, light brown to light olive grey, very fine to medium grained, common coarse grained, predominmantly very fine to fine grained, poor to moderately sorted, weak to moderately calcareous cement, trace to common argillaceous to siliceous matrix, trace very fine glauconite, rare pyrite, trace carbonaceous inclusions, loose, trace friable aggregates, poor to fair inferred porosity, no fluorescence.  SILTSTONE: dark grey, olive black, dark brown grey to brown black, medium grey, argillaceous to arenaceous, trace carbonaceous specks, trace micro micaceous, firm to moderately hard, locally hard, sub blocky to blocky.
1245	1250	90	SANDSTONE: clear, translucent, light brown to olive grey, very fine to medium grained, predominmantly fine to medium, minor coarse to very coarse grained, moderately sorted, trace glauconite, trace carbonaceous specks, rare pyrite, rare fossile fragments, rare lithics, loose, fair inferred porosity, no fluorescence.  SILTSTONE: dark grey, olive black, dark brown grey to brown black, medium grey, argillaceous to arenaceous, trace carbonaceous specks, trace micro micaceous, firm to moderately hard, locally hard, sub blocky to blocky.

Depth	Depth		
From	To	%	Lithology and Shows
(m) 1250	(m) 1255	70	SANDSTONE: clear, translucent, light brown to olive grey, very fine to medium grained, predominmantly fine to medium, minor coarse to very coarse grained, poor to moderately sorted, trace glauconite, trace carbonaceous specks, rare pyrite, rare fossile fragments, rare lithics, loose, fair inferred porosity, no fluorescence.  SILTSTONE: dark grey, olive black, dark brown grey to brown black, medium grey, argillaceous to arenaceous, trace carbonaceous specks, trace micro micaceous, firm to moderately hard, locally hard, sub blocky to blocky.
1255	1260	20	SANDSTONE: clear, translucent, light brown to olive grey, very fine to medium grained, predominmantly fine to medium, minor coarse grained, poor to moderately sorted, trace glauconite, trace carbonaceous specks, rare pyrite, rare fossile fragments, rare lithics, loose, fair inferred porosity, no fluorescence.  SILTSTONE: dark grey, olive black, dark brown grey to brown black, medium grey, argillaceous to arenaceous, trace carbonaceous specks, trace micro micaceous, firm to moderately hard, locally hard, sub blocky to blocky.
1260	1265	30	SANDSTONE: clear, translucent, light brown to olive grey, very fine to medium grained, predominmantly fine to medium, minor coarse grained, poor to moderately sorted, trace glauconite, trace carbonaceous specks, rare pyrite, rare fossile fragments, rare lithics, loose, fair inferred porosity, no fluorescence.  SILTSTONE: dark grey, olive black, dark brown grey to brown black, medium grey, argillaceous to arenaceous, trace carbonaceous specks, trace micro micaceous, firm to moderately hard, locally hard, sub blocky to blocky.
1265	1268	40	SANDSTONE: clear, translucent, very fine to coarse grained, predominmantly fine to medium grained, poorly sorted, sub angular to sub round, trace to common glauconite, trace to common carbonaceous specks, rare pyrite, trace lithics, trace fossile fragments, loose, poor inferred porosity, no fluorescence.  SILTSTONE: dark grey, olive black, dark brown grey to brown black, medium grey, argillaceous to arenaceous, trace carbonaceous specks, trace micro micaceous, firm to moderately hard, locally hard, sub blocky to blocky.
1268	1271	30	SANDSTONE: clear, translucent, very fine to coarse grained, predominmantly fine to medium grained, poorly sorted, sub angular to sub round, trace weak to moderately calcareous cement, trace argillaceous to siliceous matrix, trace to common glauconite, trace to common carbonaceous specks, rare pyrite, trace lithics, trace fossile fragments, loose, trace moderately hard aggregates, poor inferred porosity, no fluorescence.  SILTSTONE: dark grey, olive black, dark brown grey to brown black, medium grey, argillaceous to arenaceous, trace carbonaceous specks, trace micro micaceous, trace disseminated pyrite, firm to moderately hard, locally hard, sub blocky to blocky.

Depth From	Depth To	%	Lithology and Shows
(m)	(m)		
1271	1274	20	SANDSTONE: clear, translucent, light brown to light olive grey, very fine to medium grained, predominmantly fine to medium grained, moderately sorted, sub angular to round, trace to common carbonaceous specks, trace glauconite, trace calcite grains, rare fossile fragments, rare lithics, loose, poor to fair inferred porosity, no fluorescence.  SILTSTONE: dark grey, olive black, dark brown grey to brown black, medium grey, argillaceous to arenaceous, trace carbonaceous specks, trace micro micaceous, trace disseminated pyrite, firm to moderately hard, locally hard, sub blocky to blocky.
1274	1277	70 30	SANDSTONE: clear, translucent, light brown to light olive grey, very fine to medium grained, predominmantly fine to medium grained, moderately sorted, sub angular to round, trace to common carbonaceous specks, trace glauconite, trace calcite grains, rare fossile fragments, rare lithics, loose, poor to fair inferred porosity, no fluorescence.  SILTSTONE: medium dark grey, olive grey, brown grey, medium grey, argillaceous to arenaceous, trace carbonaceous specks, trace micro micaceous, trace disseminated pyrite, firm to moderately hard,
			locally hard, sub blocky to blocky.
1277	1280	60	SANDSTONE: clear, translucent, light brown to light olive grey, very fine to medium grained, predominmantly fine to medium grained, moderately sorted, sub angular to round, trace to common carbonaceous specks, trace glauconite, trace calcite grains, rare fossile fragments, rare lithics, loose, poor to fair inferred porosity, no fluorescence.
		40	SILTSTONE: medium dark grey, olive grey, brown grey, argillaceous to arenaceous, trace carbonaceous specks, trace micro micaceous, trace disseminated pyrite, firm to moderately hard, locally hard, sub blocky to blocky.
1280	1283	40	SANDSTONE: clear, translucent, light brown to light olive grey, very fine to medium grained, predominmantly fine to medium grained, moderately sorted, sub angular to round, trace to common carbonaceous specks, trace glauconite, trace calcite grains, rare fossile fragments, rare lithics, loose, poor to fair inferred porosity, no fluorescence.
		60	SILTSTONE: medium dark grey, olive grey, brown grey, argillaceous to arenaceous, trace carbonaceous specks, trace micro micaceous, trace disseminated pyrite, firm to moderately hard, locally hard, sub blocky to blocky.
1283	1286		Sample missed, fast ROP.
1286	1289	80	SANDSTONE: clear, translucent, light brown to light olive grey, very fine to medium grained, predominmantly fine to medium grained, moderately sorted, minor weak siliceous cement, trace light brown to brown grey argillaceous to silty matrix, sub angular to round, trace to common carbonaceous specks, trace glauconite, trace calcite grains, rare fossile fragments, rare lithics, loose, minor friable aggregates, poor to fair inferred porosity, no fluorescence.

Depth From (m)	Depth To (m)	%	Lithology and Shows
(m)	(111)	20	SILTSTONE: medium dark grey, olive grey, brown grey, argillaceous to arenaceous, trace carbonaceous specks, trace micro micaceous, trace disseminated pyrite, firm to moderately hard, locally hard, sub blocky to blocky.
1289	1292	80	SANDSTONE: clear, translucent, light brown to light olive grey, very fine to medium grained, predominmantly fine to medium grained, moderately sorted, minor weak siliceous cement, trace light brown to brown grey argillaceous to silty matrix, sub angular to round, trace to common carbonaceous specks, trace glauconite, trace calcite grains, rare fossile fragments, rare lithics, loose, minor friable aggregates, poor to fair inferred porosity, no fluorescence.
		20	SILTSTONE: medium dark grey, olive grey, brown grey, argillaceous to arenaceous, trace carbonaceous specks, trace micro micaceous, trace disseminated pyrite, firm to moderately hard, locally hard, sub blocky to blocky.
1292	1295	80	SANDSTONE: clear, translucent, light brown to light olive grey, very fine to medium grained, predominmantly fine to medium grained, moderately sorted, minor weak siliceous cement, trace light brown to brown grey argillaceous to silty matrix, sub angular to round, trace to common carbonaceous specks, trace glauconite, trace calcite grains, rare fossile fragments, rare pyrite, rare lithics, loose, minor friable aggregates, poor to fair inferred porosity, no fluorescence.
		20	SILTSTONE: medium dark grey, olive grey, brown grey, argillaceous to arenaceous, trace carbonaceous specks, trace micro micaceous, trace disseminated pyrite, firm to moderately hard, locally hard, sub blocky to blocky.
1295	1298	80	SANDSTONE: clear, translucent, light brown to light olive grey, very fine to medium grained, predominmantly fine to medium grained, moderately sorted, minor weak siliceous cement, trace light brown to brown grey argillaceous to silty matrix, sub angular to round, trace to common carbonaceous specks, trace glauconite, trace calcite grains, rare fossile fragments, rare pyrite, rare lithics, loose, minor friable aggregates, poor to fair inferred porosity, no fluorescence.
		20	SILTSTONE: medium dark grey, olive grey, brown grey, argillaceous to arenaceous, trace carbonaceous specks, trace micro micaceous, trace disseminated pyrite, firm to moderately hard, locally hard, sub blocky to blocky.
1298	1301	80	SANDSTONE: clear, translucent, light brown to light olive grey, very fine to medium grained, predominmantly fine to medium grained, moderately sorted, minor weak siliceous cement, trace light brown to brown grey argillaceous to silty matrix, sub angular to round, trace to common carbonaceous specks, trace to common glauconite, trace calcite grains, rare fossile fragments, rare pyrite, rare lithics, loose, minor friable aggregates, poor to fair inferred porosity, no fluorescence.

Depth From	Depth To	%	Lithology and Shows
(m)	(m)	20	SILTSTONE: medium dark grey, olive grey, brown grey, argillaceous to arenaceous, trace carbonaceous specks, trace micro micaceous, trace disseminated pyrite, firm to moderately hard, locally hard, sub blocky to blocky.
1301	1304	30	SANDSTONE: clear, translucent, light brown to light olive grey, very fine to medium grained, predominmantly fine to medium grained, occasionally coarse grains, moderately sorted, minor weak siliceous cement, trace light brown to brown grey argillaceous to silty matrix, sub angular to round, trace to common carbonaceous specks, trace to common glauconite, trace calcite grains, rare fossile fragments, rare pyrite, rare lithics, loose, minor friable aggregates, fair inferred porosity, no fluorescence.  SILTSTONE: medium dark grey, olive grey, brown grey, argillaceous to arenaceous, trace carbonaceous specks, trace micro micaceous, trace disseminated pyrite, firm to moderately hard, locally hard, sub blocky to blocky.
1304	1307	90	SANDSTONE: clear, translucent, light brown, very fine to medium grained, predominmantly fine to medium grained, occasionally coarse grains, moderately sorted, minor weak siliceous cement, trace light brown to brown grey argillaceous to silty matrix, sub angular to round, trace to common carbonaceous specks, trace to common glauconite, trace calcite grains, rare fossile fragments, rare pyrite, rare lithics, loose, minor friable aggregates, fair inferred porosity, no fluorescence. SILTSTONE: medium dark grey, olive grey, brown grey, argillaceous to arenaceous, trace carbonaceous specks, trace micro micaceous, trace disseminated pyrite, firm to moderately hard, locally hard, sub blocky to blocky.
1307	1310	90	SANDSTONE: clear, translucent, light brown, very fine to medium grained, predominmantly fine to medium grained, occasionally coarse grains, moderately sorted, minor weak siliceous cement, trace light brown to brown grey argillaceous to silty matrix, sub angular to round, trace to common carbonaceous specks, trace to common glauconite, trace calcite grains, rare fossile fragments, rare pyrite, rare lithics, loose, minor friable aggregates, fair inferred porosity, no fluorescence. SILTSTONE: medium dark grey, olive grey, brown grey, argillaceous to arenaceous, trace carbonaceous specks, trace micro micaceous, trace disseminated pyrite, firm to moderately hard, locally hard, sub blocky to blocky.
1310	1313	70	SANDSTONE: clear, translucent, light brown, very fine to medium grained, predominmantly fine to medium grained, occasionally coarse grains, moderately sorted, minor weak siliceous cement, trace light brown to brown grey argillaceous to silty matrix, sub angular to round, trace to common carbonaceous specks, trace to common glauconite, trace calcite grains, rare fossile fragments, rare pyrite, rare lithics, loose, minor friable aggregates, fair inferred porosity, no fluorescence.

Depth From (m)	Depth To (m)	%	Lithology and Shows
(m)	(III)	30	SILTSTONE: medium dark grey, olive grey, brown grey, argillaceous to arenaceous, trace carbonaceous specks, trace micro micaceous, trace disseminated pyrite, firm to moderately hard, locally hard, sub blocky to blocky.
1313	1316	40	SANDSTONE: clear, translucent, light brown, very fine to medium grained, predominmantly fine to medium grained, occasionally coarse to very coarse grains, moderately sorted, minor weak siliceous cement, trace sideritic cement, trace light brown to brown grey argillaceous to silty matrix, sub angular to round, trace to common carbonaceous specks, trace to common glauconite, trace calcite grains, trace fossile fragments, rare pyrite, rare lithics, loose, minor friable aggregates, fair inferred porosity, no fluorescence.
		60	SILTSTONE: medium dark grey, olive grey, brown grey, argillaceous to arenaceous, trace carbonaceous specks, trace micro micaceous, trace disseminated pyrite, firm to moderately hard, locally hard, sub blocky to blocky.
1316	1319	40	SANDSTONE: clear, translucent, light brown, very fine to medium grained, predominmantly fine to medium grained, occasionally coarse to very coarse grains, moderately sorted, minor weak siliceous cement, trace sideritic cement, trace light brown to brown grey argillaceous to silty matrix, sub angular to round, trace to common carbonaceous specks, trace to common glauconite, trace calcite grains, trace fossile fragments, rare pyrite, rare lithics, loose, minor friable aggregates, fair inferred porosity, no fluorescence.
		60	SILTSTONE: medium dark grey, olive grey, brown grey, argillaceous to arenaceous, trace carbonaceous specks, trace micro micaceous, trace disseminated pyrite, firm to moderately hard, locally hard, sub blocky to blocky.
1319	1322	50	SANDSTONE: clear, translucent, light brown, very fine to medium grained, predominmantly fine to medium grained, occasionally coarse to very coarse grains, moderately sorted, minor weak siliceous cement, moderate sideritic cement, trace light brown to brown grey argillaceous to silty matrix, sub angular to round, trace to common carbonaceous specks, trace to common glauconite, trace calcite grains, trace fossile fragments, rare pyrite, rare lithics, loose, common friable to moderately hard aggregates, poor inferred and visual porosity, no fluorescence.
		50	SILTSTONE: medium dark grey, olive grey, brown grey, argillaceous to arenaceous, trace carbonaceous specks, trace micro micaceous, trace disseminated pyrite, firm to moderately hard, locally hard, sub blocky to blocky.
1322	1325	40	SANDSTONE: clear, translucent, light brown, very fine to medium grained, predominmantly fine to medium grained, common coarse to very coarse grains, moderately sorted, minor weak siliceous cement, moderate sideritic cement, trace light brown to brown grey argillaceous to silty matrix, sub angular to round, trace to common carbonaceous specks, trace to common glauconite, trace calcite grains, trace fossile fragments, rare pyrite, rare lithics, loose, common friable to moderately hard aggregates, poor inferred and visual porosity, no fluorescence.

Depth From	Depth To	%	Lithology and Shows
(m)	(m)	60	SILTSTONE: medium dark to dark grey, grey black, dark brown grey, olive grey, arenaceous to argillaceous, locally common carbonaceous specks and micro laminations, trace micro micaceous, moderately hard to hard, sub blocky to blocky.
1325	1328	20	SANDSTONE: clear, translucent, light brown, very fine to medium grained, predominmantly fine to medium grained, common coarse to very coarse grains, moderately sorted, minor weak siliceous cement, moderate sideritic cement, trace light brown to brown grey argillaceous to silty matrix, sub angular to round, trace to common carbonaceous specks, trace to common glauconite, trace calcite grains, trace fossile fragments, rare pyrite, rare lithics, loose, common friable to moderately hard aggregates, poor inferred and visual porosity, no fluorescence.
		80	SILTSTONE: medium dark to dark grey, grey black, dark brown grey, olive grey, arenaceous to argillaceous, locally common carbonaceous specks and micro laminations, trace micro micaceous, moderately hard to hard, sub blocky to blocky.
1328	1331	30	SANDSTONE: clear, translucent, light brown, very fine to medium grained, predominmantly fine to medium grained, common coarse to very coarse grains, moderately sorted, minor weak siliceous cement, moderate sideritic cement, trace light brown to brown grey argillaceous to silty matrix, sub angular to round, trace to common carbonaceous specks, trace to common glauconite, trace calcite grains, trace fossile fragments, rare pyrite, rare lithics, loose, common friable to moderately hard aggregates, poor inferred and visual porosity, no fluorescence.
		70	SILTSTONE: medium dark to dark grey, grey black, dark brown grey, olive grey, arenaceous to argillaceous, locally common carbonaceous specks and micro laminations, trace micro micaceous, moderately hard to hard, sub blocky to blocky.
1331	1334	60	SANDSTONE: clear, translucent, light brown, very fine to medium grained, predominmantly fine to medium grained, common coarse to very coarse grains, moderately sorted, minor weak siliceous cement, moderate sideritic cement, trace light brown to brown grey argillaceous to silty matrix, sub angular to round, trace to common carbonaceous specks, trace to common glauconite, trace calcite grains, trace fossile fragments, rare pyrite, rare lithics, loose, common friable to moderately hard aggregates, poor inferred and visual porosity, no fluorescence.
		40	SILTSTONE: medium dark to dark grey, grey black, dark brown grey, olive grey, arenaceous to argillaceous, locally common carbonaceous specks and micro laminations, trace micro micaceous, moderately hard to hard, sub blocky to blocky.
1334	1337	20	SANDSTONE: clear, translucent, light brown, very fine to medium grained, predominmantly fine to medium grained, common coarse to very coarse grains, moderately sorted, minor weak siliceous cement, moderate sideritic cement, trace light brown to brown grey argillaceous to silty matrix, sub angular to round, trace to common carbonaceous specks, trace to common glauconite, trace calcite grains, trace fossile fragments, rare pyrite, rare lithics, loose, common friable to moderately hard aggregates, poor inferred and visual porosity, no fluorescence.

Depth From (m)	Depth To (m)	%	Lithology and Shows
(III)	(111)	80	SILTSTONE: medium dark to dark grey, grey black, dark brown grey, olive grey, arenaceous to argillaceous, locally trace to common carbonaceous specks and micro laminations, trace micro micaceous, moderately hard to hard, sub blocky to blocky.
1337	1340	30	SANDSTONE: clear, translucent, light brown, fine to medium grained, common coarse to very coarse grains, moderately sorted, minor weak siliceous cement, moderate sideritic cement, trace light brown to brown grey argillaceous to silty matrix, sub angular to round, trace to common carbonaceous specks, trace to common glauconite, trace calcite grains, rare fossile fragments, rare pyrite, rare lithics, loose, common friable to moderately hard aggregates, poor inferred and visual porosity, no fluorescence.
1340	1343	70	SILTSTONE: medium dark to dark grey, grey black, dark brown grey, olive grey, arenaceous to argillaceous, locally trace to common carbonaceous specks and micro laminations, trace micro micaceous, moderately hard to hard, sub blocky to blocky.  SANDSTONE: clear translucent light brown fine to medium grained.
1340	1343	80	SANDSTONE: clear, translucent, light brown, fine to medium grained, common coarse to very coarse grains, moderately sorted, minor weak siliceous cement, moderate sideritic cement, trace light brown to brown grey argillaceous to silty matrix, sub angular to round, trace to common carbonaceous specks, trace to common glauconite, trace calcite grains, rare fossile fragments, rare pyrite, rare lithics, loose, common friable to moderately hard aggregates, poor inferred and visual porosity, no fluorescence.  SILTSTONE: medium dark to dark grey, grey black, dark brown grey, olive grey, arenaceous to argillaceous, locally trace to common
			carbonaceous specks and micro laminations, trace micro micaceous, moderately hard to hard, sub blocky to blocky.
1343	1346	20	SANDSTONE: clear, translucent, light brown, fine to medium grained, common coarse to very coarse grains, moderately sorted, minor weak siliceous cement, moderate sideritic cement, trace light brown to brown grey argillaceous to silty matrix, sub angular to round, trace to common carbonaceous specks, trace to common glauconite, trace calcite grains, rare fossile fragments, rare pyrite, rare lithics, loose, common friable to moderately hard aggregates, poor inferred and visual porosity, no fluorescence.
		80	SILTSTONE: medium dark to dark grey, grey black, dark brown grey, olive grey, arenaceous to argillaceous, locally trace to common carbonaceous specks and micro laminations, trace micro micaceous, moderately hard to hard, sub blocky to blocky.
1346	1349	20	SANDSTONE: clear, translucent, light brown, fine to medium grained, common coarse to very coarse grains, moderately sorted, minor weak siliceous cement, moderate sideritic cement, trace light brown to brown grey argillaceous to silty matrix, sub angular to round, trace to common carbonaceous specks, trace to common glauconite, trace calcite grains, rare fossile fragments, rare pyrite, rare lithics, loose, common friable to moderately hard aggregates, poor inferred and visual porosity, no fluorescence.

Depth From (m)	Depth To (m)	%	Lithology and Shows
(m)	(111)	80	SILTSTONE: medium dark to dark grey, grey black, dark brown grey, olive grey, arenaceous to argillaceous, locally trace to common carbonaceous specks and micro laminations, trace micro micaceous, moderately hard to hard, sub blocky to blocky.
1349	1352	90	SANDSTONE: clear, translucent, light brown, fine to medium grained, common coarse to very coarse grains, moderately sorted, minor weak siliceous cement, moderate sideritic cement, trace light brown to brown grey argillaceous to silty matrix, sub angular to round, trace to common carbonaceous specks, trace to common glauconite, trace calcite grains, rare fossile fragments, rare pyrite, rare lithics, loose, common friable to moderately hard aggregates, poor inferred and visual porosity, no fluorescence.  SILTSTONE: medium to dark grey, brown black to olive black, argillaceous, locally arenaceous, trace carbonaceous specks, trace
			micro micaceous, rare glauconite, firm to moderately hard, sub blocky to blocky.
1352	1355	90	SANDSTONE: clear, translucent, light brown, fine to medium grained, common coarse to very coarse grains, moderately sorted, minor weak siliceous cement, moderate sideritic cement, trace light brown to brown grey argillaceous to silty matrix, sub angular to round, trace to common carbonaceous specks, trace to common glauconite, trace calcite grains, rare fossile fragments, rare pyrite, rare lithics, loose, common friable to moderately hard aggregates, poor inferred and visual porosity, no fluorescence.  SILTSTONE: medium to dark grey, brown black to olive black, argillaceous, locally arenaceous, trace carbonaceous specks, trace micro micaceous, rare glauconite, firm to moderately hard, sub blocky to blocky.
1355	1358	100	SILTSTONE: medium to dark grey, brown black to olive black, argillaceous, locally arenaceous, trace carbonaceous specks, trace micro micaceous, rare glauconite, firm to moderately hard, sub blocky to blocky.
1358	1361	100	SILTSTONE: medium to dark grey, brown black to olive black, argillaceous, locally arenaceous, trace carbonaceous specks, trace micro micaceous, rare glauconite, firm to moderately hard, sub blocky to blocky.
1361	1364	20	SANDSTONE: clear, translucent, very fine to fine grained, occasionally medium grained, moderately sorted, sub angular to round, rare sideritic cement, trace argillaceous to silty matrix, trace very fine glauconite, trace carbonaceous specks, rare lithics, rare fossile fragments, loose, fair inferred porosity, no fluorescence. SILTSTONE: medium to dark grey, brown black to olive black, argillaceous, locally arenaceous, trace carbonaceous specks, trace micro micaceous, rare glauconite, firm to moderately hard, sub blocky to blocky.

Depth	Depth		
From (m)	To (m)	%	Lithology and Shows
1364	1367	40	SANDSTONE: clear, translucent, very fine to fine grained, occasionally medium grained, moderately sorted, sub angular to round, rare sideritic cement, trace argillaceous to silty matrix, trace very fine glauconite, trace carbonaceous specks, rare lithics, rare fossile fragments, loose, fair inferred porosity, no fluorescence.  SILTSTONE: medium to dark grey, brown black to olive black, argillaceous, locally arenaceous, trace carbonaceous specks, trace micro micaceous, rare glauconite, firm to moderately hard, sub blocky to blocky.
1367	1370	90	SANDSTONE: clear, translucent, very fine to fine grained, occasionally medium grained, moderately sorted, sub angular to round, rare sideritic cement, trace argillaceous to silty matrix, trace very fine glauconite, trace carbonaceous specks, rare lithics, rare fossile fragments, loose, fair inferred porosity, no fluorescence.  SILTSTONE: medium to dark grey, brown black to olive black, argillaceous, locally arenaceous, trace carbonaceous specks, trace micro micaceous, rare glauconite, firm to moderately hard, sub blocky to blocky.
1370	1373	80	SANDSTONE: clear, translucent, very fine to medium grained, occasionally coarse grained, moderately sorted, sub angular to sub round, trace sideritic cement, trace to common argillaceous to silty matrix, trace very fine glauconite, trace carbonaceous specks, rare lithics, rare fossile fragments, predominmantly loose, common moderately hard to hard aggregates, poor inferred and visual porosity, no fluorescence.  SILTSTONE: medium to dark grey, brown black to olive black, argillaceous, locally arenaceous, trace carbonaceous specks, trace micro micaceous, rare glauconite, firm to moderately hard, sub blocky to blocky.
1373	1376	70	SANDSTONE: clear, translucent, very fine to medium grained, occasionally coarse grained, moderately sorted, sub angular to sub round, trace sideritic cement, trace to common argillaceous to silty matrix, trace very fine glauconite, trace carbonaceous specks, rare lithics, rare fossile fragments, predominmantly loose, common moderately hard to hard aggregates, poor inferred and visual porosity, no fluorescence.  SILTSTONE: medium to dark grey, brown black to olive black, argillaceous, locally arenaceous, trace carbonaceous specks, trace micro micaceous, rare glauconite, firm to moderately hard, sub blocky to blocky.
1376	1379	20	SANDSTONE: clear, translucent, light brown to olive grey, fine to medium grained, common coarse grained, moderately sorted, sub angular to sub round, trace sideritic cement, trace argillaceous to silty matrix, trace glauconite, trace fossile fragments, trace carbonaceous specks, loose, moderately hard aggregates, poor to fair inferred porosity, no fluorescence.

Depth From	Depth To	0/0	Lithology and Shows
(m)	(m)	80	SILTSTONE: medium to dark grey, brown black to olive black, argillaceous, locally arenaceous, trace carbonaceous specks, trace micro micaceous, rare glauconite, firm to moderately hard, sub blocky to blocky.
1379	1382	40	SANDSTONE: clear, translucent, light brown to olive grey, fine to medium grained, common coarse grained, moderately sorted, sub angular to sub round, trace sideritic cement, trace argillaceous to silty matrix, trace glauconite, trace fossile fragments, trace carbonaceous specks, loose, moderately hard aggregates, poor to fair inferred
		60	porosity, no fluorescence. SILTSTONE: medium to dark grey, brown black to olive black, argillaceous, locally arenaceous, trace carbonaceous specks, trace micro micaceous, rare glauconite, firm to moderately hard, sub blocky to blocky.
1382	1385	80	SANDSTONE: clear, translucent, very fine to medium grained, occasionally coarse grained, moderately sorted, sub angular to round, rare sideritic cement, trace argillaceous to silty matrix, trace very fine glauconite, trace carbonaceous specks, rare lithics, rare fossile
		20	fragments, loose, fair inferred porosity, no fluorescence. SILTSTONE: medium to dark grey, brown black to olive black, argillaceous, locally arenaceous, trace carbonaceous specks, trace micro micaceous, rare glauconite, firm to moderately hard, sub blocky to blocky.
1385	1388	30	SANDSTONE: clear, translucent, very fine to medium grained, occasionally coarse grained, moderately sorted, sub angular to round, rare sideritic cement, trace argillaceous to silty matrix, trace very fine glauconite, trace carbonaceous specks, rare lithics, rare fossile fragments, loose, fair inferred porosity, no fluorescence.  SILTSTONE: medium to dark grey, brown black to olive black, argillaceous, locally arenaceous, trace carbonaceous specks, trace micro micaceous, rare glauconite, firm to moderately hard, sub blocky to blocky.
1388	1391	70	SANDSTONE: clear, translucent, very fine to medium grained, common medium to coarse grained, moderately sorted, sub angular to round, rare sideritic cement, trace argillaceous to silty matrix, trace very fine glauconite, trace carbonaceous specks, rare lithics, rare
		30	fossile fragments, loose, fair inferred porosity, no fluorescence. SILTSTONE: medium to dark grey, brown black to olive black, argillaceous, locally arenaceous, trace carbonaceous specks, trace micro micaceous, rare glauconite, firm to moderately hard, sub blocky to blocky.
1391	1394	50	SANDSTONE: clear, translucent, very fine to medium grained, common medium to coarse grained, moderately sorted, sub angular to round, rare sideritic cement, trace argillaceous to silty matrix, trace very fine glauconite, trace carbonaceous specks, rare lithics, rare fossile fragments, loose, fair inferred porosity, no fluorescence.

Depth From (m)	Depth To (m)	%	Lithology and Shows
(III)	(111)	50	SILTSTONE: medium to dark grey, brown black to olive black, argillaceous, locally arenaceous, trace carbonaceous specks, trace micro micaceous, rare glauconite, firm to moderately hard, sub blocky to blocky.
1394	1397	40	SANDSTONE: clear, translucent, very fine to medium grained, common medium to coarse grained, moderately sorted, sub angular to round, rare sideritic cement, trace argillaceous to silty matrix, trace very fine glauconite, trace carbonaceous specks, rare lithics, rare fossile fragments, loose, fair inferred porosity, no fluorescence.
		60	SILTSTONE: medium to dark grey, brown black to olive black, argillaceous, locally arenaceous, trace carbonaceous specks, trace micro micaceous, rare glauconite, firm to moderately hard, sub blocky to blocky.
1397	1400	10	SANDSTONE: clear, translucent, very fine to medium grained, common medium to coarse grained, moderately sorted, sub angular to round, rare sideritic cement, trace argillaceous to silty matrix, trace very fine glauconite, trace carbonaceous specks, rare lithics, rare fossila fragments, loose foir informed perceity, no fluorescence.
		90	fossile fragments, loose, fair inferred porosity, no fluorescence. SILTSTONE: medium to dark grey, brown black to olive black, argillaceous, locally arenaceous, trace carbonaceous specks, trace micro micaceous, rare glauconite, firm to moderately hard, sub blocky to blocky.
1400	1403	100	SILTSTONE: as above.
1403	1406	100	SILTSTONE: dark, grey, medium grey in part, very dark brownish grey, argillaceous, slightly arenaceous in part, trace fine carbonaceous specks, locally trace micro mica, trace very fine glauconite, moderately hard, sub blocky to blocky.
1406	1409	100	SILTSTONE: as above.
1409	1412	90 10	SILTSTONE: as above, trace fossil fragments. SANDSTONE: clear, translucent, slightly Fe stain in part, very fine to medium predominantly fine grained, moderately well sub rounded, sub angular to predominantly sub rounded, trace light grey argillaceous / silty matrix, trace very fine glauconite, trace carbonaceous specks, rare lithics, minor fossil fragments, predominantly loose, fair inferred porosity, no fluorescence.
1412	1415	100	SILTSTONE: dark brownish grey, dark grey, argillaceous, slightly arenaceous in part with trace very fine sandstone laminae, rare very fine carbonaceous specks, minor fossil fragments, uniform, moderately hard, sub blocky to blocky, trace sub fissile.
1415	1418	100	SILTSTONE: as above.
1418	1421	100	SILTSTONE: as above.

Depth From	Depth To (m)	%	Lithology and Shows
( <b>m</b> ) 1421	1424	100	SILTSTONE: dark brownish grey, medium to dark grey, argillaceous, slightly arenaceous in part with trace very fine sandstone laminae, rare very fine carbonaceous specks, minor fossil fragments, uniform, moderately hard, sub blocky to blocky, trace sub fissile.
1424	1427	100	SILTSTONE: medium to dark brownish grey, dark grey, argillaceous, slightly arenaceous in part with thin very fine sandstone laminae, trace fine carbonaceous specks, minor shell fragments, trace coarse loose clear quartz grains, firm to moderately hard, sub blocky to blocky, occasionally sub fissile.
1427	1430	100	SILTSTONE: medium to dark brownish grey, dark grey, argillaceous, slightly arenaceous in part, rare very fine glauconite, rare fossil fragments, trace nodular pyrite, trace loose coarse quartz grains, firm to moderately hard, sub blocky to blocky.
1430	1433	90 10	SILTSTONE: generally as above, common fossil fragments. SANDSTONE: clear, translucent, very fine to medium predominantly fine grained, sub angular to predominantly sub rounded, moderately well sorted, trace weak calcareous cement, slightly silty matrix in part, friable to loose, fair to good inferred porosity, no fluorescence.
1433	1436	100	SILTSTONE: dark brownish grey, dark grey, generally as above, common fossil fragments, rare loose coarse quartz grains.
1436	1439	90	SILTSTONE: medium to predominantly dark brownish grey, dark grey black in part, argillaceous, slightly arenaceous in part, rare very fine glauconite, minor fossil fragments, trace nodular pyrite, trace loose coarse quartz grains, firm to moderately hard, sub blocky to blocky. SANDSTONE: clear, translucent, very fine to medium predominantly fine grained, sub angular to predominantly sub rounded, moderately well sorted, trace weak calcareous cement, slightly silty matrix in part, friable to loose, fair to good inferred porosity, no fluorescence.
1439	1442	100	SILTSTONE: medium dark grey, medium to dark brownish grey, argillaceous, rare glauconite, rare fossil fragments, trace carbonaceous flecks, firm to moderately hard, sub blocky to occasionally sub fissile. SANDSTONE: as above, trace – 5%.
1442	1445	100	SILTSTONE: medium dark grey, medium to dark brownish grey, argillaceous, rare glauconite, trace nodular pyrite, rare fossil fragments, trace carbonaceous flecks, firm to moderately hard, sub blocky to occasionally sub fissile.
1445	1448	100	SILTSTONE: medium dark grey, medium to dark brownish grey, argillaceous, rare glauconite, trace nodular pyrite, rare fossil fragments, trace carbonaceous flecks, firm to moderately hard, sub blocky to occasionally sub fissile.
1448	1451	100	SILTSTONE: as above, medium dark brownish grey.

Depth From (m)	Depth To (m)	%	Lithology and Shows
1451	1454	100	SILTSTONE: medium to dark brownish grey, argillaceous, minor fine grained glauconite, trace nodular pyrite, rare fossil fragments, firm to moderately hard, sub blocky to occasionally sub fissile.
1454	1457	100 trace – 5%	SILTSTONE: as above. SANDSTONE: as above, clear, translucent, very fine to medium predominantly fine grained, sub angular to predominantly sub rounded, moderately well sorted, trace weak calcareous cement, slightly silty matrix in part, friable to loose, fair to good inferred porosity, no fluorescence.
1457	1460	90	SILTSTONE: medium to dark brownish grey, argillaceous, common glauconite, trace nodular pyrite, rare fossil fragments, firm to occasionally moderately hard, sub blocky to blocky.
		10	SANDSTONE: clear, translucent, very fine to medium predominantly fine grained, rare coarse grain, sub angular to sub rounded, trace light grey silty matrix, trace glauconite, trace nodular pyrite, rare fossil fragments, friable to predominantly loose, fair to good inferred porosity, no fluorescence.
1460	1463	100	SILTSTONE: medium to dark brownish grey, argillaceous, common glauconite, trace nodular pyrite, rare fossil fragments, firm to occasionally moderately hard, sub blocky to blocky.
1463	1466	100	SILTSTONE: medium to dark brownish grey, argillaceous, common glauconite, trace nodular pyrite, rare fossil fragments, firm to occasionally moderately hard, sub blocky to blocky.
1466	1469	100	SILTSTONE: medium to dark brownish grey, dark grey, common glauconite, trace to rare nodular pyrite, trace fossil fragments, firm to moderately hard, sub blocky to sub fissile.
1469	1472	100	SILTSTONE: medium to dark brownish grey, dark grey, common glauconite, trace to rare nodular pyrite, trace fossil fragments, firm to moderately hard, sub blocky to sub fissile.
1472	1475	100	SILTSTONE: medium to dark brownish grey, dark grey, common glauconite, trace to rare nodular pyrite, trace fossil fragments, firm to moderately hard, sub blocky to sub fissile.
1475	1478	100	SILTSTONE: medium to dark brownish grey, dark grey, common glauconite, trace to rare nodular pyrite, trace fossil fragments, firm to moderately hard, sub blocky to sub fissile.
1478	1481	80 20	SILTSTONE: medium dark brownish grey, common glauconite, generally as above.  SANDSTONE: clear, translucent, very fine to medium predominantly fine grained, sub angular to sub rounded, predominantly loose quartz grains, fair to good inferred porosity, no fluorescence.

Depth	Depth	0/	Lith along and Change
From (m)	To (m)	%	Lithology and Shows
1481	1484	70 30	SILTSTONE: as above.  SANDSTONE: translucent, clear, fine to medium predominantly fine grained, moderately well sorted, sub rounded to occasionally sub angular, rare medium grey silty matrix, minor carbonaceous fragments, rare glauconite, trace fossil fragments, trace cream lithics, friable to predominantly loose, fair inferred porosity, no fluorescence.
1484	1487	40	SILTSTONE: medium brownish grey, medium dark brownish grey, argillaceous, common fine grained glauconite, trace nodular pyrite, trace lithics, firm to occasionally moderately hard, sub blocky to blocky, occasionally sub fissile.  SANDSTONE: clear, translucent, fine to medium, trace medium to coarse, moderately well sorted, sub angular to sub rounded, common carbonaceous fragments, trace very fine glauconite, trace fine grained lithics, predominantly loose clean quartz grains, fair to good inferred porosity, no fluorescence.
1487	1490	60 40	SILTSTONE: as above. SANDSTONE: clear, translucent, fine to medium grained, trace medium to coarse, moderately well sorted, sub angular to sub rounded, trace light grey silty matrix, common carbonaceous fragments, minor fine lithics, rare glauconite, trace fossil fragments, friable to predominantly loose, predominantly loose quartz grains, fair to good inferred porosity, no fluorescence.
1490	1493	40 60	SILTSTONE: as above.  SANDSTONE: clear, translucent, slightly yellow stain in part, fine to coarse predominantly medium grained, sub angular to sub rounded, weak calcareous cement, minor white argillaceous matrix, trace light grey silty matrix, common carbonaceous fragments, trace very fine glauconite, trace fossil fragments, predominantly loose, friable to locally moderately hard aggregates in part, fair to good inferred porosity, no fluorescence.
1493	1496	40 60	SILTSTONE: as above.  SANDSTONE: clear, translucent, slightly yellow stain in part, fine to coarse predominantly medium grained, sub angular to sub rounded, weak calcareous cement, minor white argillaceous matrix, trace light grey silty matrix, common carbonaceous fragments, trace very fine glauconite, trace fossil fragments, predominantly loose, friable to locally moderately hard aggregates in part, fair to good inferred porosity, no fluorescence.
1496	1499	30	SILTSTONE: medium dark grey, becoming light to medium grey, argillaceous, very finely arenaceous, trace shelly fragments, minor carbonaceous flecks, grading to CLAYSTONE in part, firm, blocky to sub blocky.

Depth From	Depth To	%	Lithology and Shows
(m)	(m)	70	SANDSTONE: clear, translucent, light grey, very fine to medium predominantly fine grained, trace coarse grains, rare siliceous cement, predominantly loose, common carbonaceous fragments, trace cream / orange lithics, rare fossil fragments, fair to good inferred porosity, no fluorescence.
1499	1502	100	SANDSTONE: clear, translucent, very fine to fine grained, moderately well sorted, sub angular to sub rounded, common light grey silty matrix, common fine carbonaceous specks, trace fossil fragments, rare very fine lithics, fair inferred porosity, no fluorescence.
1502	1505	100	SANDSTONE: light grey, translucent, clear, very fine to fine occasionally medium grained, moderately well sorted, sub angular to sub rounded, rare weak siliceous cement, common very light brownish grey / greenish grey argillaceous to silty matrix, common fine carbonaceous specks / fragments, trace very fine lithics, trace fossil / shell fragments, friable, poor inferred porosity, no fluorescence.
1505	1508	80 20	SANDSTONE: as above, becoming predominantly loose. SILTSTONE: light greenish grey, very light brownish grey, arenaceous grading to silty very fine SANDSTONE, rare very fine lithics, trace fine carbonaceous specks, soft to firm, sub blocky.
1508	1511	80 20	SANDSTONE: as above, becoming predominantly loose and fine grained. SILTSTONE: light greenish grey, very light brownish grey, arenaceous grading to silty very fine SANDSTONE, rare very fine lithics, trace fine carbonaceous specks, soft to firm, sub blocky.
1511	1514	70 30	SANDSTONE: light grey, translucent, clear, very fine to fine occasionally medium grained, trace coarse, moderately well sorted, sub angular to sub rounded, rare weak siliceous cement, common very light brownish grey argillaceous to silty matrix, common fine carbonaceous fragments, trace very fine lithics, trace fossil fragments, friable, poor to fair inferred porosity, no fluorescence.  SILTSTONE: light greenish grey, very light brownish grey, arenaceous grading to silty very fine SANDSTONE, rare very fine lithics, trace fine carbonaceous specks, soft to firm, sub blocky.
1514	1517	60	SANDSTONE: as above, light grey, translucent clear, very fine to fine grained, moderately well sorted, sub angular to sub rounded, common light grey silty / argillaceous matrix, minor fine carbonaceous specks, trace lithics, friable to firm aggregates, loose in part, poor inferred porosity, no fluorescence.  SILTSTONE: light to medium grey, argillaceous, very finely arenaceous, rare fine carbonaceous specks, trace very fine lithics, soft to firm, blocky.

Depth From	Depth To	%	Lithology and Shows
(m)	(m)		
1517	1520	70	SANDSTONE: translucent, clear, light brown, light grey, very fine to fine grained, sub angular to predominantly sub rounded, minor light grey silty matrix, trace fine lithics, rare fine carbonaceous specks, trace micro mica, friable to loose, poor to fair inferred porosity, no fluorescence.  SILTSTONE: argillaceous as above.
1520	1523	80 20	SANDSTONE: generally as above, rare medium grained. SILTSTONE: as above.
		20	SILTSTONE, as above.
1523	1526	20	SANDSTONE: generally as above, translucent, clear, light brown, light grey, very fine to predominantly fine grained, trace medium, sub angular to predominantly sub rounded, rare light grey silty matrix, trace fine lithics, rare fine carbonaceous specks, trace micro mica, friable to loose, poor to fair inferred porosity, no fluorescence. SILTSTONE: as above, light to medium grey, argillaceous, very finely
			arenaceous, rare fine carbonaceous specks, trace very fine lithics, soft to firm, blocky.
1526	1529	80	SANDSTONE: translucent, clear, light brown, fine to medium, moderately well sorted, sub angular to predominantly sub rounded, trace light grey silty matrix, trace fine lithics, rare fine carbonaceous specks, trace fossil fragments, friable to predominantly loose, poor to
		20	fair inferred porosity, no fluorescence. SILTSTONE: generally as above, light to medium grey, light brownish grey, argillaceous, very finely arenaceous, rare fine carbonaceous specks, minor, very fine lithics, soft to firm, blocky.
1529	1532	90 10	SANDSTONE: fine to medium, translucent, clear, as above. SILTSTONE: light grey as above.
1532	1535	70 30	SANDSTONE: as above. SILTSTONE: as above, light to medium grey, light brownish grey, argillaceous, very finely arenaceous, rare fine carbonaceous specks, minor, very fine lithics, soft to firm, blocky.
1535	1538	70	SANDSTONE: as above, translucent, clear, light brown, fine to medium, moderately well sorted, sub angular to predominantly sub rounded, trace light grey silty matrix, trace fine lithics, rare fine carbonaceous specks, trace fossil fragments, friable to predominantly loose, poor to fair inferred porosity, no fluorescence.
		30	SILTSTONE: as above.
1538	1541	70 30	SANDSTONE: as above. SILTSTONE: as above.
1541	1544	90	SANDSTONE: translucent, clear, light brown, fine to medium, moderately well sorted, sub angular to predominantly sub rounded, trace light grey silty matrix, trace fine lithics, rare fine carbonaceous specks, trace fossil fragments, friable to predominantly loose, poor to fair inferred porosity, no fluorescence.

Depth From (m)	Depth To (m)	%	Lithology and Shows
	,	10	SILTSTONE: as above.
1544	1547	90	SANDSTONE: translucent, clear, fine grained, loose generally as above.
		10	SILTSTONE: as above.
1547	1550	60 40	SANDSTONE: as above. SILTSTONE: as above.
1550	1553	40 60	SANDSTONE: as above. SILTSTONE: as above.
1553	1556	70	SANDSTONE: translucent, clear, light grey, very fine to medium predominantly fine grained, sub angular to sub rounded, rare siliceous cement, minor light grey argillaceous matrix, rare carbonaceous specks, trace very fine lithics, friable aggregates, commonly loose, poor to fair inferred porosity, no fluorescence.  SILTSTONE: light to occasionally medium grey, light brownish grey, argillaceous, very finely arenaceous, rare fine carbonaceous specks, minor, very fine lithics, soft to firm, blocky.
1556	1559	60 40	SANDSTONE: light grey, light brownish grey, translucent, very fine to fine occasionally medium grained, sub angular to sub rounded, moderately well sorted, rare weak siliceous cement, common light grey argillaceous to silty matrix, trace fine carbonaceous specks, trace fossil fragments, firm to friable, occasionally loose, poor inferred porosity, no fluorescence.  SILTSTONE: light grey as above.
1559	1562	70 30	SANDSTONE: as above, becoming translucent, clear in part. SILTSTONE: light grey, light brownish grey, very finely arenaceous as above.
1562	1565	50	SANDSTONE: light grey, translucent, clear, very fine to fine occasionally medium grained, moderately well sorted, generally as above.
		50	SILTSTONE: light grey, light brownish grey, light brown in part, very finely arenaceous, trace very fine lithics, trace fine carbonaceous specks, soft to firm, sub blocky.
1565	1568	50	SANDSTONE: light grey, translucent, clear, very fine to fine trace medium grained, sub angular to sub rounded, weak siliceous cement in part, common light grey argillaceous matrix, trace very fine carbonaceous specks, trace nodular pyrite, trace very fine lithics, trace calcareous fragments, firm to friable, occasionally loose, poor inferred porosity, no fluorescence.
		50	SILTSTONE: very finely arenaceous as above.

Depth From	Depth To	%	Lithology and Shows
(m) 1568	(m) 1571	40	SANDSTONE: light grey, translucent, clear, very fine to fine trace medium grained, sub angular to sub rounded, weak siliceous cement in part, common light grey argillaceous matrix, trace very fine carbonaceous specks, trace nodular pyrite, trace very fine lithics, trace calcareous fragments, firm to friable, occasionally loose, poor inferred porosity, no fluorescence.  SILTSTONE: light grey, light brownish grey, light brown in part, very finely arenaceous, trace very fine lithics, trace fine carbonaceous specks, soft to firm, sub blocky.
1571	1574	70	SANDSTONE: light grey, translucent, clear, very fine to fine, trace medium grained, sub angular to sub rounded, weak siliceous cement in part, common light grey argillaceous matrix, trace very fine carbonaceous specks, trace nodular pyrite, trace very fine lithics, trace calcareous fragments, firm to friable, occasionally loose, poor inferred porosity, no fluorescence.  SILTSTONE: light to medium grey, light brownish grey, light brown in part, very finely arenaceous, trace very fine lithics, trace fine carbonaceous specks, soft to firm, sub blocky.
1574	1577	60	SANDSTONE: light grey, translucent, clear, very fine to fine, trace medium grained, sub angular to sub rounded, weak siliceous cement in part, common light grey argillaceous matrix, trace very fine carbonaceous specks, trace glauconite, rare pyrite, trace very fine lithics, trace calcareous fragments, firm to friable, occasionally loose, poor inferred porosity, no fluorescence.  SILTSTONE: light to medium grey, light brownish grey, light brown in part, very finely arenaceous, trace very fine lithics, trace fine carbonaceous specks, soft to firm, sub blocky.
1577	1580	70	SANDSTONE: light grey, translucent, clear, very fine to fine, trace medium grained, sub angular to sub rounded, weak siliceous cement in part, common light grey argillaceous matrix, trace very fine carbonaceous specks, trace glauconite, rare pyrite, trace very fine lithics, trace calcareous fragments, firm to friable, occasionally loose, poor inferred porosity, no fluorescence.  SILTSTONE: light to medium grey, light brownish grey, light brown in part, very finely arenaceous, trace very fine lithics, trace fine carbonaceous specks, soft to firm, sub blocky.
1580	1583	20 80	SANDSTONE: light grey, translucent, clear, very fine to fine, trace medium grained, sub angular to sub rounded, weak siliceous cement in part, common light grey argillaceous matrix, trace very fine carbonaceous specks, trace glauconite, rare pyrite, trace very fine lithics, trace calcareous fragments, firm to friable, occasionally loose, poor inferred porosity, no fluorescence.  SILTSTONE: light to medium grey, light brownish grey, light brown in part, very finely arenaceous, trace very fine lithics, trace fine carbonaceous specks, soft to firm, sub blocky.

Depth	Depth		
From (m)	To (m)	%	Lithology and Shows
1583	1586	20	SANDSTONE: light grey, translucent, clear, very fine to fine, trace medium grained, sub angular to sub rounded, weak siliceous cement in part, common light grey argillaceous matrix, trace very fine carbonaceous specks, trace glauconite, rare pyrite, trace very fine lithics, trace calcareous fragments, firm to friable, occasionally loose, poor inferred porosity, no fluorescence.  SILTSTONE: light to medium grey, light brownish grey, light brown in part, very finely arenaceous, trace very fine lithics, trace fine carbonaceous specks, soft to firm, sub blocky.
1586	1589	60	SANDSTONE: light grey, translucent, clear, very fine to fine, trace medium grained, sub angular to sub rounded, weak siliceous cement in part, common to abundant light grey argillaceous to silty matrix, in part grading to an Arenaceous Siltstone, trace very fine carbonaceous specks, trace glauconite, rare pyrite, trace very fine lithics, trace calcareous fragments, firm to friable, occasionally loose, poor inferred porosity, no fluorescence.  SILTSTONE: light to medium grey, light brownish grey, light brown in part, very finely arenaceous, trace very fine lithics, trace fine carbonaceous specks, soft to firm, sub blocky.
1589	1592	50	SANDSTONE: light grey, translucent, clear, very fine to fine, trace medium grained, sub angular to sub rounded, weak siliceous cement in part, common to abundant light grey argillaceous to silty matrix, in part grading to an Arenaceous Siltstone, trace very fine carbonaceous specks, trace glauconite, rare nodular pyrite, trace very fine lithics, trace calcareous fragments, firm to friable, occasionally loose, poor inferred porosity, no fluorescence.  SILTSTONE: light to medium grey, light brownish grey, light brown in part, very finely arenaceous, trace very fine lithics, trace fine carbonaceous specks, soft to firm, sub blocky.
1592	1595	40	SANDSTONE: light grey, translucent, clear, very fine to fine, trace medium grained, sub angular to sub rounded, weak siliceous cement in part, common to abundant light grey argillaceous to silty matrix, in part grading to an Arenaceous Siltstone, trace very fine carbonaceous specks, trace glauconite, rare nodular pyrite, trace very fine lithics, trace calcareous fragments, firm to friable, occasionally loose, poor inferred porosity, no fluorescence.  SILTSTONE: light to medium grey, light brownish grey, light brown in part, very finely arenaceous, trace very fine lithics, trace fine carbonaceous specks, soft to firm, sub blocky.
1595	1598	50	SANDSTONE: light grey, translucent, clear, very fine to fine, trace medium grained, sub angular to sub rounded, weak siliceous cement in part, common to abundant light grey argillaceous to silty matrix, in part grading to an Arenaceous Siltstone, trace very fine carbonaceous specks, trace glauconite, rare nodular pyrite, trace very fine lithics, trace calcareous fragments, firm to friable, occasionally loose, poor inferred porosity, no fluorescence.

Depth From (m)	Depth To (m)	%	Lithology and Shows
(11)	()	50	SILTSTONE: light to medium grey, light brownish grey, light brown in part, very finely arenaceous, trace very fine lithics, trace fine carbonaceous specks, soft to firm, sub blocky.
1598	1601	60 40	SANDSTONE: light grey as above. SILTSTONE: very fine arenaceous as above.
1601	1604	60 40	SANDSTONE: light grey as above. SILTSTONE: very fine arenaceous as above.
1604	1607	20	SANDSTONE: translucent, clear, light grey, light greenish grey in part, fine grained, trace medium, sub angular to sub round, weak siliceous cement in part, rare to minor light grey argillaceous matrix, occasionally grading to arenaceous siltstone, rare carbonaceous specks / fragments, rare fine grained lithics, firm to friable, loose in part, poor to fair inferred porosity, no fluorescence.  SILTSTONE: as above, light to medium grey, light brownish grey, light brown in part, very finely arenaceous, trace very fine lithics, trace
1607	1610	90	fine carbonaceous specks, soft to firm, sub blocky.  SANDSTONE: translucent, clear, light grey, light greenish grey in part, fine grained, trace medium, sub angular to sub round, weak siliceous cement in part, rare to minor light grey argillaceous matrix, occasionally grading to arenaceous siltstone, rare carbonaceous specks / fragments, rare fine grained lithics, firm to friable, loose in part, poor
		10	to fair inferred porosity, no fluorescence.  SILTSTONE: as above, light to medium grey, light brownish grey, light brown in part, very finely arenaceous, trace very fine lithics, trace fine carbonaceous specks, soft to firm, sub blocky.
1610	1613	90	SANDSTONE: translucent, clear, light grey, light greenish grey in part, fine grained, trace medium, sub angular to sub round, weak siliceous cement in part, rare to minor light grey argillaceous matrix, occasionally grading to arenaceous siltstone, rare carbonaceous specks / fragments, rare fine grained lithics, firm to friable, loose in part, poor to fair inferred porosity, no fluorescence.
		10	SILTSTONE: as above, light to medium grey, light brownish grey, light brown in part, very finely arenaceous, trace very fine lithics, trace fine carbonaceous specks, soft to firm, sub blocky.
			Stop control drilling. Continue with 5m sample interval.
1613	1620	90	SANDSTONE: translucent, clear, light grey in part, trace orange stain, very fine to medium predominmantly fine grained, sub angular to sub round, trace siliceous cement, trace light grey silty matrix, trace lithics, trace fine carbonaceous flecks, friable to predominmantly loose, fair inferred porosity, no fluorescence.  SILTSTONE: light grey, medium grey in part, light brownish grey, arenaceous, trace lithics, trace micro micaceous, firm to moderately hard, sub blocky.

Depth From	Depth To	%	Lithology and Shows
(m)	(m)		8,
1620	1625	90	SANDSTONE: as above.
		10	SILTSTONE: as above.
1625	1630	90	SANDSTONE: as above.
		10	SILTSTONE: as above.
1630	1635	80	SANDSTONE: as above.
1050	1033	20	SILTSTONE: as above.
1635	1640	80	SANDSTONE: translucent, clear, light grey in part, trace orange stain,
		20	fine to medium grained, common medium to coarse grained, sub angular to sub round, trace siliceous cement, trace light grey silty matrix, trace lithics, trace fine carbonaceous flecks, friable to predominmantly loose, fair inferred porosity, no fluorescence. SILTSTONE: light grey, medium grey in part, light brownish grey, arenaceous, trace lithics, trace micro micaceous, firm to moderately hard, sub blocky.
1640	1645	70	SANDSTONE: translucent, clear, light grey in part, trace orange stain, fine to medium grained, common medium to coarse grained, sub angular to sub round, trace siliceous cement, rare calcareous cement, trace light grey silty matrix, trace lithics, trace fine carbonaceous flecks, friable to predominmantly loose, fair inferred porosity, no fluorescence.
		30	SILTSTONE: light grey, medium grey in part, light brownish grey, arenaceous, trace lithics, trace micro micaceous, firm to moderately hard, sub blocky.
1645	1650	70	SANDSTONE: translucent, clear, light grey in part, rare orange stain, fine to medium grained, common medium to coarse grained, sub angular to sub round, trace siliceous cement, rare calcareous cement, trace light grey silty matrix, trace lithics, trace fine carbonaceous flecks, friable to predominmantly loose, fair inferred porosity, no fluorescence.
		30	SILTSTONE: light grey, medium grey in part, light brownish grey, arenaceous, trace lithics, trace micro micaceous, firm to moderately hard, sub blocky.
1650	1655	80	SANDSTONE: translucent, clear, light grey in part, rare orange stain, fine to medium grained, common medium to coarse grained, sub angular to sub round, trace siliceous cement, rare calcareous cement, trace light grey silty matrix, trace lithics, trace fine carbonaceous flecks, rare nodular pyrite, friable to predominmantly loose, fair inferred paresity, no fluorescence.
		20	inferred porosity, no fluorescence. SILTSTONE: light grey, medium grey in part, light brownish grey, arenaceous, trace lithics, trace micro micaceous, firm to moderately hard, sub blocky.
1655	1660	80	SANDSTONE: translucent, clear, light grey in part, rare orange stain, fine to medium grained, common medium to coarse grained, sub angular to sub round, trace siliceous cement, rare calcareous cement, trace light grey silty matrix, trace lithics, trace fine carbonaceous flecks, rare nodular pyrite, friable to predominmantly loose, fair inferred porosity, no fluorescence.

Depth From (m)	Depth To (m)	%	Lithology and Shows
(m)	(m)	20	SILTSTONE: light grey, medium grey in part, light brownish grey, arenaceous, trace lithics, trace micro micaceous, firm to moderately hard, sub blocky.
1660	1665	70 30	SANDSTONE: translucent, clear, light grey in part, rare orange stain, fine to medium grained, common medium to coarse grained, sub angular to sub round, trace siliceous cement, rare calcareous cement, trace light grey silty matrix, trace lithics, trace fine carbonaceous flecks, rare nodular pyrite, friable to predominmantly loose, fair inferred porosity, no fluorescence.  SILTSTONE: light grey, medium grey in part, light brownish grey,
		30	arenaceous, trace lithics, trace micro micaceous, firm to moderately hard, sub blocky.
1665	1670	70	SANDSTONE: translucent, clear, light grey in part, rare orange stain, fine to medium grained, common medium to coarse grained, sub angular to sub round, trace siliceous cement, rare calcareous cement, trace light grey silty matrix, trace lithics, trace fine carbonaceous flecks, rare nodular pyrite, friable to predominmantly loose, fair inferred porosity, no fluorescence.
		30	SILTSTONE: light grey, medium grey in part, light brownish grey, arenaceous, trace lithics, trace micro micaceous, firm to moderately hard, sub blocky.
1670	1675	80	SANDSTONE: translucent, clear, light grey in part, rare orange stain, fine to medium grained, common medium to coarse grained, sub angular to sub round, trace siliceous cement, rare calcareous cement, trace light grey silty matrix, trace lithics, trace fine carbonaceous flecks, rare nodular pyrite, friable to predominmantly loose, fair inferred porosity, no fluorescence.
		20	SILTSTONE: light grey, medium grey in part, light brownish grey, arenaceous, trace lithics, trace micro micaceous, firm to moderately hard, sub blocky.
1675	1680	80	SANDSTONE: translucent, clear, light grey in part, rare orange stain, very fine to medium grained, minor coarse grained, sub angular to sub round, trace siliceous cement, rare calcareous cement, trace light grey silty matrix, trace lithics, trace fine carbonaceous flecks, rare nodular pyrite, friable to predominmantly loose, fair inferred porosity, no fluorescence.
		20	SILTSTONE: light grey, medium grey in part, light brownish grey, arenaceous, trace lithics, trace micro micaceous, firm to moderately hard, sub blocky.
1680	1685	70	SANDSTONE: translucent, clear, light grey in part, rare orange stain, very fine to medium grained, minor coarse grained, sub angular to sub round, trace siliceous cement, rare calcareous cement, trace light grey silty matrix, trace lithics, trace fine carbonaceous flecks, rare nodular pyrite, friable to predominmantly loose, fair inferred porosity, no fluorescence.

Depth From (m)	Depth To (m)	%	Lithology and Shows
(III)	(111)	30	SILTSTONE: light grey, medium grey in part, light brownish grey, arenaceous, trace lithics, trace micro micaceous, firm to moderately hard, sub blocky.
1685	1690	80	SANDSTONE: translucent, clear, light grey in part, rare orange stain, very fine to medium grained, moderately sorted, minor coarse grained, sub angular to sub round, trace siliceous cement, rare calcareous cement, trace light grey silty matrix, trace lithics, trace fine carbonaceous flecks, rare nodular pyrite, friable to predominmantly loose, fair inferred porosity, no fluorescence.  SILTSTONE: light grey, medium grey in part, light brownish grey,
			arenaceous, trace lithics, trace micro micaceous, firm to moderately hard, sub blocky.
1690	1695	70	SANDSTONE: translucent, clear, frosted, light grey in part, fine to medium grained, minor coarse grained, moderately sorted, sub angular to sub round, trace siliceous cement, rare calcareous cement, trace light grey silty matrix, trace lithics, trace fine carbonaceous flecks, rare nodular pyrite, friable to predominmantly loose, fair inferred porosity, no fluorescence.
		30	SILTSTONE: light grey, light olive grey, medium grey, medium brown grey, argillaceous to arenaceous, trace carbonaceous specks, rare micro micaceous, firm to moderately hard sub blocky to blocky.
1695	1700	60	SANDSTONE: translucent, clear, frosted, light grey in part, fine to medium grained, minor coarse grained, moderately sorted, sub angular to sub round, trace siliceous cement, rare calcareous cement, trace light grey silty matrix, trace lithics, trace fine carbonaceous flecks, rare nodular pyrite, friable to predominmantly loose, fair inferred porosity, no fluorescence.
		40	SILTSTONE: light grey, light olive grey, medium grey, medium brown grey, argillaceous to arenaceous, trace carbonaceous specks, rare micro micaceous, firm to moderately hard sub blocky to blocky.
1700	1705	60	SANDSTONE: translucent, clear, frosted, light grey in part, fine to medium grained, minor coarse grained, moderately sorted, sub angular to sub round, trace siliceous cement, rare calcareous cement, trace light grey silty matrix, trace lithics, trace fine carbonaceous flecks, rare nodular pyrite, friable to predominmantly loose, fair inferred porosity, no fluorescence.
		40	SILTSTONE: light grey, light olive grey, medium grey, medium brown grey, argillaceous to arenaceous, trace carbonaceous specks, rare micro micaceous, firm to moderately hard sub blocky to blocky.
1705	1710	50	SANDSTONE: translucent, clear, frosted, light grey in part, fine to medium grained, minor coarse grained, moderately sorted, sub angular to sub round, trace siliceous cement, rare calcareous cement, trace light grey silty matrix, trace lithics, trace fine carbonaceous flecks, rare nodular pyrite, friable to predominmantly loose, fair inferred porosity, no fluorescence.

Depth From (m)	Depth To (m)	%	Lithology and Shows
(III)	(111)	50	SILTSTONE: light grey, light olive grey, medium grey, medium brown grey, argillaceous to arenaceous, trace carbonaceous specks, rare micro micaceous, firm to moderately hard sub blocky to blocky.
1710	1715	70	SANDSTONE: translucent, clear, frosted, light grey in part, fine to medium grained, minor coarse grained, moderately sorted, sub angular to sub round, trace siliceous cement, rare calcareous cement, trace light grey silty matrix, trace lithics, trace fine carbonaceous flecks, rare nodular pyrite, friable to predominmantly loose, fair inferred porosity, no fluorescence.
		30	SILTSTONE: light grey, light olive grey, medium grey, medium brown grey, argillaceous to arenaceous, trace carbonaceous specks, rare micro micaceous, firm to moderately hard sub blocky to blocky.
1715	1720	40	SANDSTONE: translucent, clear, frosted, light grey in part, fine to medium grained, minor coarse grained, moderately sorted, sub angular to sub round, trace siliceous cement, rare calcareous cement, trace light grey silty matrix, trace lithics, trace fine carbonaceous flecks, rare nodular pyrite, friable to predominmantly loose, fair inferred porosity, no fluorescence.
		60	SILTSTONE: light grey, light olive grey, medium grey, medium brown grey, argillaceous to arenaceous, trace carbonaceous specks, rare micro micaceous, firm to moderately hard sub blocky to blocky.
1720	1725	30	SANDSTONE: translucent, clear, frosted, light grey in part, fine to medium grained, minor coarse grained, moderately sorted, sub angular to sub round, trace siliceous cement, rare calcareous cement, trace light grey silty matrix, trace lithics, trace fine carbonaceous flecks, rare nodular pyrite, friable to predominmantly loose, fair inferred porosity, no fluorescence.
		70	SILTSTONE: light grey, light olive grey, medium grey, medium brown grey, argillaceous to arenaceous, trace carbonaceous specks, rare micro micaceous, firm to moderately hard sub blocky to blocky.
1725	1730	30	SANDSTONE: translucent, clear, frosted, light grey in part, fine to medium grained, minor coarse grained, moderately sorted, sub angular to sub round, trace siliceous cement, rare calcareous cement, trace light grey silty matrix, trace lithics, trace fine carbonaceous flecks, rare nodular pyrite, friable to predominmantly loose, fair inferred porosity, no fluorescence.
		70	SILTSTONE: light grey, light olive grey, medium grey, medium brown grey, argillaceous to arenaceous, trace carbonaceous specks, rare micro micaceous, firm to moderately hard sub blocky to blocky.
1730	1735	20	SANDSTONE: translucent, clear, frosted, light grey in part, fine to medium grained, minor coarse grained, moderately sorted, sub angular to sub round, trace siliceous cement, rare calcareous cement, trace light grey silty matrix, trace lithics, trace fine carbonaceous flecks, rare nodular pyrite, friable to predominmantly loose, fair inferred porosity, no fluorescence.

Depth From (m)	Depth To (m)	%	Lithology and Shows
		80	SILTSTONE: light grey, light olive grey, medium grey, medium brown grey, argillaceous to arenaceous, trace carbonaceous specks, rare micro micaceous, firm to moderately hard sub blocky to blocky.
1735	1740	10	SANDSTONE: translucent, clear, frosted, light grey in part, fine to medium grained, minor coarse grained, moderately sorted, sub angular to sub round, trace siliceous cement, rare calcareous cement, trace light grey silty matrix, trace lithics, trace fine carbonaceous flecks, rare nodular pyrite, friable to predominmantly loose, fair inferred porosity, no fluorescence.
		90	SILTSTONE: light grey, olive grey, medium grey, medium brown grey, argillaceous to arenaceous, trace carbonaceous specks, rare micro micaceous, firm to moderately hard sub blocky to blocky.
1740	1745	100	SILTSTONE: light grey, olive grey, medium grey, medium brown grey, argillaceous to arenaceous, trace carbonaceous specks, rare micro micaceous, firm to moderately hard sub blocky to blocky.
1745	1750	60	SANDSTONE: translucent, clear, frosted, light grey in part, fine to medium grained, minor coarse grained, moderately sorted, sub angular to sub round, trace siliceous cement, rare calcareous cement, trace light grey silty matrix, trace lithics, trace fine carbonaceous flecks, rare nodular pyrite, friable to predominmantly loose, fair inferred porosity, no fluorescence.  SILTSTONE: light grey, olive grey, medium grey, medium brown grey, argillaceous to arenaceous, trace carbonaceous specks, rare micro micaceous, firm to moderately hard sub blocky to blocky.
1750	1755	70 30	SANDSTONE: translucent, clear, frosted, light grey in part, fine to medium grained, minor coarse grained, moderately sorted, sub angular to sub round, trace siliceous cement, rare calcareous cement, trace light grey silty matrix, trace lithics, trace fine carbonaceous flecks, rare nodular pyrite, friable to predominmantly loose, fair inferred porosity, no fluorescence.  SILTSTONE: light grey, olive grey, medium grey, medium brown grey, argillaceous to arenaceous, trace carbonaceous specks, rare micro micaceous, firm to moderately hard sub blocky to blocky.
1755	1760	60	SANDSTONE: translucent, clear, frosted, light grey in part, fine to medium grained, minor coarse grained, moderately sorted, sub angular to sub round, trace siliceous cement, rare calcareous cement, trace light grey silty matrix, trace lithics, trace fine carbonaceous flecks, rare nodular pyrite, friable to predominmantly loose, fair inferred porosity, no fluorescence.  SILTSTONE: light grey, olive grey, medium grey, medium brown grey, argillaceous to arenaceous, trace carbonaceous specks, trace micro micaceous, firm to moderately hard sub blocky to blocky.

Depth	Depth		
From	To	%	Lithology and Shows
( <b>m</b> ) 1760	(m) 1765	70	SANDSTONE: translucent, clear, frosted, light grey in part, fine to medium grained, minor coarse grained, moderately sorted, sub angular to sub round, trace siliceous cement, rare calcareous cement, trace light grey silty matrix, trace lithics, trace fine carbonaceous flecks, rare nodular pyrite, friable to predominmantly loose, fair inferred porosity, no fluorescence.  SILTSTONE: light grey, olive grey, medium grey, medium brown grey, argillaceous to arenaceous, trace carbonaceous specks, trace micro micaceous, firm to moderately hard sub blocky to blocky.
1765	1770	70 30	SANDSTONE: translucent, clear, frosted, light grey in part, fine to medium grained, minor coarse grained, moderately sorted, sub angular to sub round, trace siliceous cement, rare calcareous cement, trace light grey silty matrix, trace lithics, trace fine carbonaceous flecks, rare nodular pyrite, friable to predominmantly loose, fair inferred porosity, no fluorescence.  SILTSTONE: light grey, olive grey, medium grey, medium brown grey, argillaceous to arenaceous, trace carbonaceous specks, trace
1770	1775	70	micro micaceous, firm to moderately hard sub blocky to blocky.  SANDSTONE: translucent, clear, frosted, light grey in part, fine to medium grained, minor coarse grained, moderately sorted, sub angular to sub round, trace siliceous cement, rare calcareous cement, trace light grey silty matrix, trace lithics, trace fine carbonaceous flecks, rare nodular pyrite, friable to predominmantly loose, fair inferred porosity, no fluorescence.  SILTSTONE: light grey, olive grey, medium grey, medium brown grey, argillaceous to arenaceous, trace carbonaceous specks, trace micro micaceous, firm to moderately hard sub blocky to blocky.
1775	1780	20	SANDSTONE: translucent, clear, frosted, light grey in part, fine to medium grained, minor coarse grained, moderately sorted, sub angular to sub round, trace siliceous cement, rare calcareous cement, trace light grey silty matrix, trace lithics, trace fine carbonaceous flecks, rare nodular pyrite, friable to predominmantly loose, fair inferred porosity, no fluorescence.  SILTSTONE: light grey, olive grey, medium grey, medium brown grey, argillaceous to arenaceous, trace carbonaceous specks, trace micro micaceous, firm to moderately hard sub blocky to blocky.
1780	1785	70 30	SANDSTONE: translucent, clear, frosted, light grey in part, fine to medium grained, minor coarse grained, moderately sorted, sub angular to sub round, trace siliceous cement, rare calcareous cement, trace light grey silty matrix, trace lithics, trace fine carbonaceous flecks, rare nodular pyrite, friable to predominmantly loose, fair inferred porosity, no fluorescence.  SILTSTONE: light grey, white, olive grey, medium grey, light brown grey, argillaceous to arenaceous, trace carbonaceous specks, trace Coal fragments, trace micro micaceous, firm to moderately hard sub blocky to blocky.

Depth	Depth		
From	To	%	Lithology and Shows
(m)	(m)		
1785	1790	60	SANDSTONE: translucent, clear, frosted, light grey in part, fine to medium grained, minor coarse grained, moderately sorted, sub angular to sub round, trace siliceous cement, rare calcareous cement, trace light grey silty matrix, trace lithics, trace fine carbonaceous flecks, rare nodular pyrite, friable to predominmantly loose, fair inferred porosity, no fluorescence.
		40	SILTSTONE: light grey, white, olive grey, medium grey, light brown grey, argillaceous to arenaceous, trace carbonaceous specks, trace Coal fragments, trace micro micaceous, firm to moderately hard sub blocky to blocky.
1790	1795	50	SANDSTONE: translucent, clear, frosted, light grey in part, fine to medium grained, minor coarse grained, moderately sorted, sub angular to sub round, trace siliceous cement, rare calcareous cement, trace light grey silty matrix, trace lithics, trace fine carbonaceous flecks, rare nodular pyrite, friable to predominmantly loose, fair inferred porosity, no fluorescence.
		50	SILTSTONE: light grey, white, olive grey, medium grey, light brown grey, argillaceous to arenaceous, trace carbonaceous specks, trace Coal fragments, trace micro micaceous, firm to moderately hard sub blocky to blocky.
1795	1800	60	SANDSTONE: translucent, clear, frosted, light grey in part, fine to medium grained, minor coarse grained, moderately sorted, sub angular to sub round, trace siliceous cement, rare calcareous cement, trace light grey silty matrix, trace lithics, trace fine carbonaceous flecks, rare nodular pyrite, friable to predominmantly loose, fair inferred porosity, no fluorescence.
		40	SILTSTONE: light grey, white, olive grey, medium grey, light brown grey, argillaceous to arenaceous, trace carbonaceous specks, trace Coal fragments, trace micro micaceous, firm to moderately hard sub blocky to blocky

## **SECTION 2.2: CORE DESCRIPTIONS**

No full hole cores were cut at the Martha 1 location.

**SECTION 2.3: SIDEWALL CORES DESCRIPTIONS** 

## SANTOS LIMITED SIDEWALL CORE DESCRIPTIONS

WELL:	MARTHA 1	DATE:	02/11/2004	PAGE:	1 OF 3
		SHOTS FIRED:	25	SHOTS BOUGHT:	25
GUN NO.:	SUITE 1	GEOLOGIST:	J.PITMAN / F.FERNANDES		

CORE NO.	DEPTH	REC. (mm)	PALYN. EVAL. REJECT	LITH.	COLOUR	GRAIN SIZE	HYDR. INDIC. (Y/N)	SUPPLEMENTARY INFORMATION
1	1728.9	45	Y	Claystone	dark grey	n/a	N	CLAYSTONE: dark grey, non calcareous, minor micro carbonaceous specks, trace disseminated pyrite, firm, massive.
2	1700	40	Y	Siltstone	medium greenish grey	very fine	N	SILTSTONE: light to medium greenish grey, non calcareous, argillaceous, soft to firm, massive.
3	1659.5	45	Y	Sandstone	medium grey	very fine	N	SANDSTONE: light to medium grey, greenish grey, very fine to fine grained, sub angular, well sorted, common light grey argillaceous matrix, rare disseminated pyrite, large coal fragments, firm to friable, very poor visual porosity, no fluorescence.
4	1630.2	40	Y	Sandstone	medium grey	very fine	N	SANDSTONE: light to medium grey, light greenish grey, very fine to occasionally fine grained, sub angular, common light grey argillaceous matrix, common coal fragments, firm to friable, poor visual porosity, no fluorescence.
5	1612.9	48	Y	Sandstone	medium grey	fine	N	SANDSTONE: light to medium grey, mottled, very fine to medium predominmantly fine grained, sub angular, moderately sorted, common light grey argillaceous matrix, abundant carbonaceous fragments, firm, very poor visual porosity, no fluorescence.
6	1598.4	48	Y	Sandstone	medium grey	very fine	N	SANDSTONE: light to medium grey, mottled, very fine to occasionally fine grained, sub angular, common light grey argillaceous matrix, well sorted, common carbonaceous fragments, trace disseminated pyrite, firm to friable, very poor visual porosity, no fluorescence.
7	1590	45	Y	Claystone	medium dark grey	n/a	N	CLAYSTONE: medium grey, dark grey, with thin SANDSTONE laminae, firm, massive.

#### SIDEWALL CORE DESCRIPTIONS

WELL:	MARTHA 1	DATE:	02/11/2004	PAGE:	2 OF 3
		SHOTS FIRED:	25	SHOTS BOUGHT:	25
GUN NO.:	SUITE 1	GEOLOGIST:	J.PITMAN / F.FERNANDES		

8	1572.1	50	Y	Claystone	medium grey	n/a	N	CLAYSTONE: medium grey, non calcareous, firm.
9	1558	45	Y	Claystone	medium grey	n/a	N	CLAYSTONE: medium grey, non calcareous, firm.
10	1534.1	50	Y	Claystone	medium grey	n/a	N	CLAYSTONE: medium grey, non calcareous, firm as above.
11	1510.8	50	Y	Claystone	medium grey	n/a	N	CLAYSTONE: as above, trace carbonaceous flecks.
12	1501.8	45	Y	Claystone	medium grey	n/a	N	CLAYSTONE: slightly silty, trace micro micaceous.
13	1489.2	45	Y	Sandstone	light to medium grey	very fine	N	SANDSTONE: light to medium grey, mottled, sub angular, very fine to occasionally fine grained, minor light grey argillaceous matrix, minor medium grey silty matrix, common carbonaceous flecks, trace very fine lith, firm to friable, very poor visual porosity, no fluorescence.
14	1483.8	50	Y	Claystone	dark grey	n/a	N	CLAYSTONE: dark grey, massive with thin very fine sandstone laminae.
15	1479	50	Y	Claystone	dark grey	n/a	N	CLAYSTONE: very dark grey, massive, firm to moderately hard.
16	1475	48	Y	Claystone	dark grey	n/a	N	CLAYSTONE: as above, very dark grey, firm to moderately hard, massive.
17	1457.6	50	Y	Claystone	dark grey	n/a	N	CLAYSTONE: dark grey as above.
18	1435.4	50	Y	Claystone	dark grey	n/a	N	CLAYSTONE: very dark grey, firm to moderately hard, trace disseminated pyrite.
19	1421.2	45	Y	Claystone	dark grey	n/a	N	CLAYSTONE: very dark grey, dark grey, firm to moderately hard, trace disseminated pyrite.
20	1403.3	45	Y	Claystone	dark grey	n/a	N	CLAYSTONE: very dark grey, firm to moderately hard.
21	1378.5	35	Y	Claystone	dark grey	n/a	N	CLAYSTONE: dark grey, very dark grey, silty in part, rare thin sandstone laminae.
22	1360.1	50	Y	Claystone	dark grey	n/a	N	CLAYSTONE: dark grey, very dark grey, slightly silty, trace micro micaceous, firm.

#### SIDEWALL CORE DESCRIPTIONS

WELL:	MARTHA 1	DATE:	02/11/2004	PAGE:	3 OF 3
		SHOTS FIRED:	25	SHOTS BOUGHT:	25
GUN NO.:	SUITE 1	GEOLOGIST:	J.PITMAN / F.FERNANDES		

23	1338	50	Y	Sandstone	medium dark grey	very fine	N	SANDSTONE: grading to SILTSTONE, medium to dark brownish grey, very fine, well sorted, sub angular, common silty matrix, trace thin siltstone laminae, trace micro micaceous, firm, very poor visual porosity, no fluorescence.
24	1309.3	50	Y	Sandstone	medium brownish grey	very fine	N	SANDSTONE: medium brownish grey, very fine to occasionally fine grained, sub angular, well sorted, common light grey silty / argillaceous matrix, trace very fine lithics, rare micro carbonaceous specks, firm, tight to very poor visual porosity, no fluorescence.
25	1307.2	50	Y	Claystone	dark grey	very fine	N	CLAYSTONE: dark grey, arenaceous in part with thin sandstone laminae.

### **COMMENTS:**

Depth correlation conducted from 1745m to 1685m.

25 cores attempted with 100% recovery. All cores were recovered with no overpull.

## **SECTION 2.4: ROTARY SIDEWALL CORE DESCRIPTIONS**

No rotary sidewall cores were obtained at the Martha 1 location.

Santo	

**SECTION 2.5: CATALOGUE OF WELLSITE SAMPLES** 

# **HALLIBURTON**

## Sperry-Sun

OPERATOR: Santos Ltd RIG: Ocean Patriot

WELL: Martha-1

DATE: 31-Mar-05 CONTAINER: OPC 297

SHIP TO: Att: Core Librarian

Santos Core Library Ascot Transport 30 Francis Street

Port Adelaide SA 5015

#### **PACKAGING INVENTORY**

BOX No.	DESCRIPTION	Final destination	DEPTH INTERVAL (m)
			-
			-
			-
1	Samplex Trays A	Mitsui	628.0 - 1800.0
2	Samplex Trays B	Santos	628.0 - 1800.0
3	Samplex Trays C	Santos	628.0 - 1800.0
4	Mud Samples	Santos	various

\_

OPERATOR: Santos Ltd RIG: Ocean Patriot

WELL: Martha-1
DATE: 31-Mar-05
CONTAINER: OPC 297

**FORWARD TO:** 

Santos Ltd Samplex Set A
Santos Ltd Samplex Set B
Santos Ltd Samplex Set C
Santos Ltd Mud samples

Halliburton/ 1 Wooden Crate with samples

Sperry-Sun to be split in Perth

# HALLIBURTON

## Sperry-Sun



## **SAMPLING INTERVALS**

OPERATOR: Santos Ltd RIG: Ocean Patriot

WELL: Martha-1

DATE: 31-Mar-05 CONTAINER: OPC 297

SHIP TO: Att: Core Librarian

Santos Core Library Ascot Transport 30 Francis Street

Port Adelaide SA 5015

#### **SAMPLING INTERVALS**

FROM (m)	TO (m)	INTERVAL (m)	NUMBER OF SAMPLES
630.0	690.0	5	12
690.0	715.0	25	1
715.0	1265.0	10	55
1265.0	1613.0	3	116
1613.0	1620.0	7	1
1620.0	1800.0	5	36
		TOTAL	221

## Sperry-Sun

OPERATOR: Santos Ltd RIG: Ocean Patriot

WELL: Martha-1

DATE: 31-Mar-05 CONTAINER: OPC 297

SHIP TO: Att: Angus lamont

Halliburton / Sperry-sun

Ascot Transport 53-55 Bannister RD Canning Vale, WA 6155

08 94 55 8300

BOX No.	DESCRIPTION	Final destination	DEPTH INTERVAL (m)
1	Wooden Crate	Canningvale, WA	628.0 1800.0
•	W & D Splits (SET 1)	DPI	-
	W & D Splits (SET 2)	GEOSCIENCE AUSTRALIA	-
	W & D Splits (SET 3)	Mud samples	-
	W & D Splits (SET 4)	Santos Ltd	-



## Sperry-Sun



#### SAMPLEX TRAYS Set A Mitsui

OPERATOR: Santos Ltd RIG: Ocean Patriot

WELL: Martha-1

DATE: 31-Mar-05 CONTAINER: OPC 297

Hand Carried by Att: Core Librarian

Santos Core Library Ascot Transport 30 Francis Street

Port Adelaide SA 5015

FORWARD TO: Santos Ltd

Box No.	Well Name	Depth (m)			
1	Martha-1	628 - 1800 TD			

## Sperry-Sun



#### SAMPLEX TRAYS Set B Santos

OPERATOR: Santos Ltd RIG: Ocean Patriot

WELL: Martha-1

DATE: 31-Mar-05 CONTAINER: OPC 297

Hand Carried by Att: Core Librarian

Santos Core Library Ascot Transport 30 Francis Street

Port Adelaide SA 5015

FORWARD TO: Mitsui

Box No.	Well Name	Depth (m)
1	Martha-1	628 - 1800 TD

## Sperry-Sun



#### SAMPLEX TRAYS Set C Santos

OPERATOR: Santos Ltd RIG: Ocean Patriot

WELL: Martha-1

DATE: 31-Mar-05 CONTAINER: OPC 297

Hand Carried by Att: Core Librarian

Santos Core Library Ascot Transport 30 Francis Street

Port Adelaide SA 5015

FORWARD TO: Mitsui

Box No.	Well Name	Depth (m)
1	Martha-1	628-1800

## Sperry-Sun



#### **MUD & FILTRATE SAMPLES**

OPERATOR: Santos Ltd RIG: Ocean Patriot

WELL: Martha-1

DATE: 31-Mar-05 CONTAINER: OPC 297

SHIP TO: Att: Core Librarian

Santos Core Library Ascot Transport 30 Francis Street

Port Adelaide SA 5015

FORWARD TO: Santos Ltd

Sample Type	Depth (m)	Volume	Description
Filtrate	Filtrate 631		Start 12 1/4" hole
Filtrate	1262	20 ml	Trip out for new Bit
Filtrate	1800	20 ml	TD 12 1/4" hole
Mud	631	1 It	Start 12 1/4" hole
Mud	1262	1 It	Trip out for new Bit
Mud	1800	1 It	TD 12 1/4"" hole
Mud	1488	1 It	MUD SAMPLE

**SECTION 3: WIRELINE LOGGING REPORTS** 

**SECTION 3.1: SUITE 1 - LOGGING ORDER FORM** 

Page 1 of 2



#### LOGGING ORDER FORM

**COMPANY: SANTOS** 

**WELL:** MARTHA 1 FIELD: **MARTHA** 

RIG: OCEAN PATRIOT **STATE: VICTORIA** 

LOCATION: 01CAS3D Survey L7418 X3290 **BLOCK: OTWAY BASIN** 

> VIC / P44 LICENCE:

**LATITUDE:** 38° 37' 24.33" S **LONGITUDE** 142° 42' 05.02" E

**ELEVATIONS:** 

21.5 m WATER DEPTH 54.7 m 76.2 m RT: **SEABED:** 

122.5m 121.0 914mm (36") 762/508mm WT: 461 kg/m

**HOLE:** 

(30"/20") CSG: 340mm 445mm (17½") 628m 620.8m WT: 101 kg/m

(13-3/8") CSG

**HOLE:** 

311m (12-1/4") 1800m

**HOLE:** 

TD (DRILLER): 1800m

**MUD** KCl / Glycol **CIRCULATION STOPPED:** 06:30 hr on 31/10/04

**SYSTEM:** 

**BARITE:** 5.7%

WT: 1.26 (10.5) VIS: 45 pH: 8.7 FLUID LOSS:

**GEOLOGIST:** J. Pitman / F. Fernandes

#### INFORMATION GIVEN ABOVE IS TO BE USED ON LOG HEADER SHEETS

#### HOLE CONDITIONS (TIGHT SPOTS, DEVIATION, COALS, BARITE IN MUD, ETC.)

Maximum Deviation: 3.78deg @ 1304m.

Tight spots reamed during final trip out of hole.

#### **DRILL STEM TESTS/CORED INTERVALS:**

nil

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

Standard Santos scales to be applied to all logs run.

Page 2 of 2



#### **LOGGING ORDER FORM**

#### **LOGGING PROGRAMME:**

casing shoe	340mm (13 5/8") 621m.	Shoe	$\widehat{a}$	
· ·	, ,	Shoe	$\widehat{a}$	
100m above Waarre (1380m)	621m		w	
100m above Waarre (1380m)	021111.			
100111 above waarre (1300111)				
340mm Shoe				
Seafloor (1200m/hr to surface)				
340mm Csg Shoe				
ngent PVT multisampler, pump-	Retain PVT samples.			
, ,				
loss of signal				
2 x 25 agree Points to be advised				
cores. Forms to be advised				
	Seafloor (1200m/hr to surface) 340mm Csg Shoe	100m above Waarre (1380m) 340mm Shoe Seafloor (1200m/hr to surface) 340mm Csg Shoe  Ingent PVT multisampler, pump- b, resistivity monitoring. Entional sampler 1gal / 2¾ gal over for gas analysis.  loss of signal	100m above Waarre (1380m) 340mm Shoe Seafloor (1200m/hr to surface) 340mm Csg Shoe  Ingent PVT multisampler, pump- b, resistivity monitoring. Entional sampler 1gal / 2¾ gal over for gas analysis.  loss of signal	

#### **REMARKS: (ALL OPERATIONS AS PER CURRENT 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.
- 3. ALL THERMOMETER READINGS TO BE RECORDED ON LOG
- 4. ALL SCALES AND PRESENTATIONS TO CONFIRM TO STANDARDS UNLESS OTHERWISE ADVISED.
- 5. THE FIELD/EDIT TAPE MUST BE A MERGED COPY OF ALL LOGS RUN. SEPARATE TAPES ARE ONLY ACCEPTABLE AS AN INTERIM MEASURE.
- 6. ANY CHANGE FROM STANDARD PROCEDURES/SCALES TO BE NOTED IN REMARKS SECTION.
- 7. RM, RMF, RMC AND BHT MUST BE ANNOTATED ON FAXED LOGS. FAXED LOGS SHOULD ALSO INDICATE IF ON DEPTH OR NOT.
- 8. LOG DATA IS TO BE TRANSMITTED AS SOON AS POSSIBLE AFTER ACQUISITION. IF ANY DELAYS ARE LIKELY OR IF DATA TRANSMISSION WILL ADVERSELY EFFECT THE OPERATION THEN THE WELLSITE GEOLOGIST MUST BE IMMEDIATELY INFORMED.

Santos	Well Completion Report - Volume 1 Basic
SECTION 3.2: SUIT	TE 1 – FIELD ELECTRIC LOGGING REPORT

#### SANTOS LIMITED FIELD ELECTRIC LOG REPORT

WELL: MARTHA 1 GEOLOGIST: J. PITMAN / F. FERNANDES

**LOGGING ENGINEER:** M. REYES / S. MITCHELL

**RUN NO.:** SUITE 1 / RUN 1,2,3,4 & 5 **DATE LOGGED:** 30/10/2004 TO 02/11/2004

**DRILLERS DEPTH:** 1800m **LOGGERS DEPTH:** 1791m (9m of fill)

**ARRIVED ON SITE:** 24/10/04

ACTUAL LOG TIME: 46.0 LOST TIME LOGGER: 1.0 hr
TOTAL TIME: 64 hrs (including wiper trip) LOST TIME OTHER: 0.5 hr

• Wiper trip total time 17.5 hrs.

• 30 minutes lost while waiting on crane to move tool racks off the catwalk between runs 3 & 4.

• Trouble shooting RCOR tool at surface. (1.0 hr)

TYPE OF LOG	TYPE OF LOG GRANDE SLAM		RCI-GR	VELOCITY SURVEY
TIME CIRC. STOPPED	29/10/04 5:30 hr	31/10/04 06:30 hr	31/10/04 06:30 hr	31/10/04 06:30 hr
TIME TOOL RIG UP	30/10/04 13:15 hr	31/10/04 12:00 hr	31/10/04 20:15 hr	01/11/04 11:30 hr
TIME TOOL RIH	30/10/04 14:30 hr	31/10/04 14:00 hr	31/10/04 21:45 hr	01/11/04 12:30 hr
TIME TOOL RIG DOWN	30/10/04 18:30 hr	31/10/04 20:15 hr	01/11/04 11:30 hr	01/11/04 19:30 hr
TOTAL TIME	5:15 hrs	8:15 hrs	15:15 hrs	08:00 hrs

TYPE OF LOG	ROTARY SWC	SIDEWALL CORES	
TIME CIRC. STOPPED	31/10/04 06:30 hr	31/10/04 06:30 hr	
TIME TOOL RIG UP	01/11/04 19:30 hr	02/11/04 00:45 hr	
TIME TOOL RIH	01/11/04 21:45 hr	02/11/04 02:00 hr	
TIME TOOL RIG DOWN	02/11/04 00:45 hr	02/11/04 06:30 hr	
TOTAL TIME	5:15 hrs	5.75 hrs	

TYPE OF LOG	FROM	ТО	REPEAT	TIME SINCE LAST	BHT
	(m)	(m)	SECTION	CIRCULATION	°C
Suite 1 Run 1					
GRAND SLAM			No repeat section	8 hours 30 minutes	66°C
GR	1756	Surface	as per Santos		
DLL	1785	621	procedure.		
MLL	1790	621	Log quality		
ZDL	1766	621	compared with		
CN	1766	621	downlog and LWD		
SP	1747	621	data.		
MAC	1771	621			
CAL	1790	621			
Suite 1 Run 2 RCI-GR Suite 1 Run 3	1258.6	1613		24 hours 35 pretests attempted, 17 normal, 9 lost seal, 2 tool plugged, 6 curtailed, 1 failure. 4 x 850cc samples @ 1488.6m, 2 x 850cc samples @ 1258.7m	71.1
VELOCITY SURVEY	1785	Sea Bed		Total levels 115 at 15m intervals	
Suite 1 Run 4 RCOR-GR	-	-		Run aborted due to tool failure No cores cut	
Suite 1 Run 5 SWC-GR (25 core)	1728.9	1307.2		25 cores attempted, 25 recovered (100%)	

MW: 1.2 FV: 43

pH: 8.7

Cl: 37k

KCl: 4% Barite 5.7%

RUN 1 – 1<sup>ST</sup> ATTEMPT 30/10/04

MUD SYSTEM: KCl / PHPA / Glycol

 $\begin{array}{lll} Rm &=& 0.125 \ \Omega m \ @ \ 21.94 ^{\circ} C \\ Rmf &=& 0.099 \ \Omega m \ @ \ 21.40 ^{\circ} C \end{array} \qquad \begin{array}{lll} WL: \ 9.3 & PV/YP: \ 20/25 \\ pH: \ 8.0 & Cl: \ 40k \end{array}$ 

Rmc =  $0.418 \Omega \text{m} (\hat{a}) 22.71 ^{\circ}\text{C}$  KCl: 6.5%

HOLE CONDITIONS: During trip the trip out of the hole minor tight spots were washed / reamed

from 1364m - 1491m. Circulation stopped 05:30 hr 29/10/04

#### **RUNS 1-4 CONDUCTED 31/10/04**

MUD SYSTEM: KCl/PHPA/Glycol

 $Rm = 0.158 \Omega m @ 23.89^{\circ}C$  MW: 1.26 FV: 45 WL: 9.6  $Rmf = 0.112 \Omega m @ 23.72^{\circ}C$  PV/YP: 16/21

 $Rmf = 0.112 \Omega m @ 23.72^{\circ}C$  $Rmc = 0.315 \Omega m @ 23.69^{\circ}C$ 

HOLE CONDITIONS: Hole good during trip out. Circulation stopped 06:30 hr 31/10/04

#### REMARKS / RECOMMENDATIONS

1. Casing ID; Theor: 315.2mm (12.41"), Loggers: - 314mm (12.39").

- 2. 340mm (13 3/8") Casing Shoe Driller: 620.8m. Loggers: 621m.
- 3. Run 1 unable to pass 1466m. Several attempts made to work past without success. Caliper opened and closed however still unable to pass. Run 1 was pulled from the hole and a wiper trip conducted.
- 4. Following the first attempt to conduct wireline logs a wiper trip was conducted. Tight spots were washed and reamed from 1464m 1507m, 1582m-1591m, 1630m-1651m, 1717m-1733m, 1764m-1790m. At total depth 1800m the hole was circulated clean. The trip out of the hole was good with no tight hole encounted.
- 5. Run 2 tagged a bridge at bridge at 912m while running in hole. The tools were worked past this point over a period of 10 minutes.
- 6. A total of 35 pretest were attempted with 17 normal, 9 lost seal, 2 tool plugged, 6 curtailed, 1 failure. 4 x 840cc samples @ 1488.6m, 2 x 840cc samples @ 1258.7m

SAMPLE CHAMBER 189733 DEPTH: 1488.6m WAARRE FM:

AMBIENT TEMPERATURE: 17degC SURFACE PRESSURE 4500 PSI

Sample chamber bled down 1.5 cuft to purge lines. After taking samples a total of 2.7 cuft had been bled down FINAL CHAMBER PRESSURE: 3000 PSI. The sample chamber was not fully bled down and was transported to Petrolab for further analysis. Final gas analysis: 94/4/1.4/0.6/TR

SAMPLE CHAMBER 369205 DEPTH: 1258.7m PAARATTE FM AMBIENT TEMPERATURE: 17degC SURFACE PRESSURE 4500 PSI

Sample chamber bled down 1.6 cuft to purge lines. After taking samples a total of 2.1 cuft had been bled down FINAL CHAMBER PRESSURE: 3000 PSI The sample chamber was not fully bled down and was transported to Petrolab for further analysis. Final gas analysis 96/3/1/TR/TR.

- 7. Run 3 VSP surveys were recorded from Total Depth to Seabed, using 2 gun (4 guns not required as signal amplitude good).
- 8. Data points from 930m to 825m are missing on the VSP run as the hole conditions were poor in this section (hole badly washed out).
- 9. Run 4 RCOR, trouble shoot problem with tool, core bit not extending out of the housing, lost 1 hour attempting to fix problem, while discussing problem with technician in Melbourne.
- 10. Run in hole after trouble shooting problem (engineer happy with tool condition). Lower arm on RCOR not opening, attempt to get a response from the tool for 30 minutes before aborting run as per instructions from Adelaide.
- 11. Run 5, SWC-GR. Unable to pass bridge at 910M, worked passed a 910m over 5 minutes.
- 12. SWC: Total short fired 25, recovered 25 (100%)

#### WELLSITE LOG QUALITY CONTROL CHECKS

LOG ORDER FORM	Y	MUD SAMPLE RESISTIVITY	N/A	TOOL NO. / CODE CHECK	Y
OFFSET WELL DATA	*1	CABLE DATA CARD	Y	LOG SEQUENCE CONFIRM.	*2

LOG TYPE	MAC	GR	CAL	DLL	MLL	DSL	ZDN	CN	RCI	CST	VSP	REMARKS
CASING CHECK	57 us/ft		12.41"									
SCALE CHECK	40-140us/ft	0- 200	150-450m	0.2-200	0.2-200	1.95-2.95	0.45-/-0.15	45 -(-15)				
DEPTH Casing Total	*3	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
CALIBRATIONS OK	Y	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	-	-				
NOISY / MISSING DATA	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
CURVES/LOGS Depth Matched	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Rm MEASUREMENT				*4	Y							
LLS / LLD / CHECK						*5	Y	Y				
PEF / RHOB CHECK						Y	Y	Y				
LOG HEADER / TAIL	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
PRINT/FILM QUALITY	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	

#### COMMENTS: \*1. Offset wells Casino 3, 1 & 2

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

<sup>\*2.</sup> Confirmed with SANTOS geology operations and Baker Atlas.

<sup>\*3</sup> Casing Driller: 620.8m Logger: 621m Total Depth Driller: 1800m Logger: 1791m \*4 Rmc>Rmf

<sup>\*5</sup> Curves overlay in 0 porosity shale.

Santos	Well Completion Report - Volume 1 Basic
SECTION 33 · 9	SUITE 1 – ELECTRIC LOGGING TIME SUMMARY
	CONTROL DOGING THAT SOMETHING

## **Geology Operations**



## **ELECTRIC LOGGING TIME SUMMARY**

LOGGING UNIT:	8677
START DATE:	30/10/2004
END DATE:	02/11/2004
DEPTH DRILLER:	1800m
DEPTH LOGGER:	1791m (9m fill)

LEFT BASE:	24/10/04
ARRIVED AT WELLSITE:	25/10/04
INITIAL RIG UP:	30/10/04
FINAL RIG DOWN:	2/11/04
RETURN TO BASE:	3/11/04

WELL NAME:	MARTHA 1
TRIP NUMBER:	SUITE 1
WELLSITE GEOLOGIST:	J.Pitman / F.Fernandes
LOGGING ENGINEER:	M.Reyes / S.Mitchell
PAGE / DATE:	Page 1 / 30-10-2004

DATE / TIME	RIG UP / DOWN	TOOL CHECK	RIH / POOH	LOGGING	DATA TX	LOST TIME BAKER	I.O.	WIPER TRIP	LOST TIME OTHERS	OTHERS	COMMENTS	REMARKS
00:00												
.20												
:30												
01:00												
:30												
02.00												
02:00												
:30												
03:00												
20												
:30												
04:00												
01.00												
:30												
05:00												
:30												
.50												
06:00												
:30												
07:00												
07.00												
:30												
08:00												
.20												
:30												
09:00												
:30												
10.00												
10:00				-								
:30				1								
11:00												
:30				1								
				<u> </u>		<u>I</u>					WSG (SIGN)	ENGINEER/SIGN)
					TOT	ΓALS					WSG (SIGN) J.Pitman / F.Fernandes	ENGINEER(SIGN) M.Reyes / S.Mitchell
											TOOLS RUN:	
					1		-					
				1	l	l					TOOLS RUN:	
			1	1	l	ı		1			TOOLS DUN.	

