

**SANTOS – AWE – MITSUI**

**COMPILED FOR**

**SANTOS LIMITED**

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

**CASINO-4DW1 and CASINO-4DW2**

**BASIC DATA REPORT**

**(Combined)**

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# CASINO-4DW1 & CASINO-4DW2

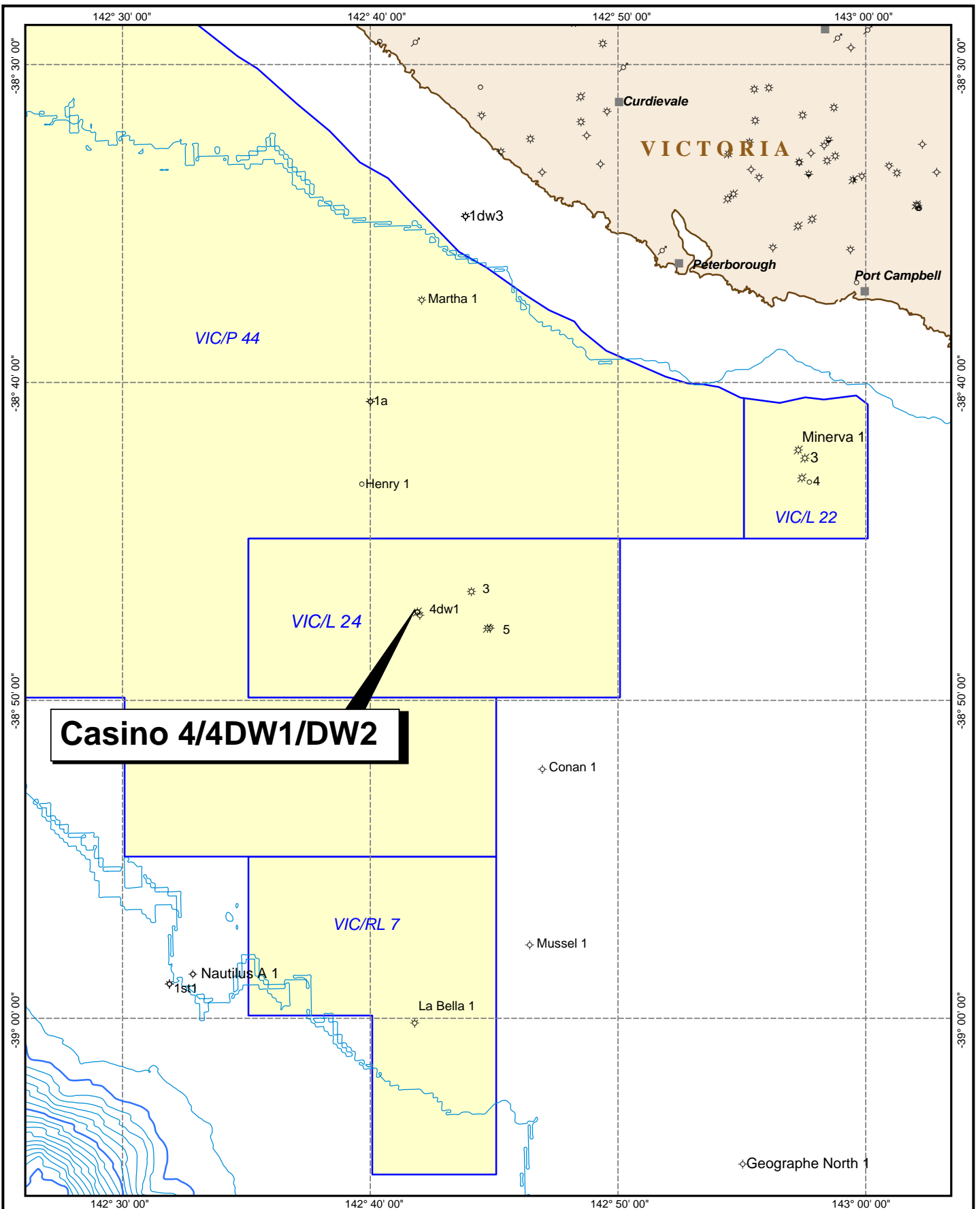
## BASIC DATA REPORT

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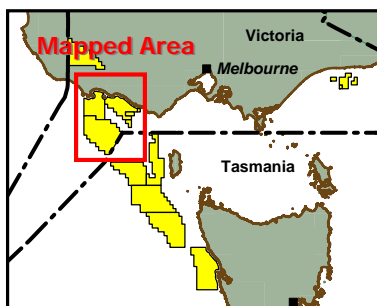
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**LOCATION MAP**



**Casino 4/4DW1/DW2**



**Legend**

Santos Permit

**Santos**

VIC/L24 - Victoria  
Otway Basin

**Casino 4/4DW1/DW2  
Location Map**



Date: Sept 2005, File No. OTWAY 658



**GENERAL DATA CARD**

**CASINO-4DW1**



**GENERAL DATA CARD**

**CASINO-4DW2**



**SECTION 1: WELL HISTORY**

## 1.1 INTRODUCTION

The Casino gas field is located in the southeast corner of the offshore Otway Basin. The field lies in 70m of water and is 29km southwest of Port Campbell and 250km southwest of Melbourne. The permit holders are: Santos Limited (50%) Operator, Peedamullah Petroleum Pty Ltd (AWE) (25%), Mittwell Energy Resources Pty Limited (Mitsui) (25%)

Casino-4DW1 / Casino-4DW2 were drilled in the Otway Basin in the Victoria Offshore VIC/P44 licence as sidetracks to the Casino-4 well. The Surface Location (Casino-4) is Latitude: 38° 47' 13.03" South, Longitude: 142° 41' 54.49" East (GDA94), Northing: 570549.5m, Easting: 647518.19m (MGA-94). The Seismic Reference is the Casino 3D Survey Inline 6074 Xline 2742. The surface location lies 220 m northwest of Casino-1.

Casino-4DW1 / Casino-4DW2 are located in 70.8m of water and was drilled by the semi-submersible drilling rig "Ocean Patriot".

The primary purpose of the Casino development drilling campaign was to drill and complete a production well in each of the Casino reservoirs thus developing the reserves of the Casino gas field. Casino-4 was the vertical pilot hole in the Waarre A reservoir well. Casino-4DW1 was the initial deviated well but was plugged back when the desired build was not achieved. Casino-4DW2 was the second sidetrack and was the Waarre A production well.

The reservoir modelling work carried out as part of development planning studies highlighted the uncertainty concerning the Waarre A reservoir properties, especially the intrinsic formation permeability. To address this uncertainty it was decided to drill, core and evaluate a vertical pilot hole in the Waarre A reservoir. This well was designated as Casino-4. A key objective of this well was to recover a full core which would be immediately subjected to routine core analysis for porosity and permeability and selected plugs would also be subjected to special core analysis for relative permeability and petrophysical properties. The data obtained from this well would be used to understand the subsequent production performance of the Waarre A reservoir at Casino and would also be important to justify future exploration surrounding Casino targeting potential Waarre A gas accumulations.

Following conclusion of evaluation operations on Casino-4 the well was to be plugged back and sidetracked to directionally drill and complete a Waarre A development well, Casino-4DW. The key objective of the directional well would be to develop the Waarre A gas reserves via a sub-horizontal completion in the Waarre A reservoir. The well path would be located so as to contact the full stratigraphic succession apart from the lowermost zone known as the calcite cemented zone.

**1.2 GENERAL DATA**

Well Names:	CASINO-4DW1 and CASINO-4DW2	
Well Classification:	Offshore Gas Development	
Interest Holders:	Santos Ltd	50%
	Mitsui	25%
	AWE	25%
Participating Interests:	Santos Ltd	50%
	Mitsui	25%
	AWE	25%
Operator:	Santos Ltd.	
Location:	Offshore Victoria – Otway Basin VIC/P44	
Surveyed Location (GDA94)	Latitude:	38° 47' 13.03" S South
	Longitude:	142° 41' 54.49" East
	Easting:	647518.19m
	Northing:	5705495.28m
Seismic Location:	Casino 3D 2001 Inline 6074 Xline 2742	
Elevations:	Sea Floor	-70.8m LAT
	Rotary Table	+22.0m LAT
	Rotary Table to Mud Line:	92.8m LAT
Total Depth:	Casino-4DW1: Driller :	1662m RT
	Casino-4DW2: Driller :	2404m RT
Status:	Casino-4DW1: Plugged back & Sidetracked	
	Casino-4DW2: Completed	
License:	VIC/P44 Offshore Victoria	
	<b><u>CASINO-4DW1:</u></b>	<b><u>CASINO-4DW2:</u></b>
Date Drilling Commenced:	09:30 hours on 21-05-05	00:00 hours on 27-05-05
Date Drilling Completed:	17:30 hours on 22-05-05	03:30 hours on 04-06-05
Date Rig Released:	24:00 hours on 26-05-05	20:00 hours on 14-06-05
Total Well Time:	4.6 days	18.3 days
Contractor:	Diamond Offshore	
Rig:	Ocean Patriot (semi-submersible)	

### 1.3 DRILLING SUMMARY

#### (a) Drilling Summary (All Depths Driller's RT)

##### CASINO-4DW1 :

Casino-4DW1 was kicked off from 1308m from a cement plug at 09:30 hrs on 21-05-05.

Bit 6, a 311mm (12.25") Security-DBS FS2663 was run in hole along with MWD tools and the Sperry Sun GEOPILLOT steerable unit. Cement was tagged at 1273m and the kick-off was initiated from 1308m. Directional hole was drilled from 1308m to 1599m where the bit was pulled up into the casing shoe to undertake repairs to the Top Drive System. After the repairs the bit was run to bottom and drilling continued from 1599m to 1662m. However, the required build rate was not being achieved. The drill string was pulled to surface and a motor assembly with a 1.5° bend was made and run in hole. However this assembly was not able to pass below the wellhead. Instructions were received to plug back to about 1200m and re-attempt the sidetrack. Total depth of Casino-4DW1 was reached at 17:30 hours on 22-05-05. The 311mm (12 1/4") section was logged while drilling with Sperry Sun MWD tools to record Gamma Ray, Resistivity, Vibration/Shock, Annular Pressure and Deviation Survey data.

Thereafter a kick-off plug was set in the interval 1200m-1350m. While waiting on cement, the Blowout Preventers were tested. From 1200m to 1265m attempts to kick-off from this plug failed and plug #3 was then set from 1100m to 1265m. A PDC was run in hole and used to initiate the sidetrack to Casino-4DW2 from 1146m. All activities on Casino-4DW1 ceased at 24:00 hrs on 26-05-05.

##### CASINO-4DW2:

Casino-4DW2 was kicked off from a cement plug from 1146m. Activities on the well commenced at 00:00 hrs on 27-05-05 after 90% formation was seen in the cuttings. A 311mm (12.25") PDC sidetrack bit along with MWD tools and mud-motor (1.15° bend) was used to kick-off and initiate the sidetrack from 1146m to 1157m where it was pulled out of hole due to slow penetration rates. A TCI bit was then run in hole along with the mud-motor and MWD tools and drilled directional hole from 1157m to 1274m. A PDC bit was then run in hole along with the GEOPILLOT steering assembly and drilled directional hole from 1274m to the casing point of 1998m which was reached at 15:00 hours on 30-05-05. A wiper trip was performed to clean out tight hole and condition mud. A string of 244mm (9.625") casing was run and cemented with the shoe at 1989.85mMD (1740.8mTVD). The cementing assembly and the landing string were laid and the 216mm (8.5") directional assembly was run in hole with a Security FMF3553 PDC bit, GEOPILLOT and LWD tools consisting of a Gamma Ray, Resistivity, Vibration, Pressure, Density-Neutron Porosity and Surveys were run in hole to drill out the shoe track. The 216mm (8.5") section was drilled from 1998m to 2404m where drilling was terminated at 03:30 hours on 04-06-05. A completions string was run and the well tested. The rig was released at 20:00 hours on 14-06-05.



**(b) Mudlogging Services**

Mudlogging services were provided by Geoservices Unit 170 with the following parameters monitored:

1. Total Gas (RESERVAL)
2. Chromatographic Gas Breakdown (RESERVAL)
3. Hydrogen Sulphide Levels (4 locations)
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)
14. Mud Weight In and Out
15. Mud Temperature In and Out
16. Carbon Dioxide

**CASINO-4DW1**: Ditch cuttings were collected at 6m intervals in the 311mm (12.25") phase from 1308m to 1662m.

**CASINO-4DW2**: Ditch cuttings were collected at 6m intervals from 1110m to 1842m and 3m intervals from 1650m to total depth of 1825m. However fast drilling rates required the sampling interval to be increased when necessary. In addition to microscopic examination of all drilled cuttings, samples were subjected to fluoroscope examination.

A catalogue of all wellsite samples is found in SECTION 2.3: CATALOGUE OF WELLSITE SAMPLES-CASINO-4DW1 and SECTION 2.4: CATALOGUE OF WELLSITE SAMPLES – CASINO-4DW2

**(c) MWD Data**

Measurement while drilling (MWD) was acquired by Sperry Sun in Casino-4DW1 / Casino-4DW2. In the 311mm (12.25") phase, Gamma Ray, Resistivity, Vibration, Pressure and Deviation Survey data were acquired in 3 runs from 1146m to the section Total Depth in Casino-4DW2 at 1998m. In the 216mm (8.5") phase, Gamma Ray, Resistivity, Density-Neutron Porosity, Vibration, Pressure and Deviation Survey data were acquired in 1 runs from 1998m to the Total Depth of 2404m. Sperry Sun's detailed report is attached in SECTION 3.3 MWD/LWD END OF WELL REPORT

**(d) Testing**

No production tests were conducted at the Casino-4DW1 location. Casino-4DW2 was completed and flow tested. The preliminary report is presented in SECTION 4: PRODUCTION TEST REPORTS.

(e) **Coring**

No cores were cut in Casino-4DW1 or Casino-4DW2.

(f) **Biostratigraphy**

No micro-palaeontology studies were conducted at the Casino-4DW1 / Casino-4DW2 location.

(g) **Electric Logging**

No wireline logs were recorded at the Casino-4DW1 / Casino-4DW2 location.

(h) **MDT Pressure Data**

No pressure survey was conducted at the Casino-4DW1 / Casino-4DW2 location.

(i) **Hole Deviation**

Casino-4DW1 was drilled as a deviated hole from the parent well Casino-4. The well was plugged back after the desired directional objectives were deemed unachievable. The well was re-drilled another sidetrack designated as Casino-4DW2. MWD survey data as well as a graphical representation of the wellpaths are presented in SECTION 15: DEVIATION SUMMARY.

(j) **Velocity Surveys**

No Velocity Survey was at the Casino-4DW1 / Casino-4DW2 location.

**(k) Casing & Cementing Summary**

The following Table-3 summarises casing sizes, depths and cementing details for Casino-4 and Casino-4DW2. The 914mm and 445mm casing strings were run in the parent hole Casino-4 and are included here for completeness. The 244mm casing was run in Casino-4DW2 and a completion string was run in the 216mm sub-horizontal section. 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")	192m	762mm (30")	137.0m	3	460 kg/m X56	Primary: 32 m3 (202 bbl) 1.9sg (15.8 ppg) Class G slurry. Top up: 12.7 m3 (80 bbl) 1.9sg (15.8 ppg) Class G slurry using 2 7/8" stinger
445mm (17.5")	742m	340mm (13.375")	727.8m	54	107 kg/m L80 BTC	Lead: 53.4 m3 (336 bbl) 1.5sg (12.5 ppg) Class G Tail: 15.7 m3 (99 bbl) 1.9sg (15.8 ppg) Class G
311mm (12.25")	1998m	244mm (9.965")	1989.85m	160	70 kg/m L80 VAM	Lead: 12.7 m3 (80 bbl) 1.5sg (12.5ppg) Class G Tail: 7.15 m3 (45 bbl) 1.9sg (15.8 ppg) Class G

## **SECTION 2: LITHOLOGICAL DESCRIPTIONS**

## **SECTION 2.1: CUTTINGS DESCRIPTIONS**

### **CASINO-4DW1**

## 2.1 CASINO-4DW1 - LITHOLOGICAL DESCRIPTIONS

(Depths are referenced to Drillers' depth)

Depth From (m)	Depth To (m)	%	Descriptions
1308	1314	40	SILTSTONE: Medium brown to olive grey, dark brown to greyish black, arenaceous & grading to very fine Sandstone in part, trace carbonaceous, trace to minor carbonaceous specks, minor to locally common glauconite, common pyrite, firm to moderately hard, blocky to amorphous
		40	SANDSTONE: Clear to translucent to light grey, occasionally medium dark grey, medium to very coarse grained, subangular to subrounded, poorly sorted, weak siliceous cement, common glauconite, abundant pyrite nodules, predominantly loose, occasional aggregates with glauconite and pyrite inclusions, poor visual porosity, fair inferred porosity, no shows.
		20	Cement
1314	1320	80	SILTSTONE: Medium brown to brownish grey, trace carbonaceous matter, trace to minor glauconite, minor pyrite, firm to moderately hard, blocky to amorphous.
		20	SANDSTONE: Clear to translucent, light grey, occasionally medium dark grey, medium to very coarse grained, subangular to subrounded, poorly sorted, weak siliceous cement, common glauconite, abundant pyrite nodules, predominantly loose, occasional aggregates with glauconite and pyrite inclusions, poor visual porosity, fair inferred porosity, no shows.
1320	1326	100	SILTSTONE: Medium brown to brownish grey, trace carbonaceous matter, trace to minor glauconite, minor pyrite, firm to moderately hard, blocky to amorphous.
1326	1332	100	SILTSTONE: Medium brown to brownish grey, trace carbonaceous matter, trace to minor glauconite, minor pyrite, firm to moderately hard, blocky to amorphous.
1332	1338	100	SILTSTONE: Grey brown to moderately brown, predominantly arenaceous & grading to very fine Sandstone in part, minor argillaceous, rare to trace carbonaceous specks, trace glauconite specks, soft to firm, subblocky to amorphous.
1338	1344	100	SILTSTONE: Grey brown to moderately brown, arenaceous to argillaceous, rare to trace carbonaceous specks, minor glauconite specks, trace nodular pyrite, trace to minor coarse quartz grains, soft to firm, subblocky to amorphous.
1344	1350	100	SILTSTONE: Grey brown to moderately brown, arenaceous to argillaceous, rare to trace carbonaceous specks, minor glauconite specks, trace nodular pyrite, trace to minor coarse quartz grains, soft to firm, subblocky to amorphous.