LOGGING UNIT: 8677 WELL NAME MARTHA 1 PAGE 1A DATE / RIG UP / TOOL RIH / LOGGING DATA LOST I.O. WIPER LOST TIME OTHERS COMMENTS / REMARKS TIME DOWN CHECK **POOH** TIME TRIP **OTHERS** BAKEF 12:00 MARTHA 1 : SUITE 1 :30 **RUN 1: GRAND SLAM** GR-DLL-MLL-ZDL-CN-MAC-CAL-SP 13:00 13:00 HELD PRE-JOB SAFETY MEETING 13:15 RIG TO BAKER, RIG UP SHIEVES X X 13:30 RIG UP RUN 1 X 14:00 X 14:15 LOAD RADIO ACTIVE SOURCES :30 14:20 RUN IN HOLE WITH RUN 1 X 14:45 CALIPER CHECK AT 600m 15:00 X 15:00 LOG 340mm CASING SHOE @ 621m 15:15 START RECORDING DOWN LOG :30 X X 16:00 16:00 UNABLE TO PASS BRIDGE AT 1466m. X ATTEMPT TO GET PAST BRIDGE FOR 30mins 16:30 PULL OUT OF HOLE FOR WIPER TRIP :30 X 17:00 X X :30 17:30 RIG DOWN RUN 1 X 18:00 X X :30 X 18:30 RIG DOWN COMPLETE 18:30 RIG UP TO RUN IN HOLE ON WIPER X 19:00 X TRIP X :30 X 20:00 X X :30 X X 21:00 X X :30 X X 22:00 X X X 23:00 X X :30 X WSG (SIGN) **ENGINEER(SIGN) TOTALS** J.Pitman / F.Fernandes M.Reyes / S.Mitchell TOTAL TOOLS RUN: GRAND SLAM 5.25 2.0 0.50 1.50 0.75 5.50 0.50 **TOOLS RUN:** TOOLS RUN: SERVICE QUALITY SUMMARY CLIENT WSG ENGINEER 4 SAFETY PROMPTNESS TOOL & SURFACE SYSTEM PERFORMANCE ATTITUDE & CO-OPERATION WELLSITE PRODUCTS / LOG OUALITY COMMUNICATIONS / TX PERFORMANCE OTHER (PLEASE SPECIFY) 1: Excellent - 2 - 3: Normal - 4 - 5: Very Poor

## **Geology Operations**



## **ELECTRIC LOGGING TIME SUMMARY**

LOGGING UNIT:	8677
START DATE:	30/10/2004
END DATE:	02/11/2004
DEPTH DRILLER:	1800m
DEPTH LOGGER:	1791m (9m fill)

LEFT BASE:	24/10/04
ARRIVED AT WELLSITE:	25/10/04
INITIAL RIG UP:	30/10/04
FINAL RIG DOWN:	2/11/04
RETURN TO BASE:	3/11/04
•	

WELL NAME:	MARTHA 1
TRIP NUMBER:	SUITE 1
WELLSITE GEOLOGIST:	J.Pitman / F.Fernandes
LOGGING ENGINEER:	M.Reyes / S.Mitchell
PAGE / DATE:	Page 2 / 31-10-2004

DATE / TIME	RIG UP / DOWN	TOOL CHECK	RIH / POOH	LOGGING	DATA TX	LOST TIME SCHL	I.O.	WIPER TRIP	LOST TIME OTHERS	OTHERS	COMMENTS	/ REMARKS
00:00								X				
								X				
:30								X				
								X				
01:00								X				
								X				
:30								X				
02.00								X				
02:00								X				
20								X				
:30								X				
03:00								X X				
03.00								X				
:30								X				
.50								X				
04:00								X				
01.00								X				
:30								X				
								X				
05:00								X				
								X				
:30								X				
								X				
06:00								X				
								X				
:30								X				
								X			FINISH CIRCULATING B	
07:00								X			PULL OUT OF HOLE WIT	TH CLEAN OUT
20								X			ASSEMBLY.	
:30								X				
00.00								X X				
08:00												
:30								X X				
.30								X				
09:00								X				
09.00								X				
:30								X				
.50								X				
10:00								X				
- 5.00								X				
:30								X				
								X				
11:00								X				
								X				
:30								X				
								X				
VT A I					тот	TALS					WSG (SIGN) J.Pitman / F.Fernandes	ENGINEER(SIGN M.Reyes / S.Mitche
TAL											TOOLS RUN:	

			J.Pitman / F.Fernandes	M.Reyes / S.Mitchell				
OTAL						•	_	
'.5					17.5		<b>TOOLS RUN:</b>	WIPER TRIP
							_	
							TOOLS RUN:	
							TOOLS RUN:	
							-	

 LOGGING UNIT:
 8677

 WELL NAME
 MARTHA 1

 PAGE
 2A

DATE / TIME	RIG UP / DOWN	TOOL CHECK	RIH / POOH	LOGGING	DATA TX	LOST TIME	I.O.	WIPER TRIP	LOST TIME OTHERS	OTHERS	COMMENTS / REMARKS
						BAKER					
12:00											12:00 HOLD JSA
20	X										12:15 RIG UP COMPENSATOR AND SHEAVES
:30	X X										12:45 RIG UP TOOLS RUN 1 GRAND SLAM
13:00	X										12.43 KIG UI TOOLS KUN I GRAND SLAM
15.00	X										13:30 TOOL CHECKS ON SURFACE
:30		X									13:40 LOAD SOURCES
			X								13:50 TOOL ZERO. RUN IN HOLE TO
14:00			X								COMPENSATE – RUN IN HOLE
:30			X	X							14:05 AT CASING SHOE – CALIPER CHECK 14:10 RUN IN HOLE TO 1350m
.30				X							14:30 LOG DOWN FROM 1350m
15:00				X							15:00 TOTAL DEPTH FOUND AT 1791m
				X							RECORD UP LOG – HOLE GOOD
:30				X							
				X							
16:00				X X							
:30				X							
.50				X							17:30 LOG AT CASING SHOE. SHOE FOUND
17:00				X							AT 621m
				X							
:30				X							
10.00				X							18:25 PULL OUT OF HOLE LOGGING GR
18:00				X X							TO SURFACE
:30				X							18:40 TOOL AT SURFACE – REMOVE
.50				X							SOURCES – CONDUCT AFTER LOG TOOL
19:00				X							VERIFICATIONS
	X										19:15 RIG DOWN RUN 1
:30	X										
20.00	X										20.15 PRIIGUED DICCONC DOWN DUN 1
20:00	X X										20:15 FINISHED RIGGING DOWN RUN 1 RUN 2: RCI-GR, COMMENCE RIG UP @ 20:15
:30	X										RUN 2. RCI-GR, COMMENCE RIG UI (a) 20.13
10.0	X										
21:00	X										
	X										
:30		X	37								21:30 PERFORM SURFACE TEST
22:00			X X								21:45 RUN IN HOLE
22.00			X								
:30			X								
			X								22:45 ATTEMPT TO PASS BRIDGE AT 912m
23:00			X								FOR 10 mins
20				X							23:15 CONDUCT CORRELATION PASS @ 1300m
:30				X X							23:30 RECORD FIRST PRESSURE SURVEY @ 1258.7m
		l		Λ							WSG (SIGN) ENGINEER(SIGN)
					TOT	TALS					J.Pitman / F.Fernandes M. Reyes / S.Mitchell
TOTAL											
8.25	2.75	0.25	0.75	4.75							TOOLS RUN 1: GRAND SLAM
2.75	1.25	0.25	1.50	0.75				I	<u> </u>	T	TOOLS DINA, DOLOR
3.75	1.25	0.25	1.50	0.75				<u> </u>	<u> </u>	1	TOOLS RUN 2: RCI-GR
											TOOLS RUN:
								•		•	
						LITY SU	MMAR		MEED		
	1	2	3	CLIENT WS	<b>SG</b> 5	1	2		NEER 4	5	-
	1	4	J	-	J	1		. 3	+	3	SAFETY
						1					PROMPTNESS
											TOOL & SURFACE SYSTEM PERFORMANCE
											ATTITUDE & CO-OPERATION
										<u> </u>	WELLSITE PRODUCTS / LOG QUALITY
						1	-			1	COMMUNICATIONS / TX PERFORMANCE
			1	: Excellent -	2 - 3· N	ormal - 4	1 - 5· Ve	ery Poor		<u> </u>	OTHER (PLEASE SPECIFY)
				c.non	_ 5.11		. 5. 70	-, 1001			_

## **Geology Operations**



#### **ELECTRIC LOGGING TIME SUMMARY**

LOGGING UNIT:	8677
START DATE:	30/10/2004
END DATE:	02/11/2004
DEPTH DRILLER:	1800m
DEPTH LOGGER:	1791m (9m fill)

LEFT BASE:	24/10/04
ARRIVED AT WELLSITE:	25/10/04
INITIAL RIG UP:	30/10/04
FINAL RIG DOWN:	2/11/04
RETURN TO BASE:	3/11/04
•	

WELL NAME:	MARTHA 1
TRIP NUMBER:	SUITE 1
WELLSITE GEOLOGIST:	J.Pitman / F.Fernandes
LOGGING ENGINEER:	M.Reyes / S.Mitchell
PAGE / DATE:	Page 3 / 01-11-2004

TOOLS RUN:

DATE / TIME	RIG UP / DOWN	TOOL CHECK	RIH / POOH	LOGGING	DATA TX	LOST TIME BAKER	I.O.	WIPER TRIP	LOST TIME OTHERS	OTHERS	COMMENTS /	REMARKS
00:00				X							RECORD PRESSURE SUR	VEYS
				X								
:30				X								
.50				X								
01:00				X								
01.00				X								
20												
:30				X								
				X								
02:00				X								
				X								
:30				X								
				X								
03:00				X								
				X								
:30				X								
				X								
04:00				X								
				X								
:30				X								
				X								
05:00				X								
05.00				X								
:30				X								
.50				X								
06:00				X								
00.00				X							06:30 COMMENCE CORR	EL ATION DACC DDIOD
:30				X							TO COLLECTING FORMA	
.30				X							06:40 START PUMPING	ATION SAMIFLES
07.00				X							00.40 START FUMFING	
07:00				X								
:30				X							07-20 COLLECT 4 940	CAMPLE @ 1400 (
.30				X							07:30 COLLECT 4 x 840 cc	
00.00											07:50 TOOL CLOSED, MO	OVE OFF STATION
08:00				X							08:00 CORRELATION PAS	SS A1 1258.6m
				X								
:30				X							08:30 SEAL ACHIEVED A	FTER 4 ATTEMPTS
				X							08:40 START PUMPING	
09:00				X							09:15 COLLECT 2x 840cc	SAMPLES @ 1258.6m
				X								
:30			X								09:30 TOOL CLOSED, PUI	LL OUT HOLE RUN 2
			X									
10:00			X									
			X									
:30	X										10:30 RIG DOWN RCI-GR	
	X											
11:00	X											
	X										11:30 FINISH RIGGING D	
:30	X										RUN 3, VSP: COMMENC	E RIG UP @ 11:30
	X											·
											WSG (SIGN)	ENGINEER(SIGN)
					TOT	ΓALS					F.Fernandes / M. Lahiff	M.Reyes / S.Mitchell
TOTAL												
15.25	2.25	0.25	2.5	10.25							TOOLS RUN 2:	RCI-GR
!								•	•	•	<u> </u>	
											TOOLS RUN 3:	

 $\verb|\ADEFP01| Tech\_Servs| GEOLOGY| REPORTS| RDR| Martha 1\_Basic Data Report. doc$ 

LOGGING UNIT: 8677 WELL NAME MARTHA 1 PAGE 3A DATE / RIG UP / TOOL RIH / LOGGING DATA LOST I.O. WIPER LOST TIME OTHERS COMMENTS / REMARKS TIME DOWN CHECK **POOH** TIME TRIP **OTHERS** BAKEF 12:00 X :30 12:30 RUN IN HOLE RUN 3 X 13:00 13:05 WORKED TOOLS PAST BRIDGE AT 911m. X 13:15 RECORD FIRST POINT AT 960m X :30 X X 14:00 X :30 X 15:00 X :30 X X 16:00 X X :30 X X 17:00 :30 X 18:00 RECORDED LAST STATION X 18:00 TOTAL STATIONS 115 AT 15m SPACINGS. X :30 X X 19:00 19:00 TOOLS TO SURFACE, RIG DOWN X X 19:30 RIG DOWN COMPLETED :30 WAIT ON CRANE 20:00 RUN 4: RCOR, COMMENCE RIG UP @ 20:00 X X 20:30 SURFACE CHECKS 20:45 TROUBLE SHOOT TOOL PROBLEM WITH :30 X TECH IN TOWN 21:00 X X :30 21:45 RUN IN HOLE X 22:00 X X 22:30 CONDUCT CORRELATION PASS @ 1750m 22:45 TOOL CHECK AT 1753m, LOWER ARM 23:00 X NOT OPENING, TOOL DRAWING EXCESS POWER, PULL OUT OF HOLE, RUN ABORTED X :30 23:15 PULL OUT OF HOLE WSG (SIGN) **ENGINEER(SIGN)** TOTALS J.Pitman / F.Fernandes M.Reyes / S.Mitchell TOTAL TOOLS RUN 3: VSP 8.00 0.75 5.0 TOOLS RUN 4: RCOR-GR TOOLS RUN: SERVICE QUALITY SUMMARY CLIENT WSG ENGINEER 4 SAFETY PROMPTNESS TOOL & SURFACE SYSTEM PERFORMANCE ATTITUDE & CO-OPERATION WELLSITE PRODUCTS / LOG QUALITY COMMUNICATIONS / TX PERFORMANCE OTHER (PLEASE SPECIFY)

1: Excellent - 2 - 3: Normal - 4 - 5: Very Poor

# **Geology Operations**



## **ELECTRIC LOGGING TIME SUMMARY**

LOGGING UNIT:	8677
START DATE:	30/10/2004
END DATE:	02/11/2004
DEPTH DRILLER:	1800m
DEPTH LOGGER:	1791m (9m fill)

LEFT BASE:	24/10/04
ARRIVED AT WELLSITE:	25/10/04
INITIAL RIG UP:	30/10/04
FINAL RIG DOWN:	2/11/04
RETURN TO BASE:	3/11/04

WELL NAME:	MARTHA 1
TRIP NUMBER:	SUITE 1
WELLSITE GEOLOGIST:	J.Pitman / F.Fernandes
LOGGING ENGINEER:	M.Reyes / S.Mitchell
PAGE / DATE:	Page 4 / 02-11-2004

DATE / TIME	RIG UP / DOWN	TOOL CHECK	RIH / POOH	LOGGING	DATA TX	LOST TIME BAKER	I.O.	WIPER TRIP	LOST TIME OTHERS	OTHERS	COMMENTS / REMARKS
00:00			X								
	X										00:15 TOOLS TO SURFACE, RIG DOWN RUN 4
:30	X										
01.00	X										00:45 RIG DOWN COMPLETE
01:00	X X										RUN 5: SWC-GR, COMMENCE RIG UP @ 00:45 01:15 RIG ON RADIO SILENCE
:30											01:30 ARM GUNS ON CATWALK
.50	71		X								01:45 RUN IN HOLE
02:00			X								
			X								
:30			X								02:25 TOOL HUNG UP AT 910m, WORK PAST
02.00			X	V							IN 5 MINUTES
03:00				X							03:00 CORRELATION PASS @ 1745m
:30				X							
.50				X							
04:00				X							
			X								04:15 FIRED SHORT NO.25, PULL OUT OF HOLE
:30			X								
05:00			X								
03.00			X								
:30			X								05:30 RADIO SILENCE CONFIRMED
			X								06:00 TOOL AT SURFACE – RIG DOWN
06:00	X										RUN 5 SWC.
	X										06:30 FINISH RIGGING DOWN BAKER
:30											ATLAS WIRELINE.
07:00											
07.00											
:30											
08:00											
:30											
09:00											
07.00											
:30											
10:00											
.20											
:30											
11:00											
22.00											
:30											
											_
					то	ΓALS					WSG (SIGN) F.Fernandes / J.Pitman ENGINEER(SIGN) M.Reyes / S.Mitchell
TOTAL 5.25	1.0	1.0	1.5	0.25		1.0			0.5		TOOLS RUN 4: RCOR-GR
J.25	1.0	1.0	1.5	0.23	<u> </u>	1.0	1	I.	0.5	1	· · · · · · · · · · · · · · · · · · ·
5.75	1.5		3.0	1.25							TOOLS RUN 5: SWC-GR
											TOOLS RUN:
				1					1	1	10020 10111

**SECTION 3.4: RCI PRESSURE SURVEY RESULTS** 

# Santos

## **RCI PRESSURE SURVEY**

 WELL: Martha 1
 RT:
 21.5 metres
 Gauge Type :
 CQG
 Page : 1 OF 3

 WITNESS: M. Lahiff
 Time since last circ : 6:30 hrs, 31-10-04
 Probe/Packer Type :
 Standard
 Date : 31/10/2004

TEST NO	FORMATION	DEPTH	DEPTH	FILE		TEST RE	SULTS			INTERPRETATION		COMMENTS
		RT	SUBSEA	NO	HYDRO	FORM	HYDRO	TEMP	D/D	BU	Super-charged	
		MD			BEFORE	PRESS	AFTER	l	MOB	Description	yes/no	
		m	m		PSIA	PSIA	PSIA	deg Far	MD/CP			Correlation Run
1	Paaratte Fm.	1258.7	1237.2	3	2272.70	1803.60	2272.70	58.4	38.7	Good		Correlation Kun
1	Paaratte Fm.	1258.7	1237.2	3	2272.70	1804.10	2272.70	58.4	45.7	Good		Repeat
2	Paaratte Fm.	1260.6	1237.2	4	2276.30	1804.50	2276.50	59.0	18.7	Good		repeat
2	Paaratte Fm.	1260.6	1239.1	4	2276.30	1804.50	2276.50	59.0	22.9	Good		Repeat
3	Paaratte Fm.	1276.0	1254.5	5	2304.40	1832.40	2304.40	59.5	119.5	Good		repeat
3	Paaratte Fm.	1276.0	1254.5	5	2304.40	1832.60	2304.40	59.5	283.8	Good		Repeat
4	Paaratte Fm.	1276.8	1255.3	6	2305.70	.002.00	2306.00	60.1	57.60	Slow		Did not stabilise
4	Paaratte Fm.	1276.8	1255.3	6	2305.70	1833.10	2306.00	60.1	37.00	Good		Repeat
4	Paaratte Fm.	1276.8	1255.3	6	2305.70	1833.10	2306.00	60.1	37.00	Good		Repeat.
5	Paaratte Fm.	1281.3	1259.8	7	2314.10		2314.20	61.1	165.40	Slow		Not stable
5	Paaratte Fm.	1281.3	1259.8	7	2314.10	1833.14	2314.30	61.1	286.60	Good		Repeat
5	Paaratte Fm.	1281.3	1259.8	7	2314.10	1833.23	2314.30	61.1	286.60	Good		Repeat
6	Paaratte Fm.	1284.5	1263.0	8	2320.10		2320.50	61.7	92.40	Slow		Not stable
6	Paaratte Fm.	1284.5	1263.0	8	2320.10	1835.90	2320.50	61.7	163.70	Good		Repeat
6	Paaratte Fm.	1284.5	1263.0	8	2320.10	1836.00	2320.50	61.7	167.00	Good		Repeat
7	Paaratte Fm.	1289.4	1267.9	9	2328.90	1843.29	2329.20	62.1	35.90	Good		
7	Paaratte Fm.	1289.4	1267.9	9	2328.90	1843.40	2329.20	62.1	32.50	Good		Repeat
8	Paaratte Fm.	1300.5	1279.0	10	2349.30		2349.50	62.2	54.00	Slow		Not stable
8	Paaratte Fm.	1300.5	1279.0	10	2349.30	1860.00	2349.50	62.2	48.00	Slow		stable
8	Paaratte Fm.	1300.5	1279.0	10	2349.30	1859.90	2349.50	62.2	53.10	Slow		stable
9	Thylacine Mbr	1366.2	1344.7	11	2466.70	1997.35	2467.00	62.3	5.40	V. Slow	Possibly sc	stable.
10	Thylacine Mbr	1367.6	1346.1	12	2469.50	1993.20	2469.50	62.8	11.70	Good		stable
10	Thylacine Mbr	1367.6	1346.1	12	2469.50	1993.00	2469.50	62.8	10.70	Good		Repeat
11	Thylacine Mbr	1383.7	1362.2	13						n/a		failure
12	Thylacine Mbr	1383.7	1362.2	14	2498.40		2498.70	64.2		tight		tight
13	Thylacine Mbr	1385.6	1364.1	15	2501.80	2049.90	2502.00	64.2	3.80	V. Slow		stable
14	Thylacine Mbr	1386.8	1365.3	16								Lost seat.
15	Thylacine Mbr	1386.8	1365.3	17								Tool plug
16	Thylacine Mbr	1383.0	1361.5	18	0407.40		0407.00					Tool plug Tight
16	Thylacine Mbr	1383.0	1361.5	18 19	2497.40	2045 10	2497.60	GE E	4.60	Closs		Stable
17 17	Thylacine Mbr Thylacine Mbr	1386.8 1386.8	1365.3 1365.3	19	2503.60 2503.60	2045.10 2045.10	2504.10 2504.10	65.5 65.5	4.60 4.60	Slow Slow		repeat
17	mylacine wibi	1300.0	1305.3	20	2503.60	2045.10	2504.10	00.0	4.00	SIOW		Correlation Run
18	Waarre	1484.5	1463.0	21	2679.30	2203.15	2677.70	66.4	3.00	Good		Stable
18	Waarre	1484.5	1463.0	21	2679.30	2203.13	2677.70	66.4	3.90	Good		Repeat
19	Waarre	1487.5	1466.0	22	2683.20		2683.60	66.5	44.20	Slow		Not stable
19	Waarre	1487.5	1466.0	22	2683.20	2204.30	2683.60	66.5	103.50	Good		Repeat.Stable
20	Waarre	1491.8	1470.3	23	2691.00		2691.00	66.6	117.50	Good		Not stable
20	Waarre	1491.8	1470.3	23	2691.00	2204.70	2691.20	66.6	117.50	Good		Repeat.
21	Waarre	1495.5	1474.0	24	2697.60		2697.60	66.7	82.70	Good	Possibly sc	Not stable
21	Waarre	1495.5	1474.0	24	2697.60	2205.20	2697.60	66.7	182.40	Good	.,	Repeat. Stable
22	Waarre	1496.8	1475.3	25	2699.90		2699.80	67.5	7.50			Not stable

# **Santos**

## **RCI PRESSURE SURVEY**

 WELL: Martha 1
 RT:
 21.5 metres
 Gauge Type :
 CQG
 Page : 2 OF 3

 WITNESS: M. Lahiff
 Time since last circ : 6:30 hrs, 31-10-04
 Probe/Packer Type :
 Standard
 Date : 31/10/2004

	FORMATION DEPTH		DEPTH	FILE		TEST RE	SULTS			INTER	PRETATION	COMMENTS
		RT	SUBSEA	NO	HYDRO	FORM	HYDRO	TEMP	D/D	BU	Super-charged	
		MD			BEFORE	PRESS	AFTER		МОВ	Description	yes/no	
		m	m		PSIA	PSIA	PSIA	deg Far	MD/CP	-	-	
22	Waarre	1496.8	1475.3	25	2699.90	2205.37	2699.80	67.5	7.00			Repeat.
23	Waarre	1507.5	1486.0	26	2719.10		2719.20	67.5				Tight
24	Waarre	1517.6	1496.1	27	2737.10		2737.40	68.0				Tight
25	Waarre	1520.0	1498.5	28	2741.50		2741.50					Tight
				29								Correlation Run
26	Waarre	1579.8	1558.3	30	2848.10		2848.20			V.Slow		Tight. Unstable BU
27	Waarre	1585.5	1564.0	31	2858.50	2717.60	2858.30	69.5	4.30	V.Slow		Stable
28	Waarre	1602.3	1580.8	32								No Seal
28	Waarre	1602.2	1580.7	33								No Seal
29	Waarre	1608.0	1586.5	34								No Seal
30	Waarre	1613.0	1591.5	35								No Seal
31	Waarre	1613.0	1591.5	35								No Seal
				36								Correlation Run
32	Waarre	1488.6	1467.1	37								
32	Waarre	1488.6	1467.1	38		2204.40			54.90			Repeat & Sample (4 x 850cc)
				39								Correlation Run
33	Paaratte Fm.	1258.6	1237.1	40								Possible lost seal
33	Paaratte Fm.	1258.6	1237.1	41								Repeat. Possible lost seal
34	Paaratte Fm.	1258.7	1237.2	42								Possible lost seal
35	Paaratte Fm.	1258.7	1237.2	43								Unstable
35	Paaratte Fm.	1258.7	1237.2	44		1804.00			52.90			Repeat. Stable. Sample (2 x 850cc)

35 PRE-TESTS: 17 Normal, 9 Lost Seals, 2 Tool Plugged, 6 Curtailed/Tight, 1 Failure

SAMPLES: 1488.6mRT; 4 X 850cc bottles

1258.7m; 2 X 850 cc bottle

Expected Water Gradient: 0.423 psi/ft
Mud Weight: 10.5ppg

#### SAMPLE CHAMBER 189733 (850cc)

**DEPTH: 1488.6m** WAARRE FM.

AMBIENT TEMPERATURE: 17degC SURFACE PRESSURE 4500 PSI

Sample chamber bled down 1.5 cuft to purge lines.

After taking samples a total of 2.7 cuft had been bled down

FINAL CHAMBER PRESSURE: 3000 PSI

The sample chamber was not fully bled down and was transported

to Petrolab for further analysis.

	PPM	%
C1	742661	93.651
C2	32869	4.145
C3	11409	1.439
IC4	2444	0.308
NC4	2368	0.299
IC5	765	0.096
NC5	489	0.062

94/4/1.4/0.6/TR

#### **SAMPLE CHAMBER 369205 (850cc)**

**DEPTH: 1258.7m** PAARATTE FM

AMBIENT TEMPERATURE: 17degC SURFACE PRESSURE 4500 PSI

Sample chamber bled down 1.6 cuft to purge lines.

After taking samples a total of 2.1 cuft had been bled down

FINAL CHAMBER PRESSURE: 3000 PSI

The sample chamber was not fully bled down and was transported

to Petrolab for further analysis.

	PPM	%
C1	941628	96.058
C2	29271	2.986
C3	5742	0.586
IC4	1894	0.193
NC4	948	0.097
IC5	590	0.060
NC5	198	0.020

96/3/1/TR/TR

## **SECTION 3.4.1: RCI SAMPLE ANALYSES**



# SECTION 3.5: LWD END OF WELL REPORT (Sperry Sun)

# End of Well Report for Santos Ltd

Rig: Ocean Patriot

Well: Martha-1

Field: Offshore Otway Basin

Country: Australia

Job No: AU-FE-0003287671

Date: 20-Oct-04

API No:





## **Table of Contents**

- 1. General Information
- 2. Operational Overview
- 3. Summary of MWD Runs
- 4. Bitrun Summary
- 5. Directional Survey Data



## **General Information**

Company: Santos Ltd

Rig: Ocean Patriot

Well: Martha-1

Field: Offshore Otway Basin

Country: Australia

API Number:

Sperry-Sun Job Number: AU-FE-0003287671

Job start date: 20-Oct-04
Job end date: 29-Oct-04

North reference: Grid

Declination: 10.884 deg

Dip angle: -69.861 deg

Total magnetic field: 60851.918 nT

Date of magnetic data: 23-Oct-04

Wellhead coordinates N: 38 deg. 37 min 24.330 sec South Wellhead coordinates E: 142 deg. 42 min 5.020 sec East

Vertical section direction: Closure deg

MWD Engineers: T.Oborne D.Luoni

Company Representatives: N.Walters S.Hodgetts

Company Geologist: J.Pitman F.Fernandes

Lease Name: Vic P44
Unit Number: 197

State: Victoria

County:



## **Operational Overview**

Sperry-Sun Drilling Services were contracted to provide formation evaluation and directional surveying services for the drilling of Martha-1 well by Santos Ltd on the Ocean Patriot MODU.

12 1/4" (311mm) Hole Section

Sperry-Sun's formation evaluation suite of tools were used consisting of a Dual Gamma Ray (DGR) sensor, Pressure While Drilling (PWD) and Four Phase Electromagnetic Resistivity (EWR-P4) sensors along with a Positon Monitor (PM) for directional control. The 12 1/4" hole section was drilled in two runs with the first from 628.0 mMDRT to 1262.0 mMDRT at which point a bit trip was made. Drilling resumed with a PDC bit to TD at 1800.0 mMDRT.

# Sperry-Sun

## Summary of MMD runs

Run No.	Bit No.	Hole Size (in)	Service	Start Depth (m)	End Drill Depth Dist (m)	/Wipe tance (m)		Run End Date Time	BRT (	Oper. Ci Hrs. Hi	rc. rs.	Max. Temp. (degC)	Serv. Ti Int. M	ipfor Fa	ailure Type
0300	3	12.25	DIR-FE	628.00	1262.00	634.00	25-Oct-04 18:20	28-Oct-04 09:55	63.60	65.63	46.67	51.00	No	No	
0400	4	12.25	DIR-FE	1262.00	1800.00	538.00	28-Oct-04 12:33	30-Oct-04 11:13	46.67	46.67	30.21	67.00	No	No	
				TOTALS	<b>⇒</b>	1172.00			110.26	112.30	76.88		0	0	

 Job No.:
 AU-FE-0003287671
 Well No.:
 Martha-1
 End of Well Report
 Page 3



# **Bitrun Summary**

MWD Run :	0000		Drilling Data			Mud Data				
	MWD Run: 0300		Start Depth: 628.00 m		Mud Type: KCI/PHPA					
Rig Bit No:	3	End Depth:	1262.00	m	Weight / Visc :	1.08	sg /	42.00	spqt	
Hole Size :	12.25 in	Footage :	634.00	m	Chlorides:	38000	ppm			
Run Start :	25-Oct-04 18:20	Avg. Flow Rate:	900.00	gpm	PV / YP :	11.00	cp /	9.58	lhf2	
Run End:	28-Oct-04 09:55	Avg. RPM:	108.00	rpm	Solids/Sand:	1	% /	0.75	%	
BRT Hrs:	63.60	Avg. WOB:	15.00	klb	%Oil / O:W:	N/A	% /	N/A:100		
Circ. Hrs:	46.67	Avg. ROP:	18.60	m/hr	pH/Fluid Loss:	8.00	pH /	1.00	mptm	
Oper. Hrs :	65.63	Avg. SPP:	2280.00	psig	Max. Temp. :	51.00	degC			
MWD	Schematics		BHA Schematics							
(0)		(40)		Length		O.D.	I.D.			
(5)		(12)					(m)	(in)	(in)	
(4)	6. 8" P4M 1200 System SN: 0.00 m From Bit	(8)	12. H\	NDP			112.33	5.000	3.000	
(3)	5. PM	(7)	11. Cr	oss Ove	er Sub		1.13	9.000	3.125	
	SN: 134019 12.30 m From Bit	(7)	10. Dr	ill Colla	r		9.22	8.000	3.000	
- 11	4. HCIM	1 74	∩9 Dr	09. Drilling Jars			10.39	8.000	3.000	
- 11	SN: 62583	(6)		· ·			27.09	8.000	3.000	
(2)	3. PWD	(5)	07. Dr	illing Ja	rs		9.95	8.000	3.000	
***	SN: 104432	(5)	06. Dr	ill Colla	r		90.55	8.000	3.063	
110	8.30 m From Bit	(*)	05. 3-	Point St	ring Reamer		2.01	12.250	3.000	
	2. EWR-P4			ill collar	•		9.11			
(1)	SN: 142009 5.77 m From Bit	(3)						8.000	2.813	
- 11	1. DGR		03. M	WD			14.21	8.000	1.920	
- 11	SN: 151078	(2)	02. 6-	Point Ne	ear Bit Reamer		2.16	12.250	2.800	
	3.46 m From Bit	(1)	01. Re	eed TD4	3HKPROH		0.35	12.250	2.800	
Comments					MWD Performance					
	hole section from 628.0 m was recovered at surface.	MDRT to 1262.0 mMl	DRT. All		Tool OD / Type MWD Real-time MWD Recorded Min. Inc. : Max. Inc. : Final Az. : Max Op. Press.	%: 78.3 %: 100 0.36 3.46 212	33 % 0.00 % 6 de 6 de 2.50 de	g / 672.9 g / 1247.		



# **Bitrun Summary**

Run Time Data		Drilling Data			Mud Data				
MWD Run: 0400		Start Depth: 1262.00 m		m	Mud Type : KCI/Pł		/PHPA		
Rig Bit No:	4	End Depth :	1800.00	m	Weight / Visc :	1.23	sg /	44.00	spqt
Hole Size :	12.25 in	Footage :	538.00	m	Chlorides:	35000	ppm		
Run Start :	28-Oct-04 12:33	Avg. Flow Rate:	850.00	gpm	PV / YP :	16.00	cp /	16.00	lhf2
Run End :	30-Oct-04 11:13	Avg. RPM:	128.00	rpm	Solids/Sand:	10	% /	1.5	%
BRT Hrs :	46.67	Avg. WOB:	9.10	klb	%Oil / O:W:	N/A	% /	N/A:98.5	
Circ. Hrs :	30.21	Avg. ROP:	25.99	m/hr	pH/Fluid Loss:	8.00	pH /	9.20	mptm
Oper. Hrs:	46.67	Avg. SPP:	3280.00	psig	Max. Temp. :	67.00	degC		
MWD S	Schematics	BHA Schematic							
(0)		(10)	Length		ength	O.D.	I.D.		
(6)		(12) (11) (10)				(n	n)	(in)	(in)
(5) 6.	8" P4M 1200 System SN:	(9)							
	0.00 m From Bit	(8)	12. H	- - -		1	12.33	5.000	3.000
	5. PM				ou Cuib	•			
(3)	SN: 134019	(7)		Cross Ove			1.13	9.000	3.125
	12.17 m From Bit	III	10. D	rill Collar			9.22	8.000	3.000
4.	HCIM	(6)	09. D	rilling Ja	illing Jars			8.000	3.000
	SN: 62583		08. D	Orill Collar			27.09	8.000	3.000
(2)	PWD		07. D	rilling Ja	rs		9.95	8.000	3.000
J.	SN: 156659	(5)	06. D	orill Colla	r		90.55	8.000	3.063
	8.16 m From Bit	(4)							
2.	EWR-P4				ring Reamer		2.01	12.250	3.000
(1)	SN: 130937	(3)	04. D	Orill collar			9.11	8.000	2.813
I III .	5.73 m From Bit		03. N	<b>MWD</b>			14.08	8.000	1.920
1.	DGR SN: 176691	(2)	02. 6	-Point Ne	ear Bit Reamer		2.16	12.250	2.800
	3.42 m From Bit	(1)	01. H	lycalog D	SX104HGW		0.35	12.250	2.800
Comments					MWD Performance				
Drilled from 1262.0 mMDRT to TD at 1800.00 mMDRT. All data was					Tool OD / Type :	8.00	in	/ MPT	
recovered at surface.					MWD Real-time®	%: 86.67	%		
					MWD Recorded	%: 100.0	0 %		
					Min. Inc. :	2.20	de	g / 1620.	36 m
					Max. Inc.: 3.78 de		g / 1276.	08 m	
						214.7	6 de	g	
								-	



# **Directional Survey Data**

Measured Depth	Inclination	Direction	Vertical Depth	Latitude	Departure	Vertical Section	Dogleg
(metres)	(degrees)	(degrees)	(metres)	(metres)	(metres)	(metres)	(deg/30m)
672.92	0.36	121.62	672.92	0.98 S	1.60 E	-0.98	TIE-IN
731.00	0.56	135.36	730.99	1.28 S	1.95 E	0.05	0.12
759.74	0.35	171.41	759.73	1.47 S	2.07 E	0.14	0.36
846.09	0.12	248.92	846.08	1.76 S	2.02 E	0.42	0.12
872.68	0.05	166.11	872.67	1.78 S	2.00 E	0.45	0.14
960.62	1.59	200.68	960.60	2.96 S	1.58 E	1.67	0.53
989.35	1.27	184.55	989.32	3.65 S	1.41 E	2.34	0.53
1017.99	2.00	214.08	1017.95	4.38 S	1.10 E	3.12	1.14
1046.87	2.46	218.63	1046.81	5.28 S	0.44 E	4.24	0.51
1075.51	2.33	211.04	1075.42	6.26 S	0.25 W	5.43	0.36
1104.15	2.36	211.11	1104.04	7.27 S	0.85 W	6.60	0.03
1132.60	2.43	210.35	1132.47	8.29 S	1.46 W	7.79	0.08
1161.23	2.65	210.29	1161.07	9.38 S	2.10 W	9.06	0.24
1189.87	2.78	210.70	1189.67	10.55 S	2.79 W	10.42	0.13
1218.57	3.07	212.16	1218.34	11.80 S	3.55 W	11.88	0.32
1247.39	3.46	212.50	1247.11	13.19 S	4.43 W	13.52	0.41
1276.08	3.78	212.66	1275.74	14.71 S	5.41 W	15.33	0.33
1304.67	3.60	212.65	1304.27	16.26 S	6.40 W	17.17	0.18
1333.52	3.43	215.56	1333.07	17.73 S	7.39 W	18.94	0.26
1362.11	3.23	216.60	1361.61	19.07 S	8.37 W	20.60	0.22
1390.88	3.10	219.06	1390.34	20.33 S	9.34 W	22.18	0.20
1419.53	3.12	219.42	1418.95	21.53 S	10.33 W	23.73	0.03
1448.27	3.07	219.27	1447.64	22.73 S	11.31 W	25.26	0.06
1476.85	2.88	220.27	1476.18	23.87 S	12.26 W	26.73	0.20
1505.48	2.74	223.28	1504.78	24.92 S	13.19 W	28.12	0.21
1591.58	2.35	219.65	1590.80	27.78 S	15.73 W	31.89	0.15
1620.36	2.20	220.22	1619.55	28.66 S	16.47 W	33.02	0.16
1649.36	2.43	227.31	1648.53	29.50 S	17.28 W	34.17	0.38
1678.05	2.32	225.45	1677.19	30.32 S	18.14 W	35.32	0.14
1706.72	2.40	224.26	1705.84	31.15 S	18.97 W	36.47	0.10
1735.43	2.43	221.48	1734.52	32.04 S	19.79 W	37.66	0.13
1763.96	2.56	220.08	1763.03	32.98 S	20.60 W	38.88	0.15
1785.46	2.69	214.76	1784.50	33.76 S	21.20 W	39.86	0.38
1800.00	2.69	214.76	1799.03	34.32 S	21.59 W	40.55	0.00



## **Directional Survey Data**

CALCULATION BASED ON Minimum Curvature METHOD

SURVEY COORDINATES RELATIVE TO WELL SYSTEM REFERENCE POINT TVD VALUES GIVEN RELATIVE TO DRILLING MEASUREMENT POINT

VERTICAL SECTION RELATIVE TO WELL HEAD

VERTICAL SECTION IS COMPUTED ALONG CLOSURE OF 212.17 DEGREES (GRID)

A TOTAL CORRECTION OF 11.95 DEG FROM MAGNETIC NORTH TO GRID NORTH HAS BEEN APPLIED

HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD.

HORIZONTAL DISPLACEMENT(CLOSURE) AT 1800.00 METRES

IS 40.55 METRES ALONG 212.17 DEGREES (GRID)

Final survey is projected to TD RT-MSL = 21.5m

**SECTION 3.6: BOREHOLE SEISMIC ANALYSIS** 



### BOREHOLE SEISMIC ANALYSIS

**FOR** 

### **SANTOS & PARTNERS**

#### PREPARED BY

# BAKER ATLAS DOWNHOLE SEISMIC SERVICES

WELL: MARTHA-1

LOCATION : OTWAY BASIN, AUSTRALIA

ENGINEER : B.READ

DATE : MON 1ST NOVEMBER 2004



### FIELD ENGINEER'S LOG

SURVEY INFORM	ATION							
CLIENT	SANTOS & PART	NERS						
CLIENT REP	J.PITMAN F.FER	J.PITMAN F.FERNANDES						
WELL NAME	MARTHA-1							
WELL LOCATION	OTWAY BASIN, A	USTRALIA						
FIELD NAME	EXPLORATION							
RIG NAME	OCEAN PATRIOT	-						
ENGINEER	B.READ							
TYPE OF SERVICE	ZVSP (MLR)							
WIRELINE CO. ANI	D DISTRICT BAKER	ATLAS, DARWIN						
WIRELINE OPERAT	OR UNIT 8	677	_					
RUN NUMBER	3		TOTAL TRIPS TH	IS RUN 1				
WEATHER / SEAS	CLEAR, CALM		SURVEY DATE	MON 19	MON 1ST NOVEMBER 2004			
LINEID <u>MARTHA-</u>	1 FILE NAME	RAW	SERVICE ORDER	NO. <u>516561</u>				
WELL INFORMAT	ION.							
		EC 27! 24 22" C 442 DE	C 40! 05 00" F					
WELL HEAD COOF NORTHING	5723638.3N	EG 37' 24.33" S 142 DE	ELEV D.F.	22.5 M				
EASTING	648109.3E		OPEN HOLE DIAM	-				
RIG HEADING	44 Deg		MAX. TEMPERATU					
GROUND ELEVATION			FLUID TYPE	KCL/GLYC				
WATER DEPTH	54.66 M		CASING : (DIAMETER / DEPTH)					
WELL T.D.	1785 M		1 30" 0 - 121 M					
REFERENCE DATU		 L	2 13 3/8 - 620.8	 M				
DEVIATED WELL	NO		3 OPEN HOLE					
MAXIMUM DEVIATION	ON N/A		4 OPEN HOLE					
DOWNHOLE REC	EIVER							
RECEIVER TYPE	AWS 1300 GM	ARM LENGTH	LONG 8-20"	PREAMP GAIN	51 dB			
SENSOR TYPE	GEOPHONE	SENSOR FREQ.	10 HZ	GIMBALLED	YES			
GIMBAL TYPE	1025	RCVR SPACING	15 M	ZERO POINT	DRILL FLOOR			
DEPTH ERROR	0.8 M	ASSET NO RCV-1	166202	ASSET NO RCV-	2 166476			
ASSET NO. RCV-3	186706	ASSET NO RCV-4	189237	ASSET NO RCV-	5 190172			
LOGGING TOOLS	USED							
1309XA/MLR STRIN								



### FIELD ENGINEER'S LOG

#### **RECORDING SYSTEM**

RECORDING SYSTEM RECORDING UNIT ASSET NUMBER	0700	N	<b>.</b>					
		9700LA 302869 DSS 16CH A/D						
DOWNHOLE A/D TYPE AND ASSET NU								
				OTAL CHANNELS 1	6			
SURFACE A/D TOTAL CHANNELS <u>8</u> FLASK TYPE HIGH TEMP			DOWNHOLE A/D TO	TAL CHANNELS I	0			
SAMPLE RATE 1 MILLISECOND			RECORD LENGTH	4 SECONDS	_			
SWEEP LENGTH N/A				·				
TIME OF START OF RECORD TO TIME				TW/PA				
				250 Hz				
· · · · · · · · · · · · · · · · · · ·			TAPE FORMAT	TAR & SEGY				
CHANNELS ASSIGNMENT AND GAIN:			=					
CH 1V	CH 2		Н	CH 3	Т			
CH 4 V				CH 6	Ţ			
CH 7 V				CH 9	Т			
CH 10 V				CH 12	Т			
CH 13 V				CH 15	Т			
CH 16 N/A	· · · · · · · · · · · · · · · · · · ·		N/A	CH 18				
CH 19 N/A	CH 20			CH 21	N/A			
CH 22 N/A			N/A	CH 24				
CH 25 N/A	CH 26		N/A	CH 26	N/A			
CH 28 N/A			N/A	CH 30	N/A			
CH 31 N/A	CH 32_		N/A					
WIRELINE & WTS PANEL								
WIRELINE ASSET NO 9520LA 10103244			WIRELINE TYPE	7H47RTZHS				
WIRELINE LENGTH 7744 M			WTS TYPE/ASSET	NO. <u>5710XD 172466</u>				
TRANSMIT GAIN 42	MODE 2	GAIN 1	10	MODE 2 GAIN 2	50			
MODE 2 EQN. 1 66	MODE 2	EQN. 2	57	MODE 2 EQN. 3	OUT			
MODE 5 GAIN 1 9		EQN. 1		MODE 5 EQN. 1	60			
INTERCONNECTS								
SPACING DISTANCE 15 M	ASSET N	IO. INC-1	152532	ASSET NO. INC-2	186728			
ASSET NO. INC-3 190271	ASSET N	IO. INC-4	190274	ASSET NO. INC-5				
SPECIAL FEATURES								
					_			



# PROCESSING INSTRUCTION

SEISMIC DATUM : <u>MEAN SEA LEVEL</u>	CORRECTION VELOCITY	1500 M/SEC
LOGS AVAILABLE ON SITE : ACCOUSTIC	CALIPER	
SURVEY INSTRUCTIONS RECEIVED		
( N ) PRIORITY ( N ) CALIBRATION ( N ) SYNTHETIC ( Y ) VSP ( Y ) VELOCITY ( N ) INVERSION ( N ) OFFSET VSP ( N ) WALKWAY ( N ) PROXIMITY ( N ) NORMAL INCIDENCE ( N ) 3 COMPONENTS ( N ) MAVIGATION ( N ) GYRO		
GUN TO HYDROPHONE CORRECTION 1.3 MSECS		
HYDROPHONE DELAY = 0.0 MSECS		
ZVSP AT 15 M INTERVALS FROM TD (1785M) TO LOSS O	F SEABED (75M)	
GR CORRELATION WAS + 0.8 M AT A DEPTH OF 1530 M	· OLINDED (FOIN)	
A TOTAL OF 115 LEVELS PLUS THREE CHECKSHOTS WE	FRE TAKEN	
LEVEL 12 HAD THE WRONG DEPTHS SHOULD HAVE BEE		
LEVEL 28 HAD THE WRONG DEPTHS SHOULD HAVE BEE		
FROM 915 M TO 825 M (NOT INLCLUDING 840M) HOLE W	ASHED OUT PASSED ARM LENGTH OF	20 INCHES



### AIRGUN SURVEY

#### **Baker Atlas**

0		:c	Г	N	n	١.	1
U	ГΓ	.0		W	u	٠.	

#### DISTANCE FROM WELL 46.3 M AZIMUTH FROM WELL 328 Deg ELEVATION FROM MSL -5 M **GUN ARRAY TYPE SLEEVE GUN** GCU-4 6001LA 123483 **GUN CONTROLLER** WATER DEPTH 54.66 M **GUN DEPTH** 5 M NUMBER OF GUNS 2 1 M **GUN SEPERATION GUN VOLUMES** 2 X 150 CU IN GUN UNIT NO. 127901, 127895

**OPEN SEA** 

1800 PSI

15 Hz

# **COMPRESSORS**

TYPE & S/N:	
FIDING PRECCURE	

PIT DIMENSION (L,W,D)

#### REFERENCE PHONE

TYPE
DISTANCE TO SOURCE
DIRECTION TO SOURCE
DEPTH
FREQ.

### MP8-D HYDROPHONE

**RUCKER SYSTEM** 

WILD THIDINGLITIONE
2 M
DIRECTLY BELOW
7 M

#### OFFSET NO. 2

DISTANCE FROM WELL	N/A
AZIMUTH FROM WELL	N/A
ELEVATION FROM MSL	N/A
GUN ARRAY TYPE	N/A
GUN CONTROLLER	N/A
WATER DEPTH	N/A
GUN DEPTH	N/A
NUMBER OF GUNS	N/A
GUN SEPERATION	N/A
GUN VOLUMES	N/A
GUN UNIT NO.	N/A
PIT DIMENSION (L,W,D)	N/A

#### **COMPRESSORS**

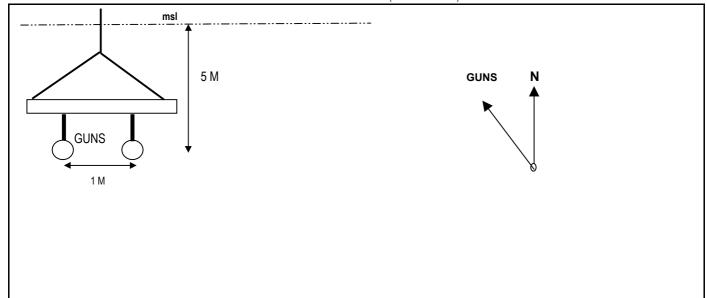
TYPE & S/N:	N/A
FIRING PRESSURE	N/A

#### REFERENCE PHONE

TYPE	N/A
DISTANCE TO SOURCE	N/A
DIRECTION TO SOURCE	N/A
DEPTH	N/A
FREQ.	N/A

#### SURVEY CONFIGURATION

#### SHOW ALL DISTANC INCLUDE SOURCE AND RECEIVER (NOT TO SCALE)







#### **Baker Atlas**

: MARTHA-1 CLIENT : SANTOS & PARTNERS
SOURCE: 2 x 150 cu in Sleeve Guns SERVICE : ZVSP (MLR) WELL NAME

: MON 1ST NOV 2004 : B.READ DATE **ENGINEER** 

No	LEVEL	T001	FILE	STATION	TOOL	VERTICAL CHAN	TIME AT	CABLE	PRE-	DEMARKO
10						TIME PICK			AMP	REMARKS (COMMENTS, UH TIME,CHARGE TYPE, DEPTH, ETC)
20	10		1 - 10	1	5		Mon 12:29			
30   29							Mon 12:29	_		
Month   Mont	-				-		Mon 12:29			file 1Ch 5-16 are bad. Kill file 1
Second Color	-						·	_		file 1Ch 5-16 are bad. Kill file 1
The image is a content of the image is a c	-			-				_	0	file 1Ch 5-16 are bad. Kill file 1
The color of the	-				-			0	0	file 1Ch 5-16 are bad. Sig Ch Pick = 97.0 ms. kill file 1.GUN TIMING
1							Nov 01, 2004	0	0	kill file 11.
S							Nov 01, 2004	0	0	kill file 11.
9 975 11 - 14 2 2 1 4190 Nov 01, 2004 0 0 0 sig ch Pick = 100.0 ms. kill file 11. FIRST CHECKSHOT LEVEL.  11 1320 15 - 18 3 5 534.0 Mon 1339 0 0 0 sig ch Pick = 100.0 ms. kill file 11. FIRST CHECKSHOT LEVEL.  12 1305 15 - 18 3 4 531.0 Nov 01, 2004 0 0 0 silf file 15.  13 1290 15 - 18 3 3 525.0 Nov 1, 2004 0 0 0 silf file 15.  14 1275 15 - 18 3 1 3 62.0 Nov 1, 2004 0 0 0 silf file 15.  15 1260 15 - 18 3 1 362.0 Nov 1, 2004 0 0 0 silf file 15.  16 1620 19 - 21 4 5 638.0 Nov 1, 2004 0 0 0 silf file 15.  18 1590 19 - 21 4 4 634.0 Nov 1, 2004 0 0 0 silf file 15.  18 1590 19 - 21 4 2 624.0 Nov 1, 2004 0 0 0 silf file 15.  19 1575 19 - 21 4 2 624.0 Nov 1, 2004 0 0 0 silf file 15.  20 1560 19 - 21 4 1 618.0 Nov 1, 2004 0 0 0 Silf file 15.  21 1785 22 - 26 5 4 684.0 Nov 1, 2004 0 0 0 Silf file 15.  22 1770 22 - 26 5 4 684.0 Nov 1, 2004 0 0 0 Silf file 15.  23 1755 22 - 26 5 1 689.0 Nov 1, 2004 0 0 0 Silf file 15.  24 1740 22 - 26 5 2 655.0 Nov 1, 2004 0 0 0 Silf file 15.  25 1725 22 - 26 5 1 665.0 Nov 1, 2004 0 0 0 Silf file 15.  26 1710 27 - 31 6 5 665.0 Nov 1, 2004 0 0 0 Silf file 15.  27 1695 27 - 31 6 3 655.0 Nov 1, 2004 0 0 0 Silf file 15.  28 1680 27 - 31 6 1 640.0 Nov 1, 2004 0 0 0 Silf file 15.  29 1665 27 - 31 6 1 640.0 Nov 1, 2004 0 0 0 Silf ch Pick = 100.0 ms.  30 1605 32 - 39 7 5 642.0 Nov 1, 2004 Nov 1, 2004 0 0 0 Silf ch Pick = 100.0 ms.  30 1605 32 - 39 7 5 642.0 Nov 1, 2004 Nov 1, 2004 0 0 0 Silf ch Pick = 100.0 ms.  30 1605 32 - 39 7 1 6 638.0 Nov 1, 2004 Nov 1, 2004 0 0 0 Nov 1, 2004 Nov				-			Nov 01, 2004	0	0	kill file 11.
10					2		Nov 01, 2004	0	0	kill file 11.
11	10	960	11 - 14	2	1		Nov 01, 2004	0	0	Sig Ch Pick = 100.0 ms. kill file 11.FIRST CHECKSHOT LEVEL
12	11	1320	15 - 18	3	5	534.0	Nov 01, 2004	0	0	kill file 15.
13	12	1305	15 - 18	3	4	531.0	Nov 01, 2004	0	0	kill file 15.
14	13	1290	15 - 18	3	3	525.0	Nov 01, 2004	0	0	kill file 15.
15	14	1275	15 - 18	3	2	519.0	Nov 01, 2004	0	0	kill file 15. SECOND CHECKSHOT LEVEL
16	15	1260	15 - 18	3	1	362.0	Nov 01, 2004	0	0	Sig Ch Pick = 100.0 ms. kill file 15.
17	16	1620	19 - 21	4	5	638.0	Nov 01, 2004	0	0	GR CORRELATION +0.8M
19	17	1605	19 - 21	4	4	634.0		0	0	
19	18	1590	19 - 21	4	3	1980.0		0	0	
20	19	1575	19 - 21	4	2	624.0		0	0	
27	20	1560	19 - 21	4	1	618.0		0	0	Sig Ch Pick = 99.0 ms. THIRD CHECKSHOT LEVEL
22	21	1785	22 - 26	5	5	689.0		0	0	BOTTOM LEVEL TAGGED TD @ 1785 M
23	22	1770	22 - 26	5	4	684.0		0	0	
24 1740 22 - 26 5 2 675.0 Nov 01, 2004 0 0 0 Sig Ch Pick = 100.0 ms.  25 1725 22 - 26 5 1 670.0 Nov 01, 2004 0 0 0 Sig Ch Pick = 100.0 ms.  26 1710 27 - 31 6 5 665.0 Nov 01, 2004 0 0 0  27 1695 27 - 31 6 3 655.0 Nov 01, 2004 0 0 0  28 1680 27 - 31 6 3 655.0 Nov 01, 2004 Nov 01, 2004 0 0  29 1665 27 - 31 6 2 652.0 Nov 01, 2004 0 0 0  30 1650 27 - 31 6 1 646.0 Nov 01, 2004 0 0 0  31 1635 32 - 39 7 5 642.0 Nov 01, 2004 0 0 0 Sig Ch Pick = 100.0 ms.  31 1635 32 - 39 7 4 638.0 Nov 01, 2004 0 0 0 kill files 32 33 34.  32 1620 32 - 39 7 4 638.0 Nov 01, 2004 0 0 0 kill files 32 33 34.  33 1605 32 - 39 7 2 628.0 Nov 01, 2004 0 0 0 kill files 32 33 34.  35 1575 32 - 39 7 1 623.0 Nov 01, 2004 0 0 0 kill files 32 33 34.  36 1605 40 - 44 8 5 633.0 Nov 01, 2004 0 0 0 Sig Ch Pick = 100.0 ms. kill files 32 33 34.	23	1755	22 - 26	5	3	680.0		0	0	
25	24	1740	22 - 26	5	2	675.0		0	0	
26	25	1725	22 - 26	5	1	670.0		0	0	Sig Ch Pick = 100.0 ms.
27	26	1710	27 - 31	6	5	665.0		0	0	
28	27	1695	27 - 31	6	4	661.0		0	0	
1665   27 - 31   6   2   652.0   Nov 01, 2004   0   0   0	28	1680	27 - 31	6	3	655.0		0	0	
30	29	1665	27 - 31	6	2	652.0	Mon 14:21			
31	30	1650	27 - 31	6	1	646.0	Mon 14:21			Sig Ch Pick = 100.0 ms.
32	31	1635	32 - 39	7	5	642.0	Mon 14:42		0	
33	32	1620	32 - 39	7	4	638.0	Mon 14:42		_	
34	33	1605	32 - 39	7	3	632.0	Mon 14:42			
35	34	1590	32 - 39	7	2	628.0	Mon 14:42			
36 1605 40 - 44 8 5 633.0 Nov 01, 2004 0 0	35	1575	32 - 39	7	1	623.0	Mon 14:42			
07 4500 40 44 0 44 0 0 Mon 14:50	36	1605	40 - 44	8	5	633.0	Mon 14:50			
- NOV DE 2004 LE	37	1590	40 - 44	8	4	627.0		0	0	

### TOOL STATIONS



#### **Baker Atlas**

: MARTHA-1 CLIENT : SANTOS & PARTNERS
SOURCE: 2 x 150 cu in Sleeve Guns SERVICE : ZVSP (MLR) WELL NAME

LEVEL	TOOL	FILE	STATION	TOOL	VERTICAL CHAN	TIME AT	CABLE	PRE-	REMARKS
NO	STATION	NUMBER	NO.	NO	TIME PICK	COMPLETION	SLACK	AMP	(COMMENTS, UH TIME, CHARGE TYPE, DEPTH, ETC)
38	1575	40 - 44	8	3	(MSEC) 623.0	OF LEVEL Mon 14:50 Nov 01, 2004	0	GAIN 0	
39	1560	40 - 44	8	2	618.0	Mon 14:50 Nov 01, 2004	0	0	
40	1545	40 - 44	8	1	613.0	Mon 14:50 Nov 01, 2004	0	0	Cia Ch Diale - 400 0 mg
41	1530	45 - 49	9	5	609.0	Mon 14:58	0	0	Sig Ch Pick = 100.0 ms.
42	1515	45 - 49	9	4	604.0	Nov 01, 2004 Mon 14:58	0	0	
43	1500	45 - 49	9	3	599.0	Nov 01, 2004 Mon 14:58	0	0	
44	1485	45 - 49	9	2	594.0	Nov 01, 2004 Mon 14:58	0	0	
45	1470	45 - 49	9	1	589.0	Nov 01, 2004 Mon 14:58 Nov 01, 2004	0	0	Cir. Ch. Dial 400.0 mg
46	1455	50 - 55	10	5	583.0	Mon 15:04 Nov 01, 2004	0	0	Sig Ch Pick = 100.0 ms. kill file 50.
47	1440	50 - 55	10	4	577.0	Mon 15:04 Nov 01, 2004	0	0	
48	1425	50 - 55	10	3	114.0	Mon 15:04 Nov 01, 2004	0	0	kill file 50. kill file 50.BAD LEVEL REPEAT
49	1410	50 - 55	10	2	566.0	Mon 15:04 Nov 01, 2004	0		kill file 50. BAD LEVEL REPEAT
50	1395	50 - 55	10	1	560.0	Mon 15:04 Nov 01, 2004	0	0	Sig Ch Pick = 100.0 ms. kill file 50.BAD LEVEL REPEAT
51	1425	56 - 61	11	5	571.0	Mon 15:10 Nov 01, 2004	0	0	org off text = 100.0 file. Kill file 30.DAD EEVEE NET EAT
52	1410	56 - 61	11	4	568.0	Mon 15:10 Nov 01, 2004	0	0	
53	1395	56 - 61	11	3	1961.0	Mon 15:10 Nov 01, 2004	0	0	BAD LEVEL REPEAT
54	1380	56 - 61	11	2	556.0	Mon 15:10 Nov 01, 2004	0	0	DAD EEVEL KET EAT
55	1365	56 - 61	11	1	1032.0	Mon 15:10 Nov 01, 2004	0	0	Sig Ch Pick = 100.0 ms.
56	1350	62 - 69	12	5	549.0	Mon 15:21 Nov 01, 2004	0	0	kill files 62 64 65.WRONG DEPTH SHOULD BE 1365
57	1335	62 - 69	12	4	545.0	Mon 15:21 Nov 01, 0	0	0	kill files 62 64 65.WRONG DEPTH SHOULD BE 1350
58	1320	62 - 69	12	3	1833.0	Mon 15:21 Nov 01, 2004	0	0	kill files 62 64 65.BAD LEVEL REPEAT. WRONG DEPTH SHOULD BE 1335
59	1305	62 - 69	12	2	536.0	Mon 15:21 Nov 01, 0	0	0	kill files 62 64 65.WRONG DEPTH SHOULD BE 1320
60	1290	62 - 69	12	1	529.0	Mon 15:21 Nov 01, 2004	0	0	Sig Ch Pick = 100.0 ms. kill files 62 64 65.WRONG DEPTH SHOULD BE 1305
61	1335	70 - 75	13	5	540.0	Mon 15:27 Nov 01, 2004	0	0	kill file 71.
62	1320	70 - 75	13	4	534.0	Mon 15:27 Nov 01, 2004	0	0	kill file 71.
63	1305	70 - 75	13	3	529.0	Mon 15:27 Nov 01, 2004	0	0	kill file 71.
64	1290	70 - 75	13	2	524.0	Mon 15:27 Nov 01, 2004	0	0	kill file 71.
65	1275	70 - 75	13	1	519.0	Mon 15:27 Nov 01, 2004	0	0	Sig Ch Pick = 100.0 ms. kill file 71.
66	1260	76 - 80	14	5	512.0	Mon 15:33 Nov 01, 2004	0	0	
67	1245	76 - 80	14	4	506.0	Mon 15:33 Nov 01, 2004	0	0	
68	1230	76 - 80	14	3	501.0	Mon 15:33 Nov 01, 2004	0	0	
69	1215	76 - 80	14	2	496.0	Mon 15:33 Nov 01, 2004	0	0	
70	1200	76 - 80	14	1	493.0	Mon 15:33 Nov 01, 2004	0	0	Sig Ch Pick = 100.0 ms.BAD LEVEL REPEAT
71	1200	81 - 87	15	5	490.0	Mon 15:44 Nov 01, 2004	0	0	kill files 81 84.
72	1185	81 - 87	15	4	485.0	Mon 15:44 Nov 01, 2004	0	0	kill files 81 84.
73	1170	81 - 87	15	3	478.0	Mon 15:44 Nov 01, 2004	0	0	kill files 81 84.BAD LEVEL REPEAT





#### **Baker Atlas**

: MARTHA-1 CLIENT : SANTOS & PARTNERS
SOURCE: 2 x 150 cu in Sleeve Guns SERVICE : ZVSP (MLR) WELL NAME

LEVEL	TOOL	FILE	STATION	TOOL	VERTICAL CHAN	TIME AT	CABLE	PRE-	REMARKS
NO	STATION	NUMBER	NO.	NO	TIME PICK	COMPLETION	SLACK	AMP GAIN	(COMMENTS, UH TIME, CHARGE TYPE, DEPTH, ETC)
74	1155	81 - 87	15	2	(MSEC) 474.0	OF LEVEL Mon 15:44 Nov 01, 2004	0	0	kill files 81 84.
75	1140	81 - 87	15	1	470.0	Mon 15:44 Nov 01, 2004	0	0	Sig Ch Pick = 100.0 ms. kill files 81 84.
76	1170	88 - 95	16	5	479.0	Mon 15:50 Nov 01, 2004	0	0	kill files 89 92 94.
77	1155	88 - 95	16	4	474.0	Mon 15:50 Nov 01, 2004	0	0	kill files 89 92 94.
78	1140	88 - 95	16	3	61.0	Mon 15:50 Nov 01, 2004	0	0	kill files 89 92 94.
79	1125	88 - 95	16	2	463.0	Mon 15:50 Nov 01, 2004	0	0	kill files 89 92 94.
80	1110	88 - 95	16	1	458.0	Mon 15:50 Nov 01, 2004	0	0	Sig Ch Pick = 100.0 ms. kill files 89 92 94.
81	1095	96 - 100	17	5	452.0	Mon 15:58 Nov 01, 2004	0	0	
82	1080	96 - 100	17	4	447.0	Mon 15:58 Nov 01, 2004	0	0	
83	1065	96 - 100	17	3	442.0	Mon 15:58 Nov 01, 2004	0	0	
84	1050	96 - 100	17	2	438.0	Mon 15:58 Nov 01, 2004	0	0	
85	1035	96 - 100	17	1	433.0	Mon 15:58 Nov 01, 2004	0	0	Sig Ch Pick = 101.5 ms.BAD LEVEL REPEAT
86	1035	101 - 105	18	5	432.0	Mon 16:04 Nov 01, 2004	0	0	
87	1020	101 - 105	18	4	428.0	Mon 16:04 Nov 01, 2004	0	0	
88	1005	101 - 105	18	3	423.0	Mon 16:04 Nov 01, 2004	0	0	
89	990	101 - 105	18	2	418.0	Mon 16:04 Nov 01, 2004	0	0	
90	975	101 - 105	18	1	414.0	Mon 16:04 Nov 01, 2004	0	0	Sig Ch Pick = 100.7 ms.BAD LEVEL REPEAT
91	975	106 - 111	19	5	413.0	Mon 16:21 Nov 01, 2004	0	0	
92	960	106 - 111	19	4	408.0	Mon 16:21 Nov 01, 2004	0	0	
93	945	106 - 111	19	3	404.0	0 16:21 Nov 01, 2004	0	0	
94	930	106 - 111	19	2	400.0	Mon 16:21 Nov 01, 2004	0	0	HOLE OVER 20" LEVEL CANCELLED
95	915	106 - 111	19	1	831.0	Mon 16:21 Nov 01, 2004	0	0	Sig Ch Pick = 100.0 ms.HOLE OVER 20" LEVEL CANCELLED
96	930	112 - 117	20	5	398.0	Mon 16:29 Nov 01, 2004	0	0	HOLE OVER 20" LEVEL CANCELLED
97	915	112 - 117	20	4	1000.0	Mon 16:29 Nov 01, 2004	0	0	HOLE OVER 20" LEVEL CANCELLED
98	900	112 - 117	20	3	1000.0	1107 01, 2001	0	0	HOLE OVER 20" LEVEL CANCELLED
99	885	112 - 117	20	2	1000.0	Mon 16:29 Nov 01, 2004	0	0	HOLE OVER 20" LEVEL CANCELLED
100	870	112 - 117	20	1	1000.0	Mon 16:29 Nov 01, 2004	0	0	Sig Ch Pick = 100.0 ms.HOLE GREATER THAN 20 INCHES
101	855	118 - 122	21	5	376.0	Mon 16:40 Nov 01, 2004	0	0	HOLE OVER 20" LEVEL CANCELLED
102	840	118 - 122	21	4	367.0	0 16:40 Jan 00, 2004	0	0	
103	825	118 - 122	21	3	363.0	Mon 16:40 Nov 01, 2004	0	0	HOLE OVER 20" LEVEL CANCELLED
104	810	118 - 122	21	2	357.0	Mon 16:40 Nov 01, 2004	0	0	
105	795	118 - 122	21	1	355.0	Mon 16:40 Nov 01, 2004	0	0	Sig Ch Pick = 100.0 ms.BAD LEVEL REPEAT
106	795	123 - 127	22	5	350.0	Mon 16:48 Nov 01, 2004	0	0	NOISY LEVEL
107	780	123 - 127	22	4	345.0	Mon 16:53 Nov 01, 2004	0	0	NOISY LEVEL
108	765	123 - 127	22	3	339.0	Mon 16:53 Nov 01, 2004	0	0	NOISY LEVEL
109	750	123 - 127	22	2	332.0	Mon 16:48 Nov 01, 2004	0	0	NOISY LEVEL





#### **Baker Atlas**

: MARTHA-1 CLIENT : SANTOS & PARTNERS
SOURCE: 2 x 150 cu in Sleeve Guns SERVICE : ZVSP (MLR) WELL NAME

LEVEL NO	TOOL STATION DEPTH	FILE NUMBER	STATION NO.	TOOL NO	VERTICAL CHAN TIME PICK (MSEC)	TIME AT COMPLETION OF LEVEL	CABLE	PRE- AMP GAIN	REMARKS (COMMENTS, UH TIME,CHARGE TYPE, DEPTH, ETC)
110	735	123 - 127	22	1	327.0	Mon 16:48 Nov 01, 2004	0	0	Sig Ch Pick = 100.0 ms.NOISY LEVEL
111	720	128 - 132	23	5	322.0	Mon 16:48 Nov 01, 2004	0	0	
112	705	128 - 132	23	4	316.0	Mon 16:53 Nov 01, 2004	0	0	
113	690	128 - 132	23	3	312.0	Mon 16:53 Nov 01, 2004	0	0	HOLE OVER 20" LEVEL CANCELLED
114	675	128 - 132	23	2	306.0	Mon 16:53 Nov 01, 2004	0	0	
115	660	128 - 132	23	1	304.0	Mon 16:53 Nov 01, 2004	0	0	Sig Ch Pick = 100.0 ms.BAD LEVEL REPEAT
116	660	133 - 140	24	5	301.0	Mon 16:53 Nov 01, 2004	0	0	kill files 134 135 139.
117	645	133 - 140	24	4	295.0	Mon 17:01 Nov 01, 2004	0	0	kill files 134 135 139.
118	630	133 - 140	24	3	287.0	Mon 17:01 Nov 01, 2004	0	0	kill files 134 135 139.
119	615	133 - 140	24	2	281.0	Mon 17:01 Nov 01, 2004	0	0	kill files 134 135 139.
120	600	133 - 140	24	1	275.0	Mon 17:01 Nov 01, 2004	0	0	Sig Ch Pick = 100.0 ms. kill files 134 135 139.
121	585	141 - 147	25	5	267.0	Mon 17:09 Nov 01, 2004	0	0	kill file 146.
122	570	141 - 147	25	4	261.0	Mon 17:09 Nov 01, 2004	0	0	kill file 146.
123	555	141 - 147	25	3	254.0	Mon 17:09 Nov 01, 2004	0	0	kill file 146.
124	540	141 - 147	25	2	247.0	Mon 17:09 Nov 01, 2004	0	0	kill file 146.
125	525	141 - 147	25	1	240.0	Mon 17:09 Nov 01, 2004	0	0	Sig Ch Pick = 100.0 ms. kill file 146.
126	510	148 - 152	26	5	233.0	Mon 17:17 Nov 01, 2004	0	0	
127	495	148 - 152	26	4	226.0	Mon 17:17 Nov 01, 2004	0	0	
128	480	148 - 152	26	3	219.0	Mon 17:17 Nov 01, 2004	0	0	
129	465	148 - 152	26	2	212.0	Mon 17:17 Nov 01, 2004	0	0	
130	450	148 - 152	26	1	206.0	Mon 17:17 Nov 01, 2004	0	0	Sig Ch Pick = 100.0 ms.
131	435	153 - 159	27	5	198.0	Mon 17:24 Nov 01, 2004	0	0	kill files 153 157.
132	420	153 - 159	27	4	192.0	Mon 17:24 Nov 01, 2004	0	0	kill files 153 157.
133	405	153 - 159	27	3	184.0	Mon 17:24 Nov 01, 2004	0	0	kill files 153 157.BAD LEVEL REPEAT
134	390	153 - 159	27	2	178.0	Mon 17:24 Nov 01, 2004	0	0	kill files 153 157.
135	375	153 - 159	27	1	171.0	1407 01, 2007	0	0	Sig Ch Pick = 100.0 ms. kill files 153 157.
136	400	160 - 165	28	5	185.0	Mon 17:29 Nov 01, 2004	0	0	kill file 160.WRONG DEPTH SHOULD BE 405
137	385	160 - 165	28	4	176.0	Mon 17:29 Nov 01, 2004	0	0	kill file 160.WRONG DEPTH SHOULD BE 390
138	370	160 - 165	28	3	169.0	Mon 17:29 Nov 01, 2004	0	0	kill file 160.WRONG DEPTH SHOULD BE 375
139	355	160 - 165	28	2	165.0	Mon 17:29 Nov 01, 2004	0	0	kill file 160.WRONG DEPTH SHOULD BE 360
140	340	160 - 165	28	1	160.0	Mon 17:29 Nov 01, 2004	0	0	Sig Ch Pick = 100.0 ms. kill file 160.WRONG DEPTH SHOULD BE 345
141	345	166 - 175	29	5	159.0	Mon 17:38 Nov 01, 2004	0	0	kill files 166 167 168 172 173.BAD LEVEL REPEAT
142	330	166 - 175	29	4	149.0	Mon 17:38 Nov 01, 2004	0	0	kill files 166 167 168 172 173.
143	315	166 - 175	29	3	145.0	Mon 17:38 Nov 01, 2004	0	0	kill files 166 167 168 172 173.
144	300	166 - 175	29	2	137.0	Mon 17:38 Nov 01, 2004	0	0	kill files 166 167 168 172 173.
145	285	166 - 175	29	1	132.0	Mon 17:38 Nov 01, 2004	0	0	Sig Ch Pick = 100.0 ms. kill files 166 167 168 172 173.

### TOOL STATIONS



#### **Baker Atlas**

: MARTHA-1 CLIENT : SANTOS & PARTNERS
SOURCE: 2 x 150 cu in Sleeve Guns SERVICE : ZVSP (MLR) WELL NAME

LEVEL	TOOL	FILE	STATION	TOOL	VERTICAL CHAN	T1145 A.T	CABLE	PRE-	PEMPIN
NO	TOOL STATION	NUMBER	NO.	NO	TIME PICK	TIME AT COMPLETION	SLACK	AMP	REMARKS (COMMENTS, UH TIME,CHARGE TYPE, DEPTH, ETC)
4.40	DEPTH	470 404	00	_	(MSEC)	OF LEVEL Mon 17:48		GAIN	
146	300	176 - 184	30	5	137.0	Nov 01, 2004 Mon 17:48	0	0	kill files 176 181 182 183.
147	285	176 - 184	30	4	130.0	Nov 01, 2004	0	0	kill files 176 181 182 183.
148	270	176 - 184	30	3	126.0	Mon 17:48 Nov 01, 2004	0	0	kill files 176 181 182 183.
149	255	176 - 184	30	2	117.0	Mon 17:48 Nov 01, 2004	0	0	kill files 176 181 182 183.
150	240	176 - 184	30	1	111.0	Mon 17:48 Nov 01, 2004	0	0	Sig Ch Pick = 100.0 ms. kill files 176 181 182 183.
151	315	185 - 189	31	5	144.0	Mon 17:56 Nov 01, 2004	0	0	
152	300	185 - 189	31	4	137.0	Mon 17:56 Nov 01, 2004	0	0	
153	285	185 - 189	31	3	132.0	Mon 17:56 Nov 01, 2004	0	0	BAD LEVEL REPEAT
154	270	185 - 189	31	2	1511.0	Mon 17:56 Nov 01, 2004	0	0	BAD LEVEL REPEAT
155	255	185 - 189	31	1	1987.0	Mon 17:56 Nov 01, 2004	0	0	Sig Ch Pick = 100.0 ms.BAD LEVEL REPEAT
156	270	190 - 200	32	5	125.0	Mon 18:06 Nov 01, 2004	0	0	kill files 190 195 196 197 198 199.
0	255	190 - 200	32	4	114.0	Mon 18:06 Nov 01, 0	0	0	kill files 190 195 196 197 198 199.
158	240	190 - 200	32	3	111.0	Mon 18:06 Nov 01, 2004	0	0	kill files 190 195 196 197 198 199.
159	225	190 - 200	32	2	107.0	Mon 18:06 Nov 01, 0	0	0	kill files 190 195 196 197 198 199.
160	210	190 - 200	32	1	99.0	Mon 18:06 Nov 01, 2004	0	0	Sig Ch Pick = 100.0 ms. kill files 190 195 196 197 198 199.
161	195	201 - 206	33	5	90.0	Mon 18:15 Nov 01, 2004	0	0	kill file 205.
162	180	201 - 206	33	4	83.0	Mon 18:15 Nov 01, 2004	0	0	kill file 205.
163	165	201 - 206	33	3	75.0	Mon 18:15 Nov 01, 2004	0	0	kill file 205.
164	150	201 - 206	33	2	66.7	Mon 18:15 Nov 01, 2004	0	0	kill file 205.
165	135	201 - 206	33	1	1461.0	Mon 18:15 Nov 01, 2004	0	0	Sig Ch Pick = 100.0 ms. kill file 205.
166	135	207 - 215	34	5	61.0	Mon 18:27 Nov 01, 2004	0	0	kill files 210 211 213 214.
167	120	207 - 215	34	4	57.0	Mon 18:27 Nov 01, 2004	0	0	kill files 210 211 213 214.
168	105	207 - 215	34	3	52.0	Mon 18:27 Nov 01, 2004	0	0	kill files 210 211 213 214.
169	90	207 - 215	34	2	46.0	Mon 18:27 Nov 01, 2004	0	0	kill files 210 211 213 214.
170	75	207 - 215	34	1	40.0	Mon 18:27 Nov 01, 2004	0	0	Sig Ch Pick = 100.0 ms. kill files 210 211 213 214.



**Baker Atlas** 

CLIENT NAME : SANTOS & PARTNERS

WELL NAME : MARTHA-1

FIELD NAME : OFFSHORE AUSTRALIA

LOCATION : EXPLORATION
DATE : 1ST NOVEMBER 2004

KB ELEVATION = 22.5 M DATUM ELEVATION = 0.0 CORRECTION VELOCITY = 1500 (M/S)

COMPUTATION METHODE: STRAIGHT RAYS (COSINE CORRECTION)

MD	TVD	DGD	OFFSET	RAW	CORR	. TIME	VELC	CITY		INTERVA	<b>NL</b>
(DF)	(DF)		SRC-REC	TIME	TGD	TGD	AVERAGE	RMS	DEPTH	TIME	VELOCITY
(M)	(M)	(M)	(M)	(MS)	1-WAY	2-WAY	(M/S)	(M/S)	(M)	(MS)	(M/S)
75	75	52	45.8	40.0	32.0	64.0	1625.9	1625.9			
									15.0	8.4	1796.0
90	90	67	45.8	46.0	40.3	80.7	1661.1	1662.5			
									15.0	7.7	1950.1
105	105	82	45.8	52.0	48.0	96.1	1707.4	1711.8			
									15.0	6.3	2367.9
120	120	97	45.8	57.0	54.4	108.7	1784.4	1800.6			
									15.0	6.0	2488.2
135	135	112	45.8	62.1	60.4	120.8	1854.6	1880.6	45.0		00455
450	450	407	45.0	07.0	00.4	400.4	4000 5	4050.0	15.0	5.7	2645.5
150	150	127	45.8	67.0	66.1	132.1	1922.5	1958.0	45.0	0.4	47047
165	165	142	45.8	75.0	74.5	148.9	1906.9	1939.2	15.0	8.4	1784.7
105	100	142	43.0	75.0	74.5	140.9	1900.9	1939.2	15.0	8.3	1798.5
180	180	157	45.8	83.0	82.8	165.6	1896.0	1925.5	13.0	0.5	17 30.3
100	100	107	45.0	00.0	02.0	100.0	1030.0	1020.0	15.0	8.3	1806.8
195	195	172	45.8	91.0	91.1	182.2	1887.9	1915.0	10.0	0.0	1000.0
									15.0	8.2	1821.7
210	210	187	45.8	99.0	99.3	198.7	1882.4	1907.4			
									15.0	7.3	2054.0
225	225	202	45.8	106.1	106.6	213.3	1894.2	1917.8			
									15.0	5.2	2891.7
240	240	217	45.8	111.0	111.8	223.7	1940.4	1973.7			
									15.0	6.2	2422.5
255	255	232	45.8	117.0	118.0	236.0	1965.7	1999.7			
070	070	0.47	45.0	105.0	400.0	050.0	4057.0	1000.1	15.0	8.1	1844.8
270	270	247	45.8	125.0	126.2	252.3	1957.9	1990.1	15.0	7.4	2402.0
285	285	262	45.8	132.0	133.3	266.6	1965.7	1996.3	15.0	7.1	2103.0
200	200	202	43.0	132.0	133.3	200.0	1905.7	1990.3	15.0	6.1	2440.9
300	300	277	45.8	138.0	139.4	278.9	1986.6	2018.0	13.0	0.1	2440.3
300	300	211	45.0	100.0	100.4	270.5	1000.0	2010.0	15.0	6.1	2457.8
315	315	292	45.8	144.0	145.5	291.1	2006.4	2038.3	10.0	0.1	2107.0
									15.0	7.1	2104.5
330	330	307	45.8	151.0	152.7	305.3	2011.0	2041.5			
									15.0	8.0	1866.2
345	345	322	45.8	159.0	160.7	321.4	2003.7	2033.0			
									15.0	6.1	2464.7
360	360	337	45.8	165.0	166.8	333.6	2020.6	2050.4			
									15.0	6.1	2468.1
375	375	352	45.8	171.0	172.9	345.7	2036.3	2066.5	,		
									15.0	7.1	2123.9



CLIENT NAME WELL NAME SANTOS & PARTNERS

MARTHA-1

DATE 1ST NOVEMBER 2004

**Baker Atlas** 

		IOI NOVE		r							
MD	TVD	DGD	OFFSET	RAW	CORR	. TIME	VELC	CITY		INTERVA	۸L
(KBE)	(KBE)		SRC-REC	TIME	TGD	TGD	AVERAGE	RMS	DEPTH	TIME	VELOCITY
M	M	М	M	(MS)	1-WAY	2-WAY	(M/S)	(M/S)	M	(MS)	(M/S)
				` '			, ,	, ,	141	(1410)	(11170)
390	390	367	45.8	178.0	179.9	359.9	2039.7	2068.8			
									15.0	7.1	2125.4
405	405	382	45.8	185.0	187.0	374.0	2043.0	2071.0			
									15.0	7.1	2126.7
420	420	397	45.8	192.0	194.0	388.1	2046.0	2073.0			
720	720	001	45.0	132.0	134.0	300.1	2040.0	2070.0	15.0	6.1	2477.2
405	405	440	45.0	400.0	000.4	400.0	0050.4	0000.4	15.0	0.1	2477.2
435	435	412	45.8	198.0	200.1	400.2	2059.1	2086.4			
									15.0	8.0	1865.9
450	450	427	45.8	206.0	208.1	416.3	2051.6	2078.3			
									15.0	6.0	2480.2
465	465	442	45.8	212.0	214.2	428.4	2063.7	2090.7			
									15.0	7.0	2130.9
480	480	457	45.8	219.0	221.2	442.4	2065.8	2092.0	10.0	7.0	2.00.0
400	400	457	45.0	219.0	221.2	442.4	2003.0	2092.0	15.0	7.0	2424 7
40=	40=	4=0	45.0	0000	000.0	450 5		00000	15.0	7.0	2131.7
495	495	472	45.8	226.0	228.3	456.5	2067.9	2093.2			
									15.0	7.0	2132.4
510	510	487	45.8	233.0	235.3	470.6	2069.8	2094.4			
									15.0	7.0	2133.1
525	525	502	45.8	240.0	242.3	484.6	2071.6	2095.6			
5_5	0_0						-0		15.0	7.0	2133.6
E40	540	517	45.0	247.0	249.4	400.7	2072.4	2006.6	13.0	7.0	2133.0
540	540	517	45.8	247.0	249.4	498.7	2073.4	2096.6	45.0	7.0	04040
									15.0	7.0	2134.2
555	555	532	45.8	254.0	256.4	512.8	2075.0	2097.7			
									15.0	7.0	2134.6
570	570	547	45.8	261.0	263.4	526.8	2076.6	2098.7			
									15.0	7.0	2131.0
585	585	562	45.8	268.0	270.4	540.9	2078.1	2099.5			
	000	002	10.0	200.0	270.1	0.10.0	2070.1	2000.0	15.0	7.0	2139.7
600	600	577	45.0	275.0	277 E	EE4 0	2070.6	2100 5	13.0	7.0	2139.1
600	600	5//	45.8	275.0	277.5	554.9	2079.6	2100.5	45.0	0.0	0.400.0
									15.0	6.0	2489.3
615	615	592	45.8	281.0	283.5	567.0	2088.3	2109.6			
									15.0	6.0	2489.9
630	630	607	45.8	287.0	289.5	579.0	2096.7	2118.2			
									15.0	8.0	1870.9
645	645	622	45.8	295.0	297.5	595.0	2090.6	2111.9		0.0	101010
0-3	040	022	45.0	200.0	201.0	000.0	2000.0	2111.5	15.0	6.0	2490.8
000	000	007	45.0	204.0	202 5	007.4	2000 5	0400.4	15.0	0.0	2490.0
660	660	637	45.8	301.0	303.5	607.1	2098.5	2120.1			
									15.0	5.0	2986.0
675	675	652	45.8	306.0	308.6	617.1	2113.0	2137.0			
									15.0	5.0	2977.2
690	690	667	45.8	311.0	313.6	627.2	2126.9	2153.1			
									15.0	5.0	2997.1
705	705	682	45.8	316.0	318.6	637.2	2140.5	2168.9	10.0	0.0	2007.1
100	100	002	45.0	310.0	310.0	037.2	2 140.5	2100.9	45.0	6.0	2402.0
				000.5	0045	0.40.5	044= :	0475.5	15.0	6.0	2492.6
720	720	697	45.8	322.0	324.6	649.3	2147.1	2175.3	<b>l</b> ,		
									15.0	5.0	2988.7



CLIENT NAME WELL NAME SANTOS & PARTNERS

MARTHA-1

DATE 1ST NOVEMBER 2004

**Baker Atlas** 

MD	TVD	DGD	OFFSET	RAW	CORR	. TIME	VELC	CITY		INTERVA	\L
(KBE)	(KBE)		SRC-REC	TIME	TGD	TGD	AVERAGE	RMS	DEPTH	TIME	VELOCITY
` M ´	` M ´	М	М	(MS)	1-WAY	2-WAY	(M/S)	(M/S)	М	(MS)	(M/S)
705	725				220.6	650.0	` ′	,		,	
735	735	712	45.8	327.0	329.6	659.3	2159.9	2189.9	45.0	г о	2000.0
750	750	707	45.0	000.0	0047	000.0	0470.0	0004.4	15.0	5.0	2989.2
750	750	727	45.8	332.0	334.7	669.3	2172.3	2204.1	45.0	7.0	0400.0
					=				15.0	7.0	2138.8
765	765	742	45.8	339.0	341.7	683.4	2171.6	2202.8			
									15.0	6.0	2493.9
780	780	757	45.8	345.0	347.7	695.4	2177.2	2208.1			
									15.0	5.0	2990.6
795	795	772	45.8	350.0	352.7	705.4	2188.8	2221.2			
									15.0	7.0	2139.3
810	810	787	45.8	357.0	359.7	719.4	2187.8	2219.6			
									30.0	10.0	2991.5
840	840	817	45.8	367.0	369.8	739.5	2209.6	2244.0			
									90.0	31.1	2896.7
930	930	907	45.8	398.0	400.8	801.6	2262.9	2301.3	00.0	• • • • • • • • • • • • • • • • • • • •	
	000	001	10.0	000.0	100.0	001.0	2202.0	2001.0	15.0	5.0	2984.1
945	945	922	45.8	403.0	405.8	811.7	2271.8	2311.0	10.0	0.0	2004.1
343	343	922	45.0	403.0	405.0	011.7	221 1.0	2311.0	15.0	5.0	3003.8
960	960	937	45.8	408.0	410.8	821.7	2280.7	2320.6	15.0	5.0	3003.8
960	960	937	43.0	400.0	410.0	021.7	2200.7	2320.0	45.0	<b>-</b> 0	00040
075	075	050	45.0	440.0	445.0	004.7	00000	00000	15.0	5.0	2994.2
975	975	952	45.8	413.0	415.9	831.7	2289.3	2329.9			
									15.0	5.0	2994.5
990	990	967	45.8	418.0	420.9	841.7	2297.7	2338.9			
									15.0	5.0	2994.7
1005	1005	982	45.8	423.0	425.9	851.7	2305.9	2347.7			
									15.0	5.0	2994.9
1020	1020	997	45.8	428.0	430.9	861.8	2313.9	2356.2			
									15.0	4.7	3171.1
1035	1035	1012	45.8	432.7	435.6	871.2	2323.2	2366.6			
									15.0	4.6	3264.4
1050	1050	1027	45.8	437.3	440.2	880.4	2333.0	2377.7			
									15.0	4.7	3191.7
1065	1065	1042	45.8	442.0	444.9	889.8	2342.1	2387.8			
									15.0	5.0	2995.5
1080	1080	1057	45.8	447.0	449.9	899.8	2349.4	2395.4		0.0	
1000	1000	1007	10.0		110.0	000.0	2010.1	2000.1	15.0	5.0	2995.7
1095	1095	1072	45.8	452.0	454.9	909.8	2356.5	2402.8	10.0	0.0	2000.1
1000	1000	1012	40.0	40 <b>2</b> .0	707.0	505.0	2000.0	2402.0	15.0	6.0	2497.5
1110	1110	1087	45.8	458.0	460.9	921.8	2358.3	2404.1	13.0	0.0	2431.3
1110	1110	1007	45.6	430.0	400.9	921.0	2336.3	2404.1	15.0	E 0	2005.0
1105	1105	4400	45.0	460.0	465.0	024.0	2205.0	0444.0	15.0	5.0	2995.9
1125	1125	1102	45.8	463.0	465.9	931.9	2365.2	2411.2	45.0	0.0	0400.0
4440	4440	444-	45.0	400.0	470.0	040.0	00000	04400	15.0	6.0	2490.9
1140	1140	1117	45.8	469.0	472.0	943.9	2366.8	2412.2	45.5		000-0
									15.0	5.0	3005.9
1155	1155	1132	45.8	474.0	476.9	953.9	2373.5	2419.2			
									15.0	5.0	2996.3



CLIENT NAME WELL NAME SANTOS & PARTNERS

MARTHA-1

DATE 1ST NOVEMBER 2004

**Baker Atlas** 

DAIL		ISTNOVE		•							
MD	TVD	DGD	OFFSET	RAW	CORR	a. TIME	VELC	CITY		INTERVA	\L
(KBE)	(KBE)		SRC-REC	TIME	TGD	TGD	AVERAGE	RMS	DEPTH	TIME	VELOCITY
` M ´	` M ´	М	М	(MS)	1-WAY	2-WAY	(M/S)	(M/S)	М	(MS)	(M/S)
							, ,	, ,			,
1170	1170	1147	45.8	479.0	481.9	963.9	2379.9	2425.9	45.0	0.0	0407.0
4405	4405	4400	45.0	405.0	400.0	075.0	0004.4	0.400.0	15.0	6.0	2497.8
1185	1185	1162	45.8	485.0	488.0	975.9	2381.4	2426.8	45.0		2000 =
									15.0	5.0	2996.5
1200	1200	1177	45.8	490.0	493.0	985.9	2387.6	2433.2			
									15.0	6.0	2498.0
1215	1215	1192	45.8	496.0	499.0	997.9	2388.9	2434.0			
									15.0	5.0	2996.7
1230	1230	1207	45.8	501.0	504.0	1007.9	2395.0	2440.3			
									15.0	5.0	2996.8
1245	1245	1222	45.8	506.0	509.0	1018.0	2400.9	2446.4			
									15.0	6.0	2498.1
1260	1260	1237	45.8	512.0	515.0	1030.0	2402.0	2447.0			
									15.0	7.0	2141.7
1275	1275	1252	45.8	519.0	522.0	1044.0	2398.5	2443.1			
				0.0.0	0				15.0	5.0	2997.0
1290	1290	1267	45.8	524.0	527.0	1054.0	2404.2	2449.0	10.0	0.0	2001.0
1230	1230	1201	40.0	0 <b>2</b> 4.0	527.0	1004.0	2404.2	2445.0	15.0	5.0	2997.1
1305	1305	1282	45.8	529.0	532.0	1064.0	2409.8	2454.7	13.0	3.0	2997.1
1303	1303	1202	45.6	529.0	552.0	1004.0	2409.0	2404.7	15.0	6.0	2404.6
4200	4000	4007	45.0	F0F 0	F20.0	4070.0	0440.7	0455.4	15.0	6.0	2491.6
1320	1320	1297	45.8	535.0	538.0	1076.0	2410.7	2455.1	45.0	<b>5</b> 0	0007.0
4005	4005	1010	45.0	<b>540.0</b>	540.0	4000.0	04400	0400 7	15.0	5.0	3007.0
1335	1335	1312	45.8	540.0	543.0	1086.0	2416.2	2460.7			
									15.0	5.0	2997.3
1350	1350	1327	45.8	545.0	548.0	1096.0	2421.5	2466.2			
									15.0	5.0	2989.2
1365	1365	1342	45.8	550.0	553.0	1106.0	2426.7	2471.4			
									15.0	5.5	2706.6
1380	1380	1357	45.8	555.6	558.6	1117.1	2429.4	2473.9			
									15.0	5.0	3012.4
1395	1395	1372	45.8	560.5	563.5	1127.1	2434.6	2479.1			
									15.0	5.5	2738.8
1410	1410	1387	45.8	566.0	569.0	1138.0	2437.5	2481.8			
									15.0	5.0	2997.7
1425	1425	1402	45.8	571.0	574.0	1148.1	2442.4	2486.7			
									15.0	6.0	2498.6
1440	1440	1417	45.8	577.0	580.0	1160.1	2443.0	2486.8			
									15.0	6.0	2498.7
1455	1455	1432	45.8	583.0	586.0	1172.1	2443.5	2487.0	10.0	0.0	55.7
1 100	. 700	. 102	10.0	000.0	000.0	2 . 1	10.0	2.57.0	15.0	6.0	2498.7
1470	1470	1447	45.8	589.0	592.0	1184.1	2444.1	2487.1	10.0	0.0	2-700.1
1470	1470	1777	+3.0	JUB.U	J92.U	1104.1	2 <del>777</del> .1	∠ <del>1</del> 01.1	15.0	5.0	2997.8
1/05	1/05	1460	150	504.0	597.0	1104 1	2//07	2404.0	15.0	5.0	2331.0
1485	1485	1462	45.8	594.0	0.180	1194.1	2448.7	2491.8	15.0	E 0	2007.0
4500	4500	4 4 7 7	45.0	E00.0	000.0	40044	0450.0	0400 4	15.0	5.0	2997.9
1500	1500	1477	45.8	599.0	602.0	1204.1	2453.3	2496.4	45.0		0007.0
									15.0	5.0	2997.9



CLIENT NAME WELL NAME SANTOS & PARTNERS

MARTHA-1

DATE 1ST NOVEMBER 2004

**Baker Atlas** 

MD	TVD	DGD	OFFSET	RAW	CORR	. TIME	VELC	CITY		INTERVA	Ĺ
(KBE)	(KBE)		SRC-REC	TIME	TGD	TGD	AVERAGE	RMS	DEPTH	TIME	VELOCITY
M	М	М	М	(MS)	1-WAY	2-WAY	(M/S)	(M/S)	М	(MS)	(M/S)
1515	1515	1492	45.8	604.0	607.0	1214.1	2457.8	2501.0	15.0	5.0	2998.0
1530	1530	1507	45.8	609.0	612.1	1224.1	2462.2	2505.4	15.0	4.5	3311.0
1545	1545	1522	45.8	613.5	616.6	1233.2	2468.5	2512.3	15.0	4.5	3350.8
1560	1560	1537	45.8	618.0	621.1	1242.1	2474.8	2519.3	15.0	5.0	2998.1
1575	1575	1552	45.8	623.0	626.1	1252.1	2479.0	2523.5	15.0	5.0	2998.2
1590	1590	1567	45.8	628.0	631.1	1262.1	2483.1	2527.6	15.0	5.0	2998.2
1605 1620	1605 1620	1582 1597	45.8 45.8	633.0 638.0	636.1 641.1	1272.1 1282.1	2487.2 2491.1	2531.7 2535.7	15.0	5.0	2998.3
1635	1635	1612	45.8	642.0	645.1	1290.1	2491.1	2535.7	15.0	4.0	3746.9
1650	1650	1627	45.8	646.5	649.6	1290.1	2504.6	2544.9	15.0	4.5	3311.3
1665	1665	1642	45.8	651.0	654.1	1308.2	2510.4	2557.4	15.0	4.5	3351.2
1680	1680	1657	45.8	655.0	658.1	1316.2	2517.9	2566.3	15.0	4.0	3747.1
1695	1695	1672	45.8	660.0	663.1	1326.2	2521.5	2569.8	15.0	5.0	2988.8
1710	1710	1687	45.8	665.0	668.1	1336.2	2525.1	2573.3	15.0	5.0	3008.2
1725	1725	1702	45.8	670.0	673.1	1346.2	2528.6	2576.7	15.0	5.0	2998.5
1740	1740	1717	45.8	675.0	678.1	1356.2	2532.1	2580.1	15.0	5.0	2998.5
1755	1755	1732	45.8	680.0	683.1	1366.2	2535.5	2583.4	15.0	5.0	2998.6
1770	1770	1747	45.8	684.5	687.6	1375.2	2540.6	2588.9	15.0	4.5	3311.6
1785	1785	1762	45.8	689.0	692.1	1384.2	2545.9	2594.5	15.0	4.5	3351.5

# VELOCITY ANALYSIS PLOT (FIELD COPY).

CLIENT : SANTOS & PARTNERS

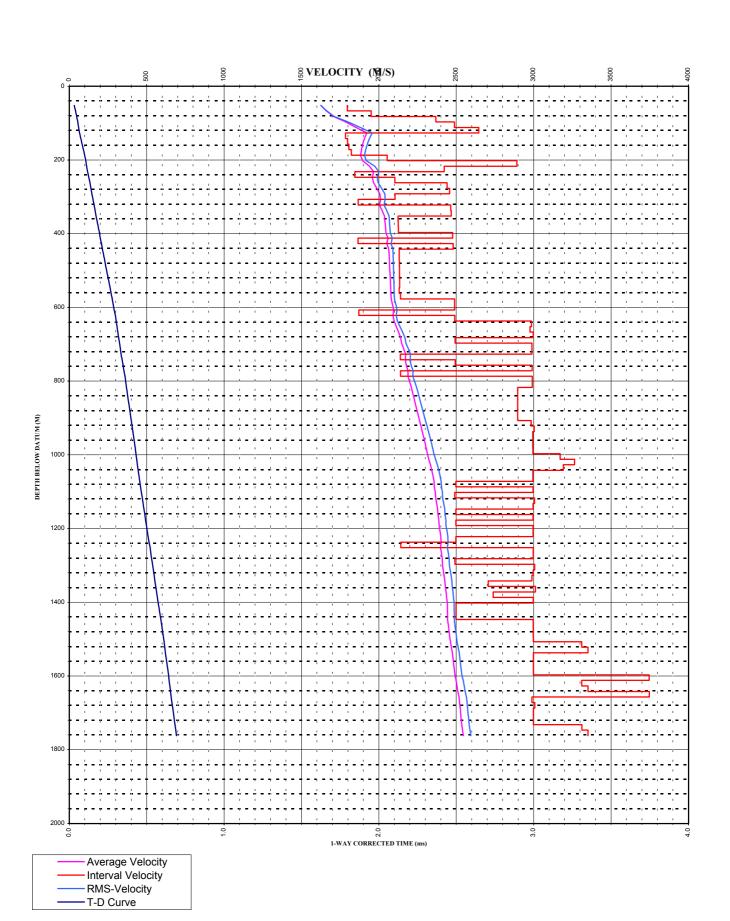
WELL: MARTHA-1

DATE: 1ST NOVEMBER 2004

OFFSET# : 1



**Baker Atlas** 



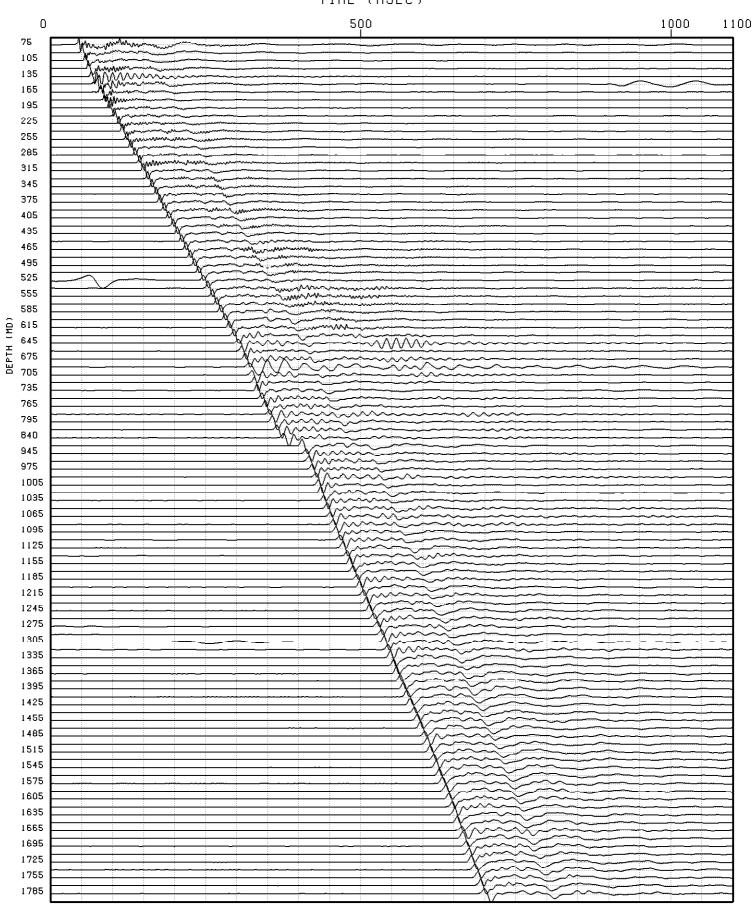
### VELOCITY SURVEY STACKED VERTICAL TRACES



OFFSET NO.1

### **Baker Atlas**





### **SECTION 4: PRODUCTION TEST REPORT**

No production tests were conducted at the Martha 1 location.

**SECTION 5: DAILY GEOLOGICAL REPORTS** 

A.B.N. 80 007 550 923

#### WELL PROGRESS REPORT

DATE: 21/10/04 - 05:00 HRS WST | MARTHA 1 | REPORT NO: 1

(As at 2400 hours EST, 20/10/04) DEPTH: 95 mMD PROGRESS: 19m DAYS FROM SPUD: 1

(00:00-24:00)

**OPERATION:** DRILLING 914mm (36") HOLE WITH RETURNS TO SEABED.

(As at 0600 hours EST, 21/10/04) **DEPTH:** 122.5 mMD **PROGRESS:** 46.5m

(06:00-06:00)

**OPERATION**: RUNNING IN HOLE WITH 762mm (30") CASING.

AFE COST \$ CUMULATIVE COST \$

CASING SHOE: RIG: OCEAN PATRIOT

PROGRAMMED TD: 1878 mMD ROTARY TABLE: 21.5 m LAT WATER DEPTH: 54.7m LAT

MUD DATA Type: Wt: Vis: FL: PH: KCl Cl: PV / YP: Rmf:

(2400 Hours) Seawater / Sweeps 8.8 14 9.5 1000

No. Make Type Size (in.) Hours Drilled (m) Condition

 BIT DATA
 PRESENT
 1
 STC
 MSDS
 660mm (26")
 1.3
 19
 Drilling

 SHC
 (914mm (36")

hole opener)

(2400 Hours) LAST

SURVEYS: MD (m) INCLINATION AZIMUTH (T) CLOSURE (m) DIRECTION (T)

#### PREVIOUS 24 HOURS OPERATIONS SUMMARY: (20/10/04)

CONTINUE FINAL APPROACH OF RIG MOVE TO MARTHA 1 LOCATION, 02:30 HR #5 ANCHOR ON BOTTOM 11:55 HR. MAKE UP 30" CASING AND LAND IN PERMANENT GUIDE BASE, RACK TO SIDE OF MOONPOOL WHILE RUNNING ANCHORS. CROSS TENSION ANCHORS. RE-RUN ANCHOR #8, ON BOTTOM 13:07 HR. BALLAST RIG TO DRILLING DRAFT. MAKE UP 914mm (36") BOTTOM HOLE ASSEMBLY AND RUN IN. TAG SEABED AT 76.16m LAT, WATER DEPTH 55m. TAKE ANDERDRIFT SURVEY 3m OFF BOTTOM, READING 0 DEG. **SPUD MARTHA-1 AT 23:00 HRS ON 20/10/2004.** DRILL 660mm (26") HOLE OPENING OUT TO 914mm (36") FROM 76.16m TO 95m PUMPING 8m3 (50 BBL) HI-VIS SWEEPS EVERY TOOL JOINT.

#### 00:00 - 05:00 HOURS WST (21/10/04):

CONTINUE TO DRILL 660mm (26") HOLE OPENING OUT TO 914mm (36") FROM 95m TO 122.5m. DISPLACE HOLE TO PHG MUD. PULL OUT OF HOLE, RACK BACK 660/914mm (26/36") BOTTOM HOLE ASSEMBLY. RUN 762mm (30") CASING.

#### **ANTICIPATED OPERATIONS:**

RUN AND CEMENT 762mm (30") CASING. MAKE UP 445mm (17½") BOTTOM HOLE ASSEMBLY AND RUN IN HOLE.

A.B.N. 80 007 550 923

### WELL PROGRESS REPORT

DATE: 21/10/04 - 05:00 HRS WST	MARTHA 1	REPORT NO: 1

FORMATION	TOPS:	MDRT (m)	Subsea (m)	High/Low to Prognosis (m)	High /Low to Casino 3 (m)
			, ,		
	HYDROCARBO	N SHOW SUMMAR	RY		
INTERVAL	LITHOLOGY				GAS
					GIL
	GEOLOGICAL	SUMMARY			
INTERVAL (m/hr)	LITHOLOGY				GAS
` ,	RETURNS TO SE	EAFLOOR.			

A.B.N. 80 007 550 923

#### WELL PROGRESS REPORT

DATE: 22/10/04 - 06:00 HRS EST | MARTHA 1 | REPORT NO: 2

(As at 2400 hours EST, 21/10/04) DEPTH: 122.5 mMD PROGRESS: 27.5m DAYS FROM SPUD: 2

(00:00-24:00)

**OPERATION:** RUNNING IN HOLE WITH THE 445mm (17½") DRILLING ASSEMBLY.

(As at 0600 hours EST, 22/10/04) **DEPTH:** 179 mMD **PROGRESS:** 56.5m

(06:00-06:00)

OPERATION: SERVICING THE TOP DRIVE PRIOR PRIOR TO CONTINUING TO DRILL 445mm (171/2")

HOLE.