Depth From (m)	Depth To (m)	%	Descriptions
1350	1356	100	SILTSTONE: Grey brown to moderately brown, arenaceous to argillaceous, rare to trace carbonaceous specks, minor glauconite specks, trace nodular pyrite, trace to minor coarse quartz grains, soft to firm, subblocky to amorphous.
1356	1362	100	SILTSTONE: Grey brown to moderately brown, arenaceous to argillaceous, rare to trace carbonaceous specks, minor glauconite specks, trace nodular pyrite, trace to minor coarse quartz grains, soft to firm, subblocky to amorphous.
1362	1368	100	SILTSTONE: Grey brown to moderately brown, arenaceous to argillaceous, rare to trace carbonaceous specks, minor glauconite specks, trace nodular pyrite, trace to minor coarse quartz grains, soft to firm, subblocky to amorphous.
1368	1374	100	SILTSTONE: Grey brown to moderately brown, arenaceous to argillaceous, rare to trace carbonaceous specks, minor glauconite specks, trace nodular pyrite, trace to minor coarse quartz grains, soft to firm, subblocky to amorphous.
1374	1380	100	SILTSTONE: Grey brown to moderately brown, arenaceous to argillaceous, rare to trace carbonaceous specks, minor glauconite specks, trace nodular pyrite, trace to minor coarse quartz grains, soft to firm, subblocky to amorphous.
1380	1386	100	SILTSTONE: Grey brown to moderately brown, arenaceous to argillaceous, rare to trace carbonaceous specks, minor glauconite specks, trace nodular pyrite, trace to minor coarse quartz grains, soft to firm, subblocky to amorphous.
1386	1392	100	SILTSTONE: Medium yellowish brown to greyish brown, predominantly arenaceous & occasionally grading to very fine Sandstone, minor argillaceous, minor to locally common glauconite specks, trace carbonaceous specks, rare to trace disseminated pyrite, minor coarse quartz grains, soft, firm in part, predominantly subblocky.
1392	1398	100	SILTSTONE: Medium yellowish brown to greyish brown, predominantly arenaceous & occasionally grading to very fine Sandstone, minor argillaceous, minor to locally common glauconite specks, trace carbonaceous specks, rare to trace disseminated pyrite, minor coarse quartz grains, soft, firm in part, predominantly subblocky.
1398	1404	100	SILTSTONE: Medium yellowish brown to greyish brown, predominantly arenaceous & occasionally grading to very fine Sandstone, minor argillaceous, minor to locally common glauconite specks, trace carbonaceous specks, rare to trace disseminated pyrite, minor coarse quartz grains, soft, firm in part, predominantly subblocky.

Depth From (m)	Depth To (m)	%	Descriptions
1404	1410	100	SILTSTONE: Moderate yellow brown to grey brown, predominantly arenaceous & occasionally grading to very fine Sandstone, minor argillaceous, minor to locally common glauconite specks, trace carbonaceous specks, trace disseminated & nodular pyrite, minor to locally abundant coarse & very coarse quartz grains, soft, firm in part, predominantly subblocky.
1410	1416	100	SILTSTONE: Moderate yellow brown to grey brown, predominantly arenaceous & occasionally grading to very fine Sandstone, minor argillaceous, minor to locally common glauconite specks, trace carbonaceous specks, trace disseminated & nodular pyrite, minor to locally abundant coarse & very coarse quartz grains, soft, firm in part, predominantly subblocky.
1416	1422	100	SILTSTONE: Moderate yellow brown to grey brown, predominantly arenaceous & occasionally grading to very fine Sandstone, minor argillaceous, minor to locally common glauconite specks, trace carbonaceous specks, trace disseminated & nodular pyrite, minor to locally abundant coarse & very coarse quartz grains, soft, firm in part, predominantly subblocky.
1422	1428	100	SILTSTONE: Moderate yellow brown to grey brown, predominantly arenaceous & occasionally grading to very fine Sandstone, minor argillaceous, minor to locally common glauconite specks, trace carbonaceous specks, trace disseminated & nodular pyrite, minor to locally abundant coarse & very coarse quartz grains, soft, firm in part, predominantly subblocky.
1428	1434	100	SILTSTONE: Moderate yellow brown to grey brown, predominantly arenaceous & occasionally grading to very fine Sandstone, minor argillaceous, minor to locally common glauconite specks, trace carbonaceous specks, trace disseminated & nodular pyrite, minor to locally abundant coarse & very coarse quartz grains, soft, firm in part, predominantly subblocky.
1434	1440	100	SILTSTONE: Moderate yellow brown to grey brown, predominantly arenaceous & occasionally grading to very fine Sandstone, minor argillaceous, minor to locally common glauconite specks, trace carbonaceous specks, trace disseminated & nodular pyrite, minor to locally abundant coarse & very coarse quartz grains, soft, firm in part, predominantly subblocky.
1440	1446	100	SILTSTONE: Grey brown to olive grey, very arenaceous & commonly grading to very fine Sandstone, trace to minor glauconite specks, rare to trace carbonaceous specks, trace disseminated pyrite, soft to firm, predominantly subblocky, minor amorphous.
1446	1452	100	SILTSTONE: Grey brown to olive grey, very arenaceous & commonly grading to very fine Sandstone, trace to minor glauconite specks, rare to trace carbonaceous specks, trace disseminated pyrite, soft to firm, predominantly subblocky, minor amorphous.



Depth From (m)	Depth To (m)	%	Descriptions
1452	1458	100	SILTSTONE: Grey brown to olive grey, very arenaceous & commonly grading to very fine Sandstone, trace to minor glauconite specks, rare to trace carbonaceous specks, trace disseminated pyrite, soft to firm, predominantly subblocky, minor amorphous.
1458	1464	100	SILTSTONE: Grey brown to olive grey, very arenaceous & commonly grading to very fine Sandstone, trace to minor glauconite specks, rare to trace carbonaceous specks, trace disseminated pyrite, soft to firm, predominantly subblocky, minor amorphous.
1464	1470	80	SILTSTONE: Grey brown to olive grey, very arenaceous & commonly grading to very fine Sandstone, trace to minor glauconite specks, rare to trace carbonaceous specks, trace disseminated pyrite, soft to firm, predominantly subblocky, minor amorphous.
		20	SANDSTONE: Clear to translucent, off white, fine to coarse, predominantly fine to medium, moderately well sorted, subangular to subrounded, moderate siliceous cement, minor to locally abundant pale brown to off white argillaceous matrix, minor glauconite, common loose grains, friable to moderately hard aggregates, poor visual porosity, poor to fair inferred porosity, no hydrocarbon fluorescence.
1470	1476	70	SILTSTONE: Greyish brown to olive grey, very arenaceous & commonly grading to very fine Sandstone, trace to minor glauconite specks, rare to trace carbonaceous specks, trace disseminated pyrite, soft to firm, predominantly subblocky, minor amorphous.
		30	SANDSTONE: Clear to translucent, off white, fine to coarse, predominantly fine to medium, moderately well sorted, subangular to subrounded, moderate siliceous cement, minor to locally abundant pale brown to off white argillaceous matrix, minor glauconite, common loose grains, friable to moderately hard aggregates, poor visual porosity, poor to fair inferred porosity, no hydrocarbon fluorescence.
1476	1482	60	SILTSTONE: Greyish brown to olive grey, very arenaceous & commonly grading to very fine Sandstone, trace to minor glauconite specks, rare to trace carbonaceous specks, trace disseminated pyrite, soft to firm, predominantly subblocky, minor amorphous.
		40	SANDSTONE: Light brown to very light grey, clear to translucent, fine to coarse, predominantly medium, moderately well sorted, subangular to subrounded, moderately strong siliceous cement, locally abundant white to very light brown argillaceous matrix, minor glauconite, minor very coarse quartz grains, commonly loose, friable to moderately hard aggregates, poor visual & inferred porosity, no hydrocarbon fluorescence.
1482	1488	70	SILTSTONE: Greyish brown to olive grey, very arenaceous & commonly grading to very fine Sandstone, trace to minor glauconite specks, rare to trace carbonaceous specks, trace disseminated pyrite, soft to firm, predominantly subblocky, minor amorphous.

Depth From (m)	Depth To (m)	%	Descriptions
		30	SANDSTONE: Light brown to very light grey, clear to translucent, fine to coarse, predominantly medium, moderately well sorted, subangular to subrounded, moderately strong siliceous cement, locally abundant white to very light brown argillaceous matrix, minor glauconite, minor very coarse quartz grains, commonly loose, friable to moderately hard aggregates, poor visual & inferred porosity, no hydrocarbon fluorescence.
1488	1494	80	SILTSTONE: Greyish brown to olive grey, very arenaceous & commonly grading to very fine Sandstone, trace to minor glauconite specks, rare to trace carbonaceous specks, trace disseminated pyrite, soft to firm, predominantly subblocky, minor amorphous.
		20	SANDSTONE: Light brown to very light grey, clear to translucent, fine to coarse, predominantly medium, moderately well sorted, subangular to subrounded, moderately strong siliceous cement, locally abundant white to very light brown argillaceous matrix, minor glauconite, minor very coarse quartz grains, commonly loose, friable to moderately hard aggregates, poor visual & inferred porosity, no hydrocarbon fluorescence.
1494	1500	90	SILTSTONE: Olive black to brownish grey, predominantly arenaceous, minor argillaceous, trace carbonaceous specks, trace to minor glauconite, trace disseminated pyrite, soft to firm, subblocky.
		10	SANDSTONE: Light brown to very light grey, clear to translucent, fine to coarse, predominantly medium, moderately well sorted, subangular to subrounded, moderately strong siliceous cement, locally abundant white to very light brown argillaceous matrix, minor glauconite, minor very coarse quartz grains, commonly loose, friable to moderately hard aggregates, poor visual & inferred porosity, no hydrocarbon fluorescence.
1500	1506	100	SILTSTONE: Olive black to brownish grey, predominantly arenaceous, minor argillaceous, trace carbonaceous specks, trace to minor glauconite, trace disseminated pyrite, soft to firm, subblocky.
1506	1512	100	SILTSTONE: Olive black to brownish grey, predominantly arenaceous, minor argillaceous, trace carbonaceous specks, trace to minor glauconite, trace disseminated pyrite, soft to firm, subblocky.
1512	1518	90	SILTSTONE: Olive black to brownish grey, predominantly arenaceous, minor argillaceous, trace carbonaceous specks, trace to minor glauconite, trace disseminated pyrite, soft to firm, subblocky.
		10	SANDSTONE: Light brown to very light grey, clear to translucent, fine to coarse, predominantly medium, moderately well sorted, subangular to subrounded, moderately strong siliceous cement, locally abundant white to very light brown argillaceous matrix, minor to locally abundant glauconite, minor very coarse quartz grains, commonly loose, friable to moderately hard aggregates, poor visual & inferred porosity, no hydrocarbon fluorescence.

Depth From (m)	Depth To (m)	%	Descriptions
1518	1524	90	SILTSTONE: Olive black to brownish grey, predominantly arenaceous, minor argillaceous, trace carbonaceous specks, trace to minor glauconite, trace disseminated pyrite, soft to firm, subblocky.
		10	SANDSTONE: Light brown to very light grey, white, clear to translucent, fine to coarse, predominantly medium, moderately well sorted, subangular to subrounded, moderately strong siliceous cement, trace white to very light brown argillaceous matrix, minor to locally abundant glauconite, common coarse quartz grains, predominantly loose, minor friable to moderately hard aggregates, poor to fair inferred porosity, no hydrocarbon fluorescence.
1524	1530	90	SILTSTONE: Olive black to brownish grey, predominantly arenaceous, minor argillaceous, trace carbonaceous specks, trace to minor glauconite, trace disseminated pyrite, soft to firm, subblocky.
		10	SANDSTONE: Light brown to very light grey, white, clear to translucent, fine to coarse, predominantly medium, moderately well sorted, subangular to subrounded, moderately strong siliceous cement, trace white to very light brown argillaceous matrix, minor to locally abundant glauconite, common coarse quartz grains, predominantly loose, minor friable to moderately hard aggregates, poor to fair inferred porosity, no hydrocarbon fluorescence.
1530	1536	90	SILTSTONE: Olive black to brown grey, dominantly arenaceous, trace argillaceous, minor carbonaceous specks & laminations, trace glauconite specks, trace disseminated pyrite, minor coarse grains, soft to firm, occasionally moderately hard, subblocky.
		10	SANDSTONE: Light brown to very light grey, white, clear to translucent, fine to coarse, predominantly medium, moderately well sorted, subangular to subrounded, moderately strong siliceous cement, trace white to very light brown argillaceous matrix, minor to locally abundant glauconite, common coarse quartz grains, predominantly loose, minor friable to moderately hard aggregates, poor to fair inferred porosity, no hydrocarbon fluorescence.
1536	1542	80	SILTSTONE: Olive black to brown grey, dominantly arenaceous, trace argillaceous, minor carbonaceous specks & laminations, trace glauconite specks, trace disseminated pyrite, minor coarse grains, soft to firm, occasionally moderately hard, subblocky.
		20	SANDSTONE: Clear to translucent, occasionally light brown, fine to coarse, predominantly medium, moderately well sorted, subrounded to subangular, moderately siliceous cement, trace white to very light brown argillaceous matrix, trace glauconite, predominantly loose, minor friable to moderately hard aggregates, poor to fair inferred porosity, no hydrocarbon fluorescence.
1542	1548	60	SILTSTONE: Olive black to brown grey, dominantly arenaceous, trace argillaceous, minor carbonaceous specks & laminations, trace glauconite specks, trace disseminated pyrite, minor coarse grains, soft to firm, occasionally moderately hard, subblocky.

Depth From (m)	Depth To (m)	%	Descriptions
		40	SANDSTONE: Clear to translucent, occasionally light brown, fine to coarse, predominantly medium, moderately well sorted, subrounded to subangular, moderately siliceous cement, trace white to very light brown argillaceous matrix, trace glauconite, predominantly loose, minor friable to moderately hard aggregates, poor to fair inferred porosity, no hydrocarbon fluorescence.
1548	1554	60	SILTSTONE: Olive black to brown grey, dominantly arenaceous, trace argillaceous, minor carbonaceous specks & laminations, trace glauconite specks, trace disseminated pyrite, minor coarse grains, soft to firm, occasionally moderately hard, subblocky.
		40	SANDSTONE: Clear to translucent, occasionally light brown, fine to coarse, predominantly medium, moderately well sorted, subrounded to subangular, moderately siliceous cement, trace white to very light brown argillaceous matrix, trace glauconite, predominantly loose, minor friable to moderately hard aggregates, poor to fair inferred porosity, no hydrocarbon fluorescence.
1554	1560	70	SILTSTONE: Olive black to brown grey, dominantly arenaceous, trace argillaceous, minor carbonaceous specks & laminations, trace glauconite specks, trace disseminated pyrite, minor coarse grains, soft to firm, occasionally moderately hard, subblocky.
		30	SANDSTONE: Clear to translucent, fine to coarse grained, predominantly medium to coarse, moderately well sorted, subangular to subrounded, trace weak to moderately firm white siliceous cement, trace white to very light brown argillaceous matrix, trace to common glauconite, friable to moderately hard aggregates, loose grains common, poor to fair inferred porosity, no hydrocarbon fluorescence.
1560	1566	80	SILTSTONE: Medium brown to light brown, predominantly argillaceous, occasionally arenaceous, trace carbonaceous specks, trace lithics, locally common glauconite specks & inclusions, trace to minor nodular & disseminated pyrite, trace coarse quartz grains, soft to firm, occasionally moderately hard, subblocky.
		20	SANDSTONE: Clear to translucent, very fine to coarse, predominantly fine to coarse, moderately well sorted, angular to subangular, generally weak siliceous cement occasionally moderately strong siliceous cement, occasional aggregates, common glauconite, trace light brown silty matrix, generally loose, fair to poor visual porosity, no hydrocarbon fluorescence.
1566	1572	30	SILTSTONE: Medium brown to light brown, predominantly argillaceous, occasionally arenaceous, trace carbonaceous specks, trace lithics, locally common glauconite specks & inclusions, trace to minor nodular & disseminated pyrite, trace coarse quartz grains, soft to firm, occasionally moderately hard, subblocky.
		70	SANDSTONE: Clear to translucent, very fine to coarse, predominantly fine to coarse, moderately well sorted, angular to subangular, generally weak siliceous cement occasionally moderately strong siliceous cement,

Depth From (m)	Depth To (m)	%	Descriptions
			occasional aggregates, common glauconite, trace light brown silty matrix, generally loose, fair to poor visual porosity, no hydrocarbon fluorescence.
1572	1578	40	SILTSTONE: Medium brown to light brown, predominantly argillaceous, occasionally arenaceous, trace carbonaceous specks, trace lithics, locally common glauconite specks & inclusions, trace to minor nodular & disseminated pyrite, trace coarse quartz grains, soft to firm, occasionally moderately hard, subblocky.
		60	SANDSTONE: Clear to translucent, very fine to coarse, predominantly fine to coarse, moderately well sorted, angular to subangular, generally weak siliceous cement occasionally moderately strong siliceous cement, occasional aggregates, common glauconite, trace light brown silty matrix, generally loose, fair to poor visual porosity, no hydrocarbon fluorescence.
1578	1584	90	SILTSTONE: Medium brown to light brown, predominantly argillaceous, occasionally arenaceous, trace carbonaceous specks, trace lithics, locally common glauconite specks & inclusions, trace to minor nodular & disseminated pyrite, trace coarse quartz grains, soft to firm, occasionally moderately hard, subblocky.
		10	SANDSTONE: Clear to translucent, very fine to coarse, predominantly fine to coarse, moderately well sorted, angular to subangular, generally weak siliceous cement occasionally moderately strong siliceous cement, occasional aggregates, common glauconite, trace light brown silty matrix, generally loose, fair to poor visual porosity, no hydrocarbon fluorescence.
1584	1590	90	SILTSTONE: Medium brown to light brown, predominantly argillaceous, occasionally arenaceous, trace carbonaceous specks, trace lithics, locally common glauconite specks & inclusions, trace to minor nodular & disseminated pyrite, soft to firm, occasionally moderately hard, subblocky.
		10	SANDSTONE: Clear to translucent, very fine to coarse, predominantly fine to coarse, moderately well sorted, angular to subangular, generally weak siliceous cement occasionally moderately strong siliceous cement, occasional aggregates, common glauconite, trace light brown silty matrix, generally loose, fair to poor visual porosity, no hydrocarbon fluorescence.
1590	1596	90	SILTSTONE: Medium brown to light brown, predominantly argillaceous, occasionally arenaceous, trace carbonaceous specks, trace lithics, locally common glauconite specks & inclusions, trace to minor nodular & disseminated pyrite, soft to firm, occasionally moderately hard, subblocky.
		10	SANDSTONE: Clear to translucent, very fine to coarse grained, predominantly fine to coarse grained, generally moderately well sorted, angular to subangular, generally weak to occasionally moderately strong siliceous cement, occasional aggregates, common glauconite, trace light brown silty matrix, generally loose, fair to poor inferred and visual porosity, no hydrocarbon fluorescence.