AFE COST \$ CUMULATIVE COST \$

CASING SHOE: 762/508mm (30/20") set at

RIG: OCEAN PATRIOT

RT – SEAFLOOR: 76.2m LAT

PROGRAMMED TD: 1878 mMD ROTARY TABLE: 21.5 m LAT WATER DEPTH: 54.7m LAT

(2400 Hours) Seawater / Sweeps 8.8 >120 15 9.5 - 1000 17/32

No. Make **Type** Size (in.) Hours Drilled (m) Condition **BIT DATA** 2 STC XRTC 445mm IN HOLE **PRESENT**  $(17 \frac{1}{2}")$ STC MSDS 660mm (26") 46.3m NOT GRADED 1 3 (2400 Hours) **LAST** SHC (914mm (36") hole opener)

**AZIMUTH**  $\underline{MD}$  (m) **AZIMUTH SURVEYS**: **INCLINATION** MD (m) **INCLINATION** 73 0 150 0 95 1.5 178 1 122 1

#### PREVIOUS 24 HOURS OPERATIONS SUMMARY: (21/10/04)

CONTINUE TO DRILL 660mm (26") HOLE OPENING OUT TO 914mm (36") FROM 95m TO 122.5m PUMPING HIVIS SWEEPS EVERY JOINT. DISPLACE HOLE TO PHG MUD. PULL OUT OF HOLE LAY OUT BIT AND HOLE OPENER. RUN 762mm (30") CASING. CEMENT CASING WITH 1.9SG (15.8PPG) CEMENT SLURRY. PICK UP DRILL PIPE WHILE WAITING ON CEMENT. RELEASE CASING RUNNING TOOL AND PULL OUT. CONTINUE TO PICK UP DRILL PIPE. MAKE UP PLUG LAUNCHER AND CEMENTING STINGER. MAKE UP 445mm (17½") BOTTOM HOLE ASSEMBLY AND RUN IN HOLE.

#### 00:00 - 05:00 HOURS EST (22/10/04):

CONTINUE TO RUN IN HOLE WITH THE 445mm (17 ½") DRILLING ASSEMBLY. TAG THE TOP OF CEMENT AT 114.5m. DRILL CEMENT AND CASING SHOE TRACK TO 122.5m. DRILL 445mm (17 ½") HOLE FROM 122.5m TO 133m. PULL BACK AND PICK UP DRILL COLLARS. DRILL 445mm (17 ½") HOLE FROM 133m TO 179m. PULL BACK TO 120m. SERVICE TOP DRIVE.

#### ANTICIPATED OPERATIONS:

SERVICE TOP DRIVE. PICK UP AND MAKE UP REMAINING DRILL COLLARS TO THE BOTTOM HOLE ASSEMBLY. CONTINUE TO DRILL 445mm (17½") HOLE TO +/- 630m. PULL OUT OF HOLE AND RUN 340mm (13 3/8") CASING.

A.B.N. 80 007 550 923

### WELL PROGRESS REPORT

DATE: 22/10/04 - 06:00 HRS EST	MARTHA 1	REPORT NO: 2

FORMATION	TOPS:	MDRT (m)	Subsea (m)	High/Low to Prognosis (m)	High /Low to Casino 3 (m)
	HYDROCARBO	N SHOW SUMMAR	RY		
INTERVAL	LITHOLOGY				GAS
	GEOLOGICAL	SUMMARY			
INTERVAL (m/hr)	LITHOLOGY				GAS
(,)	RETURNS TO SE	EAFLOOR.			

A.B.N. 80 007 550 923

#### WELL PROGRESS REPORT

DATE: 23/10/04 - 06:00 HRS EST **REPORT NO: 3 MARTHA 1** 

(As at 2400 hours EST, 22/10/04) **DEPTH:** 514 mMD **PROG:** 391.5m

**DAYS FROM SPUD: 3** 

(00:00-24:00)

DRILLING 445mm (171/2") HOLE RISERLESS WITH RETURNS TO SEAFLOOR. **OPERATION:** 

(As at 0600 hours EST, 23/10/04) **DEPTH:** 628 mMD **PROGRESS:** 449m

(06:00-06:00)

DISPLACING HOLE TO HI-VIS MUD PRIOR TO PULLING OUT AND RUNNING 340mm (13-**OPERATION**:

3/8") CASING.

AFE COST **CUMULATIVE COST** \$

**CASING SHOE**: 762/508mm (30/20") set at 121mMD RIG: OCEAN PATRIOT

RT - SEAFLOOR: 76.2m LAT

PROGRAMMED TD: 1878 mMD **ROTARY TABLE: 21.5 m LAT** WATER DEPTH: 54.7m LAT

**MUD DATA** Type: Wt: Vis: FL: PH: KCl Cl: PV / YP: Rmf:

(2400 Hours) Seawater / Sweeps 8.8 >100 18 9.5 300 11/36

No. Make **Type** Size (in.) Hours Drilled (m) Condition **BIT DATA** 2 STC 445mm 16.4 391.5 IN HOLE

**PRESENT** XRTC

 $(17 \frac{1}{2}")$ 

(2400 Hours) LAST

**INCLINATION AZIMUTH** <u>INCLINATIO</u>N **AZIMUTH SURVEYS**:  $\underline{MD}$  (m)  $\underline{MD}$  (m) 0.5 Anderdrift Anderdrift 263 407 0 302 1.0 Anderdrift 493 0.5 Anderdrift

#### PREVIOUS 24 HOURS OPERATIONS SUMMARY: (22/10/04)

CONTINUE TO RUN IN HOLE WITH THE 445mm (17 1/2") DRILLING ASSEMBLY. TAG THE TOP OF CEMENT AT 114.5m. DRILL CEMENT AND CASING SHOE TRACK TO 122.5m. DRILL 445mm (17 1/2") HOLE FROM 122.5m TO 133m. PULL BACK AND PICK UP DRILL COLLARS. DRILL 445mm (17 1/2") HOLE FROM 133m TO 179m. PULL BACK TO 120m. SERVICE TOP DRIVE. PICK UP DRILL COLLARS. RUN IN HOLE, TAKE WEIGHT AT 122m. REAM SHOE TO CLEAR OBSTRUCTION. RUN IN HOLE. TAKE WEIGHT AT 168m. WASH AND REAM 168m - 179m. DRILL 445mm (17 1/2") HOLE FROM 179m TO 514m SWEEPING MID STAND WITH HI-VIS MUD AND SPOTTING HI-VIS BEFORE CONNECTIONS.

#### 00:00 - 05:00 HOURS EST (23/10/04):

DRILL 445mm (17 1/2") HOLE FROM 514m TO 628m. SWEEP HOLE WITH PHG MUD. DISPLACE HOLE TO HI-VIS MUD.

#### **ANTICIPATED OPERATIONS:**

PULL OUT OF HOLE. RUN AND CEMENT 340mm (13-3/8") CASING.

A.B.N. 80 007 550 923

### WELL PROGRESS REPORT

DATE: 23/10/04 - 06:00 HRS EST	MARTHA 1	REPORT NO: 3

FORMATION	TOPS:	MDRT (m)	Subsea (m)	High/Low to Prognosis (m)	High /Low to Casino 3 (m)
	HYDROCARBO	N SHOW SUMMAR	RY		
INTERVAL	LITHOLOGY				GAS
	GEOLOGICAL	SUMMARY			
INTERVAL (m/hr)	LITHOLOGY				GAS
	RETURNS TO S	EAFLOOR.			

A.B.N. 80 007 550 923

#### WELL PROGRESS REPORT

DATE: 24/10/04 - 06:00 HRS EST | MARTHA 1 | REPORT NO: 4

(As at 2400 hours EST, 23/10/04) **DEPTH**: 628 mMD

**PROG:** 114m

**DAYS FROM SPUD: 4** 

(00:00-24:00)

**OPERATION:** RUNNING IN HOLE WITH THE 340mm (13 3/8") CASING.

(As at 0600 hours EST, 24/10/04) **DEPTH:** 628 mMD **PROGRESS:** 0m

(06:00-06:00)

**OPERATION**: CEMENTING 340mm (13 3/8") CASING.

AFE COST \$ CUMULATIVE COST \$

CASING SHOE: 340mm (13-3/8") CASING SET AT 621.2m RIG: OCEAN PATRIOT

RT – SEAFLOOR: 76.2m LAT

PROGRAMMED TD: 1878 mMD ROTARY TABLE: 21.5 m LAT WATER DEPTH: 54.7m LAT

MUD DATA Type: Wt: Vis: FL: PH: KCl Cl: PV/YP: Rmf:

(2400 Hours) Hi-vis sweeps 1.06 16 9.5 300 (8.8)

No. Make Type Size (mm/in.) Hours Drilled (m) Condition **PRESENT BIT DATA** 2 STC XRTC 445mm 505.5 1-1-WT-A-E-I-NO-TD (2400 Hours) LAST 20 (17 1/2")

**SURVEYS**: MD (m) **INCLINATION AZIMUTH** MD (m) **INCLINATION AZIMUTH** 550 Anderdrift 608 Anderdrift 0 0.5 579 0 0.5 Anderdrift 628 Anderdrift

#### PREVIOUS 24 HOURS OPERATIONS SUMMARY: (23/10/04)

DRILL 445mm (17 ½") HOLE FROM 514m TO 628m. SWEEP HOLE WITH PHG MUD. DISPLACE HOLE TO HIVIS MUD. PULL OUT OF HOLE WORKING STRING THROUGH TIGHT SPOTS. JET WELL HEAD ON THE WAY OUT. LAY OUT BIT AND STABILISERS. MAKE UP CASING RUNNING TOOL AND PLUG LAUNCHER. RIG TO RUN CASING. MAKE UP SHOE TRACK. RUN 340mm (13 3/8") 101.2 KG/M L80 CASING.

#### 00:00 - 05:00 HOURS EST (24/10/04):

CONTINUE TO RUN 340mm (13 3/8") CASING. MAKE UP HOUSING JOINT. LAND OUT HOUSING JOINT. RIG UP CEMENT LINES. CIRCULATE PRIOR TO CEMENTING. PRESSURE TEST CEMENT LINES.

#### **ANTICIPATED OPERATIONS:**

RUN BLOW OUT PREVENTER AND MARINE RISER.

A.B.N. 80 007 550 923

### WELL PROGRESS REPORT

DATE: 24/10/04 - 06:00 HRS EST	MARTHA 1	REPORT NO: 4

FORMATION	TOPS:	MDRT (m)	Subsea (m)	High/Low to Prognosis (m)	High /Low to Casino 3 (m)
	HYDROCARBO	N SHOW SUMMAR	RY		<u> </u>
INTERVAL	LITHOLOGY				GAS
	GEOLOGICAL S	SUMMARY			
INTERVAL (m/hr)	LITHOLOGY				GAS

A.B.N. 80 007 550 923

#### WELL PROGRESS REPORT

DATE: 25/10/04 - 06:00 HRS EST | MARTHA 1 | REPORT NO: 5

(As at 2400 hours EST, 24/10/04) **DEPTH**: 628 mMD

PROG: 0m

DAYS FROM SPUD: 5

(00:00-24:00)

**OPERATION:** RUNNING BLOW OUT PREVENTER AND MARINE RISER.

(As at 0600 hours EST, 25/10/04) **DEPTH:** 628 mMD **PROGRESS:** 0m

(06:00-06:00)

**OPERATION**: SERVICING SLIP JOINT PRIOR TO PICKING UP DRILL PIPE.

AFE COST \$ CUMULATIVE COST \$

CASING SHOE: 340mm (13-3/8") CASING SET AT 620.8m RIG: OCEAN PATRIOT

RT – SEAFLOOR: 76.2m LAT

PROGRAMMED TD: 1878 mMD ROTARY TABLE: 21.5 m LAT WATER DEPTH: 54.7m LAT

MUD DATA Type: Wt: Vis: FL: PH: KCl Cl: PV/YP: Rmf:

(2400 Hours) Spud Mud 1.06 110 11 9.5 300 10/35

(8.8)

No. Make Type Size (mm/in.) Hours Drilled (m) Condition

BIT DATA PRESENT (2400 Hours) LAST

SURVEYS: MD (m) INCLINATION AZIMUTH MD (m) INCLINATION AZIMUTH

#### PREVIOUS 24 HOURS OPERATIONS SUMMARY: (24/10/04)

RUN 340mm (13 3/8") 101.2 KG/M L80 CASING. MAKE UP HOUSING JOINT. LAND OUT HOUSING JOINT. RIG UP CEMENT HEAD AND LINES. LAND OUT CASING. 340mm (13 3/8") SHOE SET AT 620.76m. PRESSURE TEST CEMENT LINES. CEMENT CASING, BUMP PLUG. FLOATS HELD O.K. PULL OUT OF HOLE WITH CASING RUNNING TOOL JETTING WELLHEAD ON THE WAY OUT. RIG TO RUN BLOW OUT PREVENTER AND RISER. TEST CHOKE AND KILL LINES. PICK UP SLIP JOINT AND LANDING JOINT. NIPPLE UP CHOKE AND KILL LINES.

#### 00:00 - 06:00 HOURS EST (25/10/04):

INSTALL STORM LOOPS. CENTRE RIG OVER HOLE. LAND BLOW OUT PREVENTER AND CONFIRM LATCH. SCOPE OUT SLIP JOINT. LAY OUT RISER HANDLING EQUIPMENT. INSTALL DIVERTER. LAY OUT RUNNING TOOL. SERVICE SLIP JOINT.

#### ANTICIPATED OPERATIONS:

PICK UP DRILL PIPE AND MAKE UP STANDS FOR DRILLING WHILE WAITING ON CEMENT. FUNCTION TEST BLOW OUT PREVENTER AND PRESSURE TEST. MAKE UP 311mm (12¼") BOTTOM HOLE ASSEMBLY AND RUN IN HOLE. DRILL CEMENT AND SHOE TRACK.

A.B.N. 80 007 550 923

### WELL PROGRESS REPORT

DATE: 25/10/04 - 06:00 HRS EST	MARTHA 1	REPORT NO: 5

FORMATION	TOPS:	MDRT (m)	Subsea (m)	High/Low to Prognosis (m)	High /Low to Casino 3 (m)
	HYDROCARBO	N SHOW SUMMAR	RY		
INTERVAL	LITHOLOGY				GAS
	GEOLOGICAL S	SUMMARY			
INTERVAL (m/hr)	LITHOLOGY				GAS

A.B.N. 80 007 550 923

#### WELL PROGRESS REPORT

DATE: 26/10/04 - 06:00 HRS EST **REPORT NO: 6 MARTHA 1** 

(As at 2400 hours EST, 25/10/04) **DEPTH:** 628 mMD

PROG: 0m

**DAYS FROM SPUD: 6** 

(00:00-24:00)

RUNNING IN HOLE WITH THE 311mm (121/4") DRILLING ASSEMBLY. **OPERATION:** 

(As at 0600 hours EST, 26/10/04) **DEPTH:** 628 mMD **PROGRESS:** 0m

(06:00-06:00)

**OPERATION**: DRILLING THE 340mm (13 3/8") SHOE TRACK.

\$ AFE COST **CUMULATIVE COST** 

**CASING SHOE**: 340mm (13-3/8") CASING SET AT 620.8m RIG: OCEAN PATRIOT

RT – SEAFLOOR: 76.2m LAT

PROGRAMMED TD: 1878 mMD **ROTARY TABLE: 21.5 m LAT** WATER DEPTH: 54.7m LAT

**MUD DATA** Type: Wt: Vis: FL: PH: KCl C1:PV / YP: Rmf:

(2400 Hours) KCl/PHPA/Glydril 1.07 59 9.5 9.5 7.5 38k 12/14

(8.9)

No. Make Type Size (mm/in.) Hours Drilled (m) Condition 3 REED IN HOLE

**PRESENT** TD43H 311mm **BIT DATA** 

KPRDH  $(12\frac{1}{4}")$ (2400 Hours) LAST

**SURVEYS**: **INCLINATION** AZIMUTH **INCLINATION AZIMUTH** MD (m) MD (m)

#### PREVIOUS 24 HOURS OPERATIONS SUMMARY: (25/10/04)

NIPPLE UP CHOKE AND KILL LINES. CENTRE RIG OVER HOLE. LAND BLOW OUT PREVENTER. CONFIRM LATCH. SCOPE OUT SLIP JOINT. INSTALL DIVERTER. SERVICE SLIP JOINT. LAY OUT 445mm (171/2") BOTTOM HOLE ASSEMBLY. PICK UP 5" DRILL PIPE STANDS AND STAND BACK IN DERRICK. FUNCTION TEST DIVERTER. CONTINUE TO PICK UP 5" DRILL PIPE. MAKE UP THE 311mm (121/4") BOTTOM HOLE ASSEMBLY, SHALLOW TEST MWD TOOLS. RUN IN HOLE WITH THE 311mm (12<sup>1</sup>/<sub>4</sub>") BOTTOM HOLE ASSEMBLY.

#### 00:00 - 06:00 HOURS EST (26/10/04):

CONTINUE TO RUN IN HOLE TO 440m. FUNCTION TEST BLUE POD. PRESSURE TEST BLOW OUT PREVENTER CONNECTOR AND CASING TO 1380/20680 KPa (200/3000 PSI). FUNCTION TEST MAIN UNIT WITH YELLOW POD AND ACCUMULATOR TEST. RUN IN HOLE TO 546m. BREAK CIRCULATION AND WASH DOWN. TAG TOP OF CEMENT AT 570m. DRILL CEMENT AND SHOE TRACK 570m TO 594m.

#### **ANTICIPATED OPERATIONS:**

DRILL 340mm (13-3/8") SHOE TRACK AND 3m OF NEW HOLE. CONDUCT LEAK-OFF TEST. DRILL AHEAD WITH 311mm (121/4") HOLE.

#### MWD SENSOR OFFSETS FROM THE BIT:

GR 3.46m, RES 5.77m, PWD 8.3m, SURVEYS 12.3m

A.B.N. 80 007 550 923

### WELL PROGRESS REPORT

DATE: 26/10/04 - 06:00 HRS EST	MARTHA 1	REPORT NO: 6

FORMATION	TOPS:	MDRT (m)	Subsea (m)	High/Low to Prognosis (m)	High /Low to Casino 3 (m)
					·
	HYDROCARBO	N SHOW SUMMAR	RY		
INTERVAL	LITHOLOGY				GAS
	1				
	GEOLOGICAL	SUMMARY			
INTERVAL (m/hr)	LITHOLOGY				GAS
	NO NEW FORM	ATION DRILLED.			

**DAYS FROM SPUD: 7** 

# Santos

A.B.N. 80 007 550 923

#### WELL PROGRESS REPORT

DATE: 27/10/04 - 06:00 HRS EST | MARTHA 1 | REPORT NO: 7

(As at 2400 hours EST, 26/10/04) **DEPTH**: 866 mMD **PROG**: 238m

(00:00-24:00)

OPERATION: CONTROL DRILLING 311mm (12 1/4") HOLE @ 10-15m/hr TO LIMIT MUD LOSSES OVER

SHAKERS.

(As at 0600 hours EST, 27/10/04) **DEPTH**: 913 mMD **PROGRESS**: 285m

(06:00-06:00)

**OPERATION**: DRILLING 311mm (12 1/4") HOLE @ 20-30 m/hr.

AFE COST \$ CUMULATIVE COST \$

CASING SHOE: 340mm (13-3/8") CASING SET AT 620.8m RIG: OCEAN PATRIOT

RT – SEAFLOOR: 76.2m LAT

**PROGRAMMED TD:** 1878 mMD **ROTARY TABLE:** 21.5 m LAT **WATER DEPTH:** 54.7m LAT

MUD DATA Type: Wt: Vis: FL: PH: KCl Cl: PV/YP: Rmf:

(2400 Hours) KCI/PHPA/Glydril 1.08 (9.0) 47 7.6 9.4 7.5 38k 15/18

Make Hours Drilled (m) Condition Type Size (mm/in.) No. TD43HKPRDH **PRESENT REED** 311mm (121/4") DRILLING **BIT DATA** 3 10.7 238

(2400 Hours) LAST

**SURVEYS**: MD(m)**INCLINATION AZIMUTH INCLINATION**  $\underline{MD}$  (m) **AZIMUTH** 760 0.35 171 846 0.12 249 873 0.05 166

#### PREVIOUS 24 HOURS OPERATIONS SUMMARY: (26/10/04)

RUN IN HOLE 311mm (12¼") BOTTOM HOLE ASSEMBLY. FUNCTION TEST BLUE POD. PRESSURE TEST BLOW OUT PREVENTER CONNECTOR, CASING TO 1380/20680 KPa (200/3000 PSI). FUNCTION TEST MAIN UNIT ON YELLOW POD, ACCUMULATOR TEST. RUN IN HOLE TO 546m. BREAK CIRCULATION, WASH DOWN. TAG TOP OF CEMENT AT 570m. DRILL CEMENT AND SHOE TRACK FROM 570m, SHOE AT 620.8m. CLEAN RAT HOLE TO 628m WHILE DISPLACING TO KCI/PHPA/GLYCOL MUD. DRILL 3m OF NEW FORMATION TO 631m. PULL BACK, CONDUCT LEAK-OFF TEST, EQUIVALENT MUD WEIGHT (EMW) = 2.60SG (21.6PPG). MAIN RIG GENERATOR SHUT DOWN. CIRCULATE UTILISING CEMENT UNIT WHILE TROUBLE SHOOTING GENERATOR PROBLEM. DRILL 311mm (12¼") HOLE FROM 631m 646m. CONTROL DRILL 311mm (12¼") HOLE FROM 646m TO 866m TO LIMIT MUD LOSSES OVER SHAKERS.

#### 00:00 - 06:00 HOURS EST (27/10/04):

CONTROL DRILL 311mm (12  $\frac{1}{4}$ ") HOLE FROM 866m TO 889m TO LIMIT MUD LOSSES OVER THE SHAKERS. PUMP HIGH VISCOCITY PILL AND CIRCULATE HOLE CLEAN WHILE CHANGING SHAKER SCREENS. DRILL 311mm (12  $\frac{1}{4}$ ") HOLE FROM 889m TO 913m.

#### **ANTICIPATED OPERATIONS:**

DRILL 311mm (121/4") HOLE TO PROGRAMMED TOTAL DEPTH OF ~1872mMD.

#### MWD SENSOR OFFSETS FROM THE BIT:

GR 3.46m, RES 5.77m, PWD 8.3m, SURVEYS 12.3m

A.B.N. 80 007 550 923

### WELL PROGRESS REPORT

DATE: 27/10/04 - 06:00 HRS EST | MARTHA 1 | REPORT NO: 7

FORMATION TOPS:	MDRT (m)	Subsea (m)	High/Low to Prognosis (m)	High /Low to Casino 3 (m)

HYDROCARBON SHOW SUMMARY			
INTERVAL	LITHOLOGY	GAS	

	GEOLOGICAL SUMMARY	
INTERVAL (m/hr)	LITHOLOGY	GAS
628 – 645m 14 – 52 m/hr Av: 33 m/hr	CALCAREOUS CLAYSTONE WITH MINOR INTERBEDDED CALCARENITE. CALCAREOUS CLAYSTONE: medium dark grey, medium to dark brownish grey, trace glauconite, minor forams, soft to firm, sub blocky to blocky.  CALCARENITE: light brown to off white, very pale cream, slightly silty in part, trace fossil / shell fragments, friable to moderately hard, nil to very poor inferred porosity, blocky.	No gas
645 – 671m 5 – 88 m/hr Av: 45 m/hr	INTERBEDDED CALCAREOUS CLAYSTONE AND SANDSTONE. <u>CALCAREOUS CLAYSTONE</u> : med grey, light to medium brownish grey, medium dark brownish grey in part, minor fossil fragments, rare forams, trace very fine glauconite, firm, blocky to sub blocky. <u>SANDSTONE</u> : very light brown, very light grey white, off white, white, very fine to fine grained, trace medium, well sorted, sub round to sub angular, common moderately strong calcareous cement, minor white argillaceous matrix, moderately hard, very poor inferred porosity, no fluorescence.	No gas
671 – 750m 11 – 150 m/hr Av: 64 m/hr	SANDSTONE WITH MINOR INTERBEDDED CLAYSTONE.  SANDSTONE: common orange brown FE stain, translucent, clear, fine grained – with depth becoming predominantly medium to coarse, sub angular to sub round, rare weak calcareous cement, trace light grey silty matrix, trace very fine glauconite, trace forams, rare limestone fragments, trace fine grained lithics, friable to predominmantly loose, good inferred porosity, no fluorescence.  CLAYSTONE: glauconite, light to medium greenish grey, minor very fine grained glauconite, trace forams, slightly arenaceous in part, soft to firm, sub blocky to blocky.	No gas

A.B.N. 80 007 550 923

### WELL PROGRESS REPORT

DATE: 27/10/04 - 06:00 HRS EST | MARTHA 1 | REPORT NO: 7

	GEOLOGICAL SUMMARY	
INTERVAL (m/hr)	LITHOLOGY	GAS
750 – 774m 16 – 309 m/hr Av: 85 m/hr	INTERBEDDED SANDSTONE AND SILTSTONE.  SANDSTONE: clear, translucent, fine to coarse predominmantly fine to medium, fair sorting, sub angular to predominmantly sub round, trace mica, rare nodular pyrite, predominmantly loose clean quartz grains, good inferred porosity, no fluorescence.  SILTSTONE: medium to dark brown, medium to dark brownish grey, very finely arenaceous in part, argillaceous in part grading to CLAYSTONE, trace very fine glauconite, trace fine lithics, firm, sub blocky to blocky.	No gas
774 – 845m 2 – 298 m/hr Av: 42 m/hr	SANDSTONE WITH MINOR INTERBEDDED SILTSTONE.  SANDSTONE: clear, translucent, very light grey, fine to predominmantly very coarse, sub angular to sub round, moderately sorted, predominmantly loose quartz grains, minor nodular pyrite, good inferred porosity, no fluorescence.  SILTSTONE: medium to dark brownish grey, argillaceous in part, arenaceous, trace very fine glauconite, trace fine grained lithics, firm, sub blocky to blocky.	No gas
845 – 913m 1 – 225 m/hr Av: 25 m/hr	SANDSTONE: clear, translucent, fine to coarse grained, predominmantly medium to coarse grained, becoming coarse to very coarse with depth, sub angular to round, predominantly sub rounded, moderate to well sorted, rare light grey silty matrix, trace to common calcareous fragments, rare fine grained glauconite, trace very fine lithics, trace carbonaceous inclusions, rare pyrite, loose, good inferred porosity, no fluorescence.	No gas

A.B.N. 80 007 550 923

#### WELL PROGRESS REPORT

DATE: 28/10/04 - 06:00 HRS EST | MARTHA 1 | REPORT NO: 8

(As at 2400 hours EST, 27/10/04) **DEPTH**: 1188 mMD

**PROG:** 322m

DAYS FROM SPUD: 8

(00:00-24:00)

**OPERATION:** DRILLING 311mm (12 1/4") HOLE @ 25-30 m/hr.

(06:00-06:00)

**OPERATION**: CIRCULATING HOLE CLEAN AT 1262m PRIOR TO PULLING OUT OF HOLE TO CHANGE

BIT.

AFE COST \$ CUMULATIVE COST \$

Make

**REED** 

Type

TD43HKPRDH

CASING SHOE: 340mm (13-3/8") CASING SET AT 620.8m RIG: OCEAN PATRIOT

RT – SEAFLOOR: 76.2m LAT WATER DEPTH: 54.7m LAT

Drilled (m)

322

Hours

19.5

Condition

PROGRAMMED TD: 1878 mMD ROTARY TABLE: 21.5 m LAT WATER DEPTH: 54.7m LAT

MUD DATA Wt: PH: **KC1** C1: PV / YP: Type: Vis: FL: Rmf: (2400 Hours) KCl/PHPA/Glydril 14k 0.33Ωm @ 75°Fht 1.04 (8.7) 40 12.6 8.0 7/12

Size (mm/in.)

311mm (121/4")

(2400 Hours) LAST **INCLINATION AZIMUTH INCLINATION AZIMUTH SURVEYS**: MD (m) MD(m)1161 2.60 210 1190 2.80 210 1219 3.10 212

#### PREVIOUS 24 HOURS OPERATIONS SUMMARY: (27/10/04)

No.

3

**PRESENT** 

CONTROL DRILL 311mm (12 ¼") HOLE FROM 866m TO 888m MAINTAINING 15 m/hr DUE TO LOOSES OVER THE SHAKERS. PUMP AND DISPLACE 15.8 m3 (100 bbls) OF HIGH VISCOSITY SWEEP. CIRCULATE AND CONDITION HOLE WHILE CONSOLIDATING MUD RESERVES. DRILL FROM 888m TO 994m USING LOW FLOW RATES (800 gpm). DRILL 311mm (12 ¼") HOLE FROM 994m TO 1188m.

#### 00:00 - 06:00 HOURS EST (28/10/04):

DRILL 311mm (12  $\frac{1}{4}$ ") HOLE 1188m TO 1262m. CIRCULATE HOLE AT 1262m BEFORE PULLING OUT OF HOLE TO CHANGE BIT.

#### ANTICIPATED OPERATIONS:

**BIT DATA** 

PULL OUT OF HOLE TO CHANGE BIT. DOWN LOAD MWD MEMORY DATA. PICK UP BIT 4, 311mm (12 ¼") HYCALOG DSX104 (PDC) AND RUN IN HOLE. DRILL 311mm (12¼") HOLE FROM 1262m TO TARGET DEPTH.

#### MWD SENSOR OFFSETS FROM THE BIT:

GR 3.46m, RES 5.77m, PWD 8.3m, SURVEYS 12.3m

A.B.N. 80 007 550 923

### WELL PROGRESS REPORT

DATE: 28/10/04 - 06:00 HRS EST	MARTHA 1	REPORT NO: 8

FORMATION TOPS:	MDRT (m)	Subsea (m)	High/Low to Prognosis (m)	High /Low to Casino 3 (m)

	HYDROCARBON SHOW SUMMARY				
INTERVAL	LITHOLOGY	GAS			

	GEOLOGICAL SUMMARY	
INTERVAL	LITHOLOGY	GAS
(m/hr)		
913 – 934m	SANDSTONE WITH OCCASIONAL THIN INTERBEDDED SILTSTONE.	No Gas
2 – 220 m/hr	SANDSTONE: clear, translucent, fine to coarse grained, predominmantly medium to	
Av: 37 m/hr	coarse grained, becoming coarse to very coarse with depth, sub angular to round,	
	predominantly sub rounded, moderate to well sorted, rare light grey silty matrix,	
	trace to common calcareous fragments, rare fine grained glauconite, trace very fine	
	lithics, trace carbonaceous inclusions, rare pyrite, loose, good inferred porosity, no	
	fluorescence.	
	SILTSTONE: medium brownish grey, arenaceous, trace very fine lithic, soft to firm,	
	blocky.	
934 – 975m 2 – 219 m/hr Av: 38 m/hr	<u>SANDSTONE</u> : translucent, clear, white, light grey in part, fine to very coarse, predominantly coarse to very coarse, sub rounded to rounded, trace light grey silty matrix, trace calcareous fragments, predominantly loose clean quartz grains, good inferred porosity, no fluorescence.	4 – 15 Units 96/4/Tr/Tr/Tr %
975 – 993m	SANDSTONE WITH INTERBEDDED SILTSTONE.	1 – 9 Units
2 - 220  m/hr	SILTSTONE: medium to dark brownish grey, very finely arenaceous, rare nodular	94/4/Tr/1/1 %
Av: 42 m/hr	pyrite, trace very fine glauconite, interlaminated with very fine SANDSTONE, friable,	) I/ I/ I/ I/ I / O
	blocky.	
	SANDSTONE: clear, translucent, very fine to medium predominantly fine grained,	
	sub angular to sub rounded, interlaminated with siltstone as above, predominantly	
	loose quartz grains, poor inferred porosity, and no fluorescence.	

A.B.N. 80 007 550 923

### WELL PROGRESS REPORT

DATE: 28/10/04 - 06:00 HRS EST | MARTHA 1 | REPORT NO: 8

	CEOLOCICAL CHMMADV	
INTERVAL	GEOLOGICAL SUMMARY LITHOLOGY	GAS
	LITHOLOGY	GAS
(m/hr) 993 – 1035m 2 – 203 m/hr Av: 42 m/hr	INTERBEDDED SANDSTONE AND SILTSTONE. <u>SILTSTONE</u> : medium to dark brownish grey, very finely arenaceous, interlaminated with very fine SANDSTONE, friable, blocky. <u>SANDSTONE</u> : clear, translucent, very fine to medium predominantly fine grained, sub angular to sub rounded, interlaminated with siltstone as above, predominantly loose quartz grains, poor inferred porosity, and no fluorescence.	3 – 20 Units 97/3/Tr/Tr/Tr % Peak: 70 Units 92/5/2/1/Tr %
1035 – 1060m 179 – 242 m/hr Av: 222 m/hr	SANDSTONE WITH MINOR SILTSTONE INTERBEDS  SANDSTONE: clear, translucent, light brown to light olive grey, fine to very coarse grained, dominantly medium to coarse grained, poor to moderately sorted, sub angular to rounded, weak to moderate calcareous cement, trace weak siliceous cement, trace siliceous cement, trace to common pyrite, trace to common very fine to fine glauconite, trace carbonaceous specks, trace lithics, predominmantly loose, trace moderately hard aggregates, poor to fair inferred and visual porosity, no fluorescence.  SILTSTONE: olive grey to olive black, brown black, medium to dark grey, arenaceous, locally grading to a very fine Sandstone, weakly calcareous, trace glauconite, trace to common carbonaceous specks, trace to locally common pyrite, firm to loc moderately hard, sub blocky to blocky.	4 – 20 Units 94/6/Tr/Tr/Tr % Peak: 100 Units 93/4/2/1/Tr %
1060 – 1100m 2 – 147 m/hr Av: 44 m/hr	SANDSTONE WITH SILTSTONE INTERBEDS  SANDSTONE: clear, translucent, light brown to light olive grey, very fine to fine grained, common medium to coarse grained, poor to moderately sorted, sub angular to rounded, weak to moderate calcareous cement, trace weak siliceous cement, trace siliceous matrix, trace to common pyrite with pyrite percentage increasing around 1080m, trace to common very fine to fine glauconite, trace carbonaceous specks, trace lithics, rare fossile fragments, predominmantly loose, trace moderately hard aggregates, poor to fair inferred and visual porosity, no fluorescence.  SILTSTONE: olive grey to olive black, brown black, medium to dark grey, arenaceous, locally grading to a very fine Sandstone, in part moderately calcareous, trace pyrite, trace carbonaceous specks, trace glauconite, firm to moderately hard, sub blocky to blocky.	4 – 40 Units 98/2/Tr/Tr/Tr %
1100 – 1133m 2 – 122 m/hr Av: 42 m/hr	SANDSTONE WITH SILTSTONE INTERBEDS  SANDSTONE: clear, translucent, light brown to light olive grey, very fine to medium grained, common coarse grained, moderately sorted, sub angular to rounded, weak to moderate calcareous cement, trace weak siliceous cement, trace glauconitic matrix, common to abundant glauconite, trace pyrite, trace carbonaceous specks, trace lithics, rare fossile fragments, predominmantly loose, trace moderately hard aggregates, poor to fair inferred and visual porosity, no fluorescence.  SILTSTONE: olive grey to olive black, brown black, medium to dark grey, arenaceous, locally grading to a very fine Sandstone, in part moderately calcareous, trace pyrite, trace carbonaceous specks, trace glauconite, firm to moderately hard, sub blocky to blocky.	20 – 90 Units 97/3/Tr/Tr/Tr % Peak: 210 Units 97/3/Tr/Tr/Tr %

A.B.N. 80 007 550 923

### WELL PROGRESS REPORT

DATE: 28/10/04 - 06:00 HRS EST | MARTHA 1 | REPORT NO: 8

	GEOLOGICAL SUMMARY	
INTERVAL	LITHOLOGY	GAS
(m/hr)		
1122 1170	CH TETONE WITH CANDETONE INTERDEDE	10 27 Haita
1133 – 1178m 10 – 113 m/hr Av: 30 m/hr	SILTSTONE WITH SANDSTONE INTERBEDS  SILTSTONE: medium to medium dark grey, olive grey, brown grey, argillaceous to arenaceous, locally grading a very fine Sandstone, trace carbonaceous specks, trace glauconite, firm to moderately hard, sub blocky to blocky.  SANDSTONE: clear, translucent, light brown, very fine to medium grained, predominmantly fine to medium grained, poorly sorted, sub angular to sub round, weak siliceous cement, common to abundant argillaceous to siliceous cement, loc grading to a Siltstone, trace glauconite, trace pyrite, trace to common carbonaceous specks, rare lithics, predominmantly loose, rare friable to moderately hard aggregates, poor visual and inferred porosity, no fluorescence.	19 – 37 Units Peak: 151 Units 97/3/Tr/Tr/Tr %
1178 – 1218m 7 – 97 m/hr Av: 73 m/hr	INTERBEDDED SILTSTONE AND SANDSTONE  SILTSTONE: medium to medium dark grey, olive grey, brown grey, argillaceous to arenaceous, locally grading a very fine Sandstone, trace carbonaceous specks, trace glauconite, trace pyrite, firm to moderately hard, sub blocky to blocky.  SANDSTONE: clear, translucent, light brown, very fine to coarse grained, dominantly fine to medium grained, poorly sorted, sub angular to sub round, common angular, weak siliceous cement, common to abundant argillaceous to siliceous cement, locally grading to a Siltstone, trace to common glauconite, trace to common carbonaceous specks, trace to common pyrite, trace fossile fragments, rare lithics, predominmantly loose, rare friable to moderately hard aggregates, poor visual and inferred porosity, no fluorescence.	15 – 40 Units Peak: 93 Units 97/3/Tr/Tr/Tr %
1218 – 1262m 11 – 105 m/hr Av: 20 m/hr	INTERBEDDED SILTSTONE AND SANDSTONE  SILTSTONE: dark grey, olive black, dark brown grey to brown black, medium grey, argillaceous to arenaceous, trace carbonaceous specks, trace micro micaceous, firm to moderately hard, locally hard, sub blocky to blocky.  SANDSTONE: clear to translucent, light brown to light olive grey, very fine to medium grained, common coarse grained, predominmantly very fine to fine grained, poor to moderately sorted, weak to moderately calcareous cement, trace to common argillaceous to siliceous matrix, trace very fine glauconite, rare pyrite, trace carbonaceous inclusions, loose, trace friable aggregates, poor to fair inferred porosity, no fluorescence.	10 – 60 Units Peak: 206 Units 96/3/1/Tr/Tr %

A.B.N. 80 007 550 923

#### WELL PROGRESS REPORT

DATE: 29/10/04 - 06:00 HRS EST | MARTHA 1 | REPORT NO: 9

(As at 2400 hours EST, 28/10/04) **DEPTH**: 1305 mMD

**PROG:** 117m (00:00-24:00)

DAYS FROM SPUD: 9

**OPERATION:** CONTROL DRILLING 311mm (12<sup>1</sup>/<sub>4</sub>") HOLE AT 20-30

m/hr.

(As at 0600 hours EST, 29/10/04) **DEPTH:** 1431 mMD **PROGRESS:** 169m

(06:00-06:00)

**OPERATION**: CONTROL DRILLING 311mm (12 1/4") HOLE AT 30 m/hr.

AFE COST \$ CUMULATIVE COST \$

CASING SHOE: 340mm (13-3/8") CASING SET AT 620.8m RIG: OCEAN PATRIOT

RT – SEAFLOOR: 76.2m LAT

**PROGRAMMED TD:** 1878 mMD **ROTARY TABLE:** 21.5 m LAT **WATER DEPTH: 54.7m LAT** 

MUD DATA Type: Wt: Vis: FL: PH: KCl Cl: PV/YP: Rmf:

 $(2400 \ Hours) \qquad \qquad KCl/PHPA/Glydril \qquad 1.14 \ (9.5) \qquad 40 \qquad 14.2 \qquad 8.0 \qquad - \qquad 14k \qquad 9/17 \qquad \qquad 0.41 \Omega m \ @ \ 75^{\circ}Fht$ 

		No.	Make	Type	Size (mm/in.)	Hours	Drilled	Condition
BIT DATA	PRESENT	4	HYCALOG	DSX104	311mm (121/4")	2.5	43m	Drilling
(2400 Hours)	LAST	3	REED	TD43HKPRDH	311mm (12 <sup>1</sup> / <sub>4</sub> ")	34	634m	To Be Graded

SURVEYS:	<u>MD</u> (m)	INCLINATION	<u>AZIMUTH</u>	<u>MD</u> (m)	INCLINATION	<u>AZIMUTH</u>
	1270	3.8	213	1362	3.2	217
	1305	3.6	213	1391	3.1	219
	1334	3.4	216			

#### PREVIOUS 24 HOURS OPERATIONS SUMMARY: (28/10/04)

DRILL 311mm (12¼") HOLE FROM 1188m TO 1262m. CIRCULATE BOTTOMS UP. PULL OUT OF HOLE TO CHANGE BIT. CHANGE OUT LWD TOOLS. PICK UP NEW 311mm (12 ¼") PDC BIT 4. RUN IN HOLE TO 575.5m, SERVICE TOP DRIVE. CONTINUE RUNNING IN HOLE FROM 575.5m TO 1262m, WASH AND REAM TIGHT HOLE AT 890m, AND 1149m TO 1262m. CONTROL DRILL 311mm (12 ¼") HOLE FROM 1262m TO 1305m.

#### 00:00 - 06:00 HOURS EST (29/10/04):

CONTROL DRILL 311mm (12<sup>1</sup>/<sub>4</sub>") HOLE FROM 1305m TO 1431m.

#### ANTICIPATED OPERATIONS:

DRILL 311mm (12<sup>1</sup>/<sub>4</sub>") HOLE TO TOTAL DEPTH.

#### MWD SENSOR OFFSETS FROM THE BIT:

GR 3.41m, RES 5.72m, PWD 8.16m, SURVEYS 12.17m

A.B.N. 80 007 550 923

### WELL PROGRESS REPORT

DATE: 29/10/04 - 06:00 HRS EST | MARTHA 1 | REPORT NO: 9

FORMATION TOPS:	MDRT (m)	Subsea (m)	High/Low to Prognosis (m)	High /Low to Casino 3 (m)

	HYDROCARBON SHOW SUMMARY	
INTERVAL 1362 – 1368m 17 – 35 m/hr Av: 25 m/hr	LITHOLOGY THYLACINE MEMBER SANDSTONE: clear, translucent, very fine to fine grained, occasionally medium grained, moderately sorted, sub angular to round, rare sideritic cement, trace argillaceous to silty matrix, trace very fine glauconite, trace carbonaceous specks, rare lithics, rare fossile fragments, loose, fair inferred porosity, no fluorescence.	GAS BG: 37 Units Peak: 222 Units 96/3/1/Tr/Tr %
1381 – 1387m 35 – 65 m/hr Av: 38 m/hr	THYLACINE MEMBER  SANDSTONE: clear, translucent, very fine to medium grained, occasionally coarse grained, moderately sorted, sub angular to round, rare sideritic cement, trace argillaceous to silty matrix, trace very fine glauconite, trace carbonaceous specks, rare lithics, rare fossile fragments, loose, fair inferred porosity, no fluorescence.	BG: 30 Units Peak: 561 Units 96/3/1/Tr/Tr %

	GEOLOGICAL SUMMARY	
INTERVAL	LITHOLOGY	GAS
(m/hr)		
1262 – 1306m	INTERBEDDED SILTSTONE AND SANDSTONE	17 – 35 Units
9 - 21  m/hr	SILTSTONE: dark grey, olive black, dark brown grey to brown black, medium grey,	Peak: 180 Units
Av: 43 m/hr	argillaceous to arenaceous, trace carbonaceous specks, trace micro micaceous, firm to	96/3/1/Tr/Tr %
	moderately hard, locally hard, sub blocky to blocky.	
	SANDSTONE: clear to translucent, light brown to light olive grey, very fine to	
	medium grained, common coarse grained, predominmantly very fine to fine grained,	
	poor to moderately sorted, weak to moderately calcareous cement, trace to common	
	argillaceous to siliceous matrix, trace very fine glauconite, rare pyrite, trace	
	carbonaceous inclusions, loose, trace friable aggregates, poor to fair inferred porosity,	
	no fluorescence.	

A.B.N. 80 007 550 923

### WELL PROGRESS REPORT

DATE: 29/10/04 - 06:00 HRS EST | MARTHA 1 | REPORT NO: 9

	GEOLOGICAL SUMMARY	
INTERVAL	LITHOLOGY	GAS
(m/hr) 1306 – 1324m 10 – 45 m/hr Av: 37 m/hr	INTERBEDDED SANDSTONE AND SILTSTONE  SANDSTONE: clear, translucent, light brown, very fine to medium grained, predominmantly fine to medium grained, occasionally coarse to very coarse grains, poor to moderately sorted, minor weak siliceous cement, trace to common sideritic cement, trace light brown to brown grey argillaceous to silty matrix, sub angular to round, trace to common carbonaceous specks, trace to common glauconite, trace calcite grains, trace fossile fragments becoming common with depth, rare to trace pyrite, rare lithics, loose, common friable to moderately hard aggregates, poor to fair inferred porosity, no fluorescence.  SILTSTONE: medium dark grey, olive grey, brown grey, argillaceous to arenaceous, trace carbonaceous specks, trace micro micaceous, trace disseminated pyrite, firm to moderately hard, locally hard, sub blocky to blocky.	19 – 30 Units Peak: 45 Units 96/4/Tr/Tr/Tr %
1324 – 1362m 15 – 80 m/hr Av: 24 m/hr	SILTSTONE WITH SANDSTONE INTERBEDS  SILTSTONE: medium dark to dark grey, grey black, dark brown grey, olive grey, arenaceous to argillaceous, locally common carbonaceous specks and micro laminations, trace micro micaceous, moderately hard to hard, sub blocky to blocky.  SANDSTONE: clear, translucent, light brown, very fine to medium grained, predominmantly fine to medium grained, common coarse to very coarse grains, moderately sorted, minor weak siliceous cement, moderate sideritic cement, trace light brown to brown grey argillaceous to silty matrix, sub angular to round, trace to common carbonaceous specks, trace to common glauconite, trace calcite grains, trace fossile fragments, rare pyrite, rare lithics, loose, common friable to moderately hard aggregates, poor inferred porosity, no fluorescence.	14 – 34 Units Peak: 50 Units 95/4/1/Tr/Tr %
1362 – 1387m 15 – 26 m/hr Av: 17 m/hr	INTERBEDDED SILTSTONE AND SANDSTONE  SANDSTONE: clear, translucent, very fine to fine grained, occasionally medium grained, moderately sorted, sub angular to round, rare sideritic cement, trace argillaceous to silty matrix, trace very fine glauconite, trace carbonaceous specks, rare lithics, rare fossile fragments, loose, fair inferred porosity, no fluorescence.  SILTSTONE: medium to dark grey, brown black to olive black, argillaceous, locally arenaceous, trace carbonaceous specks, trace micro micaceous, rare glauconite, firm to moderately hard, sub blocky to blocky.	55 – 61 Units Peak: 1362-1367m 222 Units 96/3/1/Tr/Tr % 1381-1387 561 Units 96/3/1/Tr/Tr %
1387 – 1403m 20 – 80 m/hr Av: 30 m/hr	INTERBEDDED SILTSTONE AND SANDSTONE  SANDSTONE: clear, translucent, very fine to medium grained, common medium to coarse grained, moderately sorted, sub angular to round, rare sideritic cement, trace argillaceous to silty matrix, trace very fine glauconite, trace carbonaceous specks, rare lithics, rare fossile fragments, loose, fair inferred porosity, no fluorescence.  SILTSTONE: medium to dark grey, brown black to olive black, argillaceous, locally arenaceous, trace carbonaceous specks, trace micro micaceous, rare glauconite, firm to moderately hard, sub blocky to blocky.	20 – 40 Units 95/4/1/Tr/Tr %

A.B.N. 80 007 550 923

#### WELL PROGRESS REPORT

DATE: 30/10/04 - 06:00 HRS EST | MARTHA 1 | REPORT NO: 10

(As at 2400 hours EST, 29/10/04) **DEPTH:** 1800 mMD

**PROG:** 495m

**DAYS FROM SPUD: 10** 

(00:00-24:00)

**OPERATION:** PULLING OUT OF HOLE AFTER REACHING TOTAL DEPTH AT 1800m.

(As at 0600 hours EST, 30/10/04) **DEPTH:** 1800 mMD **PROGRESS:** 369m

(06:00-06:00)

**OPERATION**: PULLING OUT OF HOLE TO CONDUCT SUITE 1 WIRELINE LOGS.

AFE COST \$ CUMULATIVE COST \$

CASING SHOE: 340mm (13-3/8") CASING SET AT 620.8m RIG: OCEAN PATRIOT

RT – SEAFLOOR: 76.2m LAT

PROGRAMMED TD: 1878 mMD ROTARY TABLE: 21.5 m LAT WATER DEPTH: 54.7m LAT

 $(2400 \ Hours) \qquad \text{KCl/PHPA/Glydril} \qquad 1.20 \ (10.3) \qquad 59 \qquad 14 \qquad 8.0 \qquad 6.5 \qquad 40 k \qquad 20/25 \qquad 0.16 \Omega m \ @ \ 75 ^{\circ} Fht$ 

		No.	Make	Type	Size (mm/in.)	Hours	Drilled	Condition
BIT DATA	PRESENT	4	HYCALOG	DSX104	311mm (12 <sup>1</sup> / <sub>4</sub> ")	18.2	495m	IN HOLE
(2400 Hours)	LAST							

SURVEYS:	<u>MD</u> (m)	INCLINATION	<u>AZIMUTH</u>	<u>MD</u> (m)	<u>INCLINATION</u>	<u>AZIMUTH</u>
	1678	2.3	225	1764	2.6	220
	1707	2.4	224	1785	2.7	215
	1735	2.4	221	1800	2.7	215

#### PREVIOUS 24 HOURS OPERATIONS SUMMARY: (29/10/04)

CONTROL DRILL 311mm (12¼") HOLE FROM 1305m. TO 1634m. REPLACE PIN FROM TOP DRIVE LINK ADAPTER. DRILL 311mm (12¼") HOLE FROM 1634m TO 1800m, **REACHED TOTAL DEPTH OF 1800m AT 22:30 HRS ON 29/10/04.** CIRCULATE BOTTOMS UP AT 1800m. RECORD SLOW CIRCULATING RATES. PULL OUT OF HOLE TO RUN WIRELINE LOG SUITE 1.

#### 00:00 - 06:00 HOURS EST (30/10/04):

CONTINUE TO PULL OUT OF HOLE FROM TO 1608m, PUMP SLUG. CONTINUE TO PULL OUT OF HOLE TO 1364m. RUN IN HOLE, 1364m TO 1491m, WORK TIGHT SPOTS FROM 1364 - 1491m. PULL OUT OF HOLE FROM 1491m TO 1262, CIRCULATE HOLE CLEAN. CONTINUE TO PULL OUT OF HOLE FROM 1262m TO CONDUCT SUITE 1 WIRELINE LOGS.

#### ANTICIPATED OPERATIONS:

PULL OUT OF HOLE. LAY OUT LWD TOOLS. DOWN-LOAD MEMORY DATA. RIG UP BAKER ATLAS WIRELINE. CONDUCT SUITE 1 RUN 1 (GRAND SLAM – GR-RES-NUTRON-DENSITY-SONIC).

A.B.N. 80 007 550 923

### WELL PROGRESS REPORT

DATE: 30/10/04 - 06:00 HRS EST | MARTHA 1 | REPORT NO: 10

FORMATION TOPS:	MDRT (m)	Subsea (m)	High/Low to Prognosis (m)	High /Low to Casino 3 (m)

	HYDROCARBON SHOW SUMMARY	
INTERVAL 1481 – 1497 8 – 62 m/hr Av: 40 m/hr	LITHOLOGY  SANDSTONE: translucent to clear, fine to medium grained, minor medium to coarse grained, moderately sorted, common to minor carbonaceous fragments, trace very fine glauconite, trace lithics, predominantly loose, sub angular to sub rounded, fair to good inferred porosity, no fluorescence.	GAS BG: 20 Units Peak: 910 Units 92/5/2/1/Tr %
1577 – 1586 35 – 76 m/hr Av: 38 m/hr	SANDSTONE: light olive grey to light grey, translucent, clear, very fine to medium grained, trace coarse grained, poorly sorted, weak siliceous cement, common light grey argillaceous to silty matrix, trace carbonaceous specks, trace glauconite, rare pyrite, predominantly loose, common friable to moderately hard aggregates, poor inferred and visual porosity, no fluorescence.	BG: 30 Units Peak: 298 Units 95/4/1/Tr/Tr %
1604 – 1612 21 – 60 m/hr Av: 50 m/hr	SANDSTONE: clear, translucent, very light grey to light green grey, very fine to medium grained, moderately to well sorted, sub angular to sub round, predominmantly sub round, occasionally weak to moderately siliceous cement, trace argillaceous matrix, trace glauconite, trace lithics, occasionally soft to friable aggregates, predominmantly loose quartz grains, poor inferred porosity, no fluorescence.	BG: 70 Units Peak: 150 Units 95/4/1/Tr/Tr %

	GEOLOGICAL SUMMARY	
INTERVAL	LITHOLOGY	GAS
(m/hr)		
1403 – 1481m	SILTSTONE WITH MINOR INTERBEDDED SANDSTONE.	20-40 Units
3 – 132 m/hr	SILTSTONE: medium to dark brownish grey, dark grey, argillaceous, slightly	Peak: 58 Units
Av: 30 m/hr	arenaceous in part with thin very fine sandstone laminae, trace fine carbonaceous	93/5/2/Tr/Tr %
	specks, minor shell fragments, trace coarse loose clear quartz grains, firm to	
	moderately hard, sub blocky to blocky, occasionally sub fissile.	
	SANDSTONE: clear, translucent, slightly Fe stain in part, very fine to medium	
	predominantly fine grained, moderately well sub rounded, sub angular to	
	predominantly sub rounded, trace light grey argillaceous / silty matrix, trace very fine	
	glauconite, trace carbonaceous specks, rare lithic, minor fossil fragments,	
	predominantly loose, fair inferred porosity, no fluorescence.	

A.B.N. 80 007 550 923

### WELL PROGRESS REPORT

DATE: 30/10/04 - 06:00 HRS EST | MARTHA 1 | REPORT NO: 10

	GEOLOGICAL SUMMARY	
INTERVAL	LITHOLOGY	GAS
(m/hr)		
1481 – 1499m 3 – 80 m/hr Av: 31 m/hr	SANDSTONE WITH MINOR INTERBEDDED SILTSTONE.  SANDSTONE: clear, translucent, slightly yellow stain in part, fine to coarse predominantly medium grained, sub angular to sub rounded, weak calcareous cement, minor white argillaceous matrix, trace light grey silty matrix, common carbonaceous fragments, trace very fine glauconite (cavings?), trace fossil fragments, predominantly loose, friable to locally moderately hard aggregates in part, fair to good inferred porosity, no fluorescence.  SILTSTONE: (cavings ?) medium brownish grey, medium dark brownish grey, argillaceous, common fine grained glauconite, trace nodular pyrite, trace lithic, firm to occasionally moderately hard, sub blocky to blocky, occasionally sub fissile.	30 Units Peak: 298 Units 95/4/1/Tr/Tr %
1499 – 1518m 24 – 50 m/hr Av: 33 m/hr	SANDSTONE WITH INTERBEDDED SILTSTONE.  SANDSTONE: light grey, translucent, clear, very fine to fine occasionally medium grained, moderately well sorted, sub angular to sub rounded, rare weak siliceous cement, common very light brownish grey / greenish grey argillaceous to silty matrix, common fine carbonaceous specks / fragments, trace very fine lithics, trace fossil / shell fragments, friable, poor inferred porosity, no fluorescence.  SILTSTONE: light greenish grey, very light brownish grey, arenaceous grading to silty very fine SANDSTONE, rare very fine lithics, trace fine carbonaceous specks, soft to firm, sub blocky.	50 Units 93/4/1/Tr %
1518 – 1553m 21 – 98 m/hr Av: 43 m/hr	SANDSTONE WITH MINOR INTERBEDDED SILTSTONE.  SANDSTONE: translucent, clear, light brown, fine to medium, moderately well sorted, sub angular to predominantly sub rounded, trace light grey silty matrix, trace fine lithics, rare fine carbonaceous specks, trace fossil fragments, friable to predominantly loose, poor to fair inferred porosity, no fluorescence.  SILTSTONE: generally as above, light to medium grey, light brownish grey, argillaceous, very finely arenaceous, rare fine carbonaceous specks, minor, very fine lithic, soft to firm, blocky.	20 – 40 Units 93/4/1/1/Tr %
1553 – 1607m 16 – 75 m/hr Av: 28 m/hr	SANDSTONE WITH INTERBEDDED SILTSTONE.  SANDSTONE: light grey, light brownish grey, translucent, very fine to fine occasionally medium grained, sub angular to sub rounded, moderately well sorted, rare weak siliceous cement, common light grey argillaceous to silty matrix, trace fine carbonaceous specks, trace fossil fragments, firm to friable, occasionally loose, poor inferred porosity, no fluorescence.  SILTSTONE: light to occasionally medium grey, light brownish grey, argillaceous, very finely arenaceous, rare fine carbonaceous specks, minor, very fine lithic, soft to firm, blocky.	40 – 60 Units Peak: 115 Units 95/4/1/Tr/Tr %
1607 – 1696m 18 – 60 m/hr Av: 35 m/hr Stop controlled drilling from 1634m	SANDSTONE WITH INTERBEDDED ARENACEOUS SILTSTONE.  SANDSTONE: translucent, clear, light grey, light greenish grey in part, fine grained, trace medium, sub angular to sub round, weak siliceous cement in part, rare to minor light grey argillaceous matrix, occasionally grading to arenaceous siltstone, rare carbonaceous specks / fragments, rare fine grained lithics, firm to friable, loose in part, poor to fair inferred porosity, no fluorescence.  SILTSTONE: as above, light to medium grey, light brownish grey, light brown in part, very finely arenaceous, trace very fine lithic, trace fine carbonaceous specks, soft to firm, sub blocky.	40 – 60 Units Peak: 115 Units 95/4/1/Tr/Tr %

A.B.N. 80 007 550 923

### WELL PROGRESS REPORT

DATE: 30/10/04 - 06:00 HRS EST | MARTHA 1 | REPORT NO: 10

	GEOLOGICAL SUMMARY	
INTERVAL	LITHOLOGY	GAS
(m/hr)		
1696 – 1800m 15 – 250 m/hr Av: 65 m/hr	INTERBEDDED SILTSTONE AND SANDSTONE  SANDSTONE: translucent, clear, frosted, light grey in part, fine to medium grained, minor coarse grained, moderately sorted, sub angular to sub round, trace siliceous cement, rare calcareous cement, trace light grey silty matrix, trace lithics, trace fine carbonaceous flecks, rare nodular pyrite, friable to predominmantly loose, fair inferred porosity, no fluorescence.  SILTSTONE: light grey, white, olive grey, medium grey, light brown grey, argillaceous to arenaceous, trace carbonaceous specks, trace coal fragments, trace micro micaceous, firm to moderately hard sub blocky to blocky.	20 – 60 Units Peak: 75 Units 96/3/1/Tr/Tr %

A.B.N. 80 007 550 923

#### WELL PROGRESS REPORT

DATE: 31/10/04 - 06:00 HRS EST MARTHA 1 REPORT NO: 11

(As at 2400 hours EST, 30/10/04) **DEPTH:** 1800 mMD

PROG: 0m

**DAYS FROM SPUD: 11** 

(00:00-24:00)

**OPERATION:** RUNNING IN HOLE ON WIPER TRIP TO 1800m.

(As at 0600 hours EST, 31/10/04) **DEPTH:** 1800 mMD **PROGRESS:** 0m

(06:00-06:00)

**OPERATION:** CIRCULATING AND CONDITIONING HOLE AT 1800m PRIOR TO PULLING OUT OF HOLE

TO RUN ELECTRIC LOGS.

AFE COST \$ CUMULATIVE COST \$

CASING SHOE: 340mm (13-3/8") CASING SET AT 620.8m RIG: OCEAN PATRIOT

RT – SEAFLOOR: 76.2m LAT

**PROGRAMMED TD:** 1878 mMD **ROTARY TABLE:** 21.5 m LAT **WATER DEPTH: 54.7m LAT** 

No. Make Type **Drilled** Condition Size (mm/in.) **Hours** M16694 BIT DATA PRESENT 3RR REED 311mm (12 ½") Wiper Trip (2400 Hours) LAST 4 HYCALOG DSX104 311mm (121/4") 18.2 495m 2-3-BT-S-X-I-WT-TD

SURVEYS: MD (m) INCLINATION AZIMUTH MD (m) INCLINATION AZIMUTH

#### PREVIOUS 24 HOURS OPERATIONS SUMMARY: (30/10/04)

CONTINUE TO PULL OUT OF HOLE FROM 1800m TO 1608m, PUMP SLUG. CONTINUE TO PULL OUT OF HOLE TO 1364m. RUN IN HOLE FROM 1364m TO 1491m TO WORKING TIGHT SPOTS. PULL OUT OF HOLE FROM 1491m TO 1262, CIRCULATE HOLE CLEAN. CONTINUE PULLING OUT OF HOLE FROM 1262m TO CONDUCT SUITE 1 ELECTRIC LOGS. LAY OUT 311mm (12 ¼") BIT 4 AND DOWNLOAD LWD MEMORY DATA. HELD PRE-JOB SAFETY MEETING PRIOR TO RIGGING UP BAKER ATLAS LOGGING UNIT. RIG UP AND RUN IN HOLE WITH ELECTRIC LOGGING SUITE 1 / RUN 1, GRAND SLAM (RESISTIVITY-NEUTRON-DENSITY-GR-SONIC). UNABLE TO PASS BRIDGE AT 1466m WHILE RECORDING DOWN LOG ON RUN 1 – ATTEMPT TO PASS BRIDGE FOR 30 MINUTES. ABORT RUN 1 AND PULL OUT OF HOLE TO PERFORM A WIPER TRIP. RIG DOWN RUN 1 AND BAKER ATLAS SHIEVES. PICK UP 311mm (12 ¼") BOTTOM HOLE ASSEMBLY AND RUN IN HOLE WITH SAME. RUN IN HOLE TO 1274m REAMING LEDGES AT 1121m AND 1270m.

#### 00:00 - 06:00 HOURS EST (31/10/04):

CONTINUE RUNNING IN HOLE ON WIPER TRIP FROM 1274m TO 1800m REAMING TIGHT HOLE FROM 1464-1507m, 1582-1591m, 1630-1651m, 1717-1733m, 1764-1790m (TAKING WEIGHT OF BETWEEN 35-60 klbs). CIRCULATE AND CONDITION HOLE AT 1800m.

#### **ANTICIPATED OPERATIONS:**

RUN IN HOLE TO 1800m ON WIPER TRIP. CIRCULATE AND CONDITION HOLE AT 1800m. PULL OUT OF HOLE TO RUN ELECTRIC LOGS. RIG UP BAKER ATLAS LOGGERS AND CONDUCT LOGGING SUITE 1 / RUN 1.

A.B.N. 80 007 550 923

### WELL PROGRESS REPORT

DATE: 31/10/04 - 06:00 HRS EST		MARTHA 1			REPORT NO: 11		
FORMATION	TOPS:	MDRT (m)	Subsea (m)		gh/Low to ognosis (m)	High /Low to Casino 3 (m)	
	HYDROCARBON SI	HOW SUMMAR	RY				
INTERVAL	LITHOLOGY					GAS	
	GEOLOGICAL GIDA	D # 4 D X7					
INTERVAL (m/hr)	GEOLOGICAL SUM LITHOLOGY	UVIAK Y				GAS	

A.B.N. 80 007 550 923

#### WELL PROGRESS REPORT

DATE: 01/11/04 - 06:00 HRS EST | MARTHA 1 | REPORT NO: 12

(As at 2400 hours EST, 31/10/04) **DEPT** 

**DEPTH:** 1800 mMD

PROG: 0m

**DAYS FROM SPUD: 12** 

(00:00-24:00)

**OPERATION:** CONDUCTING RCI PRESSURE SURVEY NUMBER 2 @ 1260m.

(As at 0600 hours EST, 01/11/04) **DEPTH:** 1800 mMD **PROGRESS:** 0m

(06:00-06:00)

**OPERATION**: CONDUCTING RCI PRESSURE SURVEYS (CONDUCTED 30 PRETEST).

AFE COST \$ CUMULATIVE COST \$

CASING SHOE: 340mm (13-3/8") CASING SET AT 620.8m RIG: OCEAN PATRIOT

RT – SEAFLOOR: 76.2m LAT

**PROGRAMMED TD:** 1878 mMD **ROTARY TABLE:** 21.5 m LAT **WATER DEPTH: 54.7m LAT** 

MUD DATA Type: Wt: Vis: FL: PH: KCl Cl: PV/YP: Rmf:

 $(2400 \ Hours) \qquad \qquad KCl/PHPA/Glydril \qquad 1.20 \ (10.3) \qquad 59 \qquad 14 \qquad 8.0 \qquad 6.5 \qquad 40k \qquad 20/25 \qquad 0.16 \Omega m \ @ \ 75 ^{\circ} Fht$ 

	No.	Make	Type	Size (mm/in.)	Hours	Drilled	Condition
BIT DATA PRESENT (2400 Hours) LAST	4	HYCALOG	DSX104	311mm (12½")	18.2	495m	2-3-BT-S-X-I-WT-TD

SURVEYS: MD (m) INCLINATION AZIMUTH MD (m) INCLINATION AZIMUTH

#### PREVIOUS 24 HOURS OPERATIONS SUMMARY: (31/10/04)

RUN IN HOLE, WIPER TRIP 1274m TO 1800m REAMING TIGHT HOLE FROM 1464-1507m, 1582-1591m, 1630-1651m, 1717-1733m, 1764-1790m. CIRCULATE HOLE CLEAN AT 1800m. PULL OUT OF HOLE TO RUN WIRELINE LOGS. LAY OUT BIT 3RR, HELD SAFETY MEETING. RIG UP BAKER ATLAS WIRELINE. PICK UP TOOLS RUN 1 – GRAND SLAM (RESISTIVITY-NEUTRON-DENSITY-GR-SONIC). CONDUCT RUN 1 AS PER PROGRAM. RIG DOWN RUN 1 TOOLS. RIG UP AND RUN IN HOLE RUN 2, RCI-GR. TOOLS HELD UP AT 912m, WORK TOOLS PAST 912m OVER 10 MINUTES. CONDUCT PRETESTS (CONDUCTED 2 PRESSURE SURVEYS AS OF 24:00 HRS).

#### 00:00 - 06:00 HOURS EST (01/11/04):

CONDUCT PRESSURE SUREYS (CONDUCTED 30 PRESSURE SURVEYS AS OF 0600 HOURS).

#### ANTICIPATED OPERATIONS:

CONTINUE CONDUCTING RUN 2 , RCI-GR. CONTINUE TO CONDUCT SUITE 1 WIRELINE LOGS.

A.B.N. 80 007 550 923

### WELL PROGRESS REPORT

DATE: 01/11/04 - 06:00 HRS EST		MARTHA 1			REPORT NO: 12		
FORMATION	TOPS:	MDRT	Subsea		gh/Low to	High /Low to	
		( <b>m</b> )	(m)	Pr	ognosis (m)	Casino 3 (m)	
	HYDROCARBON SI	HOW SUMMAR	RY			•	
INTERVAL	LITHOLOGY					GAS	
	GEOLOGICAL SUM	MARY					
INTERVAL	LITHOLOGY					GAS	
(m/hr)							

A.B.N. 80 007 550 923

#### WELL PROGRESS REPORT

DATE: 02/11/04 - 06:00 HRS EST | MARTHA 1 | REPORT NO: 13

(As at 2400 hours EST, 01/11/04) **DEPTH:** 1800 mMD

**PROG:** 0m

**DAYS FROM SPUD: 13** 

(00:00-24:00)

**OPERATION:** PULLING OUT OF HOLE WITH WIRELINE SUITE 1, RUN 4 (RCOR-GR).

(As at 0600 hours EST, 02/11/04) **DEPTH:** 1800 mMD **PROGRESS:** 0m

(06:00-06:00)

**OPERATION**: RIGGING DOWN WIRELINE SUITE 1, RUN 5 (SWC-GR).

AFE COST \$ CUMULATIVE COST \$

CASING SHOE: 340mm (13-3/8") CASING SET AT 620.8m RIG: OCEAN PATRIOT

**ROTARY TABLE:** 21.5 m LAT

RT – SEAFLOOR: 76.2m LAT WATER DEPTH: 54.7m LAT

MUD DATA Type: Wt: Vis: FL: PH: KCl Cl: PV / YP: Rmf:

(2400 Hours) KCl/PHPA/Glydril 1.20 (10.3) 59 14 8.0 6.5 40k 20/25

No. Make Type Size (mm/in.) Hours Drilled Condition

BIT DATA (2400 Hours)

PRESENT

LAST

PROGRAMMED TD: 1878 mMD

SURVEYS: MD (m) INCLINATION AZIMUTH MD (m) INCLINATION AZIMUTH

#### PREVIOUS 24 HOURS OPERATIONS SUMMARY: (1/11/04)

CONDUCT SUITE 1 RUN 2 RCI-GR (TOTAL 35 PRETESTS ATTEMPTED, 17 NORMAL TEST, 9 LOST SEAL, 2 PLUGGED, 6 CURTAILED, 1 FAILURE, COLLECTED 6x840cc SAMPLES). RIG DOWN RCI-GR, RIG UP RUN 3 VSP, RUN IN HOLE. CONDUCT SUITE 1 RUN 3. RIG DOWN RUN 3, RIG UP RUN 4 RCOR-GR, TROUBLE SHOOT AND REPAIR TOOL AT SURFACE, RUN IN HOLE RUN 4. LOWER ARM ON RCOR TOOL NOT WORKING, TROUBLE SHOOT PROBLEM. ABORT RUN 4, PULL OUT OF HOLE TO RUN CONVENTIONAL SIDEWALL CORES.

#### **00:00 – 06:00 HOURS EST (02/11/04):**

RIG UP RUN 5 SWC-GR. RIG ON RADIO SILENCE, ARM SIDEWALL CORE GUN AND RUN IN HOLE. CONDUCT RUN 5 (FIRED 25 SHOTS). PULL OUT OF HOLE WITH SUITE 1 RUN 5 SWC-GR.

#### **ANTICIPATED OPERATIONS:**

RIG DOWN BAKER ATLAS WIRELINE. RUN IN HOLE TO SET ABANDONMENT PLUGS.

A.B.N. 80 007 550 923

### WELL PROGRESS REPORT

DATE: 02/11/04 - 06:00 HRS EST		MARTHA 1			REPORT NO: 13		
FORMATION	TOPS:	MDRT	Subsea	Hi	gh/Low to	High /Low to	
		( <b>m</b> )	(m)	Pr	rognosis (m)	Casino 3 (m)	
	·						
	HYDROCARBON SI	HOW SUMMAR	RY				
	I ITITIOI OCI					G 4 G	
INTERVAL	LITHOLOGY					GAS	
<u> </u>							
	GEOLOGICAL SUM	IMARY					
INTERVAL	LITHOLOGY					GAS	
(m/hr)							

**SECTION 6: DAILY DRILLING REPORTS** 



		From:	Chris Wilson				
		OIM:	Sean De Frei	tas			
Well Data							
Country	Australia	M. Depth	0m	Cur. Hole Size	0in	AFE Cost	
Field		TVD	0m	Casing OD	0in	AFE No.	5736086
Drill Co.	DOGC	Progress	0m	Shoe TVD	0m	Daily Cost	
Rig	Ocean Patriot	Days from spud		F.I.T. / L.O.T.	Oppg / Oppg	Cum Cost	
Wtr Dpth(LAT)	55.0m	Days on well	0.46			Planned TD	1878.0m
RT-ASL(LAT)	21.5m	Current Op @ 0600	On tow to I	Martha-1 location.			
RT-ML	76.5m	Planned Op	Continue to activities or		ation while pre-sp	oud preparation and	rig maintenance

Completed anchor handling operations, commenced tow to Martha-1 location.

Operations For Period 0000 Hrs to 2400 Hrs on 17 Oct 2004

Phse	Cls (RC)	Ор	From	То	Hrs	Depth	Activity Description
PS	Р	RM	1300	2400	11.00	0m	Last anchor (#4) racked at 13:00 on 17th October 2004. Rig handed over from BSOC to Santos.
							Statement of facts: Ocean Patriot - Fuel Oil 2055 bbl, Drill Water 1021 bbl, Potable Water 1216 bbl, Lube Oil 8920 litre, Barite 57 MT, Gel 18 MT Cement 83 MT
							Far Grip - Fuel Oil 3773 bbl, Drill Water 0 bbl, Potable Water 3233 bbl, Lube Oil 12400 litre, Barite 0 MT, Gel 84 MT Cement 36 MT
							Pacific Wrangler - Fuel Oil 2457 bbl, Drill Water 742 bbl, Potable Water 843 bbl, Lube Oil 25489 litre, Barite 0 MT, Gel 11 MT Cement 0 MT
							Anchor #4 PCC passed back to rig at 13:05.
							Rig under tow to Martha-1 location:
							18:00 - Lat 38 deg 22.5' S 148 deg 34' E, Speed 4.4 kn, ETA 18:00 19 Oct, Distance travelled 22 nm, distance to go 295 nm, course 208 deg. 24:00 - Lat 38 deg 46.1' S 147 deg 58.5' E, Speed 6.27 kn, ETA 18:01 19 Oct, Distance travelled 60 nm, distance to go 258 nm, course 251 deg.
							Rig maintenance and pre-spud preparation ongoing: Inspection of topdrive, changeout of liners in mud pumps from 6.5" to 6", starboard crane repairs, setting of mud pump pop-off valves.

Operations For Period 0000 Hrs to 0600 Hrs on 18 Oct 2004

Phse	Cls (RC)	Ор	From	То	Hrs	Depth	Activity Description
PS F	P	RM	0000	0600	6.00	0m	(IN PROGRESS) Rig under tow to Martha-1 location:  0600: Lat 38 deg 56.1' S, Long 147 deg 18' E, Speed 5.8 kn, ETA 19:00 19th Oct, Distance travelled 95 nm, distance to go 223 nm, course 243 deg.  1200: Lat 39 deg 8' S, Long 146 deg 38' E, Speed 5.52 kn, ETA 19:40 19th Oct, Distance travelled 127 nm, distance to go 190 nm, course 251 deg.  1800: Lat 39 deg 9' S, Long 145 deg 53' E, Speed 5.33 kn, ETA 20:00 19th Oct, Distance travelled 159 nm, distance to go 158 nm, course 274 deg.
							2400: Lat 39 deg 6' S, Long 145 deg 7.5' E, Speed 6 kn, ETA 20:00 19th Oct, Distance travelled 195 nm, distance to go 122 nm, course 277 deg.  Rig maintenance and pre-spud preparation ongoing:  Performed electrical PM's on Baylor brake, worked on luffing upgrade to starboard crane, re-assembled TDS after inspection, worked on PM's for drill floor, shaker hous and pump room, completed pressure testing of both annulars, function tested BOP from drillers panel.

Phase Data to 2400hrs, 17 Oct 2004						
Phase	Phase Hrs	Start On	Finish On	Cum Hrs	Cum Days	Max Depth
PRESPUD(PS)	11	17 Oct 2004	17 Oct 2004	11.00	0.458 days	0m



## DRILLING MORNING REPORT # 1 MARTHA 01 ( 17 Oct 2004 )

<b>Bulk Stocks</b>						Personnel On Board	
Name	Unit	In	Used	Adjust	Balance	Company	Pax
Fuel	МЗ	0	14.7	0	327.2	DOGC	47
Drill Water	MT	0	11.9	0	150.4	Santos	3
Potable Water	MT	25	25	0	192.9	Total Marine Catering	8
Gel	sx	0	0	0	404.0	Fugro	4
Cement	sx	0	0	0	1,954.0	Sperry-Sun	2
Barite	sx	0	0	0	1,265.0	M.I	1
						Dowell	2
						ECL	1
						Fugro	2
						MO47	8
						Varco	1
						Marcomm	1
						Cameron	1
						Liebher	1
						Total	82

Pu	Pumps																
Pu	Pump Data - Last 24 Hrs Slow Pump Data																
No.	Туре	Liner (in)	MW (ppg)	Eff (%)	SPM	SPP (psi)	Flow (gpm)	Depth (m)	SPM1	SPP1 (psi)	Flow1 (gpm)	SPM2	SPP2 (psi)	Flow2 (gpm)	SPM3		Flow3 (gpm)
1	A1700	6.00	0	98	0	0	0	0	0	0	0	0	0	0	0	0	0
2	12P-160	6.00	0	98	0	0	0	0	0	0	0	0	0	0	0	0	0
3	12P-160	6.00	0	98	0	0	0	0	0	0	0	0	0	0	0	0	0

Marine									
Weather ch	eck on 17 Oct	2004 at 24:0	0					Rig Support	
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (klb)
9.00nm	14.0kn	120deg	1021bar	10.0C°	1.0m	120deg	Oft/sec	1	0
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather	Comments	2	0
0.3deg	0.3deg	0m	1.5m	070deg	Oft/sec			- 3 4	0 0
Rig Dir.	Ris. Tension	VDL		Comments				5	0
251.0deg	0klb	4357.0klb						6	0
								7	0
								8	0

Boats	Arrived (date/time)	Departed (date/time)	Status	Bu	lks	
Far Grip			On primary tow leg.	Item	Unit	Quantity
				Barite	MT	0
				Gel	MT	84
				Cement	MT	36
Pacific			On secondary tow leg.	Item	Unit	Quantity
Wrangler				Barite	MT	0
				Gel	MT	12
				Cement	MT	0
				Drill Water		0
				Fuel		0



		From : OIM :	Chris Wilson Sean De Freit						
Well Data									
Country	Australia	M. Depth	0m	Cur. Hole Size	0in	AFE Cost			
Field		TVD	0m	Casing OD	0in	AFE No.	5736086		
Drill Co.	DOGC	Progress	0m	Shoe TVD	0m	Daily Cost			
Rig	Ocean Patriot	Days from spud		F.I.T. / L.O.T.	Oppg / Oppg	Cum Cost			
Wtr Dpth(LAT)	55.0m	Days on well	1.46			Planned TD	1878.0m		
RT-ASL(LAT)	21.5m	Current Op @ 0600	Rig under to	ow to Martha-1 loc	ation				
RT-ML	76.5m	Planned Op	Continue tow to Martha-1, commence anchor handling operations.						

Rig under tow to Martha-1 location. Maintenance and pre-spud preparation activities ongoing.

#### Operations For Period 0000 Hrs to 2400 Hrs on 18 Oct 2004

Phse	Cls (RC)	Op	From	То	Hrs	Depth	Activity Description
PS		RM	0000	2400	24.00	Om	Rig under tow to Martha-1 location:  0600: Lat 38 deg 56.1' S, Long 147 deg 18' E, Speed 5.8 kn, ETA 19:00 19th Oct, Distance travelled 95 nm, distance to go 223 nm, course 243 deg.  1200: Lat 39 deg 8' S, Long 146 deg 38' E, Speed 5.52 kn, ETA 19:40 19th Oct, Distance travelled 127 nm, distance to go 190 nm, course 251 deg.  1800: Lat 39 deg 9' S, Long 145 deg 53' E, Speed 5.33 kn, ETA 20:00 19th Oct, Distance travelled 159 nm, distance to go 158 nm, course 274 deg.  2400: Lat 39 deg 6' S, Long 145 deg 7.5' E, Speed 6 kn, ETA 20:00 19th Oct, Distance travelled 195 nm, distance to go 122 nm, course 277 deg.  Rig maintenance and pre-spud preparation ongoing:
							Performed electrical PM's on Baylor brake, worked on luffing upgrade to starboard crane, re-assembled TDS after inspection, worked on PM's for drill floor, shaker house and pump room, completed pressure testing of both annulars, function tested BOP from drillers panel.

#### Operations For Period 0000 Hrs to 0600 Hrs on 19 Oct 2004

Phse	Cls (RC)	Ор	From	То	Hrs	Depth	Activity Description
PS	P	RM	0000	0600	6.00	0m	Rig under tow to Martha-1 location:  0600: Lat 39 deg 01' S, Long 144 deg 26' E, Speed 5.5 kn, ETA 21:00 19th October, Distance travelled 228 nm, distance to go 89 nm, course 227 deg.  Rig maintenance and pre-spud preparation activities ongoing.

#### Phase Data to 2400hrs, 18 Oct 2004

Phase	Phase Hrs	Start On	Finish On	Cum Hrs	Cum Days	Max Depth
PRESPUD(PS)	35	17 Oct 2004	18 Oct 2004	35.00	1.458 days	0m

` '							,		
Bulk Stocks						Personnel On Board			
Name	Unit	In	Used	Adjust	Balance	Company	Pax		
Fuel	M3	0	3.5	0	323.7	DOGC	47		
Drill Water	MT	0	5.9	0	144.5	Santos	3		
Potable Water	MT	25	19.5	0	198.4	Total Marine Catering	8		
Gel	sx	0	0	0	404.0	Fugro	4		
Cement	sx	0	0	0	1,954.0	Sperry-Sun	2		
Barite	sx	0	0	0	1,265.0	M.I	2		
						Dowell	2		
						ECL	1		
						Fugro	2		
						MO47	7		

Varco Cameron

Liebher

1

Total 81



Arrived (date/time)

**Boats** 

## DRILLING MORNING REPORT # 2 MARTHA 01 ( 18 Oct 2004 )

**Bulks** 

Pυ	ımps																
Pu	mp Data - Last 24 Hr	s						Slow P	ump Dat	а							
No.	Туре	Liner (in)	MW (ppg)	Eff (%)	SPM	SPP (psi)	Flow (gpm)	Depth (m)	SPM1	SPP1 (psi)	Flow1 (gpm)	SPM2	SPP2 (psi)	Flow2 (gpm)			Flow3 (gpm)
1	A1700	6.00	0	98	0	0	0	0	0	0	0	0	0	0	0	0	0
2	12P-160	6.00	0	98	0	0	0	0	0	0	0	0	0	0	0	0	0
3	12P-160	6.00	0	98	0	0	0	0	0	0	0	0	0	0	0	0	0

Marine									
Weather che	eck on 18 Oct	2004 at 24:0	0					Rig Support	
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (klb)
10.00nm	12.0kn	130deg	1020bar	12.0C°	0.5m	130deg	Oft/sec	1	0
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather	Comments	2	0
0.3deg	0.3deg	0m	1.0m	270deg	Oft/sec			3 4	0 0
Rig Dir.	Ris. Tension	VDL		Comments				5	0
277.0deg	0klb	4334.0klb						6	0
								7	0
								8	0

**Status** 

Departed (date/time)

Far Grip				On primary tow leg.	Item	Unit	Quantity
					Barite	MT	0
					Gel	MT	84
					Cement	MT	36
					Drill Water	M3	0
					Fuel	M3	553
					Potable Water	M3	510
Pacific				On secondary tow leg.	Item	Unit	Quantity
Wrangler					Barite	MT	0
					Gel	MT	12
					Cement	MT	0
					Fuel	M3	362
					Drill Water	M3	118
					Potable Water	M3	128
Helicopter	Movement						
Flight #	Time		Destination	Con	nment		Pax
1	12:50	Ocean Patriot					1
1	12:58	Essendon					2



		From : OIM :	Chris Wilson Sean De Frei				
Well Data							
Country	Australia	M. Depth	0m	Cur. Hole Size	0in	AFE Cost	
Field		TVD	0m	Casing OD	0in	AFE No.	5736086
Drill Co.	DOGC	Progress	0m	Shoe TVD	0m	Daily Cost	
Rig	Ocean Patriot	Days from spud		F.I.T. / L.O.T.	Oppg / Oppg	Cum Cost	
Wtr Dpth(LAT)	55.0m	Days on well	2.46			Planned TD	1878.0m
RT-ASL(LAT)	21.5m	Current Op @ 0600	Anchor han	idling.			
RT-ML	76.5m	Planned Op	Run anchor	rs, ballast down an	nd prepare for sp	ud.	

Continued tow to Martha-1 location.

Operations For Period 0000 Hrs to 2400 Hrs on 19 Oct 2004

Phse	Cls (RC)	Ор	From	То	Hrs	Depth	Activity Description
PS	Р	RM	0000	2400	24.00	0m	Rig under tow to Martha-1 location:
							0600: Lat 39 deg 01' S, Long 144 deg 26' E, Speed 5.5 kn, ETA 21:00 19th October, Distance travelled 228 nm, distance to go 89 nm, course 277 deg.
							1200: Lat 38 deg 58' S, Long 143 deg 42' E, Speed 5.7 kn, ETA 21:00 19th October, Distance travelled 262 nm, distance to go 55 nm, course 277 deg.
							Dropped Pacific Wrangler off secondary tow leg at 17:00.
							1800: Lat 38 deg 49.8' S, Long 143 deg 10' E, Speed 4.42 kn, ETA 24:00 19th October, Distance travelled 289 nm, distance to go 28 nm, course 285 deg.
							2400: Lat 38 deg 34' S, Long 142 deg 41' E, Speed 4.2 kn, ETA 00:45 19th October, Distance travelled 314 nm, distance to go 3 nm, course 319 deg.
							Rig maintenance and pre-spud preparation activities ongoing:
							Pressure tested surface equipment, serviced top drive, laid out BHA components (hole opener/stabilizers etc.) on catwalk.

#### Operations For Period 0000 Hrs to 0600 Hrs on 20 Oct 2004

Phse	Cls (RC)	Ор	From	То	Hrs	Depth	Activity Description
PS	Р	RM	0000	0600	6.00	0m	Commenced anchor handling operations:
							Anchor #5: PCC passed to Wrangler at 00:40
							First anchor (#5) on bottom at Martha-1 location at 02:30 on 20th October 2004
							Anchor #5: PCC back to rig at 03:25
							Anchor #1: PCC passed to Wrangler at 03:40, on bottom at 04:32, PCC back to rig at 04:55
							Anchor #4: PCC passed to Wrangler at 05:05, on bottom at 05:53

Dhaco	Data to	2400hre	19 Oct 2004
Phase	Data to	Z4UUNIS.	. 19 OCT 2004

Phase	Phase Hrs	Start On	Finish On	Cum Hrs	Cum Days	Max Depth
PRESPUD(PS)	59	17 Oct 2004	19 Oct 2004	59.00	2.458 days	0m



## DRILLING MORNING REPORT #3 MARTHA 01 ( 19 Oct 2004 )

Bulk Stocks						Personnel On Board	
Name	Unit	In	Used	Adjust	Balance	Company	Pax
Fuel	M3	0	2.4	0	321.3	DOGC	47
Drill Water	MT	0	0	0	144.5	Santos	3
Potable Water	MT	27	21.5	0	203.9	Total Marine Catering	8
Gel	sx	0	0	0	404.0	Fugro	4
Cement	sx	0	0	0	1,954.0	Sperry-Sun	2
Barite	sx	0	0	0	1,265.0	M.I	2
						Dowell	2
						ECL	1
						Fugro	2
						MO47	7
						Varco	1
						Cameron	1
						Liebher	1
						Total	81

Pυ	ımps																
Pu	mp Data - Last 24 H	rs						Slow P	ump Dat	а							
No.	Туре	Liner (in)	MW (ppg)	Eff (%)	SPM	SPP (psi)	Flow (gpm)	Depth (m)	SPM1	SPP1 (psi)	Flow1 (gpm)	SPM2	SPP2 (psi)	Flow2 (gpm)		SPP3 (psi)	Flow3 (gpm)
1	A1700	6.00	0	98	0	0	0	0	0	0	0	0	0	0	0	0	0
2	12P-160	6.00	0	98	0	0	0	0	0	0	0	0	0	0	0	0	0
3	12P-160	6.00	0	98	0	0	0	0	0	0	0	0	0	0	0	0	0

<b>HSE Summary</b>			
Events	Date of Last	Days Since	Remarks
Abandon Drill	18 Oct 2004	1 Day	Fire and abandon rig drill held based on simulated fire in the sub-sea workshop. All personnel mustered at aft lifeboats.
Safety Meeting	17 Oct 2004	2 Days	Three safety meetings held (13:00, 19:00, 01:00). Attended by all crews. Martha-1 pre-spud presentation given by company reps.
Stop Cards	19 Oct 2004	0 Days	8 STOP cards submitted by personnel in past 24 hours. 2 from 3rd party, 6 from Diamond.

Marine									
Weather ch	eck on 19 Oct	2004 at 24:0	0					Rig Support	
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (klb)
10.00nm	10.0kn	090deg	1016bar	10.0C°	0.5m	090deg	Oft/sec	1	0
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather	Comments	2	0
0.3deg	0.3deg	0m	1.0m	235deg	Oft/sec			- 3 4	0
Rig Dir.	Ris. Tension	VDL		Comments				5	0
319.0deg	0klb	4333.0klb						6	0
								7	0
								8	0

Boats	Arrived (date/time)	Departed (date/time)	Status	Ві	ılks	
Far Grip			On primary tow leg.	Item	Unit	Quantity
				Fuel	M3	518
				Drill Water	M3	0
				Potable Water	M3	508
				Barite	MT	0
				Gel	MT	84
				Cement	MT	36
Pacific			Off secondary tow leg, preparing to receive anchor #5.	Item	Unit	Quantity
Wrangler			to receive anchor #5.	Fuel	M3	346
				Drill Water	M3	118
				Potable Water	M3	124
				Barite	MT	0
				Gel	MT	12
				Cement	MT	0



		From:	Chris Wilson	l			
		OIM:	Sean De Frei	tas			
Well Data							
Country	Australia	M. Depth	95.0m	Cur. Hole Size	36.000in	AFE Cost	
Field		TVD	95.0m	Casing OD	0in	AFE No.	5736086
Drill Co.	DOGC	Progress	18.8m	Shoe TVD	0m	Daily Cost	
Rig	Ocean Patriot	Days from spud	0.04	F.I.T. / L.O.T.	Oppg / Oppg	Cum Cost	
Wtr Dpth(LAT)	54.7m	Days on well	3.46			Planned TD	1878.0m
RT-ASL(LAT)	21.5m	Current Op @ 0600	Rigging up	to cement surface	casing.		
RT-ML	76.2m	Planned Op	Cement su	rface casing, wait	on cement, make	up 17 1/2" BHA an	d drill out shoe.

Towed rig to Martha - 1 location. Ran anchors and pre-tensioned same. Performed pull off test. Picked up tubulars. Spudded well. Drilled 26" x 36" hole

#### Operations For Period 0000 Hrs to 2400 Hrs on 20 Oct 2004

Phse	Cls (RC)	Op	From	То	Hrs	Depth	Activity Description
PS	Р	RM	0000	0230	2.50	0m	Commenced anchor handling operations:
							Anchor #5: PCC passed to Wrangler at 00:40
							First anchor (#5) on bottom at Martha-1 location at 02:30 on 20th October 2004.
PS	Р	RM	0230	1400	11.50	0m	Continued anchor handling operations:
							Anchor #5: PCC back to rig at 03:25 Anchor #1: PCC passed to Wrangler at 03:40, on bottom at 04:32, PCC back to rig at 04:55
							Anchor #4: PCC passed to Wrangler at 05:05, on bottom at 05:53, PCC back to rig at 06:45
							Anchor #8: PCC passed to Wrangler at 06:50, on bottom at 07:20, PCC back to rig at 07:55
							Anchor #6: PCC passed to Wrangler at 08:00, on bottom at 08:25, PCC back to rig at
							08:59 Anchor #2: PCC passed to Far Grip at 08:14, on bottom at 08:43, PCC back to rig at
							09:22 Anchor #7: PCC passed to Wrangler at 09:04, on bottom at 09:28, anchor didn't hold,
							re-run, on bottom at 11:05, PCC back to rig at 11:38 Anchor #3: PCC passed to Far Grip at 09:30, changed out 85 MT shackle on pig-tail,
							anchor on bottom at 10:58, PCC back to rig at 11:35
							Commenced cross tensioning anchors at 11:55.
							Anchor #8 slipping, re-ran same: PCC passed to Wrangler at 12:40, off bottom at 13:00, on bottom at 13:07, PCC back to rig at 13:37
							Conducted winch-off test at 13:55, all OK.
							Note: while handling anchors, made up and racked back 3 stands of HWDP, 1 stand 8" DC and 1 stand 9 1/2" DC. Made up 30" surface casing string, landed in PGB and moved same clear to port side of moonpool. Began backload to Pacific Wrangler.
PS	Р	RM	1400	1915	5.25	0m	Ballasted rig to drilling draft of 23.5 m.
PS	Р	HT	1915	2230	3.25	0m	Picked up 36" BHA and ran in to tag seabed with same. ROV jumped at 20:10 for seabed survey, survey complete at 21:50.
PS	Р	SVY	2230	2300	0.50	0m	Tagged seabed with 5k down at 76.16 m.
							RT to sea level (LAT): 21.5 m RT to sea bed (LAT): 76.16 m Water depth 54.66 m Rig heading 44.86 deg true Rig offset from intended location by 1.8 m at a bearing of 171 deg grid.
							Final location: Lat: 38 deg 37' 24.33" S Long: 142 deg 42' 05.02" E Easting: 648109.28 Northing: 5723638.23
							Took anderdrift survey 3 m off bottom, 0 deg.
SH	Р	DA	2300	2400	1.00	95.0m	Spudded well and drilled from 76.16 m to 95 m pumping 50 bbl hi-vis sweeps every 10 m.

Operations For Period 0000 Hrs to 0600 Hrs on 21 Oct 2004



## DRILLING MORNING REPORT # 4 MARTHA 01 ( 20 Oct 2004 )

Phse	Cls (RC)	Ор	From	То	Hrs	s Dept	h					Д	ctivity De	escrip	otion				
SH	Р	DA	0000	0200	2.00	122.5m						6" hole fro drift surve				umping 50	bbl hi-	vis sv	veeps
SH	Р	CHC	0200	0230	0.50	122.5m	1	Pump	ed 50	bbl hi-	vis swe	eep and di	isplaced	hole 1	to PHG	mud.			
SH	Р	TO	0230	0400	1.50	122.5m						n 122.5 m	•		,			•	
SH	Р	CRN	0400	0530	1.50	122.5m						er below 3 tring into						ousir	ng joint.
SH	Р	RUC	0530	0600	0.50	122.5m					_	cement		assis	starice ii	om Kov.			
	e Data t										75 1								
Phase	e Data t	0 2400	1113, 2	, 001	2007		Dhr	ase Hr		Start C	)n	Finish C	)n (	um H	Jro	Cum Da	VC	May [	Depth
	UD(PS)						FII	ase ni	_	17 Oct		20 Oct 2		umr	82.00	1	days	VIAX L	Om Om
	CE HOLE	(SH)								17 Oct 20 Oct		20 Oct 2			83.00		days		95.0m
WBM		.(01.)							-							000	auyo		00.0
Mud Typ	pe: F	li-vis swee	ps API	FL:	1	14cm <sup>3</sup> /30m	CI:				1000	Solids:			4	Viscosity:			120sec/qt
Sample	-From:	Pi	it 4 Filte	er-Cake		2/32nd"		C*1000	).		0%	H2O:			96%	PV: YP:			17cp 30lb/100ft <sup>2</sup>
Time:		23:		HP-FL:		0cm <sup>3</sup> /30m		rd/Ca:			40	Oil:			0%	Gels 10s:			29
Weight:		8.80p		⊪ -ı ⊑. HP-Cak	е.	0/32nd"	MB				27	Sand:			0	Gels 10m:	$\perp$		39
Temp:		15.6		.ı -cak	<b>.</b>	U/UZIIU	PM				0	pH:			9.5	Fann 003: Fann 006:			20 20
							PF:									Fann 100:			31
							PF.				0.52	PHPA:			0ppb	Fann 200: Fann 300:			40 47
																Fann 600:			64
Bit #	 1						W	'ear	I		01	D	L		В	G	02		R
<b>D</b> IC #	<u> </u>																		
Size (")	:		26.00		DC#	1-1-5		No	zzles		Dril	led over	last 24 h	rs		Calculated	d over I	Bit R	
Mfr:			SMIT		DB(avg)	11.0klb	No.		Size		Progre		18	3.8m	Cum. I	Progress			18.8m
Type:			Ro		M(avg)	58	1		21/3	32nd"		ttom Hrs		.30h		On Btm H			1.30h
Serial N			MR38		Rate	1100gpm	1			32nd"	_	Drill Hrs		.30h		ADC Drill			1.30h
Bit Mod		M	ISDS SH	-		370psi	2		22/3	32nd"	Total I			'000		otal Revs			7000
Depth I			76.2		A	1.387					ROP(a	avg)	14.46	m/hr	ROP(a	avg)		14.	46 m/hr
Depth (	Jut			m															
BHA	# 1																		
Weight	(Wet)		47.6k	lb Le	ngth			125	.3m	Torque	e(max)		2f	t-lbs	D.C. (	1) Ann Ve	locity		
Wt Belo	ow Jar(We	et)	47.6k	lb Sti	ing			55.0	Oklb	Torque	e(Off.Bt	tm)	1f	t-lbs	D.C. (2	2) Ann Ve	locity		
				Pic	k-Up			120.0	Oklb	Torque	e(On.Bt	tm)	2f	t-lbs	H.W.D	.P. Ann V	'elocity		
				Sla	ack-Off			120.0	Oklb						D.P. A	nn Veloci	ty		
BHA R	un Descrip	otion				hole open					loat, 9	1/2" ande	rdrift, 2 x	17 1	/2" strin	g stabilize	ers, 3 x	9 1/2'	" DCs,
		Equip	ment			Lenç		1	DD		D	Seri	al#			Com	ment		
Bit						0.6	37m	26	3.00in		0in	MR3846							
Hole O	pener					3.2	21m	36	3.00in	3	.13in	203A10							
Float S	ub					1.0	)3m		.44in			186-0028	3	Sol	id float	with TOTO	CO ring	on to	p.
	nderdrift						74m		).50in			AD995							
	String Sta	biliser					94m		7.50in			207A75							
9.5in D	String Sta	hilicor					20m 31m		).50in '.50in			00-006 207A212							
9.5in D	-	SIII3CI					13m		.50in		.00in	2017Z1Z							
9.5in D							35m		).50in			00-005							
X/O							94m		3.00in			186-0035	;	7 5	/8" Reg	pin X 6 5	/8" Reg	box.	
8in DC							35m		3.00in			00-001			J		J		
8in DC						9.3	33m	8	3.00in	3	.00in	00-010							
8in DC						9.0	)3m		3.00in			00-032							
X/O							I3m		3.00in			186-0011			·	Pin X 4 1/	2" IF Bo	X.	
5in HW	/DP					55.9	94m	5	.00in	3	.00in	Various		6 jo	ints.				



## DRILLING MORNING REPORT # 4 MARTHA 01 ( 20 Oct 2004 )

Survey								
MD (m)	Incl Deg (deg)	Corr. Az (deg)	TVD (m)	'V' Sect (m)	Dogleg (deg/30m)	N/S (m)	E/W (m)	Tool Type
73.00	0	0	0	0	0	0	0	Anderdrift

Bulk Stocks						Personnel On Board	
Name	Unit	In	Used	Adjust	Balance	Company	Pax
Fuel	M3	0	13.2	0	308.1	DOGC	45
Drill Water	MT	0	142.3	0	2.2	Santos	7
Potable Water	MT	26	23.2	0	206.7	Total Marine Catering	8
Gel	sx	0	44	0	360.0	Fugro	4
Cement	sx	0	0	0	1,954.0	Sperry-Sun	3
Barite	sx	0	0	0	1,265.0	M.I	2
						Dowell	2
						ECL	1
						Fugro	2
						MO47	7
						Varco	1
						Cameron	1
						Liebher	1
						Baker Atlas	2
						Total	86

Pι	Pumps																
Pump Data - Last 24 Hrs								Slow Pump Data									
No.	Туре	Liner (in)	MW (ppg)	Eff (%)	SPM	SPP (psi)	Flow (gpm)	Depth (m)	SPM1	SPP1 (psi)	Flow1 (gpm)	SPM2	SPP2 (psi)	Flow2 (gpm)		SPP3 (psi)	Flow3 (gpm)
1	A1700	6.00	8.60	98	85	370	367	0	0	0	0	0	0	0	0	0	0
2	12P-160	6.00	8.60	98	85	370	367	0	0	0	0	0	0	0	0	0	0
3	12P-160	6.00	8.60	98	85	370	367	0	0	0	0	0	0	0	0	0	0

HSE Summary			
Events	Date of Last	Days Since	Remarks
Abandon Drill	18 Oct 2004	2 Days	Fire and abandon rig drill held based on simulated fire in the sub-sea workshop. All personnel mustered at aft lifeboats.
First Aid	20 Oct 2004	0 Days	Were advised that seaman aboard Far Grip had piece of metal embedded in his knee. IP brought on board for examination by rig medic. Medic advised IP fit to return to normal duties and no need for medivac. IP returned to Far Grip.
Safety Meeting	17 Oct 2004	3 Days	Three safety meetings held (13:00, 19:00, 01:00). Attended by all crews. Martha-1 pre-spud presentation given by company reps.
Stop Cards	20 Oct 2004	0 Days	13 STOP cards submitted by personnel, 7 by DODI, 6 by 3rd party.

Shakers, V	olumes and	d Losses Dat	a	Engineer : Jasdeep Si	ingh		
Available	790bbl	Losses	120bbl	Equip.	Descr.	Mesh Size	Hours
Active	150.0bbl	Downhole	0bbl				
Mixing	0bbl	Surf+ Equip	0bbl				
Hole	0bbl	Dumped	0bbl				
Slug	0bbl	De-Sander	0bbl				
Reserve	640.0bbl	De-Silter	0bbl				
Kill	0bbl	Centrifuge	0bbl				
		Sweeps	120.0bbl				



### **DRILLING MORNING REPORT #4** MARTHA 01 ( 20 Oct 2004 )

Marine									
Weather ch	eck on 20 Oct	2004 at 24:0		Rig Support					
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (klb)
10.00nm	22.0kn	090deg	1016bar	13.0C°	0.5m	090deg	Oft/sec	1	209.0
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather	Comments	2	190.0
0.04	0.04==	4.00	0.0	400-1	04/			3	198.0
0.3deg	0.3deg	1.00m	2.0m	180deg	Oft/sec			4	203.0
Rig Dir.	Ris. Tension	VDL		Comments				5	207.0
45.0deg	0klb	4554.0klb						6	209.0
-o.oucg	OND	4004.0Kib						7	205.0
								8	198.0

Boats	Arrived (date/time)	Departed (date/time)	Status	1	Bulks	
Far Grip		16:20	Loading in Portland.	Item	Unit	Quantity
				Cement	MT	36
				Gel	MT	84
				Potable Water	M3	500
				Barite	MT	0
				Drill Water	M3	0
				Fuel	M3	506
Pacific			At standby on location.	Item	Unit	Quantity
Wrangler				Cement	MT	0
				Gel	MT	12
				Barite	MT	0
				Drill Water	M3	118
				Potable Water	M3	124
				Fuel	M3	322.8

Helicopter	Movement
------------	----------

Helicoptei	Helicopter Movement											
Flight #	Time	Destination	Comment	Pax								
1	12:01	Ocean Patriot		2								
1	12:09	Essendon		8								
2	15:50	Ocean Patriot		6								
2	15:58	Essendon		5								



		From : OIM :	Chris Wilson Sean De Fre	_			
Well Data		Olivi :	Sean De Fre	itas			
Country	Australia	M. Depth	122.5m	Cur. Hole Size	17.500in	AFE Cost	
Field		TVD	122.5m	Casing OD	20.000in	AFE No.	5736086
Drill Co.	DOGC	Progress	18.8m	Shoe TVD	121.0m	Daily Cost	
Rig	Ocean Patriot	Days from spud	1.04	F.I.T. / L.O.T.	Oppg / Oppg	Cum Cost	
Wtr Dpth(LAT)	54.7m	Days on well	4.46			Planned TD	1878.0m
RT-ASL(LAT)	21.5m	Current Op @ 0600	Drilling 17	1/2" hole and conti	nuing to pick up	last of the BHA	
RT-ML	76.2m	Planned Op	Continue d	Irilling 17 1/2" hole	to section TD of	625 m	

Drilling 36" hole 121 m. spotted 200 bbls PHG in hole. POOH. Ran 20" x 30" surface casing and PGB. Cement surface casing in place. pick up DP while waiting 4 hrs for cement to harden. POOH with running tool. Pick up more DP to get to section TD. Make up running tools for casing run. Make up 17 1/2" BHA and RIH to drill

#### Operations For Period 0000 Hrs to 2400 Hrs on 21 Oct 2004

Phse	Cls (RC)	Ор	From	То	Hrs	Depth	Activity Description
SH	Р	DA	0000	0200	2.00	122.5m	Continued to drill 26" x 36" hole from 95 m to 122.5 m pumping 50 bbl hi-vis sweeps every 10 m, taking Anderdrift surveys every connection.
SH	Р	CHC	0200	0230	0.50	122.5m	Pumped 50 bbl hi-vis sweep and displaced hole with 200 bbls PHG mud.
SH	Р	TO	0230	0400	1.50	122.5m	Pulled out of the hole from 122.5 m, laid out bit sub, 26" bit and 36" hole opener.
SH	P	CRN	0400	0530	1.50	122.5m	Ran 1 stand HWDP stinger below 30" CART. Made up 30" CART to 30" housing joint in PGB. Ran 30" x 20" conductor, PGB and guidelines to sea level and filled with sea water. Continued ran in hole with conductor and PGB. Stabbed conductor string into well with assistance from ROV.
SH	Р	RUC	0530	0600	0.50	122.5m	Landed out conductor with PGB 1.5m above mudline. Bullseyes to aft and port of PGB both mobile and reading between 1/2 and 1 degree to port aft. Rigged up cement line.
SH	P	CMC	0600	0800	2.00	122.5m	Dowell pressure tested cmt line to 2000 psi. Dowell circulated 150 bbls sea water, last 20 bbls with flourosine dye. Dowell mixed and pumped 215 bbls of 15.8 ppg G neat slurry and displaced with 32 bbls of sea water. Flourosine dye observed at seabed with ROV. Checked float holding - OK
SH	Р	WOC	0800	1200	4.00	122.5m	Picked up 258m of 5" S-135 DP and racked back in derrick while waiting on cement to harden.
SH	Р	CRN	1200	1330	1.50	122.5m	Slacked off string to neutral weight and backed 30" CART out of PGB with 6 1/2 RH turns. POOH with running tool and laid down.
IH	Р	PUP	1330	1500	1.50	122.5m	Held JSA and picked up 7 stands of 5" S-135 DP and racked in derrick.
IH	Р	HT	1500	1630	1.50	122.5m	P/U 18 3/4" CART on stand of 5" HWDP and racked in derrick. Made up second 18 3/4" CART to lift nubbin then laid down as lifter for 18 3/4" wellhead.
IH	U (RE)	RR	1630	1730	1.00	122.5m	Changed out leaking hydraulic hose on pipe racking system.
IH	P	НТ	1730	1930	2.00	122.5m	Picked up DeepSea Express launcher head and made up to to stand of 5" HWDP and racked in derrick. Picked up DeepSea Express X/O, made up to joint of 5" HWDP and laid back down on deck.
IH	Р	HBHA	1930	2400	4.50	122.5m	Held JSA, Pick up 17 1/2" BHA and RIH.

#### Operations For Period 0000 Hrs to 0600 Hrs on 22 Oct 2004

Phse	Cls (RC)	Ор	From	То	Hrs	Depth	Activity Description
IH	Р	HT	0000	0030	0.50	122.5m	Continued to make up BHA and ran in the hole from 106 m. Circulated and tagged top of cement at 114.5 m.
IH	Р	DC	0030	0200	1.50	122.5m	Cleaned out shoe track and rat hole from 114.5 m to 122.5 m, working string through the shoe at 121 m.
IH	Р	DA	0200	0300	1.00	133.0m	Drilled 17 1/2" hole from 122.5 m to 133 m.
IH	Р	HT	0300	0330	0.50	133.0m	Pulled and racked 1 stand HWDP and picked up 2 x 8" DCs.
IH	Р	DA	0330	0530	2.00	179.0m	Continued to drill 17 1/2" hole from 133 m to 179 m pumping 50 bbl hi-vis sweeps and backreaming a single prior to connection, taking surveys with Anderdrift every connection.
IH	Р	HT	0530	0600	0.50	179.0m	Pulled out of the hole with HWDP from 179 m to 120 m to install more collars in BHA.

Dhaca	Data to	2400hro	24	Oct 2004
Phase	Data to	) 24UUNTS.	_21	OCT 2004

Phase	Phase Hrs	Start On	Finish On	Cum Hrs	Cum Days	Max Depth
PRESPUD(PS)	82	17 Oct 2004	20 Oct 2004	82.00	3.417 days	0m
SURFACE HOLE(SH)	14.5	20 Oct 2004	21 Oct 2004	96.50	4.021 days	122.5m
INTERMEDIATE HOLE(IH)	10.5	21 Oct 2004	21 Oct 2004	107.00	4.458 days	122.5m

## DRILLING MORNING REPORT # 5 MARTHA 01 ( 21 Oct 2004 )

WBM Data																
Mud Type: H	Hi-vis sweeps	API FL	: 1	5cm³/30m	CI:				1000	Solids:			5	Viscosity:		120sec/qt
Sample-From:	Pit 4	Filter-C	Cake:	2/32nd"	K+C	C*1000	):		0%	H2O:			95%	PV: YP:		17cp 32lb/100ft <sup>2</sup>
Time:	23:30	HTHP-		0cm <sup>3</sup> /30m		d/Ca:			40	Oil:			0%	Gels 10s:		3210/10010
Weight:	8.80ppg	HTHP-		0/32nd"	MB				30				0	Gels 10m:		42
Temp:	15.6C°	1111111-	Cake.	0/32110	PM:				0				9.5	Fann 003: Fann 006:		20 21
romp.	10.00									1				Fann 100:		32
					PF:				0.5	PHPA:			0ppb	Fann 200: Fann 300:		41 49
														Fann 600:		66
Bit # 2					We	ear	I		01	D	L		В	G	O2	R
Size ("):		17.50in	IADC#	1-1-5		No	zzles		Dril	led over l	ast 24 hr	s		Calculated	d over B	it Run
Mfr:		SMITH	WOB(avg)	0klb	No.		Size		Progre			_		Progress		0m
Type:		Rock	RPM(avg)	0	INO.		Size			ottom Hrs				On Btm H	re	0h
Serial No.:	M	IR5734	F.Rate	0gpm						Drill Hrs				ADC Drill		0h
Bit Model	IVI	XRTC	SPP	Opsi					Total					otal Revs		0
Depth In	1	122.5m	TFA	0.000					ROP(a		,		ROP(a		•	0.00 m/hr
Depth Out	,	0m	II A	0.000					1.01 (	avg)		W/A	1101 (6	avg)		0.00 111/111
		0111			14/	ear	<del></del>		01				_	0	O2	R
Bit # 1					VVE	ear	0		0	D NO	L A		B 0	G I	NO	PR
Size ("):	2	26.00in	IADC#	1-1-5		No	zzles		Dril	led over I	ast 24 hr	s	C	Calculated	d over B	it Run
Mfr:	;	SMITH	WOB(avg)	11.0klb	No.		Size		Progre	ess	18.	8m	Cum.	Progress		37.6m
Type:		Rock	RPM(avg)	58	1		21/3	32nd"	On Bo	ottom Hrs	1.3	30h	Cum.	On Btm H	rs	2.60h
Serial No.:	М	R3846	F.Rate	1100gpm	1			32nd"	IADC	Drill Hrs	1.3	30h	Cum I	ADC Drill	Hrs	2.60h
Bit Model	MSD	S SHC	SPP	370psi	2		22/3	32nd"	Total	Revs	70	000	Cum T	otal Revs	i	14000
Depth In		76.2m	TFA	1.387					ROP(a	avg)	14.46 m	n/hr	ROP(a	avg)		14.46 m/hr
Depth Out	1	122.5m							,	-			·	-		
BHA # 2					<u>'</u>							<u></u>				
Weight(Wet)	Ę	57.0klb	Length			152	.1m	Torque	e(max)		2ft-	lbs	D.C. (	1) Ann Ve	locity	
Wt Below Jar(Wo	et) 5	55.0klb	String			55.	0klb	Torque	e(Off.B	tm)	1ft-	lbs	D.C. (	2) Ann Ve	locity	
(	- ',		Pick-Up			120.		•	e(On.B	,	2ft-		•	).P. Ann V	•	
			Slack-Off			120.		rorque	3(011.12)	,				nn Veloci	•	
BHA Run Descri	ption		17 1/2" bit,			olid flo	oat, 9									" stab, 2 x 9
	Equipme	ınt	1/2" DC, X	O, 6 x 8" D Leng			3 x 8" DD		ccelera D	ator, 8" DC Seria	-			Com	ment	
D:4	Ечирт			`				- '			μ π			00111	mont	
Bit Float Sub					l5m )3m		7.50in 9.44in			MR5734 186-0028		Solid	d float	installed		
9.5in Anderdrift					74m		9.50in			AD995			o ring			
9.5in Pony Drill (	Collar				58m		9.50in	3		502A22		1010	o mig	on top		
17.5in String Sta					94m		7.50in			207A75						
9.5in DC	•				20m		9.50in			00-006						
17.5in String Sta	biliser				31m		7.50in			207A212						
9.5in DC				9.1	3m	Ş	9.50in	3	.00in	00-004						
9.5in DC				9.3	85m	9	9.50in	3	.00in	00-005						
X/O					94m		3.00in		.13in	186-0035		7 5/8	8" Reg	pin X 6 5/	/8" Reg I	oox.
8in DC				54.7			3.00in		.00in	Various						
8in Hydraulic Jar	'S				95m		3.00in			83460C						
8in DC				27.0			3.00in		.00in	Various						
Jar Accel.				10.3			3.25in		.00in	186-0011						
8in DC					22m		3.00in		.00in	Various		6.5%	0 D	. 4 4 /0 ! =		
X/O				1.1	3m	٤	3.00in	2	.81in	186-0011		o 5/8	s Keg	x 4 1/2 IF		

~											INIAL	<u> </u>	<u></u>	210	/CL Z	<del></del>
BHA#	1															
Weight(W	/et)	47.6klb	Length			125.3m	Tor	rque(max)		2	2ft-lbs [	D.C. (1)	Ann V	elocity		
Wt Below	Jar(Wet)	47.6klb	String			160.0klb	Tor	rque(Off.B	tm)	1	ft-lbs [	D.C. (2)	Ann V	elocity		
			Pick-Up		160.0klb			Torque(On.Btm)		2	2ft-lbs l	H.W.D.F	P. Ann	Velocity		
			Slack-Of	f		160.0klb		. `	,			D.P. An		-		
RHA Pun	Description				nonor f	oat sub w		lid float 0	1/2" and	ardrift 2					0 1/2"	DCs
DI IA IXUII	Description					r, 6 x 5" H			1/2 and	Fidilit, Z	X 17 1/2	Stillig	Stabiliz	C13, 3 X	3 1/2	DO3,
	Equi	pment		ı	Length	OD		ID	Sei	rial #			Con	nment		
Bit					0.67m	26.00	in	0in	MR3846							
Hole Ope					3.21m	36.00		3.13in	203A10							
Float Sub					1.03m	9.44		0in	186-002	8	Solid	float wi	th TOT	CO ring	on top	).
9.5in And					2.74m	9.50		0in	AD995							
	ring Stabiliser				1.94m	17.50		3.00in	207A75							
9.5in DC	ring Stabiliser				9.20m 2.31m	9.50 17.50		3.06in 3.00in	00-006 207A212	)						
9.5in DC	ing otabilisel				9.13m	9.50		3.00in	201 MZ 12	_						
9.5in DC					9.35m	9.50		3.00in	00-005							
X/O					0.94m	8.00		3.13in	186-003	5	7 5/8	" Rea n	in X 6 !	5/8" Reg	box.	
8in DC					9.35m	8.00		3.00in	00-001	-	. 5,0	g p		1109	, ~~	
8in DC					9.33m	8.00		3.00in	00-010							
8in DC					9.03m	8.00		3.00in	00-032							
X/O					1.13m	8.00	in	3.00in	186-001	1	6 5/8	Reg Pi	n X 4 1	/2" IF B	ox.	
5in HWDF	P				55.94m	5.00	in	3.00in	Various		6 join	nts.				
Survey																
MD (m)	Incl Deg		rr. Az deg)	TVD		'V' Sect	[	Dogleg deg/30m)	N/ (n		E/W (m)			Tool T	уре	
95.00	1.50	0	deg)	(m)	0	(111)	0	deg/30III)	0		0		Anderd	rift		
122.00	1.00	0	0		0		0		0		0		Anderd			
150.00	0	0	0		0		0		0		0		Anderd			
178.00	1.00	0	0		0		0		0		0		Anderd			
Bulk St	tocks	<u> </u>			<u> </u>		Pe	rsonne	l On Bo	pard		<u>"</u>				
	Name	Unit	In	Used	Adjus	st Balanc	е		Со	mpany				F	Pax	
Fuel		МЗ	0	15.2	! (	0 292.9	DO	GC					46			
Drill Wate	er	MT	418	77.7		0 342.5	Sar	ntos					5			
Potable V	Vater	MT	27.1	27		0 206.8	Tota	tal Marine	Catering				8			
Gel		sx	985	204	. (	0 1,141.0	_	•					4			
Cement		sx	0			0 812.0		erry-Sun					4			
Barite		SX	0	109	) (	0 1,156.0	_						2			
								well					2			
								meron					2			
								bher					1			
								ker Atlas					2			
							vve	eatherford				Tot	3 al 79			
Pumps																
-	nta - Last 24 Hrs	 S					Slow I	Pump Da	ta							
No.	Туре		1W Eff	SPM	SPP		Depth	sPM1	SPP1	Flow1	SPM2	SPP2		SPM3	SPP3	Flow
		(in) (p	pg) (%)		(psi)	(gpm)	(m)		(psi)	(gpm)		(psi)	(gpm)		(psi)	(gpr
1 A170			3.80 98	80	403	345	0		0	0	0	0	0	0	0	
2 12P-1			3.80 98	80	403	345	0		0	0	0	0	0	0	0	
3   12P-1		6.00	3.80 98	80	403	345	0	0	0	0	0	0	0	0	0	(
Casing																

L.O.T. / F.I.T.

Oppg / Oppg

OD

30 "

Csg Shoe (MD/TVD)

121.0m / 121.0m

Cementing



## DRILLING MORNING REPORT # 5 MARTHA 01 ( 21 Oct 2004 )

<b>HSE Sum</b>	nmary										
E	events	Date of Last	Days Sind	e			Ren	narks			
Abandon Dr	ill	18 Oct 2004	3 Days		Fire and abandon rig drill held based on simulated fire in the sub-sea workshop. All personnel mustered at aft lifeboats.						
First Aid	brought on boa				ught on boa		ion by rig med	nad piece of metal em ic. Medic advised IP fi to Far Grip.			
Safety Meet	ing	17 Oct 2004	4 Days			eetings held (13 ntation given by		:00). Attended by all os.	crews. Martha	n-1	
Shakers,	Volumes a	nd Losses D	ata	Eng	jineer : Jaso	deep Singh					
Available	1170b	ol Losses	400b	bl	Equip.		Descr.	Mesh Size	Ноц	ırs	
Active	325.0b	bl Downhole	192.0b	bl							
Mixing	0b	bl Surf+ Equip	Ob	bl							
Hole	0b	bl Dumped	0b	bl							
Slug	0b	bl De-Sander	0b	bl							
Reserve	845.0b	bl De-Silter	0b	bl							
Kill	0b	bl Centrifuge	Ob	bl							
		Sweeps	208.0	bl							
Marine											
Weather che	eck on 21 Oct	2004 at 24:00						Rig Support			
Visibility	Wind Speed	Wind Dir. Pr	essure Ai	Temp.	Wave Heig	ht Wave Dir.	Wave Period	Anchors	Tensio	n (klb)	
10.00nm	10.0kn	100deg 10	08bar 1	4.0C°	0.5m	100deg	Oft/sec	1	207	.0	
Roll	Pitch	Heave Swe	ell Height Sv	vell Dir.	Swell Perio	od Weather	Comments	2 3	190 201		
0.3deg	0.3deg	1.00m	1.0m 2	25deg	Oft/sec			4	201		
Rig Dir.	Ris. Tension	VDL	Со	mments				5	212	.0	
45.0deg	0klb	4554.0klb						6	207		
	I.	<b>-</b>						7 8	205 198		
Boats	Arrive	d (date/time)	Depart	ed (date	e/time)	Stat	us	В	ulks		
Far Grip		19:20				Unloading alongs	ide rig	Item	Unit	Quantity	
								Fuel	M3 M3	67	
								Drill Water Potable Water	M3	38	
								Gel	MT	4	
								Barite Cement	MT MT	7	
Pacific					19:20	Steaming to Portl	and	Item	Unit	Quantity	
Wrangler								Fuel	M3	321	
								Cement	MT		
								Drill Water Potable Water	M3 M3	1:	
								Barite	MT		
	1							i			

Comment

Freight only: 12 1/4" PDC bit for Jack Bates

Call sign: JGO

Call sign: BHI

Time

13:07

13:12

15:40

15:49

Destination

Ocean Patriot

Ocean Patriot

Jack Bates

Essendon

Flight #

1 2 2 Pax

0

0

8

7



		From :	Nigel Walters	S			
		OIM:	Sean De Frei	tas			
Well Data							
Country	Australia	M. Depth	514.0m	Cur. Hole Size	17.500in	AFE Cost	
Field		TVD	514.0m	Casing OD	20.000in	AFE No.	5736086
Drill Co.	DOGC	Progress	391.5m	Shoe TVD	121.0m	Daily Cost	
Rig	Ocean Patriot	Days from spud	2.04	F.I.T. / L.O.T.	0ppg / 0ppg	Cum Cost	
Wtr Dpth(LAT)	54.7m	Days on well	5.46			Planned TD	1878.0m
RT-ASL(LAT)	21.5m	Current Op @ 0600	Displacing	the well to Hi-vis m	nud.	-1	
RT-ML	76.2m	Planned Op	Run and ce	ement 13 3/8" casir	ng.		

Made up 17 1/2" BHA, cleaned out shoe track, drilled ahead in 17 1/2" hole to 514 m.

### Operations For Period 0000 Hrs to 2400 Hrs on 22 Oct 2004

Phse	Cls (RC)	Ор	From	То	Hrs	Depth	Activity Description
IH	Р	HT	0000	0030	0.50	122.5m	Continued to make up BHA and ran in the hole from 106 m. Circulated and tagged top of cement at 114.5 m.
IH	Р	DC	0030	0200	1.50	122.5m	Cleaned out shoe track and rat hole from 114.5 m to 122.5 m, working string through the shoe at 120.7 m.
IH	Р	DA	0200	0300	1.00	133.0m	Drilled 17 1/2" hole from 122.5 m to 133 m.
IH	Р	HT	0300	0330	0.50	133.0m	Pulled and racked 1 stand HWDP and picked up 2 x 8" DCs.
IH	Р	DA	0330	0530	2.00	179.0m	Continued to drill 17 1/2" hole from 133 m to 179 m pumping 50 bbl hi-vis sweeps and backreaming a single prior to connection, taking surveys with Anderdrift every connection.
IH	Р	HT	0530	0600	0.50	179.0m	Pulled out of the hole with HWDP from 179 m to 120 m to install more collars in BHA.
IH	Р	RS	0600	0630	0.50	179.0m	Service TDS and travelling block. Repair TDS blower hose on travelling block.
IH	TP (HC)	RW	0630	0830	2.00	179.0m	Pick up 8" DC and attempt to run in hole. Taking weight at 122 m. POOH and rack stand of 8" DC's. Make up stand of HWDP and ream out shoe to clear obstruction. Rack back HWDP and RIH with accelerator and 8" DC's.
IH	TP (HC)	RW	0830	0900	0.50	179.0m	String taking weight at 168 m. wash and ream from 168 - TD at 179 m.
IH	Р	DA	0900	1200	3.00	240.0m	Drill 17 1/2" hole from 179 - 240 m. Ream last single. Pump 50 bbl sweep mid stand and spot 50 bbl HiVis around BHA at connection. Survey with Anderdrift every connection.
IH	Р	DA	1200	2400	12.00	514.0m	Continue to drill 17 1/2" hole from 240 m to 514 m, taking survey with Anderdrift every connection. Spotting 100 bbl hi-vis around BHA before connection.

#### Operations For Period 0000 Hrs to 0600 Hrs on 23 Oct 2004

Phse	Cls (RC)	Ор	From	То	Hrs	Depth	Activity Description
IH	Р	DA	0000	0445	4.75	628.0m	Continued to drill ahead in 17 1/2" hole from 514 m to TD at 628 m. Took Anderdrift surveys at every connection and spotted 100 bbl hi-vis around BHA on connections.
IH	Р	DA	0445	0600	1.25	628.0m	Circulated hole with 150 bbl of PHG. Prepared to displace the hole to Hi-vis mud.

#### Phase Data to 2400hrs, 22 Oct 2004

**WBM** Data

Phase	Phase Hrs	Start On	Finish On	Cum Hrs	Cum Days	Max Depth
PRESPUD(PS)	82	17 Oct 2004	20 Oct 2004	82.00	3.417 days	0m
SURFACE HOLE(SH)	14.5	20 Oct 2004	21 Oct 2004	96.50	4.021 days	122.5m
INTERMEDIATE HOLE(IH)	34.5	21 Oct 2004	22 Oct 2004	131.00	5.458 days	514.0m

Mud Type:	Hi-vis sweeps	API FL:	18cm <sup>3</sup> /30m	CI:	300	Solids:	4	Viscosity:	100sec/qt
Sample-From:	Pit 4	Filter-Cake:	2/32nd"	K+C*1000:	0%	H2O:	96%	PV:	11cp 36lb/100ft²
Time:	20:30	HTHP-FL:	0cm <sup>3</sup> /30m	Hard/Ca·	40	Oil:		Gels 10s:	23
Weight:						_		Gels 10m:	30
vvoigin.	о.оорру	HTHP-Cake:	0/32nd"	MBT:	30	Sand:	0	Fann 003:	29
Temp:	15.6C°			PM:	0	pH:	9.5	Fann 006:	30
					•	•		Fann 100:	38
				PF∙	0.35	PHPA.	Onnh	Fann 200:	13

47 58

Fann 300:

Fann 600:



## DRILLING MORNING REPORT # 6 MARTHA 01 ( 22 Oct 2004 )

Bit # 2					We	ear I		01	D	L		В	G	O2	F	R
		17 50:	IADO#	4 4 5		Norrica		D''	lod aver '	201 24 h			`olo…'	atod aver 5	is D	
Size ("): Mfr:		17.50in SMITH		1-1-5 ) 15.0klb		Nozzles		Progre	led over I			ر ا .Cum		ated over B		)1.5m
			` `	•		Size			ess ottom Hrs	391.			·			
Type:		Rock	` 0,		' '		32nd"			16.4		Cum.				6.40ŀ
Serial No.:		MR5734	F.Rate	1020gpm	3	22/	32nd"				Orill Hrs		6.40h			
Bit Model		XRTC	SPP	2100psi				Total		2010		Cum T		levs		1000
Depth In		122.5m	TFA	1.420				ROP(	avg)	23.87 m	n/hr	ROP(a	avg)		23.87	m/hı
Depth Out		0m														
BHA # 2			1													
Weight(Wet)		57.0klb	Length			152.1m	Torque	(max)		2ft-	lbs	D.C. (	1) Ann	Velocity		
Wt Below Jar	(Wet)	55.0klb	String			55.0klb	Torque	(Off.B	tm)	1ft-	lbs	D.C. (	2) Ann	Velocity		
			Pick-Up			120.0klb	Torque	(On.B	tm)	2ft-	lbs	H.W.D	D.P. Ar	n Velocity		
			Slack-Off			120.0klb		•	,			D.P. A	nn Ve	elocity		
PHA Pup Do	norintian				with or		1/2" on	dordrif	+ 0 1/2" al	ort DC 1					" otob	2 v 0
BHA Run De	scription		1/2" DC, 2	xO, 6 x 8" E	OCs, 8	" Jar, 3 x 8	" DC, A	cceler	t, 9 1/2 Si ator, 8" D0	) () () () () () () () () () () () () ()	/ 1/2	Stab,	, 9 1/2	" DC, 17 1/2	stab,	2 X 9
	Equipr	nent		Len	gth	OD	10	)	Seria	al#			C	Comment		
Bit				0.	45m	17.50in		0in	MR5734							
Float Sub				1.	03m	9.44in		0in	186-0028		Solid	d float	installe	ed		
9.5in Anderdi	rift			2.	74m	9.50in			AD995		Totc	o ring	on top	)		
9.5in Pony D				3.	58m	9.50in			502A22							
17.5in String	Stabiliser				94m	17.50in		.00in	207A75							
9.5in DC					20m	9.50in		.06in	00-006							
17.5in String	Stabiliser				31m	17.50in		.00in	207A212							
9.5in DC					13m	9.50in		.00in	00-004							
9.5in DC					35m	9.50in		.00in	00-005		7.516	N. D	' V	0 F/0" D		
X/O 8in DC					94m 78m	8.00in 8.00in		.13in .00in	186-0035 Various		7 5/8	s" Reg	pin X	6 5/8" Reg	oox.	
8in Hydraulic	lore				95m	8.00in		.00in	83460C							
8in DC	Jais				93111 09m	8.00in		.00in	Various							
Jar Accel.					39m	8.25in		.00in	186-0011							
8in DC					22m	8.00in		.00in	Various							
X/O					13m	8.00in		.81in	186-0011		6 5/8	Reg	x 4 1/2	2 IF		
Survey				l e								- 3				
MD	Incl Deg	Corr	r. Az	TVD	'\	/' Sect	Dog	leg	N/S	;	E/V	٧		Tool Ty	ре	
(m)	(deg)		eg)	(m)	1_	(m)	(deg/		(m)		(m	)			<u> </u>	
263.00	0.50	0	0		0		0		0	0				erdrift		
302.00	1.00	0	0		0		0		0	0				erdrift		
407.00	0 0.50	0	0		0		0		0	0				erdrift		
493.00 Bulk Stoc		0	0		0		0 Porce	anno	0 On Bo	0 ord			Ande	erdrift		
	me	Unit	In	Used /	\ diuct	Balance	reisc	Jillie		npany				Pa		
Fuel	ille	M3	0	17.1	o 0		DOGC		Con	ірапу					3A	
Drill Water		MT	285	309.1	0		Santos						4			
Potable Water	er	MT	34	28.5	0	212.3			Catering				8			
Gel		sx	0	554	0		Fugro		- w.o.mig				4			
Cement		sx	938	0	0		Sperry-	-Sun					4			
Barite		sx	0	0			M.I						2			
			II.				Dowell						2			
							Camer	on					2	2		
							Liebhe	r					1	l		
							Baker /	Atlas					2	2		
							Weath	erford					3	3		
							_	_					۔ ا			

Sperry-Sun

Total 82



Pu	ımps																
Pu	mp Data - Last 24	Hrs						Slow P	ump Dat	а							
No.	Туре	Liner (in)	MW (ppg)	Eff (%)	SPM	SPP (psi)	Flow (gpm)	Depth (m)	SPM1	SPP1 (psi)	Flow1 (gpm)	SPM2	SPP2 (psi)	Flow2 (gpm)	SPM3	SPP3 (psi)	Flow3 (gpm)
1	A1700	6.00	8.80	98	84	2100	345	0	0	0	0	0	0	0	0	0	0
2	12P-160	6.00	8.80	98	84	2100	345	0	0	0	0	0	0	0	0	0	0
3	12P-160	6.00	8.80	98	84	2100	345	0	0	0	0	0	0	0	0	0	0

Casin	g		
OD	L.O.T. / F.I.T.	Csg Shoe (MD/TVD)	Cementing
30 "	Oppg / Oppg	121.0m / 121.0m	

<b>HSE Summary</b>			
Events	Date of Last	Days Since	Remarks
Abandon Drill	18 Oct 2004	4 Days	Fire and abandon rig drill held based on simulated fire in the sub-sea workshop. All personnel mustered at aft lifeboats.
First Aid	20 Oct 2004	2 Days	Were advised that seaman aboard Far Grip had piece of metal embedded in his knee. IP brought on board for examination by rig medic. Medic advised IP fit to return to normal duties and no need for medivac. IP returned to Far Grip.
Safety Meeting	17 Oct 2004	5 Days	Three safety meetings held (13:00, 19:00, 01:00). Attended by all crews. Martha-1 pre-spud presentation given by company reps.

Shakers, V	olumes and	d Losses Dat	a	Engineer : Jasdeep Si	ngh		
Available	1794bbl	Losses	1840bbl	Equip.	Descr.	Mesh Size	Hours
Active	0bbl	Downhole	0bbl				
Mixing	0bbl	Surf+ Equip	0bbl				
Hole	464.0bbl	Dumped	25.0bbl				
Slug	0bbl	De-Sander	0bbl				
Reserve	1330.0bbl	De-Silter	0bbl				
Kill	0bbl	Centrifuge	0bbl				
		Sweeps	1815.0bbl				

Marine									
Weather ch	eck on 22 Oct	2004 at 24:0	0					Rig Support	
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (klb)
0.10nm	4.0kn	000deg	1006bar	14.0C°	0m	000deg	Oft/sec	1	207.0
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather	Comments	2	185.0
0.3deg	0.3deg	2.00m	1.0m	230deg	Oft/sec			3 4	203.0 201.0
Rig Dir.	Ris. Tension	VDL		Comments				5	207.0
45.0deg	0klb	4868.0klb						6	205.0
.0.0409	00							7	205.0
								8	198.0

Boats	Arrived (date/time)	Departed (date/time)	Status	В	Bulks	
Far Grip			At standby waiting for fog to lift	Item	Unit	Quantity
			before coming alongside for backload/unload.	Cement	MT	36
			backload/unioad.	Gel	MT	42
				Barite	MT	0
				Potable Water	M3	95
				Drill Water	M3	0
				Fuel	M3	664
Pacific			Steaming to the rig with Sperry	Item	Unit	Quantity
Wrangler			MWD container. ETA 04:00 23rd October. Bulks TBA.	Gel	MT	0
			October, Bulks TBA.	Barite	MT	0
				Potable Water	M3	0
				Drill Water	M3	0
				Fuel	M3	0
		I .		Cement	MT	•

Helicopte	r Movemen	t		
Flight #	Time	Destination	Comment	Pax
1	10:54	Ocean Patriot	Call sign: BHQ	8
1	11:00	Essendon		5



		From:	Nigel Walters	5			
		OIM:	Sean De Frei	tas			
Well Data							
Country	Australia	M. Depth	628.0m	Cur. Hole Size	17.500in	AFE Cost	
Field		TVD	628.0m	Casing OD	20.000in	AFE No.	5736086
Drill Co.	DOGC	Progress	114.0m	Shoe TVD	121.0m	Daily Cost	
Rig	Ocean Patriot	Days from spud	3.04	F.I.T. / L.O.T.	Oppg / Oppg	Cum Cost	
Wtr Dpth(LAT)	54.7m	Days on well	6.46			Planned TD	1878.0m
RT-ASL(LAT)	21.5m	Current Op @ 0600	Cementing	13 3/8" casing.			
RT-ML	76.2m	Planned Op	Cement 13 BOP and ri		ut running tool an	d cementing head.	Begin running

Drilled to TD in 17 1/2" hole. Displaced hole to hi-vis mud. Pulled out of the hole and handled 17 1/2" BHA. Rigged up to run 13 3/8" casing. Began running 13 3/8" casing.

### Operations For Period 0000 Hrs to 2400 Hrs on 23 Oct 2004

Phse	Cls (RC)	Op	From	То	Hrs	Depth	Activity Description
IH	Р	DA	0000	0445	4.75	628.0m	Continued to drill ahead in 17 1/2" hole from 514 m to TD at 628 m. Took Anderdrift surveys at every connection and spotted 100 bbl hi-vis around BHA on connections.
IH	Р	CHC	0445	0600	1.25	628.0m	Swept hole with 150 bbl of PHG. Displaced hole with 830 bbls PHG mud.
IH	Р	ТО	0600	0830	2.50	628.0m	Pulled out of the hole from 628 m to 265 m working string through tight spots (maximum overpull 80k).
IH	Р	HT	0830	1200	3.50	628.0m	Continued to pull out of the hole with BHA from 265 m, jetting the wellhead on the way out. Laid out crossover, stabilizer, pony drill collar, Anderdrift, bit sub and 17 1/2" bit.
IH	Р	HT	1200	1400	2.00	628.0m	Broke out 18 3/4" housing running tool from HWDP racked in derrick, made up 20' pup joint on top of running tool and 1 joint HWDP below with Deep Sea Express crossover and plug launcher. Laid down same with crane.
IC	Р	RRC	1400	1500	1.00	628.0m	Rigged up to run 13 3/8" casing.
IC	Р	CRN	1500	1630	1.50	628.0m	Made up float assembly and ran in the hole with same installing centralizers per the program.
IC	TP (PR)	CRN	1630	1730	1.00	628.0m	While making up casing, the open side door elevators contacted the spinning casing, causing them to rotate and the bails to become jammed in Topdrive. Resolved problem.
IC	Р	CRN	1730	2000	2.50	628.0m	Ran 13 3/8" casing installing centralizers per the program.
IC	Р	RRC	2000	2200	2.00	628.0m	Rigged down manual casing handling equipment and rigged up 500 ton air elevators and slips and TAM packer. Tested TAM packer, OK.
IC	Р	CRN	2200	2400	2.00	628.0m	Ran 13 3/8" casing.

#### Operations For Period 0000 Hrs to 0600 Hrs on 24 Oct 2004

Phse	Cls (RC)	Ор	From	То	Hrs	Depth	Activity Description						
IC	Р	CRN	0000	0130	1.50	628.0m	Continued to run 13 3/8" casing from 294 m to 523 m.						
IC	Р	RRC	0130	0230	1.00	628.0m	Picked up cross over joint and removed 500 ton spider slips. Rigged down spider elevators, 500 ton bails and TAM packer.						
IC	Р	CRN	0230	0330	1.00	628.0m	Picked up 18 3/4" wellhead housing joint. Picked up 18 3/4" CART with Deepsea Express plug launcher below and installed Dowell plug basket.						
IC	Р	CRN	0330	0430	1.00	628.0m	Made up 18 3/4" wellhead housing joint and continued to run in the hole with casing on HWDP landing string.						
IC	TP (VE)	RUC	0430	0530	1.00	628.0m	Picked up cement head and nippled up cement hose. Attempted to make up TDS to cement stand. Swivel on cement head not turning, nippled down cement hose.						
IC	Р	CRN	0530	0600	0.50	628.0m	Made up TDS to cement stand and landed out in 30" housing. Confirmed latch with 100k overpull.						

#### Phase Data to 2400hrs, 23 Oct 2004

,						
Phase	Phase Hrs	Start On	Finish On	Cum Hrs	Cum Days	Max Depth
PRESPUD(PS)	82	17 Oct 2004	20 Oct 2004	82.00	3.417 days	0m
SURFACE HOLE(SH)	14.5	20 Oct 2004	21 Oct 2004	96.50	4.021 days	122.5m
INTERMEDIATE HOLE(IH)	48.5	21 Oct 2004	23 Oct 2004	145.00	6.042 days	628.0m
INTERMEDIATE CASING(IC)	10	23 Oct 2004	23 Oct 2004	155.00	6.458 days	628.0m



## DRILLING MORNING REPORT # 7 MARTHA 01 ( 23 Oct 2004 )

													<u> </u>			
WBM Data	a 				1					ı			✓ Viscosity:			
Mud Type:	Hi-vis sweeps	API FL	PI FL: 16cm <sup>3</sup> /30m		CI:	CI:			300	Solids:	Solids: 4				110sec/q 10cp	
Sample-From	: Pit 5	Filter-Cake: 2/32nd			K+C	K+C*1000:			0%	H2O:		969	PV: YP:		35lb/100ft	
Time:	20:00	HTHP-FL: 0cm <sup>3</sup> /30m			Har	Hard/Ca: 60			Oil:	Dil: 0%				20		
Weight:	8.80ppg	HTHP-Cake: 0/32nd"			MB	MBT: 30			Sand:	and: 0				27		
Temp: 15.6C°				uno. 0/02/10			PM:			pH:					28	
·					PF:				0.3	·			Fann 100:		35	
					FF.				0.3	FHFA.		0рр	Fann 200:		41 45	
													Fann 600:		55	
D:4 # 0					\٨/	ear	-		O1	D	1	В	G	02	R	
Bit # 2					**	Cai	1		1	WT	A	E	ı	NO	TD	
Size ("):		17.50in	IADC#	1-1-5	;	No	zzles	<u> </u>	Dril	led over l	ast 24 hr	s	Calculated	l over Bit	Run	
Mfr:		SMITH	WOB(avg	15.0klb	No.		Size	;	Progre	ess	114.	.0m Cum	n. Progress		505.5m	
Type:		Rock	RPM(avg)	140	1		20/	32nd"	On Bo	ottom Hrs	3.0	60h Cum	n. On Btm H	rs	20.00h	
Serial No.:	M	IR5734	F.Rate	1020gpm				32nd"	IADC	Drill Hrs	3.0	60h Cum	n IADC Drill	Hrs	20.00h	
Bit Model		XRTC	SPP	2100ps		1			Total	Revs	252	000 Cum	n Total Revs		453000	
Depth In	,	122.5m	TFA	1.420									P(avg)			
Depth Out		528.0m							(	9/			(9)			
BHA # 2																
Weight(Wet)	Į.	57.0klb	Length			152	.1m	Torque	e(max)		3200ft-	-lbs D.C	. (1) Ann Ve	locity		
Wt Below Jai	r(Wet)	55.0klb	String			55.0	)klh	Torque	· ≥(Off B	tm)	1000ft-	lhs D.C	. (2) Ann Ve	locity		
W Bolow oal	Wt Below Jar(Wet) 55.0klb			· ·			120.0klb		Torque(Off.Btm) Torque(On.Btm)		,		` ,	•		
			Pick-Up					Torque	e(On.B	tm)	2800II-		/.D.P. Ann V	•		
	Slack-Off					120.0klb D.P. Ann Velocity  ith solid float, 9 1/2" anderdrift, 9 1/2" short DC, 17 1/2" stab, 9 1/2" DC, 17 1/2"										
BHA Run De	scription			, float sub (O, 6 x 8" I								17 1/2" sta	ab, 9 1/2" DC	C, 17 1/2"	stab, 2 x 9	
	Equipme	ent		Ler	gth	C	D	I	D	Seria	al#		Com	ment		
Bit				0.	45m	17	'.50in		0in	MR5734						
Float Sub				1.	03m	9	.44in		0in	186-0028		Solid floa	at installed			
9.5in Anderd	9.5in Anderdrift			2.7			.50in	n 0in		AD995		Totco ring of		ng on top		
9.5in Pony D	rill Collar			3.	58m	9	.50in	3	.00in	502A22						
17.5in String	Stabiliser			1.	94m	17	'.50in	3	.00in	207A75						
9.5in DC				9.	20m	9	.50in	3	.06in	00-006						
17.5in String	Stabiliser			2.	31m	17	'.50in	3	.00in	207A212						
9.5in DC				9.	13m	9	.50in	3	.00in	00-004						
9.5in DC				9.	35m	9	.50in	3	.00in	00-005						
X/O				0.	94m	8	3.00in	3	.13in	186-0035		7 5/8" Re	eg pin X 6 5/	8" Reg bo	OX.	
8in DC				54.	78m	8	3.00in	3		Various						
8in Hydraulic	: Jars				95m		3.00in			83460C						
8in DC					09m		.00in			Various						
Jar Accel.					39m		3.25in			186-0011						
8in DC					22m		3.00in			Various						
X/O				1.	13m	8	3.00in	2	81in	186-0011		6 5/8 Re	g x 4 1/2 IF			
Survey MD	Incl Deg	Corr	r. Az	TVD	''	V' Sec	·+	Do	nlog	N/S		E/W		Tool Typ	Δ	
(m)	(deg)		eg)	(m)	,	(m)	,l		gleg /30m)	(m)		(m)		тоог тур	<del>C</del>	
550.00	0	0	0		0			0		0	0		Anderdri	ft		
579.00	0	0	0		0			0		0	0		Anderdri			
608.00	0.50	0	0		0			0		0	0		Anderdri			
628.00	0.50	0	0		0			0		0	0		Anderdri	ft		



Bulk Stocks						Personnel On Board	
Name	Unit	In	Used	Adjust	Balance	Company	Pax
Fuel	M3	200	14.8	0	461.0	DOGC	48
Drill Water	MT	0	168	0	150.4	Santos	4
Potable Water	MT	29	29.3	0	212.0	Total Marine Catering	8
Gel	sx	0	168	0	419.0	Fugro	4
Cement	sx	844	0	0	2,594.0	Sperry-Sun	4
Barite	sx	0	0	0	1,156.0	M.I	2
						Dowell	2
						Cameron	2
						Liebher	1
						Baker Atlas	2
						Weatherford	3
						Sperry-Sun	2
						Total	82

Pι	ımps																
Pu	Pump Data - Last 24 Hrs							Slow Pump Data									
No.	. Туре	Liner (in)	MW (ppg)	Eff (%)	SPM	SPP (psi)	Flow (gpm)	Depth (m)	SPM1	SPP1 (psi)	Flow1 (gpm)	SPM2	SPP2 (psi)	Flow2 (gpm)	SPM3		Flow3 (gpm)
1	A1700	6.00	8.80	98	84	2100	345	0	0	0	0	0	0	0	0	0	0
2	12P-160	6.00	8.80	98	84	2100	345	0	0	0	0	0	0	0	0	0	0
3	12P-160	6.00	8.80	98	84	2100	345	0	0	0	0	0	0	0	0	0	0

Casing	g		
OD	L.O.T. / F.I.T.	Csg Shoe (MD/TVD)	Cementing
30 "	Oppg / Oppg	121.0m / 121.0m	

<b>HSE Summary</b>			
Events	Date of Last	Days Since	Remarks
Abandon Drill	18 Oct 2004	5 Days	Fire and abandon rig drill held based on simulated fire in the sub-sea workshop. All personnel mustered at aft lifeboats.
First Aid	20 Oct 2004	3 Days	Were advised that seaman aboard Far Grip had piece of metal embedded in his knee. IP brought on board for examination by rig medic. Medic advised IP fit to return to normal duties and no need for medivac. IP returned to Far Grip.
Safety Meeting	17 Oct 2004	6 Days	Three safety meetings held (13:00, 19:00, 01:00). Attended by all crews. Martha-1 pre-spud presentation given by company reps.

Shakers, V	olumes and	l Losses Dat	а	Engineer : Jasdeep Si	ingh		
Available	540bbl	Losses	1505bbl	Equip.	Descr.	Mesh Size	Hours
Active	0bbl	Downhole	190.0bbl				
Mixing	0bbl	Surf+ Equip	0bbl				
Hole	0bbl	Dumped	0bbl				
Slug	0bbl	De-Sander	0bbl				
Reserve	540.0bbl	De-Silter	0bbl				
Kill	0bbl	Centrifuge	0bbl				
		Sweeps	1315.0bbl				



Weather ch Visibility 9.00nm Roll	eck on 23 Oct Wind Speed	2004 at 24:00						Rig Support		
9.00nm	Wind Speed	\\/:1 D'						Rig Support		
		Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tensio	n (klb)
	15.0kn	200deg	1012bar	12.0C°	1.0m	200deg	Oft/sec	1	207	.0
ROII		J						1	207	.0
11011	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	vveatner	Comments	2	190	
0.3deg	0.3deg	1.00m	1.0m	260deg	Oft/sec			2	185	
Rig Dir.	Ris. Tension	VDL		Comments				3	205	
		4662 Oklb						3	203	.0
45.0deg	0klb	4662.0klb						4	203	.0
								4	201	.0
								5	203	.0
								5	207	.0
								6	198	.0
								6	205	.0
								7	203	.0
								7	205	.0
								8	198	.0
								8	198	.0
Boats	Arrive	ed (date/time)	Dej	parted (date/	/time)	Stat	us	E	Bulks	
Far Grip					A	standby on loc	ation.	Item	Unit	Quantity
								Fuel	M3	45
								Drill Water	M3	
								Potable Water	M3	9
								Barite Gel	MT MT	4
								Cement	MT	
Pacific		19	9:15		At	standby on loc	ation.	Item	Unit	Quantity
Wrangler								Fuel	M3	49
								Drill Water	M3	29
								Potable Water	M3	43 8
								Barite Gel	MT MT	č
								Cement	MT	
					J				1411	
Helicopto	er Moveme	nt						Comoni	1011	

Call sign: BHQ

Copyright IDS, 20040114, jg. SANTOS_OFFSHORE_drllg
Printed on 23 Oct 2004

10:54

11:00

Ocean Patriot

Essendon

8

5



		From:	Nigel Walters	3							
		OIM:	Sean De Frei	tas							
Well Data											
Country	Australia	M. Depth	628.0m	Cur. Hole Size	17.500in	AFE Cost					
Field		TVD	628.0m	Casing OD	13.375in	AFE No.	5736086				
Drill Co.	DOGC	Progress	0m	Shoe TVD	620.8m	Daily Cost					
Rig	Ocean Patriot	Days from spud	4.04	F.I.T. / L.O.T.	Oppg / Oppg	Cum Cost					
Wtr Dpth(LAT)	54.7m	Days on well	7.46			Planned TD	1878.0m				
RT-ASL(LAT)	21.5m	Current Op @ 0600	Picking up	drill pipe.							
RT-ML	76.2m	Planned Op	Run in the hole.	Run in the hole with 12 1/4" BHA, drill out shoe, perform LOT, drill ahead in 12 1/4"							

Continued running 13 3/8" casing. Landed 18 3/4" housing. Cemented casing and commenced running BOP and riser.

Operations For Period 0000 Hrs to 2400 Hrs on 24 Oct 2004

Phse	Cls (RC)	Ор	From	То	Hrs	Depth	Activity Description
IC	Р	CRN	0000	0130	1.50	628.0m	Continued to run 13 3/8" casing from 294 m to 523 m.
IC	Р	RRC	0130	0230	1.00	628.0m	Picked up cross over joint and removed 500 ton spider slips. Rigged down spider elevators, 500 ton bails and TAM packer.
IC	Р	CRN	0230	0330	1.00	628.0m	Picked up 18 3/4" wellhead housing joint. Picked up 18 3/4" CART with Deepsea Express plug launcher below and installed Dowell plug basket.
IC	Р	CRN	0330	0430	1.00	628.0m	Made up 18 3/4" wellhead housing joint and continued to run in the hole with casing on HWDP landing string.
IC	TP (VE)	RUC	0430	0530	1.00	628.0m	Picked up cement head and nippled up cement hose. Attempted to make up TDS to cement stand. Swivel on cement head not turning, nippled down cement hose.
IC	Р	CRN	0530	0600	0.50	628.0m	Made up TDS to cement stand and landed out in 30" housing. Confirmed latch with 100k overpull. 13 3/8" casing shoe set at 620.76 m.
IC	Р	RUC	0600	0630	0.50	628.0m	Nippled up surface cement hose and pressure tested same to 3,000 psi - OK.
IC	TP (VE)	CMC	0630	0800	1.50	628.0m	Dowell attempted to commence cement job however cement surge tank actuator valve was blocked with hard cement. Retified same.
IC	P	СМС	0800	1130	3.50	628.0m	Dowell pumped 322 bbl 12.5 ppg class G lead slurry and 189 bbl 15.8 ppg class G tail slurry and displaced with 258 bbl seawater. Bumped plug, pressured up to 1,500 psi (~700 psi above bump pressure) - good test. Bled off, 2.5 bbl returned - floats held. Nippled down cement hose.
IC	Р	HT	1130	1330	2.00	628.0m	Backed out CART and pulled out of the hole jetting wellhead on the way out. Laid out CART and Deepsea Express launcher assembly. Laid down Deepsea Express cement head and cement stand used for 30" casing.
IC	Р	BOP	1330	1530	2.00	628.0m	Rigged up to run BOP and riser.
IC	Р	BOP	1530	1730	2.00	628.0m	Held JSA, picked up riser double and stack. Installed guide lines, pod clamps and beacon.
IC	Р	BOP	1730	1800	0.50	628.0m	Tested choke and kill lines on riser to 250 psi for 5 mins and 3,000 psi for 15 mins. Good tests.
IC	Р	BOP	1800	2030	2.50	628.0m	Picked up slip joint and landing joint.
IC	Р	BOP	2030	2300	2.50	628.0m	Nippled up choke, kill and booster lines to slip joint.
IC	Р	ВОР	2300	2400	1.00	628.0m	Tested choke and kill lines with goosenecks to 250 psi for 5 mins and 3,000 psi for 15 mins. Good tests.

#### Operations For Period 0000 Hrs to 0600 Hrs on 25 Oct 2004

Phse	Cls (RC)	Ор	From	То	Hrs	Depth	Activity Description
IC	Р	BOP	0000	0130	1.50	628.0m	Latched onto SDL ring and installed storm loops in pod hoses.
IC	Р	BOP	0130	0230	1.00	628.0m	Centred rig over the well.
IC	Р	BOP	0230	0400	1.50	628.0m	Landed BOP and confirmed latch with 50k overpull. Unlocked and stroked out slip joint. Laid out riser landing joint.
IC	Р	ВОР	0400	0600	2.00	628.0m	Picked up and installed diverter. Laid out running tool. Serviced slip joint and greased same.

Phase Data to 2400hrs, 24	4 Oct 20	04
---------------------------	----------	----

·						
Phase	Phase Hrs	Start On	Finish On	Cum Hrs	Cum Days	Max Depth
PRESPUD(PS)	82	17 Oct 2004	20 Oct 2004	82.00	3.417 days	0m
SURFACE HOLE(SH)	14.5	20 Oct 2004	21 Oct 2004	96.50	4.021 days	122.5m
INTERMEDIATE HOLE(IH)	48.5	21 Oct 2004	23 Oct 2004	145.00	6.042 days	628.0m
INTERMEDIATE CASING(IC)	34	23 Oct 2004	24 Oct 2004	179.00	7.458 days	628.0m



WBM Data									
Mud Type:	KCL/Polymer	API FL:	11cm <sup>3</sup> /30m	CI:	30000	Solids:	1	Viscosity:	56sec/qt
Sample-From:	Pit 4							PV:	17cp
Sample-Floin.	FIL 4	Filter-Cake:	1/32nd"	K+C*1000:	6%	H2O:	99%	YP:	12lb/100ft <sup>2</sup>
Time:	22:00	HTHP-FL:	0cm <sup>3</sup> /30m	Hard/Ca:	240	Oil:	0%	Gels 10s:	2
\\/ - ! - l- t-								Gels 10m:	2
Weight:	8.80ppg	HTHP-Cake:	0/32nd"	MBT:	2	Sand:	0	Fann 003:	1
Temp:	12.2C°			PM:	0	pH:	9.2	Fann 006:	2
•					Ŭ	pr	0.2	Fann 100:	14
				PF:	0.15	PHPA:	0ppb	Fann 200:	22
								Fann 300:	29
								Fann 600:	46

Survey								
MD (m)	Incl Deg (deg)	Corr. Az (deg)	TVD (m)	'V' Sect (m)	Dogleg (deg/30m)	N/S (m)	E/W (m)	Tool Type
550.00	0	0	0	0	0	0	0	Anderdrift
579.00	0	0	0	0	0	0	0	Anderdrift
608.00	0.50	0	0	0	0	0	0	Anderdrift
628.00	0.50	0	0	0	0	0	0	Anderdrift

Bulk Stocks						Personnel On Board	
Name	Unit	In	Used	Adjust	Balance	Company	Pax
Fuel	M3	0	8.9	0	452.1	DOGC	47
Drill Water	MT	568	207.4	0	511.0	Santos	4
Potable Water	MT	16	17.3	0	210.7	Total Marine Catering	8
Gel	sx	0	0	0	419.0	Fugro	4
Cement	sx	0	1632	0	962.0	Sperry-Sun	6
Barite	sx	0	0	0	1,156.0	M.I	2
						Dowell	2
						Baker Atlas	5
						Sperry-Sun	2
						Total	80

Pυ	ımps																
Pu	mp Data - Last 24 I	Hrs						Slow P	ump Dat	a							
No.	Туре	Liner (in)	MW (ppg)	Eff (%)	SPM	SPP (psi)	Flow (gpm)	Depth (m)	SPM1	SPP1 (psi)	Flow1 (gpm)	SPM2	SPP2 (psi)	Flow2 (gpm)	SPM3	SPP3 (psi)	Flow3 (gpm)
1	A1700	6.00	0	98	0	0	0	0	0	0	0	0	0	0	0	0	0
2	12P-160	6.00	0	98	0	0	0	0	0	0	0	0	0	0	0	0	0
3	12P-160	6.00	0	98	0	0	0	0	0	0	0	0	0	0	0	0	0

Casing			
OD	L.O.T. / F.I.T.	Csg Shoe (MD/TVD)	Cementing
30 "	Oppg / Oppg	121.0m / 121.0m	
13 3/8"	0ppg / 0ppg	620.8m / 620.8m	

<b>HSE Summary</b>			
Events	Date of Last	Days Since	Remarks
Abandon Drill	24 Oct 2004	0 Days	Fire and abandon rig drill held based on simulated fire in the paint locker. All personnel mustered at forward lifeboats.
First Aid	20 Oct 2004	4 Days	Were advised that seaman aboard Far Grip had piece of metal embedded in his knee. IP brought on board for examination by rig medic. Medic advised IP fit to return to normal duties and no need for medivac. IP returned to Far Grip.
Safety Meeting	24 Oct 2004	0 Days	Three safety meetings held (13:00, 19:00, 01:00). Attended by all crews.



Shakers, V	olumes and	d Losses Data	Er	ngineer : Jasdeep S	ingh	_	
Available	1160bbl	Losses	150bbl	Equip.	Descr.	Mesh Size	Hours
Active	0bbl	Downhole	0bbl				
Mixing	0bbl	Surf+ Equip	0bbl				
Hole	0bbl	Dumped	0bbl				
Slug	0bbl	De-Sander	0bbl				
Reserve	1160.0bbl	De-Silter	0bbl				
Kill	0bbl	Centrifuge	0bbl				
		Casing Fill-up	150.0bbl				

Marine									
Weather ch	eck on 24 Oct	2004 at 24:0	0					Rig Support	
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (klb)
10.00nm	5.0kn	225deg	1018bar	12.0C°	0.5m	225deg	Oft/sec	1	207.0
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather	Comments	2	190.0
0.3deg	0.3deg	1.00m	1.5m	225deg	Oft/sec			- 3 4	203.0 207.0
Rig Dir.	Ris. Tension	VDL		Comments				5	207.0
45.0deg	0klb	4869.0klb						6	203.0
	31.00							7	205.0
								8	203.0

						-
Boats	Arrived (date/time)	Departed (date/time)	Status		Bulks	
Far Grip			At standby on location, trouble	Item	Unit	Quantity
			shooting vessel's anchor chain	Gel	MT	42
			problem.	Barite	MT	0
				Potable Water	M3	85
				Drill Water	M3	0
				Fuel	M3	446
				Cement	MT	0
Pacific			At close standby on location	Item	Unit	Quantity
Wrangler			(men working in moonpool).	Gel	MT	0
				Barite	MT	85
				Potable Water	M3	151
				Drill Water	M3	0
				Fuel	M3	479.8
				Cement	MT	0
Helicopter	Movement					
Flight #	Time	Destination	Cor	mment		Pay

Tiencopter	MOVEINEIN			
Flight #	Time	Destination	Comment	Pax
1	14:25	Ocean Patriot		6
1	14:35	Essendon		8



		From :	Nigel Walters				
		OIM:	Sean De Frei	tas			
Well Data							
Country	Australia	M. Depth	628.0m	Cur. Hole Size	17.500in	AFE Cost	
Field		TVD	628.0m	Casing OD	13.375in	AFE No.	5736086
Drill Co.	DOGC	Progress	0m	Shoe TVD	620.8m	Daily Cost	
Rig	Ocean Patriot	Days from spud	5.04	F.I.T. / L.O.T.	Oppg / Oppg	Cum Cost	
Wtr Dpth(LAT)	54.7m	Days on well	8.46			Planned TD	1878.0m
RT-ASL(LAT)	21.5m	Current Op @ 0600	Drilling out	shoe track.			
RT-ML	76.2m	Planned Op	Drill ahead	in 12 1/4" hole.			

Ran BOP and riser. Picked up and racked back pipe. Picked up 12 1/4" BHA. Ran in the hole.

#### Operations For Period 0000 Hrs to 2400 Hrs on 25 Oct 2004

Phse	Cls (RC)	Ор	From	То	Hrs	Depth	Activity Description
IC	Р	BOP	0000	0130	1.50	628.0m	Latched onto riser tensioner ring and installed storm loops in pod hoses.
IC	Р	BOP	0130	0230	1.00	628.0m	Centred rig over the well.
IC	Р	ВОР	0230	0400	1.50	628.0m	Landed BOP and confirmed latch with 50k overpull. Unlocked and stroked out slip joint. Laid out riser landing joint.
IC	Р	ВОР	0400	0530	1.50	628.0m	Picked up and installed diverter. Laid out running tool. Serviced slip joint and greased same.
IC	Р	BOP	0530	0600	0.50	628.0m	Nipple down riser handling equipment
IC	Р	НВНА	0600	0800	2.00	628.0m	Lay out 17 1/2" BHA from derrick
IC	Р	PUP	0800	1500	7.00	628.0m	Pick up 96 joints of 5" S-135 DP ( 32 stands) from deck and rack in derrick. All pipe drifted with 2 5/8" rabbit
IC	Р	BOP	1500	1530	0.50	628.0m	Function test diverter system and pump through port and stbd diverter lines - all OK
IC	Р	PUP	1530	1600	0.50	628.0m	Continue to rack back 5" DP in derrick
IC	Р	НВНА	1600	2300	7.00	628.0m	P/U 12 1/4" BHA. Drift all components with 2 5/8" rabbit. Shallow test MWD - OK
IC	Р	PUP	2300	2400	1.00	628.0m	P/U 5" S-135 DP as RIH with 12 1/4" BHA. Drift all pipe with 2 5/8" rabbit

#### Operations For Period 0000 Hrs to 0600 Hrs on 26 Oct 2004

Phse	Cls (RC)	Ор	From	То	Hrs	Depth	Activity Description
IC	Р	PUP	0000	0100	1.00	628.0m	Continued to pick up 5" drill pipe and ran in hole from 325 m to 440 m.
IC	Р	ВОР	0100	0300	2.00	628.0m	Function test BOP with blue pod from drill floor remote panel. Pressure tested BOP connector and casing to 200 psi for 5 mins and 3,000 psi for 30 mins. Conducted second function test with yellow pod and accumulator test.
IC	Р	PUP	0300	0330	0.50	628.0m	Continued to pick up 5" drill pipe and ran in the hole from 440 m to 546 m.
IC	Р	RW	0330	0400	0.50	628.0m	Broke circulation and washed down from 546 m. Tagged top of cement at 570 m.
PH	Р	DA	0400	0600	2.00	628.0m	Drilled out DS plugs in ~15 mins. Cleaned out shoe track and rat hole from 570 m to 594 m.

#### Phase Data to 2400hrs, 25 Oct 2004

**WBM** Data

Phase	Phase Hrs	Start On	Finish On	Cum Hrs	Cum Days	Max Depth
PRESPUD(PS)	82	17 Oct 2004	20 Oct 2004	82.00	3.417 days	0m
SURFACE HOLE(SH)	14.5	20 Oct 2004	21 Oct 2004	96.50	4.021 days	122.5m
INTERMEDIATE HOLE(IH)	48.5	21 Oct 2004	23 Oct 2004	145.00	6.042 days	628.0m
INTERMEDIATE CASING(IC)	58	23 Oct 2004	25 Oct 2004	203.00	8.458 days	628.0m

Mud Type:	KCL/Polymer	API FL:	9cm <sup>3</sup> /30m	CI:	37500	Solids:		Viscosity:	45sec/qt
Sample-From:	Pit 4	Ciltar Calcar	4/22=4!	K . C*4000.	7.50/	1120.		PV:	11cp
l	1117	Filter-Cake:	1/32nd"	K+C*1000:	7.5%	H2O:	99%	YP:	11lb/100ft <sup>2</sup>
Time:	22:00	HTHP-FL:	0cm <sup>3</sup> /30m	Hard/Ca:	200	Oil:	0%	Gels 10s:	3
Weight:	9.00000							Gels 10m:	3
weight.	o.auppg	HTHP-Cake:	0/32nd"	MBT:	3	Sand:	0	Fann 003:	2
Temp:	12.2C°			PM:	0.15	pH·	9.5	Fann 006:	3
					00	P		Fann 100:	12
Ì				PF:	0.25	PHPA:	1ppb	Fann 200:	18
İ								Fann 300:	22



Bit # 3							Wea	ır	I		O1	D		L	E	3	G	02		R
Size ("):		12.2	5in IA	ADC#	4-	3-7		Nozzl	les		Dril	led ove	r last 2	24 hrs		Ca	lculate	d over	Bit Ru	n
Mfr:		REI		/OB(av	a) (	)klb N	No.	S	Size		Progre	ess		C	m	Cum. Pi	roaress			0m
Type:				PM(avg		0					-	ottom Hi	·c			Cum. O	•			0h
Serial No.:		MI66		.Rate		ipm	3		20/32	znu		Drill Hrs				Cum IAI				0h
	TD	I3HKPRI		PP							Total		•	•		Cum To	-			
Bit Model	104					)psi												S		0
Depth In Depth Out		628.0	Om   11	FA	0.9	920					ROP(	avg)		N	/A F	ROP(av	g)		0.0	00 m/hr
BHA # 3																				
Weight(Wet	t)	92.0	klb Lo	ength			:	288.5n	n T	orque	(max)			3ft-II	os [	D.C. (1)	Ann V	elocity		
Wt Below Ja	ar(Wet)	54.0	klb S	tring				0kll	ьТ	orque	(Off.B	tm)		1ft-II	os l	D.C. (2)	Ann V	elocity		
20.0 0.	u.(1101)	0		ick-Up				Okli		•	(On.B	,		3ft-II				Velocity		
				•						orque	(OII.D	u11 <i>)</i>		SIL-II				•		
				lack-Of				0kll								D.P. An		•		
BHA Run D	escription			CI bit, n	ear bit ro	oller re	eamei	r, FEW	/D, P	M, Pu	ılser, 1	5 x 8" [	Cs, Ro	ller re	ame	r, jars, a	accellei	ator, cr	ossove	r,
	Equi	pment			ı	Length	1	OD		IC	)	Se	erial #				Con	nment		
Bit						0.35	m	12.25	5in		0in	M1669	4	-	TCI					-
12.25in Rol	ler Reamer					2.16	m	12.25	5in	3.	00in	XM025								
MWD Tools	3					8.32	m	8.00	0in	1.	92in	V8		1	FEW	D				
MWD Tools	3					2.77	m	8.13	3in	1.	92in	M8		1	PM					
MWD Tools	3					3.12	m	8.13	3in	1.	92in	106351	09	1	Pulsa	ar				
8in DC					1	35.47	m	8.00	0in	3.	00in	Various	6							
8in Hydrauli	ic Jars					9.95	m	8.00	0in	3.	00in	834600								
Jar Accel.						10.39	m	8.25	5in	3.	00in	E71375	5							
X/O						1.13	m	8.00	0in	3.	00in	186-01	1							
5in HWDP					1	12.33	m	5.00	0in	3.	00in	Various	3							
Survey																				
MD (m)	Incl De (deg)	g (	Corr. A (deg)		TVD (m)			Sect (m)		Dog (deg/	leg 30m)		I/S (m)		E/W (m)			Tool 7	Гуре	
550.00	0	0		0		(	)		0			0		0			Anderd	rift		
579.00	0	0		0			)		0			0		0			Anderd	rift		
608.00	0.50	0		0			)		0			0		0			Anderd			
628.00	0.50	0		0			)		0			0		0			Anderd			
Bulk Sto									_		nnel	l On B	oard							
N	lame	Ur	nit	In	Used	Ad	just	Baland					ompan	y				ı	Pax	
Fuel		МЗ		0	8.3		0	443.8	8 D	OGC							47			
Drill Water		МТ		0	0		0	511.0		antos							4			
Potable Wa	iter	МТ		14	14		0	210.		otal M	larine	Catering	<b>1</b>				8			
Gel		sx		0	0		0	419.0		ugro			9				4			
Cement		sx		0	0		0	962.0		perry-	Sun						6			
Barite		sx		0	0			1,156.0		1.I	•						2			
240		· · ·						.,	_	owell							2			
										aker A	Atlas						5			
										perry-							2			
										,,,,,,	<u> </u>					Tot				
Pumps																				
Pump Data	ı - Last 24 Hr	s							Slov	v Pun	np Dat	ta								
No.	Туре	Liner (in)	MW (ppg)	Eff (%)	SPM	SPF (psi)		Flow gpm)	Dep (m		PM1	SPP1 (psi)	Flow (gpn		PM2	SPP2 (psi)		SPM3	SPP3 (psi)	
1 A1700		6.00	0	98	0	(	0	0		0	0	0		0	0	0	0	0	0	0
2 12P-16	60	6.00	0		0		0	0		0	0	0		0	0	0	0	0	0	0
2 120 16		6.00	0	00	0		_	0		0	0			_	0					

0

0

0

0

0

0

0

0

6.00

0 98 0

3 12P-160

0



Casing	l		
OD	L.O.T. / F.I.T.	Csg Shoe (MD/TVD)	Cementing
30 "	Oppg / Oppg	121.0m / 121.0m	
13 3/8"	Oppg / Oppg	620.8m / 620.8m	

<b>HSE Summary</b>			
Events	Date of Last	Days Since	Remarks
Abandon Drill	24 Oct 2004	1 Day	Fire and abandon rig drill held based on simulated fire in the paint locker. All personnel mustered at forward lifeboats.
First Aid	20 Oct 2004	5 Days	Were advised that seaman aboard Far Grip had piece of metal embedded in his knee. IP brought on board for examination by rig medic. Medic advised IP fit to return to normal duties and no need for medivac. IP returned to Far Grip.
Safety Meeting	24 Oct 2004	1 Day	Three safety meetings held (13:00, 19:00, 01:00). Attended by all crews.

Shakers, V	olumes and	l Losses Data		Engineer : Jasdee	ep Singh		
Available	1760bbl	Losses	0bbl	Equip.	Descr.	Mesh Size	Hours
Active	0bbl	Downhole	0bbl	Shaker 1	VSM 100	4 x 105	0
Mixing	0bbl	Surf+ Equip	0bbl	Shaker 2 Shaker 3	VSM 100 VSM 100	4 x 105 4 x 105	0
Hole	0bbl	Dumped	0bbl	Shaker 4	VSM 100 VSM 100	4 x 105	0
Slug	0bbl	De-Sander	0bbl				-
Reserve	1760.0bbl	De-Silter	0bbl				
Kill	0bbl	Centrifuge	0bbl				

Marine									
Weather ch	eck on 25 Oct	2004 at 24:0	0					Rig Support	
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (klb)
10.00nm	10.0kn	045deg	1015bar	16.0C°	0.5m	045deg	Oft/sec	1	203.0
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather	Comments	2	190.0
0.3deg	0.3deg	1.00m	2.0m	045deg	Oft/sec	Mainly	Cloudy	3	203.0
0.0009	o.odog	1.00111	2.0111	o lodog	010000	ivialily	Cloudy	4	201.0
Rig Dir.	Ris. Tension	VDL		Comments				5	198.0
45.0deg	254.0klb	4257.0klb						6	203.0
40.0dcg	204.000	4207.0Kib						7	207.0
								8	203.0

Boats	Arrived (date/time)	Departed (date/time)	Status		Bulks	
Far Grip			Alongside being backloaded	Item	Unit	Quantity
			before departure to Portland.	Fuel	M3	435
				Drill Water	M3	0
				Potable Water	M3	80
				Barite	MT	0
				Gel	MT	42
				Cement	MT	0
Pacific	24:00		At standby on location.	Item	Unit	Quantity
Wrangler				Cement	MT	0
				Fuel	M3	470
				Drill Water	M3	0
				Potable Water	M3	147
				Barite	MT	85
				Gel	MT	0



		From:	Nigel Walters	s, Steve Hodgetts	3		
		OIM:	Sean De Frei	itas			
Well Data							
Country	Australia	M. Depth	868.0m	Cur. Hole Size	12.250in	AFE Cost	
Field		TVD	868.0m	Casing OD	13.375in	AFE No.	5736086
Drill Co.	DOGC	Progress	238.0m	Shoe TVD	620.8m	Daily Cost	
Rig	Ocean Patriot	Days from spud	6.04	F.I.T. / L.O.T.	0ppg / 21.60ppg	Cum Cost	
Wtr Dpth(LAT)	54.7m	Days on well	9.46			Planned TD	1878.0m
RT-ASL(LAT)	21.5m	Current Op @ 0600	Drilling ahe	ead in 12 1/4" hole.		1	
RT-ML	76.2m	Planned Op	Drill ahead	in 12 1/4" hole, drilli	ing through Pyri	te at ~1200 m.	

Picked up drill pipe, tested BOP, drilled out shoe track, conducted LOT, drilled ahead in 12 1/4" hole.

#### Operations For Period 0000 Hrs to 2400 Hrs on 26 Oct 2004

Phse	CIs (RC)	Ор	From	То	Hrs	Depth	Activity Description
IC	Р	PUP	0000	0100	1.00	628.0m	Continued to pick up 5" drill pipe and ran in hole from 325 m to 440 m.
IC	Р	ВОР	0100	0300	2.00	628.0m	Function test BOP with blue pod from drill floor remote panel. Pressure tested BOP connector and casing to 200 psi for 5 mins and 3,000 psi for 30 mins. Conducted second function test with yellow pod and accumulator test.
IC	Р	PUP	0300	0330	0.50	628.0m	Continued to pick up 5" drill pipe and ran in the hole from 440 m to 546 m.
IC	Р	RW	0330	0400	0.50	628.0m	Broke circulation and washed down from 546 m. Tagged top of cement at 570 m.
PH	Р	DA	0400	0630	2.50	628.0m	Drilled out DSE plugs in ~15 mins. Cleaned out shoe track and rat hole from 570 m to 628 m. Displaced well to 8.9 ppg KCL/Polymer/Glycol mud system while drilling shoe track.
PH	Р	DA	0630	0700	0.50	631.0m	Drilled ahead in 12 1/4" hole from 628 m to 631 m.
PH	Р	LOT	0700	0800	1.00	631.0m	Displaced lines and performed LOT with cement unit. LOT test at shoe equivalent to 21.6 ppg (2.60 SG) mud.
PH	TP (RE)	DA	0800	1030	2.50	631.0m	Shut down drilling due to electrical problem with main engine SCR's. Circulated using cement unit while rotating at slow rate.
PH	Р	DA	1030	2330	13.00	868.0m	Continued drilling ahead in 12 1/4" hole from 631 m to 868 m, taking survey with MWD on connections.
PH	Р	DA	2330	2400	0.50	868.0m	Continued drilling ahead in 12 1/4" hole at controlled rate due to excessive losses at shakers. Changed screens from 165 and 104 to 84 but problem remained. Approximately 800 bbl lost up to midnight.

#### Operations For Period 0000 Hrs to 0600 Hrs on 27 Oct 2004

Phse	Cls (RC)	Op	From	То	Hrs	Depth	Activity Description
	(110)			,	1		
PH	Р	DA	0000	0230	2.50	888.0m	Continued to intermittantly control drill ahead in 12 1/4" hole from 868 m to 888 m due to excessive mud losses at shakers.
PH	Р	DA	0230	0300	0.50	888.0m	Pumped 100 bbl hi-vis sweep and circulated out same.
PH	Р	DA	0300	0400	1.00	888.0m	Circulated and consolidated mud resources and conditioned hole.
PH	Р	DA	0400	0430	0.50	900.0m	Continued to intermittantly control drill in 12 1/4" hole from 888 m to 900 m due to excessive mud losses at shakers.
PH	Р	DA	0430	0500	0.50	900.0m	Circulated and conditioned hole.
PH	Р	DA	0500	0600	1.00	915.0m	Continued to intermittantly control drill in 12 1/4" hole from 900 m to 915 m due to excessive mud losses at shakers. Approximately 1080 bbl lost since midnight.

#### Phase Data to 2400hrs, 26 Oct 2004

Phase	Phase Hrs	Start On	Finish On	Cum Hrs	Cum Days	Max Depth
PRESPUD(PS)	82	17 Oct 2004	20 Oct 2004	82.00	3.417 days	0m
SURFACE HOLE(SH)	14.5	20 Oct 2004	21 Oct 2004	96.50	4.021 days	122.5m
INTERMEDIATE HOLE(IH)	48.5	21 Oct 2004	23 Oct 2004	145.00	6.042 days	628.0m
INTERMEDIATE CASING(IC)	62	23 Oct 2004	26 Oct 2004	207.00	8.625 days	628.0m
PRODUCTION HOLE(PH)	20	26 Oct 2004	26 Oct 2004	227.00	9.458 days	868.0m



WBM Data															
Mud Type:		API FL	:	8cm <sup>3</sup> /30m	CI:			38000	Solids:			1	Viscosity:		47sec/qt
	/mer/Glycol	Filter-C	Cake:	1/32nd	' K+C	*1000:		7.5%	H2O:			99%	PV: YP:		15cp 18lb/100ft²
Sample-From:	Active	HTHP-	FL:	0cm <sup>3</sup> /30m	Hard	/Ca:		200	Oil:			0%	Gels 10s:		6
Time:	16:00	HTHP-	Cake:	0/32nd	' МВТ	:		6.25	Sand:			0	Gels 10m: Fann 003:		5
Weight:	9.00ppg				PM:			0	pH:			9.4	Fann 006:		8
Temp:	48.8C°				PF:			0.2	PHPA:			• • •	Fann 100:		21
					FF.			0.2	FIIFA.			0ppb	Fann 200: Fann 300: Fann 600:		28 33 48
					10/-			04						00	
Bit # 3					We	ar I		O1	D	L	E	3	G	O2	R
Size ("):	•	12.25in	IADC#	4-3-7	7	Nozzles	;	Drill	led over la	ast 24 hr	s	C	Calculated	d over B	it Run
Mfr:		REED	WOB(avg)	15.0klk	No.	Size	Э	Progre	ess	238.	.0m C	Cum. I	Progress		238.0m
Type:		Rock	RPM(avg)	62	3	20,	/32nd"	On Bo	ttom Hrs	10.	70h C	Cum. (	On Btm H	rs	10.70h
Serial No.:	N	116694	F.Rate	950gpm	1			IADC	Drill Hrs	10.	70h C	Cum I	ADC Drill	Hrs	10.70h
Bit Model	TD43Hk	(PRDH	SPP	1850ps	i			Total F	Revs	118	000	Cum T	otal Revs	;	118000
Depth In	6	328.0m	TFA	0.920	)			ROP(a	avg)	22.24 n	n/hr F	ROP(a	avg)		22.24 m/hr
Depth Out		0m													
BHA # 3															
Weight(Wet)	Ç	92.0klb	Length			288.5m	Torque	(max)		3ft-	lbs [	D.C. (	1) Ann Ve	locity	
Wt Below Jar(Wet	) !	54.0klb	String			0klb	Torque	e(Off.Bt	tm)	1ft-	lbs [	D.C. (2	2) Ann Ve	locity	
			Pick-Up			0klb	Torque	(On.Bt	im)	3ft-	lbs F	H.W.D	.P. Ann ∖	elocity/	
			Slack-Off			0klb					[	D.P. A	nn Veloci	ty	
BHA Run Descrip	tion		TCI bit, ne	ar bit rolle	r reame	er, FEWD,	, PM, Pι	ılser, 1	5 x 8" DCs	s, Roller ı	eame	r, jars	, accellera	ator, cros	ssover,
	Equipme	ent		Ler	ngth	OD	II	)	Seria	al#			Com	ment	
Bit				0	.35m	12.25in	ı	0in	M16694		TCI				
12.25in Roller Rea	amer			2	.16m	12.25in	3	.00in	XM025						
MWD Tools				8	.32m	8.00in	1	.92in	V8		FEWI	D			
MWD Tools				2	.77m	8.13in	1	.92in	M8		PM				
MWD Tools					.12m	8.13in		-	10635109	1	Pulsa	ar			
8in DC					.47m	8.00in			Various						
8in Hydraulic Jars					.95m	8.00in			83460C						
Jar Accel.					.39m	8.25in			E71375						
X/O 5in HWDP					.13m .33m	8.00in 5.00in			186-011 Various						
Survey				112	.00111	0.0011		.00111	various						
	ncl Deg		. Az	TVD	'V	' Sect	Dog		N/S		E/W			Tool Ty	ре
	(deg)	(de	eg)	(m)		(m)	(deg/	30m)	(m)		(m)		T		
(m)		46: -			_		_						B 41		
(m) 672.92 0.3	6	121.62			0		0		0	0			MWD		
(m)	66 66	121.62 135.36 171.41	0		0 0 0		0 0 0		0 0 0	0 0			MWD MWD MWD		



Bulk Stocks						Personnel On Board	
Name	Unit	In	Used	Adjust	Balance	Company	Pax
Fuel	M3	100	17.7	0	526.1	DOGC	47
Drill Water	MT	0	216.7	0	294.3	Santos	5
Potable Water	MT	28	37.5	0	201.2	Total Marine Catering	8
Gel	sx	0	0	0	419.0	Fugro	2
Cement	sx	0	0	0	962.0	Sperry-Sun	6
Barite	sx	0	0	0	1,156.0	M.I	2
						Dowell	1
						Baker Atlas	4
						Sperry-Sun	2
						Total	77

Ρι	ımps																
Pu	Pump Data - Last 24 Hrs								Slow Pump Data								
No.	Туре	Liner (in)	MW (ppg)	Eff (%)	SPM	SPP (psi)	Flow (gpm)	Depth (m)	SPM1	SPP1 (psi)	Flow1 (gpm)	SPM2	SPP2 (psi)	Flow2 (gpm)	SPM3	SPP3 (psi)	Flow3 (gpm)
1	A1700	6.00	9.00	98	70	1850	335	860.0	20	50	88	30	90	132	40	120	176
2	12P-160	6.00	9.00	98	75	1850	360	860.0	20	50	88	30	80	132	40	130	176
3	12P-160	6.00	9.00	98	75	1850	360	0	0	0	0	0	0	0	0	0	0

Casing	g		
OD	L.O.T. / F.I.T.	Csg Shoe (MD/TVD)	Cementing
30 "	Oppg / Oppg	121.0m / 121.0m	
13 3/8"	21.60ppg / 0ppg	620.8m / 620.8m	

<b>HSE Summary</b>			
Events	Date of Last	Days Since	Remarks
Abandon Drill	24 Oct 2004	2 Days	Fire and abandon rig drill held based on simulated fire in the paint locker. All personnel mustered at forward lifeboats.
First Aid	20 Oct 2004	6 Days	Were advised that seaman aboard Far Grip had piece of metal embedded in his knee. IP brought on board for examination by rig medic. Medic advised IP fit to return to normal duties and no need for medivac. IP returned to Far Grip.
Safety Meeting	24 Oct 2004	2 Days	Three safety meetings held (13:00, 19:00, 01:00). Attended by all crews.

Shakers, Vo	olumes and	d Losses Dat	а	Engineer : Gordor	n Howie		
Available	1419bbl	Losses	1041bbl	Equip.	Descr.	Mesh Size	Hours
Active	504.0bbl	Downhole	0bbl	Shaker 1	VSM 100	4 x 84	18
Mixing	0bbl	Surf+ Equip	856bbl	Shaker 2	VSM 100	4 x 84	18
J				Shaker 3	VSM 100	4 x 84	18
Hole	430.0bbl	Dumped	20.0bbl	Shaker 4	VSM 100	4 x 84	18
Slug	0bbl	De-Sander	0bbl				
Reserve	485.0bbl	De-Silter	0bbl				
Kill	0bbl	Centrifuge	0bbl				
		Sweeps	165.0bbl				

Marine									
Weather che	eck on 26 Oct	2004 at 24:0		Rig Support					
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (klb)
5.00nm	20.0kn	135deg	1006bar	12.0C°	0.8m	135deg	Oft/sec	1	203.0
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather	Comments	2	190.0
0.0.1-	0.04	4.00	0.0	005-1	011/			3	207.0
0.3deg	0.3deg	1.00m	2.0m	225deg	Oft/sec			4	201.0
Rig Dir.	Ris. Tension	VDL		Comments				5	198.0
45.0deg	222.0klb	3753.0klb						6	203.0
								7	207.0
								8	203.0



Boats	Arrived (da	te/time)	Departed (date/time)	Status		Bulks	
Far Grip			00:55	Steaming to Martha-1 location	Item	Unit	Quantity
				from Portland with mud chemicals. Bulks TBA. ETA	Potable Water	M3	0
				08:30 27th October.	Barite	MT	0
				00.30 Z7 III October.	Gel	MT	0
					Cement	MT	0
					Drill Water Fuel	M3	0
							U
Pacific				At standby on location.	Item	Unit	Quantity
Wrangler					Barite	MT	85
					Gel	MT	0
					Potable Water	M3	143
					Fuel	M3	355.1
					Cement Drill Water	MT M3	0
Heliconte	r Movement				Dilli Water	IVIS	0
· ionoopio							
Flight #	Time		Destination	Cor	mment		Pax
1	15:13 C	Ocean Patriot		Call sign: BHI			6
1	15:21 E	ssendon					7
2	16:27 C	Ocean Patriot		Call sign: BHQ			6
2	16:41 E	ssendon					8



		From : OIM :	Nigel Walters Sean De Frei	s, Steve Hodgetts itas	<b>i</b>		
Well Data							
Country	Australia	M. Depth	1188.0m	Cur. Hole Size	12.250in	AFE Cost	
Field		TVD	1188.0m	Casing OD	13.375in	AFE No.	5736086
Drill Co.	DOGC	Progress	560.0m	Shoe TVD	620.8m	Daily Cost	
Rig	Ocean Patriot	Days from spud	7.04	F.I.T. / L.O.T.	0ppg / 21.60ppg	Cum Cost	
Wtr Dpth(LAT)	54.7m	Days on well	10.46			Planned TD	1878.0m
RT-ASL(LAT)	21.5m	Current Op @ 0600	Circulating	bottoms up and prep	paring for bit tri	p.	
RT-ML	76.2m	Planned Op	Drill ahead ahead.	to ~50m below pyrit	es. POOH & m	ake bit change to PI	OC. RIH & drill

### Summary of Period 0000 to 2400 Hrs

Drilled 12.25" hole from 868 - 1,188m.

Formations	formations								
Name	Top (MD)	Top (TVD)	Comment						

Operations For Period 0000 Hrs to 2400 Hrs on 27 Oct 2004

Phse	Cls (RC)	Ор	From	То	Hrs	Depth	Activity Description
PH	Р	DA	0000	0230	2.50	888.0m	Continued to intermittantly control drill ahead in 12 1/4" hole from 868 m to 888 m due to excessive mud losses at shakers. Flowchecked well at 877m, well static.
PH	Р	CHC	0230	0300	0.50	888.0m	Pumped 100 bbl hi-vis sweep and circulated out same.
PH	Р	CMD	0300	0400	1.00	888.0m	Circulated and consolidated mud resources and conditioned hole.
PH	Р	DA	0400	0430	0.50	900.0m	Continued to intermittantly control drill in 12 1/4" hole from 888 m to 900 m due to excessive mud losses at shakers.
PH	Р	CHC	0430	0500	0.50	900.0m	Circulated and conditioned hole.
PH	Р	DA	0500	0600	1.00	915.0m	Continued to intermittantly control drill in 12 1/4" hole from 900 m to 915 m due to excessive mud losses at shakers. Approximately 1080 bbl lost since midnight.
PH	Р	DA	0600	1200	6.00	994.0m	Continued drilling from 915m to 994m. Back reamed connections & took surveys with MWD. Circulation down to ~800gpm to reduce losses. Flowchecked well at 993m, well static.
PH	Р	DA	1200	2100	9.00	1123.0m	Continued drilling from 994m to 1,123m. Max gas 4.9%.
PH	Р	DA	2100	2400	3.00	1188.0m	Continued drilling from 1,123m to 1,188m with 2 x MP. Made repairs to suction module on #2 MP.

#### Operations For Period 0000 Hrs to 0600 Hrs on 28 Oct 2004

Phse	Cls (RC)	Ор	From	То	Hrs	Depth	Activity Description
PH	Р	DA	0000	0500	5.00	1262.0m	Continued drilling to 1,262m.
PH	Р	CHC	0500	0530	0.50	1262.0m	Circulated bottoms up and prepared to pull out of hole for bit change.
PH	Р	TO	0530	0600	0.50	1262.0m	POOH

Phase Data to 2400hrs, 27 Oct 2004						
Phase	Phase Hrs	Start On	Finish On	Cum Hrs	Cum Days	Max Depth
PRESPUD(PS)	82	17 Oct 2004	20 Oct 2004	82.00	3.417 days	0m
SURFACE HOLE(SH)	14.5	20 Oct 2004	21 Oct 2004	96.50	4.021 days	122.5m
INTERMEDIATE HOLE(IH)	48.5	21 Oct 2004	23 Oct 2004	145.00	6.042 days	628.0m
INTERMEDIATE CASING(IC)	62	23 Oct 2004	26 Oct 2004	207.00	8.625 days	628.0m
PRODUCTION HOLE(PH)	44	26 Oct 2004	27 Oct 2004	251.00	10.458 days	1188.0m



<b>WBM</b> Data																
Mud Type:	Glydril	API FL:	:	14cm <sup>3</sup> /	/30m	CI:			14000	Solids:			2	Viscosity:		42sec/c
Sample-From:	Flowline	Filter-C	ake:	1/3	2nd"	K+C*100	00:		0%	H2O:			98%	PV: YP:		11c 20lb/100f
Time:	22:00	HTHP-		0cm <sup>3</sup> /		Hard/Ca			1600	Oil:			0%	Gels 10s:		2015/1001
Weight:	9.00ppg	HTHP-			2nd"	MBT:	•		3.5	Sand:			2	Gels 10m:		1
Temp:	38.8C°	1111111-	Care.	0/3	ZIIU	PM:							8	Fann 003: Fann 006:		1
romp.	00.00								0	pH:				Fann 100:		2
						PF:			0	PHPA:			0ppb	Fann 200: Fann 300:		2
														Fann 600:		4
Comment		Mud re	built after s	surface l	osses					T	T .					
Bit # 3						Wear	I		01	D	L		В	G	O2	R
Size ("):		12.25in	IADC#	4	1-3-7	N	ozzles		Dril	led over la	ast 24 hi	s	C	Calculated	d over B	t Run
Mfr:		REED	WOB(avo	g) 20.	.0klb	No.	Size	)	Progre	ess	560	.0m	Cum.	Progress		798.0m
Туре:		Rock	RPM(avg	<b>g</b> )	120	3	20/	32nd"	On Bo	ttom Hrs	19.	50h	Cum.	On Btm H	rs	30.20
Serial No.:	N	116694	F.Rate	900	gpm	,			IADC	Drill Hrs	22.	00h	Cum I	ADC Drill	Hrs	32.70h
Bit Model	TD43Hk	(PRDH	SPP	230	00psi				Total I	Revs	326	000	Cum T	otal Revs	;	444000
Depth In	6	328.0m	TFA	0	.920				ROP(a	avg)	28.72 r	n/hr	ROP(a	avg)		26.42 m/h
Depth Out		0m														
BHA # 3																
Weight(Wet)	Ç	92.0klb	Length			28	8.5m	Torque	e(max)		3ft	-lbs	D.C. (	1) Ann Ve	locity	
Wt Below Jar	(Wet)	54.0klb	String				0klb	Torque	e(Off.Bt	tm)	1ft	-lbs	D.C. (	2) Ann Ve	locity	
			Pick-Up				0klb	Torque	e(On.Bt	im)	3ft	-lbs	H.W.D	).P. Ann ∖	elocity/	
			Slack-Of	f			0klb						D.P. A	nn Veloci	ty	
BHA Run Des	scription		TCI bit, n	near bit i	roller	reamer, I	FEWD,	PM, P	ulser, 1	5 x 8" DC:	s, Roller	ream	er, jars	, accellera	ator, cros	sover,
	Equipme	nt			Leng	th	OD	I	D	Seria	al#			Com	ment	
Bit					0.3	5m 1	2.25in		0in	M16694		TCI				
12.25in Roller	Reamer				2.1	6m 1	2.25in	3	.00in	XM025						
MWD Tools					8.3	2m	8.00in			V8		FEV	VD			
MWD Tools						7m	8.13in		-	M8		PM				
MWD Tools						2m	8.13in		.92in	10635109	)	Puls	sar			
8in DC	Lawa				135.4		8.00in			Various						
8in Hydraulic Jar Accel.	Jars				9.9	5m	8.00in 8.25in			83460C E71375						
X/O						3m	8.00in			186-011						
5in HWDP					112.3		5.00in			Various						
Survey																
MD (m)	Incl Deg (deg)	Corr	. Az eg)	TVD	ı	'V' Se (m			gleg /30m)	N/S (m)		E/\			Tool Ty	 oe
(m) 1075.51	2.33	211.04		(m) 075.40		1.29	,	1.20	30111)	-0.93		.73	'')	MWD		
1104.15	2.36	211.04		104.02		2.40		0.11		-1.94		.73		MWD		
1132.60	2.43	210.35		132.44		3.53		0.27		-2.96		.94		MWD		
1161.23	2.65	210.29		161.04		4.74		0.77		-4.05		.58		MWD		



Bulk Stocks						Personnel On Board	
Name	Unit	In	Used	Adjust	Balance	Company	Pax
Fuel	M3	0	18.4	0	507.7	DOGC	47
Drill Water	MT	0	277	0	17.3	Santos	5
Potable Water	MT	33	33	0	201.2	Total Marine Catering	8
Gel	sx	0	44	0	375.0	Fugro	2
Cement	sx	0	0	0	962.0	Sperry-Sun	6
Barite	sx	0	0	0	1,156.0	M.I	2
						Dowell	1
						Baker Atlas	7
						Sperry-Sun	2
						Expro	1
						Total	81

Ρι	ımps																
Pu	mp Data - Last 24 Hi	's						Slow P	ump Dat	a							
No.	Туре	Liner (in)	MW (ppg)	Eff (%)	SPM	SPP (psi)	Flow (gpm)	Depth (m)	SPM1	SPP1 (psi)	Flow1 (gpm)	SPM2	SPP2 (psi)	Flow2 (gpm)	SPM3	SPP3 (psi)	Flow3 (gpm)
1	Oilwell A1700PT	6.00	9.10	98	105	2440	450	1176.0	30	150	132	40	200	176	50	270	220
2	National 12P-160	6.00	9.10	98	0	0	0	0	0	0	0	0	0	0	0	0	0
3	National 12P-160	6.00	9.10	98	105	2440	450	1176.0	30	150	132	40	200	176	50	250	220

Casing	g		
OD	L.O.T. / F.I.T.	Csg Shoe (MD/TVD)	Cementing
30 "	Oppg / Oppg	121.0m / 121.0m	
13 3/8"	21.60ppg / 0ppg	620.8m / 620.8m	

<b>HSE Summary</b>			
Events	Date of Last	Days Since	Remarks
Abandon Drill	24 Oct 2004	3 Days	Fire and abandon rig drill held based on simulated fire in the paint locker. All personnel mustered at forward lifeboats.
First Aid	20 Oct 2004	7 Days	Were advised that seaman aboard Far Grip had piece of metal embedded in his knee. IP brought on board for examination by rig medic. Medic advised IP fit to return to normal duties and no need for medivac. IP returned to Far Grip.
Safety Meeting	24 Oct 2004	3 Days	Three safety meetings held (13:00, 19:00, 01:00). Attended by all crews.

Shakers, \	/olumes and	d Losses Dat	а	Engineer : Gordor	n Howie		
Available	1821bbl	Losses	2811bbl	Equip.	Descr.	Mesh Size	Hours
Active	427.0bbl	Downhole	0bbl	Shaker 1	VSM 100	10, 4 x 84	24
Mixing	0bbl	Surf+ Equip	2626bbl	Shaker 2 Shaker 3	VSM 100 VSM 100	10, 4 x 84 10, 4 x 84	24 24
Hole	576.0bbl	Dumped	20.0bbl	Shaker 4	VSM 100	10, 4 x 84	24
Slug	0bbl	De-Sander	0bbl			,	
Reserve	818.0bbl	De-Silter	0bbl				
Kill	0bbl	Centrifuge	0bbl				
		Sweeps	165.0bbl				
Comment	Shaker losses	due to sand blin	ding screens	changed scalpers t	o 10 mesh		

Marine									
Weather ch	eck on 27 Oct	2004 at 24:0	0					Rig Support	
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (klb)
5.00nm	25.0kn	200deg	1018bar	12.0C°	2.5m	200deg	Oft/sec	1	203.0
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather	Comments	2	185.0
1.4deg	0.8deg	1.00m	4.0m	225deg	Oft/sec	Sho	wers	3	203.0 198.0
Rig Dir.	Ris. Tension	VDL		Comments				5	203.0
45.0deg	222.0klb	3775.0klb						6	203.0
.5.5409		5 5.0KB						7	203.0

207.0



Boats	Arrived (da	te/time)	Departed (date/time)	Status		Bulks	
Far Grip		10:00		At standby on location. Seas too	Item	Unit	Quantity
				high to come along side.	Gel	MT	42
					Fuel	M3	608
					Potable Water	M3	675
					Barite	MT	86
					Drill Water	M3	0
					Cement	MT	43
Pacific			10:00	Enroute to rig with casing & mud chemicals. ETA 05:30hrs	Item	Unit	Quantity
Wrangler				28/10/04.	Drill Water	M3	0
				20/10/04.	Cement	MT	0
					Fuel	M3	355.1
					Potable Water	M3	143
					Barite	MT	85
					Gel	MT	0
Helicopter	<b>Movement</b>						
Flight #	Time		Destination	Com	nment		Pax
1	15:36 C	Ocean Patriot		Call sign: BHQ			4
1	15:43 E	Essendon					0
2	16:27 C	Ocean Patriot		Call sign: BHQ			6
2	16:41 E	Ssendon					8



	OIM:	Sean De Frei	s, Steve Hodgetts tas			
Australia	M. Depth	1188.0m	Cur. Hole Size	12.250in	AFE Cost	
	TVD	1188.0m	Casing OD	13.375in	AFE No.	5736086
DOGC	Progress	117.0m	Shoe TVD	620.8m	Daily Cost	
Ocean Patriot	Days from spud	8.04	F.I.T. / L.O.T.	0ppg / 21.60ppg	Cum Cost	
54.7m	Days on well	11.46			Planned TD	1878.0m
21.5m	Current Op @ 0600	Drilling ahe	ad 12.25" hole.		1	
76.2m	Planned Op	Drill to TD.				
	DOGC Ocean Patriot 54.7m 21.5m 76.2m	TVD DOGC Progress Ocean Patriot Days from spud  54.7m Days on well 21.5m Current Op @ 0600 76.2m Planned Op	TVD         1188.0m           DOGC         Progress         117.0m           Ocean Patriot         Days from spud         8.04           54.7m         Days on well         11.46           21.5m         Current Op @ 0600         Drilling aher	DOGC         Progress         117.0m         Shoe TVD           Ocean Patriot         Days from spud         8.04         F.I.T. / L.O.T.           54.7m         Days on well         11.46           21.5m         Current Op @ 0600         Drilling ahead 12.25" hole.           76.2m         Planned Op         Drill to TD.	DOGC         Progress         117.0m         Shoe TVD         620.8m           Ocean Patriot         Days from spud         8.04         F.I.T. / L.O.T.         0ppg / 21.60ppg           54.7m         Days on well         11.46         Uurrent Op @ 0600         Drilling ahead 12.25" hole.           76.2m         Planned Op         Drill to TD.         Drill to TD.	TVD 1188.0m Casing OD 13.375in AFE No.  DOGC Progress 117.0m Shoe TVD 620.8m Daily Cost  Days from spud 8.04 F.I.T. / L.O.T. 0ppg / 21.60ppg  54.7m Days on well 11.46 Planned TD  21.5m Current Op @ 0600 Drilling ahead 12.25" hole.  76.2m Planned Op Drill to TD.

Drilled hole to 1,262m. Made bit trip for PDC. Control drilled ahead 12.25" hole.

Formations									
Name	Top (MD)	Top (TVD)	Comment						

Operations For Period 0000 Hrs to 2400 Hrs on 28 Oct 2004

Phse	Cls (RC)	Ор	From	То	Hrs	Depth	Activity Description
PH	Р	DA	0000	0500	5.00	1262.0m	Continued drilling to 1,262m. Back reamed stand prior to connections. Took MWD surveys on connections
PH	Р	CHC	0500	0600	1.00	1262.0m	Circulated bottoms up and prepared to pull out of hole for bit change.
PH	Р	TO	0600	0830	2.50	1262.0m	Made flowcheck, well staic. POOH to BHA at 288m.
PH	Р	TO	0830	1000	1.50	1262.0m	Continued POOH with BHA. Flowchecked at shoe and at BOP, well static.
PH	TP (DTF)	НВНА	1000	1100	1.00	1262.0m	Attempted to download FEWD tool, unsuccessful.
PH	Р	НВНА	1100	1300	2.00	1262.0m	Laid out FEWD tool and downloaded data. Picked up new tool (RLL). Tested FEWD.
PH	Р	TI	1300	1530	2.50	1262.0m	Ran in hole with 12.25" BHA and new PDC bit to 575m. Shallow tested MWD at first stand of HWDP.
PH	Р	RS	1530	1600	0.50	1262.0m	Serviced rig & TDS.
PH	Р	TI	1600	1830	2.50	1262.0m	Continued running in hole to 1,149m. Worked and reamed through tight hole at 890m
PH	Р	ТО	1830	2100	2.50	1262.0m	Precaunionary reamed from 1,149m to bottom at 1,262m. No fill, no tight sections. Fanned bottom prior to drilling.
PH	Р	CDE	2100	2400	3.00	1305.0m	Established on bottom pattern and control drilled at Geologist's request 12.25" hole from 1,262m to 1,305m to enable formation sampling. Took MWD surveys on connections.

#### Operations For Period 0000 Hrs to 0600 Hrs on 29 Oct 2004

Phse	Cls (RC)	Ор	From	То	Hrs	Depth	Activity Description
PH	Р	CDE	0000	0600	6.00	1436.0m	Continued control drilling at Geologist's request from 1,305m to 1,436m.