Depth From (m)	Depth To (m)	%	Descriptions
1596	1602	90	SILTSTONE: Olive grey to brownish grey, greyish black, arenaceous, common grading to very fine Sandstone, trace nodular and disseminated pyrite, minor glauconite, occasional carbonaceous laminations, firm to moderately hard, subblocky.
		10	SANDSTONE: Clear to translucent, very fine to coarse grained, predominantly fine to coarse grained, generally moderately well sorted, angular to subangular, generally weak to occasionally moderately strong siliceous cement, occasional aggregates, common glauconite, trace light brown silty matrix, generally loose, fair to poor inferred and visual porosity, no hydrocarbon fluorescence.
1602	1608	100	SILTSTONE: Olive grey to brownish grey, greyish black, predominantly arenaceous, common grading to very fine Sandstone, minor argillaceous, trace nodular and disseminated pyrite, minor glauconite, occasional carbonaceous laminations, firm to moderately hard, subblocky.
1608	1614	100	SILTSTONE: Olive grey to brownish grey, greyish black, predominantly arenaceous, commonly grading to very fine Sandstone, minor argillaceous, trace nodular and disseminated pyrite, minor glauconite, occasional carbonaceous laminations, firm to moderately hard, subblocky.
1614	1620	100	SILTSTONE: Olive grey to brownish grey, greyish black, predominantly arenaceous, commonly grading to very fine Sandstone, minor argillaceous, trace nodular and disseminated pyrite, minor glauconite, occasional carbonaceous laminations, firm to moderately hard, subblocky.
1620	1626	100	SILTSTONE: Olive grey to brownish grey, greyish black, predominantly arenaceous, commonly grading to very fine Sandstone, minor argillaceous, trace nodular and disseminated pyrite, minor glauconite, occasional carbonaceous laminations, firm to moderately hard, subblocky.
1626	1632	100	SILTSTONE: Olive grey to brownish grey, greyish black, predominantly arenaceous, occasionally grading to very fine Sandstone, minor argillaceous, rare nodular and disseminated pyrite, minor glauconite, occasional carbonaceous laminations, firm to moderately hard, subblocky.
1632	1638	100	SILTSTONE: Olive grey to brownish grey, greyish black, predominantly arenaceous, occasionally grading to very fine Sandstone, minor argillaceous, rare nodular and disseminated pyrite, minor glauconite, occasional carbonaceous laminations, firm to moderately hard, subblocky.
1638	1644	100	SILTSTONE: Olive grey to brownish grey, greyish black, arenaceous to argillaceous, rare nodular and disseminated pyrite, trace glauconite specks, trace to minor carbonaceous specks and laminations, firm to moderately hard, subblocky to blocky.

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Depth From (m)	Depth To (m)	%	Descriptions
1644	1650	100	SILTSTONE: Olive grey to brownish grey, greyish black, arenaceous to argillaceous, rare nodular and disseminated pyrite, trace glauconite specks, trace to minor carbonaceous specks and laminations, firm to moderately hard, subblocky to blocky.
1650	1656	100	SILTSTONE: Olive grey to brownish grey, greyish black, argillaceous to arenaceous, rare nodular and disseminated pyrite, rare glauconite specks, trace to minor carbonaceous specks and laminations, firm to moderately hard, subblocky to blocky.
1656	1662	100	SILTSTONE: Olive grey to olive black, argillaceous to arenaceous, rare nodular and disseminated pyrite, rare glauconite specks, trace to minor carbonaceous specks and laminations, firm to moderately hard, subblocky to blocky.

**TOTAL DEPTH DRILLER : 1662m**

**TOTAL DEPTH LOGGER : Not logged**

## **SECTION 2.2: CUTTINGS DESCRIPTIONS**

### **CASINO-4DW2**



**2.2 CASINO-4DW2 - LITHOLOGICAL DESCRIPTIONS**

(Depths are referenced to Drillers' depth)

Depth From (m)	Depth To (m)	%	Descriptions
1146	1152	80	SANDSTONE: Clear to translucent, medium grey in part, fine to coarse grained, predominantly medium to coarse, subangular to subrounded, moderately to well sorted, predominantly loose and clean, occasionally moderately hard aggregates with moderately hard siliceous cement, common brownish grey argillaceous matrix, trace glauconite, abundant disseminated and nodular pyrite, abundant pyrite cement, poor to fair visual and inferred porosity, no hydrocarbon fluorescence.
		10	SILTSTONE: Brownish grey to olive grey, argillaceous to arenaceous, trace carbonaceous specks, locally common disseminated pyrite, occasional quartz inclusions, soft, dispersive in part, subblocky to amorphous.
		10	Cement
1152	1158	80	SANDSTONE: Clear to translucent, medium grey in part, fine to coarse grained, predominantly medium to coarse grained, subangular to subrounded, moderately to well sorted, predominantly loose and clean, occasional moderately hard aggregates with moderately hard siliceous cement, common brownish grey argillaceous matrix, trace glauconite, abundant disseminated and nodular pyrite, abundant pyrite cement, poor to fair visual and inferred porosity, no hydrocarbon fluorescence.
		20	SILTSTONE: Brownish grey to olive grey, argillaceous to arenaceous, trace carbonaceous specks, locally common disseminated pyrite, occasional quartz inclusions, soft, dispersive in part, subblocky to amorphous.
1158	1164	60	SANDSTONE: Clear to translucent, fine to medium grained, trace coarse grains, subrounded to well rounded, moderately to well sorted, predominantly loose and clean, trace to common pyrite nodules, trace aggregates with siliceous cement, trace pyritic cement, poor to fair visual and inferred porosity, no hydrocarbon fluorescence.
		40	SILTSTONE: Medium to dark grey, predominantly arenaceous and grading to very fine Sandstone, occasionally argillaceous in part, trace carbonaceous, trace disseminated pyrite, subblocky.

Depth From (m)	Depth To (m)	%	Descriptions
1164	1170	50	SANDSTONE: Clear to translucent, fine to medium grained, trace coarse grains, subrounded to well rounded, moderately to well sorted, predominantly loose and clean, trace to common pyrite nodules, trace aggregates with siliceous cement, trace pyritic cement, poor to fair visual and inferred porosity, no hydrocarbon fluorescence.
		50	SILTSTONE: Medium to dark grey, predominantly arenaceous and grading to very fine Sandstone, occasionally argillaceous in part, trace carbonaceous, trace disseminated pyrite, subblocky.
1170	1176	70	SANDSTONE: Clear to translucent, fine to medium grained, trace coarse grains, subrounded to well rounded, moderately to well sorted, predominantly loose and clean, trace to common pyrite nodules, trace aggregates with siliceous cement, trace pyritic cement, poor to fair visual and inferred porosity, no hydrocarbon fluorescence.
		30	SILTSTONE: Medium to dark grey, predominantly arenaceous and grading to very fine Sandstone, occasionally argillaceous in part, trace carbonaceous, trace disseminated pyrite, subblocky.
1176	1182	70	SANDSTONE: Clear to translucent to light grey, fine to medium grained, trace coarse grains, subangular to subrounded, well sorted, abundant loose quartz, common moderately firm to moderately hard aggregates with white siliceous cement, trace glauconite, trace to common pyrite nodules and inclusions, trace lithic fragments, poor to fair visual and inferred porosity, no hydrocarbon fluorescence.
		30	SILTSTONE: Medium to dark grey, predominantly arenaceous and grading to very fine Sandstone, occasionally argillaceous in part, trace carbonaceous, trace disseminated pyrite, subblocky.
1182	1188	40	SANDSTONE: Clear to translucent to light grey, fine to medium grained, trace coarse grains, subangular to subrounded, well sorted, abundant loose quartz, common moderately firm to moderately hard aggregates with white siliceous cement, trace glauconite, trace to common pyrite nodules and inclusions, trace lithic fragments, poor to fair visual and inferred porosity, no hydrocarbon fluorescence.
		60	SILTSTONE: Medium to dark grey, predominantly arenaceous and grading to very fine Sandstone, occasionally argillaceous in part, trace carbonaceous, trace disseminated pyrite, subblocky.