Phase Data to 2400hrs, 28 Oct 2004						
Phase	Phase Hrs	Start On	Finish On	Cum Hrs	Cum Days	Max Depth
PRESPUD(PS)	82	17 Oct 2004	20 Oct 2004	82.00	3.417 days	0m
SURFACE HOLE(SH)	14.5	20 Oct 2004	21 Oct 2004	96.50	4.021 days	122.5m
INTERMEDIATE HOLE(IH)	48.5	21 Oct 2004	23 Oct 2004	145.00	6.042 days	628.0m
INTERMEDIATE CASING(IC)	62	23 Oct 2004	26 Oct 2004	207.00	8.625 days	628.0m
PRODUCTION HOLE(PH)	68	26 Oct 2004	28 Oct 2004	275.00	11.458 days	1305.0m



WBM Data													
Mud Type: Seawater Duovis	API FL	.: 15cr	m³/30m	CI:			16000	Solids:		7			39sec/qt
Sample-From: Active	Filter-C	Cake:	1/32nd"	K+C*100	)O·		0%	H2O:		93%	PV: YP:		13cp
Time: 22:30	HTHP-		m³/30m	Hard/Ca			1600	Oil:		0%	0-1-40-		20lb/100ft <sup>2</sup>
Weight: 9.70ppg					-						Gels 10m:		11
	HTHP-	-Cake: (	0/32nd"	MBT:			7.5	Sand:		2	Fann 000:		9 11
Temp: 40.5C°				PM:			0	pH:		8.1	Fann 1006.		23
				PF:			0	PHPA:		0ppb			28
											Fann 300: Fann 600:		33 46
Comment	Mud re	euild after surface	e losses									l .	
Bit # 3				Wear	I		01	D WT	L	В	G 1	O2 NO	R FM
C:=o ("):	10 0Ein	IADC#	407	NI.	1		1		A 24 hr	0			
( )		IADC#	4-3-7		ozzles			led over I			Calculate	a over B	
Mfr:	REED	` 0,	20.0klb	No.	Size	)	Progre		74.		Progress		872.0m
Type:	Rock	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	120	3	20/	32nd"		ottom Hrs	3.8	30h Cum	On Btm H	Irs	34.00h
Serial No.:	И16694	F.Rate 9	00gpm				IADC	Drill Hrs	5.0	00h Cum	IADC Drill	Hrs	37.70h
Bit Model TD43HI	KPRDH	SPP 2	:300psi				Total	Revs	3700	000 Cum	Total Reve	3	814000
Depth In	628.0m	TFA	0.920				ROP(	avg)	19.47 m	hr ROP	(avg)		25.65 m/hr
Depth Out 1	262.0m												
Bitwear Comment		Bit pulled as p	rogramr	med chan	ge afte	er Pyrite	es drille	ed.					
Bit # 4				Wear	I		01	D	L	В	G	O2	R
Size ("):	12.25in	IADC#		No	ozzles		Dril	led over I	ast 24 hr	s	Calculate	d over Bi	it Run
	CALOG	WOB(avg)	6.0klb	No.	Size	,	Progre		43.		Progress		43.0m
Type:	PDC	RPM(avg)	0.011.0					ottom Hrs			. On Btm H	Iro	2.50h
**		` 0,	-	5	14/	32nd"					_		
	109617		00gpm					Drill Hrs	3.0		IADC Drill		3.00h
Bit Model DSX104A		SPP	0psi				Total				Total Reve	6	34
Depth In 1	262.0m	TFA	0.752				ROP(	avg)	17.20 m	hr ROP	(avg)		17.20 m/hr
Depth Out	0m												
Run Comment		Run below pyr	rites										
BHA # 3													
Weight(Wet)	92.0klb	Length		28	8.5m	Torque	e(max)		3ft-	lbs D.C.	(1) Ann Ve	elocity	
Wt Below Jar(Wet)	54.0klb	String			0klb	Torque	e(Off.B	tm)	1ft-	lbs D.C.	(2) Ann Ve	elocity	
Wit Bolow dur(Wot)	04.010	_					,	•			D.P. Ann \		
		Pick-Up				Torque	e(On.B	uii)	3ft-			,	
		Slack-Off			0klb						Ann Veloc	,	
BHA Run Description		TCI bit, near baccellerator, 1						x 8"DC, F	Roller rea	mer, 10 x 8	3" DCs, jar	s, 3 x 8" [	DCs,
BHA Run Comment		Jar #83460C :	= 64hrs										
Equipme	ent		Leng	gth	OD	I	D	Seri	al#		Com	ment	
Bit			0.3	35m 1	2.25in		0in	M16694		TCI			
12.25in Roller Reamer			2.1	6m 1	2.25in	3	3.00in	XM025		NBRR			
MWD Tools			8.3	32m	8.00in	1	.92in	V8		-	1.75 OD st	ab	
MWD Tools			2.7	7m	8.13in	1	.92in	M8		PM			
MWD Tools			3.1		8.13in			10635109	9	Pulsar			
8in DC					8.00in			00-007					
12.25in Roller Reamer					2.25in			MX023					
8in DC			90.5		8.00in			Various					
8in Hydraulic Jars			9.9		8.00in			83460C					
8in DC			28.2		8.00in			Various					
Jar Accel.			10.3		8.25in			E71375					
8in DC					8.00in			800-00					
X/O					8.00in			186-011					
5in HWDP			112.3	3m	5.00in	3	3.00in	Various					

BHA # 4										
Weight(Wet)	92.0klb	Length		288.3m	Torque(max	)	3ft-lbs	D.C. (1) Ann Velocity		
Wt Below Jar(Wet)	54.0klb	String		0klb	Torque(Off.Btm)		1ft-lbs	D.C. (2) Ann Velocity		
		Pick-Up		0klb	Torque(On.Btm)		3ft-lbs	H.W.D.P. Ann Velocity		
		Slack-Off		0klb				D.P. Ann Velocity		
BHA Run Description			ear bit roller reamer, FEWD, PM, Pulser, 1 x 8"DC, Roller reamer, 10 x 8" DCs, jars, 3 x 8" DCs, r, 1 x 8" DC, crossover, 12 x HWDP							
BHA Run Comment		Jar #83460C = GR = 3.41m fr Res = 5.72m, PWD = 8.16m Dir = 12.17m.	om bit,							
Equi	pment		Length	OD	ID	Serial #		Comment		
Bit			0.35m	12.25in	0in	109617	PD	С		
12.25in Roller Reamer			2.16m	12.25in	3.00in	XM025	NB	RR		
MWD Tools			8.19m	8.00in	1.92in	WRGV8		WD, 11.75 OD stab (RLL component anged)		
MWD Tools			2.77m	8.13in	1.92in	M8	PM			
MWD Tools			3.12m	8.13in	1.92in	10635109	Pul	sar		
8in DC			9.11m	8.00in	2.77in	00-007				
12.25in Roller Reamer			2.01m	12.25in	3.00in	MX023				
8in DC			90.55m	8.00in	3.00in	Various				
8in Hydraulic Jars			9.95m	8.00in	3.00in	83460C				
8in DC		28.29m	8.00in	3.00in	Various					
Jar Accel.			10.39m	8.25in	3.00in	E71375				
8in DC			9.22m	8.00in	3.06in	00-008				
X/O			1.13m	8.00in	3.00in	186-011				
5in HWDP			112.33m	5.00in	3.00in	Various				
Survey										

Survey								
MD (m)	Incl Deg (deg)	Corr. Az (deg)	TVD (m)	'V' Sect (m)	Dogleg (deg/30m)	N/S (m)	E/W (m)	Tool Type
1189.87	2.78	210.70	1189.65	6.03	0.46	-5.22	-4.27	MWD
1218.57	3.07	212.16	1218.31	7.42	1.04	-6.47	-5.03	MWD
1247.39	3.46	212.50	1247.09	8.96	1.35	-7.86	-5.91	MWD
1276.08	3.78	212.66	1275.72	10.66	1.12	-9.38	-6.89	MWD

<b>Bulk Stocks</b>						Personnel On Board			
Name	Unit	In	Used	Adjust	Balance	Company	Pax		
Fuel	M3	0	14.4	2	495.3	DOGC	46		
Drill Water	MT	580	164.9	1.3	433.7	Santos	5		
Potable Water	MT	28	21.1	0.5	208.6	Total Marine Catering	8		
Gel	sx	0	57	0	318.0	Fugro	2		
Cement	sx	0	0	-29	933.0	Sperry-Sun	6		
Barite	sx	1760	220	0	2,696.0	M.I	2		
						Dowell	1		
						Baker Atlas	9		
						Sperry-Sun	2		
						Expro	1		
						DPI	2		
						Total	84		

Pu	Pumps																
Pui	mp Data - Last 24 Hr	's						Slow Pump Data									
No.	Туре	Liner (in)	MW (ppg)	Eff (%)	SPM	SPP (psi)	Flow (gpm)	Depth (m)	SPM1	SPP1 (psi)	Flow1 (gpm)	SPM2	SPP2 (psi)	Flow2 (gpm)	SPM3	SPP3 (psi)	Flow3 (gpm)
1	Oilwell A1700PT	6.00	9.70	98	68	3300	299	1176.0	30	150	132	40	200	176	50	270	220
2	National 12P-160	6.00	9.70	98	68	3300	299	0	0	0	0	0	0	0	0	0	0
3	National 12P-160	6.00	9.70	98	68	3300	299	1176.0	30	150	132	40	200	176	50	250	220



Casing	g		
OD	L.O.T. / F.I.T.	Csg Shoe (MD/TVD)	Cementing
30 "	Oppg / Oppg	121.0m / 121.0m	
13 3/8"	21.60ppg / 0ppg	620.8m / 620.8m	

<b>HSE Summary</b>			
Events	Date of Last	Days Since	Remarks
Abandon Drill	24 Oct 2004	4 Days	Fire and abandon rig drill held based on simulated fire in the paint locker. All personnel mustered at forward lifeboats.
First Aid	20 Oct 2004	8 Days	Were advised that seaman aboard Far Grip had piece of metal embedded in his knee. IP brought on board for examination by rig medic. Medic advised IP fit to return to normal duties and no need for medivac. IP returned to Far Grip.
Safety Meeting	24 Oct 2004	4 Days	Three safety meetings held (13:00, 19:00, 01:00). Attended by all crews.

Shakers, V	olumes and	d Losses Dat	а	Engineer : Gordor	n Howie		
Available	2055bbl	Losses	495bbl	Equip.	Descr.	Mesh Size	Hours
Active	457.0bbl	Downhole	0bbl	Shaker 1	VSM 100	10, 4 x 84	12
Mixing	0bbl	Surf+ Equip	310bbl	Shaker 2 Shaker 3	VSM 100 VSM 100	10, 4 x 105 10, 2 x 120, 2 x 105	12 12
Hole	630.0bbl	Dumped	20.0bbl	Shaker 4	VSM 100	10, 2 x 120, 2 x 105	12
Slug	0bbl	De-Sander	0bbl				
Reserve	968.0bbl	De-Silter	0bbl				
Kill	0bbl	Centrifuge	0bbl				
		Sweeps	165.0bbl				

Marine									
Weather ch	eck on 28 Oct	2004 at 24:0	0					Rig Support	
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (klb)
10.00nm	15.0kn	170deg	1025bar	13.0C°	1.0m	170deg	Oft/sec	1	209.0
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather	Comments	2	187.0
0.01	0.01	0.50		205.1	001			3	203.0
0.3deg	0.3deg	0.50m	2.5m	225deg	Oft/sec	Ove	rcast	4	209.0
Rig Dir.	Ris. Tension	VDL		Comments				5	203.0
45.0deg	222.0klb	4139.0klb						6	203.0
icidadg	ZZZ.ONIO	1100.010						7	234.0
								8	214.0

Boats	Arrived (date/time)	Departed (date/time)	Status	E	Bulks	
Far Grip		17:15	Enroute to Portland, ETA 07:30	Item	Unit	Quantity
				Potable Water	M3	675
				Barite	MT	86
				Drill Water	M3	0
				Fuel	M3	608
				Cement	MT	43
				Gel	MT	42
Pacific		10:00	At standby on location.	Item	Unit	Quantity
Wrangler				Cement	MT	0
				Gel	MT	0
				Fuel	M3	331.4
				Potable Water	M3	399
				Barite	MT	85
				Drill Water	M3	202

#### Helicopter Movement Flight # Time Destination Comment Pax 14:40 Ocean Patriot Call sign: BHI 7 7 1 14:50 Essendon 2 7 16:23 Call sign: BHQ Ocean Patriot 2 16:34 Essendon 4



		From:	Nigel Walters	s, Steve Hodgetts	3		
		OIM:	<b>Barry Scott</b>				
Well Data							
Country	Australia	M. Depth	1800.0m	Cur. Hole Size	12.250in	AFE Cost	
Field		TVD	1799.0m	Casing OD	13.375in	AFE No.	5736086
Drill Co.	DOGC	Progress	569.0m	Shoe TVD	620.8m	Daily Cost	
Rig	Ocean Patriot	Days from spud	9.04	F.I.T. / L.O.T.	0ppg / 21.60ppg	Cum Cost	
Wtr Dpth(LAT)	54.7m	Days on well	12.46			Planned TD	1878.0m
RT-ASL(LAT)	21.5m	Current Op @ 0600	Pulling out	of hole to log.			
RT-ML	76.2m	Planned Op	POOH. La	y out MWD tools. Ru	n electric loggir	ng suite.	

#### Summary of Period 0000 to 2400 Hrs

**Santos** 

Drilled 12.25" hole to TD at 1,800m Circulated bottoms up & flowchecked well.

Formations												
Name	Top (MD)	Top (TVD)	Comment									

#### Operations For Period 0000 Hrs to 2400 Hrs on 29 Oct 2004

Phse	Cls (RC)	Ор	From	То	Hrs	Depth	Activity Description
PH	Р	CDE	0000	0600	6.00	1436.0m	Continued control drilling at Geologist's request from 1,305m to 1,436m.
PH	Р	CDE	0600	1200	6.00	1570.0m	Continued control drilling to 1,570m.
PH	Р	CDE	1200	1530	3.50	1634.0m	Continued control drilling to 1,627m. Drilled ahead to 1,634m. Took MWD surveys each connection.
PH	TP (RE)	RR	1530	1730	2.00	1634.0m	Investigated dropped object. Found 3" x 3/4" pin on rotary table while drilling ahead. Suspended current operations and inspected TDS. Pin had fallen from TDS link tilt. Replaced pin and checked all other pins. Investigation being conducted.
PH	Р	DA	1730	2230	5.00	1800.0m	Continued drilling ahead to 1,800m. Took MWD surveys each connection & at TD.
PH	Р	CHC	2230	2400	1.50	1436.0m	Took SCR's & circulated bottoms up. Flowchecked well, well static.

#### Operations For Period 0000 Hrs to 0600 Hrs on 30 Oct 2004

Phse	Cls (RC)	Op	From	То	Hrs	Depth	Activity Description
PH	Р	TO	0000	0100	1.00	1800.0m	Pulled 10 stands to 1,608m, hole good. Filled trip tank, pumped 30 bbls slug.
PH	Р	TO	0100	0130	0.50	1800.0m	POOH to 1,364m hole good.
PH	TP (HC)	TOT	0130	0200	0.50	1800.0m	Hole pulled tight, excessive drag. Hole not taking correct fluid, flowchecked well static. Run back 4 stands to 1,491m (below gas interval).
PH	TP (HC)	RW	0200	0400	2.00	1800.0m	Washed & back reamed to 1,262m.
PH	Р	CHC	0400	0500	1.00	1800.0m	Circulated bottoms up to clean hole. Flowchecked well, well static.
PH	Р	TO	0500	0600	1.00	1800.0m	Continued POOH.

Phase Data to 2400hrs, 29 Oct 2004						
Phase	Phase Hrs	Start On	Finish On	Cum Hrs	Cum Days	Max Depth
PRESPUD(PS)	82	17 Oct 2004	20 Oct 2004	82.00	3.417 days	0m
SURFACE HOLE(SH)	14.5	20 Oct 2004	21 Oct 2004	96.50	4.021 days	122.5m
INTERMEDIATE HOLE(IH)	48.5	21 Oct 2004	23 Oct 2004	145.00	6.042 days	628.0m
INTERMEDIATE CASING(IC)	62	23 Oct 2004	26 Oct 2004	207.00	8.625 days	628.0m
PRODUCTION HOLE(PH)	92	26 Oct 2004	29 Oct 2004	299.00	12.458 days	1800.0m

General Comments										
Comments	Rig Requirements	Lessons Learnt								
CO2 = 0.30 - 0.50%, BG = 50 U, MG = 1,034 U at 1,484m, TG = 344 U at 1,262m.										



WBM Data															
Mud Type:	Glydril	API FL	: 9c	:m³/30m	CI:			35000	Solids:		1	0 Viscosity:		44sec/qt	
Sample-From:	Active	Filter-C	:ake·	1/32nd"	K+C*1	1000.		6%	H2O:		909	PV: % YP:		16cp 16lb/100ft <sup>2</sup>	
Time:	21:00	HTHP-		:m³/30m	Hard/0			1440			0,	0-1-40		9	
Weight:	10.30ppg					Ja.						Gels 10m:		14	
· ·		HTHP-	Саке:	0/32nd"	MBT:			15			1.	1.5 Fann 003: Fann 006:		7 9	
Temp:	51.6C°				PM:			0	pH:			8 Fann 1006:	O I		
					PF:			0	PHPA:		0pp			26	
												Fann 300: Fann 600:		32 48	
Bit # 3					Wea	r I		O1 1	D WT	L A	B 0	G 1	O2 NO	R FM	
Size ("):	1	2 25in	IADC#	4-3-7		Nozzles		-	led over l			Calculate			
Mfr:	'	REED	WOB(avg)	20.0klb				Progre				n. Progress		946.0m	
			, 0,		No.	Size		Ŭ				•			
Type:		Rock	( 0)	120	3	20/	32nd"		ottom Hrs			n. On Btm F		37.80h	
Serial No.:		116694		900gpm	IADC Drill Hrs							n IADC Drill		42.70h	
Bit Model	TD43HK			2300psi		Total Revs 3700						Total Rev	S	1184000	
Depth In	6	28.0m	TFA	0.920				ROP(	avg)	19.47 m	n/hr ROF	P(avg)		25.03 m/hr	
Depth Out	12	262.0m													
Bitwear Commen	ıt		Bit pulled as p	orogram	med ch	ange afte	r Pyrite	es drille	ed.						
Bit # 4					Wea	r I		O1	D	L	В	G	O2	R	
Size ("):	1	2.25in	IADC#			Nozzles	l .	Dril	led over l	ast 24 hr	s	it Run			
Mfr:				0klb				Progre	ess	495.	0m Cun	n. Progress	538.0m		
Type:		PDC	RPM(avg)	0				_	ottom Hrs	18.2				20.70h	
Serial No.:	1	09617	F.Rate		5	14/	32nd"	4	Drill Hrs 20.					23.50h	
				0gpm											
Bit Model	DSX104A		SPP	0psi				Total				Total Rev	S	270	
Depth In		262.0m	TFA	0.752				ROP(	avg)	27.20 m	1/hr   ROF	P(avg)		25.99 m/hr	
Depth Out	18	00.0m	<u> </u>	.,											
Run Comment			Run below py	rites											
BHA # 3			T.												
Weight(Wet)	9	2.0klb	Length		2	288.5m	Torque	e(max)		3ft-	lbs D.C	. (1) Ann Ve	elocity		
Wt Below Jar(We	et) 5	4.0klb	String			0klb	Torque	e(Off.B	tm)	1ft-	lbs D.C	. (2) Ann Ve	elocity		
			Pick-Up			0klb	Torque	e(On.B	tm)	3ft-	lbs H.W	.D.P. Ann	Velocity		
			Slack-Off			0klb					D.P	. Ann Veloc	city		
BHA Run Descrip	otion		TCI bit, near accellerator.						x 8"DC, F	Roller rea	mer, 10 x	8" DCs, jar	rs, 3 x 8"	DCs,	
BHA Run Comm	ent		Jar #83460C	= 64hrs	•	,									
	Equipme	nt		Leng	gth	OD	I	D	Seria	al#		Com	nment		
Bit			·	0.3	35m	12.25in		0in	M16694		TCI	-	<del></del>	-	
12.25in Roller Re	eamer			2.1	6m	12.25in	3	.00in	XM025		NBRR				
MWD Tools				8.3	32m	8.00in	1	.92in	V8		FEWD, 1	11.75 OD st	tab		
MWD Tools				2.7	77m	8.13in	1	.92in	M8		PM				
MWD Tools					2m	8.13in			10635109	)	Pulsar				
8in DC					1m	8.00in			00-007						
					)1m	12.25in			MX023						
8in DC				90.5		8.00in			Various						
8in Hydraulic Jar					95m	8.00in			83460C						
8in DC				28.2		8.00in			Various						
Jar Accel.				10.3		8.25in			E71375						
8in DC					22m	8.00in			00-008						
X/O					3m	8.00in			186-011						
5in HWDP				112.3	s3m	5.00in	3	.00in	Various						

BHA # 4										
Weight(Wet)	92.0klb	Length		288.3m	Torque(max)	) 3ft	-lbs	D.C. (1) Ann Velocity		
Wt Below Jar(Wet)	54.0klb	String		292.0klb	Torque(Off.E	3tm) 1ft	-lbs	D.C. (2) Ann Velocity		
		Pick-Up		0klb	Torque(On.E	Stm) 3ft	-lbs	H.W.D.P. Ann Velocity		
		Slack-Off		0klb		,		D.P. Ann Velocity		
BHA Run Description			r bit roller reamer, FEWD, PM, Pulser, 1 x 8"DC, Roller reamer, 10 x 8" DCs, jars, 3 x 8" DCs, 1 x 8" DC, crossover, 12 x HWDP							
BHA Run Comment		Jar #83460C = GR = 3.41m fr Res = 5.72m, PWD = 8.16m, Dir = 12.17m.	om bit,							
Equipment			Length	OD	ID	Serial #		Comment		
Bit			0.35m	12.25in	0in	109617	PD0	C		
12.25in Roller Reamer			2.16m	12.25in	3.00in	XM025	NBI	RR		
MWD Tools			8.19m	8.00in	1.92in	WRGV8		ND, 11.75 OD stab (RLL component nged)		
MWD Tools			2.77m	8.13in	1.92in	M8	PM			
MWD Tools			3.12m	8.13in	1.92in	10635109	Puls	sar		
8in DC			9.11m	8.00in	2.77in	00-007				
12.25in Roller Reamer			2.01m	12.25in	3.00in	MX023				
8in DC			90.55m	8.00in	3.00in	Various				
8in Hydraulic Jars			9.95m	8.00in	3.00in	83460C				
8in DC			28.29m	8.00in	3.00in	Various				
Jar Accel.		10.39m	8.25in	3.00in	E71375					
8in DC			9.22m	8.00in	3.06in	00-008				
X/O			1.13m	8.00in	3.00in	186-011				
5in HWDP			112.33m	5.00in	3.00in	Various				
Survey	<u> </u>		·							

Survey								
MD (m)	Incl Deg (deg)	Corr. Az (deg)	TVD (m)	'V' Sect (m)	Dogleg (deg/30m)	N/S (m)	E/W (m)	Tool Type
1735.43	2.43	221.48	1734.50	30.71	0.42	-26.71	-21.27	MWD
1763.96	2.56	220.08	1763.00	31.80	0.50	-27.65	-22.08	MWD
1785.46	2.69	214.76	1784.48	32.70	1.28	-28.43	-22.68	MWD
1800.00	2.69	214.76	1799.01	33.33	0	-28.99	-23.07	Projected

<b>Bulk Stocks</b>						Personnel On Board	
Name	Unit	In	Used	Adjust	Balance	Company	Pax
Fuel	M3	0	17.2	0	478.1	DOGC	48
Drill Water	MT	0	72.4	0	361.3	Santos	7
Potable Water	MT	37	23.1	0	222.5	Total Marine Catering	8
Gel	sx	0	0	0	318.0	Fugro	2
Cement	sx	0	0	0	933.0	Sperry-Sun	6
Barite	sx	0	0	0	2,696.0	M.I	2
						Dowell	1
						Baker Atlas	9
						Sperry-Sun	2
						Expro	1
						Total	86

Pu	ımps																
Pui	Pump Data - Last 24 Hrs							Slow P	ump Dat	a							
No.	Туре	Liner (in)	MW (ppg)	Eff (%)	SPM	SPP (psi)	Flow (gpm)	Depth (m)	SPM1	SPP1 (psi)	Flow1 (gpm)	SPM2	SPP2 (psi)	Flow2 (gpm)	SPM3	SPP3 (psi)	Flow3 (gpm)
1	Oilwell A1700PT	6.00	10.30	98	65	3300	286	1800.0	30	200	132	40	275	176	50	300	220
2	National 12P-160	6.00	10.30	98	65	3300	286	1800.0	30	200	132	40	245	176	50	375	220
3	National 12P-160	6.00	10.30	98	65	3300	286	1176.0	30	150	132	40	200	176	50	250	220



Casing	g		
OD	L.O.T. / F.I.T.	Csg Shoe (MD/TVD)	Cementing
30 "	Oppg / Oppg	121.0m / 121.0m	
13 3/8"	21.60ppg / 0ppg	620.8m / 620.8m	

HSE Summary			
Events	Date of Last	Days Since	Remarks
Abandon Drill	24 Oct 2004	5 Days	Fire and abandon rig drill held based on simulated fire in the paint locker. All personnel mustered at forward lifeboats.
First Aid	20 Oct 2004	9 Days	Were advised that seaman aboard Far Grip had piece of metal embedded in his knee. IP brought on board for examination by rig medic. Medic advised IP fit to return to normal duties and no need for medivac. IP returned to Far Grip.
Near Miss	29 Oct 2004	0 Days	Found 3" x 3/4" pin on rotary table while drilling ahead. Suspended current operations and inspected TDS. Pin had fallen from TDS link tilt. Replaced pin and checked all other pins. Investigation being conducted.
Safety Meeting	24 Oct 2004	5 Days	Three safety meetings held (13:00, 19:00, 01:00). Attended by all crews.

Shakers, V	olumes and	d Losses Dat	а	Engineer : Gordor	neer : Gordon Howie							
Available	1565bbl	Losses	548bbl	Equip.	Descr.	Mesh Size	Hours					
Active	359.0bbl	Downhole	0bbl	Shaker 1	VSM 100	10, 4 x 84	24					
Mixing	0bbl	Surf+ Equip	203bbl	Shaker 2	VSM 100	10, 4 x 165	24					
Ü	Iddo	Suit+ Equip	203001	Shaker 3	VSM 100	10, 2 x 120, 2 x 105	24					
Hole	852.0bbl	Dumped	345.0bbl	Shaker 4	VSM 100	10, 4 x 105	24					
Slug	53.0bbl	De-Sander	0bbl									
Reserve	301.0bbl	De-Silter	0bbl									
Kill	0bbl	Centrifuge	0bbl									
		Sweeps										
Marine												

Weather ch	eck on 29 Oct		Rig Support						
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (klb)
10.00nm	10.0kn	090deg	1024bar	12.0C°	0.5m	090deg	Oft/sec	1	207.0
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather	Comments	2	185.0
0.04==	0.04==	0.50	2.5	005455	04/	0		3	203.0
0.3deg	0.3deg	0.50m	2.5m	225deg	Oft/sec	Ove	ercast	4	190.0
Rig Dir.	Ris. Tension	VDL		Comments				5	203.0
45.0deg	222.0klb	4086.0klb						6	203.0
.0.0009	ZZZ.ONID	1000.010						7	229.0
								8	216.0

Boats	Arrived (date/time)	Departed (date/time)	Status		Bulks	
Far Grip		17:15	Enroute to Rig, ETA 03:15	Item	Unit	Quantity
				Drill Water	M3	0
				Fuel	M3	589
				Barite	MT	86
				Potable Water	M3	680
				Gel	MT	63.6
				Cement	MT	85.3
Pacific	17:15		At standby on location.	Item	Unit	Quantity
Wrangler				Cement	MT	0
				Fuel	M3	319.4
				Drill Water	M3	202
				Barite	MT	85
				Potable Water	M3	395
				Gel	MT	0

#### **Helicopter Movement** Flight # Time Destination Comment Pax 14:40 Ocean Patriot Call sign: BHI 7 1 7 14:50 Essendon 2 15:06 Ocean Patriot Call sign: BHQ 3 15:11 Essendon 0 1 9:44 Ocean Patriot Call sign: BHI 8 9:54 Essendon 9



		From:	Nigel Walters	s, Steve Hodgetts	3		
		OIM:	<b>Barry Scott</b>				
Well Data							
Country	Australia	M. Depth	1800.0m	Cur. Hole Size	12.250in	AFE Cost	
Field		TVD	1799.0m	Casing OD	13.375in	AFE No.	5736086
Drill Co.	DOGC	Progress	0m	Shoe TVD	620.8m	Daily Cost	
Rig	Ocean Patriot	Days from spud	10.04	F.I.T. / L.O.T.	0ppg / 21.60ppg	Cum Cost	
Wtr Dpth(LAT)	54.7m	Days on well	13.46			Planned TD	1878.0m
RT-ASL(LAT)	21.5m	Current Op @ 0600	Circulating	bottoms up.		+	
RT-ML	76.2m	Planned Op	Clean out.	RU & run wireline lo	gs.		

POOH, reamed tight spots. Laid out bit & MWD tools. Rigged up and ran log #1, held up. POOH & made wiper trip.

Formations												
Top (MD)	Top (TVD)	Comment										
	Top (MD)	Top (MD)  Top (TVD)										

Operations For Period 0000 Hrs to 2400 Hrs on 30 Oct 2004

Phse	Cls (RC)	Ор	From	То	Hrs	Depth	Activity Description				
PH	Р	TO	0000	0030	0.50	1800.0m	Pulled 10 stands to 1,608m, hole good.				
PH	Р	FC	0030	0100	0.50	1800.0m	Flowchecked hole, well static. Filled trip tank, pumped 30 bbls slug.				
PH	Р	TO	0100	0130	0.50	1800.0m	POOH to 1,364m hole good.				
PH	TP (HC)	TOT	0130	0200	0.50	1800.0m	Hole pulled tight, excessive drag. Hole not taking correct fluid, flowchecked well static. Run back 4 stands to 1,491m (below gas interval).				
PH	TP (HC)	RW	0200	0400	2.00	1800.0m	Washed & back reamed to 1,262m.				
PH	Р	CHC	0400	0530	1.50	1800.0m	Circulated bottoms up to clean hole. Flowchecked well, well static.				
PH	Р	TO	0530	0800	2.50	1800.0m	Continued POOH to 600m.				
PH	Р	FC	0800	0830	0.50	1800.0m	Flowchecked hole at shoe, well static. Pumped HW slug.				
PH	Р	TO	0830	0900	0.50	1800.0m	Continued POOH to BHA at 288m.				
PH	Р	TO	0900	1030	1.50	1800.0m	Continued POOH to surface with BHA.				
PH	Р	НВНА	1030	1230	2.00	1800.0m	Laid out bit, near bit roller reamer & MWD. Downloaded MWD on deck.				
PH	Р	LOG	1230	1330	1.00	1800.0m	Held JSA. RU Baker Atlas wireline & compensator line.				
PH	Р	LOG	1330	1630	3.00	1800.0m	PU Baker Atlas logging tool string & RIH with MLL, DLL, MAT, ZDL, ZN & GR. Run on wireline to 1,466m.				
PH	TP (HC)	LOG	1630	1730	1.00	1800.0m	Unable to pass 1,466m after repeated attempts. POOH.				
PH	TP (HC)	НВНА	1730	1900	1.50	1800.0m	RD wireline & compensator line.				
PH	TP (HC)	TI	1900	2100	2.00	1800.0m	Picked up 12.25" rerun bit & RIH with BHA.				
PH	TP (HC)	НВНА	2100	2400	3.00	1800.0m	Make wiper trip to condition hole, to 1,274m. Washed & reamed ledges at 1,121m (took 50klb) & at 1,270m (took 30klb).				

#### Operations For Period 0000 Hrs to 0600 Hrs on 31 Oct 2004

Phse	Cls (RC)	Op	From	То	Hrs	Depth	Activity Description
PH	TP (HC)	RW	0000	0530	5.50	1800.0m	Continued wiper tip to TD. Washed & reamed tight spots & ledges. Held up & worked tight hole at 1,464 - 1,507m (took 30klb), ledge 1,582m (60klb), tight hole 1,630 - 1,635m (20klb), ledge 1,717m (30klb). At 1,765m washed & reamed to TD with 10klb on bit.
PH	TP (HC)	CHC	0515	0600	0.75	1800.0m	Commenced circulating bottoms up to clean hole.



											IVIA		<u>, , , , , , , , , , , , , , , , , , , </u>	JU (	<b>J</b> GL	2004 )
Phase Data to	2400hrs	s, 30 C	Oct 2004													
Phase					Phase Hr	rs	Start C	)n	Finish (	On .	Cum H	Irs	Cum Da	vs	Max	Depth
PRESPUD(PS)						82	17 Oct	2004	20 Oct 2	2004		82.00		days		0m
SURFACE HOLE(	SH)					14.5	20 Oct	2004	21 Oct 2	2004		96.50		days		122.5m
INTERMEDIATE H	HOLE(IH)					48.5	21 Oct	2004	23 Oct 2	2004		145.00	6.042	2 days		628.0m
INTERMEDIATE (	CASING(IC	)				62	23 Oct	2004	26 Oct 2	2004		207.00	8.625	days		628.0m
PRODUCTION HO	DLE(PH)					116	26 Oct	2004	30 Oct 2	2004		323.00	13.458	days		1800.0m
General Com	ments															
	Comment	s			Rig F	Requi	irement	ts				Les	sons Le	arnt		
All rig clocks advanced by 1 hour at 02:00hrs to 03:00hrs.																
WBM Data																
Mud Type:	Glydril	API FL	: 1	1cm <sup>3</sup> /30m	CI:			35000	Solids:			10	Viscosity: PV:			52sec/qt 16cp
Sample-From:	Active	Filter-C	Cake:	1/32nd"	K+C*1000	<b>)</b> :		4%	H2O:			90%	YP:			22lb/100ft <sup>2</sup>
Time:	21:00	HTHP-	FL:	0cm <sup>3</sup> /30m	Hard/Ca:			1600	Oil:			0%	Gels 10s:			9
Weight:	10.50ppg	HTHP-	Cake:	0/32nd"	MBT:			15	Sand:			1.25	Gels 10m: Fann 003:			7
Temp:	0C°				PM:			0	pH:			8.1	Fann 006:			9
					PF:			0	PHPA:			0ppb	Fann 100: Fann 200:			23 32
								ŭ				орра	Fann 300:			38
													Fann 600:			54
Bit # 4					Wear	ı		01	D	L		В	G	02	!	R
Dit#4						2	2	3	вт	s		Χ	1	WT	-	TD
Size ("):		12.25in	IADC#		No	zzles	3	Drill	ed over	last 24	hrs	С	alculate	dover	Bit F	Run
Mfr:	HYC	CALOG	WOB(avg)	0klb	No.	Size	e	Progre	ess		0m	Cum. F	Progress			538.0m
Type:		PDC	RPM(avg)	0	5	14	/32nd"		ttom Hrs		0h	Cum. 0	On Btm H	rs		20.70h
Serial No.:		109617	F.Rate	0gpm			OZIIG	IADC	Drill Hrs		0h	Cum IA	ADC Drill	Hrs		23.50h
Bit Model	DSX104A	1HGW	SPP	0psi				Total F	Revs		236	Cum T	otal Reve	;		506
Depth In	12	262.0m	TFA	0.752				ROP(a	avg)		N/A	ROP(a	ıvg)		25	5.99 m/hr
Depth Out	18	300.0m														
Run Comment			Run below	pyrites												
Bit # 3RR					Wear	I		O1	D	L		В	G	02		R
Size ("):		12.25in	IADC#	4-3-7	No	zzles	 }	Drill	ed over	last 24	hrs	С	alculate	d over	Bit F	Run
Mfr:		REED	WOB(avg)	0klb	No.	Size		Progre	ess		0m	Cum. F	Progress			0m
Type:		Rock	, ,,	0	3		/32nd"		ttom Hrs		0h		On Btm H	rs		0h
Serial No.:	N	116694	F.Rate	0gpm	3	20	/32Hu		Drill Hrs		0h	Cum I	ADC Drill	Hrs		0h
Bit Model	TD43Hk	(PRDH	SPP	0psi				Total F	Revs		0	Cum T	otal Revs	;		0
Depth In	18	300.0m	TFA	0.920				ROP(a	ava)		N/A	ROP(a	ıva)		(	0.00 m/hr
Depth Out		0m						,	0,			,	37			
Run Comment			Wiper trip r	eamed tigh	nt spots.											
Bitwear Comment			Reaming or	nly												
BHA # 4																
Weight(Wet)	9	92.0klb	Length		288	.3m	Torque	e(max)		:	3ft-lbs	D.C. (	1) Ann Ve	locity		
Wt Below Jar(Wet	:) :	54.0klb	String		292.0	0klb	Torque	e(Off.Bt	m)		1ft-lbs	D.C. (2	2) Ann Ve	locity		
			Pick-Up		(	0klb	Torque	e(On.Bt	m)	;	3ft-lbs	H.W.D	.P. Ann \	elocity	,	
			Slack-Off		(	0klb						D.P. A	nn Veloc	ty		
BHA Run Description  PDC bit, near bit roller accellerator, 1 x 8" DC						EWE			1 x 8"DC	, Roller	reame				8" D(	Os,
BHA Run Comme	nt		Jar #83460 GR = 3.41r Res = 5.72 PWD = 8.1 Dir = 12.17	n from bit, m, 6m,												



Equipment	Length	OD	ID	Serial #	Comment
Bit	0.35m	12.25in	0in	109617	PDC
8in DC	9.11m	8.00in	2.77in	00-007	
12.25in Roller Reamer	2.01m	12.25in	3.00in	MX023	
8in DC	90.55m	8.00in	3.00in	Various	
8in Hydraulic Jars	9.95m	8.00in	3.00in	83460C	
8in DC	28.29m	8.00in	3.00in	Various	
Jar Accel.	10.39m	8.25in	3.00in	E71375	
8in DC	9.22m	8.00in	3.06in	800-00	
X/O	1.13m	8.00in	3.00in	186-011	
5in HWDP	112.33m	5.00in	3.00in	Various	

BHA # 5								
Weight(Wet)	85.0klb	Length		273.3m	Torque(max)	) 3	ft-lbs	D.C. (1) Ann Velocity
Wt Below Jar(Wet)	49.0klb	String		292.0klb	Torque(Off.Btm)		ft-lbs	D.C. (2) Ann Velocity
		Pick-Up		0klb	Torque(On.E	3tm) 3	ft-lbs	H.W.D.P. Ann Velocity
		Slack-Off		0klb				D.P. Ann Velocity
BHA Run Description		PDC bit, 1 x 8"	DC, Roller r	eamer, 10	x 8" DCs, jars	s, 3 x 8" DCs, acce	ellerato	or, 1 x 8" DC, crossover, 12 x HWDP
BHA Run Comment		Jar #83460C =	90hrs					
Equip	ment		Length	OD	ID	Serial #		Comment
Bit			0.35m	12.25in	0in	109617	PD	С
8in DC			9.11m	8.00in	2.77in	00-007		
12.25in Roller Reamer			2.01m	12.25in	3.00in	MX023		
8in DC			90.55m	8.00in	3.00in	Various		
8in Hydraulic Jars			9.95m	8.00in	3.00in	83460C		
8in DC			28.29m	8.00in	3.00in	Various		
Jar Accel.			10.39m	8.25in	3.00in	E71375		
8in DC			9.22m	8.00in	3.06in	00-008		
X/O			1.13m	8.00in	3.00in	186-011		
5in HWDP			112.33m	5.00in	3.00in	Various		

Survey								
MD (m)	Incl Deg (deg)	Corr. Az (deg)	TVD (m)	'V' Sect (m)	Dogleg (deg/30m)	N/S (m)	E/W (m)	Tool Type
1735.43	2.43	221.48	1734.50	30.71	0.42	-26.71	-21.27	MWD
1763.96	2.56	220.08	1763.00	31.80	0.50	-27.65	-22.08	MWD
1785.46	2.69	214.76	1784.48	32.70	1.28	-28.43	-22.68	MWD
1800.00	2.69	214.76	1799.01	33.33	0	-28.99	-23.07	Projected

<b>Bulk Stocks</b>						Personnel On Board		
Name	Unit	In	Used	Adjust	Balance	Company	Pax	
Fuel	M3	0	15.2	-0.1	462.8	DOGC	48	
Drill Water	MT	0	6	0	355.3	Santos	7	
Potable Water	MT	35	23.9	0	233.6	Total Marine Catering	8	
Gel	sx	0	0	0	318.0	Fugro	2	
Cement	sx	0	0	0	933.0	Sperry-Sun	6	
Barite	sx	0	66	-1	2,629.0	M.I	2	
						Dowell	1	
						Baker Atlas	9	
						Sperry-Sun	2	
						Expro	1	
						Total	86	

Pu	ımps																
Pui	Pump Data - Last 24 Hrs							Slow Pump Data									
No.	Туре	Liner (in)	MW (ppg)	Eff (%)	SPM	SPP (psi)	Flow (gpm)	Depth (m)	SPM1	SPP1 (psi)	Flow1 (gpm)	SPM2	SPP2 (psi)	Flow2 (gpm)	-	SPP3 (psi)	Flow3 (gpm)
1	Oilwell A1700PT	6.00	10.30	98	65	3300	286	1800.0	30	200	132	40	275	176	50	300	220
2	National 12P-160	6.00	10.30	98	65	3300	286	1800.0	30	200	132	40	245	176	50	375	220
3	National 12P-160	6.00	10.30	98	65	3300	286	1176.0	30	150	132	40	200	176	50	250	220



Casing	g		
OD	L.O.T. / F.I.T.	Csg Shoe (MD/TVD)	Cementing
30 "	Oppg / Oppg	121.0m / 121.0m	
13 3/8"	21.60ppg / 0ppg	620.8m / 620.8m	

<b>HSE Summary</b>			
Events	Date of Last	Days Since	Remarks
Abandon Drill	24 Oct 2004	6 Days	Fire and abandon rig drill held based on simulated fire in the paint locker. All personnel mustered at forward lifeboats.
First Aid	20 Oct 2004	10 Days	Were advised that seaman aboard Far Grip had piece of metal embedded in his knee. IP brought on board for examination by rig medic. Medic advised IP fit to return to normal duties and no need for medivac. IP returned to Far Grip.
Near Miss	29 Oct 2004	1 Day	Found 3" x 3/4" pin on rotary table while drilling ahead. Suspended current operations and inspected TDS. Pin had fallen from TDS link tilt. Replaced pin and checked all other pins. Investigation being conducted.
Safety Meeting	24 Oct 2004	6 Days	Three safety meetings held (13:00, 19:00, 01:00). Attended by all crews.

Shakers, \	olumes and	d Losses Dat	ta	Engineer : Gordon	n Howie		
Available	1578bbl	Losses	220bbl	Equip.	Descr.	Mesh Size	Hours
Active	359.0bbl	Downhole	31.0bbl	Shaker 1	VSM 100	10, 4 x 84	5
Mixing	0bbl	Surf+ Equip	52bbl	Shaker 2	VSM 100	10, 4 x 165	5
			407 Obbl	Shaker 3	VSM 100	10, 2 x 120, 2 x 105	5
Hole	864.0bbl	Dumped	137.0bbl	Shaker 4	VSM 100	10, 4 x 105	5
Slug	27.0bbl	De-Sander	0bbl				
Reserve	328.0bbl	De-Silter	0bbl				
Kill	0bbl	Centrifuge	0bbl				
		Sweeps					

Marine									
Weather ch	eck on 30 Oct	2004 at 24:0	0					Rig Support	
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (klb)
10.00nm	15.0kn	120deg	1016bar	16.0C°	0.5m	120deg	Oft/sec	1	207.0
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather	Comments	2	185.0
0.3deg	0.3deg	0.50m	2.5m	225deg	Oft/sec	Partic	al cloud	- 3 4	203.0 192.0
Rig Dir.	Ris. Tension	VDL		Comments				5	203.0
45.0deg	222.0klb	3904.0klb						6	203.0
								7	225.0
								8	220.0

Boats	Arrived (date/time)	Departed (date/time)	Status		Bulks	
Far Grip		22:30	Enroute to Portland, ETA 07:30	Item	Unit	Quantity
				Fuel	M3	572
				Drill Water	M3	0
				Potable Water	M3	580
				Barite	MT	0
				Gel	MT	63.6
				Cement	MT	85.3
Pacific	22:30		At standby on location.	Item	Unit	Quantity
	22:30		At standby on location.	Item Fuel	Unit M3	Quantity 506.5
	22:30		At standby on location.			
	22:30		At standby on location.	Fuel	M3	506.5
	22:30		At standby on location.	Fuel Drill Water	M3 M3	506.5 347
Pacific Wrangler	22:30		At standby on location.	Fuel Drill Water Potable Water	M3 M3 MT	506.5 347 423

пенсорге	i woveilleli	L .		
Flight #	Time	Destination	Comment	Pax
2	15:06	Ocean Patriot	Call sign: BHQ	3
2	15:11	Essendon		0
1	9:44	Ocean Patriot	Call sign: BHI	8
1	9:54	Essendon		9



		From:	Nigel Walters	s, Steve Hodgetts			
		OIM:	<b>Barry Scott</b>				
Well Data							
Country	Australia	M. Depth	1800.0m	Cur. Hole Size	12.250in	AFE Cost	
Field		TVD	1799.0m	Casing OD	13.375in	AFE No.	5736086
Drill Co.	DOGC	Progress	0m	Shoe TVD	620.8m	Daily Cost	
Rig	Ocean Patriot	Days from spud	11.04	F.I.T. / L.O.T.	0ppg / 21.60ppg	Cum Cost	
Wtr Dpth(LAT)	54.7m	Days on well	14.46			Planned TD	1878.0m
RT-ASL(LAT)	21.5m	Current Op @ 0600	Running lo	gs.			
RT-ML	76.2m	Planned Op	Complete le	ogging programme.			

Completed wiper trip to condition hole. Ran log # 1 & commenced log # 2.

ormations								
Top (MD)	Top (TVD)	Comment						
	Top (MD)	Top (MD) Top (TVD)						

Operations For Period 0000 Hrs to 2400 Hrs on 31 Oct 2004

Phse	Cls (RC)	Ор	From	То	Hrs	Depth	Activity Description
PH	TP (HC)	RW	0000	0300	3.00	1800.0m	Continued wiper tip to TD. Washed & reamed tight spots & ledges. Held up & worked tight hole at 1,464 - 1,507m (took 30klb), ledge 1,582m (60klb), tight hole 1,630 - 1,635m (20klb).
PH	Р	LOG	0300	0400	1.00	1800.0m	Updated clocks to reflect Daylight Savings Time coming into effect
PH	TP (HC)	WT	0400	0430	0.50	1800.0m	Continued RIH from 1,648 to 1,706m.
PH	TP (HC)	RW	0430	0530	1.00	1800.0m	Continued wiper tip to TD. Washed & reamed tight spots & ledges. Ledge 1,717m (30klb). At 1,765m washed & reamed to TD with 10klb on bit.
PH	TP (HC)	CHC	0530	0630	1.00	1800.0m	Commenced circulating bottoms up to clean hole.
PH	TP (HC)	WT	0630	0830	2.00	1800.0m	POOH to 1,075m
PH	TP (HC)	FC	0830	0900	0.50	1800.0m	Made flowcheck, well static, pumped HW slug.
PH	TP (HC)	WT	0900	1030	1.50	1800.0m	Continued POOH to BHA and conducted flowchech, well static.
PH	TP (HC)	WT	1030	1200	1.50	1800.0m	Continued POOH with BHA, racked same.
PH	TP (HC)	LOG	1200	1230	0.50	1800.0m	Held JSA and RU wireline & compensator line.
PH	TP (HC)	LOG	1230	1430	2.00	1800.0m	Rigged up and reran log # 1 - MLL, DLL, MAC, ZDL, CN & GR. RIH to point where logs held up.
PH	Р	LOG	1430	1830	4.00	1800.0m	Continued running log # 1. Logged down, TD - loggers 1,791m. Logged up, hole good. Recorded she at drillers depth 621m.
PH	Р	LOG	1830	2000	1.50	1800.0m	Rigged down log #1. calibrated tools.
PH	Р	LOG	2000	2115	1.25	1800.0m	Rigged up to run Log # 2.
PH	Р	LOG	2115	2400	2.75	1800.0m	RIH with log # 2, RCI, GR & TTRM. 2 x pressure points taken to 1,295m.

Operations For Period 0000 Hrs to 0600 Hrs on 01 Nov 2004

Phse	Cls (RC)	Ор	From	То	Hrs	Depth	Activity Description
PH	Р	LOG	0000	0600	6.00	1800.0m	Continued running log # 2. Total of 30 pressure points taken by 06:00hrs.

Phase Data to 2400hrs, 31 Oct 2004						
Phase	Phase Hrs	Start On	Finish On	Cum Hrs	Cum Days	Max Depth
PRESPUD(PS)	82	17 Oct 2004	20 Oct 2004	82.00	3.417 days	0m
SURFACE HOLE(SH)	14.5	20 Oct 2004	21 Oct 2004	96.50	4.021 days	122.5m
INTERMEDIATE HOLE(IH)	48.5	21 Oct 2004	23 Oct 2004	145.00	6.042 days	628.0m
INTERMEDIATE CASING(IC)	62	23 Oct 2004	26 Oct 2004	207.00	8.625 days	628.0m
PRODUCTION HOLE(PH)	140	26 Oct 2004	31 Oct 2004	347.00	14.458 days	1800.0m



WBM Data															
Mud Type:	Glydril	API FL	110	m³/30m	CI:			25000	Solids:			10	Viscosity:		52sec/at
	•							35000					PV:		16cp
Sample-From:	Active	Filter-C		I/32nd"	K+C*10			4%	H2O:			90%	YP:		22lb/100ft <sup>2</sup>
Time:	21:00	HTHP-	FL: Ocr	n³/30m	Hard/Ca	a:		1600	Oil:			0%	Gels 10s: Gels 10m:		9 20
Weight:	10.50ppg	HTHP-	Cake: (	)/32nd"	MBT:			15	Sand:			1.25	Fann 003:		7
Temp:	0C°				PM:			0	pH:			8.1	Fann 006: Fann 100:		9
					PF:			0	PHPA:			0ppb	Fann 200:		32
													Fann 300: Fann 600:		38 54
Bit # 4					Wear	I		01	D	L		В	G	O2	R
C:o ("):		2.25in	IADC#			2 Nozzles		3	BT lled over l	S last 24 hr		X	l Colouloto	WT d over Bi	TD
Size ("):				OLIL						iast 24 m	_			a over bi	
Mfr:	HYC	ALOG	WOB(avg)	0klb	No.	Size		Progr			0m		Progress		538.0m
Type:		PDC	RPM(avg)	0	5	14/	32nd"		ottom Hrs		0h		On Btm F		20.70h
Serial No.:	-	09617	F.Rate	0gpm				•	Drill Hrs		0h		ADC Drill		23.50h
Bit Model	DSX104A	_	SPP	0psi				Total			236		Total Rev	3	742
Depth In		62.0m	TFA	0.752				ROP(	avg)		N/A	ROP(a	avg)		25.99 m/hr
Depth Out	18	00.0m													
Run Comment			Run below pyr	rites											
Bit # 3RR					Wear	I		O1	D	L		В	G	O2	R
			T			1		1	WT	Α		0	1	NO	LOG
Size ("):		2.25in	IADC#	4-3-7	١	lozzles			lled over	last 24 hr	rs			d over Bi	t Run
Mfr:		REED	WOB(avg)	0klb	No.	Size	;	Progr	ess		0m	Cum.	Progress		0m
Type:		Rock	RPM(avg)	0	3	20/	32nd"	On Bo	ottom Hrs		0h	Cum.	On Btm H	Irs	0h
Serial No.:	M	16694	F.Rate	0gpm				IADC	Drill Hrs		0h	Cum I	ADC Drill	Hrs	0h
Bit Model	TD43HK	PRDH	SPP	0psi				Total	Revs		0	Cum T	Total Reve	5	0
Depth In	18	00.0m	TFA	0.920				ROP(	avg)		N/A	ROP(a	avg)		0.00 m/hr
Depth Out		0m													
Run Comment			Wiper trip rear	ned tigh	t spots.			*				Į.			
Bitwear Comment	t		Reaming only												
BHA # 4															
Weight(Wet)	9	2.0klb	Length		28	88.3m	Torqu	e(max)		3ft	-lbs	D.C. (	1) Ann Ve	elocity	
Wt Below Jar(We	t) 5	4.0klb	String		29	2.0klb	Torqu	e(Off.B	tm)	1ft	-lbs	D.C. (	2) Ann Ve	elocity	
,	,		Pick-Up			0klb	Torqu	e(On.B	tm)	3ft	-lbs	H.W.D	D.P. Ann \	/elocity	
			Slack-Off			0klb	·	`	,			D.P. A	Ann Veloc	ity	
BHA Run Descrip	tion		PDC bit, near accellerator, 1						1 x 8"DC,	Roller re	amer	r, 10 x 8	B" DCs, ja	irs, 3 x 8"	DCs,
BHA Run Comme	ant		Jar #83460C :		, 0,000	7101, 12	X 1 1 1 1 1 1	-							
BHA Kun Gomme	, in		GR = 3.41m fi Res = 5.72m, PWD = 8.16m Dir = 12.17m.	om bit,											
	Equipme	nt		Leng	jth	OD	ı	ID	Seri	al#			Com	nment	
Bit				0.3	5m	12.25in		0in	109617		PDO	3			
8in DC					1m	8.00in			00-007		-				
12.25in Roller Re	amer					12.25in			MX023						
8in DC				90.5	5m	8.00in	3	3.00in	Various						
8in Hydraulic Jars	8			9.9	5m	8.00in	3	3.00in	83460C						
8in DC				28.2	9m	8.00in	3	3.00in	Various						
Jar Accel.				10.3	9m	8.25in	3	3.00in	E71375						
8in DC				9.2	2m	8.00in	3	3.06in	800-00						
X/O					3m	8.00in		3.00in	186-011						
5in HWDP				112.3	3m	5.00in	3	3.00in	Various						

BHA # 5	<u>-</u>							
Weight(Wet)	85.0klb	Length		273.3m	Torque(max)	) 3f	t-lbs	D.C. (1) Ann Velocity
Wt Below Jar(Wet)	49.0klb	String		292.0klb	Torque(Off.Btm) 1ft		t-lbs	D.C. (2) Ann Velocity
		Pick-Up		0klb	Torque(On.E	3tm) 3f	t-lbs	H.W.D.P. Ann Velocity
		Slack-Off		0klb				D.P. Ann Velocity
BHA Run Description		TCI bit, 1 x 8"I	DC, Roller re	amer, 10 x	8" DCs, jars,	3 x 8" DCs, accelle	erator	r, 1 x 8" DC, crossover, 12 x HWDP
BHA Run Comment		Jar #83460C :	= 90hrs					
Eq	uipment		Length	OD	ID	Serial #		Comment
Bit			0.35m	12.25in	0in	M16694	TC	I
8in DC			9.11m	8.00in	2.77in	00-007		
12.25in Roller Reamer			2.01m	12.25in	3.00in	MX023		
8in DC			90.55m	8.00in	3.00in	Various		
8in Hydraulic Jars			9.95m	8.00in	3.00in	83460C		
8in DC			28.29m	8.00in	3.00in	Various		
Jar Accel.			10.39m	8.25in	3.00in	E71375		
8in DC			9.22m	8.00in	3.06in	00-008		
X/O			1.13m	8.00in	3.00in	186-011		
5in HWDP			112.33m	5.00in	3.00in	Various		
Survey	·	·		·	·	-		
MD Incl D	eg Cor	r. Az T\	/D "\	/' Sect	Dogleg	N/S	E/	/W Tool Type

Survey								
MD (m)	Incl Deg (deg)	Corr. Az (deg)	TVD (m)	'V' Sect (m)	Dogleg (deg/30m)	N/S (m)	E/W (m)	Tool Type
1735.43	2.43	221.48	1734.50	30.71	0.42	-26.71	-21.27	MWD
1763.96	2.56	220.08	1763.00	31.80	0.50	-27.65	-22.08	MWD
1785.46	2.69	214.76	1784.48	32.70	1.28	-28.43	-22.68	MWD
1800.00	2.69	214.76	1799.01	33.33	0	-28.99	-23.07	Projected

Bulk Stocks						Personnel On Board	
Name	Unit	In	Used	Adjust	Balance	Company	Pax
Fuel	M3	0	10.8	0	452.0	DOGC	46
Drill Water	MT	0	24.1	0	331.2	Santos	6
Potable Water	MT	33	24.7	0.1	242.0	Total Marine Catering	8
Gel	sx	0	0	0	318.0	Fugro	2
Cement	sx	0	0	0	933.0	Sperry-Sun	2
Barite	sx	0	159	1	2,471.0	M.I	1
						Dowell	2
						Baker Atlas	8
						Sperry-Sun	2
						Expro	1
						Total	78

Pυ	Pumps																
Pump Data - Last 24 Hrs								Slow Pump Data									
No.	Туре	Liner (in)	MW (ppg)	Eff (%)	SPM	SPP (psi)	Flow (gpm)	Depth (m)	SPM1	SPP1 (psi)	Flow1 (gpm)	SPM2	SPP2 (psi)	Flow2 (gpm)	SPM3	SPP3 (psi)	Flow3 (gpm)
1	Oilwell A1700PT	6.00	10.30	98	65	2400	286	1800.0	30	200	132	40	275	176	50	300	220
2	National 12P-160	6.00	10.30	98	65	2400	286	1800.0	30	200	132	40	245	176	50	375	220
3	National 12P-160	6.00	10.30	98	65	2400	286	1176.0	30	150	132	40	200	176	50	250	220

Casing	g		
OD	L.O.T. / F.I.T.	Csg Shoe (MD/TVD)	Cementing
30 "	Oppg / Oppg	121.0m / 121.0m	
13 3/8"	21.60ppg / 0ppg	620.8m / 620.8m	



HSE Summary			
Events	Date of Last	Days Since	Remarks
Abandon Drill	31 Oct 2004	0 Days	Fire and abandon rig drill held based on simulated fire in the outside smokers shack. All personnel mustered at aft lifeboats.
First Aid	20 Oct 2004	11 Days	Were advised that seaman aboard Far Grip had piece of metal embedded in his knee. IP brought on board for examination by rig medic. Medic advised IP fit to return to normal duties and no need for medivac. IP returned to Far Grip.
Near Miss	29 Oct 2004	2 Days	Found 3" x 3/4" pin on rotary table while drilling ahead. Suspended current operations and inspected TDS. Pin had fallen from TDS link tilt. Replaced pin and checked all other pins. Investigation being conducted.
Safety Meeting	31 Oct 2004	0 Days	Three safety meetings held (13:00, 19:00, 01:00). Attended by all crews.

Shakers, Vo	olumes and	d Losses Dat	а	Engineer : Gordon Howie							
Available	1578bbl	Losses	220bbl	Equip.	Descr.	Mesh Size	Hours				
Active	359.0bbl	Downhole	31.0bbl	Shaker 1	VSM 100	10, 4 x 84	5				
Mixing	0bbl	Surf+ Equip	52bbl	Shaker 2	VSM 100	10, 4 x 165	5				
				Shaker 3	VSM 100	10, 2 x 120, 2 x 105	5				
Hole	864.0bbl	Dumped	137.0bbl	Shaker 4	VSM 100	10, 4 x 105	5				
Slug	27.0bbl	De-Sander	0bbl								
Reserve	328.0bbl	De-Silter	0bbl								
Kill	0bbl	Centrifuge	0bbl								
		Sweeps									

Marine									
Weather cho	eck on 31 Oct	2004 at 24:0	0					Rig Support	
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (klb)
10.00nm	15.0kn	220deg	1007bar	15.0C°	0.5m	220deg	Oft/sec	1	207.0
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather	Comments	2	185.0
0.2deg	0.2deg	0.50m	1.0m	225deg	Oft/sec	Partica	al cloud	3	203.0
	J				0.4000		0.000	4	187.0
Rig Dir.	Ris. Tension	VDL		Comments				5	203.0
45.0deg	222.0klb	3755.4klb						6	203.0
.5.5409		5. 55. Hdb						7	236.0
								8	225.0

Boats	Arrived (date/time)	Departed (date/time)	Status	E	Bulks	
Far Grip			Portland	Item	Unit	Quantity
				Fuel	M3	572
				Drill Water	M3	0
				Potable Water	M3	580
				Barite	MT	0
				Gel	MT	63.6
				Cement	MT	85.3
Pacific			At standby on location.	Item	Unit	Quantity
Wrangler				Fuel	M3	495.5
				Drill Water	M3	347
				Potable Water	MT	417
				Barite	M3	85
				Gel	MT	0
				Cement	MT	0

# Helicopter Movement Flight # Time Destination Comment Pax 1 14:31 Ocean Patriot Call sign BZU 1

14:49

Essendon

12



		From:	Nigel Walters	s, Steve Hodgetts	3		
		OIM:	<b>Barry Scott</b>				
Well Data							
Country	Australia	M. Depth	1800.0m	Cur. Hole Size	12.250in	AFE Cost	
Field		TVD	1799.0m	Casing OD	13.375in	AFE No.	5736086
Drill Co.	DOGC	Progress	0m	Shoe TVD	620.8m	Daily Cost	
Rig	Ocean Patriot	Days from spud	12.04	F.I.T. / L.O.T.	0ppg / 21.60ppg	Cum Cost	
Wtr Dpth(LAT)	54.7m	Days on well	15.75			Planned TD	1878.0m
RT-ASL(LAT)	21.5m	Current Op @ 0600	Rigging do	wn logs.		1	
RT-ML	76.2m	Planned Op	Set abando	onment plugs.			

Ran wireline logs # 2, 3 & 4.

Top (TVD)	
, ιορ (1 τ Σ	Comment

#### Operations For Period 0000 Hrs to 2400 Hrs on 01 Nov 2004

Phse	Cls (RC)	Ор	From	То	Hrs	Depth	Activity Description
PH	Р	LOG	0000	0600	6.00	1800.0m	Continued running log # 2. Total of 30 pressure points taken by 06:00hrs.
EP	Р	LOG	0000	0930	9.50	1800.0m	Continued running log # 2. Total of 35 pressure points & 6 samples taken. No hole problems.
EP	Р	LOG	0930	1130	2.00	1800.0m	POOH & laid out RCI tools.
EP	Р	LOG	1130	1315	1.75	1800.0m	RU & RIH with log #3.
EP	Р	LOG	1315	1900	5.75	1800.0m	Ran log#3, VSP & 5 level MLR from 1,785m to seabed.
EP	Р	LOG	1900	1930	0.50	1800.0m	POOH & laid out VSP tools.
EP	TP (WOE)	LOG	1930	2000	0.50	1800.0m	Waited on crane to move basket off catwalk.
EP	U	LOG	2000	2030	0.50	1800.0m	RU & surface tested RCOR tools.
EP	TU (LTF)	LOG	2030	2130	1.00	1800.0m	Trounleshoot prolems with rotary core cutter & repaired same.
EP	U	LOG	2130	2315	1.75	1800.0m	RIH with RCOR to 1,753m attempt to take samples.
EP	U	LOG	2315	2400	0.75	1800.0m	Unable to take sample POOH.

#### Operations For Period 0000 Hrs to 0600 Hrs on 02 Nov 2004

Phse	Cls (RC)	Op	From	То	Hrs	Depth	Activity Description
EP	U	LOG	0000	0045	0.75	1800.0m	POOH with RCOR tools & laid out same.
EP	U	LOG	0000	0000	0.00	1800.0m	Laid out tools.
EP	Р	LOG	0045	0300	2.25	1800.0m	Picked up CST tools & RIH, tol took weight at 910m, worked past ledge (5min). Rig on radio silence during loading and running of CSTs.
EP	Р	LOG	0300	0430	1.50	1800.0m	Ran log #5, CST, shot 25.
EP	Р	LOG	0430	0530	1.00	1800.0m	POOH with CST tools.
PA	Р	TI	0530	0600	0.50	1800.0m	Clear floor & prepare to RIH w/ OEDP to set cement abandonment plugs.

Phase Data to 2400hrs, 01 Nov 2004						
Phase	Phase Hrs	Start On	Finish On	Cum Hrs	Cum Days	Max Depth
PRESPUD(PS)	82	17 Oct 2004	20 Oct 2004	82.00	3.417 days	0m
SURFACE HOLE(SH)	14.5	20 Oct 2004	21 Oct 2004	96.50	4.021 days	122.5m
INTERMEDIATE HOLE(IH)	48.5	21 Oct 2004	23 Oct 2004	145.00	6.042 days	628.0m
INTERMEDIATE CASING(IC)	62	23 Oct 2004	26 Oct 2004	207.00	8.625 days	628.0m
PRODUCTION HOLE(PH)	147	26 Oct 2004	01 Nov 2004	354.00	14.750 days	1800.0m
EVALUATION PRODUCTION HOLE(EP)	24	01 Nov 2004	01 Nov 2004	378.00	15.750 days	1800.0m



#### DRILLING MORNING REPORT # 16 MARTHA 01 (01 Nov 2004)

<b>General Con</b>	nments														
	Comment	S			Rig F	Requi	remen	ts				Le	ssons Lea	arnt	
Radio silence for the Fargrip to de cement transfer the RCI tools.	lay the comp	letion of	f the												
Held rig move m Mate (Fargrip), C DSV. Discussed	DIM, Barge M	laster, S	Santos												
WBM Data															
Mud Type:	Glydril	API FL	:	0cm <sup>3</sup> /30m	CI:			0	Solids:			0	Viscosity:		52sec/q
Sample-From:	Active	Filter-C	Cake:	0/32nd"	K+C*1000	O:		0%	H2O:			0%	PV: YP:		0cp 0lb/100ft
Time:	21:00	HTHP-	FL:	0cm <sup>3</sup> /30m	Hard/Ca:			0	Oil:			0%	Gels 10s:		C
Weight:	10.50ppg	HTHP-	Cake:	0/32nd"	MBT:			0	Sand:				Gels 10m: Fann 003:		C
Temp:	0C°				PM:			0	pH:			0	Fann 006:		0
					PF:			0	PHPA:			0ppb	Fann 100: Fann 200:		0
								Ū	1 1 11 7 (.			оррь	Fann 300:		0
													Fann 600:		0
WBM Data															
Mud Type:	Glydril	API FL	:	10cm <sup>3</sup> /30m	CI:			37000	Solids:			10	Viscosity:		45sec/qt
Sample-From:	Active	Filter-C		2/32nd"	K+C*1000	)·		4%	H2O:			90%	PV: YP:		16cp 21lb/100ft²
Time:	18:00	HTHP-		0cm <sup>3</sup> /30m	Hard/Ca:			1080	Oil:			0%	Gels 10s:		2110/100112
Weight:	10.50ppg	HTHP-		0/32nd"	MBT:			15	Sand:			1.25	Gels 10m:		18
Temp:	0C°		ouno.	0/02110	PM:			0	pH:			8.7	Fann 003: Fann 006:		7
					PF:			0.05	PHPA:				Fann 100:		21
					FF.			0.05	гпга.			0ppb	Fann 200: Fann 300:		30 37
													Fann 600:		53
Bit # 3RR					Wear	ı		01	D	L		В	G	O2	R
						1		1	WT	Α		0	1	NO	LOG
Size ("):	•	12.25in	IADC#	4-3-7	No	zzles		Drill	ed over l	ast 24 hr	s	(	Calculated	l over Bi	t Run
Mfr:		REED	WOB(avg)	0klb	No.	Size	•	Progre	ess		0m	Cum.	Progress		0m
Type:		Rock	RPM(avg)	0	3	20/	/32nd"	J	ttom Hrs		0h	Cum.	On Btm H	rs	0h
Serial No.:		116694	F.Rate	0gpm					Drill Hrs				ADC Drill		0h
Bit Model	TD43Hk	PRDH	SPP	0psi				Total F			-		Total Revs		0
Depth In	18	800.0m	TFA	0.920				ROP(a	avg)	1	N/A	ROP(	avg)		0.00 m/hr
Depth Out		0m													
Run Comment				reamed tigh	nt spots.										
Bitwear Commer	nt		Reaming of	only											
BHA # 5		NE 01.11	1		^=-		Ta ::	- (m; - )		0.00	II	D C (	4)	la altri	
Weight(Wet)		35.0klb	Length			3.3m		e(max)	,	3ft-			1) Ann Ve	-	
Wt Below Jar(We	et) 4	19.0klb	String		292.			e(Off.Bt		1ft-			2) Ann Ve	-	
			Pick-Up			0klb	Torque	e(On.Bt	m)	3ft-	lbs	H.W.E	D.P. Ann V	elocity	
			Slack-Off			0klb							Ann Veloci	•	
BHA Run Descri	ption		TCI bit, 1	x 8"DC, Rol	ler reamer	, 10 x	8" DC:	s, jars, 3	3 x 8" DCs	, acceller	ator,	1 x 8"	DC, cross	over, 12	x HWDP
BHA Run Comm	ent		Jar #8346	0C = 90hrs							_				



#### DRILLING MORNING REPORT # 16 MARTHA 01 (01 Nov 2004)

Equipment	Length	OD	ID	Serial #	Comment
Bit	0.35m	12.25in	0in	M16694	TCI
8in DC	9.11m	8.00in	2.77in	00-007	
12.25in Roller Reamer	2.01m	12.25in	3.00in	MX023	
8in DC	90.55m	8.00in	3.00in	Various	
8in Hydraulic Jars	9.95m	8.00in	3.00in	83460C	
8in DC	28.29m	8.00in	3.00in	Various	
Jar Accel.	10.39m	8.25in	3.00in	E71375	
8in DC	9.22m	8.00in	3.06in	00-008	
X/O	1.13m	8.00in	3.00in	186-011	
5in HWDP	112.33m	5.00in	3.00in	Various	

Survey								
MD (m)	Incl Deg (deg)	Corr. Az (deg)	TVD (m)	'V' Sect (m)	Dogleg (deg/30m)	N/S (m)	E/W (m)	Tool Type
1678.05	2.32	225.45	1677.17	28.66	0.47	-24.98	-19.61	MWD
1706.72	2.40	224.26	1705.82	29.66	0.33	-25.82	-20.45	MWD
1735.43	2.43	221.48	1734.50	30.71	0.42	-26.71	-21.27	MWD
1763.96	2.56	220.08	1763.00	31.80	0.50	-27.65	-22.08	MWD
1785.46	2.69	214.76	1784.48	32.70	1.28	-28.43	-22.68	MWD
1800.00	2.69	214.76	1799.01	33.33	0	-28.99	-23.07	Projected

Bulk Stocks						Personnel On Board	
Name	Unit	In	Used	Adjust	Balance	Company	Pax
Fuel	M3	0	8.7	-0.1	443.2	DOGC	45
Drill Water	MT	0	24.1	-0.1	307.0	Santos	5
Potable Water	MT	35	22.5	0	254.5	Total Marine Catering	8
Barite	sx	0	786	0	1,685.0	Fugro	4
Gel	sx	0	0	0	318.0	Sperry-Sun	2
Cement	sx	0	0	0	933.0	M.I	1
	·					Dowell	2
						Baker Atlas	8
						Cameron	1
						Smith Tool Company	1
						Total	77

Pυ	Pumps																
Pump Data - Last 24 Hrs							Slow Pump Data										
No.	Туре	Liner (in)	MW (ppg)	Eff (%)	SPM	SPP (psi)	Flow (gpm)	Depth (m)	SPM1	SPP1 (psi)	Flow1 (gpm)	SPM2	SPP2 (psi)	Flow2 (gpm)	SPM3	SPP3 (psi)	Flow3 (gpm)
1	Oilwell A1700PT	6.00	10.30	98	0	0	0	1800.0	30	200	132	40	275	176	50	300	220
2	National 12P-160	6.00	10.30	98	0	0	0	1800.0	30	200	132	40	245	176	50	375	220
3	National 12P-160	6.00	10.30	98	0	0	0	1176.0	30	150	132	40	200	176	50	250	220

Casing	3		
OD	L.O.T. / F.I.T.	Csg Shoe (MD/TVD)	Cementing
30 "	Oppg / Oppg	121.0m / 121.0m	
13 3/8"	21.60ppg / 0ppg	620.8m / 620.8m	

<b>HSE Summary</b>			
Events	Date of Last	Days Since	Remarks
Abandon Drill	31 Oct 2004	1 Day	Fire and abandon rig drill held based on simulated fire in the outside smokers shack. All personnel mustered at aft lifeboats.
First Aid	20 Oct 2004	12 Days	Were advised that seaman aboard Far Grip had piece of metal embedded in his knee. IP brought on board for examination by rig medic. Medic advised IP fit to return to normal duties and no need for medivac. IP returned to Far Grip.
Near Miss	29 Oct 2004	3 Days	Found 3" x 3/4" pin on rotary table while drilling ahead. Suspended current operations and inspected TDS. Pin had fallen from TDS link tilt. Replaced pin and checked all other pins. Investigation being conducted.
Safety Meeting	31 Oct 2004	1 Day	Three safety meetings held (13:00, 19:00, 01:00). Attended by all crews.



#### DRILLING MORNING REPORT # 16 MARTHA 01 (01 Nov 2004)

Shakers, Volumes and Losses Data				Engineer : Gordon Howie				
Available	1589bbl	Losses	144bbl	Equip.	Descr.	Mesh Size	Hours	
Active	427.0bbl	Downhole	30.0bbl	Shaker 1	VSM 100	10, 4 x 84		
Mixing	0bbl	Surf+ Equip	52bbl	Shaker 2	VSM 100	10, 4 x 165	;	
Hole	926.0bbl	Dumped	62.0bbl	Shaker 3 Shaker 4	VSM 100 VSM 100	10, 2 x 120, 2 x 105 10, 4 x 105	;	
Slug	42.0bbl	De-Sander	0bbl					
Reserve	194.0bbl	De-Silter	0bbl					
Kill	0bbl	Centrifuge	0bbl					
		Sweeps						

Marine									
Weather check on 01 Nov 2004 at 24:00							Rig Support		
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (klb)
10.00nm	20.0kn	270deg	1006bar	14.0C°	1.0m	270deg	Oft/sec	1	207.0
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather Comments		2	185.0
0.04-	0.04	0.50	4.5	0.47-1	011/			3	203.0
0.2deg	0.2deg	0.50m	1.5m	247deg	Oft/sec	Mainly cloudy		4	192.0
Rig Dir.	Ris. Tension	VDL		Comments				5	203.0
45.0deg	222.0klb	3619.5klb						6	203.0
.5.5409		22.2.010						7	236.0
								8	214.0

				U	Z 1-	r. 0
Boats	Arrived (date/time)	Departed (date/time)	Status		Bulks	
Far Grip			Portland	Item	Unit	Quantity
				Fuel	M3	572
				Drill Water	M3	C
				Potable Water	M3	580
				Barite	MT	C
				Gel	MT	63.6
				Cement	MT	85.3
Far Grip	16:10		At standby on location.	Item	Unit	Quantity
				Fuel	m3	558.5
				Drill Water	m3	380
				Potable Water	m3	675
				Barite	MT	0
				Gel	MT	87
				Cement	MT	129
Pacific			At standby on location.	Item	Unit	Quantity
Wrangler				Fuel	M3	495.5
				Drill Water	M3	347
				Potable Water	MT	417
				Barite	M3	85
				Gel	MT	0
				Cement	MT	0
Pacific			At standby on location.	Item	Unit	Quantity
Wrangler				Fuel	m3	484.1
				Drill Water	m3	347
				Potable Water	m3	411
				Barite	MT	85
				Gel	MT	0
				Cement	MT	0
Helicopter	Movement					
Flight #	Time	Destination		Comment		Pax
					-	

Flight #	Time	Destination	Comment	Pax
1	16:31	Ocean Patriot	Call sign BHI	4
1	16:40	Essendon		2



		From:	Nigel Walters	s, Steve Hodgetts	3		
		OIM:	<b>Barry Scott</b>				
Well Data							
Country	Australia	M. Depth	1800.0m	Cur. Hole Size	12.250in	AFE Cost	
Field		TVD	1799.0m	Casing OD	13.375in	AFE No.	5736086
Drill Co.	DOGC	Progress	0m	Shoe TVD	620.8m	Daily Cost	
Rig	Ocean Patriot	Days from spud	13.04	F.I.T. / L.O.T.	0ppg / 21.60ppg	Cum Cost	
Wtr Dpth(LAT)	54.7m	Days on well	16.77			Planned TD	1878.0m
RT-ASL(LAT)	21.5m	Current Op @ 0600	POOH layi	ng down excess DP.			
RT-ML	76.2m	Planned Op	Set balanc	ed cement abandonr	ment plug # 4 a	cross shoe & # 5 a	surface. Pull BOP.

### Summary of Period 0000 to 2400 Hrs

Completed wireline logs. RIH with open ended DP. Set balanced cement abandonment plugs # 1, 2 & 3.

Formations										
Name	Top (MD)	Top (TVD)	Comment							

Operations For Period 0000 Hrs to 2400 Hrs on 02 Nov 2004

Phse	Cls (RC)	Ор	From	То	Hrs	Depth	Activity Description
EP	U	LOG	0000	0045	0.75	1800.0m	POOH with RCOR tool & laid out same.
EP	U	LOG	0000	0000	0.00	1800.0m	Laid out tools.
EP	Р	LOG	0045	0300	2.25	1800.0m	Picked up CST tools & RIH, tool took weight at 910m, worked past ledge (5min). Rig on radio silence during loading and running of CSTs.
EP	Р	LOG	0300	0430	1.50	1800.0m	Ran log #5, CST, shot 25.
EP	Р	LOG	0430	0600	1.50	1800.0m	POOH with CST tools. Recovered 25, 100% recovery, 0 lost, 0 empty.
PA	Р	TI	0530	0600	0.50	1800.0m	Clear floor & prepare to RIH w/ OEDP to set cement abandonment plugs.
EP	Р	LOG	0600	0630	0.50	1800.0m	Rigged down wireline & compensator line.
PA	Р	LOG	0630	0700	0.50	1800.0m	Made up stand with side entry for cementing & stood back.
PA	Р	TI	0700	1100	4.00	1800.0m	Picked up mule shoe & RIH to 1800m.
PA	Р	SM	1100	1200	1.00	1800.0m	Circulated bottoms up. Held pre-job meeting for setting cement plugs.
PA	Р	PT	1200	1230	0.50	1800.0m	Broke circulation with Dowell cement unit & tested lines to 2,000psi.
PA	Р	CMP	1230	1330	1.00	1800.0m	Set balanced cement plug # 1 (1,790 - 1,600m). Pumped 20 bbls DW with Dowell ahead of cement. Mixed & pumped 104 bbls of cement slurry at 15.8ppg. Pumped 2.5 bbls of DW behind & displaced with 84 bbls mud. Full returns observed.
PA	Р	TO	1330	1430	1.00	1800.0m	Rigged down cement hose & POOH 1,790 to 1,600m.
PA	Р	CHC	1430	1530	1.00	1800.0m	Rigged up cement hose & circulated bottoms up, trace of cement observed.
PA	Р	CMP	1530	1700	1.50	1800.0m	Set balanced cement plug # 2 (1,600 - 1,400m). Pumped 20 bbls DW with Dowell ahead of cement. Mixed & pumped 135 bbls of cement slurry at 15.8ppg. Pumped 2 bbls of DW behind & displaced with 72.5 bbls mud. Full returns observed.
PA	Р	TO	1700	1800	1.00	1800.0m	Rigged down cement hose & POOH 1,600 to 1,400m.
PA	Р	CHC	1800	1900	1.00	1800.0m	Rigged up cement hose & circulated bottoms up. Cement observed on bottoms up, dumped heavily contaminated mud.
PA	Р	RS	1900	1930	0.50	1800.0m	Serviced TDS & blocks.
PA	TP (RE)	RR	1930	2000	0.50	1800.0m	Troubleshoot & rectify problem w/ air compressor. Complete repressurising of cement pod after cement transfer.
PA	Р	CMP	2000	2130	1.50	1800.0m	Set balanced cement plug # 3 (1,400 - 1,200m). Pumped 20 bbls DW with Dowell ahead of cement. Mixed & pumped 157 bbls of cement slurry at 15.8 ppg. Pumped 1.6 bbls of DW behind & displaced with 60 bbls mud. Full returns observed.
PA	Р	TO	2130	2230	1.00	1800.0m	Rigged down cement hose & POOH 1,400 to 1,150m.
PA	Р	CMD	2230	2330	1.00	1800.0m	Rigged up cement hose & circulated bottoms up. Mud treated for cement contamination.
PA	Р	CMD	2330	2400	0.50	1800.0m	Functioned BOP stack components & circulated riser.

### Operations For Period 0000 Hrs to 0600 Hrs on 03 Nov 2004

Phse	Cls (RC)	Ор	From	То	Hrs	Depth	Activity Description
PA	Р	CMD	0000	0030	0.50	1800.0m	Continued to circulate & condition cement contamination.
PA	Р	TO	0030	0130	1.00	1800.0m	Pulled DP back to 730m.
PA	Р	CMD	0130	0200	0.50	1800.0m	Spotted 70 bbls balanced viscous 1.5 sg pill, displaced with 37 bbls mud to postiion pill from 730m to 655m.



### DRILLING MORNING REPORT # 17 MARTHA 01 ( 02 Nov 2004 )

Phse	Cls (RC)	Ор	From	То	Hrs	Depth	Activity Description
PA	Р	ТО	0200	0230	0.50	1800.0m	Pulled DP back to plug setting point at 655m.
PA	Р	CMP	0230	0300	0.50	1800.0m	Set balanced cement plug # 4(655 - 570m). Pumped 20 bbls DW with Dowell ahead of cement. Mixed & pumped 55 bbls of cement slurry at 15.8ppg. Pumped 2.8 bbls of DW behind & displaced with 26 bbls mud. Full returns observed.
PA	Р	TO	0300	0330	0.50	1800.0m	Rigged down cement hose & POOH 655 to 550m.
PA	Р	CHC	0330	0500	1.50	1800.0m	Rigged up cement hose & circulated bottoms up with inhibited 10.5 ppg mud.
PA	Р	PLD	0500	0600	1.00	1800.0m	POOH laying out exess DP.

Phase Data to 2400hrs, 02 Nov 2004						
Phase	Phase Hrs	Start On	Finish On	Cum Hrs	Cum Days	Max Depth
PRESPUD(PS)	82	17 Oct 2004	20 Oct 2004	82.00	3.417 days	0m
SURFACE HOLE(SH)	14.5	20 Oct 2004	21 Oct 2004	96.50	4.021 days	122.5m
INTERMEDIATE HOLE(IH)	48.5	21 Oct 2004	23 Oct 2004	145.00	6.042 days	628.0m
INTERMEDIATE CASING(IC)	62	23 Oct 2004	26 Oct 2004	207.00	8.625 days	628.0m
PRODUCTION HOLE(PH)	147	26 Oct 2004	01 Nov 2004	354.00	14.750 days	1800.0m
EVALUATION PRODUCTION HOLE(EP)	30.5	01 Nov 2004	02 Nov 2004	384.50	16.021 days	1800.0m
PLUG AND ABANDON(PA)	18	02 Nov 2004	02 Nov 2004	402.50	16.771 days	1800.0m

WBM Data									
Mud Type:	Glydril	API FL:	14cm³/30m	CI:	37000	Solids:	10	Viscosity:	47sec/qt
Sample-From:	Active	Filter-Cake:	2/32nd"	K+C*1000:	4%	H2O:	90%	PV: YP:	20cp 25lb/100ft <sup>2</sup>
Time:	23:00	HTHP-FL:	0cm <sup>3</sup> /30m	Hard/Ca:	1200	Oil:	0%	Gels 10s:	0
Weight:	10.50ppg	HTHP-Cake:	0/32nd"	MBT:	15	Sand:	1	Gels 10m: Fann 003:	9
Temp:	0C°			PM:	0	pH:	11.7	Fann 006:	11
				PF:	0.05	PHPA:		Fann 100: Fann 200:	26 35
								Fann 300:	45
								Fann 600:	65

Survey								
MD (m)	Incl Deg (deg)	Corr. Az (deg)	TVD (m)	'V' Sect (m)	Dogleg (deg/30m)	N/S (m)	E/W (m)	Tool Type
1678.05	2.32	225.45	1677.17	28.66	0.47	-24.98	-19.61	MWD
1706.72	2.40	224.26	1705.82	29.66	0.33	-25.82	-20.45	MWD
1735.43	2.43	221.48	1734.50	30.71	0.42	-26.71	-21.27	MWD
1763.96	2.56	220.08	1763.00	31.80	0.50	-27.65	-22.08	MWD
1785.46	2.69	214.76	1784.48	32.70	1.28	-28.43	-22.68	MWD
1800.00	2.69	214.76	1799.01	33.33	0	-28.99	-23.07	Projected

Bulk Stocks						Personnel On Board	
Name	Unit	In	Used	Adjust	Balance	Company	Pax
Fuel	M3	0	13	0.2	430.4	DOGC	47
Drill Water	MT	0	36	-0.2	270.8	Santos	5
Potable Water	MT	32	22.3	0	264.2	Total Marine Catering	8
Barite	sx	0	0	0	1,685.0	Fugro	4
Gel	sx	0	0	0	318.0	Sperry-Sun	2
Cement	sx	2865	568	-1	3,229.0	M.I	1
						Dowell	2
						Baker Atlas	4
						Cameron	1
						Smith Tool Company	1
						Total	75



Pυ	mps																
Pu	mp Data - Last 24 Hi		Slow Pump Data														
No.	Туре	Liner (in)	MW (ppg)	Eff (%)	SPM	SPP (psi)	Flow (gpm)	Depth (m)	SPM1	SPP1 (psi)	Flow1 (gpm)	SPM2	SPP2 (psi)	Flow2 (gpm)	SPM3	SPP3 (psi)	Flow3 (gpm)
1	Oilwell A1700PT	6.00	10.30	98	0	0	0	1800.0	30	200	132	40	275	176	50	300	220
2	National 12P-160	6.00	10.30	98	0	0	0	1800.0	30	200	132	40	245	176	50	375	220
3	National 12P-160	6.00	10.30	98	0	0	0	1176.0	30	150	132	40	200	176	50	250	220

Casing	9		
OD	L.O.T. / F.I.T.	Csg Shoe (MD/TVD)	Cementing
30 "	Oppg / Oppg	121.0m / 121.0m	
13 3/8"	21.60ppg / 0ppg	620.8m / 620.8m	

<b>HSE Summary</b>			
Events	Date of Last	Days Since	Remarks
Abandon Drill	31 Oct 2004	2 Days	Fire and abandon rig drill held based on simulated fire in the outside smokers shack. All personnel mustered at aft lifeboats.
First Aid	20 Oct 2004	13 Days	Were advised that seaman aboard Far Grip had piece of metal embedded in his knee. IP brought on board for examination by rig medic. Medic advised IP fit to return to normal duties and no need for medivac. IP returned to Far Grip.
Near Miss	29 Oct 2004	4 Days	Found 3" x 3/4" pin on rotary table while drilling ahead. Suspended current operations and inspected TDS. Pin had fallen from TDS link tilt. Replaced pin and checked all other pins. Investigation being conducted.
Safety Meeting	31 Oct 2004	2 Days	Three safety meetings held (13:00, 19:00, 01:00). Attended by all crews.

Shakers, \	olumes and	d Losses Data	1	Engineer : Gordor	n Howie		
Available	1529bbl	Solumes and Losses Data   1529bbl   Losses   L	68bbl	Equip.	Descr.	Mesh Size	Hours
Active	457.0bbl	Downhole	0bbl	Shaker 1	VSM 100	10, 4 x 84	5
Mixing	0bbl	Surf+ Equip	68bbl	Shaker 2 Shaker 3	VSM 100 VSM 100	10, 4 x 165 10, 2 x 120, 2 x 105	5 5
Hole	639.0bbl	Dumped	0bbl	Shaker 4	VSM 100	10, 2 x 120, 2 x 105	5
Slug	42.0bbl	De-Sander	0bbl				
Reserve	391.0bbl	De-Silter	0bbl				
Kill	0bbl	Centrifuge	0bbl				
		Sweeps					

Marine									
Weather ch	eck on 02 Nov	2004 at 24:0	00					Rig Support	
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (klb)
10.00nm	30.0kn	225deg	1004bar	11.0C°	2.0m	225deg	Oft/sec	1	207.0
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather Comments		2	185.0
0.3deg	0.3deg	1.00m	3.0m	240deg	Oft/sec	Dri	zzle	- 3 4	203.0 201.0
Rig Dir.	Ris. Tension	VDL		Comments				5	203.0
45.0deg	222.0klb	3998.7klb						6	203.0
								7	227.0
								8	209.0

Boats	Arrived (date/time)	Departed (date/time)	Status	В	ulks	
Far Grip			At standby on location.	Item	Unit	Quantity
				Fuel	m3	549
				Drill Water	m3	380
				Potable Water	m3	670
				Barite	MT	0
				Gel	MT	87
				Cement	MT	0
Pacific		08:30	Enroute rig.	Item	Unit	Quantity
Wrangler				Fuel	m3	567
				Drill Water	m3	380
				Potable Water	m3	680
				Barite	MT	85
				Gel	MT	12
				Cement	MT	84



### DRILLING MORNING REPORT # 17 MARTHA 01 ( 02 Nov 2004 )

Helicopte	Movemen	t		
Flight #	Time	Destination	Comment	Pax
1	17:35	Ocean Patriot	Call sign BZU	13
1	17:53	Essendon		15



		From:	Nigel Walters	s, Steve Hodgetts						
		OIM:	<b>Barry Scott</b>							
Well Data										
Country	Australia	M. Depth	1800.0m	Cur. Hole Size	12.250in	AFE Cost				
Field		TVD	1799.0m	Casing OD	13.375in	AFE No.	5736086			
Drill Co.	DOGC	Progress	0m	Shoe TVD	620.8m	Daily Cost				
Rig	Ocean Patriot	Days from spud	14.04	F.I.T. / L.O.T.	0ppg / 21.60ppg	Cum Cost				
Wtr Dpth(LAT)	54.7m	Days on well	17.77			Planned TD	1878.0m			
RT-ASL(LAT)	21.5m	Current Op @ 0600	RU to pull i	marine riser & BOPs.		П				
RT-ML	76.2m	Planned Op	Pull BOP, I	Pull BOP, RIH, cut wellhead & retrieve same. Deballast & pull anchors.						

### Summary of Period 0000 to 2400 Hrs

Set abandonment plug #4. Laid out excess drillstring tubulars. Set cement retainer for abandonment plug #5.

### Operations For Period 0000 Hrs to 2400 Hrs on 03 Nov 2004

Phse	Cls (RC)	Op	From	То	Hrs	Depth	Activity Description
PA	Р	CMD	0000	0030	0.50	1800.0m	Continued to circulate & condition cement contamination.
PA	Р	TO	0030	0130	1.00	1800.0m	Pulled DP back to 730m.
PA	Р	CMD	0130	0200	0.50	1800.0m	Spotted 70 bbls balanced viscous 1.5 sg pill, displaced with 37 bbls mud to postiion pill from 730m to 655m.
PA	Р	TO	0200	0230	0.50	1800.0m	Pulled DP back to plug setting point at 655m.
PA	Р	CMP	0230	0300	0.50	1800.0m	Held JSA. Set balanced cement plug # 4(655 - 570m). Pumped 20 bbls DW with Dowell ahead of cement. Mixed & pumped 55 bbls of cement slurry at 15.8ppg. Pumped 2.8 bbls of DW behind & displaced with 26 bbls mud. Full returns observed.
PA	Р	TO	0300	0330	0.50	1800.0m	Rigged down cement hose & POOH 655 to 550m.
PA	Р	CHC	0330	0500	1.50	1800.0m	Rigged up cement hose & circulated bottoms up with inhibited 10.5 ppg mud.
PA	Р	PLD	0500	0930	4.50	1800.0m	POOH laying out exess DP. Laid out 2 stands of DC
PA	Р	TI	0930	1100	1.50	1800.0m	Ran in hole and tagged cement at 575m
PA	Р	PLD	1100	1400	3.00	1800.0m	POOH laying out excess DP.
PA	Р	CHC	1400	1430	0.50	1800.0m	Jetted wellhead & stack.
PA	Р	PLD	1430	1500	0.50	1800.0m	Continued POOH laying out excess DP from 75m to surface.
PA	Р	PLD	1500	1530	0.50	1800.0m	RIH w/13 stds 5" DP to 348m.
PA	Р	PLD	1530	1800	2.50	1800.0m	POOH laying out excess DP from 348 to surface.
PA	Р	RPK	1800	2030	2.50	1800.0m	Made up cement retainer & RIH to 166m on 2 stands of DC & 4 stands of HWDP. Set Baker cement retainer as per Dowell instructions. Pressure tested same to 500 psi, held. (pumped & returned ~.2bbl).
PA	Р	PLD	2030	2400	3.50	1800.0m	POOH laying out HWDP. RIH with 2 stands of 8" DC & POOH laying out same.

#### Operations For Period 0000 Hrs to 0600 Hrs on 04 Nov 2004

Phse	Cls (RC)	Ор	From	То	Hrs	Depth	Activity Description
PA	Р	PLD	0000	0100	1.00	1800.0m	Continued laying out 8" DC.
PA	Р	TI	0100	0130	0.50	1800.0m	RIH with muleshoe on DP & tagged cement retainer at 166m.
PA	Р	CHC	0130	0200	0.50	1800.0m	Rigged up cemeent lines & displaced wellhead & riser to seawater with rig pumps.
PA	Р	CMP	0200	0300	1.00	1800.0m	Rigged up to set cement plug. Set balanced cement plug # 5(166 - 114m). Pumped 10 bbls DW with Dowell ahead of cement. Mixed & pumped 25 bbls of cement slurry at 15.8ppg. Displaced with 6.5 bbls seawater. Returns observed, dumped same.
PA	Р	ТО	0300	0330	0.50	1800.0m	POOH to 100m. Reverse circulated out cement contamination & dumped returns. Dumped pits.
PA	Р	PLD	0330	0430	1.00	1800.0m	Continued laying out excess tubulars, cement stand & DP.
PA	Р	WH	0430	0500	0.50	1800.0m	Make up wearbushing running/retrieval tool, jet sub & RIH. Jet wellhead & BOPs.
PA	Р	WH	0530	0600	0.50	1800.0m	Retrieved wearbushing with 20klb overpull. POOH & laid out same. No wear observed.

### Phase Data to 2400hrs, 03 Nov 2004

Phase	Phase Hrs	Start On	Finish On	Cum Hrs	Cum Days	Max Depth
PRESPUD(PS)	82	17 Oct 2004	20 Oct 2004	82.00	3.417 days	0m
SURFACE HOLE(SH)	14.5	20 Oct 2004	21 Oct 2004	96.50	4.021 days	122.5m
INTERMEDIATE HOLE(IH)	48.5	21 Oct 2004	23 Oct 2004	145.00	6.042 days	628.0m
INTERMEDIATE CASING(IC)	62	23 Oct 2004	26 Oct 2004	207.00	8.625 days	628.0m
PRODUCTION HOLE(PH)	147	26 Oct 2004	01 Nov 2004	354.00	14.750 days	1800.0m
EVALUATION PRODUCTION HOLE(EP)	30.5	01 Nov 2004	02 Nov 2004	384.50	16.021 days	1800.0m
PLUG AND ABANDON(PA)	42	02 Nov 2004	03 Nov 2004	426.50	17.771 days	1800.0m

WBM Data									
Mud Type:	Glydril	API FL:	14cm <sup>3</sup> /30m	CI:	37000	Solids:	10	Viscosity:	47sec/qt
Sample-From:	Active	Filter-Cake:	2/32nd"	K+C*1000:	4%	H2O:	90%	PV: YP:	20cp 25lb/100ft <sup>2</sup>
Time:	23:00	HTHP-FL:	0cm <sup>3</sup> /30m	Hard/Ca:	1200	Oil:	070	Gels 10s: Gels 10m:	0
Weight:	10.50ppg	HTHP-Cake:	0/32nd"	MBT:	15	Sand:		Fann 003:	9
Temp:	0C°			PM:	0	pH:	11.7	Fann 006: Fann 100:	11 26
				PF:	0.05	PHPA:	0ppb	Fann 200:	35
								Fann 300:	45
								Fann 600:	65

Survey								
MD (m)	Incl Deg (deg)	Corr. Az (deg)	TVD (m)	'V' Sect (m)	Dogleg (deg/30m)	N/S (m)	E/W (m)	Tool Type
1678.05	2.32	225.45	1677.17	28.66	0.47	-24.98	-19.61	MWD
1706.72	2.40	224.26	1705.82	29.66	0.33	-25.82	-20.45	MWD
1735.43	2.43	221.48	1734.50	30.71	0.42	-26.71	-21.27	MWD
1763.96	2.56	220.08	1763.00	31.80	0.50	-27.65	-22.08	MWD
1785.46	2.69	214.76	1784.48	32.70	1.28	-28.43	-22.68	MWD
1800.00	2.69	214.76	1799.01	33.33	0	-28.99	-23.07	Projected

Bulk Stocks						Personnel On Board	
Name	Unit	In	Used	Adjust	Balance	Company	Pax
Fuel	M3	0	13	0	417.4	DOGC	50
Drill Water	MT	0	36.1	0	234.7	Santos	3
Potable Water	MT	36	24.9	0	275.3	Total Marine Catering	8
Barite	sx	0	0	0	1,685.0	Fugro	4
Gel	sx	0	0	0	318.0	Sperry-Sun	1
Cement	sx	0	1579	0	1,650.0	M.I	1
						Dowell	2
						Baker Atlas	4
						Cameron	1
						Smith Tool Company	1
						Total	75

Ρι	Pumps																
Pump Data - Last 24 Hrs								Slow Pump Data									
No.	Туре	Liner (in)	MW (ppg)	Eff (%)	SPM	SPP (psi)	Flow (gpm)	Depth (m)	SPM1	SPP1 (psi)	Flow1 (gpm)	SPM2	SPP2 (psi)	Flow2 (gpm)	SPM3	SPP3 (psi)	Flow3 (gpm)
1	Oilwell A1700PT	6.00	10.30	98	0	0	0	1800.0	30	200	132	40	275	176	50	300	220
2	National 12P-160	6.00	10.30	98	0	0	0	1800.0	30	200	132	40	245	176	50	375	220
3	National 12P-160	6.00	10.30	98	0	0	0	1176.0	30	150	132	40	200	176	50	250	220

Casing	9		
OD	L.O.T. / F.I.T.	Csg Shoe (MD/TVD)	Cementing
30 "	Oppg / Oppg	121.0m / 121.0m	
13 3/8"	21.60ppg / 0ppg	620.8m / 620.8m	

HSE Summary									
Events	Date of Last	Days Since	Remarks						
Abandon Drill	31 Oct 2004	3 Days	Fire and abandon rig drill held based on simulated fire in the outside smokers shack. All personnel mustered at aft lifeboats.						
First Aid	20 Oct 2004	14 Days	Were advised that seaman aboard Far Grip had piece of metal embedded in his knee. IP brought on board for examination by rig medic. Medic advised IP fit to return to normal duties and no need for medivac. IP returned to Far Grip.						
Near Miss	29 Oct 2004	5 Days	Found 3" x 3/4" pin on rotary table while drilling ahead. Suspended current operations and inspected TDS. Pin had fallen from TDS link tilt. Replaced pin and checked all other pins. Investigation being conducted.						
Safety Meeting	31 Oct 2004	3 Days	Three safety meetings held (13:00, 19:00, 01:00). Attended by all crews.						



**Boats** 

Arrived (date/time)

### DRILLING MORNING REPORT # 18 MARTHA 01 (03 Nov 2004)

Bulks

Shakers, V	olumes and	d Losses Data	1	Engineer : Gordon Howie					
Available	1529bbl	Losses	68bbl	Equip.	Descr.	Mesh Size	Hours		
Active	457.0bbl	Downhole	0bbl	Shaker 1	VSM 100	10, 4 x 84	5		
Mixing	0bbl	Surf+ Equip	68bbl	Shaker 2 Shaker 3	VSM 100 VSM 100	10, 4 x 165 10, 2 x 120, 2 x 105	5 5		
Hole	639.0bbl	Dumped	0bbl	Shaker 4	VSM 100	10, 2 x 120, 2 x 105	5		
Slug	42.0bbl	De-Sander	0bbl						
Reserve	391.0bbl	De-Silter	0bbl						
Kill	0bbl	Centrifuge	0bbl						
		Sweeps							

Marine										
Weather ch	eck on 03 Nov	2004 at 24:0	00					Rig Support		
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (klb)	
10.00nm	6.0kn	200deg	1008bar	10.0C°	0.5m	200deg	Oft/sec	1	207.0	
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather	Comments	2	185.0	
0.3deg	0.3deg	1.00m	2.5m	202deg	Oft/sec	Partia	l cloud	- 3 4	203.0 192.0	
Rig Dir.	Ris. Tension	VDL		Comments				5	203.0	
45.0deg	222.0klb	4097.5klb						6	203.0	
								7	227.0	
								8	209.0	

Status

Departed (date/time)

Far Grip				At standby on location.	Item	Unit	Quantity
					Fuel	m3	549
					Drill Water	m3	380
					Potable Water	m3	670
					Barite	MT	0
					Gel	MT	87
					Cement	MT	0
Pacific			08:30	Enroute rig.	Item	Unit	Quantity
Wrangler					Fuel	m3	567
					Drill Water	m3	380
					Potable Water	m3	680
					Barite	MT	85
					Gel	MT	12
					Cement	MT	84
Helicopte	r Movemen	t					
Flight #	Time		Destination	Co	mment		Pax
1	15:46	Ocean Patriot		Call sign BZU			4
1	16:09	Essendon					8



		From:	Nigel Walters	s, Steve Hodgetts			
		OIM:	<b>Barry Scott</b>				
Well Data							
Country	Australia	M. Depth	1800.0m	Cur. Hole Size	12.250in	AFE Cost	
Field		TVD	1799.0m	Casing OD	13.375in	AFE No.	5736086
Drill Co.	DOGC	Progress	0m	Shoe TVD	620.8m	Daily Cost	
Rig	Ocean Patriot	Days from spud	15.04	F.I.T. / L.O.T.	0ppg / 21.60ppg	Cum Cost	
Wtr Dpth(LAT)	54.7m	Days on well	18.75			Planned TD	1878.0m
RT-ASL(LAT)	21.5m	Current Op @ 0600	POOH with	casing cut-off.		<del>'</del>	
RT-ML	76.2m	Planned Op	Recover wellhead. Pull anchors.				

### Summary of Period 0000 to 2400 Hrs

Set final abandonment cement plug. Pulled marine riser & BOP. Deballast rig while rigging up to cut wellhead.

Operations For Period 0000 Hrs to 2400 Hrs on 04 Nov 2004

Phse	Cls (RC)	Op	From	То	Hrs	Depth	Activity Description
PA	Р	PLD	0000	0100	1.00	1800.0m	Continued laying out 8" DC.
PA	Р	TI	0100	0130	0.50	1800.0m	RIH with muleshoe on DP & tagged cement retainer at 166m.
PA	Р	CHC	0130	0200	0.50	1800.0m	Rigged up cement lines & displaced wellhead & riser to seawater with rig pumps.
PA	Р	CMP	0200	0300	1.00	1800.0m	Rigged up to set cement plug. Held JSA. Set balanced cement plug # 5(166 - 114m). Pumped 10 bbls DW with Dowell ahead of cement. Mixed & pumped 25 bbls of cement slurry at 15.8ppg. Displaced with 6.5 bbls seawater. Returns observed, dumped same.
PA	Р	ТО	0300	0330	0.50	1800.0m	POOH to 100m. Reverse circulated out cement contamination & dumped returns. Dumped pits.
PA	Р	PLD	0330	0430	1.00	1800.0m	Continued laying out excess tubulars, cement stand & DP.
PA	Р	WH	0430	0500	0.50	1800.0m	Make up wearbushing running/retrieval tool, jet sub & RIH. Jet wellhead & BOPs.
PA	Р	WH	0530	0600	0.50	1800.0m	Retrieved wearbushing with 20klb overpull. POOH & laid out same. No wear observed.
PA	Р	RR2	0600	0730	1.50	1800.0m	Held JSA, rigged up to pull BOPs & marine riser.
PA	Р	RR2	0730	0830	1.00	1800.0m	Recovered diverter & laid out same.
PA	Р	RR2	0830	0930	1.00	1800.0m	Picked up landing joint & locked slip joint.
PA	Р	RR2	0930	1400	4.50	1800.0m	Unlatched BOP & pulled clear of guide base, no offset. Nippled down slip joint. Nippled down choke, kill & booster lines.
PA	Р	RR2	1400	1800	4.00	1800.0m	Pulled BOP & laid down riser. Nippled down beacon, guidelines & double from BOP stack.
PA	Р	АН	1800	1830	0.50	1800.0m	Commenced de-ballasting rig, continued to lay out riser double. Continued to secure BOP.
PA	Р	АН	1830	2030	2.00	1800.0m	Continued to deballast rig. Cleared floor & PU Smith tension casing cutter. Broke upper connection not previously soft broke. Dressed tool with 18.5/8" grapple.
PA	Р	АН	2030	2100	0.50	1800.0m	Continued to deballast rig. Made up DC stand & RIH to moonpool. Installed softlines to guidelines using ROV friendly "C" clamps.
PA	Р	CCT	2100	2130	0.50	1800.0m	Stopped deballasting rig. RIH with casing cutter. Observed entry into wellhead with ROV. Sheared softlines & attempted to latch onto wellhead.
PA	TP (DTF)	CCT	2130	2230	1.00	1800.0m	Casing cutter not seating correctly, high (10k) torque on rotation. Suspected interference fit resisting wellhead entry, 20k load, no go, held ~ 1m high.
PA	Р	АН	2230	2400	1.50	1800.0m	Resumed deballasting of rig. POOH & examined casing cutter assembly. No apparent indication of interference or cutting BHA problem. Changed out grapple to (18.3/8" OD grapple), greater clearence with wellhead. Checked all measurements.

### Operations For Period 0000 Hrs to 0600 Hrs on 05 Nov 2004

Phse	Cls (RC)	Ор	From	То	Hrs	Depth	Activity Description
PA	Р	AH	0000	0030	0.50	1800.0m	Continued deballasting of rig. RIH with casing cutter assembly.
PA	Р	CCT	0030	0115	0.75	1800.0m	Stopped deballasting rig. RIH with casing cutter. Observed entry into wellhead with ROV. Sheared softlines & latch into wellhead. Took 50klb OP to confirm grapple holding. Observed no movement at seabed.
PA	Р	CCT	0115	0530	4.25	1800.0m	Cut casing with 100 rpm, - initially: 3-4kft.lb torque, 275 psi SPP, 160 gpm, 20klb OP. Continued to secure deck for move. Finally: 5-7kft.lb torque, 800 psi SPP, 242 gpm, 20klb OP.
PA	Р	CCT	0530	0600	0.50	1800.0m	Following minor indicationsof cut, took 80klb OP. Wellhead, PGB & casing stubs pulled free. Minimal cement attached.