Depth From (m)	Depth To (m)	%	Descriptions
1188	1194	50	SANDSTONE: Clear to translucent to light grey, fine to medium grained, trace coarse grains, subangular to subrounded, well sorted, abundant loose quartz, common moderately firm to moderately hard aggregates with white siliceous cement, trace glauconite, trace to common pyrite nodules and inclusions, trace lithic fragments, poor to fair visual and inferred porosity, no hydrocarbon fluorescence.
		50	SILTSTONE: Medium to dark grey, predominantly arenaceous and grading to very fine Sandstone, occasionally argillaceous in part, trace carbonaceous, trace disseminated pyrite, subblocky.
1194	1200	90	SANDSTONE: Clear to translucent, fine to medium grained, subangular to subrounded, moderately to well sorted, predominantly loose quartz, trace to common pyrite nodules, rare glauconite, lithic fragments common, poor to fair visual and inferred porosity, no hydrocarbon fluorescence.
		10	SILTSTONE: Medium to dark grey, predominantly arenaceous and grading to very fine Sandstone, occasionally argillaceous in part, trace carbonaceous, trace disseminated pyrite, subblocky.
1200	1206	100	SANDSTONE: Clear to translucent, fine to medium grained, subangular to subrounded, moderately to well sorted, predominantly loose quartz, trace to common pyrite nodules, rare glauconite, lithic fragments common, poor to fair visual and inferred porosity, no hydrocarbon fluorescence.
1206	1212	100	SANDSTONE: Clear to translucent, fine to medium grained, trace coarse grains, subrounded to well rounded, moderately to well sorted, predominantly loose and clean, trace to common pyrite nodules, trace aggregates with siliceous cement, trace pyritic cement, poor to fair visual and inferred porosity, no hydrocarbon fluorescence.
1212	1218	60	SANDSTONE: Clear to translucent, fine to medium grained, trace coarse grains, subrounded to well rounded, moderately to well sorted, predominantly loose and clean, trace to common pyrite nodules, trace aggregates with siliceous cement, trace pyrite cement, poor to fair visual and inferred porosity, no hydrocarbon fluorescence.
		40	SILTSTONE: Medium to dark grey, predominantly arenaceous and grading to very fine Sandstone, occasionally argillaceous in part, trace carbonaceous, trace disseminated pyrite, subblocky.
1218	1224	80	SANDSTONE: Clear to translucent, fine to medium grained, trace coarse grains, subrounded to well rounded, moderately to well sorted, predominantly loose and clean, trace to common pyrite nodules, trace aggregates with siliceous cement, trace pyrite cement, poor to fair visual and inferred porosity, no hydrocarbon fluorescence.

Depth From (m)	Depth To (m)	%	Descriptions
		20	SILTSTONE: Medium to dark grey, predominantly arenaceous and grading to very fine Sandstone, occasionally argillaceous in part, trace carbonaceous, trace disseminated pyrite, subblocky.
1224	1230	90	SANDSTONE: Clear to translucent, fine to medium grained, trace coarse grains, subrounded to well rounded, moderately to well sorted, predominantly loose and clean, trace to common pyrite nodules, trace aggregates with siliceous cement, trace pyrite cement, poor to fair visual and inferred porosity, no hydrocarbon fluorescence.
		10	SILTSTONE: Medium to dark grey, predominantly arenaceous and grading to very fine Sandstone, occasionally argillaceous in part, trace carbonaceous, trace disseminated pyrite, subblocky.
1230	1236	100	SANDSTONE: Clear to translucent, fine to medium grained, trace coarse grains, subrounded to well rounded becoming subangular to angular, poorly sorted, predominantly loose and clean with common very fine to fine aggregates with siliceous cement, trace to common pyrite nodules, poor to fair visual and inferred porosity, no hydrocarbon fluorescence.
1236	1242	90	SANDSTONE: Clear to translucent, fine to medium grained, trace coarse grains, subrounded to well rounded becoming subangular to angular, poorly sorted, predominantly loose and clean with common very fine to fine aggregates with siliceous cement, trace to common pyrite nodules, poor to fair visual and inferred porosity, no hydrocarbon fluorescence.
		10	SILTSTONE: Medium to dark grey, predominantly arenaceous and grading to very fine Sandstone, occasionally argillaceous in part, trace carbonaceous, trace disseminated pyrite, subblocky.
1242	1248	80	SANDSTONE: Clear to translucent, fine to medium grained, trace coarse grains, subrounded to well rounded becoming subangular to angular, poorly sorted, predominantly loose and clean with common very fine to fine aggregates with siliceous cement, trace to common pyrite nodules, poor to fair visual and inferred porosity, no hydrocarbon fluorescence.
		20	SILTSTONE: Medium to dark grey, predominantly arenaceous and grading to very fine Sandstone, occasionally argillaceous in part, trace carbonaceous, trace disseminated pyrite, subblocky.
1248	1254	70	SANDSTONE: Clear to translucent, fine to medium grained, trace coarse grains, subrounded to well rounded becoming subangular to angular, poorly sorted, predominantly loose and clean with common very fine to fine aggregates with siliceous cement, trace to common pyrite nodules, poor to fair visual and inferred porosity, no hydrocarbon fluorescence.

Depth From (m)	Depth To (m)	%	Descriptions
		30	SILTSTONE: Medium to dark grey, predominantly arenaceous and grading to very fine Sandstone, occasionally argillaceous in part, trace carbonaceous, trace disseminated pyrite, subblocky.
1254	1260	90	SANDSTONE: Clear to translucent, fine to medium grained, trace coarse grains, subrounded to well rounded becoming subangular to angular, poorly sorted, predominantly loose and clean with common very fine to fine aggregates with siliceous cement, trace to common pyrite nodules, poor to fair visual and inferred porosity, no hydrocarbon fluorescence.
		10	SILTSTONE: Medium to dark grey, predominantly arenaceous and grading to very fine Sandstone, occasionally argillaceous in part, trace carbonaceous, trace disseminated pyrite, subblocky.
1260	1266	90	SANDSTONE: Clear to translucent, fine to medium grained, trace coarse grains, subrounded to well rounded becoming subangular to angular, poorly sorted, predominantly loose and clean with common very fine to fine aggregates with siliceous cement, trace to common pyrite nodules, poor to fair visual and inferred porosity, no hydrocarbon fluorescence.
		10	SILTSTONE: Medium to dark grey, predominantly arenaceous and grading to very fine Sandstone, occasionally argillaceous in part, trace carbonaceous, trace disseminated pyrite, subblocky.
1266	1272	60	SANDSTONE: Clear to translucent, fine to medium grained, trace coarse grains, subrounded to well rounded becoming subangular to angular, poorly sorted, predominantly loose and clean with common very fine to fine aggregates with siliceous cement, trace to common pyrite nodules, poor to fair visual and inferred porosity, no hydrocarbon fluorescence.
		30	SILTSTONE: Medium olive brown to medium grey brown occasionally pale grey, arenaceous & commonly grading to very fine Sandstone, trace glauconite specks, rare to trace carbonaceous specks, common disseminated pyrite, soft to firm, predominantly subblocky, minor amorphous.
1272	1278	70	SANDSTONE: Clear to translucent, fine to medium grained, trace coarse grains, subrounded to well rounded becoming subangular to angular, poorly sorted, predominantly loose and clean with common very fine to fine aggregates with siliceous cement, trace to common pyrite nodules, poor to fair visual and inferred porosity, no hydrocarbon fluorescence.
		30	SILTSTONE: Medium olive brown to medium grey brown occasionally pale grey, arenaceous & commonly grading to very fine Sandstone, trace glauconite specks, rare to trace carbonaceous specks, common disseminated pyrite, soft to firm, predominantly subblocky, minor amorphous.

Depth From (m)	Depth To (m)	%	Descriptions
1278	1284	70	SANDSTONE: Clear to translucent, fine to medium grained, trace coarse grains, subrounded to well rounded becoming subangular to angular, poorly sorted, predominantly loose and clean with common very fine to fine aggregates with siliceous cement, trace to common pyrite nodules, poor to fair visual and inferred porosity, no hydrocarbon fluorescence.
		30	SILTSTONE: Medium olive brown to medium grey brown occasionally pale grey, arenaceous & commonly grading to very fine Sandstone, trace glauconite specks, rare to trace carbonaceous specks, common disseminated pyrite, soft to firm, predominantly subblocky, minor amorphous.
1284	1290	20	SANDSTONE: Clear to translucent, fine to medium grained, trace coarse grains, subrounded to well rounded becoming subangular to angular, poorly sorted, predominantly loose and clean with common very fine to fine aggregates with siliceous cement, trace to common pyrite nodules, poor to fair visual and inferred porosity, no hydrocarbon fluorescence.
		80	SILTSTONE: Medium olive brown to medium grey brown occasionally pale grey, arenaceous & commonly grading to very fine Sandstone, trace glauconite specks, rare to trace carbonaceous specks, abundant disseminated pyrite, soft to firm, predominantly subblocky, minor amorphous.
1290	1296	10	SANDSTONE: Clear to translucent, fine to medium grained, trace coarse grains, subrounded to well rounded becoming subangular to angular, poorly sorted, predominantly loose and clean with common very fine to fine aggregates with siliceous cement, trace to common pyrite nodules, poor to fair visual and inferred porosity, no hydrocarbon fluorescence.
		90	SILTSTONE: Medium olive brown to medium grey brown occasionally pale grey, arenaceous & commonly grading to very fine Sandstone, trace glauconite specks, rare to trace carbonaceous specks, abundant disseminated pyrite, soft to firm, predominantly subblocky, minor amorphous.
1296	1302	20	SANDSTONE: Clear to translucent, fine to medium grained, trace coarse grains, subrounded to well rounded becoming subangular to angular, poorly sorted, predominantly loose and clean with common very fine to fine aggregates with siliceous cement, trace to common pyrite nodules, poor to fair visual and inferred porosity, no hydrocarbon fluorescence.
		80	SILTSTONE: Medium olive brown to medium grey brown occasionally pale grey, arenaceous & commonly grading to very fine Sandstone, trace glauconite specks, rare to trace carbonaceous specks, abundant disseminated pyrite, soft to firm, predominantly subblocky, minor amorphous.