Phase Data to 2400hrs, 04 Nov 2004						
Phase	Phase Hrs	Start On	Finish On	Cum Hrs	Cum Days	Max Depth
PRESPUD(PS)	82	17 Oct 2004	20 Oct 2004	82.00	3.417 days	0m
SURFACE HOLE(SH)	14.5	20 Oct 2004	21 Oct 2004	96.50	4.021 days	122.5m
INTERMEDIATE HOLE(IH)	48.5	21 Oct 2004	23 Oct 2004	145.00	6.042 days	628.0m
INTERMEDIATE CASING(IC)	62	23 Oct 2004	26 Oct 2004	207.00	8.625 days	628.0m
PRODUCTION HOLE(PH)	147	26 Oct 2004	01 Nov 2004	354.00	14.750 days	1800.0m
EVALUATION PRODUCTION HOLE(EP)	30.5	01 Nov 2004	02 Nov 2004	384.50	16.021 days	1800.0m
PLUG AND ABANDON(PA)	65.5	02 Nov 2004	04 Nov 2004	450.00	18.750 days	1800.0m

Survey								
MD (m)	Incl Deg (deg)	Corr. Az (deg)	TVD (m)	'V' Sect (m)	Dogleg (deg/30m)	N/S (m)	E/W (m)	Tool Type
1678.05	2.32	225.45	1677.17	28.66	0.47	-24.98	-19.61	MWD
1706.72	2.40	224.26	1705.82	29.66	0.33	-25.82	-20.45	MWD
1735.43	2.43	221.48	1734.50	30.71	0.42	-26.71	-21.27	MWD
1763.96	2.56	220.08	1763.00	31.80	0.50	-27.65	-22.08	MWD
1785.46	2.69	214.76	1784.48	32.70	1.28	-28.43	-22.68	MWD
1800.00	2.69	214.76	1799.01	33.33	0	-28.99	-23.07	Projected

Bulk Stocks						Personnel On Board		
Name	Unit	In	Used	Adjust	Balance	Company	Pax	
Fuel	M3	0	8.7	0	408.7	DOGC	50	
Drill Water	MT	8.4	20.4	0	222.7	Santos	2	
Potable Water	MT	23.6	18.1	0	280.8	Total Marine Catering	8	
Barite	sx	0	0	0	1,685.0	Fugro	4	
Gel	sx	0	0	0	318.0	Sperry-Sun	1	
Cement	sx	0	0	0	1,650.0	M.I	1	
						Dowell	2	
						Cameron	1	
						Smith Tool Company	1	
						Other	2	
						MO47	8	
						Marcomm	2	
						Other	1	
						Fugro	2	
						Total	85	

Casing	Casing										
OD	L.O.T. / F.I.T.	Csg Shoe (MD/TVD)	Cementing								
30 "	Oppg / Oppg	121.0m / 121.0m									
13 3/8"	21.60ppg / 0ppg	620.8m / 620.8m									

HSE Summary			
Events	Date of Last	Days Since	Remarks
Abandon Drill	31 Oct 2004	4 Days	Fire and abandon rig drill held based on simulated fire in the outside smokers shack. All personnel mustered at aft lifeboats.
First Aid	20 Oct 2004	15 Days	Were advised that seaman aboard Far Grip had piece of metal embedded in his knee. IP brought on board for examination by rig medic. Medic advised IP fit to return to normal duties and no need for medivac. IP returned to Far Grip.
Near Miss	29 Oct 2004	6 Days	Found 3" x 3/4" pin on rotary table while drilling ahead. Suspended current operations and inspected TDS. Pin had fallen from TDS link tilt. Replaced pin and checked all other pins. Investigation being conducted.
Safety Meeting	31 Oct 2004	4 Days	Three safety meetings held (13:00, 19:00, 01:00). Attended by all crews.



### DRILLING MORNING REPORT # 19 MARTHA 01 ( 04 Nov 2004 )

Marine									
Weather ch	eck on 04 Nov	2004 at 24:0		Rig Support					
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (klb)
10.00nm	18.0kn	270deg	1003bar	10.0C°	1.0m	270deg	Oft/sec	1	207.0
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather	Comments	2	185.0
0.2deg	0.2deg	0.50m	2.0m	202deg	Oft/sec	Partia	al cloud	3	203.0
0.2ueg	0.2deg	0.50111	2.0111	202ueg	011/360	i ailia	ii ciouu	4	187.0
Rig Dir.	Ris. Tension	VDL		Comments				5	203.0
45.0deg	0klb	3853.0klb						6	203.0
10.0009	ONID	0000.01115						7	229.0
								8	220.0

Boats	Arrived (da	ate/time)	Departed (date/time)	Status		Bulks	
Far Grip				At standby on location.	Item	Unit	Quantity
					Fuel	m3	528
					Drill Water	m3	340
					Potable Water	m3	660
					Barite	MT	0
					Gel	MT	87
					Cement	MT	0
Pacific				At standby on location.	Item	Unit	Quantity
Wrangler					Fuel	m3	458.7
					Drill Water	m3	347
					Potable Water	m3	403
					Barite	MT	85
					Gel	MT	12
					Cement	MT	84
Helicopte	r Movement						
Flight #	Time		Destination		Comment		Pax
1	15:16	Ocean Patriot		Call sign BZU			15
1	15:33 E	Essendon		-			2



		From:	Nigel Walters	s, Steve Hodgetts			
		OIM:	<b>Barry Scott</b>				
Well Data							
Country	Australia	M. Depth	1800.0m	Cur. Hole Size	12.250in	AFE Cost	
Field		TVD	1799.0m	Casing OD	13.375in	AFE No.	5736086
Drill Co.	DOGC	Progress	0m	Shoe TVD	620.8m	Daily Cost	
Rig	Ocean Patriot	Days from spud	16.04	F.I.T. / L.O.T.	0ppg / 21.60ppg	Cum Cost	
Wtr Dpth(LAT)	54.7m	Days on well	19.75			Planned TD	1878.0m
RT-ASL(LAT)	21.5m	Current Op @ 0600	Rig Releas	ed		- <del>'</del>	
RT-ML	76.2m	Planned Op					

### Summary of Period 0000 to 2400 Hrs

Cut and recovered 20 x 30" casings. ROV performed sebed survey. Deballast rig. Pull anchors. Rig Released @ 24:00 Hours.

### Operations For Period 0000 Hrs to 2400 Hrs on 05 Nov 2004

Phse	CIs (RC)	Ор	From	То	Hrs	Depth	Activity Description
PA	Р	AH	0000	0030	0.50	1800.0m	Continued deballasting of rig. RIH with casing cutter assembly.
PA	Р	ССТ	0030	0115	0.75	1800.0m	Stopped deballasting rig. RIH with casing cutter. Observed entry into wellhead with ROV. Sheared softlines & latch into wellhead. Took 50klb OP to confirm grapple holding. Observed no movement at seabed.
PA	Р	ССТ	0115	0530	4.25	1800.0m	Cut casing with 100 rpm, - initially: 3-4kft.lb torque, 275 psi SPP, 160 gpm, 20klb OP. Continued to secure deck for move. Finally: 5-7kft.lb torque, 800 psi SPP, 242 gpm, 20klb OP.
PA	Р	CCT	0530	0600	0.50	1800.0m	Following minor indicationsof cut, took 80klb OP. Wellhead, PGB & casing stubs pulled free. Minimal cement attached.
PA	Р	HT	0600	0730	1.50	1800.0m	Service casing cutter & lay out same while deballasting rig throughcritical zone.
PA	Р	AH	0730	1000	2.50	1800.0m	Lay out 20" and 30" stumps. Continue debballasting while chasing out anchors.
PA	Р	АН	1000	1200	2.00	1800.0m	Move guide base to moon pool while handling anchors. P. Wrangler chased out #6, Far Grip chased out #2.
PA	P	AH	1200	2400	12.00	1800.0m	Continue to handle anchors. #6 bolstered @ 12:30, pcc back @ 12:44. #2 bolstered @ 12:40, pcc back @ 12:50. P. Wrangler on #7, off bottom @13:22, bolstered @ 14:32, pcc back @ 14:49. Far Grip on #3, off bottom 13:30, bolstered @ 14:41, pcc back @ 14:58. P. Wrangler on #8, off bottom @ 15:51, bolstered @ 17:05, pcc back @ 17:14. Far Grip on tow bridle. P. Wrangler on #4, off bottom @ 17:55, bolstered @ 18:54, pcc back @19:00. P. Wrangler on #1, off bottom 21:34, bolstered @ 23:00, pcc back @ 23:10. Rig heaves on #5 @ 21:45, anchor to deck of P. Challenger to secure shackle, Anchor bolstered @ 24:00. Under tow to Apache location. RIG RELEASED: 24:00 05/11/04

Dhaca	Data to	2400hrs	OF Nov	2004

I had bata to 2 forms, or nov 200 f						
Phase	Phase Hrs	Start On	Finish On	Cum Hrs	Cum Days	Max Depth
PRESPUD(PS)	82	17 Oct 2004	20 Oct 2004	82.00	3.417 days	0m
SURFACE HOLE(SH)	14.5	20 Oct 2004	21 Oct 2004	96.50	4.021 days	122.5m
INTERMEDIATE HOLE(IH)	48.5	21 Oct 2004	23 Oct 2004	145.00	6.042 days	628.0m
INTERMEDIATE CASING(IC)	62	23 Oct 2004	26 Oct 2004	207.00	8.625 days	628.0m
PRODUCTION HOLE(PH)	147	26 Oct 2004	01 Nov 2004	354.00	14.750 days	1800.0m
EVALUATION PRODUCTION HOLE(EP)	30.5	01 Nov 2004	02 Nov 2004	384.50	16.021 days	1800.0m
PLUG AND ABANDON(PA)	89.5	02 Nov 2004	05 Nov 2004	474.00	19.750 days	1800.0m

Survey								
MD (m)	Incl Deg (deg)	Corr. Az (deg)	TVD (m)	'V' Sect (m)	Dogleg (deg/30m)	N/S (m)	E/W (m)	Tool Type
1678.05	2.32	225.45	1677.17	28.66	0.47	-24.98	-19.61	MWD
1706.72	2.40	224.26	1705.82	29.66	0.33	-25.82	-20.45	MWD
1735.43	2.43	221.48	1734.50	30.71	0.42	-26.71	-21.27	MWD
1763.96	2.56	220.08	1763.00	31.80	0.50	-27.65	-22.08	MWD
1785.46	2.69	214.76	1784.48	32.70	1.28	-28.43	-22.68	MWD
1800.00	2.69	214.76	1799.01	33.33	0	-28.99	-23.07	Projected

Bulk Stocks						Personnel On Board			
Name	Unit	In	Used	Adjust	Balance	Company	Pax		
Fuel	M3	0	0	0	408.7	DOGC	50		
Drill Water	MT	0	0	0	222.7	Santos	2		
Potable Water	MT	0	0	0	280.8	Total Marine Catering	8		
Barite	sx	0	0	0	1,685.0	Fugro	4		
Gel	sx	0	0	0	318.0	M.I	1		
Cement	sx	0	0	0	1,650.0	Dowell	2		
						Cameron	1		
						Smith Tool Company	1		
						Other	2		
						MO47	8		
						Marcomm	2		
						Other	1		
						Fugro	2		
						Total	84		

Casing	9		
OD	L.O.T. / F.I.T.	Csg Shoe (MD/TVD)	Cementing
30 "	Oppg / Oppg	121.0m / 121.0m	
13 3/8"	21.60ppg / 0ppg	620.8m / 620.8m	

HSE Summary								
Events	Date of Last	Days Since	Remarks					
Abandon Drill	31 Oct 2004	5 Days	Fire and abandon rig drill held based on simulated fire in the outside smokers shack. All personnel mustered at aft lifeboats.					
First Aid	20 Oct 2004	16 Days	Were advised that seaman aboard Far Grip had piece of metal embedded in his knee. IP brought on board for examination by rig medic. Medic advised IP fit to return to normal duties and no need for medivac. IP returned to Far Grip.					
Near Miss	29 Oct 2004	7 Days	Found 3" x 3/4" pin on rotary table while drilling ahead. Suspended current operations and inspected TDS. Pin had fallen from TDS link tilt. Replaced pin and checked all other pins. Investigation being conducted.					
Safety Meeting	31 Oct 2004	5 Days	Three safety meetings held (13:00, 19:00, 01:00). Attended by all crews.					

Marine									
Weather ch	eck on 05 Nov	Rig Support							
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (klb)
10.00nm	18.0kn	270deg	1003bar	10.0C°	1.0m	270deg	Oft/sec	1	207.0
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather	Comments	2	185.0
0.2deg	0.2deg	0.50m	2.0m	202deg	Oft/sec	Partia	ıl cloud	- 3 4	203.0 187.0
Rig Dir.	Ris. Tension	VDL		Comments				5	203.0
45.0deg	0klb	3853.0klb						6	203.0
								7	229.0
								8	220.0

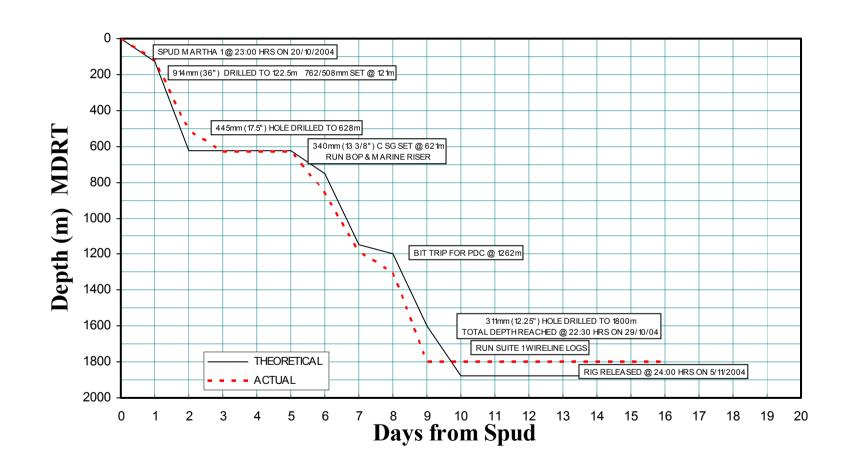
Boats	Arrived (date/time)	Departed (date/time)	Status	В	ulks	
Far Grip			At standby on location.	Item	Unit	Quantity
				Fuel	m3	528
				Drill Water	m3	340
				Potable Water	m3	660
				Barite	MT	0
				Gel	MT	87
				Cement	MT	0
Pacific			At standby on location.	Item	Unit	Quantity
Wrangler				Fuel	m3	458.7
				Drill Water	m3	347
				Potable Water	m3	403
				Barite	MT	85
				Gel	MT	12
				Cement	MT	84

				Cernoni	1411	04
Helicopte	r Movement	:				
Flight #	Time	Destination	Com	ment		Pax
1	15:16	Ocean Patriot	Call sign BZU			15
1	15:33	Essendon				2

**SECTION 7: TIME / DEPTH CURVE** 

### **Santos**

### MARTHA 1 TIME - DEPTH CURVE



**SECTION 8: BHA SUMMARY** 

Wellname : MARTHA 01 Prilling Co. : DOGC Rig : Ocean Patriot

Spud Date : 20 Oct 2004

DFE above MSL: 21.5m Lat: 38 Deg 37 Min 24.27 Sec

Long: 142 Deg 42 Min 5 Sec Spud Time: 23:00

Release Date : 05 Nov 2004

Release Time: 24:00

### **BHA Record**

Water Depth: 54.7m

#	Date-in	Length	Weight	Weight Blw/Jar	String Weight	Pick-Up Weight	Slack-Off Weight	Torque Max	Torque on Bottom	Torque off Bottom	Description
1	20 Oct 2004	125.3	55.0	47.6	160.0	160.0	160.0	2	2	1	26" bit, 36" hole opener, float sub with solid float, 9 1/2" anderdrift, 2 x 17 1/2" string stabilizers, 3 x 9 1/2" DCs, X-over, 3 x 8" DCs, X-over, 6 x 5" HWDP
2	20 Oct 2004	152.1	66.0	55.0	55.0	120.0	120.0	3200	2800	1000	17 1/2" bit, float sub with solid float, 9 1/2" anderdrift, 9 1/2" short DC, 17 1/2" stab, 9 1/2" DC, 17 1/2" stab, 2 x 9 1/2" DC, XO, 6 x 8" DCs, 8" Jar, 3 x 8" DC, Accelerator, 8" DC
3	25 Oct 2004	288.5	107.0	54.0	0	0	0	3	3	1	TCI bit, near bit roller reamer, FEWD, PM, Pulser, 1 x 8"DC, Roller reamer, 10 x 8" DCs, jars, 3 x 8" DCs, accellerator, 1 x 8" DC, crossover, 12 x HWDP
4	28 Oct 2004	288.3	107.0	54.0	292.0	0	0	3	3	1	PDC bit, near bit roller reamer, FEWD, PM, Pulser, 1 x 8"DC, Roller reamer, 10 x 8" DCs, jars, 3 x 8" DCs, accellerator, 1 x 8" DC, crossover, 12 x HWDP
5	30 Oct 2004	273.3	102.0	49.0	292.0	0	0	3	3	1	TCI bit, 1 x 8"DC, Roller reamer, 10 x 8" DCs, jars, 3 x 8" DCs, accellerator, 1 x 8" DC, crossover, 12 x HWDP

Santos	Well Completion Report - Volume 1 Basic
<b>SECTION 9:</b>	BIT RECORD & PERFORMANCE SUMMARY

Wellname : MARTHA 01 Prilling Co. : DOGC Rig : Ocean Patriot

DFE above MSL: 21.5m

Lat: 38 Deg 37 Min 24.27 Sec

Spud Date : 20 Oct 2004

Release Date :

Water Depth: 54.7m

Long: 142 Deg 42 Min 5 Sec

Spud Time: 23:00

Release Time:

### Bit Record

Well: MA	RTHA 0	1																								
Date In	IADC	Bit#	Size in	Ser #	Mfr	Туре	Jets # x /32nd"	D.In m	D.Out m	Prog m	Hrs o/b	SPP psi	Flow gpm	WOB klb	RPM	MW	TFA	ROP m/hr	I	01	D	L	В	G	02	R
				T	1	1	/52Hu													1						
20 Oct 2004	1-1-5	1	26.00	MR3846	SMITH	MSDS SHC		76.2	122.5	46.3		370	1100	11.0	58		1.387				NO	A		1	NO	PR
21 Oct 2004	1-1-5	2	17.50	MR5734	SMITH	XRTC		122.5	628.0	505.5		2100	1020	15.0	140		1.42		1	1	WT	Α	E	1	NO	TD
25 Oct 2004	4-3-7	3	12.25	M16694	REED	TD43HKPRDH		628.0	1262.0	634		2300	950	20.0	120		0.92		1	1	WT	Α		1	NO	FM
28 Oct 2004		4	12.25	109617	HYCALOG	DSX104A1HGW		1262.0	1800.0	538		0	900	6.0	0		0.752		2	3	BT	S	X	1	WT	TD
17 Oct 2004	4-3-7	3RR	12.25	M16694	REED	TD43HKPRDH		1800.0	0	-1800		0	0	0	0		0.92		1	1	WT	Α		1	NO	LOG

**SECTION 10: DRILLING FLUIDS REPORT** 

### Fluids Recap

**Santos Ltd** 

Martha-1 Otway Basin Wild Cat-Gas Well VIC-P-44



Prepared by:





### M-I *L.L.C.*

### **ONE-TRAX**

### **DRILLING FLUID DATA MANAGEMENT SYSTEM**

Operator: Santos Ltd Spud Date: 20/10/2004
Well Name: Martha-1 TD Date: 29/10/2004

Field/Area: Otway Basin Location Code: 7001

Description:Wild Cat-Gas WellProject Engineer:Nigel WarmanLocation:VIC-P-44Sales Engineer:Gordon HowieWarehouse:MelbourneSales Engineer:Jasdeep Singh

Contractor: Diamond Offshore M-I Well No. 14920

Comments:										
Туре	Size in	Depth m	TVD m	Hole in	Max MW lb/gal	Fluid 1	Fluid2	Drilling Problem	Days	Cost \$
Casing	30	122.5	122.5	36	8.7	Spud Mud		None	3	8953.21
Casing	13.37	628	628	17.5	8.8	Spud Mud		None	2	10031.53
Open Hole		1800	1800	12.25	10.5	GLYDRIL			10	128065.10

Total Depth: m TVD: m Water Depth: 55 m Drilling Days: Total Cost: 147,049.84



### **CONTENTS:**

- DISCUSSION BY INTERVAL
- DAILY DISCUSSION REPORT
- COST BY INTERVAL
- DAILY VOLUME SUMMARY SHEET
- TOTAL MATERIAL COST
- HYDRAULICS REPORT
- DRILLING FLUIDS SUMMARY
- PRODUCT CONSUMPTION
- DAILY MUD REPORTS



DISCUSSION BY INTERVAL



### **SUMMARY:**

Santos Ltd was the operator of vertical exploration wild cat gas well, Martha-1, Vic/P44, Victoria, Australia using Ocean Patriot semi submersible rig owned by Diamond Offshore. Martha-1 was located 26 km west of Port Campbell, approximately 24 km WNW of Minerva gas field and 18 Km North of Casino gas field. The well was programmed for 18 days to drill to a depth of 1878 m in 55 m of water depth.

The Ocean Patriot rig was towed from Gippsland Basin and arrived on location on the 20th October 2004.

Its primary target was gas in the Warre formation at 1457 m SS.

Martha-1 was spudded on the 20<sup>th</sup> October 2004 at 23:00 hrs and the well was drilled to TD of 1800 meters on 29<sup>th</sup> October 2004.

The well was logged extensively in five runs and plugged & abandoned. The BOP stack was pulled ready for the rig move to the next location.

### **FORMATION TOPS:**

Formation Tops RKB (Meters)	Formation	Lithology
671	MEPUNGA FM	Claystone
774	WANGERRIP GROUPS	Sandstone/Calcarinite
934	PEBBLE POINT FM	Sandstone/Calcarinite
993	MASSACRE SHALE	Siltstone
1030	TIMBOON SST	Sandstone
1133	PAARATTE FM	Sandstone
1324	BELFAST MUDSTONE	Siltstone
1362	THYLACINE MEMBER	Sandstone/Siltstone
1481	WAARRE FM	Sandstone/Siltstone
1696	EUMERALLA FM	Siltstone/Sandstone



Interval I
------------

MUD TYPE : Seawater / PHG sweeps

MUD RELATED HOLE PROBLEMS : None

MUD PROPERTIES:

 Mud Weight:
 :
 8.7-8.8 ppg

 YP:
 :
 22-33 lb/100ft²

 API FL:
 :
 15 cc/30 min

 Funnel Vis:
 :
 > 100 se/qt

 Hardness:
 :
 40 mg/l

 MBT:
 :
 30 ppb

#### **OPERATIONS:**

Martha-1 was spudded on 20<sup>th</sup> October 2004. The 26 inch hole with 36" hole opener was drilled to 122.5 m in 3 hrs. The 30" casing was lowered and cemented in place with permanent guide base.

### **MUD**

820 bbl of 30 ppb Gel was mixed with no time to prehydrate, in preparation for spudding. No kill mud was prepared. The hole was swept with 50 bbl flocculated mud made with 2:1 gel from Pit 4 & sea water every 10 m of drilling. At TD a 100 bbl sweep was pumped and hole displaced with 150 bbl of unflocculated mud from Pit 5. A total of 350 bbl of gel was used for this section and 470 bbl left over was carried over for next section.

### **SOLIDS CONTROL:**

None used as returns were directed to seabed.

#### **OBSERVATIONS AND RECOMMENDATIONS:**

No changes are proposed.



Interval II	122 – 628	17½" Hole section	13¾" casing
-------------	-----------	-------------------	-------------

MUD TYPE : Seawater / PHG / Guar Gum sweeps

MUD RELATED HOLE PROBLEMS : None

MUD PROPERTIES:

 Mud Weight:
 :
 8.7-8.8 ppg

 YP:
 :
 22-33 lb/100ft²

 API FL:
 :
 15 cc/30 min

 Funnel Vis:
 :
 > 100 se/qt

 Hardness:
 :
 40 mg/l

 MBT:
 :
 30 ppb

### **OPERATIONS:**

The 17½" drilling assembly was made up and run in hole. The shoe track was drilled with sea water pumped at 1100 gpm. A 50 bbl Floc gel sweeps was pumped after drilling cement and further drilling was progressed using sea water. A sweep regime of 50 bbl Guar Gum and 50 bbl Floc Gel was followed while drilling to 300m. There after the sweep regime was changed to 100 bbl PHG at connections due to poor drilling rates of 25-35 m an hour. The formation drilled was limestone. A 150 bbl PHG sweep was pumped at TD of 628m and the hole was displaced with 865 bbl PHG and string pulled out for running casing. Tight hole was encountered while tripping out but no wiper trip was made. The casing was run and cemented in place as per program without incident.

#### MUD:

470 bbl of Gel mud from the previous section was carried over to this section and additional volume of 30 ppb Gel was mixed on the run as drilling progressed. Also 300 bbl of 4 ppb Guar gum was mixed in sea water in a separate pit due to shortage of drill water and gel onboard. 350 bbls of unflocculated mud was left over from this section which was used in next section.

#### **SOLIDS CONTROL:**

No solids control was used as returns were to seabed.

#### **OBSERVATIONS AND RECOMMENDATIONS:**

No changes are recommended as the PHB sweep system is the most cost effective way to drill this interval.



Interval I11 621 - 1800 meters	121/4" Section	P & A
--------------------------------	----------------	-------

MUD TYPE : KCl/PHPA/Glydril

MUD RELATED HOLE PROBLEMS : None

Sand blinding the shaker screens caused huge volume losses.

MUD PROPERTIES :

Mud Weight: 9.0 - 10.5 ppg

YP: 14-22 PV 11-16 7 - 14 ccAPI FL: KCl: >7.5% 0.5-0.9 ppb PHPA:  $40 - 56 \sec/qt$ Funnel Vis 3 - 3.7%Glycol Hardness: 240 mg/l Drill Solids: 1-2.5% PH: 8.0 - 9.48 - 116 RPM:

#### **OPERATIONS:**

The 13%" casing shoe track and rat hole were drilled out with a 12¼" bit and the hole was displaced to 8.9 ppg KCl/PHPA/ Glydril mud. Drilled to 631 meters then a FIT was conducted which reached 21.2 ppg EMW.

#### MUD:

220 bbl of 25 ppb Gel left from previous section, was blended into 1365 bbl of new mud prepared in four pits to obtain 1585 bbl of mud containing 7.5% KCl, 3% Glydril LC, 0.5 ppb Polyplus, 1 ppb Polypac UL, (This was all the Polypac UL on the rig at the time, waiting for delivery from town) 0.75 ppb Duovis. 340 bbl of KCl brine containing 71 ppb was mixed into pit #2 to be used when mixing new premixes. On this rig , the 1 MT bags of KCl can only be added to the mud pits by slinging from a crane and adding through a hopper on the outside deck near the shaker house. This added to our mixing problems when there were severe losses over the shakers, new volume was required, and the cranes were shut down because of the weather.



The surface volume could not be sheared as there is no shearing device on this rig.

The 12 ¼ inch BHA was made up and RIH. The Top of Cement was tagged at 570 meters. This was drilled out with seawater and PHG sweeps. After the shoe track and rat hole was cleaned, the hole was displaced to the KCl/PHPA/Glydril system. There were no mud losses at the shakers during the displacement. The VSM Thule shakers were dressed with 105 mesh screens with 30 mesh scalpers on top.

Drilling 12¼" hole proceeded with ROP's from 20 – 50 meters per hour pumping 1100 gpm. At a depth 715 – 720 meters the shaker screens were blinded with huge amounts of coarse sand, causing the mud to flow over the screens into the ditch. Approximately 78 bbls of mud were lost before the sand cleared away and the mud fell through the screens. Sand again blinded the screens at 862 meters again causing heavy mud volume losses. Screens on two middle shakers were changed up to 165 mesh in an attempt to avoid blinding the screens, but this proved unsuccessful and no improvement was achieved. The screens were then changed back to 84 mesh all round and the scalpers were changed back to 10 mesh. The rig desander was running all the time. The pump rate was reduced to 800 gpm. This reduced the losses over the shakers to manageable amounts. Also at this time the weather was deteriorating, causing the rig to move about which in turn aggravated the losses as the mud flowed from one end to the other in the header box.

This sand problem, and consequent mud losses continued. Supply boats were unable to unload to the rig because of the heavy seas and high winds stopping the rig cranes from operating.

Controlled drilling continued, increasing and decreasing the pump rates as the losses allowed. A total of 4017 bbls of mud were lost over the shakers while drilling this section. At around 1150 meters, all drill water on the rig was used. The weather remained bad for a couple of days preventing the supply vessels from coming into the rig to unload. Mud was then made with seawater and Duovis, to maintain volume and retain carrying capacity in the mud to ensure hole cleaning. The cuttings over the shakers were observed to be individual and discrete, and well encapsulated with the PHPA concentration and KCl levels still in the system. The low-end rheology was maintained with Duovis giving 6 rpm readings on rheometer between 8 and 11. The corresponding Yield Points were in the range of 16-25lb/100ft². No PHPA, KCl or Glydril were added to the system during this time. There were no KCl or Glydril LC left on the rig, (in fact the inhibition was not required for the type of formation being drilled) and no drill water was available.

At 1262 meters a trip was made to change out the bit and the FEWD tool. When running back in the hole, tight spots at 890 meters and from 1149m to 1262m were reamed. When back on bottom , controlled drilling continued with losses at the



shakers steadily reducing. On Santos instructions the mud weight was increased, starting when on bottom after the trip, to be at 10.2 ppg by the top of the Belfast Mudstone formation. This was achieved by the use of both KCl and barite. This increased the KCl concentration to 6.5% in the system after it had been almost completely depleted during the bad weather.

By this time the weather had settled down allowing the supply boats to offload to the rig. Drill water was one of the first items to be received on the rig, so new volume of mud could be mixed according to the program. KCl and Glydril were added to the system, then the concentration of PHPA was steadily increased as more clays were being drilled as shown by a small but steady increase in the bentonite concentration (MBT) in the mud. As drilling continued with no hole problems, the concentrations of KCl, Glydril LC and Glydril MC and PHPA were increased to nearer those proposed in the mud program. The Polypac UL required to reduce the fluid loss was only received off the supply vessel as we were approaching TD. It appears Polyplus was sent on the supply vessel instead of the Polypac UL, which had been ordered. For this reason the fluid loss was not able to be reduced as low as required in the mud program. However this did not cause any mud or hole problems. Then as TD was coming nearer and the announcement had been made the hole was to be P & A, we were instructed by the Santos Co Man, to maintain the current properties and not add additional chemicals to bring all properties in line with those programmed. He was satisfied with the properties at the time.

The well was drilled to TD 1800 meters, the hole circulated clean, then the pipe was pulled out of the hole to commence the wireline logging program. On the trip out the hole was back reamed from 1491 meters to 1250 meters due to tight hole.

The first wireline log would not go to bottom and was pulled out of the hole. A wiper trip was made with any tight spots reamed, the pipe was then pulled out of the hole. The logging program was then able to proceed without any problems getting the tools to bottom. Mud losses during the logging program were 82 bbls (from 2-2.5 bbls per hour). The well was logged extensively in five runs and plugged and abandoned. The BOP stack was pulled ready for the rig move to the next location.



#### **SOLIDS CONTROL:**

These handled the flow as there were no losses of mud during the displacement. After a short period drilling sand blinded the screens and large losses were incurred. The bottom screens on shakers #2 and #3 were changed to 165 mesh to see if these would handle the sand any better, the idea being the sand was too coarse to get stuck in the finer mesh. The losses continued so all bottom screens were changed back to 84 mesh and the scalpers were changed to 10 mesh. This set-up was much more successful and losses reduced to a manageable amount, after the pump rate was reduced from 1100 gpm back to 800 – 900 gpm. The desander was run continuously, to assist with sand removal from the system. The desilter was not used as it was throwing out large volumes of mud. Attempts to fix the problem were not successful as the losses continued.

As drilling continued, the screens were changed up as and when possible, depending on the amount of sand, with the final screens being as follows. Shaker  $#1 - 4 \times 84$  mesh. Shaker  $#2 - 4 \times 165$  mesh. Shaker  $#3 - 2 \times 120$  mesh, and  $2 \times 105$  mesh. Shaker  $#4 - 4 \times 105$  mesh.

#### **DOWNHOLE LOSSES:**

Unable to calculate due to severe losses at the shakers.

#### **OBSERVATIONS AND RECOMMENDATIONS:**

The top several hundred meters of this well could have been drilled with seawater and sweeps of viscous PHG, or a very basic gel mud with sufficient carrying capacity to ensure the hole was being cleaned.

6% KCl and 1 ppb PHPA concentrations would be sufficient to control shales drilled.

Operationally crane availability was an issue to add KCl bags via the hopper to finish premixes in time to maintain volumes and mixing mud well in advance to shear polymers.



#### **POST TD OPERATIONS:**

The well was logged as programmed. The well was taking mud during the logging at 2 – 2.5 bbls per hour, with total losses of 82 bbls. The first tool would not go to bottom, (1466 meters) so a wiper trip was run to ream any tight spots. After that all logging runs were able to go to bottom without any problems. The calliper logs indicate the well is considerably washed out in the upper section of soft sands. The well was finally plugged and abandoned as per procedures. The cement stringer was run to bottom and hole circulated clean before placing first of four cement plugs from 1800m to 1200m and from 655m to 570m over the casing shoe. The mud in the open hole above this plug was treated with Glute 25 as biocide and Conqor 303A for corrosion inhibition. After WOC this plug was tested for integrity. The cement retainer was set at 166m and well displaced with seawater. The fifth cement plug was placed from 166m to 114m. The BOP's were unlatched. The rig was released to Apache Energy after cutting and retrieving the 30 x 20 inch well head.



# DAILY DISCUSSION REPORT



Operator : Santos Ltd Well Name : Martha-1

Contractor : Diamond Offshore

Field/Area: Otway Basin

Description: Wild Cat-Gas Well

Location: VIC-P-44

Daily Discussion

M-I Well: 14920

19/10/2004 TD = 0 m Day 0

20/10/2004

TD =

95 m

Day 1

Spud the well at 23:00 Hrs. Drilled to 95 m.

Started filling pits with water at 18:30 hrs. Mixed 460 bbl of 30 ppb Gel in Pit 4 and 360 bbl of 25 ppb Gel in Pit 5. Pumping 50 bbl sweeps every single flocculated with seawater (2:1). No DW left on board.

21/10/2004

TD = 122.5 m

Day 2

Drilled to section TD 122.5 m. Sweep hole and displaced to PHG. POOH. Run casing. Cemented as per plan. WOC. Made up BHA and RIH. Used 2:1 Gel:SW flocculated 50 bbl sweeps. Used PHG for displacing hole prior to P/O for casing. Further mixing gel in pits for drilling 17.5 inch hole. Mixed 4 ppb Guar Gum in Pit 1 as contingency. Gel received: 5 T from Wrangler & 40 T from Far Frip.

22/10/2004

TD = 514 m

Day 3

Drilled to 514 m.

Used 14 old and 2 new 105 mesh screens to dress shakers. Finshed Guar Gum sweep volume. Pumped SW Floc sweeps upto 300 m and the used 100 bbl PHG sweeps at connections.

23/10/2004

TD =

Day 4

Drilled to 628 m with 100 bbl PHG sweeps every connection. Swept hole with 150 bbl PHG at TD and displaced out with sea water. Displaced hole with 865 bbl PHG and POOH. Running 13 3/8 casing filling with PHG.

Used 100 bbl PHG sweeps with 30 ppb Gel on connections to ensure clean hole. Using PHG to fill the casing. DW left on board: 945 bbl

24/10/2004

TD = 628 m

Day 5

Run casing to bottom filling with PHG. Circulated hole with SW. Cemented casing as per plan. WOC. Meanwhile running BOP stack. Started mixing Polymer mud as chemicals were unloaded from boat and availability of crane. Saved 230 bbl of PHG for drilling out shoe etc. Wating for Glydrill LC from boat.

25/10/2004

TD = 628 m

Day 6

Nippled up BOP stack. Made up BHA and new insert bit. RIH is in progress.

Completed mixing 1585 bbl of 7.5 % KCl-0.5ppb Polyplus-0.8 ppb Duotec-0.8 ppb PolyPacUL-3%Glydril LC mud with 3 ppb Gel. Sheared using mix pumps. 175 bbl of PHG available for sweeps while drilling cement and spacer ahead of Polymer mud.



Operator : Santos Ltd

Well Name : Martha-1 Contractor : Diamond Offshore Field/Area: Otway Basin

Description: Wild Cat-Gas Well
Location: VIC-P-44

Daily Discussion

M-I Well: 14920

26/10/2004 TD = 870 m Day 7

Pumped gel sweeps during cement drilling. Displaced hole with polymer mud while drilling through shoe. Dumped 20 bbl of contaminated mud during displacement. Drilled ahead to 870m.

Built premix batches for volume maintainance. Lost large volumes of mud over shakers while drilling through sand formations. Waiting on Chemical order from port.

Attempted to screen up shakers to avoid screen blinding by sand, no effect.

27/10/2004 TD = 1193 m Day 8

Drilled ahead while limiting pump rates to minimise shaker losses.

Continued to lose large amounts of mud across the shakers. Due to the sand formation, and shortage of drill water, premixes were built with Seawater and duovis to retain volume and cuttings carrying capacity, while omitting inhibition products. Shaker screens were changed to coarser mesh and losses stabilised. Started Desander to reduce sand content.

28/10/2004 TD = 1310 m Day 9

Drilled ahead to 1262m, circulated bottoms up, then POOH. Changed bit to PDC. RIH, washed and reamed down last 50m. Drilled ahead to 1310m

Continued transferring premix to active to maintain active volume. Ran desander to control sand content. Built slug to POOH. Offloaded chemicals from Far Grip and Wrangler. Added KCl, Glydril LC, Soda Ash and barite to active system to increase inhibition and bring MW to 10.1ppg. Built premix for volume addition.

29/10/2004 TD = 1800 m Day 10

Drilled ahead to well TD 1800m. Circulated shakers clear, preparing to POOH.

Blended premix to active system to maintain volume and mud weight. Added Glydril, Polyplus and Polypac UL to active to improve inhibition and fluid loss properties. Built slug for POOH.

30/10/2004 TD = 1800 m Day 11

Pumped slug and began POOH. Hole became tight at ~1400m, reamed and washed this section, before pumping 2nd slug and POOH to log. Logging tools were unable to run to bottom. POOH logging tools and RIH with drill string to make wiper trip.

Built second slug for POOH. Built some weighted premix volume for reserve.

31/10/2004 TD = 1800 m Day 12

POOH after wiper trip. Run first suite of logs. Got to bottom no problem. Now 2nd logging run.

Bleed in premix (Polypac UL & Duovis) from pit #5 to active to maintain properties and volume during wiper trip.. 10 Glydril LC drums charged today are inventory correction. Used on 28/10/04.

1/11/2004 TD = 1800 m Day 13

Continue logging program. Dumped and cleaned Pit #2 and #4 ready for cement job if required.

Mixed 150bbl viscous 12.5 ppg for cement spacer. 22mt of Barite charged today is an inventory adjustment to agree with control room tank soundings.



Operator : Santos Ltd Well Name : Martha-1

Contractor : Diamond Offshore

Field/Area: Otway Basin

Description: Wild Cat-Gas Well

Location: VIC-P-44

**Discussion**M-I Well: 14920

**Daily** 

2/11/2004 TD = 1200 m Day 14

Completed wireline logging. RIH to set cement plugs for P&A. Measure return volumes then dumping mud. Full returns on the 3 plugs set so far. Inhibited mud to be left in casing with corrosion inhibitor and biocide. Severely cement contaminated mud treated with bicarb to maintain reasonable rheological properties



COST BY INTERVAL



## PRODUCT SUMMARY

Operator: Santos Ltd Field/Area: Otway Basin

Well Name: Martha-1 Description: Wild Cat-Gas Well

**Contractor**: Diamond Offshore **Location**: VIC-P-44

SUMMARY OF PRODUCT USAGE FO	R INTERVAL	19/10/2	004 - 21/10/2004	, 0 - 122.5 m
WATER-BASED MUD	SIZE	AMOUNT	UNIT COST	PROD COST
			(\$)	(\$)
1 - SODA ASH	25 KG BG	3	13.04	39.12
2 - CAUSTIC SODA (DRY)	25 KG DM	3	20.46	61.38
3 - M-I GEL BULK	1 MT BK	13	228.67	2972.71
4 - LEAD MUD ENGR	1 EA	4	630.00	2520.00
5 - GUAR GUM	25 KG BG	16	60.00	960.00
6 - SECOND MUD ENGR	1 EA	4	600.00	2400.00
SUB TOTAL:				8953.21
TAX:				0.00
WATER-BASED MUD TOTAL COST:				8953.21
TOTAL MUD COST FOR INTERVAL:				8953.21



Operator: Santos Ltd Well Name : Martha-1 Field/Area: Otway Basin **Description: Wild Cat-Gas Well** 

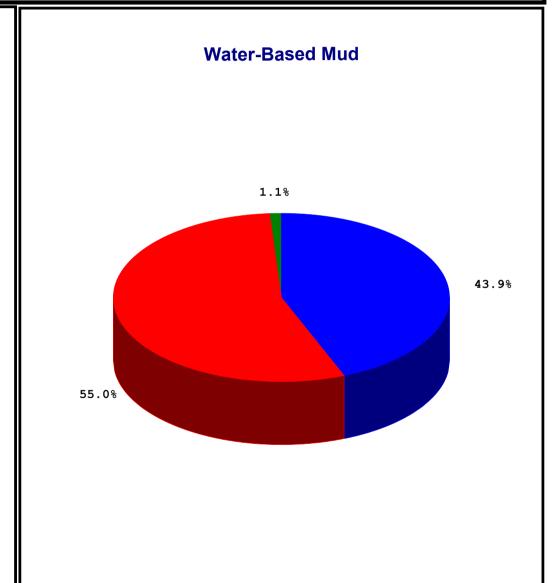
Location : VIC-P-44

# Cost **Analysis**

BREAKDOWN OF COST BY PRODUCT GROUP 19/10/2004 - 21/10/2004,

0 - 122.5 m

Water-Based Mud Products	\$	%
1-Common Chemicals	100.50	1.1
2-Engineering	4920.00	55.0
3-Visc/Fluid Loss	3932.71	43.9



Water-Based Mud Total Cost: \$

8953.21

100.0



## PRODUCT SUMMARY

Operator: Santos Ltd Field/Area: Otway Basin

Well Name: Martha-1 Description: Wild Cat-Gas Well

**Contractor**: Diamond Offshore **Location**: VIC-P-44

SUMMARY OF PRODUCT USAGE	E FOR INTERVAL	22/10	)/2004 - 23/10/200	04, 122 - 628 m
WATER-BASED MUD	SIZE	AMOUNT	UNIT COST	PROD COST
			(\$)	(\$)
1 - LIME	25 KG BG	1	10.06	10.06
2 - SODA ASH	25 KG BG	10	13.04	130.40
3 - CAUSTIC SODA (DRY)	25 KG DM	5	20.46	102.30
4 - M-I GEL BULK	1 MT BK	31	228.67	7088.77
5 - LEAD MUD ENGR	1 EA	2	630.00	1260.00
6 - GUAR GUM	25 KG BG	4	60.00	240.00
7 - SECOND MUD ENGR	1 EA	2	600.00	1200.00
SUB TOTAL:				10031.53
TAX:				0.00
WATER-BASED MUD TOTAL COST:				10031.53
TOTAL MUD COST FOR INTERVAL:				10031.53



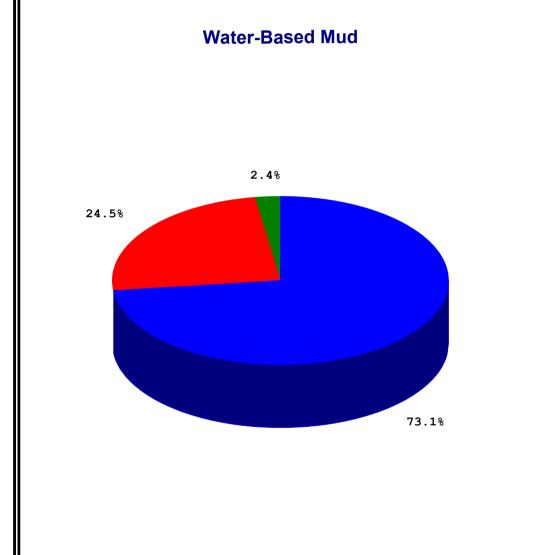
Operator: Santos Ltd Well Name: Martha-1 Field/Area: Otway Basin Description: Wild Cat-Gas Well

Location : VIC-P-44

# Cost Analysis

BREAKDOWN OF COST BY PRODUCT GROUP 22/10/2004 - 23/10/2004, 122 - 628 m

Water-Based Mud Products	\$	%
1-Common Chemicals	242.76	2.4
2-Engineering	2460.00	24.5
3-Visc/Fluid Loss	7328.77	73.1



Water-Based Mud Total Cost: \$ 10031.53 100.0



## PRODUCT SUMMARY

Operator: Santos Ltd Field/Area: Otway Basin

Well Name: Martha-1 Description: Wild Cat-Gas Well

**Contractor**: Diamond Offshore **Location**: VIC-P-44

SUMMARY OF PRODUCT USAGE I	FOR INTERVAL	24/10/2	004 - 2/11/2004,	, 628 - 1200 m		
WATER-BASED MUD	SIZE	AMOUNT	UNIT COST	PROD COST		
			(\$)	(\$)		
1 - DUOTEC	25 KG BG	40	196.24	7849.60		
2 - SODA ASH	25 KG BG	22	13.04	286.88		
3 - ANTIFOAM A	5 GA CN	10	68.59	685.90		
4 - SODIUM BICARBONATE	25 KG BG	25	10.64	266.00		
5 - POLYPAC UL	25 KG BG	87	90.00	7830.00		
6 - M-I BAR BULK	1 MT BK	62	210.00	12915.00		
7 - M-I GEL BULK	1 MT BK	6	228.67	1372.02		
8 - POTASSIUM CHLORIDE	1 MT BG	41	430.06	17632.46		
9 - LEAD MUD ENGR	1 EA	10	630.00	6300.00		
10 - DUO-VIS	25 KG BG	84	227.00	19068.00		
11 - GLUTE 25	25 LT CN	3	93.68	281.04		
12 - POLY PLUS DRY	25 KG BG	37	85.80	3174.60		
13 - SECOND MUD ENGR	1 EA	8	600.00	4800.00		
14 - CONQOR 303A	55 GA DM	4	380.36	1521.44		
15 - GLYDRIL LC	55 GA DM	68	575.81	39155.08		
16 - GLYDRIL MC	220 KG DM	12	371.49	4457.88		
17 - POTASSIUM HYDROXIDE	25 KG CN	15	31.28	469.20		
SUB TOTAL:				128065.10		
TAX:				0.00		
WATER-BASED MUD TOTAL COST:				128065.1		
TOTAL MUD COST FOR INTERVAL:				128065.1		



Operator: Santos Ltd Well Name: Martha-1 Field/Area: Otway Basin Description: Wild Cat-Gas Well

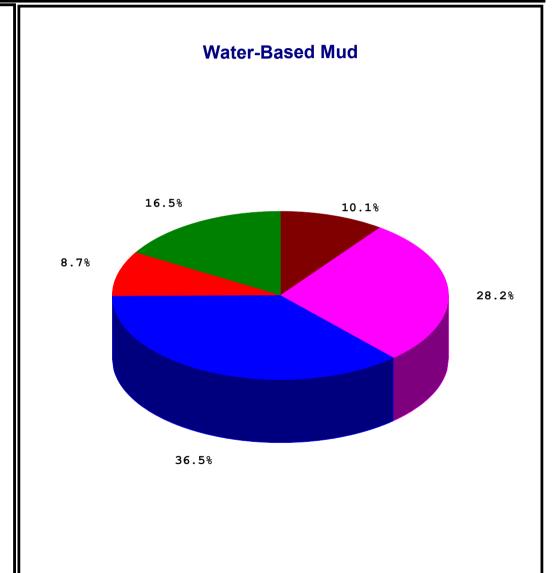
Location : VIC-P-44

# **Cost Analysis**

### BREAKDOWN OF COST BY PRODUCT GROUP 24/10/2004 - 2/11/2004,

628 - 1200 m

Water-Based Mud Products	\$	%
1-Common Chemicals	21142.92	16.5
2-Engineering	11100.00	8.7
3-Lubricant	46787.56	36.5
4-Visc/Fluid Loss	36119.62	28.2
5-Weight Material	12915.00	10.1





# DRILLING FLUIDS RECAP FOR SANTOS LTD MARTHA 1

DAILY VOLUME SUMMARY SHEET



#### Martha-1 Volume Summaries

#### 36" Interval Seawater/Gel Sweeps

	Mud Volume (bbl)						Volume Built bbl					Volume Lost bbl									
Date	Depth	Hole	Surf	Res. &	Total	Water	Mud	Synthetic	Mud	Chemical	Barite	Daily	Cum	Shakers	Centri-	Desilter	Dump	Hole	Sweeps	Daily	Cummul
			Active	Premix	Vol		Received	Added	Built			Total	Built		fuge		,			Total	Lost
20-Oct	95	0	0	790	790				910			910	910						120	120	120
21-Oct	122.5	0	0	1170	1170				780			780	1690					192	208	400	520

#### 17.5" Interval Seawater/Gel Sweeps

		Mud	Volume (	bbl)		Volume Built bbl						Volume Lost bbl									
Date	Depth	Hole	Surf	Res. &	Total	Water	Mud	Synthetic	Mud	Chemical	Barite	Daily	Cum	Shakers	Centri-	Desilter	Dump	Hole	Sweeps	Daily	Cummul
			Active	Premix	Vol		Received	Added	Built			Total	Built		fuge					Total	Lost
22-Oct	514	0	0	1330	1330		1170		2000			3170	3170				25		1815	1840	1840
23-Oct	628	0	0	540	540				715			715	3885					190	1315	1505	3345
															·						

#### 12.25" Interval Glydril WBM

		Mud	Volume (	(bbl)		Volume Built bbl						Volume Lost bbl									
Date	Depth	Hole	Surf	Res. &	Total	Water	Mud	Synthetic	Mud	Chemical	Barite	Daily	Cum	Shakers	Centri-	Desander	Dump	Hole	Other	Daily	Cummul
			Active	Premix	Vol		Received	Added	Built			Total	Built		fuge					Total	Lost
24-Oct	628	0	0	1160	1160		540		770			1310	1310						150	150	150
25-Oct	628	0	0	1760	1760				600			600	1910							0	150
26-Oct	870	430	504	485	1419				700			700	2610	856			20		165	1041	1041
27-Oct	1193	577	427	818	1822				3029			3029	5639	2626						2626	3667
28-Oct	1310	630	457	968	2055				543			543	6182	280		30				310	3977
29-Oct	1800	852	359	354	1565					58		58	6240	203			345			548	4525
30-Oct	1800	864	359	355	1578				233			233	6473	52			137		31	220	4745



# DRILLING FLUIDS RECAP FOR SANTOS LTD MARTHA 1

TOTAL
MATERIAL
COST



## PRODUCT SUMMARY

Operator: Santos Ltd Field/Area: Otway Basin

Well Name: Martha-1 Description: Wild Cat-Gas Well

**Contractor**: Diamond Offshore **Location**: VIC-P-44

SUMMARY OF PRODUCT USAGE	FOR INTERVAL	19/10/2	2004 - 2/11/2004,	0 - 1200 n
WATER-BASED MUD	SIZE	AMOUNT	UNIT COST	PROD COST
			(\$)	(\$)
1 - DUOTEC	25 KG BG	40	196.24	7849.60
2 - LIME	25 KG BG	1	10.06	10.06
3 - SODA ASH	25 KG BG	35	13.04	456.40
4 - CAUSTIC SODA (DRY)	25 KG DM	8	20.46	163.68
5 - ANTIFOAM A	5 GA CN	10	68.59	685.90
6 - SODIUM BICARBONATE	25 KG BG	25	10.64	266.00
7 - POLYPAC UL	25 KG BG	87	90.00	7830.00
8 - M-I BAR BULK	1 MT BK	62	210.00	12915.00
9 - M-I GEL BULK	1 MT BK	50	228.67	11433.50
10 - POTASSIUM CHLORIDE	1 MT BG	41	430.06	17632.46
11 - LEAD MUD ENGR	1 EA	16	630.00	10080.00
12 - GUAR GUM	25 KG BG	20	60.00	1200.00
13 - DUO-VIS	25 KG BG	84	227.00	19068.00
14 - GLUTE 25	25 LT CN	3	93.68	281.04
15 - POLY PLUS DRY	25 KG BG	37	85.80	3174.60
16 - SECOND MUD ENGR	1 EA	14	600.00	8400.00
17 - CONQOR 303A	55 GA DM	4	380.36	1521.44
18 - GLYDRIL LC	55 GA DM	68	575.81	39155.08
19 - GLYDRIL MC	220 KG DM	12	371.49	4457.88
20 - POTASSIUM HYDROXIDE	25 KG CN	15	31.28	469.20
SUB TOTAL:				147049.84
TAX:				0.00
WATER-BASED MUD TOTAL COST:				147049.84
TOTAL MILID COST FOR INITERVAL.				147040.94
TOTAL MUD COST FOR INTERVAL:  DRILLI  DRILLI	NG FLUIDS DATA MANA			147049.84 <b>14920</b>



Operator: Santos Ltd Well Name : Martha-1 Field/Area: Otway Basin **Description: Wild Cat-Gas Well** 

Location : VIC-P-44

# Cost **Analysis**

0 - 1200 m

### BREAKDOWN OF COST BY PRODUCT GROUP 19/10/2004 - 2/11/2004,

Water-Based Mud Products	\$	%
1-Common Chemicals	21486.18	14.6
2-Engineering	18480.00	12.6
3-Lubricant	46787.56	31.8
4-Visc/Fluid Loss	47381.10	32.2
5-Weight Material	12915.00	8.8

12.6%

**Water-Based Mud** 

147049.84

L.L.C.



# DRILLING FLUIDS RECAP FOR SANTOS LTD MARTHA 1

HYDRAULICS REPORT



# **HYDRAULICS SUMMARY**

Operator : Santos LtdField/Area : Otway BasinWell Name : Martha-1Description : Wild Cat-Gas Well

Contractor : Diamond Offshore Location : VIC-P-44

Date		20/10/2004	21/10/2004	22/10/2004	23/10/2004	24/10/2004	25/10/2004	26/10/2004	27/10/2004
Depth	m	86	123	410	628	628	628	725	1150
Days Since Spud		1	2	3	4	5	6	7	8
*RHEOLOGICAL P	ROPERTIES		_				*	,	
Mud Wt	lb/gal	8.8	8.8	8.8	8.8	8.8	8.9	9.0	9.0
Plastic Visc	cP	17	17	11	10	17	11	15	11
Yield Point	lb/100ft²	30	32	36	35	12	11	18	20
3-rpm Rdg	Fann deg	20	20	29	27	1	2	5	8
np Value		.4454	.4297	.3034	.2895	.6656	.585	.5406	.4381
Kp Value	lb•s^n/100ft²	3.1182	3.5859	7.5605	7.8935	.4874	.6113	1.2095	2.1523
na Value		.125	.134	.0771	.074	.7526	.511	.4093	.2752
Ka Value	lb•s^n/100ft²	17.4042	17.1491	27.287	25.5329	.3126	.9273	2.7366	5.4486
*FLOW DATA									
Flow Rate	gal/min	1026	1026	1077	0	0	0	923	898
Pump Pressure	psi	650	650	2400	0	0	0	1850	2400
Pump	hhp	389	*	1508	*	*	*	996	1257
*PRESSURE LOSSI									
Drill String	psi	261	*	691	*	*	*	1087	991
Bit	psi	273	*	466	*	*	*	834	789
Annulus	psi		*	18	*	*	*	32	47
Total System	psi	535	*	1176	*	*	*	1952	1828
*BIT HYDRAULIC									
Nozzles	1/32"	4x24	4x20	3x22			3x20	3x20	3x20
Nozzles	1/32"			20					
Bit Pressure	%	42	*	19	*	*	*	45	33
Bit	hhp	164	*	293	*	*	*	449	413
Bit HSI	(index)	.16	*	1.22	*	*	*	3.81	3.51
Jet Velocity	ft/s	57	*	74	*	*	*	98	95
Impact Force	lbf	870	*	1193	*	*	*	1383	1309
DRILL COLLARS A	ANNULUS								
Velocity	m/min	6	*	37	*	*	*	80	78
Critical Vel	m/min	119	*	144	*	*	*	103	107
Reynolds Number		12	*	221	*	*	*	1650	1506
Crit Re (Lam - Tran)		2860	*	3054	*	*	*	2729	2870
*DRILL PIPE ANNU	ULUS								
Velocity	m/min	6	*	29	*	*	*	55	54
Critical Vel	m/min	119	*	141	*	*	*	90	98
Reynolds Number		12	*	138	*	*	*	1133	916
Crit Re (Lam - Tran)		2860	*	3054	*	*	*	2729	2870
*HOLE CLEANING									
Slip Velocity	m/min	4	*	5	*	*	*	6	5
Rising Velocity	m/min	2	*	24	*	*	*	49	48
Lifting Capacity	%	30	*	84	*	*	*	89	90
Cutting Conc	%	18.62	*	1.51	*	*	*	0.55	0.56
Penetration Rate	m/h	20	20	20	0	0	0	13.5	13.5
CASING SHOE PRI									
ECD	lb/gal	8.8	*	8.84	*	*	*	9.15	9.18
ECD+Cuttings	lb/gal	11.03	*	9.02	*	*	*	9.22	9.25
TOTAL DEPTH PR				-					
ECD	lb/gal	8.81	*	9.01	*	*	*	9.21	9.23
ECD+Cuttings	lb/gal	11.05	*	9.19	*	*	*	9.28	9.3
M-I L.L.C.	14920		DRIL	LING FLUID	S DATA MA	ANAGEMEN	NT SYSTEM	l	

1



# **HYDRAULICS SUMMARY**

Operator : Santos LtdField/Area : Otway BasinWell Name : Martha-1Description : Wild Cat-Gas Well

Contractor : Diamond Offshore Location : VIC-P-44

Date Date			29/10/2004	30/10/2004	31/10/2004	1/11/2004	2/11/2004	
Depth	m	1285	1760	1800	1800	1800	1200	
Days Since Spud		9	10	11	12	13	14	
*RHEOLOGICAL PR	OPERTIES		10	11	12	13	11	
Mud Wt	lb/gal	9.7	10.3	10.5	10.5	10.5	10.5	
Plastic Visc	cP	13	16	16	16	16.5	20	
Yield Point	lb/100ft <sup>2</sup>	20	16	22	21	21	25	
3-rpm Rdg	Fann deg	9	7	7	7	7	9	
np Value	1 dim deg	.4792	.585	.507	.5185	.5185	.5305	
	lb•s^n/100ft²	1.7737	.8892	1.7175	1.5565	1.5565	1.756	
na Value	10 3 11/10011	.2676	.2848	.3392	.3133	.3133	.3025	
	lb•s^n/100ft²	6.2066	4.6939	4.2947	4.4804	4.4804	5.8625	
*FLOW DATA	10 5 11/10010	0.2000	1.0737	1.25 17	1.1001	1.1001	3.0023	
Flow Rate	gal/min	876	876	0	0	0	0	
Pump Pressure	psi	3250	3250	0	0	0	0	
Pump	hhp	1661	1661	*	*	*	*	
*PRESSURE LOSSES		1001	1001					
Drill String	psi	1154	1657	*	*	*	*	
Bit	psi	1213	1288	*	*	*	*	
Annulus	psi	56	61	*	*	*	*	
Total System	psi	2423	3007	*	*	*	*	
*BIT HYDRAULICS		2423	3007					
Nozzles	1/32"	5x14	5x14	5x14				
Nozzles	1/32"	JATT	JATT	JATT				
Bit Pressure	%	37	40	*	*	*	*	
Bit	hhp	620	658	*	*	*	*	
Bit HSI	(index)	5.26	5.59	*	*	*	*	
Jet Velocity	ft/s	114	114	*	*	*	*	
Impact Force	lbf	1644	1746	*	*	*	*	
DRILL COLLARS AT		1044	1740					
Velocity	m/min	76	76	*	*	*	*	
Critical Vel	m/min	108	93	*	*	*	*	
Reynolds Number	111/111111	1418	1830	*	*	*	*	
Crit Re (Lam - Tran)		2814	2669	*	*	*	*	
*DRILL PIPE ANNU	LUS	2011	2007					
Velocity	m/min	52	52	*	*	*	*	
Critical Vel	m/min	100	85	*	*	*	*	
Reynolds Number	211/111211	856	1122	*	*	*	*	
Crit Re (Lam - Tran)		2814	2669	*	*	*	*	
*HOLE CLEANING								
Slip Velocity	m/min	5	5	*	*	*	*	
Rising Velocity	m/min	48	47	*	*	*	*	
Lifting Capacity	%	91	91	*	*	*	*	
Cutting Conc	%	0.41	0.86	*	*	*	*	
Penetration Rate	m/h	9.75	20.42	0	0	0	0	
CASING SHOE PRES								
ECD	lb/gal	9.9	10.46	*	*	*	*	
ECD+Cuttings	lb/gal	9.95	10.55	*	*	*	*	
TOTAL DEPTH PRE								
ECD	lb/gal	9.95	10.5	*	*	*	*	
ECD+Cuttings	lb/gal	10.0	10.59	*	*	*	*	
M-I L.L.c.	14920			LING FLUID	S DATA MA	ANAGEME	NT SYSTEM	



# DRILLING FLUIDS RECAP FOR SANTOS LTD MARTHA 1

DRILLING
FLUIDS
SUMMARY



Operator :Santos LtdField/Area :Otway BasinWell Name :Martha-1Description :Wild Cat-Gas Well

Contractor : Diamond Offshore Location : VIC-P-44

Contractor.	Diamond Onsid	ле		LO	cation. Vic-i -4	<del>T</del>	
Date		19/10/2004	20/10/2004	21/10/2004	22/10/2004	23/10/2004	24/10/2004
Depth/TVD	m	145/145	86/86	122.5/122.5	410/410	628/628	628/628
Activity		Towing	Drilling	RIH	Drilling	Run Casing	Run BOP
Mud Type			SW/Gel Swee	SW/Gel Swee	SW/Gel Swee	SW/Gel Swee	SW/Gel Swee
Hole Size	in	36	36	17.5	17.5	17.5	12.25
Circ Volume	bbl	30	150	325	17.5	17.5	12.23
Flow Rate	gal/min	0	1026	1026	1077	0	0
Circ Pressure	psi	0	650	650	2400	0	0
Avg ROP	m/hr	0	20	20	20	0	0
Sample From	111/111	U	Pit 4	Pit 4	Pit 4	Pit 5	Pit 4
Flow Line Temp	°F		F1L4	F1L 4	FIL4	FIL 3	F1L 4
Mud Weight		@°F	8.8@60 °F	8.8@60 °F	8.8@60 °F	8.8@60 °F	8.8@ 54 °F
Funnel Viscosity	lb/gal	(й, г	> 120	> 120	> 100	8.8( <i>u</i> )60 F	56 56
	s/qt		17	17	> 100 11	10	17
PV	cP						17
YP	lb/100ft <sup>2</sup>		30	32	36	35	
R600/R300/R200		//	64/47/40	66/49/41	58/47/43	55/45/41	46/29/22
R100/R6/R3	44 /4 0 0 0 0	11	31/20/20	32/21/20	38/30/29	35/28/27	14/2/1
10s/10m/30m Gel	lb/100ft <sup>2</sup>	//	29/39/50	30/42/57	23/30/40	20/27/38	2/2/
API Fluid Loss	cc/30 min		14	15	18	16	10.5
HTHP Fluid Loss	cc/30 min		-	-	-	-	-
Cake API/HT	1/32"	/	2/-	2/-	2/-	2/-	1/-
Solids	%Vol		4	5	4	4	1
Oil/Water	%Vol	/	/96	/95	/96	/96	/99
Sand	%Vol		0				
MBT	lb/bbl		27	30	30	30	2
рН			9.5	9.5	9.5	9.5	9.2
Alkal Mud (Pm)			0.75	0.8	0.65	0.6	
Pf/Mf		/	0.52/1.12	0.5/0.9	0.35/0.75	0.3/0.9	0.15/0.6
Chlorides	mg/l		1000	1000	300	300	30000
Hardness Ca	1115/1		40	40	40	60	240
KCl	Wt %		10	10	10	00	6
Glycol	Vol %						0.5
Grycor	V 01 70						0.5
							U
Daily Mud Cost	\$	0.00	5815.03	3138.18	7148.68	2882.85	10080.74
Cuml Mud Cost	<u> </u>	0.00	5815.03	8953.21	16101.89	18984.74	29065.48
	<b></b>	0,00		0,00.00			_,
Sales Engineer		Gordon /Jasdeep	Gordon /Jasdeep	Gordon /Jasdeep	Gordon /Jasdeep	Gordon /Jasdeep	Gordon /Jasdeep
Products Used			Soda / 2	Soda / 1	Lime / 1	Soda / 4	Duotec / 10
			Caustic / 2	Caustic / 1	Soda / 6	Gel / 7	Pac UL / 16
			Gel / 9	Gel / 4	Caustic / 5	425 / 1	KCl / 11
			425 / 3	425 / 1	Gel / 24	SECENGR / 1	425 / 1
			SECENGR / 3	BUARGUM / 10			PHPA / 8
				SECENGR / 1	GUARGUM / 4		SECENGR / 1
					SECENGR / 1		KOH / 1
ļ			I.	I	I.		

#### **REMARKS**

19/10/2004: 20/10/2004: 21/10/2004: 22/10/2004:

23/10/2004: 24/10/2004:

M-I L.L.C.

DRILLING FLUIDS DATA MANAGEMENT SYSTEM

14920



Operator :Santos LtdField/Area :Otway BasinWell Name :Martha-1Description :Wild Cat-Gas Well

Contractor : Diamond Offshore Location : VIC-P-44

Contractor : B	amena eneme	,,,,			oution i vie i i	•	
Date		25/10/2004	25/10/2004	26/10/2004	27/10/2004	27/10/2004	27/10/2004
Depth/TVD	m	628/628	628/628	725/725	1150/1150	1026/1026	976/976
Activity		RIH	RIH	Drilling	Drilling	Drilling	Drilling
Mud Type		Glydril	Glydril	Glydril	Glydril	Glydril	Glydril
Hole Size	in	12.25	12.25	12.25	12.25	12.25	12.25
Circ Volume	bbl			934	1004	1004	1004
Flow Rate	gal/min	0	0	923	898	898	898
Circ Pressure	psi	0	0	1850	2400	2400	2400
Avg ROP	m/hr	0	0	13.5	13.5	13.5	13.5
Sample From		Pit 4	Pit#5	Active	Flowline	Flowline	Flowline
Flow Line Temp	°F			98	102	92	84
Mud Weight	lb/gal	8.9@64 °F	8.9@68 °F	9.0 @ °F	9.0@102 °F	8.95@92 °F	8.7@ °F
Funnel Viscosity	s/qt	45	59	47	42	44	40
PV	сP	11	12	15	11	10	7
YP	lb/100ft <sup>2</sup>	11	14	18	20	16	12
R600/R300/R200		33/22/18	38/26/21	48/33/28	42/31/26	36/26/22	26/19/17
R100/R6/R3		12/3/2	15/4/3	21/8/5	21/10/8	17/9/7	13/5/4
10s/10m/30m Gel	lb/100ft <sup>2</sup>	3/3/4	3/5/6	6/8/9	9/10/12	8/10/11	4/5/6
API Fluid Loss	cc/30 min	9.2	9.5	7.6	14.4	12.6	12.6
HTHP Fluid Loss	cc/30 min	-	-				
Cake API/HT	1/32"	1/-	1/-	1/	1/	1/	1/
Solids	%Vol	1	1	1	2	2	2
Oil/Water	%Vol	/99	0/99	/99	/98	/98	/98
Sand	%Vol	0	0	0.75	2	1.5	1
MBT	lb/bbl	3	2	6.25	3.5	3.5	3.5
pH		9.5	9.5	9.4	8	8	8
Alkal Mud (Pm)		0.15	0.5	0.3	0	0	0
Pf/Mf		0.25/0.85	0.3/0.9	0.2/0.6	0/0.3	0.05/0.35	0/0.2
Chlorides	mg/l	37500	38000	38000	14000	14000	14000
Hardness Ca		200	200	200	1600	1180	840
KCl	Wt %	7.5	7.5	7.5	0	0	0
Glycol	Vol %	0.5	0.5	3	0	0	0
		3.0	3.0				
		220	220				
Daily Mud Cost	\$	31640.72		9006.70	16476.94		
Cuml Mud Cost	\$	60706.20		69712.90	86189.84		
Sales Engineer		Gordon /Jasdeep	Gordon /Jasdeep	Gordon /Nick Co	Gordon /Nick Co	Gordon /Nick Co	Gordon /Nick Co
Products Used		Duotec / 16		Duotec / 9	Duotec / 5		
		Soda / 4		Pac UL / 6	DEFOAM / 8		
		Pac UL / 16		Gel / 2	Gel / 2		
		KCl / 10		KC1 / 2	425 / 1		
		425 / 1		425 / 1	DuoVis / 58		
		PHPA / 8		DuoVis / 14	Glut / 1		
		SECENGR / 1		PHPA / 11	SECENGR / 1		
		GLY LC / 36		SECENGR / 1			
		KOH / 2		KOH / 1			

REMARKS
---------

25/10/2004:

26/10/2004: 27/10/2004:

M-I LLC. DRILLING FLUIDS DATA MANAGEMENT SYSTEM 14920



Operator :Santos LtdField/Area :Otway BasinWell Name :Martha-1Description :Wild Cat-Gas Well

Contractor : Diamond Offshore Location : VIC-P-44

Contractor.	Diamond Onsid	ле		LU	cation. Vic-i -4	<del></del>	
Date		28/10/2004	28/10/2004	29/10/2004	29/10/2004	29/10/2004	30/10/2004
Depth/TVD	m	1285/1285	1262/1262	1760/1760	1634/1634	1488/1488	1800/1800
Activity		Drilling	Drilling	РООН	РООН	POOH	RIH wiper trip
Mud Type		Seawater/Du	Seawater/Du	Glydril	Glydril	Glydril	Glydril
Hole Size	in	12.25	12.25	12.25	12.25	12.25	12.25
Circ Volume	bbl	1087	1087	1211	1211	1211	1223
Flow Rate	gal/min	876	876	876	876	876	0
Circ Pressure	psi	3250	3250	3250	3250	3250	0
Avg ROP	m/hr	9.75	9.75	20.42	20.42	20.42	0
Sample From	111/111	Active	Active	Active	Active	Active	Active
Flow Line Temp	°F	105	Active	125	116	114	Active
Mud Weight	lb/gal	9.7@100 °F	9.5@80 °F	10.3@120 °F	10.3@108 °F	10.3@105 °F	10.5@ °F
Funnel Viscosity	s/qt	39	40	44	50	59	52
PV	cP	13	9	16	17	20	16
YP	1b/100ft <sup>2</sup>	20	17	16	21	25	22
	10/10011						
R600/R300/R200		46/33/28	35/26/22	48/32/26	55/38/31	65/45/36	54/38/32
R100/R6/R3	11. /1.00.02	23/11/9	18/9/7	19/9/7	23/10/8	26/11/9	23/9/7
10s/10m/30m Gel	lb/100ft²	10/11/13	8/9/10	9/14/18	10/18/21	13/21/23	9/20/33
API Fluid Loss	cc/30 min	15.3	14.2	9.2	12	14	11
HTHP Fluid Loss	cc/30 min	1/	1/	1/	1/	1/	1/
Cake API/HT	1/32"	1/	1/	1/	1/	1/	1/
Solids	%Vol	7	4	10	9	7	10
Oil/Water	%Vol	/93	/96	/90	/91	/93	/90
Sand	%Vol	2	1.5	1.5	1.5	2	1.25
MBT	lb/bbl	7.5	3.5	15	12.5	12.5	15
pН		8.1	8	8	8	8	8.1
Alkal Mud (Pm)		0		0	0	0	0
Pf/Mf		0/0.4	0.05/0.4	0/0.4	0.05/0.5	0/0.4	0/0.3
Chlorides	mg/l	16000	14000	35000	39000	40000	35000
Hardness Ca	_	1600	1440	1440	1520	1520	1600
KC1	Wt %			6	6.5	6.5	4
Glycol	Vol %	2.5		3.4	3.7	2.5	3.5
Daily Mud Cost	\$	23221.60		14342.32			4993.28
Cuml Mud Cost	\$	109411.44		123753.76			128747.04
Sales Engineer		Gordon /Nick Co	Gordon /Nick Co	Gordon /Nick Co	Gordon /Nick Co	Gordon /Nick Co	Gordon /Nick Co
Products Used		Soda / 8		Soda / 10			Pac UL / 10
		DEFOAM / 2		Pac UL / 31			BARITE / 7
		Pac UL / 8		BARITE / 4			425 / 1
		BARITE / 14.5		KCl / 10			DuoVis / 6
		KCl / 8		425 / 1			SECENGR / 1
		425 / 1		PHPA / 4			KOH / 1
		DuoVis / 6		SECENGR / 1			11011 / 1
		PHPA / 6		GLY MC / 12			
		SECENGR / 1		KOH / 8			
		GLY LC / 22		ROII / 0			
		JL I LC / 22					
				1			

			3			
M-I LLC.	DRILLIN	IG FLUIDS DAT	A MANAGEMEN	IT SYSTEM	1492	20
30/10/2004:						
29/10/2004:						
28/10/2004:						
REMARKS						



Operator :Santos LtdField/Area :Otway BasinWell Name :Martha-1Description :Wild Cat-Gas Well

Contractor : Diamond Offshore Location : VIC-P-44

Date		31/10/2004	1/11/2004	2/11/2004		
Depth/TVD	m	1800/1800	1800/1800	1200/1200		
Activity		Logging	Logging	Cement Plugs		
Mud Type		Glydril	Glydril	Glydril		
Hole Size	in	12.25	0	0		
Circ Volume	bbl	1353	1353	1096		
Flow Rate	gal/min	0	0	0		
Circ Pressure	psi	0	0	0		
Avg ROP	m/hr	0	0	0		
Sample From	111/111	Active	Active	Active		
Flow Line Temp	°F	Tictive	Houve	Tictive		
Mud Weight	lb/gal	10.5@95 °F	10.5@ °F	10.5@ °F		
Funnel Viscosity	s/qt	45	45	47		
PV	cP	16	16	20		
YP	lb/100ft <sup>2</sup>	21	21	25		
	10/100π²					
R600/R300/R200		53/37/30	53/37/30	65/45/35		
R100/R6/R3	11 /1 0 0 0 0	21/9/7	21/9/7	26/11/9		
10s/10m/30m Gel	lb/100ft <sup>2</sup>	9/18/23	9/18/23	//		
API Fluid Loss	cc/30 min	9.6	9.6	14		
HTHP Fluid Loss	cc/30 min					
Cake API/HT	1/32"	2/	2/	2/		
Solids	%Vol	10	10	10		
Oil/Water	%Vol	/90	/90	/90		
Sand	%Vol	1.25	1.25	1		
MBT	lb/bbl	15	15	15		
pH	20,002	8.7	8.7	11.5		
Alkal Mud (Pm)		0.7	0.7	11.0		
Pf/Mf		0.05/0.5	0.05/0.5	0.05/0.5		
Chlorides	mg/l	37000	37000	37000		
Hardness Ca	1118/1	1080	1080	1200		
KCl	Wt %	4	4	4		
	Vol %	3.2	3.2	3.2		
Glycol	V O1 %	3.2	3.2	3.2		
Daily Mud Cost	\$	7050.66	8647.34	2604.80		
Cuml Mud Cost	\$	135797.70	144445.04	147049.84		
Sales Engineer		Gordon /Nick Co	Gordon Howie	Gordon Howie		
Products Used		425 / 1	BARITE / 36	Bicarb / 25		
		SECENGR / 1	Gel / 2	425 / 1		
		GLY LC / 10	425 / 1	Glut / 2		
		KOH / 2		CONO303 / 4		
				221,2302,1		

#### REMARKS

31/10/2004: 1/11/2004: 2/11/2004:

M-I LLC. DRILLING FLUIDS DATA MANAGEMENT SYSTEM 14920



# DRILLING FLUIDS RECAP FOR SANTOS LTD MARTHA 1

PRODUCT CONSUMPTION



# **Product Consumption**

Operator :Santos LtdContractor:Diamond OffshoreWell Name :Martha-1M-I Engineer:Gordon HowieLocation :VIC-P-44Rig Name:Ocean PatriotField/Area:Otway BasinStock Point:Melbourne

							ATES					
Product	Product	Oct	19, 2004	Oct 2	20, 2004	Oct 2	1, 2004	Oct 2	22, 2004	Oct	23, 2004	Page
Name	Price	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Totals
CALCIUM CHLORIDE	11.54		0.00		0.00		0.00		0.00		0.00	0.00
CITRIC ACID	36.79		0.00		0.00		0.00		0.00		0.00	0.00
DUOTEC	196.24		0.00		0.00		0.00		0.00		0.00	0.00
LIME	10.06		0.00		0.00		0.00	1	10.06		0.00	10.06
OS-1	33.54		0.00		0.00		0.00		0.00		0.00	0.00
SODA ASH	13.04		0.00	2	26.08	1	13.04	6	78.24	4	52.16	169.52
MIX II MEDIUM	26.72		0.00		0.00		0.00		0.00		0.00	0.00
CAUSTIC SODA (DRY)	20.46		0.00	2	40.92	1	20.46	5	102.30		0.00	163.68
KWIK SEAL FINE	28.00		0.00		0.00		0.00		0.00		0.00	0.00
ANTIFOAM A	68.59		0.00		0.00		0.00		0.00		0.00	0.00
SODIUM BICARBONATE	10.64		0.00		0.00		0.00		0.00		0.00	0.00
POLYPAC UL	90.00		0.00		0.00		0.00		0.00		0.00_	0.00
M-I BAR BULK	210.00		0.00		0.00		0.00		0.00		0.00	0.00
M-I GEL BULK	228.67		0.00	9	_ =	4	914.68	24		7	1600.69	10061.48
CONQOR 404	1034.93		0.00		$ \frac{0.00}{0.00}$		$\frac{0.00}{0.00}$		$\frac{0.00}{0.00}$		0.00	0.00
POTASSIUM CHLORIDE	430.06		0.00		0.00		0.00		0.00		0.00	0.00
GUAR GUM	60.00		0.00		0.00	16		4	240.00		0.00	1200.00
NUT PLŪG MEDIŪM	14.61		0.00		0.00		0.00		0.00		0.00	0.00
ZINC OXIDE	0.00		0.00		0.00		0.00		0.00		0.00	0.00
M-I BAR	4.74		0.00		0.00		0.00		0.00		0.00	0.00
DUO-VIS	227.00		0.00		0.00		0.00		0.00		0.00	0.00
M-I GEL NT	9.18		0.00		0.00		0.00		0.00		0.00	0.00
PIPE-LAX W	354.95		0.00		0.00		0.00		0.00		0.00	0.00
GLUTE 25	93.68		0.00		0.00		0.00		0.00		0.00	0.00
KWIK SEAL MEDIUM	28.00		0.00		0.00		0.00		0.00		0.00	0.00
MIX II FINE	25.68		0.00		0.00		0.00		0.00		0.00	0.00
POLY PLUS DRY	85.80		0.00		$ \frac{0.00}{0.00}$		$\frac{0.00}{0.00}$		$ \frac{0.00}{0.00}$		0.00	0.00
M-I GEL	5.06		0.00		$ \frac{0.00}{0.00}$		$\frac{0.00}{0.00}$		$ \frac{0.00}{0.00}$		0.00	0.00
CONQOR 303A	380.36		0.00		$ \frac{0.00}{0.00}$		$\frac{0.00}{0.00}$		$ \frac{0.00}{2.22}$		$ \frac{0.00}{0.00}$	0.00
DEFOAM A	68.59		0.00		$\frac{0.00}{0.00}$		$\frac{0.00}{0.00}$		$\frac{0.00}{0.00}$		$ \frac{0.00}{0.00}$	0.00
GLYDRIL LC	575.81		0.00		$\frac{0.00}{0.00}$		$\frac{0.00}{0.00}$		$\frac{0.00}{0.00}$		$ \frac{0.00}{0.00}$	0.00
GLYDRIL MC	371.49		0.00		$\frac{0.00}{0.00}$		$\frac{0.00}{0.00}$		$\frac{0.00}{0.00}$		$ \frac{0.00}{0.00}$	0.00
KWIK SEAL COARSE	28.00		0.00		$\frac{0.00}{0.00}$		$\frac{0.00}{0.00}$		$\frac{0.00}{0.00}$		$ \frac{0.00}{0.00}$	0.00
IDCAP D	198.95		0.00		$ \frac{0.00}{0.00}$		$\frac{0.00}{0.00}$		$\frac{0.00}{0.00}$		$ \frac{0.00}{0.00}$	0.00
MIX II COARSE	25.61				$ \frac{0.00}{0.00}$		0.00				$ \frac{0.00}{0.00}$	0.00
POTASSIUM HYDROXIDE	$-\frac{31.28}{90.39}$		0.00		$\frac{0.00}{0.00}$		$\frac{0.00}{0.00}$		$\frac{0.00}{0.00}$		$ \frac{0.00}{0.00}$	$ \frac{0.00}{0.00}$
HIBTROL OMYA CARB 40	$-\frac{90.39}{20.00}$		$ \frac{0.00}{0.00}$		$\frac{0.00}{0.00}$		$\frac{0.00}{0.00}$		$\frac{0.00}{0.00}$		$ \frac{0.00}{0.00}$	-0.00
LEAD MUD ENGR			0.00		1890.00						+	$\frac{0.00}{3780.00}$
LEAD MUD ENGR LEAD MUD ENGR-STANDBY	630.00 550.00			3	0.00	<sup>1</sup> -	$\frac{-630.00}{0.00}$	<sup>1</sup>	$-\frac{630.00}{0.00}$	<sup>1</sup>	$-\frac{630.00}{0.00}$	
SECOND MUD ENGR			0.00								L	0.00
	600.00		$ \frac{0.00}{0.00}$		_ <u>1800.00</u> 	<sup>1</sup> -	$\frac{-600.00}{0.00}$	<sup>1</sup>	$-\frac{600.00}{0.00}$	<sup>1</sup>	$-\frac{600.00}{0.00}$	3600.00
SECOND MUD ENGR-STANDBY	550.00		0.00		0.00		0.00		0.00			0.00
	-											
	-											
	-										<del> </del>	
	-										<del> </del>	
Cumulative Engineering	1		0.00		3690.00		4920.00		6150.00		7380.00	7380.00
Daily Product			0.00		2125.03		1908.18		5918.68		1652.85	11604.74
Daily Sales Tax			0		0		0		0		0	0.00
<b>Cumulative Product</b>			0.00		2125.03		4033.21		9951.89		11604.74	11604.74
Cumulative Cost			0.00		5815.03		8953.21		16101.89		18984.74	18984.74



# **Product Consumption**

Operator :Santos LtdContractor:Diamond OffshoreWell Name :Martha-1M-I Engineer:Gordon HowieLocation :VIC-P-44Rig Name:Ocean PatriotField/Area:Otway BasinStock Point:Melbourne

							ATES					
Product	Previous	Oct 2	24, 2004	Oct 2	25, 2004	Oct 2	26, 2004	Oct 2	27, 2004	Oct 2	28, 2004	Page
Name	Page	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Totals
CALCIUM CHLORIDE	0.00	-	0.00		0.00		0.00		0.00		0.00	0.00
CITRIC ACID	0.00		0.00		0.00		0.00		0.00		0.00	0.00
DUOTEC	0.00	10	1962.40	16	3139.84	9	1766.16	5	981.20		0.00	7849.60
LIME	10.06		0.00		0.00		0.00		0.00		0.00	10.06
OS-1	0.00		0.00		0.00		0.00		0.00		0.00	0.00
SODA ASH	169.52		0.00	4	52.16		0.00		0.00	8	104.32	326.00
MIX II MEDIUM	0.00		0.00		0.00		0.00		0.00		0.00	0.00
CAUSTIC SODA (DRY)	163.68		0.00		0.00		0.00		0.00		0.00	163.68
KWIK SEAL FINE	0.00		0.00		0.00		0.00		0.00		0.00	0.00
ANTIFOAM A	0.00		0.00		0.00		0.00	8	548.72	2	137.18	685.90
SODIUM BICARBONATE	0.00		0.00		0.00		0.00		0.00		0.00	0.00
POLYPAC UL	0.00	16	1440.00	16		6			0.00	8		4140.00
M-I BAR BULK	0.00		0.00		0.00		0.00		0.00	15		3045.00
M-I GEL BULK	10061.4		0.00		0.00	2		2	457.34		0.00	10976.16
CONQOR 404	0.00		0.00		0.00		0.00		0.00		0.00	0.00
POTASSIUM CHLORIDE	0.00	11	4730.66	10		2	00011-		0.00	8		13331.86
GUAR GUM	1200.00		0.00		0.00		0.00		0.00		0.00	1200.00
NUT PLUG MEDIUM	0.00		0.00		0.00		0.00		0.00		0.00	0.00
ZINC OXIDE	0.00		0.00		0.00		0.00		0.00		0.00	0.00
M-I BAR	0.00		0.00		0.00		0.00		0.00		0.00	0.00
DUO-VIS	0.00		0.00		0.00	14	0 - 1 - 0 - 0	58		6		17706.00
M-I GEL NT	0.00		0.00		0.00		0.00		0.00		0.00	0.00
PIPE-LAX W	0.00		0.00		0.00		0.00		0.00		0.00	0.00
GLUTE 25	0.00		0.00		0.00		0.00	1	93.68		0.00	93.68
KWIK SEAL MEDIUM	0.00		0.00		0.00		0.00		0.00		0.00	0.00
MIX II FINE	0.00	0	0.00		0.00		0.00		0.00		0.00	0.00
POLY PLUS DRY	0.00	8	686.40	8		11	943.80		0.00	6		2831.40
M-I GEL	0.00		0.00		0.00		0.00		0.00		0.00	0.00
CONQOR 303A	0.00		0.00		0.00		0.00		0.00		0.00	0.00
DEFOAM A GLYDRIL LC	0.00		0.00	36	0.00 20729.1		0.00		0.00	22	0.00 12667.82	0.00 33396.98
GLYDRIL IC GLYDRIL MC	0.00		0.00	30	0.00		0.00		0.00		0.00	0.00
KWIK SEAL COARSE	0.00		0.00		0.00		0.00		0.00		0.00	0.00
IDCAP D	0.00		0.00		0.00		0.00		0.00		0.00	0.00
MIX II COARSE	0.00		0.00		0.00		0.00		0.00		0.00	0.00
POTASSIUM HYDROXIDE	0.00	1	31.28	2		1	31.28		0.00		0.00	125.12
HIBTROL	0.00	1	0.00		0.00	1	0.00		0.00		0.00	0.00
OMYA CARB 40	0.00		0.00		0.00		0.00		0.00		0.00	0.00
LEAD MUD ENGR	3780.00	1	630.00	1	630.00	1	630.00	1	630.00	1	630.00	6930.00
LEAD MUD ENGR-STANDBY	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	0.00
SECOND MUD ENGR	3600.00	1	600.00	1	600.00	1	600.00	1	600.00	1	600.00	6600.00
SECOND MUD ENGR-STANDBY	0.00	1	0.00		0.00		0.00	1	0.00		0.00	0.00
SECOND MOD ENGR-STANDET	0.00		0.00		0.00		0.00		0.00		0.00	0.00
Cumulative Engineering			8610.00	1	9840.00		11070.00		12300.00		13530.00	13530.00
			8850.74									
Daily Product				3	0410.72		7776.70		15246.94		21991.60	95881.44
Daily Sales Tax			0		0		0		0		0	0.00
Cumulative Product		2	20455.48	5	0866.20	:	58642.90	-	73889.84		95881.44	95881.44
Cumulative Cost	1		29065.48		0706.20		69712.90		36189.84	1	109411.44	109411.44



# **Product Consumption**

Operator :Santos LtdContractor:Diamond OffshoreWell Name :Martha-1M-I Engineer:Gordon HowieLocation :VIC-P-44Rig Name:Ocean PatriotField/Area:Otway BasinStock Point:Melbourne

		DATES										
Product	Previous	Oct	29, 2004	Oct 3	30, 2004	Oct 3	1, 2004	Nov	1, 2004	Nov	2, 2004	Page
Name	Page	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Totals
CALCIUM CHLORIDE	0.00		0.00		0.00		0.00		0.00		0.00	0.00
CITRIC ACID	0.00		0.00		0.00		0.00		0.00		0.00	0.00
DUOTEC	7849.60		0.00		0.00		0.00		0.00		0.00	7849.60
LIME	10.06		0.00		0.00		0.00		0.00		0.00	10.06
OS-1	0.00		0.00		0.00		0.00		0.00		0.00	0.00
SODA ASH	326.00	10	130.40		0.00		0.00		0.00		0.00	456.40
MIX II MEDIUM	0.00		0.00		0.00		0.00		0.00		0.00	0.00
CAUSTIC SODA (DRY)	163.68		0.00		0.00		0.00		0.00		0.00	163.68
KWIK SEAL FINE	0.00		0.00		0.00		0.00		0.00		0.00	0.00
ANTIFOAM A	685.90		0.00		0.00		0.00		0.00		0.00	685.90
SODIUM BICARBONATE	0.00		0.00		0.00		0.00		0.00	25	266.00	266.00
POLYPAC UL	4140.00	31	2790.00	10	900.00		0.00		0.00		0.00	7830.00
M-I BAR BULK	3045.00	4	840.00	7	1470.00		0.00	36	7560.00		0.00	12915.00
M-I GEL BULK	10976.1		0.00		0.00		0.00	2	457.34		0.00	11433.50
CONQOR 404	0.00		0.00		0.00		0.00		0.00		0.00	0.00
POTASSIUM CHLORIDE	13331.8	10	4300.60		0.00		0.00		0.00		0.00	17632.46
GUAR GUM	1200.00		0.00		0.00		0.00		0.00		0.00	1200.00
NUT PLUG MEDIUM	0.00		0.00		0.00		0.00		0.00		0.00	0.00
ZINC OXIDE	0.00		0.00		0.00		0.00		0.00		0.00	0.00
M-I BAR	0.00		0.00		0.00		0.00		0.00		0.00	0.00
DUO-VIS	17706.0		0.00	6	1362.00		0.00		0.00		0.00	19068.00
M-I GEL NT	0.00		0.00		0.00		0.00		0.00		0.00	0.00
PIPE-LAX W	0.00		0.00		0.00		0.00		0.00		0.00	0.00
GLUTE 25	93.68		0.00		0.00		0.00		0.00	2	187.36	281.04
KWIK SEAL MEDIUM	0.00		0.00		0.00		0.00		0.00		0.00	0.00
MIX II FINE	0.00		0.00		0.00		0.00		0.00		0.00	0.00
POLY PLUS DRY	2831.40	4	343.20		0.00		0.00		0.00		0.00	3174.60
M-I GEL	0.00		0.00		0.00		0.00		0.00		0.00	0.00
CONQOR 303A	0.00		0.00		0.00		0.00		0.00	4	1521.44	1521.44
DEFOAM A	0.00		0.00		0.00		0.00		0.00		0.00	0.00
GLYDRIL LC	33396.9		0.00		0.00	10	5758.10		0.00		0.00	39155.08
GLYDRIL MC	0.00	12	4457.88		0.00		0.00		0.00		0.00	4457.88
KWIK SEAL COARSE	0.00		0.00		0.00		0.00		0.00		0.00	0.00
IDCAP D	0.00		0.00		0.00		0.00		0.00		0.00	0.00
MIX II COARSE	0.00		0.00		0.00		0.00		0.00		0.00	0.00
POTASSIUM HYDROXIDE	125.12	8	250.24	1	31.28	2	62.56		0.00		0.00	469.20
HIBTROL	0.00		0.00		0.00		0.00		0.00		0.00	0.00
OMYA CARB 40	0.00		0.00		0.00		0.00		0.00		0.00	0.00
LEAD MUD ENGR	6930.00	1	630.00	1	630.00	1	630.00	1	630.00	1	630.00	10080.00
LEAD MUD ENGR-STANDBY	0.00		0.00		0.00		0.00		0.00		0.00	0.00
SECOND MUD ENGR	6600.00	1	600.00	1	600.00	1	600.00		0.00		0.00	8400.00
SECOND MUD ENGR-STANDBY	0.00		0.00		0.00		0.00		0.00		0.00	0.00
			-									
Cumulative Engineering		1	14760.00	1	5990.00		17220.00		17850.00		18480.00	18480.00
Daily Product		]	13112.32		3763.28		5820.66		8017.34		1974.80	128569.84
Daily Sales Tax			0		0		0		0		0	0.00
<b>Cumulative Product</b>		10	08993.76	11	2757.04	1	18577.70	13	26595.04	1	128569.84	128569.84
Cumulative Cost		12	23753.76	12	8747.04	1,	35797.70	14	44445.04		147049.84	147049.84



# DRILLING FLUIDS RECAP FOR SANTOS LTD MARTHA 1

DAILY MUD REPORTS



 
 WATER-BASED MUD REPORT No.

 Date
 19/10/2004
 Depth/TVD
 0 m / 0 m

 Spud Date
 20/10/2004
 Mud Type
 Water Depth Activity Towing 55

Field/Area: Otway Basin Operator: Santos Ltd Report For: Chris Wilson/John Wrenn **Description:** Wild Cat-Gas Well Well Name: Martha-1 **Location :** VIC-P-44

**Contractor:** Diamond Offshore **M-I Well No.**: 14920 Report For: Sean Defritas/Ray Breaud

DRILLING AS	SEMBLY	CASING	MUD VOLUME (bbl)	CIRCULATION	ON DATA
Bit Size 36 in Hole Opener		Surface	Hole	Pump Make OILWELL 17	700PT NATIONAL 12P-160
Nozzles 1/32"				Pump Size 6 X 12.i	in 6 X 12.in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap ga	l/stk gal/stk
in	m			Pump stk/min	
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	gal/min
in	m			Bottoms Up	_
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time	
in	m			Circulating Pressure	·
	MUD PR	OPERTIES		PRODUCTS USE	D LAST 24 HRS

ln .	m			Circulating Pressur		
	MUD PROPE	RTIES		PRODUCTS U	ISED LAST 24 HF	RS
Sample From				Products	Size	Amt
Flow Line Temp	°F					
Depth/TVD	m	145/145				
Mud Weight	lb/gal					
Funnel Viscosity	s/qt					
Rheology Temp	°F					
R600/R300						
R200/R100						
R6/R3						
PV	cP					
YP	lb/100ft <sup>2</sup>					
10s/10m/30m Gel	lb/100ft <sup>2</sup>					
API Fluid Loss	cc/30 min					
HTHP FL Temp	cc/30 min					
Cake API/HTHP	1/32"					
Solids	%Vol					
Oil/Water	%Vol					
Sand	%Vol			SOLIDS EQUIP	Size	Hr
MBT	lb/bbl			VSM Thule Shake		0
pН				VSM Thule Shake		0
Alkal Mud (Pm)				VSM Thule Shake		0
Pf/Mf				VSM Thule Shake		0
Chlorides	mg/l			D-Sander		0
Hardness Ca	mg/l			D-Silter		0
KCl	Wt %					
Glycol	Vol %					
					TY SPECIFICATION	NS
				Weight		
				Viscosity		
				Filtrate		

**REMARKS AND TREATMENT** 

**REMARKS** 

TIME DISTR L	DISTR Last 24 Hrs MUD VOL ACCT		(bbl)	SOLIDS ANALYSIS (%/lb/bbl)		MUD RHEOLOGY & HYDRAULICS	
Rig Up/Service		Oil Added	0	NaCl	/	np/na Values	
Drilling		Water Added	0	KCl	/	kp/ka (lb•s^n/100ft	(2)
Tripping		Mud Received	0	Low Gravity	/	Bit Loss (psi / %)	
Non-Productive Tim		Dumped	0	Bentonite	/	Bit HHP (hhp/HS	I)
		Shakers	0	Drill Solids	/	Bit Jet Vel (m/s)	
		Evaporation	0	Weight Material	/	Ann. Vel DP (m/mii	n)
		Centrifuge	0	Chemical Conc	- /	Ann. Vel DC (m/mi	n)
		Formation	0	Inert/React		Crit Vel DP (m/min	1)
		Left in Hole	0	Average SG		Crit Vel DC (m/mir	1)
		Other	0	Carb/BiCarb (m mole/L)	/		
M LENCE / PHONE		DIC DUONE	WAREHOUSE	DHONE	DAILVICOST	CHMULATIVE COST	

M-I ENGR / PHONE **WAREHOUSE PHONE CUMULATIVE COST RIG PHONE** DAILY COST Jasdeep Singh 61-8-9325 4822 \$ 0.00 \$ 0.00 Gordon Howie 61-8-6363 8872



 Date
 20/10/2004
 Depth/TVD
 95 m / 95 m

 Spud Date
 20/10/2004
 Mud Type
 SW/Gel Sweeps

 Water Depth
 55
 Activity
 Drilling

Operator: Santos Ltd Field/Area: Otway Basin
Report For: Chris Wilson/John Wrenn Description: Wild Cat-Gas Well
Woll Name: Morths 1

Well Name: Martha-1

Contractor: Diamond Offshore

Report For: Sean Defritas/Ray Breaud

Location: VIC-P-44

M-I Well No.: 14920

DRILLING AS	SSEMBLY	CASING	MUD VOLUME (bbl)	CIRCULATION DATA			
Bit Size 36 in Hole C	Opener	Surface	Hole	Pump Make OILWELL	1700PT   NATIONAL 12P-160		
Nozzles 4x24 / 1/32	2"		75.6	Pump Size 6 X 1	2.in 6 X 12.in		
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap 4.274	gal/stk 4.274 gal/stk		
5 in	26 m		150.4	Pump stk/min 80@9	07% 80@97%		
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	1026 gal/min		
in	m		226	Bottoms Up	3 min 717 stk		
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time	9.3 min 2220 stk		
9.5 in	40 m		640	Circulating Pressure	650 psi		

9.5 in	40 m		640	Circulating Pressu	re 650 psi	
	MUD PROPE	RTIES		PRODUCTS U	JSED LAST 24 HR	S
Sample From		Pit 4@23:45		Products	Size	Amt
Flow Line Temp	°F	-		SODA ASH	25 KG BG	2
Depth/TVD	m	86/86		CAUSTIC SODA (DRY)	25 KG DM	2
Mud Weight	lb/gal	8.8@60°F		M-I GEL BULK	1 MT BK	9
Funnel Viscosity	s/qt	> 120		LEAD MUD ENGR	1 EA	3
Rheology Temp	°F	60		SECOND MUD ENGR	1 EA	3
R600/R300		64/47				
R200/R100		40/31				
R6/R3		20/20				
PV	cP	17				
YP	lb/100ft <sup>2</sup>	30				
10s/10m/30m Gel	lb/100ft <sup>2</sup>	29/39/50				
API Fluid Loss	cc/30 min	14				
HTHP FL Temp	cc/30 min	-@-°F				
Cake API/HTHP	1/32"	2/-				
Solids	%Vol	4				
Oil/Water	%Vol	/96				
Sand	%Vol	0		SOLIDS EQUIP	Size	Hr
MBT	lb/bbl	27		VSM Thule Shake		0
pH		9.5		VSM Thule Shake		0
Alkal Mud (Pm)		0.75		VSM Thule Shake		0
Pf/Mf		0.52/1.12		VSM Thule Shake		0
Chlorides	mg/l	1000		D-Sander		0
Hardness Ca	mg/l	40		D-Silter		0
KC1	Wt %					
Glycol	Vol %					
				MUD PROPER	TY SPECIFICATION	NS
				Weight	8.8	
				Viscosity	> 100	
				Filtrate	NA	

#### **REMARKS AND TREATMENT**

Started filling pits with water at 18:30 hrs. Mixed 460 bbl of 30 ppb Gel in Pit 4 and 360 bbl of 25 ppb Gel in Pit 5. Pumping 50 bbl sweeps every single flocculated with seawater (2:1). No DW left on board.

Gordon Howie

### REMARKS

\$ 5,815.03

\$ 5,815.03

Spud the well at 23:00 Hrs. Drilled to 95 m.

61-8-9325 4822

		MUD VOL ACCTG	(bbl)	SOLIDS ANALYSIS (%/lb/bbl)		MUD RHEOL	MUD RHEOLOGY & HYDRAULICS		
Rig Up/Service	23	Oil Added	0	NaCl		./ .6	np/na Values		0.445/0.125
Drilling	1	Water Added	883	KCl		./ .	kp/ka (lb•s^n/100f	(t²)	3.118/17.404
Tripping		Mud Received	0	Low G	ravity	4.1/37.2	Bit Loss (psi / %)		273 / 42
Non-Productive Ti	m	Dumped	0	Benton	ite	3./ 27.	Bit HHP (hhp/HS	SI)	164 / .2
		Shakers	0	Drill So	olids	1.1/10.2	Bit Jet Vel (m/s)	•	57
		Evaporation	0	Weight	Material	NA/ NA	Ann. Vel DP (m/mi	n)	
		Centrifuge	0	0 Chemical Conc		- / .	Ann. Vel DC (m/mi	in)	6.36
		Formation	0 Inert/React		.3765	Crit Vel DP (m/mir	n)		
		Left in Hole	0	Averag	e SG	2.6	Crit Vel DC (m/mi	n)	119
		Other	0	Carb/B	iCarb (m mole/L)	10.4/ 16.4	ECD @ 95 (lb/gal	)	8.81
M-I E	M-I ENGR / PHONE		RIG PHONE		WAREHOUSE	PHONE	DAILY COST	CUMULA	ATIVE COST
Jasdeep Singh									

61-8-6363 8872



 Date
 21/10/2004
 Depth/TVD
 122.5 m / 122.5 m

 Spud Date
 20/10/2004
 Mud Type
 SW/Gel Sweeps

 Water Depth
 55
 Activity
 RIH

Operator :Santos LtdField/Area :Otway BasinReport For :Chris Wilson/John WrennDescription :Wild Cat-Gas WellWell Name :Martha-1Location :VIC-P-44

Contractor: Diamond Offshore

Report For: Sean Defritas/Ray Breaud

M-I Well No.: 14920

DRILLING AS	SSEMBLY	CASING	MUD VOLUME (bbl)	CIRCULATION DATA			
Bit Size 17.5 in Mill	Tooth	Surface	Hole	Pump Make OILWELL	1700PT NATIONAL 12P-16(		
Nozzles 4x20 / 1/32	2"		116.5	Pump Size 6 X 1	2.in 6 X 12.in		
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap 4.274	gal/stk 4.274 gal/stk		
5 in	m		324.5	Pump stk/min 80@9	97% 80@97%		
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	1026 gal/min		
in	m		324.5	Bottoms Up	min 0 stk		
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time	13.3 min 3188 stk		
9.5 in	m		845	Circulating Pressure	650 psi		

9.5 in	m		845	Circulating Press		650 psi	
	MUD PROPE	RTIES		PRODUCTS	USED	LAST 24 HRS	3
Sample From		Pit 4@23:30		Products		Size	Amt
Flow Line Temp	°F	, •		SODA ASH		25 KG BG	1
Depth/TVD	m	122.5/122.5		CAUSTIC SODA (DRY	<i>Y</i> )	25 KG DM	1
Mud Weight	lb/gal	8.8@60°F		M-I GEL BULK		1 MT BK	4
Funnel Viscosity	s/qt	> 120		LEAD MUD ENGR		1 EA	1
Rheology Temp	°F	60		GUAR GUM		25 KG BG	16
R600/R300		66/49		SECOND MUD ENGR		1 EA	1
R200/R100		41/32					
R6/R3		21/20					
PV	cP	17					
YP	lb/100ft <sup>2</sup>	32					
10s/10m/30m Gel	lb/100ft <sup>2</sup>	30/42/57					
API Fluid Loss	cc/30 min	15					
HTHP FL Temp	cc/30 min	-@-°F					
Cake API/HTHP	1/32"	2/-					
Solids	%Vol	5					
Oil/Water	%Vol	/95					
Sand	%Vol			SOLIDS EQUIP		Size	Hr
MBT	lb/bbl	30		VSM Thule Shake			0
pH		9.5		VSM Thule Shake			0
Alkal Mud (Pm)		0.8		VSM Thule Shake			0
Pf/Mf		0.5/0.9		VSM Thule Shake			0
Chlorides	mg/l	1000		D-Sander			0
Hardness Ca	mg/l	40		D-Silter			0
KC1	Wt %						
Glycol	Vol %						
				MUD PROPER	RTY SP		NS
				Weight		8.8	
				Viscosity		> 100	
				Filtrate		NA	

#### **REMARKS AND TREATMENT**

Used 2:1 Gel:SW flocculated 50 bbl sweeps. Used PHG for displacing hole prior to P/O for casing. Further mixing gel in pits for drilling 17.5 inch hole. Mixed 4 ppb Guar Gum in Pit 1 as contingency. Gel received: 5 T from Wrangler & 40 T from Far Frip.

#### **REMARKS**

Drilled to section TD 122.5 m. Sweep hole and displaced to PHG. POOH. Run casing. Cemented as per plan. WOC. Made up BHA and RIH.

TIME DISTR	Last 24 Hrs	MUD VOL ACC	TG (bbl)	SOLIDS ANALYSIS	(%/lb/bbl)	MUD RHEOL	OGY & HYDRAULICS
Rig Up/Service		Oil Added	0	NaCl	./ .6	np/na Values	
Drilling	2	Water Added	766	KCl	./ .	kp/ka (lb•s^n/100f	$(t^2)$
Tripping	18	Mud Received	0	Low Gravity	3.3/ 30.3	Bit Loss (psi / %)	
Non-Productive Tir	m	Dumped	0	Bentonite	3.3/ 30.	Bit HHP (hhp/HS	SI)
Running Casing	4	Shakers	0	Drill Solids	./ .3	Bit Jet Vel (m/s)	
-		Evaporation	0	Weight Material	NA/ NA	Ann. Vel DP (m/mi	n)
		Centrifuge	0	Chemical Conc	- / .	Ann. Vel DC (m/mi	n)
		Formation	0	Inert/React	.0115	Crit Vel DP (m/mir	1)
		Left in Hole	192	Average SG	2.6	Crit Vel DC (m/mi	n)
		Other	0	Carb/BiCarb (m mole/L)	10./ 15.8	,	

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Jasdeep Singh				
Gordon Howie -	61-8-6363 8872	61-8-9325 4822	\$ 3,138.18	\$ 8,953.21



 Date
 22/10/2004
 Depth/TVD
 514 m / 514 m

 Spud Date
 20/10/2004
 Mud Type
 SW/Gel Sweeps

 Water Depth
 55
 Activity
 Drilling

Operator :Santos LtdField/Area :Otway BasinReport For :Nigel Walters/John WrennDescription :Wild Cat-Gas WellWell Name :Martha-1Location :VIC-P-44

Contractor: Diamond Offshore

Report For: Sean Defritas/Ray Breaud

M-I Well No.: 14920

DRILLING AS	SSEMBLY	CASING	MUD VOLUME (bbl)	CIRCULATION DATA			
Bit Size 17.5 in Mill	Tooth	Surface	Hole	Pump Make OILWELL	1700PT   NATIONAL 12P-160		
Nozzles 3x22/20/	1/32"		463.6	Pump Size 6 X 1	2.in 6 X 12.in		
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap 4.274	gal/stk 4.274 gal/stk		
5 in	249 m		-463.6	Pump stk/min 84@9	97% 84@97%		
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	1077 gal/min		
5 in	112 m			Bottoms Up	17.2 min 4346 stk		
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time	min 0 stk		
9.5 in	41 m		1330	Circulating Pressure	2400 psi		

9.5 in	41 m		1330	Circulating Pressu	ire 2400 j	osi
	MUD PROPE	RTIES		PRODUCTS	USED LAST 24 H	IRS
Sample From		Pit 4@20:30		Products	Size	Amt
Flow Line Temp	°F	_		LIME	25 KG BG	i 1
Depth/TVD	m	410/410		SODA ASH	25 KG BG	i 6
Mud Weight	lb/gal	8.8@60°F		CAUSTIC SODA (DRY	25 KG DM	
Funnel Viscosity	s/qt	> 100		M-I GEL BULK	1 MT BK	24
Rheology Temp	°F	60		LEAD MUD ENGR	1 EA	1
R600/R300		58/47		GUAR GUM	25 KG BG	i 4
R200/R100		43/38		SECOND MUD ENGR	1 EA	1
R6/R3		30/29				
PV	cP	11				
YP	lb/100ft <sup>2</sup>	36				
10s/10m/30m Gel	lb/100ft <sup>2</sup>	23/30/40				
API Fluid Loss	cc/30 min	18				
HTHP FL Temp	cc/30 min	-@-°F				
Cake API/HTHP	1/32"	2/-				
Solids	%Vol	4				
Oil/Water	%Vol	/96				
Sand	%Vol			SOLIDS EQUIP	Size	Hr
MBT	lb/bbl	30		VSM Thule Shake	4 x 105	0
pH		9.5		VSM Thule Shake	4 x 105	0
Alkal Mud (Pm)		0.65		VSM Thule Shake	4 x 105	0
Pf/Mf		0.35/0.75		VSM Thule Shake	4 x 105	0
Chlorides	mg/l	300		D-Sander		0
Hardness Ca	mg/l	40		D-Silter		0
KCl	Wt %					
Glycol	Vol %					
					TY SPECIFICAT	IONS
				Weight	8.8	
				Viscosity	> 100	
				Filtrate	NA	

#### **REMARKS AND TREATMENT**

Used 14 old and 2 new 105 mesh screens to dress shakers. Finshed Guar Gum sweep volume. Pumped SW Floc sweeps upto 300 m and the used 100 bbl PHG sweeps at connections.

REMARKS
Drilled to 514 m.

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG	(bbl)	SOLIDS ANALYSIS	(%/lb/bbl)	MUD RHEOL	OGY & HYDRAULICS
Rig Up/Service		Oil Added	0	NaCl	./ .2	np/na Values	0.303/0.077
Drilling	24	Water Added	1927	KCl	./ .	kp/ka (lb•s^n/100f	$(t^2)$ 7.560/27.287
Tripping		Mud Received	0	Low Gravity	3.4/ 30.8	Bit Loss (psi / %)	466 / 19.4
Non-Productive Ti	im	Dumped	25	Bentonite	3.3/ 30.	Bit HHP (hhp/HS	SI) 293 / 1.2
		Left in Hole	0	Drill Solids	.1/ .8	Bit Jet Vel (m/s)	74
		Other	0	Weight Material	NA/ NA	Ann. Vel DP (m/mi	n) 28.61
		Sweeps	1815	Chemical Conc	- / .	Ann. Vel DC (m/mi	(n) 37.25
		_		Inert/React	.0264	Crit Vel DP (m/mii	n) 141
				Average SG	2.6	Crit Vel DC (m/mi	n) 144
				Carb/BiCarb (m mole/L)	7./ 11.	ECD @ 514 (lb/ga	9.01
M-I E	NGR / PHO	NE	<b>RIG PHONE</b>	WAREHOUSE	PHONE	DAILY COST	<b>CUMULATIVE COST</b>

| M-I ENGR / PHONE | RIG PHONE | WAREHOUSE PHONE | DAILY COST | CUMULATIVE COST | Gordon Howie | 61-8-6363 8872 | 61-8-9325 4822 | \$ 7,148.68 | \$ 16,101.89



 Date
 23/10/2004
 Depth/TVD
 628 m / 628 m

 Spud Date
 20/10/2004
 Mud Type
 SW/Gel Sweeps

 Water Depth
 55
 Activity
 Run Casing

Operator: Santos Ltd Field/Area: Otway Basin
Report For: Nigel Walters/John Wrenn Description: Wild Cat-Gas Well

Well Name: Martha-1

Contractor: Diamond Offshore

Report For: Sean Defritas/Ray Breaud

Location: VIC-P-44

M-I Well No.: 14920

DRILLING AS	SEMBLY	CASING	MUD VOLUME (bbl)	CIRCULATION DATA			
Bit Size 17.5 in		Surface	Hole	Pump Make OILWELL	1700PT NATIONAL 12P-160		
Nozzles 1/32"			635(Tot)/266(Bit)	Pump Size 6 X 1	2.in 6 X 12.in		
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	gal/stk gal/stk		
5 in	m		-635	Pump stk/min			
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	gal/min		
13.375 in	250 m		-369	Bottoms Up	-		
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time			
in	m		540	Circulating Pressure			

ın	m		540	Circulating Pressu		
	MUD PROPE	RTIES		PRODUCTS U	JSED LAST 24 HRS	S
Sample From		Pit 5@20:00		Products	Size	Amt
Flow Line Temp	°F	-		SODA ASH	25 KG BG	4
Depth/TVD	m	628/628		M-I GEL BULK	1 MT BK	7
Mud Weight	lb/gal	8.8@60°F		LEAD MUD ENGR	1 EA	1
Funnel Viscosity	s/qt	110		SECOND MUD ENGR	1 EA	1
Rheology Temp	°F	60				
R600/R300		55/45				
R200/R100		41/35				
R6/R3		28/27				
PV	cP	10				
YP	$lb/100ft^2$	35				
10s/10m/30m Gel	$lb/100ft^2$	20/27/38				
API Fluid Loss	cc/30 min	16				
HTHP FL Temp	cc/30 min	-@-°F				
Cake API/HTHP	1/32"	2/-				
Solids	%Vol	4				
Oil/Water	%Vol	/96				
Sand	%Vol			SOLIDS EQUIP	Size	Hr
MBT	lb/bbl	30		VSM Thule Shake	4 x 105	0
pН		9.5		VSM Thule Shake	4 x 105	0
Alkal Mud (Pm)		0.6		VSM Thule Shake	4 x 105	0
Pf/Mf		0.3/0.9		VSM Thule Shake	4 x 105	0
Chlorides	mg/l	300		D-Sander		0
Hardness Ca	mg/l	60		D-Silter		0
KCl	Wt %					
Glycol	Vol %					
					TY SPECIFICATION	NS
			 ]	Weight	8.8	
				Viscosity	> 100	
			 ]	Filtrate	NA	

#### **REMARKS AND TREATMENT**

Used 100 bbl PHG sweeps with 30 ppb Gel on connections to ensure clean hole. Using PHG to fill the casing. DW left on board: 945 bbl

Gordon Howie

#### REMARKS

\$ 2,882.85

\$ 18,984.74

Drilled to 628 m with 100 bbl PHG sweeps every connection. Swept hole with 150 bbl PHG at TD and displaced out with sea water. Displaced hole with 865 bbl PHG and POOH. Running 13 3/8 casing filling with PHG.

TIME DISTR	Last 24 Hrs	MUD VOL ACCTO	G (bbl)	SOLIDS ANALYSIS	(%/lb/bbl)	MUD RHEOL	OGY & HYDRAULICS
Rig Up/Service		Oil Added	0	NaCl	./ .2	np/na Values	0.290/0.074
Drilling	5	Water Added	694	KCl	./ .	kp/ka (lb•s^n/100f	t <sup>2</sup> ) 7.894/25.533
Tripping	6	Mud Received	0	Low Gravity	3.4/ 30.8	Bit Loss (psi / %)	/ 1
Non-Productive Ti	m	Dumped	0	Bentonite	3.3/ 30.	Bit HHP (hhp/HS	SI) / 1
Condition Hole	2	Left in Hole	190	Drill Solids	.1/ .8	Bit Jet Vel (m/s)	·
Running Casing	11	Other	0	Weight Material	NA/ NA	Ann. Vel DP (m/mi	n)
-		Sweeps	1315	Chemical Conc	- / .	Ann. Vel DC (m/mi	n)
		-		Inert/React	.0264	Crit Vel DP (m/mir	1)
				Average SG	2.6	Crit Vel DC (m/mii	n) 141
				Carb/BiCarb (m mole/L)	6./ 9.5	ECD @ 250 (lb/ga	8.8
M-I E	NGR / PHOI	NE	RIG PHONE	WAREHOUSE	PHONE	DAILY COST	<b>CUMULATIVE COST</b>
Jasdeep Singh							

61-8-9325 4822

61-8-6363 8872



 Date
 24/10/2004
 Depth/TVD
 628 m / 628 m

 Spud Date
 20/10/2004
 Mud Type
 SW/Gel Sweeps

 Water Depth
 55
 Activity
 Run BOP

Operator: Santos Ltd Field/Area: Otway Basin
Report For: Nigel Walters/John Wrenn Description: Wild Cat-Gas Well
Well Name: Morths 1

Well Name: Martha-1 Location: VIC-P-44
Contractor: Diamond Offshore M-I Well No.: 14920
Report For: Sean Defritas/Ray Breaud

DRILLING AS	SEMBLY	CASING	MUD VOLUME (bbl)	CIRCULATION DATA			
Bit Size 12.25 in		Surface	Hole	Pump Make	OILWELL 1700PT	NATIONAL 12P-160	
Nozzles 1/32"			365.6	Pump Size	6 X 12.in	6 X 12.in	
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	gal/stk	gal/stk	
in	m		.4	Pump stk/min			
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	F	low Rate	gal/min	
in	m		.4	Bot	ttoms Up		
Drill Collar Size	Length	Production or Liner	In Storage	Total C	Circ Time		
in	m		1160	Circulating	Pressure		

1N	m		1100	Circulating Pressu		
	MUD PROPE	RTIES			JSED LAST 24 HR	S
Sample From		Pit 4@22:00		Products	Size	Amt
Flow Line Temp	°F			DUOTEC	25 KG BG	10
Depth/TVD	m	628/628		POLYPAC UL	25 KG BG	16
Mud Weight	lb/gal	8.8@54°F		POTASSIUM CHLORID	E 1 MT BG	11
Funnel Viscosity	s/qt	56		LEAD MUD ENGR	1 EA	1
Rheology Temp	°F	54		POLY PLUS DRY	25 KG BG	8
R600/R300		46/29		SECOND MUD ENGR	1 EA	1
R200/R100		22/14		POTASSIUM HYDROX	IDE 25 KG CN	1
R6/R3		2/1				
PV	cP	17				
YP	lb/100ft <sup>2</sup>	12				
10s/10m/30m Gel	lb/100ft <sup>2</sup>	2/2/				
API Fluid Loss	cc/30 min	10.5				
HTHP FL Temp	cc/30 min	-@-°F				
Cake API/HTHP	1/32"	1/-				
Solids	%Vol	1				
Oil/Water	%Vol	/99				
Sand	%Vol			SOLIDS EQUIP	Size	Hr
MBT	lb/bbl	2	-	VSM Thule Shake	4 x 105	0
pH		9.2	-	VSM Thule Shake	4 x 105	0
Alkal Mud (Pm)			_	VSM Thule Shake	4 x 105	0
Pf/Mf		0.15/0.6	_	VSM Thule Shake	4 x 105	0
Chlorides	mg/l_	30000	 =	D-Sander		0
Hardness Ca	mg/l	240	=	D-Silter		0
TO	<b>TT</b> 1: 0/		_			
KCl	Wt %	6	-			
Glycol	Vol %	0.5	-			
		0	-			
			-	MUD DDCCCC	TV CDECIEICATIO	NC
			-		TY SPECIFICATION	МЭ
			-	Weight	9	
			-	Viscosity	50	
			-	Filtrate	5	

#### **REMARKS AND TREATMENT**

Started mixing Polymer mud as chemicals were unloaded from boat and availability of crane. Saved 230 bbl of PHG for drilling out shoe etc. Wating for Glydrill LC from boat.

#### **REMARKS**

Run casing to bottom filling with PHG. Circulated hole with SW. Cemented casing as per plan. WOC. Meanwhile running BOP stack.

TIME DISTR Last 24 Hrs MUD VOL ACCTG (bbl)			(bbl)	SOLIDS ANALYSIS (%/lb/bbl)		MUD RHEOLOGY & HYDRAULICS	
Rig Up/Service		Oil Added	0	NaCl	1.5/ 17.1	np/na Values	
Drilling		Water Added	731	KCl	./ .	kp/ka (lb•s^n/100ft²)	
Tripping		Mud Received	0	Low Gravity	1.3/ 11.7	Bit Loss (psi / %)	
Non-Productive Tim		Dumped	0	Bentonite	.2/ 2.	Bit HHP (hhp/HSI)	
Condition Hole	2	Left in Hole	0	Drill Solids	1.1/ 9.7	Bit Jet Vel (m/s)	
Running Casing	5	Other	0	Weight Material	NA/ NA	Ann. Vel DP (m/min)	
Cementing	4	Sweeps	150	Chemical Conc	- / .	Ann. Vel DC (m/min)	
BOP NU	13	_		Inert/React	4.8742	Crit Vel DP (m/min)	
				Average SG	2.6	Crit Vel DC (m/min)	
				Carb/BiCarb (m mole/L)	3./ 9.4		

M-I ENGR / PHONE		RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Jasdeep Singh					
Gordon Howie	-	61-8-6363 8872	61-8-9325 4822	\$ 10,080.74	\$ 29,065.48



| Date | 25/10/2004 | Depth/TVD | 628 m / 628 m | Spud Date | 20/10/2004 | Mud Type | Glydril | Water Depth | 55 | Activity | RIH

Operator :Santos LtdField/Area :Otway BasinReport For :Nigel Walters/John WrennDescription :Wild Cat-Gas Well

Well Name: Martha-1 Location: VIC-P-44
Contractor: Diamond Offshore M-I Well No.: 14920
Report For: Sean Defritas/Ray Breaud

DRILLING ASS	SEMBLY	CASING	MUD VOLUME (bbl)	CIRCULATION DATA			
Bit Size 12.25 in TCI		Surface	Hole	Pump Make (	OILWELL 1700PT	NATIONAL 12P-160	
Nozzles 3x20 / 1/32"		30in @121m (121TVD)	319.9	Pump Size	6 X 12.in	6 X 12.in	
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	gal/stk	gal/stk	
5 in	340 m	13.37in @621m (621TVD)	.1	Pump stk/min			
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Fl	low Rate	gal/min	
5 in	112 m	in @1800m (1800TVD)	320	Bot	toms Up		
Drill Collar Size	Length	Production or Liner	In Storage	Total C	irc Time		
8 in	176 m		1760	Circulating	Pressure		

	MUD PROPE	RTIES	,		PRODUCTS USED LAST 24 HRS			
Sample From		Pit 4@22:00	Pit#5@17.00		Products		Size	Amt
Flow Line Temp	°F				DUOTEC		25 KG BG	16
Depth/TVD	m	628/628	628/628		SODA ASH		25 KG BG	4
Mud Weight	lb/gal	8.9@64°F	8.9@68°F		POLYPAC UL		25 KG BG	16
Funnel Viscosity	s/qt	45	59		POTASSIUM CHLORIE	ÞΕ	1 MT BG	10
Rheology Temp	°F	120	120		LEAD MUD ENGR		1 EA	1
R600/R300		33/22	38/26		POLY PLUS DRY		25 KG BG	8
R200/R100		18/12	21/15		SECOND MUD ENGR		1 EA	1
R6/R3		3/2	4/3		GLYDRIL LC		55 GA DM	36
PV	cP	11	12		POTASSIUM HYDROX	IDE	25 KG CN	2
YP	lb/100ft <sup>2</sup>	11	14					
10s/10m/30m Gel	lb/100ft <sup>2</sup>	3/3/4	3/5/6					
API Fluid Loss	cc/30 min	9.2	9.5					
HTHP FL Temp	cc/30 min	-@-°F	-@-°F					
Cake API/HTHP	1/32"	1/-	1/-					
Solids	%Vol	1	1					
Oil/Water	%Vol	/99	0/99					
Sand	%Vol	0	0	-	SOLIDS EQUIP		Size	Hr
MBT	%Vol lb/bbl	3	2		VSM Thule Shake		4 x 105	0
MBT pH		3 9.5	9.5		VSM Thule Shake VSM Thule Shake		4 x 105 4 x 105	0
MBT pH Alkal Mud (Pm)		3 9.5 0.15	9.5 0.5		VSM Thule Shake VSM Thule Shake VSM Thule Shake		4 x 105 4 x 105 4 x 105	0 0 0
MBT pH Alkal Mud (Pm) Pf/Mf	lb/bbl	3 9.5 0.15 0.25/0.85	9.5 0.5 0.3/0.9		VSM Thule Shake VSM Thule Shake VSM Thule Shake VSM Thule Shake		4 x 105 4 x 105	0 0 0
MBT pH Alkal Mud (Pm) Pf/Mf Chlorides	lb/bbl mg/l	3 9.5 0.15 0.25/0.85 37500	9.5 0.5 0.3/0.9 38000		VSM Thule Shake VSM Thule Shake VSM Thule Shake VSM Thule Shake D-Sander		4 x 105 4 x 105 4 x 105	0 0 0 0
MBT pH Alkal Mud (Pm) Pf/Mf	lb/bbl	3 9.5 0.15 0.25/0.85	9.5 0.5 0.3/0.9		VSM Thule Shake VSM Thule Shake VSM Thule Shake VSM Thule Shake		4 x 105 4 x 105 4 x 105	0 0 0
MBT pH Alkal Mud (Pm) Pf/Mf Chlorides Hardness Ca	lb/bbl mg/l	3 9.5 0.15 0.25/0.85 37500 200	2 9.5 0.5 0.3/0.9 38000 200		VSM Thule Shake VSM Thule Shake VSM Thule Shake VSM Thule Shake D-Sander		4 x 105 4 x 105 4 x 105	0 0 0 0
MBT pH Alkal Mud (Pm) Pf/Mf Chlorides Hardness Ca KCl	mg/l mg/l Wt %	3 9.5 0.15 0.25/0.85 37500 200	2 9.5 0.5 0.3/0.9 38000 200		VSM Thule Shake VSM Thule Shake VSM Thule Shake VSM Thule Shake D-Sander		4 x 105 4 x 105 4 x 105	0 0 0 0
MBT pH Alkal Mud (Pm) Pf/Mf Chlorides Hardness Ca	lb/bbl mg/l	3 9.5 0.15 0.25/0.85 37500 200 7.5 0.5	2 9.5 0.5 0.3/0.9 38000 200 7.5 0.5		VSM Thule Shake VSM Thule Shake VSM Thule Shake VSM Thule Shake D-Sander		4 x 105 4 x 105 4 x 105	0 0 0 0
MBT pH Alkal Mud (Pm) Pf/Mf Chlorides Hardness Ca KCl	mg/l mg/l Wt %	3 9.5 0.15 0.25/0.85 37500 200 7.5 0.5 3.0	2 9.5 0.5 0.3/0.9 38000 200 7.5 0.5 3.0		VSM Thule Shake VSM Thule Shake VSM Thule Shake VSM Thule Shake D-Sander		4 x 105 4 x 105 4 x 105	0 0 0 0
MBT pH Alkal Mud (Pm) Pf/Mf Chlorides Hardness Ca KCl	mg/l mg/l Wt %	3 9.5 0.15 0.25/0.85 37500 200 7.5 0.5	2 9.5 0.5 0.3/0.9 38000 200 7.5 0.5		VSM Thule Shake VSM Thule Shake VSM Thule Shake VSM Thule Shake D-Sander D-Silter		4 x 105 4 x 105 4 x 105 4 x 105 4 x 105	0 0 0 0 0
MBT pH Alkal Mud (Pm) Pf/Mf Chlorides Hardness Ca KCl	mg/l mg/l Wt %	3 9.5 0.15 0.25/0.85 37500 200 7.5 0.5 3.0	2 9.5 0.5 0.3/0.9 38000 200 7.5 0.5 3.0		VSM Thule Shake D-Sander D-Silter		4 x 105 4 x 105 4 x 105 4 x 105 4 x 105	0 0 0 0 0
MBT pH Alkal Mud (Pm) Pf/Mf Chlorides Hardness Ca KCl	mg/l mg/l Wt %	3 9.5 0.15 0.25/0.85 37500 200 7.5 0.5 3.0	2 9.5 0.5 0.3/0.9 38000 200 7.5 0.5 3.0		VSM Thule Shake D-Sander D-Silter  MUD PROPER Weight		4 x 105 4 x 105 4 x 105 4 x 105 4 x 105	0 0 0 0 0
MBT pH Alkal Mud (Pm) Pf/Mf Chlorides Hardness Ca KCl	mg/l mg/l Wt %	3 9.5 0.15 0.25/0.85 37500 200 7.5 0.5 3.0	2 9.5 0.5 0.3/0.9 38000 200 7.5 0.5 3.0		VSM Thule Shake D-Sander D-Silter  MUD PROPER Weight Viscosity		4 x 105 4 x 105 4 x 105 4 x 105 4 x 105 <b>ECIFICATION</b> 9 50	0 0 0 0 0
MBT pH Alkal Mud (Pm) Pf/Mf Chlorides Hardness Ca KCl	mg/l mg/l Wt %	3 9.5 0.15 0.25/0.85 37500 200 7.5 0.5 3.0	2 9.5 0.5 0.3/0.9 38000 200 7.5 0.5 3.0		VSM Thule Shake D-Sander D-Silter  MUD PROPER Weight		4 x 105 4 x 105 4 x 105 4 x 105 4 x 105	0 0 0 0 0

#### **REMARKS AND TREATMENT**

Completed mixing 1585 bbl of 7.5 % KCl-0.5ppb Polyplus-0.8 ppb Duotec-0.8 ppb PolyPacUL-3%Glydril LC mud with 3 ppb Gel. Sheared using mix pumps. 175 bbl of PHG available for sweeps while drilling cement and spacer ahead of Polymer mud.

Gordon Howie

### REMARKS

\$ 31,640.72

\$ 60,706.20

Nippled up BOP stack. Made up BHA and new insert bit. RIH is in progress.

TIME DISTR	Last 24 Hrs	MUD VOL ACCTO	(bbl)	SOLIDS ANALYSIS	(%/lb/bbl)	MUD RHEOL	OGY & HYDRAULICS
Rig Up/Service		Oil Added	0	NaCl	./ .1	np/na Values	0.585/0.511
Drilling		Water Added	518	KCl	3./ 27.2	kp/ka (lb•s^n/100f	$(t^2)$ 0.611/0.927
Tripping	6	Mud Received	0	Low Gravity	1.2/ 10.6	Bit Loss (psi / %)	/ 1
Non-Productive Ti	im	Dumped	0	Bentonite	.3/ 3.	Bit HHP (hhp/HS	SI) / 1
BOP NU	18	Left in Hole	0	Drill Solids	.8/ 7.6	Bit Jet Vel (m/s)	
		Other	0	Weight Material	NA/ NA	Ann. Vel DP (m/mi	n)
		Sweeps	0	Chemical Conc	- / .	Ann. Vel DC (m/mi	n)
		_		Inert/React	2.519	Crit Vel DP (m/mir	57
				Average SG	2.6	Crit Vel DC (m/mi	n) 69
				Carb/BiCarb (m mole/L)	5./ 7.9	ECD @ 628 (lb/ga	11) 8.9
M-I E	NGR / PHO	NE	<b>RIG PHONE</b>	WAREHOUSE	PHONE	DAILY COST	<b>CUMULATIVE COST</b>
Jasdeep Singh							

61-8-6363 8872

61-8-9325 4822



 Date
 26/10/2004
 Depth/TVD
 870 m / 870 m

 Spud Date
 20/10/2004
 Mud Type
 Glydril

 Water Depth
 55
 Activity
 Drilling

 Operator :
 Santos Ltd
 Field/Area :
 Otway Basin

 Report For :
 Nigel Walters/Stephen Hodgetts
 Description :
 Wild Cat-Gas Well

Well Name: Martha-1

Contractor: Diamond Offshore

Report For: Sean Defritas/Ray Breaud

Location: VIC-P-44

M-I Well No.: 14920

DRILLING ASS	SEMBLY	CASING	MUD VOLUME (bbl)	CIRCULATION DATA			
Bit Size 12.25 in TCI		Surface	Hole	Pump Make OILWE	LL 1700PT	VATIONAL 12P-160	
Nozzles 3x20 / 1/32"		30in @121m (121TVD)	429.8	Pump Size 6.3	X 12.in	6 X 12.in	
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap 4.2	74 gal/stk	4.274 gal/stk	
5 in	582 m	13.37in @621m (621TVD)	504.2	Pump stk/min 70	@97%	75@97%	
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Ra	ite	923 gal/min	
5 in	112 m	in @1800m (1800TVD)	934	Bottoms I	Jp 17.7	min 3823 stk	
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Tir	ne 42.:	5 min 9180 stk	
8 in	176 m		485	Circulating Pressu	re	1850 psi	

8 in	176 m		485	Circulating Pressu	ıre	1850 psi	
	MUD PROPE	RTIES		PRODUCTS I	USED	LAST 24 HR	S
Sample From		Active@16:00		Products		Size	Amt
Flow Line Temp	°F	98		DUOTEC		25 KG BG	9
Depth/TVD	m	725/725		POLYPAC UL		25 KG BG	6
Mud Weight	lb/gal	9.0		M-I GEL BULK		1 MT BK	2
Funnel Viscosity	s/qt	47		POTASSIUM CHLORID	E	1 MT BG	2
Rheology Temp	°F	120		LEAD MUD ENGR		1 EA	1
R600/R300		48/33		DUO-VIS		25 KG BG	14
R200/R100		28/21		POLY PLUS DRY		25 KG BG	11
R6/R3		8/5		SECOND MUD ENGR		1 EA	1
PV	cP	15		POTASSIUM HYDROX	IDE	25 KG CN	1
YP	lb/100ft <sup>2</sup>	18					
10s/10m/30m Gel	lb/100ft <sup>2</sup>	6/8/9					
API Fluid Loss	cc/30 min	7.6					
HTHP FL Temp	cc/30 min						
Cake API/HTHP	1/32"	1/					
Solids	%Vol	1					
Oil/Water	%Vol	/99					
Sand	%Vol	0.75		SOLIDS EQUIP		Size	Hr
MBT	lb/bbl	6.25		VSM Thule Shake		4 x 84	18
pH		9.4		VSM Thule Shake		4 x 84	18
Alkal Mud (Pm)		0.3		VSM Thule Shake		4 x 84	18
Pf/Mf		0.2/0.6		VSM Thule Shake		4 x 84	18
Chlorides	mg/l	38000		D-Sander			0
Hardness Ca	mg/l	200		D-Silter			0
KCl	Wt %	7.5					
Glycol	Vol %	3					
				MUD DDODED	TV CD	ECIFIC ATIO	NC
				MUD PROPER Weight	11 5P	<u>ECIFICATIOI</u> 9	10
				Viscosity		50	
				Filtrate		<u> </u>	
				Tittate		<u> </u>	

#### **REMARKS AND TREATMENT**

Built premix batches for volume maintainance. Lost large volumes of mud over shakers while drilling through sand formations. Waiting on Chemical order from port.

Attempted to screen up shakers to avoid screen blinding by sand, no effect.

### REMARKS

Pumped gel sweeps during cement drilling. Displaced hole with polymer mud while drilling through shoe. Dumped 20 bbl of contaminated mud during displacement. Drilled ahead to 870m.

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG	(bbl)	SOLIDS ANALYSIS	(%/lb/bbl)	MUD RHEOLOGY & HY	DRAULICS
Rig Up/Service		Oil Added	0	NaCl	./ .4	np/na Values	0.541/0.409
Drilling	19	Water Added	683	KCl	3./ 26.9	kp/ka (lb•s^n/100ft²)	1.209/2.737
Tripping	4	Mud Received	0	Low Gravity	1.9/ 17.3	Bit Loss (psi / %)	834 / 1
Non-Productive Ti	m	Dumped	20	Bentonite	.7/ 6.3	Bit HHP (hhp/HSI)	449 / 1
Condition Mud	1	Left in Hole	0	Drill Solids	1.2/ 11.	Bit Jet Vel (m/s)	98
		Other	0	Weight Material	NA/ NA	Ann. Vel DP (m/min)	53.4
		Sweeps	165	Chemical Conc	- / .	Ann. Vel DC (m/min)	80.12
		Shakers	856	Inert/React	1.7627	Crit Vel DP (m/min)	90
				Average SG	2.6	Crit Vel DC (m/min)	103
				Carb/BiCarb (m mole/L)	4./ 7.9	ECD @ 870 (lb/gal)	9.21

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Nick Cooper				
Gordon Howie	61-8-6363 8872	61-8-9325 4822	\$ 9,006.70	\$ 69,712.90



 Date
 27/10/2004
 Depth/TVD
 1193 m / 1193 m

 Spud Date
 20/10/2004
 Mud Type
 Glydril

 Water Depth
 55
 Activity
 Drilling

 Operator :
 Santos Ltd
 Field/Area :
 Otway Basin

 Report For :
 Nigel Walters/Stephen Hodgetts
 Description :
 Wild Cat-Gas Well

Well Name: Martha-1

Contractor: Diamond Offshore

Report For: Sean Defritas/Ray Breaud

Location: VIC-P-44

M-I Well No.: 14920

DRILLING ASS	SEMBLY	CASING	MUD VOLUME (bbl)	CIRCUL	ATION D	ATA
Bit Size 12.25 in TCI		Surface	Hole	Pump Make OILWE	LL 1700PT	NATIONAL 12P-160
Nozzles 3x20 / 1/32"		30in @121m (121TVD)	576.5	Pump Size 6 X	(12.in	6 X 12.in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap 4.27	4 gal/stk	4.274 gal/stk
5 in	905 m	13.37in @621m (621TVD)	427.5	Pump stk/min 104	@97%	106@97%
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Ra	te	898 gal/min
5 in	112 m	in @1800m (1800TVD)	1004	Bottoms U	p 24.2	min 5079 stk
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Tin	ie 47	min 9861 stk
8 in	176 m		818	Circulating Pressur	re	2400 psi

O III	1 / O III			PRODUCTS USED LAST 24 H					
	MUD PROPE	RTIES			PRODUCTS	USED		S	
Sample From		lowline@22:0	lowline@15:0		Products		Size	Amt	
Flow Line Temp	°F	102	92		DUOTEC		25 KG BG	5	
Depth/TVD	m	1150/1150	1026/1026		ANTIFOAM A		5 GA CN	8	
Mud Weight	lb/gal	9.0@102°F	8.95@92°F		M-I GEL BULK		1 MT BK	2	
Funnel Viscosity	s/qt	42	44		LEAD MUD ENGR		1 EA	1	
Rheology Temp	°F	120	120		DUO-VIS		25 KG BG	58	
R600/R300		42/31	36/26		GLUTE 25		25 LT CN	1	
R200/R100		26/21	22/17		SECOND MUD ENGR		1 EA	1	
R6/R3		10/8	9/7						
PV	cP	11	10						
YP	lb/100ft <sup>2</sup>	20	16						
10s/10m/30m Gel	lb/100ft <sup>2</sup>	9/10/12	8/10/11						
API Fluid Loss	cc/30 min	14.4	12.6						
HTHP FL Temp	cc/30 min								
Cake API/HTHP	1/32"	1/	1/						
Solids	%Vol	2	2						
Oil/Water	%Vol		/98						
Sand	%Vol		1.5		SOLIDS EQUIP		Size	Hr	
MBT	lb/bbl	3.5	3.5		VSM Thule Shake	1	0, 4 x 84	0	
pH		8	8		VSM Thule Shake		0, 4 x 84	0	
Alkal Mud (Pm)		0	0		VSM Thule Shake	1	0, 4 x 84	0	
Pf/Mf		0/0.3	.05/0.35		VSM Thule Shake	1	0, 4 x 84	0	
Chlorides	mg/l	14000	14000		D-Sander			0	
Hardness Ca	mg/l	1600	1180		D-Silter			0	
KCl	Wt %	0	0						
Glycol	Vol %	0	0						
					MUD PROPER	RTY SP	<b>ECIFICATION</b>	NS	
					Weight		9		
					Viscosity		50		
					Filtrate		<6		
1					1				

#### **REMARKS AND TREATMENT**

Continued to lose large amounts of mud across the shakers. Due to the sand formation, and shortage of drill water, premixes were built with Seawater and duovis to retain volume and cuttings carrying capacity, while omitting inhibition products. Shaker screens were changed to coarser mesh and losses stabilised. Started Desander to reduce sand content.

#### **REMARKS**

Drilled ahead while limiting pump rates to minimise shaker losses.

TIME DISTR L	ast 24 Hrs	MUD VOL ACCTG	(bbl)	SOLIDS ANALYSIS	(%/lb/bbl)	MUD RHEOLOGY & HY	DRAULICS
Rig Up/Service		Oil Added	0	NaCl	.7/ 7.8	np/na Values	0.438/0.275
Drilling	24	Water Added	3014	KCl	./ .	kp/ka (lb•s^n/100ft²)	2.152/5.449
Tripping		Mud Received	0	Low Gravity	3.9/ 35.8	Bit Loss (psi / %)	789 / 1
Non-Productive Tim		Dumped	0	Bentonite	.4/ 3.5	Bit HHP (hhp/HSI)	413 / 1
Condition Mud		Left in Hole	0	Drill Solids	3.5/ 32.3	Bit Jet Vel (m/s)	95
		Other	0	Weight Material	NA/ NA	Ann. Vel DP (m/min)	53.64
		Sweeps	0	Chemical Conc	- / .	Ann. Vel DC (m/min)	77.95
		Shakers	2626	Inert/React	9.224	Crit Vel DP (m/min)	98
				Average SG	2.6	Crit Vel DC (m/min)	107
				Carb/BiCarb (m mole/L)	./1	ECD @ 1193 (lb/gal)	9.23

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Nick Cooper				
Gordon Howie	61-8-6363 8872	61-8-9325 4822	\$ 16,476.94	\$ 86,189.84



 Date
 28/10/2004
 Depth/TVD
 1310 m / 1310 m

 Spud Date
 20/10/2004
 Mud Type
 Seawater/Duovis

 Water Depth
 55
 Activity
 Drilling

 Operator :
 Santos Ltd
 Field/Area :
 Otway Basin

 Report For :
 Nigel Walters/Stephen Hodgetts
 Description :
 Wild Cat-Gas Well

Well Name: Martha-1

Contractor: Diamond Offshore

Report For: Sean Defritas/Ray Breaud

Location: VIC-P-44

M-I Well No.: 14920

DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULA	TION DATA
Bit Size 12.25 in Hyd	calog DSX	Surface	Hole	Pump Make JATIONAL	L 12P-16   NATIONAL 12P-16(
Nozzles 5x14 / 1/32	"	30in @121m (121TVD)	629.6	Pump Size 6 X 1	2.in 6 X 12.in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap 4.274	gal/stk 4.274 gal/stk
5 in	1022 m	13.37in @621m (621TVD)	457.4	Pump stk/min 103@	97% 102@97%
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	876 gal/min
5 in	112 m	in @1800m (1800TVD)	1087	Bottoms Up	27 min 5539 stk
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time	52.1 min 10684 stk
8 in	176 m		968	Circulating Pressure	3250 psi

o III	1 / 0 111			908	Circulating Flessure 3230 psi			
	MUD PROPE	RTIES			PRODUCTS USED LAST 24 HRS			
Sample From		Active@22:30	Active@16.00		Products		Size	Amt
Flow Line Temp	°F	105			SODA ASH		25 KG BG	8
Depth/TVD	m	1285/1285	1262/1262		ANTIFOAM A		5 GA CN	2
Mud Weight	lb/gal	9.7@100°F	9.5@80°F		POLYPAC UL		25 KG BG	8
Funnel Viscosity	s/qt	39	40		M-I BAR BULK		1 MT BK	15
Rheology Temp	°F	120	120		POTASSIUM CHLORIC	ÞΕ	1 MT BG	8
R600/R300		46/33	35/26		LEAD MUD ENGR		1 EA	1
R200/R100		28/23	22/18		DUO-VIS		25 KG BG	6
R6/R3		11/9	9/7		POLY PLUS DRY		25 KG BG	6
PV	cP	13	9		SECOND MUD ENGR		1 EA	1
YP	lb/100ft <sup>2</sup>	20	17		GLYDRIL LC		55 GA DM	22
10s/10m/30m Gel	lb/100ft <sup>2</sup>	10/11/13	8/9/10					
API Fluid Loss	cc/30 min	15.3	14.2					
HTHP FL Temp	cc/30 min							
Cake API/HTHP	1/32"		1/					
Solids	%Vol	7	4					
Oil/Water	%Vol	/93	/96					
Sand	%Vol		1.5		SOLIDS EQUIP		Size	Hr
MBT	lb/bbl	7.5	3.5		VSM Thule Shake		0, 4 x 84	12
pH		8.1	8		VSM Thule Shake		), 4 x 105	12
Alkal Mud (Pm)		0			VSM Thule Shake	10, 2	2x120, 2x10	12
Pf/Mf		0/0.4	.05/.4		VSM Thule Shake	10	), 4 x 105	12
Chlorides	mg/l	16000	14000		D-Sander			6
Hardness Ca	mg/l	1600	1440		D-Silter			0
KCl	Wt %							
Glycol	Vol %	2.5						
					MUD PROPER	TY SP		NS
					Weight		10.1	
					Viscosity		50	
					Viscosity Filtrate		50 <6	

#### **REMARKS AND TREATMENT**

Continued transferring premix to active to maintain active volume. Ran desander to control sand content. Built slug to POOH. Offloaded chemicals from Far Grip and Wrangler. Added KCl, Glydril LC, Soda Ash and barite to active system to increase inhibition and bring MW to 10.1ppg. Built premix for volume addition.

### REMARKS

Drilled ahead to 1262m, circulated bottoms up, then POOH. Changed bit to PDC. RIH, washed and reamed down last 50m. Drilled ahead to 1310m.

TIME DISTR Last 24 Hrs MUD VOL A		MUD VOL ACCTG	(bbl)	SOLIDS ANALYSIS (%/lb/bbl)		MUD RHEOLOGY & HYDRAULICS	
Rig Up/Service	2	Oil Added	0	NaCl	.7/ 8.7	np/na Values	0.479/0.268
Drilling	12	Water Added	465	KCl	./ .	kp/ka (lb•s^n/100ft	<sup>2</sup> ) 1.774/6.207
Tripping	7.5	Mud Received	0	Low Gravity	2.7/ 24.6	Bit Loss (psi / %)	1213 / 1
Non-Productive Tim		Dumped	0	Bentonite	.6/ 5.4	Bit HHP (hhp/HS)	I) 620 / 1
Condition Hole	0.5	Left in Hole	0	Drill Solids	2.1/ 19.3	Bit Jet Vel (m/s)	114
Reaming	2	Other	30	Weight Material	3.6/ 52.2	Ann. Vel DP (m/min	52.33
-		Sweeps	0	Chemical Conc	- / .	Ann. Vel DC (m/mir	76.04
		Shakers	280	Inert/React	2.2865	Crit Vel DP (m/min	100
				Average SG	3.51	Crit Vel DC (m/min	108
				Carb/BiCarb (m mole/L)	./1	ECD @ 1310 (lb/ga	al) 9.95
84.1.581	MIENOR / BUONE			WAREHOUSE	DUONE	DAULYCOOT	OURSEL ATIVE COOT

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Nick Cooper				
Gordon Howie	61-8-6363 8872	61-8-9325 4822	\$ 23,221.60	\$ 109,411.44



 Date
 29/10/2004
 Depth/TVD
 1800 m / 1800 m

 Spud Date
 20/10/2004
 Mud Type
 Glydril

 Water Depth
 55
 Activity
 POOH

Operator: Santos Ltd Field/Area: Otway Basin
Report For: Nigel Walters/Stephen Hodgetts Description: Wild Cat-Gas Well

Well Name: Martha-1

Contractor: Diamond Offshore

Report For: Sean Defritas/Ray Breaud

Location: VIC-P-44

M-I Well No.: 14920

DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCUL	ATION DA	ATA
Bit Size 12.25 in Hyd	calog DSX	Surface	Hole	Pump Make JATION	AL 12P-16	VATIONAL 12P-160
Nozzles 5x14 / 1/32	"	30in @121m (121TVD)	852.2	Pump Size 6 X	(12.in	6 X 12.in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap 4.27	'4 gal/stk	4.274 gal/stk
5 in	1512 m	13.37in @621m (621TVD)	358.8	Pump stk/min 103	@97%	102@97%
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Ra	te	876 gal/min
5 in	112 m	in @1800m (1800TVD)	1211	Bottoms U	p 36.3	min 7451 stk
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Tim	58.1 i	min 11903 stk
8 in	176 m		354	Circulating Pressur	re	3250 psi

UIII	1 / 0 111			331	Circulating 1 1055t		3230 psi	
	MUD PROPE	RTIES			PRODUCTS USED LAST 24 HRS			
Sample From		Active@21:00	Active@16.00		Products		Size	Amt
Flow Line Temp	°F	125	116		SODA ASH		25 KG BG	10
Depth/TVD	m	1760/1760	1634/1634		POLYPAC UL		25 KG BG	31
Mud Weight	lb/gal	10.3@120°F	10.3@108°F		M-I BAR BULK	1 MT BK		4
Funnel Viscosity	s/qt	44	50		POTASSIUM CHLORIE	E	1 MT BG	10
Rheology Temp	°F	120	120		LEAD MUD ENGR		1 EA	1
R600/R300		48/32	55/38		POLY PLUS DRY		25 KG BG	4
R200/R100		26/19	31/23		SECOND MUD ENGR		1 EA	1
R6/R3		9/7	10/8		GLYDRIL MC		220 KG DM	12
PV	cP	16	17		POTASSIUM HYDROX	IDE	25 KG CN	8
YP	lb/100ft <sup>2</sup>	16	21					
10s/10m/30m Gel	lb/100ft <sup>2</sup>	9/14/18	10/18/21					
API Fluid Loss	cc/30 min	9.2	12					
HTHP FL Temp	cc/30 min							
Cake API/HTHP	1/32"	1/	1/					
Solids	%Vol		9					
Oil/Water	%Vol		/91					
Sand	%Vol		1.5		SOLIDS EQUIP		Size	Hr
MBT	lb/bbl	15	12.5		VSM Thule Shake		0, 4 x 84	24
pH		8	8		VSM Thule Shake	10	0, 4 x 165	24
Alkal Mud (Pm)		0	0		VSM Thule Shake	10, 2	2x120, 2x10	24
Pf/Mf		0/0.4	.05/.5		VSM Thule Shake	10	0, 4 x 105	24
Chlorides	mg/l	35000	39000		D-Sander			0
Hardness Ca	mg/l	1440	1520		D-Silter			0
KCl	Wt %	6	6.5					
Glycol	Vol %	3.4	3.7					
					MUD PROPER	TY SP	ECIFICATION	NS
					Weight	TY SP	10.1	NS
						TY SP		NS
					Weight	TY SP	10.1	NS

#### **REMARKS AND TREATMENT**

Blended premix to active system to maintain volume and mud weight. Added Glydril, Polyplus and Polypac UL to active to improve inhibition and fluid loss properties. Built slug for POOH.

### REMARKS

Drilled ahead to well TD 1800m. Circulated shakers clear, preparing to POOH.

TIME DISTR L	ast 24 Hrs	MUD VOL ACCTG	(bbl)	SOLIDS ANALYSIS	(%/lb/bbl)	MUD RHEOLOGY & HY	DRAULICS
Rig Up/Service		Oil Added	0	NaCl	.5/ 5.5	np/na Values	0.585/0.285
Drilling	23	Water Added	2	KCl	1.8/ 16.5	kp/ka (lb•s^n/100ft²)	0.889/4.694
Tripping		Mud Received	0	Low Gravity	3.4/ 30.6	Bit Loss (psi / %)	1288 / 1
Non-Productive Tim	1	Dumped	345	Bentonite	1.4/ 13.	Bit HHP (hhp/HSI)	658 / 1
Condition Hole	1	Left in Hole	0	Drill Solids	1.9/ 17.6	Bit Jet Vel (m/s)	114
Reaming		Other	0	Weight Material	4.4/ 64.3	Ann. Vel DP (m/min)	52.33
-		Sweeps	0	Chemical Conc	- / .	Ann. Vel DC (m/min)	76.04
		Shakers	203	Inert/React	1.041	Crit Vel DP (m/min)	85
				Average SG	3.5	Crit Vel DC (m/min)	93
				Carb/BiCarb (m mole/L)	./1	ECD @ 1800 (lb/gal)	10.5
MIEN	CD / DUO	ve	DIC DUONE	WAREHOUSE	DHONE	DAILY COST CUMUI	ATIVE COST

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Nick Cooper				
Gordon Howie	61-8-6363 8872	61-8-9325 4822	\$ 14,342.32	\$ 123,753.76



 Date
 30/10/2004
 Depth/TVD
 1800 m / 1800 m

 Spud Date
 20/10/2004
 Mud Type
 Glydril

 Water Depth
 55
 Activity
 RIH wiper trip

 Operator :
 Santos Ltd
 Field/Area :
 Otway Basin

 Report For :
 Nigel Walters/Stephen Hodgetts
 Description :
 Wild Cat-Gas Well

Well Name: Martha-1

Contractor: Diamond Offshore

Report For: Sean Defritas/Ray Breaud

Location: VIC-P-44

M-I Well No.: 14920

DRILLING AS	SEMBLY	CASING	MUD VOLUME (bbl)	CIRCULATION DATA		
Bit Size 12.25 in Hyd	calog DSX	Surface	Hole	Pump Make JATIONA	AL 12P-16 NATIONAL 12P-16(	
Nozzles 5x14 / 1/32	."	30in @121m (121TVD)	864.2(Tot)/626(Bit)	Pump Size 6 X	12.in 6 X 12.in	
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	gal/stk gal/stk	
5 in	1014 m	13.37in @621m (621TVD)	358.8	Pump stk/min		
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	gal/min	
5 in	112 m	in @1800m (1800TVD)	984.8	Bottoms U <sub>1</sub>		
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time	e	
8 in	176 m		355	Circulating Pressure	9	

8 III	1 / 0 m		333	Circulating Pressu			
MUD PROPERTIES				PRODUCTS	S		
Sample From		Active@21:00		Products	Size	Amt	
Flow Line Temp	°F			POLYPAC UL	25 KG BG	10	
Depth/TVD	m	1800/1800		M-I BAR BULK	1 MT BK	7	
Mud Weight	lb/gal	10.5		LEAD MUD ENGR	1 EA	1	
Funnel Viscosity	s/qt	52		DUO-VIS	25 KG BG	6	
Rheology Temp	°F	120		SECOND MUD ENGR	1 EA	1	
R600/R300		54/38		POTASSIUM HYDROX	IDE 25 KG CN	1	
R200/R100		32/23					
R6/R3		9/7					
PV	cP	16					
YP	lb/100ft <sup>2</sup>	22					
10s/10m/30m Gel	lb/100ft <sup>2</sup>	9/20/33					
API Fluid Loss	cc/30 min	11					
HTHP FL Temp	cc/30 min						
Cake API/HTHP	1/32"	1/					
Solids	%Vol	10					
Oil/Water	%Vol	/90					
Sand	%Vol	1.25		SOLIDS EQUIP	Size	Hr	
MBT	lb/bbl	15		VSM Thule Shake	10, 4 x 84	5	
pН		8.1		VSM Thule Shake	10, 4 x 165	5	
Alkal Mud (Pm)		0		VSM Thule Shake	10, 2x120, 2x10	5	
Pf/Mf		0/0.3		VSM Thule Shake	10, 4 x 105	5	
Chlorides	mg/l	35000		D-Sander		0	
Hardness Ca	mg/l	1600		D-Silter		0	
KCl	Wt %	4					
Glycol	Vol %	3.5					
				MUD PROPERTY SPECIFICATIONS			
				Weight	10.1		
				Viscosity	50		
				Filtrate	<6		

#### **REMARKS AND TREATMENT**

Built second slug for POOH. Built some weighted premix volume for reserve.

### REMARKS

Pumped slug and began POOH. Hole became tight at ~1400m, reamed and washed this section, before pumping 2nd slug and POOH to log. Logging tools were unable to run to bottom. POOH logging tools and RIH with drill string to make wiper trip.

TIME DISTR L	ast 24 Hrs	MUD VOL ACCTG	(bbl)	SOLIDS ANALYSIS (%/lb/bbl)		MUD RHEOLOGY & HYDRAULICS	
Rig Up/Service	5	Oil Added	0	NaCl	.7/ 8.1	np/na Values	0.507/0.339
Drilling		Water Added	221	KCl	1.4/ 13.1	kp/ka (lb•s^n/100ft²)	1.717/4.295
Tripping	11	Mud Received	0	Low Gravity	2.1/19.3	Bit Loss (psi / %)	/ 1
Non-Productive Tim	1	Dumped	137	Bentonite	1.6/ 14.5	Bit HHP (hhp/HSI)	/ 1
Condition Hole		Left in Hole	0	Drill Solids	.5/ 4.9	Bit Jet Vel (m/s)	
Reaming	3	Other	0	Weight Material	5.8/ 84.8	Ann. Vel DP (m/min)	
Wireline Logs	5	Sweeps	0	Chemical Conc	- / .	Ann. Vel DC (m/min)	
		Shakers	52	Inert/React	.2885	Crit Vel DP (m/min)	91
		Trip Losses	31	Average SG	3.77	Crit Vel DC (m/min)	102
		-		Carb/BiCarb (m mole/L)	./1	ECD @ 1302 (lb/gal)	10.5
MIEN	ICD / DUO	ME	DIC DUONE	WAREHOUSE	DHONE	DAILY COST CUMUI	ATIVE COST

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Nick Cooper				
Gordon Howie	61-8-6363 8872	61-8-9325 4822	\$ 4,993.28	\$ 128,747.04



#### WATER-BASED MUD REPORT No. 12

Operator: Santos Ltd

Report For: Nigel Walters/Stephen Hodgetts
Well Name: Martha-1
Contractor: Diamond Offshore

Report For: Sean Defritas/Ray Breaud

Field/Area: Otway Basin
Description: Wild Cat-Gas Well

Location: VIC-P-44 M-I Well No.: 14920

DRILLING AS	SEMBLY	CASING	N	<b>NUD VOLUN</b>	IE (bbl)	CI	<b>RCULATIO</b>	N DATA	
Bit Size 12.25 in	12.25 in Surface			Hole		Pump Make I	ATIONAL 12I	P-16 NATIONAL	L 12P-160
Nozzles 1/32"		30in @121m (121TVD) 926.1		.1	Pump Size	6 X 12.in	6 X 1	2.in	
Drill Pipe Size	Length	Intermediate		Active	Pits	Pump Cap	gal/	stk	gal/stk
5 in	m	13.37in @621m (6217	ΓVD)	426	9	Pump stk/min			
Drill Pipe Size	Length	Intermediate		Total Circu	ating Vol	Fl	ow Rate	gal/m	in
5 in	112 m	in @1800m (1800TV	VD)	426			_		
Drill Collar Size	Length	Production or Lin	ner	In Storage		Total C	irc Time		
8 in	176 m			238		Circulating	Pressure		
	MUD PR	OPERTIES				PRODU	CTS USED	LAST 24 HRS	3
Sample From		Active@20.00				Products		Size	Amt
Flow Line Temp	Flow Line Temp °F					LEAD MUD ENG	R	1 EA	1
Depth/TVD	pth/TVD m 1800/1800					SECOND MUD E	NGR	1 EA	1
Mud Weight	lb	/gal 10.5@95°F				GLYDRIL LC 55		55 GA DM	10
Eumnal Wigagaitre		alat 15				DOTACCII M HVDDOVIDE		25 MC CNI	2

Sample From		Active@20.00	
Flow Line Temp	°F		
Depth/TVD	m	1800/1800	
Mud Weight	lb/gal	10.5@95°F	
Funnel Viscosity		45	
Rheology Temp	s/qt °F	120	
R600/R300		53/37	
R200/R100		30/21	
R6/R3		9/7	
PV	cР	16	
YP	lb/100ft <sup>2</sup>	21	
10s/10m/30m Gel	lb/100ft <sup>2</sup>	9/18/23	
API Fluid Loss	cc/30 min	9.6	
HTHP FL Temp	cc/30 min		
Cake API/HTHP	1/32"	2/	
Solids	%Vol	10	
Oil/Water	%Vol	/90	
Sand	%Vol	1.25	
MBT	lb/bbl	15	
pH		8.7	
Alkal Mud (Pm)			
Pf/Mf		.05/.5	
Chlorides	mg/l	37000	
Hardness Ca	mg/l	1080	
	•		
KCl	Wt %	4	
Glycol	Vol %	3.2	
	·		
<u> </u>		·	

Troducts		SIZC	AIIIt
LEAD MUD ENGR		1 EA	1
SECOND MUD ENGR		1 EA	1
GLYDRIL LC		55 GA DM	10
POTASSIUM HYDROX	IDE	25 KG CN	2
SOLIDS EQUIP		Size	Hr
VSM Thule Shake	1	0, 4 x 84	0
VSM Thule Shake			
v Sivi Thuie Shake	1 1	). 4 x 165	0
		0, 4 x 165 2x120, 2x10	0
VSM Thule Shake	10, 2	2x120, 2x10	0
VSM Thule Shake VSM Thule Shake	10, 2		0
VSM Thule Shake VSM Thule Shake D-Sander	10, 2	2x120, 2x10	0
VSM Thule Shake VSM Thule Shake	10, 2	2x120, 2x10	0 0 0
VSM Thule Shake VSM Thule Shake D-Sander	10, 2	2x120, 2x10	0 0 0
VSM Thule Shake VSM Thule Shake D-Sander	10, 2	2x120, 2x10	0 0 0
VSM Thule Shake VSM Thule Shake D-Sander	10, 2	2x120, 2x10	0 0 0
VSM Thule Shake VSM Thule Shake D-Sander	10, 2	2x120, 2x10	0 0 0
VSM Thule Shake VSM Thule Shake D-Sander D-Silter	10, 2	2x120, 2x10 0, 4 x 105	0 0 0 0
VSM Thule Shake VSM Thule Shake D-Sander D-Silter  MUD PROPER	10, 2	2x120, 2x10 0, 4 x 105 ECIFICATIO	0 0 0 0
VSM Thule Shake VSM Thule Shake D-Sander D-Silter  MUD PROPER Weight	10, 2	2x120, 2x10 0, 4 x 105 ECIFICATION	0 0 0 0
VSM Thule Shake VSM Thule Shake D-Sander D-Silter  MUD PROPER	10, 2	2x120, 2x10 0, 4 x 105 ECIFICATIO	0 0 0 0

#### **REMARKS AND TREATMENT**

Bleed in premix (Polypac UL & Duovis) from pit #5 to active to maintain properties and volume during wiper trip.. 10 Glydril LC drums charged today are inventory correction. Used on 28/10/04.

#### REMARKS

POOH after wiper trip. Run first suite of logs. Got to bottom no problem. Now 2nd logging run.

TIME DISTR	Last 24 Hrs MUI	VOL ACCTO	(bbl)	SOLIDS ANALYSIS	(%/lb/bbl)	MUD RHEOLOGY & HYD	RAULICS
Rig Up/Service	Oil Ad		0	NaCl	.8/ 9.2	np/na Values	
Drilling	Water	Added	0	KCl	1.4/ 13.1	kp/ka (lb•s^n/100ft²)	
Tripping		eceived	0	Low Gravity	2.1/ 18.8	Bit Loss (psi / %)	
Non-Productive Tir	n Dumpe	ed	0	Bentonite	1.6/ 14.5	Bit HHP (hhp/HSI)	
Condition Hole	Left in	Hole	0	Drill Solids	.5/ 4.3	Bit Jet Vel (m/s)	
Reaming	Other		0	Weight Material	5.7/ 84.3	Ann. Vel DP (m/min)	
Wireline Logs	Sweep	3	0	Chemical Conc	- / .	Ann. Vel DC (m/min)	
_	Shaker	S	0	Inert/React	.2546	Crit Vel DP (m/min)	
	Trip Lo	osses	0	Average SG	3.78	Crit Vel DC (m/min)	
		·		Carb/BiCarb (m mole/L)	1./ 9.9		

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Nick Cooper				
Gordon Howie	61-8-6363 8872	61-8-9325 4822	\$ 7,050.66	\$ 135,797.70



#### WATER-BASED MUD REPORT No. 13

 Date
 1/11/2004
 Depth/TVD
 1800 m / 1800 m

 Spud Date
 20/10/2004
 Mud Type
 Glydril

 Water Depth
 55
 Activity
 Logging

Operator :Santos LtdField/Area :Otway BasinReport For :Nigel Walters/Stephen HodgettsDescription :Wild Cat-Gas Well

Well Name: Martha-1

Contractor: Diamond Offshore

Report For: Barry Scott/Ray Breaud

Location: VIC-P-44

M-I Well No.: 14920

DRILLING AS	SEMBLY	CASING	MUD VOLUME (bbl)	CIRCULATION DATA		
Bit Size in		Surface	Hole	Pump Make JATIONAI	L 12P-16   NATIONAL 12P-16(	
Nozzles 1/32"		30in @121m (121TVD)	926.1	Pump Size 6 X 1	2.in 6 X 12.in	
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	gal/stk gal/stk	
5 in	m	13.37in @621m (621TVD)	426.9	Pump stk/min		
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	gal/min	
5 in	112 m	in @1800m (1800TVD)	426.9	Bottoms Up	_	
Drill Collar Size Length		Production or Liner	In Storage	Total Circ Time		
8 in	176 m		236	Circulating Pressure		

8 III	1 / 0 m		230	Circulating Pressu		
	MUD PROPE	RTIES		PRODUCTS	USED LAST 24 HR	S
Sample From		Active@22.00		Products	Size	Amt
Flow Line Temp	°F			M-I BAR BULK	1 MT BK	36
Depth/TVD	m	1800/1800		M-I GEL BULK	1 MT BK	2
Mud Weight	lb/gal	10.5		LEAD MUD ENGR	1 EA	1
Funnel Viscosity	s/qt	45				
Rheology Temp	°F	120				
R600/R300		53/37				
R200/R100		30/21				
R6/R3		9/7				
PV	cP	16				
YP	lb/100ft <sup>2</sup>	21				
10s/10m/30m Gel	lb/100ft <sup>2</sup>	9/18/23				
API Fluid Loss	cc/30 min	9.6				
HTHP FL Temp	cc/30 min					
Cake API/HTHP	1/32"	2/				
Solids	%Vol	10				
Oil/Water	%Vol	/90				
Sand	%Vol	1.25		SOLIDS EQUIP	Size	Hr
MBT	lb/bbl	15		VSM Thule Shake	10, 4 x 84	0
pН		8.7		VSM Thule Shake	10, 4 x 165	0
Alkal Mud (Pm)				VSM Thule Shake	10, 2x120, 2x10	0
Pf/Mf		.05/.5		VSM Thule Shake	10, 4 x 105	0
Chlorides	mg/l	37000		D-Sander		0
Hardness Ca	mg/l	1080		D-Silter		0
KC1	Wt %	4				
Glycol	Vol %	3.2				
			1			
			1		TY SPECIFICATIO	NS
			 4	Weight	10.5	
			 4	Viscosity	50	
				Filtrate	<6	
			4	1 1111410		

#### **REMARKS AND TREATMENT**

Mixed 150bbl viscous 12.5 ppg for cement spacer. 22mt of Barite charged today is an inventory adjustment to agree with control room tank soundings.

#### REMARKS

Continue logging program. Dumped and cleaned Pit #2 and #4 ready for cement job if required.

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG	(bbl)	SOLIDS ANALYSIS	(%/lb/bbl)	MUD RHEOLOGY & HYDRAULICS
Rig Up/Service		Oil Added	0	NaCl	.8/ 9.2	np/na Values
Drilling		Water Added	0	KCl	1.4/ 13.1	kp/ka (lb•s^n/100ft²)
Tripping		Mud Received	0	Low Gravity	2.1/ 18.8	Bit Loss (psi / %)
Non-Productive Ti	m	Dumped	62	Bentonite	1.6/ 14.5	Bit HHP (hhp/HSI)
Condition Hole		Left in Hole	0	Drill Solids	.5/ 4.3	Bit Jet Vel (m/s)
Reaming		Other	0	Weight Material	5.7/ 84.3	Ann. Vel DP (m/min)
Wireline Logs	24	Sweeps	0	Chemical Conc	- / .	Ann. Vel DC (m/min)
-		Shakers	0	Inert/React	.2546	Crit Vel DP (m/min)
		Trip Losses	0	Average SG	3.78	Crit Vel DC (m/min)
				Carb/BiCarb (m mole/L)	1./ 9.9	

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Gordon Howie	61-8-6363 8872	61-8-9325 4822	\$ 8,647.34	\$ 144,445.04



#### WATER-BASED MUD REPORT No. 14

Operator : Santos LtdField/Area : Otway BasinReport For : Nigel Walters/Stephen HodgettsDescription : Wild Cat-Gas Well

Well Name: Martha-1
Contractor: Diamond Offshore
Report For: Barry Scott/Ray Breaud

Location: VIC-P-44
M-I Well No.: 14920

DRILLING AS	SEMBLY	CASING	MUD VOLUME (bbl)	CIRCULATION DATA		
Bit Size in		Surface	Hole	Pump Make JATIONAL	. 12P-16   NATIONAL 12P-16(	
Nozzles 1/32"		30in @121m (121TVD)	639.1	Pump Size 6 X 1	2.in 6 X 12.in	
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	gal/stk gal/stk	
5 in	m	13.37in @621m (621TVD)	456.9	Pump stk/min		
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	gal/min	
5 in	112 m	in @1800m (1800TVD)	456.9	Bottoms Up	-	
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time		
8 in	176 m		433	Circulating Pressure		

O III	1 / 0 111		433	Circulating Flessu	пС	
	MUD PROPE	RTIES		PRODUCTS I	USED LAST 24 HR	S
Sample From		Active@23.00		Products	Size	Amt
Flow Line Temp	°F			SODIUM BICARBONAT	TE 25 KG BG	25
Depth/TVD	m	1200/1200		LEAD MUD ENGR	1 EA	1
Mud Weight	lb/gal	10.5		GLUTE 25	25 LT CN	2
Funnel Viscosity	s/qt	47		CONQOR 303A	55 GA DM	4
Rheology Temp	°F	120				
R600/R300		65/45				
R200/R100		35/26				
R6/R3		11/9				
PV	cP	20				
YP	lb/100ft <sup>2</sup>	25				
10s/10m/30m Gel	lb/100ft <sup>2</sup>					
API Fluid Loss	cc/30 min	14				
HTHP FL Temp	cc/30 min					
Cake API/HTHP	1/32"	2/				
Solids	%Vol	10				
Oil/Water	%Vol	/90			II.	•
Oil/Water Sand	%Vol			SOLIDS EQUIP	Size	Hr
Oil/Water	%Vol			SOLIDS EQUIP VSM Thule Shake	<b>Size</b> 10, 4 x 84	<b>Hr</b> 0
Oil/Water Sand	%Vol %Vol	1				
Oil/Water Sand MBT	%Vol %Vol	1 15	-	VSM Thule Shake	10, 4 x 84	0
Oil/Water Sand MBT pH Alkal Mud (Pm) Pf/Mf	%Vol %Vol	1 15	-	VSM Thule Shake VSM Thule Shake	10, 4 x 84 10, 4 x 165	0
Oil/Water Sand MBT pH Alkal Mud (Pm) Pf/Mf Chlorides	%Vol %Vol	1 15 11.5 .05/.5 37000		VSM Thule Shake VSM Thule Shake VSM Thule Shake VSM Thule Shake D-Sander	10, 4 x 84 10, 4 x 165 10, 2x120, 2x10	0 0 0
Oil/Water Sand MBT pH Alkal Mud (Pm) Pf/Mf	%Vol %Vol lb/bbl	1 15 11.5 .05/.5		VSM Thule Shake VSM Thule Shake VSM Thule Shake VSM Thule Shake	10, 4 x 84 10, 4 x 165 10, 2x120, 2x10	0 0 0
Oil/Water Sand MBT pH Alkal Mud (Pm) Pf/Mf Chlorides Hardness Ca	%Vol %Vol lb/bbl mg/l	1 15 11.5 .05/.5 37000		VSM Thule Shake VSM Thule Shake VSM Thule Shake VSM Thule Shake D-Sander	10, 4 x 84 10, 4 x 165 10, 2x120, 2x10	0 0 0 0
Oil/Water Sand MBT pH Alkal Mud (Pm) Pf/Mf Chlorides Hardness Ca	%Vol %Vol lb/bbl mg/l mg/l	1 15 11.5 .05/.5 37000 1200		VSM Thule Shake VSM Thule Shake VSM Thule Shake VSM Thule Shake D-Sander	10, 4 x 84 10, 4 x 165 10, 2x120, 2x10	0 0 0 0
Oil/Water Sand MBT pH Alkal Mud (Pm) Pf/Mf Chlorides Hardness Ca	%Vol %Vol lb/bbl mg/l	1 15 11.5 .05/.5 37000 1200		VSM Thule Shake VSM Thule Shake VSM Thule Shake VSM Thule Shake D-Sander	10, 4 x 84 10, 4 x 165 10, 2x120, 2x10	0 0 0 0
Oil/Water Sand MBT pH Alkal Mud (Pm) Pf/Mf Chlorides Hardness Ca	%Vol %Vol lb/bbl mg/l mg/l	1 15 11.5 .05/.5 37000 1200		VSM Thule Shake VSM Thule Shake VSM Thule Shake VSM Thule Shake D-Sander	10, 4 x 84 10, 4 x 165 10, 2x120, 2x10	0 0 0 0
Oil/Water Sand MBT pH Alkal Mud (Pm) Pf/Mf Chlorides Hardness Ca	%Vol %Vol lb/bbl mg/l mg/l	1 15 11.5 .05/.5 37000 1200		VSM Thule Shake VSM Thule Shake VSM Thule Shake VSM Thule Shake D-Sander D-Silter	10, 4 x 84 10, 4 x 165 10, 2x120, 2x10 10, 4 x 105	0 0 0 0 0
Oil/Water Sand MBT pH Alkal Mud (Pm) Pf/Mf Chlorides Hardness Ca	%Vol %Vol lb/bbl mg/l mg/l	1 15 11.5 .05/.5 37000 1200		VSM Thule Shake VSM Thule Shake VSM Thule Shake VSM Thule Shake D-Sander D-Silter  MUD PROPER	10, 4 x 84 10, 4 x 165 10, 2x120, 2x10	0 0 0 0 0
Oil/Water Sand MBT pH Alkal Mud (Pm) Pf/Mf Chlorides Hardness Ca	%Vol %Vol lb/bbl mg/l mg/l	1 15 11.5 .05/.5 37000 1200		VSM Thule Shake D-Sander D-Silter  MUD PROPER Weight	10, 4 x 84 10, 4 x 165 10, 2x120, 2x10 10, 4 x 105 TY SPECIFICATIO 10.5	0 0 0 0 0
Oil/Water Sand MBT pH Alkal Mud (Pm) Pf/Mf Chlorides Hardness Ca	%Vol %Vol lb/bbl mg/l mg/l	1 15 11.5 .05/.5 37000 1200		VSM Thule Shake VSM Thule Shake VSM Thule Shake VSM Thule Shake D-Sander D-Silter  MUD PROPER Weight Viscosity	10, 4 x 84 10, 4 x 165 10, 2x120, 2x10 10, 4 x 105 TY SPECIFICATIO 10.5 50	0 0 0 0 0
Oil/Water Sand MBT pH Alkal Mud (Pm) Pf/Mf Chlorides Hardness Ca	%Vol %Vol lb/bbl mg/l mg/l	1 15 11.5 .05/.5 37000 1200		VSM Thule Shake D-Sander D-Silter  MUD PROPER Weight	10, 4 x 84 10, 4 x 165 10, 2x120, 2x10 10, 4 x 105 TY SPECIFICATIO 10.5	0 0 0 0 0

#### **REMARKS AND TREATMENT**

Inhibited mud to be left in casing with corrosion inhibitor and biocide. Severely cement contaminated mud treated with bicarb to maintain reasonable rheological properties

#### **REMARKS**

Completed wireline logging. RIH to set cement plugs for P&A. Measure return volumes then dumping mud. Full returns on the 3 plugs set so far.

TIME DISTR L	ast 24 Hrs	MUD VOL ACCTG	(bbl)	SOLIDS ANALYSIS	(%/lb/bbl)	MUD RHEOLOGY & HYDRAULICS
Rig Up/Service		Oil Added	0	NaCl	.8/ 9.2	np/na Values
Drilling		Water Added	0	KCl	1.4/ 13.1	$kp/ka$ ( $lb \cdot s^n/100ft^2$ )
Tripping		Mud Received	0	Low Gravity	2.1/ 18.8	Bit Loss (psi/%)
Non-Productive Tim	1	Dumped	0	Bentonite	1.6/ 14.5	Bit HHP (hhp / HSI)
Condition Hole		Left in Hole	0	Drill Solids	.5/ 4.3	Bit Jet Vel (m/s)
Reaming		Other	0	Weight Material	5.7/ 84.3	Ann. Vel DP (m/min)
Wireline Logs		Sweeps	0	Chemical Conc	- / .	Ann. Vel DC (m/min)
-		Shakers	68	Inert/React	.2546	Crit Vel DP (m/min)
		Trip Losses	0	Average SG	3.78	Crit Vel DC (m/min)
		_		Carb/BiCarb (m mole/L)	-2.2/ .	

			CurorB	icuro (in more/L)		
M-I ENG	R / PHO	JE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Gordon Howie			61-8-6363 8872	61-8-9325 4822	\$ 2,604.80	\$ 147,049.84

**SECTION 11: CASING & CEMENTING SUMMARY** 

#### Santos 13-3/8" CASING AND CEVENTING REPORT WELL: DATE ########## Martha #1 76.16 628 RT to seabed (m): T.D(m): RTtoMSL(m): 21.5 REPORT BY: John Wrenn Cameron STM 15 SERIES: STRINGTYPE Surface Casing CASINGANDEQUIPMENT RECORDAS RUN FROM BOTTOM TO TOP WEIGHT то GRADE REWARKS OD (mm) Jants (m) (kg/m) (m) (m) 83/4" WH Housing / 133/8" 84.22 ?? 10.81 476 140 1 Buttress 73.41 340 101 L-80 BTCxTER 1277 84.22 96.99 33/8" Non cross coupling BTC box x TER pin 340 101 L-80 37 TER 473.46 96.99 570.45 133/8" Casing 68ppf L-80 583.05 340 101 TERXBTC 1260 570.45 33/8" TERboxxBTC pin L-80 1253 595.58 133/8" Float Collar Joint 340 101 Buttress 583.05 L-80 608.18 133/8" Intermediate Joint 340 101 Buttress 1260 595.58 L-80 1258 620.76 133/8" Shoe Jaint 340 101 Buttress 608.18 TALLYTOTAL CASINGI ANDEDAT:-620.76 m RTTOTOPOFWELLHEADHOUSING:-7341 m CENTRALIZER POSITION . One on Shoe, intermediate and Float collar joints, One over every second joint for next 3 joints PREFLUSH Valume(m8): 31.8 Density(SG): 1.03 Seawater Additive: Amount Usect Additive: % Amount Used CEMENT: LEADSLURRY (mixed with seawater) Additive litre/sx Amount Used (litre) Brand: Adelaide Brighton Cement G MT: 346 D047 Antifoam 0.037 525 Class: Vixwater litr/sk Yield litr/sk 63.11 D075 Extender 1.589 1404 Densitysg 1.5 Excess: 100 % Valumepumped TAILSLURRY (mixed with drill water) Additive litre/sx Amount Used (litre) D 047 Antifoam Brand: Adelaide Brighton Cement Class G MT: 391 0.037 2325 Mxwater litr/sk 19.44 3283 1.89 Yieldlitr/sk Densitysg 30.05 100 % Valumenumed m8 Excess: DISPLACEMENT PlugBump: @ Ruict Seawater Calc. Displacement (m8): 40.27 4800 **kPa** Pressure Tested to 10300 kРа 1.1 m9/min) Densitysg 103 Actual Displacement (m8): 4102 at Rate: 1.25 m9/min Reed Back 03975 m8 ACTIVITY Time Start Running Casing 23/10/04/15:00 Returns to Seabed: Yes Fluorosine dye observed with ROV Finish Running Casing 24/10/04600 Reciprocate/Rotate Casing: Nb sades of Class Start Circulating 24/10/04/6/00 Nb TopUbJob: Durina: Circulating No Start Surface Expt. Pressure Test 24/10/04625 Cementing Pump Preflush Displacing Nb 24/10/048:15 Start Mixing/Pumping Cement Wiper Plugs DeerSea Excress darts FinishMxing/PumpingCement 24/10/04/10:01 Bottom Dovel Start Displacement 24/10/04/10:05 Top Dovell Stop Displacement/Bump Plug 24/10/04/10:38 Cementing Contractor: Dovell ТорЦрЈов N/A CEVENT JOB DETAIL/REWARKS Circulated 200 bbls of seawater with rig pumps, rigged up and tested cement line to 3000 psi. Pumped 10 bbls fluorosine dye at 8.5 bpm for 315 psi $Had \textit{problems with Dowell LAsystem pump and main shutoff valve \textit{at cement surge tank with wet cement blocking it.} \textit{Took 1} \textit{hr 35} \textit{mins to start mixing cement}$ Mixed and pumped 321 bbls of Lead slurry (810sx) @ 1.5sg with 253 bbls of mix water. Mixed and pumped 112 bbls of Tail slurry (915sx) @ 1.89sg with 112 bbls of Sea water.

Dropped dart and pumped 4 bbls cement behind, shearing out top plug with 3100 psi. Continued to displace cement with seawater via cement unit ROV observed fluorosine dye at seabed during displacement and plug was bumped with 1500 psi after 258 bbls (1.7 bbls less than additional half of shoe track)



#### **CASING AND CEMENTING REPORT**

FORM DMS F220

#### Well Name: MARTHA 01

Casing Type:	Interm	ediate Casing	Originated B	y: J.	Wrenn	Checked By:	N. Walter	S	Date:		25 (	Oct 2004
Hole Size:	17.50i	in	Total Depth:	62	8.0m	GL-RT:			Contrac	tor:	Dow	vell
PRE-FLUSH	Obbl @ Op	pg				SPACER	200.0bbl @ 8	.60ppg				
Additives:						Additives:						
CEMENT							<u>ADDITIVES</u>			%	Amount	Units
LEAD SLURRY:	:		810	sx								
Brand / Class:			Ade	laide Bright	on / G		D 075			0.42 gal/sx	370	gall
Slurry Yield:			2.23	ft³/sx			D 047			0.01 gal/sx	13.87	gall
Mixwater Req't:			12.7	2gal/sx								
Actual Slurry Pu	ımped:		321.	.0bbl								
Density:			12.5	i0ppg								
Cement Top (MI	D):		76.0	m								
TAIL SLURRY:			915	SX								
Brand / Class:			Ade	laide Bright	on / G		D 047			0.01 gal/sx	6.14	gall
Slurry Yield:			1.16	ift³/sx								
Mixwater Req't:			5.14	gal/sx								
Actual Slurry Pu	ımped:		112.	.0bbl								
Density:			15.8	0ppg								
Cement Top (MI	D):		421.	.0m								
DISPLACEMEN	<u>IT</u>				Fluid: seawat	er @ 8.60ppg						
Theoretical Disp	ol.:		253.3bbl			Bumped Plug wi	th:		700psi			
Actual Displ.:			258.0bbl @ 4	100gpm		Pressure Tested	I To:		1500psi			
Displaced via:			Cement Unit			Bleed Back:			2.5bbl			
ACTIVITY		Time/Date		Returns to	Surface: Obbl mu	id, Obbl cmt						
Start Running cs	sg.	23 Oct 2004 1	5:00	Casing Ad	ction During Pr	eflush : No Action	Taken Cer	nent : No A	ction Tak	ron F	)ienlacem	NI- A-41
Casing On Botto				0 409 7 10	stion builing in	eliusii . No Action	Taken Oci	HOHE. NO	Cuon ran	CII L	Jispiaceiii	ent : No Action
oadiii.g o.i. Doille	om	24 Oct 2004 0	6:00	Taken	Stion During 11	eliusii . No Action	Traken oci	nont . No /	ction ran	Cerr L	Displacem	ent : No Actior
Start Circulation		24 Oct 2004 0			_	enusii . No Action		sx of class	CHOIT TAN	Cerr L	ларіасетт	ent : No Action
	1		6:00	Taken Top Up Jo Wiper Plu	ob run: 0 ng Top: Yes	eliusii . No Action			CHOIT TAN	Keri L	ларіасеті	ent : No Actior
Start Circulation	1	24 Oct 2004 0	6:00	Taken Top Up Jo Wiper Plu	ob run: 0	eliusii . No Action			ouon rak	Keri L	лэргасетт	ent : No Action
Start Circulation Start Pressure T	1	24 Oct 2004 0	6:00 6:25	Taken Top Up Jo Wiper Plu Wiper Plu Plug Set:	ob run: 0 g Top: Yes g Bottom: Yes Manufad	cturer: Dowell	0s Ty	sx of class /pe: Dowell			·	
Start Circulation Start Pressure T Pump Preflush	1	24 Oct 2004 0	6:00 6:25 8:15	Taken Top Up Jo Wiper Plu Wiper Plu Plug Set:	ob run: 0 g Top: Yes g Bottom: Yes	cturer: Dowell	Os Ty Ca	entralizer P	lacement	t Depth:	One centr	rilizer of first
Start Circulation Start Pressure T Pump Preflush Start Mixing Finish Mixing	Γest	24 Oct 2004 0 24 Oct 2004 0 24 Oct 2004 0	6:00 6:25 8:15 0:01	Taken Top Up Jo Wiper Plu Wiper Plu Plug Set:	ob run: 0 g Top: Yes g Bottom: Yes Manufad	cturer: Dowell	Os Ty C: th	entralizer P	lacement shoe trac	t Depth:	One centr	rilizer of first
Start Circulation Start Pressure T Pump Preflush Start Mixing Finish Mixing Start Displacing	Γest	24 Oct 2004 0 24 Oct 2004 0 24 Oct 2004 0 24 Oct 2004 1 24 Oct 2004 1	6:00 6:25 8:15 0:01	Taken Top Up Jo Wiper Plu Wiper Plu Plug Set:	ob run: 0 g Top: Yes g Bottom: Yes Manufad	cturer: Dowell	Os Ty C: th	entralizer Pree joints (	lacement shoe trac	t Depth:	One centr	rilizer of first
Start Circulation Start Pressure T Pump Preflush Start Mixing	Γest	24 Oct 2004 00 24 Oct 2004 00 24 Oct 2004 00 24 Oct 2004 10	6:00 6:25 8:15 0:01	Taken Top Up Jo Wiper Plu Wiper Plu Plug Set:	ob run: 0 g Top: Yes g Bottom: Yes Manufad	cturer: Dowell	Os Ty C: th	entralizer Pree joints (	lacement shoe trac	t Depth:	One centr	rilizer of first
Start Circulation Start Pressure T Pump Preflush Start Mixing Finish Mixing Start Displacing Stop Displ./Bum	Γest	24 Oct 2004 0 24 Oct 2004 0 24 Oct 2004 0 24 Oct 2004 1 24 Oct 2004 1 24 Oct 2004 1	6:00 6:25 8:15 0:01	Taken Top Up Jo Wiper Plu Wiper Plu Plug Set: Centralize	ob run: 0  g Top: Yes  g Bottom: Yes  Manufac er Type: Weatherfo	cturer: Dowell	Os Ty C: th	entralizer Pree joints (	lacement shoe trac	t Depth:	One centr	rilizer of first
Start Circulation Start Pressure T Pump Preflush Start Mixing Finish Mixing Start Displacing Stop Displ./Bum	Γest	24 Oct 2004 0 24 Oct 2004 0 24 Oct 2004 0 24 Oct 2004 1 24 Oct 2004 1 24 Oct 2004 1	6:00 6:25 8:15 0:01 0:05 0:38 ASING AND I	Taken Top Up Jo Wiper Plu Wiper Plu Plug Set: Centralize	ob run: 0  g Top: Yes  g Bottom: Yes  Manufac er Type: Weatherfo	cturer: Dowell	Os Ty C: th	entralizer Pree joints (	lacement shoe trac	t Depth: ck ) and o joints	One centr	ent : No Action
Start Circulation Start Pressure T Pump Preflush Start Mixing Finish Mixing Start Displacing Stop Displ./Bum	Γest	24 Oct 2004 0 24 Oct 2004 0 24 Oct 2004 0 24 Oct 2004 1 24 Oct 2004 1 24 Oct 2004 1	6:00 6:25 8:15 0:01 0:05 0:38 ASING AND I	Taken Top Up Jo Wiper Plu Wiper Plu Plug Set: Centralize	ob run: 0  g Top: Yes  g Bottom: Yes  Manufac er Type: Weatherfo	cturer: Dowell	Os Ty C: th	ype: Dowell entralizer P ree joints (	lacement shoe trac	t Depth: ck ) and c joints	One centri	rilizer of first
Start Circulation Start Pressure T Pump Preflush Start Mixing Finish Mixing Start Displacing Stop Displ./Bum Pressure Test	rest	24 Oct 2004 0 24 Oct 2004 0 24 Oct 2004 0 24 Oct 2004 1 24 Oct 2004 1 24 Oct 2004 1 24 Oct 2004 1	6:00 6:25 8:15 0:01 0:05 0:38 ASING AND I	Taken Top Up Jo Wiper Plu Wiper Plu Plug Set: Centralize	ob run: 0  gg Top: Yes  gg Bottom: Yes  Manufac er Type: Weatherfo	cturer: Dowell ord	Os Ty Co th Se	ype: Dowell entralizer Pree joints (cond joint leading to Leading Lead	lacement shoe trac for next 6	t Depth: kk) and cijoints	One centri one centri	rilizer of first lizer over even
Start Circulation Start Pressure T Pump Preflush Start Mixing Finish Mixing Start Displacing Stop Displ./Bum Pressure Test No. Joints	Test  OD	24 Oct 2004 00 24 Oct 2004 00 24 Oct 2004 00 24 Oct 2004 10 24 Oct 2004 10 24 Oct 2004 10 Co  W 50lb	6:00 6:25 8:15 0:01 0:05 0:38 ASING AND I	Taken Top Up Jo Wiper Plu Wiper Plu Plug Set: Centralize  EQUIPMEN Stick Up Grade	ob run: 0  g Top: Yes  g Bottom: Yes  Manufac er Type: Weatherfo	ord	Os Ty Ci th se	ype: Dowell entralizer Pree joints (econd joint lecond jo	lacement shoe trac for next 6	t Depth: k ) and c i joints	One centri	ilizer of first lizer over every
Start Circulation Start Pressure T Pump Preflush Start Mixing Finish Mixing Start Displacing Stop Displ./Bum Pressure Test  No. Joints 1	Test  OD  5.00in	24 Oct 2004 0 24 Oct 2004 0 24 Oct 2004 0 24 Oct 2004 1 24 Oct 2004 1 24 Oct 2004 1  Co  W 50lb 1 100lt	6:00 6:25 8:15 0:01 0:05 0:38 ASING AND I	Taken Top Up Jo Wiper Plu Wiper Plu Plug Set: Centralize  EQUIPMEN Stick Up Grade HWDP	Dob run: 0  In grop: Yes  In grop: Yes  In grop: Yes  In grop: Weatherfor  In DETAILS  Com  Runnin  18 3/4 wellh  BTC No-Cross	cturer: Dowell ord  iment g string	Thread 4 1/2IF	ype: Dowell entralizer Pree joints (econd joint to be preed to be	lacement shoe trac for next 6	t Depth: ck ) and of joints  -3.0  Fr -3.0	One centri one centri	ilizer of first lizer over every To 73.41m
Start Circulation Start Pressure T Pump Preflush Start Mixing Finish Mixing Start Displacing Stop Displ./Bum Pressure Test  No. Joints 1	OD 5.00in 18.75ii	24 Oct 2004 00 24 Oct 2004 00 24 Oct 2004 00 24 Oct 2004 10 24 Oct 2004 11 24 Oct 2004 11 24 Oct 2004 11  Column 50lb n 100lt n 68lb	6:00 6:25 8:15 0:01 0:05 0:38 ASING AND I	Taken Top Up Jo Wiper Plu Wiper Plu Plug Set: Centralize  EQUIPMEN Stick Up Grade HWDP L-80	Dob run: 0  Ig Top: Yes  Ig Bottom: Yes  Manufacer Type: Weatherfor  T DETAILS  Com  Runnin  18 3/4 wellh  BTC No-Cross TER p	ead housing coupling box x	Thread 4 1/2IF Butt	ype: Dowell entralizer Pree joints (pecond joint to pecond joint joi	lacement shoe trace for next 6	t Depth: k ) and c joints -3.0 Fr -3.0 84	One centri one centri	To 73.41m 84.22m
Start Circulation Start Pressure T Pump Preflush Start Mixing Finish Mixing Start Displacing Stop Displ./Bum Pressure Test  No. Joints 1 1 1	OD 5.00in 18.75ii 13.38ii	24 Oct 2004 0 24 Oct 2004 0 24 Oct 2004 0 24 Oct 2004 1 24 Oct 2004 1 24 Oct 2004 1  C  W  50lb  100lb  68lb	6:00 6:25 8:15 0:01 0:05 0:38 ASING AND I	Taken Top Up Jo Wiper Plu Wiper Plu Plug Set: Centralize  EQUIPMEN Stick Up Grade HWDP L-80 L-80	Dob run: 0  Ig Top: Yes  Ig Bottom: Yes  Manufac  IT DETAILS  Com  Runnin  18 3/4 wellh  BTC No-Cross  TER p  37 joints of	ement g string ead housing coupling box x in XO	Thread 4 1/2IF Butt XO	ype: Dowell entralizer Pree joints (econd joint to precond joint	lacement shoe trac for next 6	t Depth: ck ) and c i joints  -3.0  Fr  -3.0  84.1	One centri  Oom  oom  oom  oom  oom  41m  22m	To 73.41m 84.22m 96.99m
Start Circulation Start Pressure T Pump Preflush Start Mixing Finish Mixing Start Displacing Stop Displ./Bum Pressure Test  No. Joints  1 1 1 37	OD 5.00in 18.75ir 13.38ir 13.38ir	24 Oct 2004 0 24 Oct 2004 0 24 Oct 2004 0 24 Oct 2004 1 24 Oct 2004 1 24 Oct 2004 1  Co  W  50lb  100lb  68lb  68lb	6:00 6:25 8:15 0:01 0:05 0:38  ASING AND I	Taken Top Up Jo Wiper Plu Wiper Plu Plug Set: Centralize  Centralize  EQUIPMEN Stick Up Grade HWDP L-80 L-80	pob run: 0 gg Top: Yes gg Bottom: Yes Manufac er Type: Weatherfo  TT DETAILS  Com Runnin 18 3/4 wellh BTC No-Cross TER p 37 joints of BTC pin to 7	ord  Imment g string ead housing c coupling box x bin XO  TER casing	Thread 4 1/2IF Butt XO TER	Let 76 473.	lacement shoe trac for next 6	t Depth: ck ) and c i joints  -3.0  Fr -3.0  73.4  96.5	One centrione centri	To 73.41m 84.22m 96.99m 570.45m
Start Circulation Start Pressure T Pump Preflush Start Mixing Finish Mixing Start Displacing Stop Displ./Bum Pressure Test  No. Joints  1  1  37  1	OD 5.00in 18.75in 13.38in 13.3	24 Oct 2004 00 24 Oct 2004 00 24 Oct 2004 10 24 Oct 2004 11 24 Oct 2004 11 24 Oct 2004 11 25 Oct 2004 11 26 Oct 2004 11 27 Oct 2004 11 28 Oct 2004 11 29 Oct 2004 11 20 Oct	6:00 6:25 8:15 0:01 0:05 0:38  ASING AND I  //t //t //s/ft //s/ft //s/ft //s/ft //s/ft	Taken Top Up Jo Wiper Plu Wiper Plu Plug Set: Centralize  Centralize  EQUIPMEN Stick Up Grade HWDP L-80 L-80 L-80	Dob run: 0  In grop: Yes  In grop: Yes  In grop: Yes  In grop: Yes  In grop: Weatherfor  In deciding the second of	ord  Imment g string ead housing coupling box x bin XO TER casing IER box XO	Thread 4 1/2IF Butt XO TER XO	Let 12.1	lacement shoe trac for next 6	-3.0 Fr -3.0 84.1 96.9 570.	One centrione centri	To 73.41m 84.22m 96.99m 570.45m 583.05m
Start Circulation Start Pressure T Pump Preflush Start Mixing Finish Mixing Start Displacing Stop Displ./Bum Pressure Test  No. Joints 1 1 37 1 1	OD 5.00in 18.75ii 13.38ii 13.38ii 13.38ii 13.38ii 13.38ii	24 Oct 2004 0 24 Oct 2004 0 24 Oct 2004 0 24 Oct 2004 1 24 Oct 2004 1 24 Oct 2004 1 24 Oct 2004 1 26 Oct 2004 1 26 Oct 2004 1 27 Oct 2004 1 28 Oct 2004 1 29 Oct 2004 1 20	6:00 6:25 8:15 0:01 0:05 0:38  ASING AND I	Taken Top Up Jo Wiper Plu Wiper Plu Plug Set: Centralize  Centralize  EQUIPMEN Stick Up Grade HWDP L-80 L-80 L-80 L-80 L-80	Dob run: 0  Ig Top: Yes  Ig Bottom: Yes  Manuface  Trype: Weatherfor	ord  Imment g string ead housing coupling box x oin XO TER casing TER box XO	Thread 4 1/2IF Butt XO TER XO Butt	Let 12.4	lacement shoe trace for next 6	-3.0 Fr -3.0 84.: 96.: 570, 583, 595	One centri  Oom  Oom  Oom  41m  22m  99m  .45m	To 73.41m 84.22m 96.99m 570.45m 583.05m 595.58m
Start Circulation Start Pressure T Pump Preflush Start Mixing Finish Mixing Start Displacing Stop Displ./Bum Pressure Test  No. Joints 1 1 37 1 1 1 1	OD 5.00in 13.38ii 13.38ii 13.38ii 13.38ii 13.38ii 13.38ii	24 Oct 2004 0 24 Oct 2004 0 24 Oct 2004 0 24 Oct 2004 1 24 Oct 2004 1 24 Oct 2004 1 24 Oct 2004 1  68lb 68lb 68lb 68lb	6:00 6:25 8:15 0:01 0:05 0:38  ASING AND I	Taken Top Up Jo Wiper Plu Wiper Plu Plug Set: Centralize  Centralize  HWDP L-80 L-80 L-80 L-80 L-80 L-80	Dob run: 0  Ig Top: Yes  Ig Bottom: Yes  Manuface  Type: Weatherfor  Type: Weatherfor  Runnin  18 3/4 wellh  BTC No-Cross TER p  37 joints of  BTC pin to  Float co Interme	ediate jt	Thread 4 1/2IF Butt XO TER XO Butt Butt Butt	Let 12.4	lacement shoe trac for next 6 angth 41m 81m 77m 46m 50m 53m	-3.0 Fr -3.0 84.: 96.: 570, 583, 595	One centrione ce	To 73.41m 84.22m 96.99m 570.45m 583.05m 595.58m 608.18m
Start Circulation Start Pressure T Pump Preflush Start Mixing Finish Mixing Start Displacing Stop Displ./Bum Pressure Test  No. Joints 1 1 1 37 1 1 1	OD 5.00in 13.38ii 13.38ii 13.38ii 13.38ii 13.38ii 13.38ii 13.38ii 13.48ii 13.4	24 Oct 2004 0 24 Oct 2004 0 24 Oct 2004 0 24 Oct 2004 1 24 Oct 2004 1 24 Oct 2004 1 26 Oct 2004 1 26 Oct 2004 1 27 Oct 2004 1 28 Oct 2004 1 29 Oct 2004 1 20	6:00 6:25 8:15 0:01 0:05 0:38  ASING AND I	Taken Top Up Jo Wiper Plu Wiper Plu Plug Set: Centralize  Centralize  EQUIPMEN Stick Up Grade HWDP L-80 L-80 L-80 L-80 L-80 L-80 L-80 L-80	Dob run: 0  Ig Top: Yes  Ig Bottom: Yes  Manufac  IT DETAILS  Com  Runnin  18 3/4 wellh  BTC No-Cross  TER p  37 joints of  BTC pin to  Float co  Interme	ement g string ead housing coupling box x oin XO TER casing TER box XO allar joint ediate jt	Thread 4 1/2IF Butt XO TER XO Butt Butt Butt ght above GL:	Lei 76.473. 12.6 12.6 12.8	lacement shoe trac for next 6 angth 41m 81m 77m 46m 50m 53m	-3.0 Fr -3.0 84.: 96.: 570, 583, 595	One centri  Oom  Oom  Oom  Oom  41m  22m  99m  .45m  .05m  .18m	To 73.41m 84.22m 96.99m 570.45m 583.05m 595.58m 608.18m 620.76m
Start Circulation Start Pressure T Pump Preflush Start Mixing Finish Mixing Start Displacing Stop Displ./Bum Pressure Test  No. Joints  1 1 1 1 1 Theoretical Bour	OD 5.00in 18.75in 13.38in 13.3	24 Oct 2004 0 24 Oct 2004 0 24 Oct 2004 0 24 Oct 2004 1 24 Oct 2004 1 24 Oct 2004 1 24 Oct 2004 1 26 Oct 2004 1 26 Oct 2004 1 27 Oct 2004 1 28 Oct 2004 1 29 Oct 2004 1 20	6:00 6:25 8:15 0:01 0:05 0:38  ASING AND I  //t //t //s/ft	Taken Top Up Jo Wiper Plu Wiper Plu Plug Set: Centralize  Centralize  L-80 L-80 L-80 L-80 L-80 C-80 C-80 C-80 C-80 C-80 C-80 C-80 C	Dob run: 0  Ig Top: Yes  Ig Bottom: Yes  Manufac  IT Type: Weatherfor  IT DETAILS  Com  Runnin  18 3/4 wellh  BTC No-Cross  TER p  37 joints of  BTC pin to  Float co  Interme	ement g string ead housing coupling box x oin XO TER casing FER box XO dllar joint ediate jt ooe Bradenhead Hei	Thread  4 1/2IF  Butt  XO  TER  XO  Butt  Butt  Butt  Butt  Butt  Company of the second of the secon	Lei 76.473. 12.6 12.6 12.8	lacement shoe trac for next 6 angth 41m 81m 77m 46m 50m 53m	-3.0 Fr -3.0 84.: 96.: 570, 583, 595	One centrone	To 73.41m 84.22m 96.99m 570.45m 583.05m 595.58m 608.18m 620.76m