Depth From (m)	Depth To (m)	%	Descriptions
1302	1308	40	SANDSTONE: Clear to translucent, fine to medium grained, trace coarse grains, subrounded to well rounded becoming subangular to angular, poorly sorted, predominantly loose and clean with common very fine to fine aggregates with siliceous cement, trace to common pyrite nodules, poor to fair visual and inferred porosity, no hydrocarbon fluorescence.
		60	SILTSTONE: Medium olive brown to medium grey brown occasionally pale grey, arenaceous & commonly grading to very fine Sandstone, trace glauconite specks, rare to trace carbonaceous specks, abundant disseminated pyrite, soft to firm, predominantly subblocky, minor amorphous.
1308	1314	40	SANDSTONE: Clear to translucent, fine to medium grained, trace coarse grains, subrounded to well rounded becoming subangular to angular, poorly sorted, predominantly loose and clean with common very fine to fine aggregates with siliceous cement, trace to common pyrite nodules, poor to fair visual and inferred porosity, no hydrocarbon fluorescence.
		60	SILTSTONE: Medium olive brown to medium grey brown occasionally pale grey, arenaceous & commonly grading to very fine Sandstone, trace glauconite specks, rare to trace carbonaceous specks, abundant disseminated pyrite, soft to firm, predominantly subblocky, minor amorphous.
1314	1320	30	SANDSTONE: Clear to translucent, fine to medium grained, trace coarse grains, subrounded to well rounded becoming subangular to angular, poorly sorted, predominantly loose and clean with common very fine to fine aggregates with siliceous cement, trace to common pyrite nodules, poor to fair visual and inferred porosity, no hydrocarbon fluorescence.
		70	SILTSTONE: Medium olive brown to medium grey brown occasionally pale grey, arenaceous & commonly grading to very fine Sandstone, trace glauconite specks, rare to trace carbonaceous specks, abundant disseminated pyrite, soft to firm, predominantly subblocky, minor amorphous.
1320	1326	30	SANDSTONE: Clear to translucent, fine to medium grained, trace coarse grains, subrounded to well rounded becoming subangular to angular, poorly sorted, predominantly loose and clean with common very fine to fine aggregates with siliceous cement, trace to common pyrite nodules, poor to fair visual and inferred porosity, no hydrocarbon fluorescence.
		70	SILTSTONE: Medium olive brown to medium grey brown occasionally pale grey, arenaceous & commonly grading to very fine Sandstone, trace glauconite specks, rare to trace carbonaceous specks, abundant disseminated pyrite, soft to firm, predominantly subblocky, minor amorphous.

Depth From (m)	Depth To (m)	%	Descriptions
1326	1332	20	SANDSTONE: Clear to translucent, fine to medium grained, trace coarse grains, subrounded to well rounded becoming subangular to angular, poorly sorted, predominantly loose and clean with common very fine to fine aggregates with siliceous cement, trace to common pyrite nodules, poor to fair visual and inferred porosity, no hydrocarbon fluorescence.
		80	SILTSTONE: Medium olive brown to medium grey brown occasionally pale grey, arenaceous & commonly grading to very fine Sandstone, trace glauconite specks, rare to trace carbonaceous specks, abundant disseminated pyrite, soft to firm, predominantly subblocky, minor amorphous.
1332	1338	100	SILTSTONE: Medium olive brown to medium grey brown occasionally pale grey, arenaceous & commonly grading to very fine Sandstone, trace glauconite specks, rare to trace carbonaceous specks, abundant disseminated pyrite, soft to firm, predominantly subblocky, minor amorphous.
1338	1344	100	SILTSTONE: Medium olive brown to medium grey brown occasionally pale grey, arenaceous & commonly grading to very fine Sandstone, trace glauconite specks, rare to trace carbonaceous specks, abundant disseminated pyrite, soft to firm, predominantly subblocky, minor amorphous.
1344	1350	100	SILTSTONE: Medium olive brown to medium grey brown occasionally pale grey, arenaceous & commonly grading to very fine Sandstone, trace glauconite specks, rare to trace carbonaceous specks, abundant disseminated pyrite, soft to firm, predominantly subblocky, minor amorphous.
1350	1356	100	SILTSTONE: Medium olive brown to medium grey brown occasionally pale grey, arenaceous & commonly grading to very fine Sandstone, trace glauconite specks, rare to trace carbonaceous specks, abundant disseminated pyrite, soft to firm, predominantly subblocky, minor amorphous.
1356	1362	100	SILTSTONE: Medium olive brown to medium grey brown occasionally pale grey, arenaceous & commonly grading to very fine Sandstone, trace glauconite specks, rare to trace carbonaceous specks, abundant disseminated pyrite, soft to firm, predominantly subblocky, minor amorphous.
1362	1368	100	SILTSTONE: Medium olive brown to medium grey brown occasionally pale grey, arenaceous & commonly grading to very fine Sandstone, trace glauconite specks, rare to trace carbonaceous specks, abundant disseminated pyrite, soft to firm, predominantly subblocky, minor amorphous.



Depth From (m)	Depth To (m)	%	Descriptions
1368	1374	100	SILTSTONE: Medium olive brown to medium grey brown occasionally pale grey, arenaceous & commonly grading to very fine Sandstone, trace glauconite specks, rare to trace carbonaceous specks, abundant disseminated pyrite, soft to firm, predominantly subblocky, minor amorphous.
1374	1380	100	SILTSTONE: Medium olive brown to medium grey brown occasionally pale grey, arenaceous & commonly grading to very fine Sandstone, trace glauconite specks, rare to trace carbonaceous specks, abundant disseminated pyrite, soft to firm, predominantly subblocky, minor amorphous.
1380	1386	100	SILTSTONE: Medium olive brown to medium grey brown occasionally pale grey, arenaceous & commonly grading to very fine Sandstone, trace glauconite specks, rare to trace carbonaceous specks, abundant disseminated pyrite, soft to firm, predominantly subblocky, minor amorphous.
1386	1392	100	SILTSTONE: Medium olive brown to medium grey brown occasionally pale grey, arenaceous & commonly grading to very fine Sandstone, trace glauconite specks, rare to trace carbonaceous specks, abundant disseminated pyrite, soft to firm, predominantly subblocky, minor amorphous.
1392	1398	10	SANDSTONE: Clear to translucent, fine to medium occasionally coarse-very coarse, subangular-subrounded, poorly sorted, loose, rare aggregates, trace glauconite grains, poor to fair visual and inferred porosity, no hydrocarbon fluorescence.
		90	SILTSTONE: Medium olive brown to medium grey brown occasionally pale grey, arenaceous & commonly grading to very fine Sandstone, trace glauconite specks, rare to trace carbonaceous specks, abundant disseminated pyrite, soft to firm, predominantly subblocky, minor amorphous.
1398	1404	10	SANDSTONE: Clear to translucent, fine to medium occasionally coarse-very coarse, subangular-subrounded, poorly sorted, loose, rare aggregates, trace glauconite grains, poor to fair visual and inferred porosity, no hydrocarbon fluorescence.
		90	SILTSTONE: Medium olive brown to medium grey brown occasionally pale grey, arenaceous & commonly grading to very fine Sandstone, trace glauconite specks, rare to trace carbonaceous specks, abundant disseminated pyrite, soft to firm, predominantly subblocky, minor amorphous.
1404	1410	90	SANDSTONE: Clear to translucent, fine to medium occasionally coarse-very coarse, subangular-subrounded, poorly sorted, loose, rare aggregates, trace glauconite grains, poor to fair visual and inferred porosity, no hydrocarbon fluorescence.

Depth From (m)	Depth To (m)	%	Descriptions
		10	SILTSTONE: Medium olive brown to medium grey brown occasionally pale grey, arenaceous & commonly grading to very fine Sandstone, trace glauconite specks, rare to trace carbonaceous specks, abundant disseminated pyrite, soft to firm, predominantly subblocky, minor amorphous.
1410	1416	100	SILTSTONE: Medium olive brown to medium grey brown occasionally pale grey, arenaceous & commonly grading to very fine Sandstone, trace glauconite specks, rare to trace carbonaceous specks, abundant disseminated pyrite, soft to firm, predominantly subblocky, minor amorphous.
1416	1422	100	SILTSTONE: Medium olive brown to medium grey brown occasionally pale grey, trace glauconite specks, rare to trace carbonaceous specks, soft to firm, predominantly subblocky, minor amorphous.
1422	1428	100	SILTSTONE: Medium olive brown to medium grey brown occasionally pale grey, trace glauconite specks, rare to trace carbonaceous specks, soft to firm, predominantly subblocky, minor amorphous.
1428	1434	100	SILTSTONE: Medium olive brown to medium grey brown occasionally pale grey, trace glauconite specks, rare to trace carbonaceous specks, soft to firm, predominantly subblocky, minor amorphous.
1434	1440	100	SILTSTONE: Medium olive brown to medium grey brown occasionally pale grey, trace glauconite specks, rare to trace carbonaceous specks, soft to firm, predominantly subblocky, minor amorphous.
1440	1446	100	SILTSTONE: Medium olive brown to medium grey brown occasionally pale grey, trace glauconite specks, rare to trace carbonaceous specks, soft to firm, predominantly subblocky, minor amorphous.
1446	1452	100	SILTSTONE: Medium olive brown to medium grey brown occasionally pale grey, trace glauconite specks, rare to trace carbonaceous specks, soft to firm, predominantly subblocky, minor amorphous.
1452	1458	100	SILTSTONE: Medium olive brown to medium grey brown occasionally pale grey, trace glauconite specks, rare to trace carbonaceous specks, soft to firm, predominantly subblocky, minor amorphous.
1458	1464	100	SILTSTONE: Medium olive brown to medium grey brown occasionally pale grey, trace glauconite specks, rare to trace carbonaceous specks, soft to firm, predominantly subblocky, minor amorphous.