**FORM DMS F220** 

#### CALLISTER 01 Well Name

Well N	lame:		CALL	ISTER	01					
Casing Type:	Interm	ediate Casing	Originated B	y: J. \	/oung	Checked By:		Date:	28	Oct 2004
Hole Size:	12.25i	n	Total Depth:	255	50.0m	GL-RT:		Contrac	otor: Hal	liburton
PRE-FLUSH	Obbl @ Op	pg				SPACER	20.0bbl @ 8.34pp	og		
Additives:						Additives:	8.34ppg Drill water		res.	
CEMENT							ADDITIVES		% Amount	Units
LEAD SLURRY:			110	SX			I			
Brand / Class:			ABC	C/G			Econolite Liquid		0.503	gal/sx
Slurry Yield:			2.13	3ft³/sx			HR-6L		0.237	gal/sx
Mixwater Req't:			11.6	88gal/sx			NF-6		0.007	gal/sx
Actual Slurry Pun	mped:		42.0	)bbl						
Density:			12.5	50ppg						
Cement Top (MD	D):		283	7.0m						
TAIL SLURRY:			163	SX						
Brand / Class:			ABC	C/G			Halad-413L		0.252	gal/sx
Slurry Yield:			1.18	8ft³/sx			HR-6L		0.075	gal/sx
Mixwater Req't:			4.95	gal/sx			NF-6		0.003	gal/sx
Actual Slurry Pun	mped:		34.0	)bbl						
Density:			15.8	30ррд						
Cement Top (MD	D):		268	7.0m						
DISPLACEMENT	Τ				Fluid: Drilling	Mud @ 9.10ppg				
Theoretical Displ.	l.:		668.0bbl			Bumped Plug wi	th:	0psi		
Actual Displ.:			570.0bbl @ 8	8gpm		Pressure Tested		0psi		
Displaced via:			Hallibuton Pu			Bleed Back:		0.5bbl		
-				11	0 ( 000 01	alad associate Obalist associate				
ACTIVITY		Time/Date		Returns to	Surface: 626.0b	obi mua, ubbi cmt				
	g.	Time/Date				Preflush : No Action	Taken Cemer	nt : No Action Tak	ken Displacem	ent : No Action
Start Running cso		Time/Date					Taken Cemer	nt : No Action Tak	ken Displacem	ent : No Action
Start Running cso		Time/Date		Casing Ac	tion During F			nt : No Action Tak	ken Displacem	ent : No Action
Start Running cso Casing On Bottor Start Circulation	m			Casing Ac Taken Top Up Jo Wiper Plug	tion During F b run: No g Top: Yes				ken Displacem	ent : No Action
Start Running cso Casing On Bottor Start Circulation Start Pressure Te	m	15:04		Casing Ac Taken Top Up Jo Wiper Plug	tion During F b run: No				ken Displacem	ent : No Action
Start Running cso Casing On Bottor Start Circulation Start Pressure Te Pump Preflush	m	15:04 15:09		Casing Ac Taken Top Up Jo Wiper Plug	tion During F b run: No g Top: Yes g Bottom: Yes		0sx o	f class	ken Displacem	ent : No Action
Start Running cso Casing On Bottor Start Circulation Start Pressure Te Pump Preflush Start Mixing	m	15:04 15:09 15:15		Casing Ac Taken Top Up Jo Wiper Plug Wiper Plug Plug Set:	tion During F b run: No g Top: Yes g Bottom: Yes	Preflush : No Action	0sx o	f class : :ralizer Placemen	ken Displacem	
ACTIVITY Start Running csg Casing On Bottor Start Circulation Start Pressure Te Pump Preflush Start Mixing Finish Mixing Start Displacing	m	15:04 15:09 15:15 15:25		Casing Ac Taken Top Up Jo Wiper Plug Wiper Plug Plug Set:	tion During F b run: No g Top: Yes g Bottom: Yes Manuf	Preflush : No Action	0sx o rd Type: Centr - Sho	f class : :ralizer Placemen	t Depth: Centralis	
Start Running csg Casing On Bottor Start Circulation Start Pressure Te Pump Preflush Start Mixing Finish Mixing Start Displacing	m est	15:04 15:09 15:15 15:25 15:55 16:00		Casing Ac Taken Top Up Jo Wiper Plug Wiper Plug Plug Set:	tion During F b run: No g Top: Yes g Bottom: Yes Manuf	Preflush : No Action	osx o  Type: Centr - Sho - Inte - Floe	f class  : ralizer Placement e rmediate Shoe J	t Depth: Centralis oint	ers Run:
Start Running csg Casing On Bottor Start Circulation Start Pressure Te Pump Preflush Start Mixing Finish Mixing Start Displacing Stop Displ./Bump	m est	15:04 15:09 15:15 15:25 15:55 16:00 17:20		Casing Ac Taken Top Up Jo Wiper Plug Wiper Plug Plug Set:	tion During F b run: No g Top: Yes g Bottom: Yes Manuf	Preflush : No Action	osx o  Type: Centr - Sho - Inte - Floe	f class  : ralizer Placement e rmediate Shoe J	t Depth: Centralis	ers Run:
Start Running csg Casing On Bottor Start Circulation Start Pressure Te Pump Preflush Start Mixing Finish Mixing Start Displacing Stop Displ./Bump	m est	15:04 15:09 15:15 15:25 15:55 16:00 17:20 N/A	ASING AND I	Casing Ac Taken Top Up Jo Wiper Plug Wiper Plug Plug Set: Centralized	tion During F b run: No g Top: Yes g Bottom: Yes Manuf r Type: Weather	Preflush : No Action	osx o  Type: Centr - Sho - Inte - Floe	f class  : ralizer Placement e rmediate Shoe J	t Depth: Centralis oint	ers Run:
Start Running csg Casing On Bottor Start Circulation Start Pressure Te Pump Preflush Start Mixing Finish Mixing Start Displacing Stop Displ./Bump	m est	15:04 15:09 15:15 15:25 15:55 16:00 17:20 N/A		Casing Ac Taken Top Up Jo Wiper Plug Wiper Plug Plug Set: Centralized	tion During F b run: No g Top: Yes g Bottom: Yes Manuf r Type: Weather	Preflush : No Action	osx o  Type: Centr - Sho - Inte - Floe	f class  : ralizer Placement e rmediate Shoe J	t Depth: Centralis oint	ers Run:
Start Running csg Casing On Bottor Start Circulation Start Pressure Te Pump Preflush Start Mixing Finish Mixing Start Displacing Stop Displ./Bump	m est	15:04 15:09 15:15 15:25 15:55 16:00 17:20 N/A		Casing Ac Taken Top Up Jo Wiper Plug Wiper Plug Plug Set: Centralized	tion During F b run: No g Top: Yes g Bottom: Yes Manuf r Type: Weather	Preflush : No Action	osx o  Type: Centr - Sho - Inte - Floe	f class  : ralizer Placement e rmediate Shoe J	t Depth: Centralis oint ed every 3rd joint (	ers Run:
Start Running csg Casing On Bottor Start Circulation Start Pressure Te Pump Preflush Start Mixing Finish Mixing Start Displacing Stop Displ./Bump Pressure Test	est D	15:04 15:09 15:15 15:25 15:55 16:00 17:20 N/A		Casing Ac Taken Top Up Jo Wiper Plug Wiper Plug Plug Set: Centralized	tion During F b run: No g Top: Yes g Bottom: Yes Manuf r Type: Weather	Preflush : No Action acturer: Weatherfor forf Bow Spring	Osx of Type: Centrology Sho Inte Float - 25 of	f class : ralizer Placemen e rmediate Shoe J at Collar centralisers place	t Depth: Centralis oint ed every 3rd joint ( 0m	ers Run: (1591m).
Start Running csg Casing On Bottor Start Circulation Start Pressure Te Pump Preflush Start Mixing Finish Mixing Start Displacing Stop Displ./Bump Pressure Test No. Joints	est OD	15:04 15:09 15:15 15:25 15:55 16:00 17:20 N/A	Vt	Casing Ac Taken Top Up Jo Wiper Plug Wiper Plug Plug Set: Centralized	tion During F b run: No g Top: Yes g Bottom: Yes Manuf r Type: Weather  T DETAILS  Co Landing Strir Casing hange	Preflush : No Action acturer: Weatherfor forf Bow Spring	Osx of Type: Centrology Sho Inte Float - 25 of	f class : ralizer Placemen e rmediate Shoe J at Collar centralisers place	t Depth: Centralis oint ed every 3rd joint (	ers Run: (1591m). To
Start Running csg Casing On Bottor Start Circulation Start Pressure Te Pump Preflush Start Mixing Finish Mixing Start Displacing Stop Displ./Bump Pressure Test  No. Joints 0	est OD Oin	15:04 15:09 15:15 15:25 15:55 16:00 17:20 N/A	Vt s/ft	Casing Ac Taken Top Up Jo Wiper Plug Wiper Plug Plug Set: Centralized	tion During F b run: No g Top: Yes g Bottom: Yes Manuf r Type: Weather  Co Landing Strir Casing hange Vam E	Preflush : No Action acturer: Weatherfor forf Bow Spring  mment ag with CHSART ar with 9-5/8" New	osx o  Type: Centr - Sho - Inte - Floa - 25 o	ralizer Placemente radiate Shoe Ju at Collar centralisers place  Length 156.42m	t Depth: Centralis oint ed every 3rd joint of Om From Om	ers Run: (1591m). To 156.42m
Start Running csg Casing On Bottor Start Circulation Start Pressure Te Pump Preflush Start Mixing Finish Mixing Start Displacing Stop Displ./Bump Pressure Test  No. Joints 0 1	OD OIN 9.63in 9.63in	15:04 15:09 15:15 15:25 15:55 16:00 17:20 N/A  CO  V  Olb  47II	Vt s/ft ss/ft	Casing Ac Taken Top Up Jo Wiper Plug Wiper Plug Plug Set: Centralized	tion During F b run: No g Top: Yes g Bottom: Yes Manuf r Type: Weather  Co Landing Strir Casing hange Vam E 9-5/8" New Va Cro	exturer: Weatherforms forf Bow Spring  mment  ing with CHSART  ier with 9-5/8" New Extension  v Vam Casing  im Box x TMS Pin issover	Osx of Type: Centricular - Sho Inteligration - 25 of Thread New Vam New Vam New Vam/TMS	ralizer Placemente remediate Shoe Just Collar centralisers place  Length  156.42m  2.94m  877.13m  12.79m	t Depth: Centralis oint ed every 3rd joint of Om From Om 156.42m	ers Run: (1591m).  To 156.42m 159.36m 1036.49m 1049.28m
Start Running csg Casing On Bottor Start Circulation Start Pressure Te Pump Preflush Start Mixing Finish Mixing Start Displacing Stop Displ./Bump Pressure Test  No. Joints 0 1 73	OD 0in 9.63in 9.63in	15:04 15:09 15:15 15:25 15:55 16:00 17:20 N/A  CO  V  Olb  47II	Vt s/ft ps/ft	Casing Ac Taken Top Up Jo Wiper Plug Wiper Plug Plug Set: Centralized  EQUIPMENT Stick Up Grade  L80	tion During F b run: No g Top: Yes g Bottom: Yes Manuf r Type: Weather  Co Landing Strir Casing hange Vam E 9-5/8" New Va Cro	exturer: Weatherforms forf Bow Spring  mment  ing with CHSART  ing with 9-5/8" New Extension  in Vam Casing  im Box x TMS Pin	Osx o  Type: Centri - Sho - Inte - Floa - 25 o  Thread  New Vam	ralizer Placemente ermediate Shoe Ju at Collar centralisers place  Length 156.42m 2.94m 877.13m	t Depth: Centralis oint od every 3rd joint (  Om From Om 156.42m	To 156.42m 159.36m 1036.49m
Start Running csg Casing On Bottor Start Circulation Start Pressure Te Pump Preflush Start Mixing Finish Mixing Start Displacing Stop Displ./Bump Pressure Test  No. Joints 0 1 73 1	OD OD Oin 9.63in 9.63in 9.63in	15:04 15:09 15:15 15:25 15:55 16:00 17:20 N/A C U U U U U U U U U U U U U U U U U U	Vt s/ft ps/ft ps/f	Casing Ac Taken Top Up Jo Wiper Plug Wiper Plug Plug Set: Centralized  EQUIPMENT Stick Up Grade  L80  L80  L80	tion During F b run: No g Top: Yes g Bottom: Yes Manuf r Type: Weather  T DETAILS  Co Landing Strir Casing hange Vam E 9-5/8" New 9-5/8" TMS Bo Cro	exturer: Weatherforms of the Spring of the S	Thread  New Vam  New Vam  New Vam  New Vam  New Vam/TMS  TMS-SC  TMS//New Vam	Length 156.42m 2.94m 877.13m 12.79m 1436.14m 12.76m	t Depth: Centralis oint ed every 3rd joint (  Om From Om 156.42m  159.36m 1036.49m  1049.28m 2485.42m	To 156.42m 159.36m 1036.49m 1049.28m 2485.42m 2498.18m
Start Running csg Casing On Bottor Start Circulation Start Pressure Te Pump Preflush Start Mixing Finish Mixing Start Displacing Stop Displ./Bump Pressure Test  No. Joints 0 1 73 1 116 1	OD OIN 9.63in 9.63in 9.63in 9.63in 9.63in 9.63in	15:04 15:09 15:15 15:25 15:55 16:00 17:20 N/A C U U U U U U U U U U U U U U U U U U	Vt s/ft ps/ft ps/f	Casing Ac Taken Top Up Jo Wiper Plug Wiper Plug Plug Set: Centralized  EQUIPMENT Stick Up Grade  L80  L80  L80  L80  L80	tion During F b run: No g Top: Yes g Bottom: Yes Manuf r Type: Weather  T DETAILS  Co Landing Strir Casing hange Vam E 9-5/8" New Va Cro 9-5/8" TMS Bc Cro 9-5/8" TM SBc Cro 9-5/8" F	exturer: Weatherforms of Bow Spring  mment of with CHSART or with 9-5/8" New Extension or Vam Casing of Security o	Thread  New Vam	Length 156.42m 2.94m 12.79m 1436.14m 12.76m	0m From 0m 156.42m 1036.49m 1049.28m 2498.18m	To 156.42m 159.36m 1036.49m 2485.42m 2498.18m
Start Running csg Casing On Bottor Start Circulation Start Pressure Te Pump Preflush Start Mixing Finish Mixing Start Displacing Stop Displ./Bump Pressure Test  No. Joints 0 1 73 1 116 1 1 1	OD OD Oin 9.63in 9.63in 9.63in 9.63in 9.63in 9.63in	15:04 15:09 15:15 15:25 15:55 16:00 17:20 N/A  CO  V  Olb  47II	Vt s/ft ps/ft ps/f	Casing Ac Taken Top Up Jo Wiper Plug Plug Set: Centralized  EQUIPMENT Stick Up Grade  L80  L80  L80  L80  L80  L80	tion During F b run: No g Top: Yes g Bottom: Yes Manuf r Type: Weather  T DETAILS  Co Landing Strir Casing hange Vam F 9-5/8" New Va Cro 9-5/8" TM 9-5/8" TMS Be Cro 9-5/8" F 9-5/8" Interm	mment or with 9-5/8" New Extension or Vam Casing am Box x TMS Pin ssover S-SC Casing ox x New Vam Pin ssover Float Collar ediate shoe joint	Thread  New Vam	Length 156.42m 2.94m 12.79m 13.62m 12.91m	0m From 0m 156.42m 1049.28m 2498.18m 2511.8m	To 156.42m 159.36m 1036.49m 2485.42m 2498.18m 2511.8m 2524.71m
Start Running csg Casing On Bottor Start Circulation Start Pressure Te Pump Preflush Start Mixing Finish Mixing Start Displacing Stop Displ./Bump Pressure Test  No. Joints 0 1 73 1 116 1 1 1	OD Oin 9.63in 9.63in 9.63in 9.63in 9.63in 9.63in 9.63in	15:04 15:09 15:15 15:25 15:55 16:00 17:20 N/A  Obside 47iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii	Vt s/ft ps/ft ps/f	Casing Ac Taken Top Up Jo Wiper Plug Plug Set: Centralized  EQUIPMENT Stick Up Grade  L80 L80 L80 L80 L80 L80 L80 L80 L80	tion During F b run: No g Top: Yes g Bottom: Yes Manuf r Type: Weather  T DETAILS  Co Landing Strir Casing hange Vam E 9-5/8" New Va Cro 9-5/8" TMS Bo Cro 9-5/8" Interm 9-5/8" Interm 9-5/8" Interm 9-5/8" Interm	exturer: Weatherform forf Bow Spring  mment  ing with CHSART  ing with 9-5/8" New Extension  iv Vam Casing  im Box x TMS Pin issover  S-SC Casing  iox x New Vam Pin issover  Float Collar ediate shoe joint issone Joint	Osx of Type: Central - Sho Interaction - Float - 25 of Thread  New Vam New Vam New Vam/TMS  TMS-SC  TMS//New Vam New Vam New Vam New Vam New Vam	Length 156.42m 2.94m 12.79m 1436.14m 12.76m	0m From 0m 156.42m 1036.49m 1049.28m 2498.18m	To 156.42m 159.36m 1036.49m 2485.42m 2498.18m
Start Running csg Casing On Bottor Start Circulation Start Pressure Te Pump Preflush Start Mixing Finish Mixing Start Displacing Stop Displ./Bump Pressure Test  No. Joints 0 1 73 1 116 1 1 1	OD Oin 9.63in 9.63in 9.63in 9.63in 9.63in 9.63in 9.63in	15:04 15:09 15:15 15:25 15:55 16:00 17:20 N/A  Obside 47iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii	Vt s/ft ps/ft ps/f	Casing Ac Taken Top Up Jo Wiper Plug Plug Set: Centralized  EQUIPMENT Stick Up Grade  L80 L80 L80 L80 L80 L80 L80 L80 L80 L8	tion During b run: No g Top: Yes g Bottom: Yes Manuf r Type: Weather  DETAILS  Co Landing Strir Casing hange Vam E 9-5/8" New 9-5/8" TMS Bo Cro 9-5/8" TMS Bo Cro 9-5/8" Interm 9-5/8" Interm 9-5/8" Interm	mment Ing with CHSART Ing with 9-5/8" New Extension Ing War Casing Im Box x TMS Pin Issover S-SC Casing Ing X x New Vam Pin Issover Float Collar Ingediate shoe joint Ing Bradenhead Hei	Thread  New Vam	Length 156.42m 2.94m 12.79m 13.62m 12.91m	0m From 0m 156.42m 1036.49m 1049.28m 2485.42m 2511.8m 2524.71m 0m	ers Run:  To  156.42m  159.36m  1036.49m  1049.28m  2485.42m  2498.18m  2511.8m  2524.71m  2538.03m
Start Running csg Casing On Bottor Start Circulation Start Pressure Te Pump Preflush Start Mixing Finish Mixing Start Displacing Stop Displ./Bump Pressure Test  No. Joints 0 1 73 1 116 1 1 1 1 Theoretical Bouye	OD OIN 9.63in 9.63in 9.63in 9.63in 9.63in ced wt. of care	15:04 15:09 15:15 15:25 15:55 16:00 17:20 N/A	Vt s/ft ps/ft ps/f	Casing Ac Taken Top Up Jo Wiper Plug Plug Set: Centralized  EQUIPMENT Stick Up Grade  L80 L80 L80 L80 L80 L80 L80 L80 L80	tion During b run: No g Top: Yes g Bottom: Yes Manuf r Type: Weather  DETAILS  Co Landing Strir Casing hange Vam E 9-5/8" New 9-5/8" TMS Bo Cro 9-5/8" TMS Bo Cro 9-5/8" Interm 9-5/8" Interm 9-5/8" Interm	ediate shoe joint Bradenhead Hei Bradenhead Des	Thread  New Vam   Length 156.42m 2.94m 12.79m 13.62m 12.91m	0m From 0m 156.42m 1036.49m 1049.28m 2485.42m 2511.8m 2524.71m	ers Run:  To  156.42m  159.36m  1036.49m  1049.28m  2485.42m  2498.18m  2511.8m  2524.71m  2538.03m	
Start Running csg Casing On Bottor Start Circulation Start Pressure Te Pump Preflush Start Mixing Finish Mixing Start Displacing Stop Displ./Bump Pressure Test  No. Joints 0 1 73 1 116 1 1 1 1	OD 0in 9.63in 9.63in 9.63in 9.63in 9.63in ced wt. of cato landing c	15:04 15:09 15:15 15:25 15:55 16:00 17:20 N/A	Vt s/ft s/ft ss/ft	Casing Ac Taken Top Up Jo Wiper Plug Plug Set: Centralized  EQUIPMENT Stick Up Grade  L80 L80 L80 L80 L80 L80 L80 L80 L80 L8	tion During b run: No g Top: Yes g Bottom: Yes Manuf r Type: Weather  T DETAILS  T DETAILS  Co Landing Strir Casing hange Vam E 9-5/8" New 9-5/8" New 9-5/8" TMS Bo Cro 9-5/8" TMS Bo Cro 9-5/8" Interm 9-5/8" Interm 9-5/8" S	mment Ing with CHSART Ing with 9-5/8" New Extension Ing War Casing Im Box x TMS Pin Issover S-SC Casing Ing X x New Vam Pin Issover Float Collar Ingediate shoe joint Ing Bradenhead Hei	Thread  New Vam   Length 156.42m 2.94m 12.79m 13.62m 12.91m	0m From 0m 156.42m 1036.49m 1049.28m 2485.42m 2511.8m 2524.71m 0m	ers Run:  To  156.42m  159.36m  1036.49m  1049.28m  2485.42m  2498.18m  2511.8m  2524.71m  2538.03m	

### **SECTION 12: MUDLOGGING WELL REPORT**





# HALLIBURTON Sperry-Sun

#### SURFACE DATA LOGGING

**END OF WELL REPORT** 

**SANTOS LTD.** 

Martha-1

1.0 11	NTRODUCTION	1
2.0 W	WELL DATA SHEET	2
3.0 S	SYNOPSIS	3
3.1 OF	PERATIONAL SUMMARY	3
3.1.	.1 914 mm (36") Hole	3
3.1.	.2 445 mm (17½") Hole	4
3.1.	.3 311 mm (12 1/4") Hole	5
3.2 DA	AYS VS DEPTH	7
3.3 TII	ME BREAKDOWN	8
3.4 W	ELL PROFILE	9
4.0	LOGGING SERVICES SUPPLIED	10
4.1	GEOLOGICAL MONITORING	10
4.2	SERVICES PROVIDED	11
4.3	MONITORED PARAMETERS	11
4.4	PERSONNEL	12
4.5	SAMPLE COLLECTION	12
4.6	SAMPLE DISTRIBUTION	12
5.0 G	GEOLOGY AND SHOWS	15
5.1 IN	ITRODUCTION	15
5.2 LI	THOLOGICAL SUMMARY FOR MARTHA-1	16
6.0 C	CASING SUMMARY	20
7.0 N	MUD RECORD	21
8.0 B	BIT RECORD	22
9.0 H	HYDRAULICS RECORD	23

#### 1.0 INTRODUCTION

A Sperry Sun Drilling Services INSITE (Integrated System for Information Technology and Engineering) mud logging unit was contracted to Santos Limited for the drilling of the Martha-1 vertical exploration well. The unit included a logging network, which gathered, processed and stored data whilst also providing real time and additional processed data capabilities.

The Diamond Offshore Ocean Patriot offshore drilling rig was used to drill the well in permit VIC-P-44.

Full surface data logging commenced from the spud, at 23:00 hrs on the 20<sup>th</sup> of October 2004, and continued for the duration of the well. The well reached a total depth of 1800.0 mMDRT at 22:30 hrs on the 29<sup>th</sup> October 2004. The well was subsequently plugged and abandoned on the 2<sup>nd</sup> of November 2004, after running electric logs.

This report is intended as a summary of the information and data collected, processed and monitored as part of the INSITE service agreement.

#### <u>DATA ENGINEERS</u> <u>LOGGING ENGINEERS</u> <u>SAMPLE CATCHERS</u>

Gary Bloom Liam Clarke Adam Matuzelis
Doug Wilson David Hartney Richard Snow
Keith Ratnam

#### 2.0 WELL DATA SHEET

Well Name: Martha - 1

Permit: VIC-P-44

Operator: Santos Ltd

Drilling Rig: Ocean Patriot

**Contractor:** Diamond Offshore

**Location:** Lat: 38° 37' 24.33" S

Long: 148° 42' 05.02" E UTM Easting: 648 109.28

UTM Northing: 5 723 638.23

RT to MSL 21.5 m

3

Water Depth 54.66 m

**Hole Sizes:** 1 914 mm (36") to 122.5 m

2 445 mm (17 ½") to 628. m

4 311 mm (12 ¼") to 1800 m

**Casing Shoes:** 1 762 x 508 mm (30" x 20") set at 120.0 m

2 508 x 340 mm (20" x 13 <sup>3</sup>/<sub>8</sub>") set at 620.8 m

311 mm (12 1/4") to

1262. m

Date Rig on Contract:17thOctober 2004, 13:00 hrsDate Rig on Location:20thOctober 2004, 02:30 hrsSpud Date:20thOctober 2004, 23:00 hrsDate Reached TD:29thOctober 2004, 22:30 hrs

Date Rig Released: NA

T.D. (Measured Depth, Drillers)1800 mMDRTT.D. (True Vertical Depth)1799 mTVDRT

Well Status P & A

#### 3.0 SYNOPSIS

#### 3.1 OPERATIONAL SUMMARY

#### 3.1.1 914 mm (36") Hole

914 mm Hole Drilled from 76.16 mMDRT to 122.5 mMDRT 762 mm Casing set at 120.0 mMDRT

**BITS USED: 1** 

The run included a 914 mm (36") hole opener run in conjunction with a Smith MSDS SHC 660 mm (26") bit, dressed with 2 x 22, 1 X 21 and 1 x 20 nozzles. This bit assembly was run with a conventional rotary drilling assembly and drilled from 76.16 mMDRT to section TD of 122.5 mMDRT. The section was drilled using seawater combined with and gel sweeps.

The 762 x 508 mm (30" x 20") conductor was set at 120.0 mMDRT.

REASON FOR TRIP DRILLING FLUID	TRIP G	MADE	DEPTH IN	BIT
REASON FOR TRIP DRILLING FLUIL	%	(m)	m	RUN
Sea-Water/Hi-vis	NA	122.5	76 16	1
Sweeps	147 (	122.0	70.10	•

#### **PROBLEMS ON TRIPS**

There were no problems on the trips.

#### **WIRELINE PROGRAM**

No wire line logs were run over this section

#### 3.1.2 445 mm (17½") Hole

# 445 mm Hole Drilled from 122.5 mMDRT to 628.0 mMDRT 340 mm Casing Set at 620.76 mMDRT

#### **BITS USED: 1**

This run included a Smith XRTC bit, dressed with 3 x 22, 1 x 20 nozzles. This bit was run with a conventional rotary drilling assembly and drilled from 122.5 mMDRT to 628.0 mMDRT. The cement in the 762 x 508 mm (30" x 20") casing was tagged at 114.5 mMDRT. After washing/drilling 5.5 m of cement, the shoe was drilled at 120.0 mMDRT. Drilling continued to the hole section TD of 628.0 mMDRT with seawater combined with 40 bbls guar gum sweeps. Prior to POOH, a single shot survey (0°) was taken and an 800bbls Hi-vis sweep was pumped.

The 508 x 340 mm (20" x  $13^3/_8$ ") casing was set at 620.8 mMDRT.

BIT RUN	DEPTH IN	MADE	TRIPGAS	REASON FOR TRIP	DRILLING
DII KOK	M	(m)	%	REAGONT ON THE	FLUID
2	122 5	628.0	N/A	Section TD	Sea-Water/Hi-
2	122.5	020.0	IN/A	Section 1D	vis Sweeps

#### **PROBLEMS ON TRIPS**

There were no problems on the trips.

#### **WIRELINE PROGRAM**

No wire line logs were run over this section.

#### 3.1.3 311 mm (12 <sup>1</sup>/<sub>4</sub>") Hole

# 311 mm Hole Drilled from 628.0 mMDRT to 1800.0 mMDRT No. BITS USED: 2

This run included a Reed TCI TD43HKPRDH bit, dressed with 3 x 20 nozzles and was drilled with a conventional rotary drilling assembly and Sperry Sun MWD/FEWD/PWD tools. The cement in the 508 x 340 mm (20" x 13<sup>3</sup>/<sub>8</sub>") casing was tagged at 570.0 mMDRT. After drilling 3 m of new formation from 628.0.0 mMDRT to 631.0.0 mMDRT, the well was displaced to 1.07 sg (8.9 ppg) KCL Polymer mud and a Leak Off Test was performed (EMW = 2.60 sg = 21.6 ppg) using 1.07 sg (8.9 ppg) KCL Polymer mud. The first presence of methane gas was encountered at 931 m MDRT. The first presence of CO2 was encountered at 939 m MDRT. A carbide lag check at 1003 m MDRT showed 264 bbls excess in open hole. The calculated average open hole size was 384 mm (15.1"). At 1262 mMDRT, bit # 3 & BHA 3 were pulled to replace the bit as per drilling program after the last pyrite formations were encountered. The MWD tool was downloaded after bit # 3 & BHA # 3 reached surface. A PDC bit # 4, Hycalog DSX104HGW, dressed with 5 x 14 nozzles was picked up and MWD FEWD was changed out. This assembly was tripped in the hole to 1262 m MDRT. Carbide lag check at 1292 m MDRT showed 305 bbls excess in open hole and a calculated average open hole size of 385 mm (15.15") ( 8200 strokes bottoms up versus 5210 strokes bottoms up calculated at 1292 m MDRT ). This section was drilled to 1800 m MDRT, well Total Depth at 22:30 hours 29<sup>th</sup> October, 2004.

BIT	DEPTH IN	MADE	TRIP GAS	REASON FOR TRIP	DRILLING
RUN	M	(m)	%		FLUID
3	628.0	634	6.88	Bit Change	KCL Polymer

BIT	DEPTH IN	MADE	TRIP GAS	REASON FOR TRIP	DRILLING
RUN	M	(m)	%		FLUID
4	1262	538	N/A	Well TD	KCL Polymer

#### **PROBLEMS ON TRIPS**

The trip for bit # 4 at 1262 m MDRT encountered overpulls at 1170 - 1110 m MDRT (20- 40 klbs). Pipe displacement on this trip was 31 bbls excess volume to hole over calculated displacement. Made up bit # 4 PDC Hycalog DSX104HGW, trip in hole, hit obstruction at 898m MDRT, washed and reamed through, continued TIH to 1131 m MDRT, washed and reamed to bottom. The trip out of hole with bit #4 at 1800 m MDRT (well total depth) for electric Wireline logs showed overpulls at 1800 – 1355 m, 1355 – 1263 m, 1150 – 1144 m and 931 – 904 m MDRT which required washing and reaming. Wireline logs stopped at 1466 m MDRT. Pulled out with Wireline logs. Tripped in hole with bit # 3 without MWD tools for

wiper trip. Hit obstruction at 1121m MDRT (took 50 klbs wt). Washed through. Continued to run in hole and hit obstructions at 1266m, 1464m, 1507m, 1631m and 1715m, washed through all. Circulated bottoms up and tripped out of hole. Run elogs without problems.

#### WIRELINE PROGRAM

Wireline logging program as follows:

Run #1 - Grand Slam

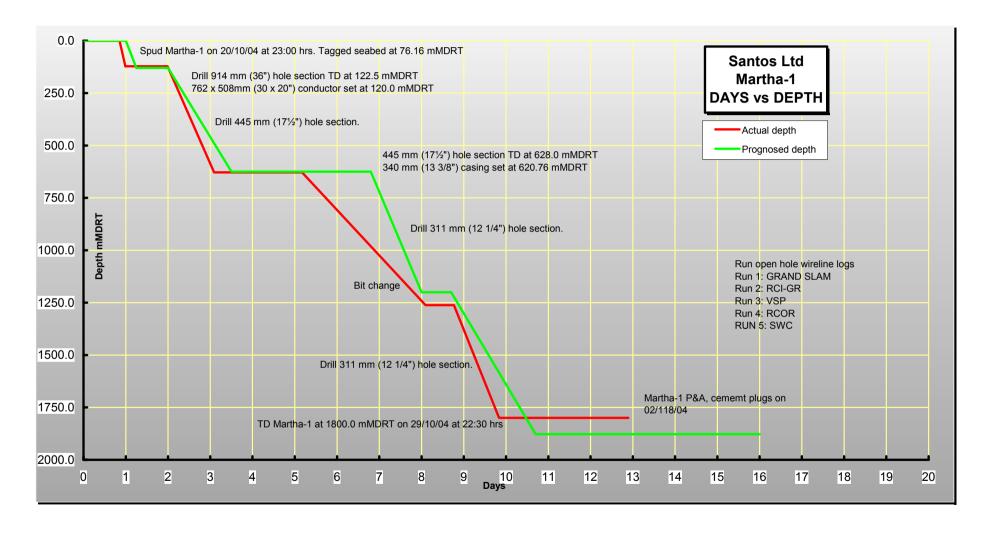
Run #2 - RCI- GR

Run #3 - SLR (VSP)

Run#4 - RCOR

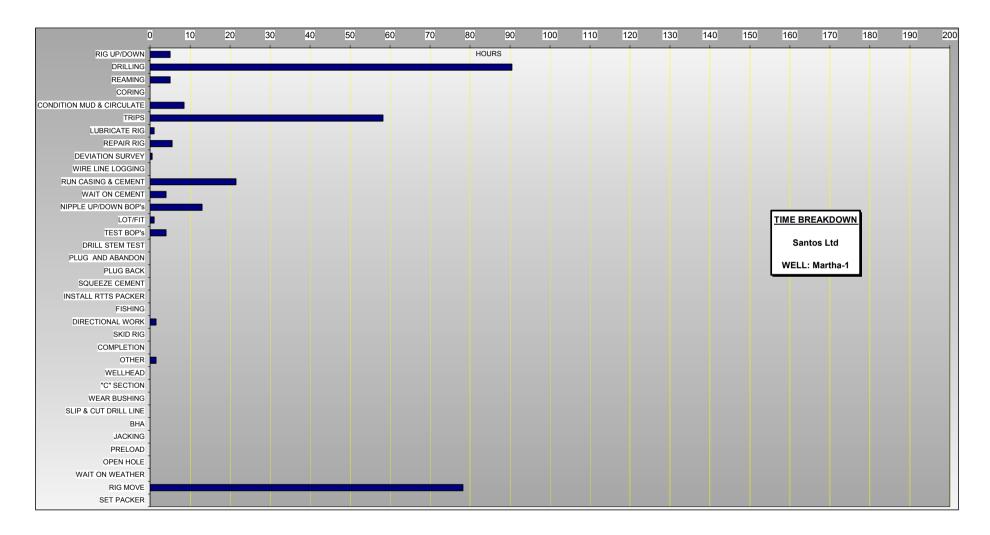
Run # 5 - SWC

#### 3.2 DAYS VS DEPTH

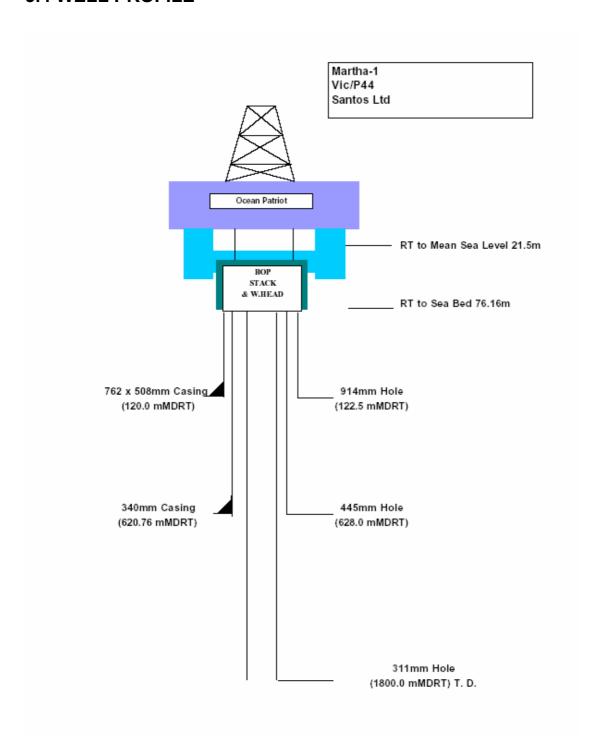


Sperry Sun Drilling Services

#### 3.3 TIME BREAKDOWN



#### 3.4 WELL PROFILE



# 4.0 LOGGING SERVICES SUPPLIED

### 4.1 GEOLOGICAL MONITORING

**EQUIPMENT** 

Autocalcimeter

Canon Bubble Jet Printer

**Company Workstation** 

Database PC (ADI)

Draw works Depth Encoder

FID Chromatograph

FID Total Gas Detector

Floating Gas Trap

Flow Out Paddle

H2S detectors (x4)

Hookload and WOB

HP Design jet Printer

Hydrometers

INSITE IRIS Data acquisition PC

Mud Density In/Out

Mud Temperature In/Out

Pit Volume Sensors (x7)

Pressure Sensors (x4)

**Printrex Printer** 

**Proximity Sensor** 

Pump Stroke Counters (x3)

Rig Floor Monitor (x2)

Standard Fluoroscope

Standard Stereo Microscope

Workstation PC

#### 4.2 SERVICES PROVIDED

Data files in .pdf, ASCII (LAS) format

Formation Evaluation

Geological and Engineering Reporting

Hydraulics Analysis using Planit

Interpreted Lithology

Plots of daily drilling activities

Real Time Drilling Monitoring

Real Time Log Display of MWD/LWD data

Real Time monitoring of drilling fluids

Real Time Tabular Display of Data

Real Time Trip Monitoring

Real Time Display of Data

Sample Collection and Processing

Timers for Hours and Revolutions on drilling assembly

#### 4.3 MONITORED PARAMETERS

**Block Position** 

Choke Pressure

Continuous Gas Percentage in Air

Depth

Flow Out

Gas Analysis (C1-C5)

H2S Gas

Hookload

Hydrocarbon Shows

Formation Lithology

Mud Density In and Out

Mud Temperature In and Out

Mud Volume

LWD data

On/Off Bottom status

Pump Stroke and Volume of Mud Pumped

Rate of Penetration

Revolutions per Minute of Top Drive

Stand Pipe Pressure

Swab\Surge Calculation

**Torque and Vibration** 

Weight on Bit including Drag and Obstructions

Well Volumes and Lag Calculations

#### 4.4 PERSONNEL

INSITE engineers continuously monitored all operations and maintained the database during the drilling of Martha-1. They also provided any well and drilling data upon request, notified the appropriate personnel of any irregularities or anticipated problems, provided daily reports, print outs of data and prepared master logs and final reports.

#### 4.5 SAMPLE COLLECTION

One extra large bag (800 g) of water-washed cuttings was collected for each interval sampled. A small portion of washed sample was placed into Samplex trays (3 sets) and the remainder air-dried and split into four sets.

The splits were distributed to Santos Ltd (2 x 100g), Victorian DPI (1 x 200g) and Geoscience Australia (1 x 200g).

The two sets of Samplex Trays were distributed to Santos Ltd (x2) and Mitsui (x1).

Mud (filtrate) samples were sent to Santos Ltd.

Reservoir cores were not collected.

Sidewall cores/Rotary SWC's were at various depths and hand carried by the Wellsite Geologist to Santos Ltd.

Palynology samples were collected at depths designated by the Wellsite Geologist and Air expressed to Jack Bates

#### 4.6 SAMPLE DISTRIBUTION

#### Washed and Dried Samples (4 sets)

#### Set 1: Washed/Dried Splits

#### **Victorian DPI**

Attn: Graeme Torr (03) 9658 4545 DPI Core Library South Road Werribee, Victoria 3030

#### Set 2: Washed/Dried Splits

#### Geoscience Australia (GA)

Attn: Manager Geoscience Australia Data Repositories Core and Cuttings Repository Cnr Jerrabomberra Ave & Hindmarsh Dr Symonston ACT 2609

#### Set 3: Washed/Dried Splits

#### Santos Ltd

Attn: Core Librarian
Ascot Transport
30 Francis Street
Port Adelaide, SA 5015

#### Set 4: Washed/Dried Splits

#### **Santos Ltd**

Attn: Core Librarian
Ascot Transport
30 Francis Street
Port Adelaide, SA 5015

#### Samplex Trays (3 Sets)

#### Set 2 & Set 3: Samplex Trays (x 2)

#### Santos Ltd

Attn: Core Librarian
Ascot Transport
30 Francis Street
Port Adelaide, SA 5015

#### Set 1: Samplex Trays

#### Mitsui

Attn: Core Librarian
Ascot Transport
30 Francis Street
Port Adelaide, SA 5015

#### **Mud Samples**

**Various Mud and Filtrate** 

#### Santos Ltd

Attn: Core Librarian

Ascot Transport 30 Francis Street Port Adelaide, SA 5015

#### Sidewall cores/Rotary SWC's

#### Santos Ltd

Attn: Core Librarian
Ascot Transport
30 Francis Street
Port Adelaide, SA 5015

#### **Palynology Samples**

#### Santos Ltd

Hot Shot via helicopter directly to Palynology Unit on the Jack Bates.

# 5.0 GEOLOGY AND SHOWS 5.1 INTRODUCTION

Sampling of drilled cuttings by Sperry-Sun commenced in the 311 mm (12  $\frac{1}{4}$ ") hole section, from 628.0 mMDRT until the total well depth of 1800.0 mMDRT. Spot sample collection for quick inspection, as well as a change in the programmed sampling frequency depended on the rate of penetration and were at the discretion of the Wellsite Geologist.

Samples of washed, air-dried cuttings were collected over the following intervals:

Martha-1				
SAMPLE DEPTH	SAMPLE FREQUENCY			
mMDRT	Metres			
631.0 – 690.0	5			
690.0 – 715.0	25 – Shaker run over			
715.0 – 1262.0	5			
1262.0 – 1620.0	3			
1620.0 – 1800.0	5			

Cuttings were logged on site by Sperry Sun geologists using a binocular microscope. An ultraviolet light box was used to inspect the fluorescence of cuttings.

Gas was monitored by a Total Hydrocarbon Gas detector (Flame Ionisation Detector – F.I.D), calibrated such that 50 API units, or 10,000 parts per million (ppm) is equivalent to 1% methane gas in air. An on-line F.I.D gas chromatograph recorded the gas breakdown, calibrated to analyse C1, C2, C3, isotopic C4, normal C4 alkanes, neo C5, isotopic C5 and normal C5. Regular gas system checks were performed to ensure the correct functioning of the gas detection and measurement system.

Below is a brief explanation to the use of different gas ratios in the enclosed Gas Ratio Plot. C1 Ratios (C1/C2, C1/C3, C1/C4). These display the fraction of each component compared to the fraction of C1. The ratios generally decrease with depth as more mature sediments are encountered. Mature source rocks and hydrocarbon reservoirs show low ratios

Gas Wetness Ratio (GWR): C2+C3+C4/C1 x 100. The GWR gives an indication of maturity. It will generally increase with depth as the C1 fraction will represent a smaller part of the total light HC.

Light to Heavy ratio (LHR): C1+C2/C3+C4 x 100. The LHR is expected to decrease with depth.

Oil Character qualifier (OQC): C4/C3. Under some circumstances high amounts of C1 will mask the presence of oil. GWR and LHR could then be misinterpreted. In the presence of oil, C4 will increase relative to C3, and the OQC would increase.

Average Carbon Number (ACN):  $[C_1 + (2xC_2) + (3xC_3) + (4xC_4)]/(C_1 + C_2 + C_3 + C_4)$ .

#### 5.2 LITHOLOGICAL SUMMARY FOR MARTHA-1

Following is a tabulated lithological summary of Martha-1. The intervals have been determined on the basis of cuttings lithology and drilling parameters and are consistent with those delineated by the Wellsite Geologist.

Interpretative Dep 74.5 to 490.0 mMD			ALCILUTITE with minor and ARGILLACEOUS
ROP.	Drilling	Maximum	Average
(metre/hour)	Parameters (Avg)	Formation	Formation
		<b>Gas:</b> 0.31%	<b>Gas:</b> 0.09%
Min. 11.4	<b>WOB</b> : 7.9 MT		
<b>Max.</b> 343.5	<b>RPM(surf)</b> : 140	Chromatograph	Chromatograph
<b>Avg.</b> 82.0	RPM(mot): N/A	Analysis:	Analysis:
	<b>TRQ</b> : 4046 nM	<b>C</b> <sub>1</sub> : 2794 ppm	<b>C</b> <sub>1</sub> : 1026 ppm
		C <sub>2</sub> : 20 ppm	<b>C</b> <sub>2</sub> : 6 ppm
		<b>C</b> <sub>3</sub> : 6 ppm	<b>C</b> <sub>3</sub> : 3 ppm
		<b>iC</b> ₄ : 3 ppm	iC₄ : 1 ppm
		<b>nC₄</b> : 4 ppm	<b>nC₄</b> : 1 ppm
		neoC <sub>5</sub> : 0 ppm	neoC₅: 0 ppm
		<b>iC</b> <sub>5</sub> : 0 ppm	<b>iC</b> ₅ : 0 ppm
		<b>nC</b> ₅ : 0 ppm	<b>nC</b> ₅ : 0 ppm

**ARGILLACEOUS CALCILUTITE (90 - 100%):** white - very light grey, occasionally bluish white - pale bluish grey, very soft - soft, amorphous, 60-70% micrite, 20-30% argillaceous matrix, weakly cemented with micritic cement, trace - occasional Fossil Fragments (Spicules, Bryozoa), trace nodular pyrite, trace glauconite, trace lithic, grading in part to CLAYSTONE.

**ARGILLACEOUS CALCARENITE (0 - 10%):** off white - very light grey, occasionally colourless - medium grey, firm - moderately hard, microcrystalline, 50-60% micrite, 30-40% argillaceous matrix, well cemented, specks, sucrosic, argillaceous, occasionally - common Fossil Fragments (Spicules, Bryozoa, Forams), trace carbonaceous specks, trace nodular pyrite, tr glauconite.

**ARGILLACEOUS CALCISILTITE (10 - 30%)**: medium light grey - medium dark grey, occasionally medium olive grey, soft - firm, occasionally moderately hard, crumbly - splintery, 10-20% argillaceous matrix, weakly - moderately cemented, sucrosic, trace carbonaceous specks, grading to argillaceous CALCILUTITE.

	r <b>etative Depth</b> - 555.0 mMDF		Lithology MARL grading CALCAREOUS SILTSTONE.	into CALCILUTITE, CLAYSTONE and
ROP.		Drilling	Maximum	Average
(metre	/hour)	Parameters (Avg)	Formation	Formation
			Gas: 0.49%	Gas: 0.31%
Min.	12.8	<b>WOB</b> : 4.9 MT		
Max.	161.2	<b>RPM(surf)</b> : 140	Chromatograph	Chromatograph
Avg.	42.7	RPM(mot): N/A	Analysis:	Analysis:
		<b>TRQ</b> : 4049 nM	<b>C</b> ₁ : 5149 ppm	<b>C</b> <sub>1</sub> : 3278 ppm
			<b>C</b> <sub>2</sub> : 40 ppm	<b>C</b> <sub>2</sub> : 24 ppm
			<b>C</b> <sub>3</sub> : 9 ppm	<b>C</b> <sub>3</sub> : 4 ppm
			<b>iC</b> ₄ : 3 ppm	<b>iC</b> ₄ : 1 ppm
			<b>nC</b> ₄ : 2 ppm	<b>nC</b> ₄ : 1 ppm
			neoC <sub>5</sub> : 0 ppm	neoC <sub>5</sub> : 0 ppm
			<b>iC</b> <sub>5</sub> : 4 ppm	<b>iC</b> ₅ : 1 ppm
			<b>nC</b> ₅ : 6 ppm	<b>nC</b> <sub>5</sub> : 2 ppm

**MARL (10 - 30%)**: white - very light grey, occasionally light bluish grey, very soft - soft, dispersive - amorphous, 10-15% argillaceous matrix, weakly cemented, trace carbonaceous specks, trace nodular pyrite, trace very fine - fine disseminated glauconite.

**ARGILLACEOUS CALCILUTITE (10 - 40%):** light grey - light olive grey, soft, amorphous, 60-70% micrite, 30-40% argillaceous matrix, weakly - moderate cementation with micritic cement, sticky, occasionally sucrosic, occasionally carbonaceous specks, trace - rare Fossil Fragments (Forams, Bryozoa), trace nodular pyrite, grading to MARL.

**SILTSTONE (40 - 90%):** medium - dark yellowish brown, soft - firm, argillaceous, with 5-10% very fine quartz sand, trace - 5% glauconite, grading to SANDSTONE.

Interp	retative Depth	 1	Lithology	
555.0 to 583.0 mMDRT				TSTONE grading into
			SANDSTONE, w	vith CALCAREOUS
			CLAYSTONE and GR	EENSAND.
ROP.		Drilling	Maximum	Average
(metre	/hour)	Parameters (Avg)	Formation	Formation
			<b>Gas:</b> 1.64%	<b>Gas:</b> 0.85%
Min.	4.5	<b>WOB</b> : 1.2 MT		
Max.	35.7	RPM(surf): 144	Chromatograph	Chromatograph
Avg.	20.0	RPM(mot): N/A	Analysis:	Analysis:
		<b>TRQ</b> : 2309 nM	<b>C</b> ₁ : 18184 ppm	<b>C</b> ₁ : 8741 ppm
			<b>C₂</b> : 178 ppm	<b>C</b> <sub>2</sub> : 74 ppm
			<b>C</b> ₃ : 23 ppm	<b>C</b> <sub>3</sub> : 8 ppm
			<b>iC</b> ₄ : 6 ppm	<b>iC₄</b> : 1 ppm
			<b>nC₄</b> : 4 ppm	<b>nC₄</b> : 1 ppm
			neoC <sub>5</sub> : 0 ppm	neoC₅: 0 ppm
			<b>iC</b> <sub>5</sub> : 5 ppm	<b>iC</b> ₅ : 1 ppm
			<b>nC</b> ₅ : 3 ppm	<b>nC</b> ₅ : 1 ppm

**CLAYSTONE (0 - 20%)**: light - medium greyish brown, light brownish yellow, trace light greenish grey, soft - firm, hard in part, amorphous - blocky, rare - abundant silt - fine sand grading to SILTY CLAYSTONE, trace fine glauconite, trace nodular pyrite.

**SILTSTONE (40 - 90%)**: medium - dark yellowish brown, soft - firm, argillaceous, with 5-10% very fine quartz sand, trace - 5% glauconite, grading to SANDSTONE.

**SANDSTONE (10 - 50%):** medium yellowish brown, firm, occasionally soft, friable, very fine, sub angular – sub round, moderately well sorted, with 5-10% clay matrix, nil to poor inferred porosity, SHOWS: 10-20% (60%@571m), dull yellow natural fluorescence, slow blue - white cut fluorescence (instantaneous blue - white cut @571m), solid - patchy blue - white residue ring.

•	retative De to 600.0 mM		Lithology QUARTZ SANDSTONE with t SILTSTONE.									
ROP.		Drilling	Maximum	Average								
(metre	/hour)	Parameters (Avg)	Formation	Formation								
•	•	, ,	<b>Gas:</b> 0.61%	<b>Gas:</b> 0.32%								
Min.	13.0	<b>WOB</b> : 1.8 MT										
Max.	43.1	<b>RPM(surf):</b> 138	Chromatograph	Chromatograph								
Avg.	22.2	RPM(mot): N/A	Analysis:	Analysis:								
_		<b>TRQ:</b> 2340 nM	<b>C</b> ₁ : 8371 ppm	<b>C</b> ₁ : 3588 ppm								
			C <sub>2</sub> : 68 ppm	<b>C</b> <sub>2</sub> : 26 ppm								
			<b>C</b> ₃ : 10 ppm	<b>C</b> <sub>3</sub> : 4 ppm								
			<b>iC</b> ₄ : 3 ppm	iC₄ : 1 ppm								
			<b>nC</b> <sub>4</sub> : 2 ppm	<b>nC</b> <sub>4</sub> : 0 ppm								
			neoC₅: 0 ppm	neoC₅: 0 ppm								
			<b>iC</b> <sub>5</sub> : 1 ppm	<b>iC</b> ₅ : 0 ppm								
			<b>nC</b> ₅ : 3 ppm	<b>nC</b> ₅ : 0 ppm								

**SANDSTONE (50 – 80%) :** colourless - milky, occasionally pale grey, predominately loose quartz grains, fine - course, predominately course grains, angular – sub-round, anhedral, moderately poorly sorted, weakly - non cemented, moderate calcareous, rare - trace medium - fine dark green, rare - trace calcareous, trace Fossil Fragments, grading in part to SILTSTONE, poor inferred porosity, NO SHOWS.

**SILTSTONE (20 – 50%):** medium - dark yellowish brown, soft - firm, argillaceous, 5-10% very fine quartz sand, trace - 5% glauconite, grading to SANDSTONE.

	retative De to 660.0 mN		Lithology QUARTZ SANDSTONE and CLAYSTONE.								
ROP. (metre/hour)		Drilling Parameters (Avg)	Maximum Formation Gas: 0.25%	Average Formation Gas: 0.11%							
Min. Max. Avg.	6.9 122.6 46.7	WOB : 6.5 MT RPM(surf): 138 RPM(mot): N/A TRQ: 4998 nM	Chromatograph Analysis: C <sub>1</sub> : 2636 ppm	Chromatograph Analysis: C <sub>1</sub> : 1460 ppm							
			C <sub>2</sub> : 24 ppm C <sub>3</sub> : 11 ppm iC <sub>4</sub> : 5 ppm	C <sub>2</sub> : 8 ppm C <sub>3</sub> : 3 ppm iC <sub>4</sub> : 1 ppm nC <sub>4</sub> : 1 ppm							
			nC <sub>4</sub> : 7 ppm neoC <sub>5</sub> : 0 ppm iC <sub>5</sub> : 4 ppm nC <sub>5</sub> : 9 ppm	neoC₅: 0 ppm iC₅ : 1 ppm nC₅ : 1 ppm							

**SANDSTONE (60 – 90%)**: colourless - frosted, translucent, white - pale grey, predominately loose quartz grains, firm - hard aggregates in part, fine - course, predominately course, angular – sub round, anhedral, moderately poorly sorted, weakly to non cemented, trace - 20% argillaceous matrix, trace calcareous cement, rare - trace medium - fine dark green glauconite, rare - trace calcareous, trace coal, trace nodular pyrite, poor - very good inferred porosity, NO SHOWS.

**CLAYSTONE (10 – 40%):** white - very light grey, soft, dispersive, trace - 5% silt - very fine sand, grading to SILTSTONE in part.

# **6.0 CASING SUMMARY**

Casing Type	Shoe Depth m
<b>762 x 508mm (30" x 20") Casing</b> X52, 459.8 kg/m, 4 joints, 46.0 m	120.0
<b>340mm (13 3/8")Casing</b> L-80, 101.2 kg/m, 37 joints, 547.3 m	620.8

# 7.0 MUD RECORD

Customer: Santos Ltd

Well: Martha-1

Area: Gippsland Basin

Lease: Vic/P44

Rig: Ocean Patriot

Mud

Company: MI

Date	Depth	Туре	Weight	ight Vis PV YP		Gels	API Filtrate	Cake	Sol	Glycol	Water	Oil	рН	Chlorides	Comments	
	mMD		ppg	sec	ср		10 sec/min	СС	API	%	%	%	%		mg/l	
25-Oct-04	628.0	KCL Polymer Mud	8.9	45	11	11	3/3/4	9.2	1.0	1	3	99		9.5	37500	Glydril
26-Oct-04	870.0	KCL Polymer Mud	9	47	15	18	6/8/9	7.6	1	1	3	99		9.4	38000	Glydril
27-Oct-04	1193. 0	KCL Polymer Mud	9.0	42	11	20	9/10/12	14.4	1.0	2.0	0.0	98.0	0.0	8.0	14000	Glydril
28-Oct-04	1310. 0	KCL Polymer Mud	9.7	39	13	20	9/10/12	15	1.0	7.0	0.0	93.0	0.0	8.1	16000	Glydril
29-Oct-04	1800. 0	KCL Polymer Mud	10.3	44	16	16	9/14/18	9.2	1.0	10.0	3.4	90.0	0.0	8.0	35000	Glydril

# 8.0 BIT RECORD

						WELL: Martha-1									RIG: Ocean Patriot							
PU	PUMP 2 : 152 x 305 mm mm					PUMP 3 : 152 x 305 mm																
													I									
Bit Size (mm)	BIT #	MAKE/TYPE	TFA (in2)	JETS	DEPTH IN (mMDRT)	Metres Drilled	Eff Hrs On Btm	AV ROP (m/hr)	IADC hrs	WOB (klbs)	RPM	KREV	SPP (psi)	GPM (gpm)	TRQ (kftlbs)	IADC BIT GRADING						
914	1	Smith MSDS SHC	1.39	2x22, 1x21, 1x20	76.2	46.3	3.0	25.5	3.0	4.5	81	26.0	413	1035	3.1							
445	2	Smith XRTC	1.42	3x22, 1x20	122.5	505.5	20.0	25.4	20.0	13	150	252.0	2013	1100	4.1	1	1	WT	Α	Е	I N	O TD
311	3	Reed TCI TD43HKPRDH	0.92	3x20	628.0	634.0	34.0	18.6	39.0	15	115	370.0	2400	900	4.2	1	1	WT	Α	0	I N	O RM
311	4	Hycalog DSX104HGW	0.75	5x14	1262.0	538.0	20.7	26.0	23.5	10	140	236.0	3300	815	8.5	2	3	ВТ	S H	F	I W	/T TD

# 9.0 HYDRAULICS RECORD

OPERATOR: Santos Ltd									Martha-	1					
PUMP 1 :		152 x305 mm (6.0x12"), 0.0162 m3/stk (0.102 bbl/stk)	152 x305 mm (6.0x12"), 0.0162 PUMP 2 : m3/stk (0.102 bbl/stk)						PUMP 3 :	152 x305 mm (6.0x12"), 0.0162 m3/stk (0.102 bbl/stk)					
	Τ			<u> </u>					<u> </u>	22500					
Bit Size	BIT#	MAKE/TYPE	DEPTH IN	TFA	JETS	SPP (psi)	Flow In (gpm)	Jet Imp	Jet Vel	PRESS LOSS (psi)		ECD	% P Loss		
(mm)			(mMDRT)	(mm <sup>2</sup> )				(HP/in2)	(m/s)	Annulus	String	bit (sg)	@ Bit		
914	1	Smith MSDS SHC	76.5	1.39	2x22, 1x21, 1x20	1308	1100	0.61	77.0	1	1307	1.05	38.0		
445	2	Smith XRTC	122.5	1.42	3x22, 1x20	2094	1100	1.31	76.0	1	2093	1.08	23.0		
311	3	Reed TCI TD43HKPRDH	628.0	0.92	3x20	2359	900	3.53	95.0	51	2308	1.11	34.0		
311	4	Hycalog DSX104HGW	1262.0	0.75	5x14	3307	815	4.56	106.0	63	3246	1.27	34.0		

**SECTION 13: RIG POSITIONING REPORT** 

# QUALITY CONTROL REPORT FOR RIG POSITIONING AT MARTHA-1

LICENCE: VIC/P44

**Client: SANTOS Ltd.** 

**Rig: OCEAN PATRIOT** 

12<sup>th</sup> October – 21<sup>st</sup> October 2004 inclusive

Report prepared by: John Herkenhoff

Report No. 1468

Project #: 1258-OZ-AUS-SAN

#### ECL Pty Ltd

Level 1, 610 Murray Street, West Perth WA 6005, Australia

Tel: +61 8 9322 4333, Fax: +61 8 9322 7254, E-mail: office@ecqc.com

Website: www.ecqc.com

#### **CONTENTS**

#### 1.0 INTRODUCTION

#### 2.0 RESULTS

- 2.1 Field (Preliminary) Position of OCEAN PATRIOT at MARTHA-1
- 2.2 Anchor Positioning

#### 3.0 CONCLUSIONS and RECOMMENDATIONS

- 3.1 Conclusions
- 3.2 Recommendations

#### 4.0 SURVEY CHECKS

- 4.1 Pre-Move Location Checks
- 4.2 Fugro GPS Antenna to Drillstem Offset Check
- 4.3 Gyrocompass Calibration
- 4.4 Check Fix and Position Comparison

#### 5.0 GEODETIC and TRANSFORMATION PARAMETERS

- 5.1 Spheroid and Map Projection for MARTHA-1 Location
- 5.2 WGS-84 Spheroid
- 5.3 Transformation Parameters
- 5.4 Geocentric Datum of Australia (GDA 94)

#### 6.0 SURVEY EQUIPMENT AND PERSONNEL

- 6.1 Equipment
  - 6.1.1 Fugro Positioning Systems
  - 6.1.2 ECL QC Position Monitoring System
- 6.2 Personnel
- 6.3 Performance of Survey Contractor's Equipment and Personnel
  - 6.3.1 Performance of Survey Contractor's Equipment
  - 6.3.2 Performance of Survey Contractor's Personnel

#### 7.0 EVENT LOG

#### 8.0 APPENDICES

- APPENDIX A: Final Fix Field Reports for MARTHA-1
- APPENDIX B: Contractor's Proposed and As-Laid Anchor Calculations
- APPENDIX C: On-Line Survey Parameters
- APPENDIX D: Survey Gyrocompass Calibration
- APPENDIX E: SANTOS Ltd Well Data Sheet

#### 1.0 INTRODUCTION

ECL Pty. Ltd. (or ECL) was contracted by Santos Ltd. (Santos) to provide Quality Control services for the positioning of the MODU 'OCEAN PATRIOT' at the intended well location of MARTHA-1 in the Bass Strait, approximately 45nm north west of Cape Otway, in Licence Area, VIC/P44.

The Survey Contractor was Fugro Survey Pty Ltd. (or Fugro). The intended geographical coordinates of the 'OCEAN PATRIOT' drillstem position at MARTHA-1 were obtained from the Santos Drilling Program. ECL's NavQC software was used to confirm the conversion of Geographical to UTM Grid coordinates. The intended well location coordinates were as follows:

Latitude : 38° 37' 24.27" South Longitude : 142° 42' 05.01" East

Easting : 648 109.0 m Northing : 5 723 640.0 m

Heading : 45° T

ECL's primary objective was to assist Santos and Diamond Offshore with planning the approach and anchoring operations while ensuring that the Survey Contractor positioned the rig correctly using the appropriate geodetic, transformation and on-line survey parameters in a safe and efficient manner. ECL provided a qualified and experienced Senior Hydrographic Surveyor to verify the correct use and application of the appropriate survey operating parameters, techniques and methodology during positioning of the rig.

This report details the survey parameters and checks made during the transit to location, and outlines the checks and verifications carried out prior to, during, and subsequent to, final positioning of the rig. All times quoted in this report are in Eastern Standard Time (GMT +10 hours) except during personnel mobilisation where Western Standard Time is referred to in the event log.

On arrival aboard the rig on Wednesday, 13<sup>th</sup> October 2004, the Santos/ECL Survey Representative was required to complete the Diamond Offshore Safety Induction.

#### 2.0 RESULTS

#### 2.1 FIELD (PRELIMINARY) POSITION OF OCEAN PATRIOT AT MARTHA-1

The surface position of the OCEAN PATRIOT after anchor pre-tensioning operations and spudding the well was:

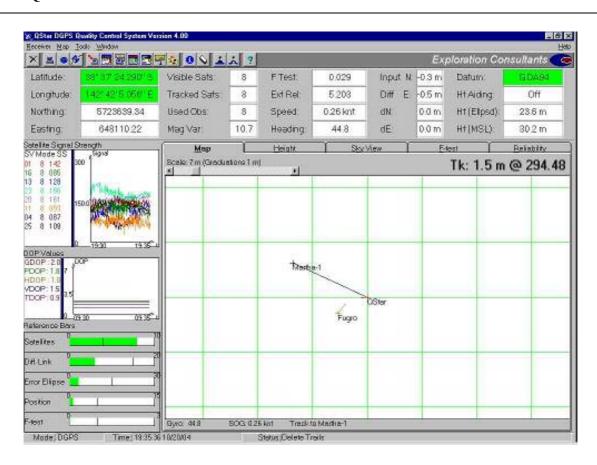
Latitude : 38° 37' 24.33" South Longitude : 142° 42' 05.02" East

Easting : 648 109.3 m Northing : 5 723 638.2 m

Heading : 44.9° T

This position is **1.8 metres**, bearing **169.9°T** <u>from</u> the intended well location. The above position was transmitted to the Santos Company man in a Preliminary Notification of Drilling Rig Position Field Report (See Appendix A). The final position will be published in a Final Report to be submitted by Fugro.

#### OSTAR VERIFICATION OF FINAL DRILLSTEM POSITION AT MARTHA-1



The above location coordinates refer to the following geodetic parameters. (Refer to Section 5.0 for details.)

Ellipsoid: GRS 80

**Datum:** Geodetic Datum of Australia 94 (GDA-94)

**Projection:** Map Grid of Australia 94

(MGA94 Zone 54 - Central Meridian 141° East)

Transverse Mercator

#### 2.2 ANCHOR POSITIONING

ECL's NavQC program was used to calculate the following proposed anchor coordinates, based on a mooring pattern of 30°/60° between anchors, 1000-1200 metres chain out for all anchors. The rig heading is to be 45°T and water depth 55 metres. These coordinates may differ slightly to those reported by Fugro due to the computation method. Anchor bearings and distances are relative to the winch positions and anchor coordinates were computed on the plane (grid bearing and distance).

Prior to deployment of anchors at the MARTHA-1 location, the Fugro proposed anchor coordinates were confirmed by ECL's NavQC software. On deployment, the approximate positions of the anchors were recorded on the StarFix Seis computer using stern roller positions of the Anchor Handling Tug (AHT) at the time of deployment. The final positions were computed utilising the bearings recorded, chain out readings, chain tensions and the catenary program incorporated in the Fugro's StarFix Seis software package.

The following ECL NavQC screen graphic capture shows the intended anchor drop position coordinates.

#### \* File Nav Mode Setup View Origin Grad Plot Tracked Datum Plot Width 5000 648109 5723640 Location 647500E Targets Range Brg Trgt ID **Trgt Description** Metres Hdg 46.1 Metres 9->16 1->8 Laid Easting Northing Range Brg 991.5 076.1 649071.8 5723925.9 991.5 106.1 649062.4 5723412.7 991.5 166.1 648394.9 5722676.4 647881.7 5722685.9 991.5 196.1 991.5 256.1 647146.2 5723354.1 991.5 286.1 647155.6 5723867.3 991.5 346.1 647823.1 5724603.6 991.5 016.1 648336.3 5724594.1

# PROPOSED ANCHOR POSITIONS-NAVQC COODINATES

Note: These coordinates are the intended anchor drop positions.

#### FINAL ANCHOR POSITIONS

Anchor	Ft. Chain	Actual 1	Vessel	
Number	Deployed	Easting	Northing	
#1	3346	649 143	5 723 902	P Wrangler
#2	3572	649 196	5 723 327	Far Grip
#3	3582	648 382	5 722 545	Far Grip
#4	3395	647 816	5 722 611	P Wrangler
#5	3493	647 039	5 723 391	P Wrangler
#6	3414	647 073	5 723 925	P Wrangler
#7	3464	647 858	5 724 707	P Wrangler
#8	3447	648 416	5 724 692	P Wrangler

#### 3.0 CONCLUSIONS AND RECOMMENDATIONS

#### 3.1 CONCLUSIONS

- The Rig Move Procedure document published by Diamond Offshore, and the pre-move meeting to discuss anchor deployment at MARTHA-1, provided sufficient details for personnel to position the rig safely and efficiently.
- A gyrocompass calibration was carried out at 1714hrs on 15<sup>th</sup> October, during P&A operations at MOBY-1. The rig heading was determined by solar hour angle observations using a Wild T2 theodolite. A Calculated minus Observed (C-O) value of +1.65° was applied to the raw gyro observations in StarFix Seis and QSTAR. (Refer to paragraph 4.3 below)
- The professional approach and cooperative attitude of the Diamond Offshore and Fugro personnel onboard the OCEAN PATRIOT contributed to the safe positioning of the rig at the MARTHA-1 location.
- The Fugro Positioning systems (onboard the rig and 2 x AHTs) operated without fault.
- The Positioning personnel (2 x Fugro personnel and the Santos/ECL QC Surveyor) were demobilised from the Rig on Thursday, 21 October 2004.

#### 3.2 RECOMMENDATIONS

#### Continued use of ECL's QStar DGPS Quality Control System.

Recommended for real-time positioning QC during transit, run-in and final positioning of the rig on location. Continued use of the **NavQC** package is also recommended, for confirmation of geodetic computations, coordinate conversions, datum transformations, anchor position calculations etc.

#### · Continue to utilise a Barge Management System (BMS) on future rig moves.

Fugros' StarfixSeis intergrated BMS and Starfix VBS (Virtual Base Station) System proved excellent in tracking and displaying the position of the Anchor Handling Tugs (AHT) relative to the rig and accurately fixing the anchor drop positions.

#### 4.0 SURVEY CHECKS

#### 4.1 PRE-MOVE LOCATION CHECKS

During transit to MARTHA-1, operational checks were conducted to ensure the navigation and positioning systems were correctly interfaced and operated within the manufacturer's specifications. These included the following tasks:

- testing of GPS receivers and verification of Starfix differential station corrections;
- verification of offsets from the GPS antenna to centre of drillstem (paragraph 4.2 below);
- verification of geodetic, transformation and survey parameters input into the positioning system (paragraph 4.4 and Section 5 below);
- verification of the survey gyrocompasses by solar hour angle observations to determine rig azimuth;
- interface checks to ensure input and output data integrity;
- interfacing of ECL's QSTAR system with the Survey Contractor's navigation system (StarfixSeis) for real-time position comparison; and
- verification of intended location, position and heading tolerances and intended anchor positions with Survey Contractor.

#### 4.2 FUGRO GPS ANTENNA TO DRILLSTEM OFFSET CHECK

The primary GPS antenna was offset **8.9** metres port, and **41.9** metres forward of the drillstem (datum). These offset values were check measured using a 30-metre tape, by the Fugro Surveyor with the assistance of the Santos/ECL Survey Representative after departure from the MOBY-1 location.

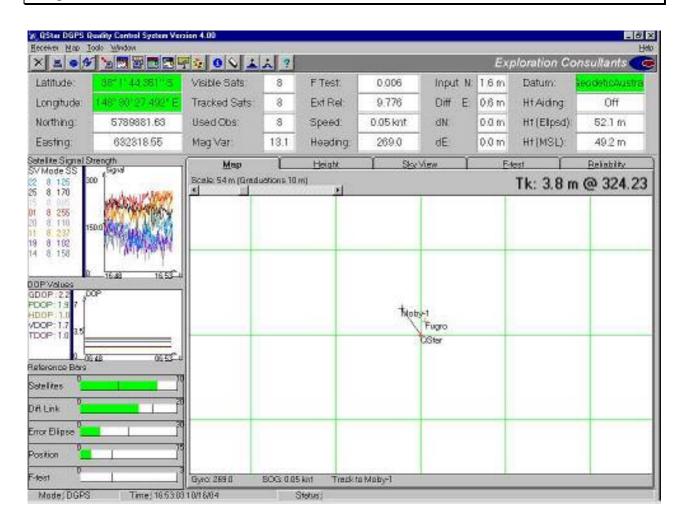
#### 4.3 GYROCOMPASS CALIBRATION

At 1715hrs on 15<sup>th</sup> October, prior to rig departing MOBY-1, a gyro calibration was carried out using a Wild T2 Theodolite. Azimuth was determined by solar hour angle observations while the StarFix Seis system logged survey gyrocompass headings simultaneously. A C-O error value of +1.65° was determined and input to the StarFix Seis on-line navigation and data logging system for reduction of raw gyro observations. The calculations for azimuth by solar hour angle observation were confirmed independently by the Santos/ECL QC Surveyor.

#### 4.4 CHECK FIX AND POSITION COMPARISON

A Check Fix was recorded at MOBY-1 prior to anchor recovery. The screen capture of QSTAR position comparison during the check fix is shown on the following page. The QSTAR and StarFix Seis position comparison was monitored continuously, in real-time, during transit from MOBY-1, and throughout rig positioning at MARTHA-1.

#### QSTAR AND FUGRO POSITION COMPARISON DURING CHECKFIX AT MOBY-1



#### 5.0 GEODETIC AND TRANSFORMATION PARAMETERS

#### 5.1 SPHEROID AND MAP PROJECTION FOR MARTHA-1 LOCATION

The following geodetic and transformation parameters were used throughout the navigation and positioning operation.

Ellipsoid : GRS 80

 Semi-Major Axis
 : 6378137.0000000 m

 Semi-Minor Axis
 : 6356752.3141403 m

 Inverse Flattening
 : 298.257222101

 Eccentricity ↑2
 : 0.00669438

Projection : MGA-94 (Transverse Mercator)

UTM Zone : 54

False Easting : 500 000 m False Northing : 10 000 000 m

Latitude of Origin : 0°

Longitude of Origin : 141° East Scale Factor : 0.9996

#### 5.2 WGS-84 SPHEROID

The Global Positioning System (GPS) is based upon the WGS-84 Spheroid which is defined by the following geodetic parameters:

Spheroid: World Geodetic Spheroid 1984

 Semi-Major Axis
 : 6378137.000 m

 Semi-Minor Axis
 : 6356752.314 m

 Inverse Flattening
 : 298.257223563

 Eccentricity ↑2
 : 0.006694380023

#### 5.3 TRANSFORMATION PARAMETERS

The following 7-parameter transformation values were used in StarFix Seis and QSTAR positioning systems to convert from WGS-84 to GDA-94:

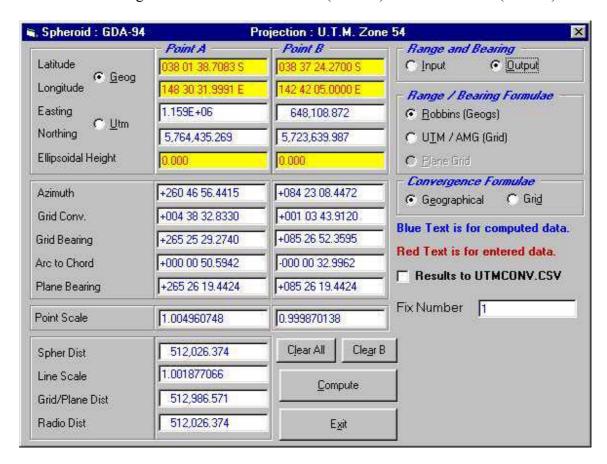
dX = -0.0266m. rX = +0.013416 Scale Factor = +0.005515ppm

dY = -0.0303m. rY = +0.012379

dZ = -0.0339m. rZ = +0.013999

#### NAVQC COMPUTATIONS FOR MOBY-1 (A) AND MARTHA-1 (B)

The following ECL NavQC screen graphic confirms the conversion of the GDA94 geographical coordinates to MGA94 grid coordinates for MOBY-1 (Point A) and MARTHA-1 (Point B).



#### 6.0 SURVEY EQUIPMENT AND PERSONNEL

#### 6.1 EQUIPMENT

#### 6.1.1 Fugro Positioning Systems

The Primary Navigation System provided by Fugro was a Starfix HP system.

The Secondary Navigation System comprised a Trimble 4000DS GPS Receiver operating with the Fugro Survey Multiple Reference Differential GPS (MRDGPS).

The observed datum position (drillstem) obtained from the primary and secondary positioning systems were compared in real-time and found to be in sub-metre agreement.

The Primary and Secondary navigation systems utilised reference stations at Melbourne, Bathurst and Cobar for the differential corrections. The details of the reference stations are as follows:

Description	Latitude (South)	Longitude (East)	Height	Site ID
			(m)	
Melbourne	037° 48' 29.010"S	144° 57' 48.028"E	82.05	385
Bathurst	033° 25' 46.884"S	149° 34' 01.967"E	756.65	336
Cobar	031° 29' 57.436"S	145° 50' 20.343"E	270.16	316

The Starfix HP solution was input to Fugros' StarfixSeis On-Line Navigation & Data-Logging System to provide a Differential GPS antenna position. Offset measurements from the GPS antenna to the drillstem centre along with heading data provided by an SG Brown 1000 survey gyrocompass were applied in StarfixSeis for real-time DGPS positioning of the drillstem throughout the rig move, positioning and anchor deployment operations.

The AHTs, M/V Far Grip and M/V Pacific Wrangler, were fitted with Fugro's Barge Management System (Wombat) incorporating a Starfix VBS with Trimble SK8 GPS Receiver and UHF Telemetry modem and associated software (including a shared database of chart data and structure files). Positioning data (absolute and relative) is telemetered between the rig and the AHTs ie. AHTs receive the rig's absolute position relative to the displayed database and the rig receives the AHTs' absolute positions relative to the displayed database. This system enabled the rig to transmit anchor targets to the AHTs and monitor the AHT's positions while retrieving and running anchors.

Fugro also provided a Wild T2 theodolite and tripod to determine azimuth by solar hour angle observations for calibration of the survey gyrocompass.

#### 6.1.2 ECL QC Position Monitoring System

ECL's QSTAR DGPS Quality Control System derives an independent offset corrected drillstem position from a stand-alone GPS antenna and 8-channel Synergy Systems GPS receiver. QSTAR received raw gyrocompass data from an SG Brown 1000 series survey gyrocompass and utilised Fugros' StarFix differential corrections (RTCM) to provide an offset corrected DGPS drillstem position. QSTAR was interfaced to Fugro's StarfixSeis On-Line Navigation & Data-Logging System to obtain StarfixSeis processed (filtered and smoothed) drillstem position, in order to compare DGPS drillstem positioning on-line and in real-time. Any discrepancy between the two positions could be immediately detected. However, agreement in positioning systems was within the accepted tolerance of 1 to 4 metres

ECL also provided its NAVQC Utility software, which enabled independent verification of the geodetic and transformation parameters, coordinate transformations and conversions, and calculation of proposed anchor coordinates for the MARTHA-1 intended well location.

#### 6.2 PERSONNEL

The following personnel were assigned to the rig move:

## **Fugro Survey:**

Razak Risah Party Chief/Surveyor

Owen Friedlieb Surveyor

#### **Santos Limited/ECL:**

John Herkenhoff Santos/ECL QC Surveyor

#### 6.3 PERFORMANCE OF SURVEY CONTRACTOR'S EQUIPMENT AND PERSONNEL

#### 6.3.1 Performance of Survey Contractor's Equipment

The Fugro Primary and Secondary positioning systems onboard the OCEAN PATRIOT and Barge Management Systems aboard both AHTs, performed to specification and without fault.

#### 6.3.2 Performance of Survey Contractor's Personnel

The Fugro Survey personnel performed their duties in a competent and safe manner.

#### 7.0 EVENT LOG

#### Tuesday, 12 October 2004

#### Time Event

- 2200 Checked in for Qantas flight to Melbourne. (WST)
- 2340- Santos/ECL Survey Representative departed Perth for Melbourne. (WST)

#### Wednesday, 13 October 2004

#### Time Event

- 0530 Arrived in Melbourne.
- 0600 Taxi to Bristow Helicopters Hanger 3 at Essendon Airport.
- 0605 Standing by for helicopter flight to OCEAN PATRIOT.
- 0710 Attended helicopter safety briefing.
- 0800 Departed Essendon Airport by helicopter for OCEAN PATRIOT.
- 0830 Landed at East Sale for refuelling.
- 0850 Departed East Sale for OCEAN PATRIOT.
- 0935 Arrived OCEAN PATRIOT at MOBY-1.
- 1000 Attended Diamond Offshore rig induction.
- 1030 Completed rig induction.
- 1230 All Fugro survey equipment operational.
- 1430 OSTAR mobilised and interfaced with StarFix Seis.
- DGPS antenna offsets check measured by Fugro Surveyor and Santos/ECL QC Surveyor. **X=-8.9**; **Y=-41.9**.
- 2359 Standing by for completion of well testing at MOBY-1.

#### Thursday, 14 October 2004

#### Time Event

- 0001 Standing by for completion of well testing at MOBY-1.
- 2359 Standing by for completion of well testing at MOBY-1.

#### Friday, 15 October 2004

#### Time Event

- 0001 Standing by for completion of well testing at MOBY-1.
- 0600 Down for weather, standing by to pull stack.
- 1430 Attended pre-move meeting. Confirmed intended location coordinates rig heading and surface position tolerance with Santos Drilling Engineer and Company Man.
- 1500 Completed pre-move meeting.
- 1714 Fugro commenced gyrocompass calibration.
- 1720 Completed gyrocompass calibration.  $C-O = +1.65^{\circ}$ .
- 1800 Down for weather, standing by to pull stack.
- 2359 Down for weather, standing by to pull stack.

#### Saturday, 16 October 2004

# Time Event 0001 Down for weather, standing by to pull stack. 0600 Down for weather, standing by to pull stack. 1200 Weather abating, P&A operations resumed. 1755 Commenced anchor recovery at MOBY-1. 2359 Continued anchor recovery at MOBY-1.

### Sunday, 17 October 2004

Time	Event
0001	Continued anchor recovery at MOBY-1.
0600	Continued anchor recovery at MOBY-1.
1300	Completed anchor recovery operations at MOBY-1. Rig preparing for tow to MARTHA-1.
1430	Rig under way to MARTHA-1, on hire to Santos.
2359	Continued transit to MARTHA-1.

#### Monday, 18 October 2004

Time	Event
0001	Continued transit to MARTHA-1.
1030	Attended fire and abandon rig drill.
1100	Drill completed.
2359	Continued transit to MARTHA-1.

#### Tuesday, 19 October 2004

Time	Event
0001	Continued transit to MARTHA-1.
1300	Attended pre-spud meeting.
1330	Completed meeting.
1515	Pacific Wrangler taken off the tow bridle.
1612	Resumed tow.
2359	Continued transit to MARTHA-1.

#### Wednesday, 20 October 2004

Time	Event
0001	Continued tow to MARTHA-1.
0005	Far Grip slowing down to shorten up tow wire.
0050	PCC #5 passed to Pacific Wrangler.
0100	Commenced runin, 1.5nm from #5 drop location.
0225	#5 on bottom.
0247	On location at MARTHA-1.
0300	Continued running primary anchors with Pacific Wrangler.
0737	Far Grip released from tow bridle.
0745	Running secondary anchors with both AHT's.
1100	Commenced pretension of anchors.

# Wednesday, 20 October 2004 (continued)

Γime	Event
130	Pre-tensioning completed.
215	Anchor #8 re-run.
305	Rig adjusting back on location. Rig within two metres of intended location.
400	Commenced ballasting down to drilling draft.
405	Standing by for completion of ballasting operations to commence final fix.
920	Ballasting operations completed.
930	Fugro commenced logging final fix.
2000	QSTAR final fix confirmation completed.
2030	Completed final fix.
2100	Provisional position transmitted to Company Man.
2130	Qstar demobilised.
2359	Standing by for helicopter flight to Melbourne.

# Thursday, 21 October 2004

Time	Event
0001	Standing by for helicopter flight to Melbourne.
1400	Attended helicopter safety briefing.
1530	Departed OCEAN PATRIOT for Melbourne.
1730	Arrived in Melbourne.
1800	Checked in for Qantas flight to Perth.
1840	Departed Melbourne aboard QF481 for Perth.
2040	Arrived in Perth.
2200	Santos/ECL Survey Representative demobilised.

Saı	ntos Well Completion Report - Volume 1 Basic
	SECTION 14: WELL ABANDONMENT AND PLUG REPORT

#### Cementing Report - Abandonment Plugs

Well Name : Martha-1
Date : 4-Nov-04

Drilling Contractor & Rig: DOGC Ocean Patriot

Santos Personnel : Nigel Walters/Steve Hodgetts
Cement Contractor/Rep. : Dowell Schlumberger David Green

Basic Well and Drilling Fluid Data					
Total Depth (m TVD):	1799	Drilling Fluid Type :	KCI polymer	Caliper Tool used :	yes
Total Depth (m MD):	1800	Density (S.G):	1.22	Water Depth (m) RT:	54.7
Last Casing Shoe (in.):	13 3/8"	PV (cp):	20	Est.shoe BHST (Deg C.):	81
Shoe Depth (m TVD):	620.8	YP (lbs/100sq.ft.):	25	Est. BHST (Deg C.):	57
Open Hole Diameter (in.):	12.25"	Water Loss (cc.):	14	Rig air gap:	21.5m

Casing Abandonment/Cutting Data						
Casing (in.)	Casing (in.) Shoe (m) Cut @ (m) ID Comments					
30" x 20"	121.00	79	27" x 18.3/4"	2.7m below seabed.		
20" x 13 3/8"	620.80	79	12.615	2.7m below seabed.		

Stinger Data						
	5" drill pipe with diverter	5" DP with 13 3/8" cmt ret.				

Plug Data					
	Plug #1	Plug #2	Plug #3	Plug #4	Plug #5
	Open hole	Open hole	Open hole	Set across shoe	Surface plug
Top - mRT	1600	1400	1200	570	114
Bottom - mRT	1800	1600	1400	655	166
Plug length - m	200	200	200	85	52
Mud in hole	KCI polymer	KCI polymer	KCI polymer	KCI polymer	Seawater
Spacer	Drillwater	Drillwater	Drillwater	Drillwater	Drillwater
Displacement Fluid	KCI polymer	KCl polymer	KCI polymer	KCI polymer	Seawater
Displaced by	Cement Unit	Cement Unit	Cement Unit	Cement Unit	Cement Unit
Slurry volume (bbl)	104	135	157	55	25
Density (ppg)	15.8	15.8	15.8	15.8	15.8
Cement type	"G"	"G"	"G"	"G"	"G"
Yield (cu.ft/sk)	1.19	1.19	1.19	1.18	1.18
Total sacks cement	490	636	740	261	119
Additives :					
D047 (gal/sk)	0.01	0.01	0.01	0.01	0.01
D110 (gal/sx)	0.02	0.02	0.02		
D145A (gal/sk)	0.1	0.1	0.1		
D193 (gal/sk)	0.3	0.3	0.3		
Swtr (gal/sk)	4.92	4.92	4.92	5.3	5.3
Total mixfluids (bbl)	62.00	81.00	94.00	33.00	15.00
Pre-flush (bbls)	20	20	20	20	10
Balance with (bbls)	2.5	2	1.6	2.8	1.4
Displacement - bbls*	83	72	60	27	5.1

<sup>\*</sup> includes balance volume

General Comments

5" drillpipe with diverter used for setting cement plugs. Cement placed from TD upwards. TOC ~ 50m above top gas sand.

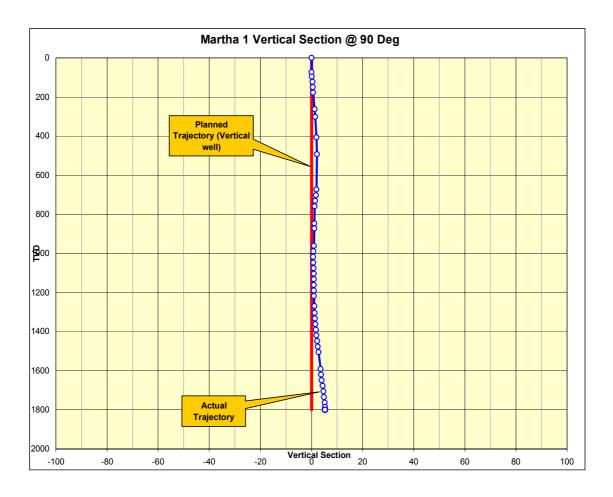
- Plug 1: Full returns observed. Trace cement observed on bottoms up. No flowback while POOH.
- Plug 2: Full returns observed. Cement observed on bottoms up. No flowback while POOH.
- Plug 3: Full returns observed. POOH to 50m above TOC & circulated bottoms up. No flowback while POOH.
- Plug 4: Set 1.5SG viscous pill from 730m to 665m. Spotted plug #4 from 665m to 570m. No losses during displacement. Pulled above TOC and circulated displacing casing to inhibited mud (corrosion inhibitor & biocide). Tagged TOC after 6 hrs at 575m with 20klbs.
- Plug 5: Set Dowell cement retainer at 166m and pressure tested same to 500 psi (0.2 bbls pumped). POOH laying down pipe. RIH with 5" drill pipe with diverter & displaced well to seawater. Set cement plug #4 from 166m to 114m. Pulled above TOC to 100m and reversed out excess cement.

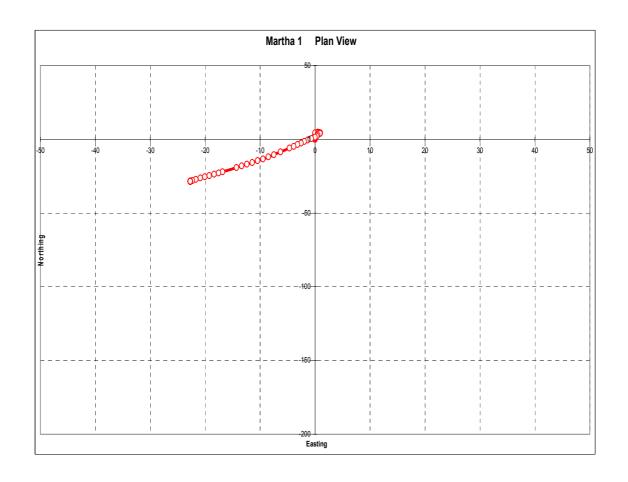
# **SECTION 15: DEVIATION SUMMARY**

Surveys and schematics are presented overleaf.

# **MARTHA-1 DEVIATION SURVEYS**

0         0.0         Anderdrift           73         0.0         Anderdrift           95         1.5         Anderdrift           122         1.0         Anderdrift           150         0.0         Anderdrift           178         1.0         Anderdrift           263         0.5         Anderdrift           302         1         Anderdrift           407         0         Anderdrift           493         0.5         Anderdrift           672.92         0.36         121.62           702.27         0.49         124.59           731         0.56         135.36           759.74         0.35         171.41           846.09         0.12         248.92           872.68         0.05         166.11           960.62         1.59         200.68	
95       1.5       Anderdrift         122       1.0       Anderdrift         150       0.0       Anderdrift         178       1.0       Anderdrift         263       0.5       Anderdrift         302       1       Anderdrift         407       0       Anderdrift         493       0.5       Anderdrift         672.92       0.36       121.62         702.27       0.49       124.59         731       0.56       135.36         759.74       0.35       171.41         846.09       0.12       248.92         872.68       0.05       166.11	
122       1.0       Anderdrift         150       0.0       Anderdrift         178       1.0       Anderdrift         263       0.5       Anderdrift         302       1       Anderdrift         407       0       Anderdrift         493       0.5       Anderdrift         672.92       0.36       121.62         702.27       0.49       124.59         731       0.56       135.36         759.74       0.35       171.41         846.09       0.12       248.92         872.68       0.05       166.11	
150         0.0         Anderdrift           178         1.0         Anderdrift           263         0.5         Anderdrift           302         1         Anderdrift           407         0         Anderdrift           493         0.5         Anderdrift           672.92         0.36         121.62           702.27         0.49         124.59           731         0.56         135.36           759.74         0.35         171.41           846.09         0.12         248.92           872.68         0.05         166.11	
178       1.0       Anderdrift         263       0.5       Anderdrift         302       1       Anderdrift         407       0       Anderdrift         493       0.5       Anderdrift         672.92       0.36       121.62         702.27       0.49       124.59         731       0.56       135.36         759.74       0.35       171.41         846.09       0.12       248.92         872.68       0.05       166.11	
263     0.5     Anderdrift       302     1     Anderdrift       407     0     Anderdrift       493     0.5     Anderdrift       672.92     0.36     121.62       702.27     0.49     124.59       731     0.56     135.36       759.74     0.35     171.41       846.09     0.12     248.92       872.68     0.05     166.11	
302     1     Anderdrift       407     0     Anderdrift       493     0.5     Anderdrift       672.92     0.36     121.62       702.27     0.49     124.59       731     0.56     135.36       759.74     0.35     171.41       846.09     0.12     248.92       872.68     0.05     166.11	
407     0     Anderdrift       493     0.5     Anderdrift       672.92     0.36     121.62       702.27     0.49     124.59       731     0.56     135.36       759.74     0.35     171.41       846.09     0.12     248.92       872.68     0.05     166.11	
493       0.5       Anderdrift         672.92       0.36       121.62         702.27       0.49       124.59         731       0.56       135.36         759.74       0.35       171.41         846.09       0.12       248.92         872.68       0.05       166.11	
672.92     0.36     121.62       702.27     0.49     124.59       731     0.56     135.36       759.74     0.35     171.41       846.09     0.12     248.92       872.68     0.05     166.11	
702.27       0.49       124.59         731       0.56       135.36         759.74       0.35       171.41         846.09       0.12       248.92         872.68       0.05       166.11	
731     0.56     135.36       759.74     0.35     171.41       846.09     0.12     248.92       872.68     0.05     166.11	
759.74       0.35       171.41         846.09       0.12       248.92         872.68       0.05       166.11	
846.09     0.12     248.92       872.68     0.05     166.11	
846.09     0.12     248.92       872.68     0.05     166.11	
1.37   200.02	
989.35 1.27 184.55	
1017.99 2.00 214.08	
1046.87 2.46 218.63	
1075.51 2.33 211.04	
1104.15 2.36 211.11	
1132.60 2.43 210.35	
1161.23 2.65 210.29	
1189.87 2.78 210.7	
1218.57 3.07 212.16	
1270.08 3.78 212.66	
1304.67 3.6 212.65	
1333.52 3.44 215.56	
1362.11 3.24 216.60	
1390.88 3.1 219.06	
1419.53 3.12 219.42	
1448.27 3.07 219.27	
1476.85 2.88 220.27	
1505.48 2.74 223.28	
1591.58 2.35 219.65	
1620.36 2.20 220.22	
1649.36 2.43 227.31	
1678.05 2.32 225.45	
1706.72 2.40 224.26	
1735.43 2.43 221.48	
1763.96 2.56 220.08	
1785.46 2.69 214.76	
1800.00 2.69 214.76	





# **SECTION 16: PALYNOLOGY REPORT**



# SANTOS STRATIGRAPHIC SERVICES GEOSCIENCE & NEW VENTURES

Palynology Report No. 2004/31

Author: R.HELBY

PALYNOLOGICAL REPORT NO. 2004/31

MARTHA -1 WELL

**Santos Ltd**A.B.N. 80 007 550 923

#### **Introduction**

Twenty one sidewall core samples from Santos Martha-1, drilled VIC-P44, were examined palynologically. An additional 13 cuttings samples were examined on board the Jack Bates during drilling of Santos Callister-1. The Santos laboratory technicians noted that the sidewall cores were "soft and fragile" indicating that pre-processing cleaning of the cores was very difficult. Mud contamination, largely represented by dinocysts from higher levels, is evident in most of the preparations. This was a particular problem in the recognition of the Eumeralla Formation. One of the definitive features of the Eumeralla Formation, hitherto, has been the apparent absence of dinocysts. In most instances the contaminants clearly originated from the interval of the Paaratte Formation to the Belfast Mudstone "C" unit.

The palynology results are presented in Table 1. A range chart of palynomorphs recorded in this study is appended.

R. Helby

#### References

Partridge, A.D. 1999. Late Cretaceous to Tertiary geological evolution of the Gippsland Basin, Victoria. Latrobe University PhD Thesis (unpublished).

Partridge, A.D. 2001. Revised stratigraphy of the Sherbrook Group, Otway Basin. PESA Eastern Australian Basins Symposium, p455-465.

Sharp, N.C. & Wood G.R. 2004. Casino Gas Field, offshore Otway Basin, Victoria – the appraisal story and some stratigraphic enlightenment. PESA Eastern Australian Basins Symposium, p1-14.

# **PALYNOLOGY REPORT**

Study: **Martha No. 1**Author: R. Helby Page 1 of 3

		REMARKS
SAMPLE	DEPTH (metres)	
SWC	1307.2	Moderately rich (21% of total palynomorphs), low diversity dinocyst suite with frequent <i>Xenikoon australis</i> , <i>Nelsoniella aceras</i> and frequent <i>Heterosphaeridium</i> spp. The high diversity spore pollen suite is not particularly diagnostic, lacking <i>Nothofagidites</i> spp. and <i>Tricolporites apoxyexinus</i> . Near-shore marine.
SWC	1338.0	Rich (50% of total palynomorphs), high diversity dinocyst suite with frequent <i>Xenikoon australis, Nelsoniella aceras, N. tuberculata, Odontochitina porifera</i> and common <i>Heterosphaeridium</i> spp. The moderate diversity spore-pollen suite is not particularly diagnostic. Shallow marine.
SWC	1360	Rich (39% of total palynomorphs), high diversity microplankton suite with <i>Nelsoniella aceras</i> , questionable <i>N. tuberculata</i> , <i>Odontochitina porifera</i> with common <i>Heterosphaeridium</i> spp. but lacking Xenikoon <i>australis</i> . The moderate diversity spore-pollen suite is not particularly diagnostic. Shallow marine.
SWC	1378.5	Rich (38% of total palynomorphs), moderate diversity microplankton suite with <i>Xenikoon australis</i> , frequent <i>Nelsoniella aceras</i> , <i>N. tuberculata</i> and <i>Odontochitina porifera</i> with common <i>Heterosphaeridium</i> spp. Shallow marine.
SWC	1403.3	Rich (46% of total palynomorphs), moderate diversity microplankton suite with <i>Xenikoon australis</i> , frequent <i>Nelsoniella aceras</i> and <i>Odontochitina porifera</i> with abundant <i>Heterosphaeridium</i> spp. Shallow marine.
SWC	1421.2	Rich (47% of total palynomorphs), low diversity dinocyst suite with <i>Nelsoniella aceras</i> , common <i>Odontochitina</i> spp. (including <i>O. magna and O. porifera</i> ) and abundant <i>Heterosphaeridium</i> spp. Shallow marine.
SWC	1435.4	Rich (65% of total palynomorphs), moderate diversity dinocyst suite with common <i>Isabelidinium rotundatum</i> , common <i>Heterosphaeridium</i> spp. and frequent <i>Trithyrodinium vermiculatum</i> . <i>Nelsoniella aceras</i> not observed. Shallow marine.

# **PALYNOLOGY REPORT**

Study: **Martha No. 1**Author: R. Helby Page 2 of 3

		REMARKS
SAMPLE	DEPTH (metres)	
SWC	1457.6	Super-abundant (97% of total palynomorphs), moderate diversity, dinocyst suite dominated by <i>Odontochitina lepros</i> ( <i>O.</i> 'stubby' of MPA), common Heterosphaeridium spp. and <i>Trithyrodinium glabrum</i> , with <i>Amphidiadema denticulata</i> , <i>Isabelidinium elongatum</i> , <i>Odontochitina magna</i> , <i>O. porifera</i> , <i>O. wannabe</i> and <i>Trithyrodinium vermiculatum</i> . Spore-pollen diversity is extremely restricted and the assemblage is not diagnostic. Shallow marine.
SWC	1475.0	Moderately rich (31% of total palynomorphs), moderate diversity, dinocyst suite with common <i>Isabelidinium</i> spp. (including <i>I. elongatum</i> and <i>I. rectangulare</i> ), <i>Odontochitina porifera</i> and frequent <i>Heterosphaeridium</i> spp. Shallow marine.
SWC	1479.0	Moderately rich (26% of total palynomorphs), moderate diversity, dinocyst suite with common <i>Isabelidinium</i> spp. (including <i>I. cretaceum</i> and <i>I. elongatum</i> ), <i>Amphidiadema denticulata Odontochitina porifera, Trithyrodinium glabrum, T. vermiculatum</i> and common <i>Heterosphaeridium</i> spp. Shallow marine.
SWC	1483.8	Moderately rich (36% of total palynomorphs), moderate diversity, dinocyst suite with common <i>Circulodinium</i> cf. <i>C. deflandrei</i> and frequent <i>Cyclonephelium compactum</i> , <i>Heterosphaeridium</i> spp., <i>Kiokansium polypes</i> with <i>Cribroperidinium</i> spp (including fragments of <i>C. edwardsii</i> ). A fairly diverse caved assemblage from the Skull Creek Mudstone was recorded. The spore-pollen suite includes <i>Appendicisporites distocarinatus</i> and <i>Hoegisporis trinalis</i> . Near-shore marine.
SWC	1489.2	Relatively lean (13% of total palynomorphs), low diversity, dinocyst suite with frequent <i>Circulodinium</i> cf. <i>C. deflandrei</i> , <i>Heterosphaeridium</i> spp. and <i>Palaeoperidinium cretaceum</i> . The spore-pollen suite lacks diagnostic elements. Near-shore marine.
SWC	1501.8	This zone pick is tentatively based on a single specimen of <i>Heterosphaeridium</i> . No other dinocysts were recorded. The spore-pollen suite appears to lack <i>Appendicisporites</i> spp., <i>Hoegisporis trinalis</i> or <i>Phyllocladidites</i> spp species that would support Waarre Sandstone "A" assignment. Possible marine influence.

# **PALYNOLOGY REPORT**

Study: **Martha No. 1**Author: R. Helby

Page 3 of 3

	REMARKS				
SAMPLE	DEPTH (metres)	DIVER			
SWC	1510.8	High	Rich, diverse spore-pollen suite, dominated by smooth fern spores (58%) with frequent <i>Cicatricosisporites</i> spp. The zone pick is based on the occurrence of the eponymous species and the apparent absence of younger indices. None of the marker taxa from the <i>Phyllocladidites mawsonii</i> Zone were observed. No unequivocal dinocysts were recorded. The occurrence of the fresh-water to brackish algal species <i>Sigmopollis carbonis</i> is recorded		
SWC	1534.0	High	Moderately rich, diverse spore-pollen suite dominated by saccate pollen and fern spores. The zone pick is based on the occurrence of <i>Coptospora paradoxa</i> and the absence of younger indices. None of the marker taxa from the <i>Phyllocladidites mawsonii</i> Zone were observed. Dinocysts not recorded, however, the occurrence of <i>Micrhystridium</i> spp. and unidentified diaphanous cysts may indicate minor salinity suggesting a possible brackish environment of deposition.		
SWC	1558.0	High	As above		
SWC	1572.1	V. low	Almost barren – lacking diagnostic taxa.		
SWC	1590.0	striatus occurre	Moderately rich, diverse spore-pollen suite dominated by saccate pollen. The zone pick is based on the occurrence of <i>Crybelosporites</i> striatus and the apparent absence of <i>Coptospora paradoxa</i> and other younger markers. No dinocysts were recorded, however, the occurrence of <i>Micrhystridium</i> spp. with other algal cysts may indicate minor salinity suggesting a possible brackish environment of deposition.		
SWC	1612.9	An extremely lean, but moderately diverse, spore-pollen assemblage lacking diagnostic species is recorded. The zone pick is based on the samples position between unequivocal <i>C. striatus</i> zone samples. Three specimens of <i>Xenikoon australis</i> , three specimens of <i>Heterosphaeridium</i> spp. and a single <i>Odontochitina specimen</i> were recorded. These are clearly contaminants from higher levels (Waarre Ss-Paaratte).			
SWC	1700.0	This very lean, low diversity, spore-pollen assemblage lacks diagnostic species. The zone pick is based on the samples' stratigraphic position Specimens of <i>Heterosphaeridium</i> spp., Isabelidinium spp. and <i>Odontochitina</i> were recorded. These are clearly contaminants from above. No spinose acritarchs observed. Non-marine.			
SWC	1728.9	Saccate pollen and fern spores dominate this moderately rich, diverse spore-pollen suite. The zone pick is based on the occurrence of <i>C. striatus</i> and the apparent absence of <i>Coptospora paradoxa</i> and other younger markers. The moderately diverse dinocyst suite including <i>Isabelidinium rotundatum</i> , <i>Nelsoniella aceras</i> , <i>Odontochitina magna</i> and <i>Xenikoon australis</i> originates from higher levels in the well (probably Skull Ck Mdst-Paaratte Mdst). No spinose acritarchs observed. Non-marine.			

# ON-RIG SAMPLES - PALYNOLOGY REPORT - REINTERPRETED

Study: **Martha No. 1**Author: R. Helby

Page 1 of 2

SAMPLE	DEPTH	REMARKS
O, 22	(metres)	
CUTT	1352	Low diversity dinocyst suite with prominent <i>Heterosphaeridium</i> spp. (>15%), <i>Nelsoniella</i> sp. and <i>Xenikoon australis</i> (tentative). Sporepollen suite includes <i>Nothofagidites senectus</i> . Near-shore marine.
CUTT	1358	Very low diversity dinocyst suite with prominent <i>Heterosphaeridium</i> spp. (≈15%) and a single, specimen of <i>Isabelidinium</i> sp. Sporepollen suite not particularly diagnostic. Near-shore marine.
CUTT	1376	Low diversity dinocyst suite with abundant <i>Heterosphaeridium</i> spp. (≈30%), <i>Nelsoniella aceras</i> , <i>Odontochitina porifera</i> and <i>Xenikoon australis</i> (tentative). Spore-pollen suite not particularly diagnostic. Near-shore marine.
CUTT	1397	Low diversity dinocyst suite with prominent <i>Heterosphaeridium</i> spp. (26%) and <i>Nelsoniella</i> sp. Spore-pollen suite not particularly diagnostic. Near-shore marine.
CUTT	1469	Moderate diversity dinocyst suite with abundant <i>Heterosphaeridium</i> spp. (≈40%), with <i>Isabelidinium elongatum</i> , <i>I rotundatum</i> , <i>Nelsoniella</i> aceras, common <i>Odontochitina</i> spp. (including <i>O. magna</i> , <i>O. porifera</i> and O. sp. (stubby), frequent <i>Trithyrodinium glabrum</i> and <i>T. vermiculatum</i> . Near-shore marine.
CUTT	1475	Moderate diversity dinocyst suite with abundant <i>Heterosphaeridium</i> spp. (≈30%), with <i>Isabelidinium</i> spp. (including <i>I. elongatum</i> , <i>I. nuculum</i> and <i>I. rotundatum</i> ), <i>Nelsoniella</i> aceras, prominent <i>Odontochitina</i> spp. (including <i>O. cribropoda</i> , <i>O. porifera</i> , <i>O. wannabe</i> and O. sp stubby) and frequent <i>Trithyrodinium glabrum</i> . Near-shore marine.
CUTT	1499	Moderate diversity dinocyst suite with frequent <i>Heterosphaeridium</i> spp., with <i>Isabelidinium</i> spp. (including <i>I. cretaceum</i> , <i>I. elongatum</i> , <i>I. nuculum</i> and <i>I. rectangulare</i> and <i>I. rotundatum</i> ), <i>Nelsoniella</i> aceras, prominent <i>Odontochitina</i> spp. (including <i>O. cribropoda</i> , <i>O. porifera</i> and <i>O.</i> sp stubby) and frequent <i>Trithyrodinium glabrum</i> and <i>T. vermiculatum</i> . Near-shore marine.

# ON-RIG SAMPLES - PALYNOLOGY REPORT - REINTERPRETED

Study: **Martha No. 1**Author: R. Helby

Author: R. Helby Page 2 of 2

		REMARKS			
SAMPLE	DEPTH (motros)				
	(metres)				
CUTT	1505	Moderate diversity dinocyst suite with frequent <i>Heterosphaeridium</i> spp., with <i>Isabelidinium</i> spp. (including <i>I. belfastense, I. cretaceum</i> and <i>I. rotundatum</i> ), <i>Nelsoniella</i> aceras, prominent <i>Odontochitina</i> spp. (including <i>O. porifera, O. wannabe</i> and O. sp stubby) and frequent <i>Trithyrodinium glabrum</i> . Near-shore marine.			
CUTT	1547	Moderately diverse spore-pollen suite with <i>Crybelosporites striatus</i> , apparently lacking markers from the <i>P. mawsonii</i> Zone. The low diversity dinocyst suite with <i>Isabelidinium rotundatum</i> , <i>Odontochitina</i> porifera, <i>Trithyrodinium glabrum</i> , <i>T. vermiculatum</i> and <i>Xenikoon australis</i> is considered to be caved. A fragment of <i>Cribroperidinium edwardsii</i> was also recorded. No evidence of in-situ marine influence.			
CUTT	1550	The moderately diverse spore-pollen suite apparently lacks markers from the <i>P. mawsonii</i> Zone is marked by prominent <i>Cicatricosisporites</i> spp. (15%). The very low diversity dinocyst suite includes <i>Odontochitina</i> porifera and <i>Trithyrodinium glabrum</i> and is considered to be caved. No evidence of in-situ marine influence.			
CUTT	1574	The moderately diverse spore-pollen suite apparently lacks markers from the <i>P. mawsonii</i> Zone. The very low diversity dinocyst suite includes <i>Isabelidinium rotundatum</i> , <i>Nelsoniella</i> aceras and <i>Xenikoon australis</i> is considered to be caved. No evidence of in-situ marine influence.			
CUTT	1577	The moderately diverse spore-pollen suite apparently lacks markers from the <i>P. mawsonii</i> Zone. The lean, very low diversity dinocyst suite, which includes <i>Nelsoniella</i> aceras and <i>Odontochitina wannabe</i> , is considered to be caved. No evidence of in-situ marine influence.			