Depth From (m)	Depth To (m)	%	Descriptions
1464	1470	100	SILTSTONE: Medium olive brown to medium grey brown occasionally pale grey, trace glauconite specks, rare to trace carbonaceous specks, soft to firm, predominantly subblocky, minor amorphous.
1470	1476	100	SILTSTONE: Medium olive brown to medium grey brown occasionally pale grey, trace glauconite specks, rare to trace carbonaceous specks, soft to firm, predominantly subblocky, minor amorphous.
1476	1482	100	SILTSTONE: Medium olive brown to medium grey brown occasionally pale grey, trace glauconite specks, rare to trace carbonaceous specks, soft to firm, predominantly subblocky, minor amorphous.
1482	1488	100	SILTSTONE: Medium olive brown to medium grey brown occasionally pale grey, arenaceous occasionally grading to very fine Sandstone, trace glauconite specks, rare to trace carbonaceous specks, soft to firm, predominantly subblocky, minor amorphous.
1488	1494	60	SILTSTONE: Medium to brown grey to dark brown grey, trace very light grey, argillaceous to arenaceous, trace to common carbonaceous specks, trace to common glauconite, trace lithics, firm to moderately hard in part, amorphous to sub blocky.
		40	SANDSTONE: Light to medium grey, white to very light grey in part, fine to coarse grained, predominantly fine to medium grained, moderately to poorly sorted, subangular to subrounded, predominantly loose, trace weak siliceous cement, minor pale brown to white silty matrix, friable to moderately hard aggregates, common glauconite, minor pyrite, poor to occasionally fair visual and inferred porosity, no hydrocarbon fluorescence.
1494	1500	80	SILTSTONE: Medium to brown grey to dark brown grey, trace very light grey, argillaceous to arenaceous, trace to common carbonaceous specks, trace to common glauconite, trace lithics, firm to moderately hard in part, amorphous to sub blocky.
		20	SANDSTONE: Light grey, white to very light grey in part, fine to coarse grained, predominantly fine to medium grained, moderately to poorly sorted, subangular to subrounded, predominantly loose, trace weak siliceous cement, minor pale brown to white silty matrix, friable to moderately hard aggregates, common glauconite, minor pyrite, poor to occasionally fair visual and inferred porosity, no hydrocarbon fluorescence.
1500	1506	100	SILTSTONE: Medium to brown grey to dark brown grey, trace very light grey, argillaceous to arenaceous, trace to common carbonaceous specks, trace to common glauconite, trace lithics, firm to moderately hard in part, amorphous to sub blocky.

Depth From (m)	Depth To (m)	%	Descriptions
1506	1512	100	SILTSTONE: Medium to brown grey to dark brown grey, trace very light grey, argillaceous to arenaceous, trace to common carbonaceous specks, trace to common glauconite, trace lithics, firm to moderately hard in part, amorphous to sub blocky.
1512	1518	100	SILTSTONE: Medium to brown grey to dark brown grey, trace very light grey, argillaceous to arenaceous, trace to common carbonaceous specks, trace to common glauconite, trace lithics, firm to moderately hard in part, amorphous to sub blocky.
1518	1524	90	SILTSTONE: Medium to brown grey to dark brown grey, trace very light grey, argillaceous to arenaceous, trace to common carbonaceous specks, trace to common glauconite, trace lithics, firm to moderately hard in part, amorphous to sub blocky.
		10	SANDSTONE: Clear to translucent, fine to medium grained, subangular to subrounded, moderately to well sorted, predominantly loose and clean quartz, trace glauconite, trace aggregates with weak siliceous cement, poor visual and inferred porosity, no hydrocarbon fluorescence.
1524	1530	90	SILTSTONE: Medium to brown grey to dark brown grey, trace very light grey, argillaceous to arenaceous, trace to common carbonaceous specks, trace to common glauconite, trace lithics, firm to moderately hard in part, amorphous to sub blocky.
		10	SANDSTONE: Clear to translucent, fine to medium grained, subangular to subrounded, moderately to well sorted, predominantly loose and clean quartz, trace glauconite, trace aggregates with weak siliceous cement, poor visual and inferred porosity, no hydrocarbon fluorescence.
1530	1536	80	SILTSTONE: Medium to brown grey to dark brown grey, trace very light grey, argillaceous to arenaceous, trace to common carbonaceous specks, trace to common glauconite, trace lithics, firm to moderately hard in part, amorphous to sub blocky.
		20	SANDSTONE: Clear to translucent, fine to medium grained, subangular to subrounded, moderately to well sorted, predominantly loose and clean quartz, trace glauconite, trace aggregates with weak siliceous cement, poor visual and inferred porosity, no hydrocarbon fluorescence.
1536	1542	90	SILTSTONE: Medium to brown grey to dark brown grey, trace very light grey, argillaceous to arenaceous, trace to common carbonaceous specks, trace to common glauconite, trace lithics, firm to moderately hard in part, amorphous to sub blocky.
		10	SANDSTONE: Clear to translucent, fine to medium grained, subangular to subrounded, moderately to well sorted, predominantly loose and clean quartz, trace glauconite, trace aggregates with weak siliceous cement, poor visual and inferred porosity, no hydrocarbon fluorescence.

Depth From (m)	Depth To (m)	%	Descriptions
1542	1548	100	SILTSTONE: Medium to brown grey to dark brown grey, trace very light grey, argillaceous to arenaceous, trace to common carbonaceous specks, trace to common glauconite, trace lithics, firm to moderately hard in part, amorphous to sub blocky.
1548	1554	40	SILTSTONE: Medium to brown grey to dark brown grey, trace very light grey, argillaceous to arenaceous, trace to common carbonaceous specks, trace to common glauconite, trace lithics, firm to moderately hard in part, amorphous to sub blocky.
		60	SANDSTONE: Clear to translucent to very light grey, light green in part, very fine to fine grained, subangular to subrounded, well sorted, predominantly loose quartz, abundant glauconite, trace pyrite nodules, common light grey to light green aggregates with moderately firm siliceous cement, glauconitic sandstone in part, trace pyrite, trace carbonaceous matter, poor visual and inferred porosity, no hydrocarbon fluorescence.
1554	1560	70	SILTSTONE: Medium to brown grey to dark brown grey, trace very light grey, argillaceous to arenaceous, trace to common carbonaceous specks, trace to common glauconite, trace lithics, firm to moderately hard in part, amorphous to sub blocky.
		30	SANDSTONE: Clear to translucent to very light grey, light green in part, very fine to fine grained, subangular to subrounded, well sorted, predominantly loose quartz, abundant glauconite, trace pyrite nodules, common light grey to light green aggregates with moderately firm siliceous cement, glauconitic sandstone in part, trace pyrite, trace carbonaceous matter, poor visual and inferred porosity, no hydrocarbon fluorescence.
1560	1566	60	SILTSTONE: Medium to brown grey to dark brown grey, trace very light grey, argillaceous to arenaceous, occasionally grading to very fine Sandstone, trace to common carbonaceous specks, trace to common glauconite, trace lithics, firm to moderately hard in part, amorphous to sub blocky.
		40	SANDSTONE: Clear to translucent to very light grey, light green in part, very fine to fine grained, subangular to subrounded, well sorted, predominantly loose quartz, abundant glauconite, trace pyrite nodules, common light grey to light green aggregates with moderately firm siliceous cement, glauconitic sandstone in part, trace pyrite, trace carbonaceous matter, poor visual and inferred porosity, no hydrocarbon fluorescence.
1566	1572	80	SILTSTONE: Medium to brown grey to dark brown grey, trace very light grey, argillaceous to arenaceous, trace to common carbonaceous specks, trace to common glauconite, trace lithics, firm to moderately hard in part, amorphous to sub blocky.

Depth From (m)	Depth To (m)	%	Descriptions
		20	SANDSTONE: Clear to translucent to very light grey, light green in part, very fine to fine grained, subangular to subrounded, well sorted, predominantly loose quartz, abundant glauconite, trace pyrite nodules, common light grey to light green aggregates with moderately firm siliceous cement, glauconitic sandstone in part, trace pyrite, trace carbonaceous matter, poor visual and inferred porosity, no hydrocarbon fluorescence.
1572	1578	50	SILTSTONE: Medium to brown grey to dark brown grey, trace very light grey, argillaceous to arenaceous, trace to common carbonaceous specks, trace to common glauconite, trace lithics, firm to moderately hard in part, amorphous to sub blocky.
		50	SANDSTONE: Clear to translucent to very light grey, light green in part, very fine to medium grained, subangular to subrounded, moderately sorted, predominantly loose quartz, abundant glauconite, trace pyrite nodules, common light grey to light green aggregates with moderately firm siliceous cement, glauconitic sandstone in part, trace pyrite, trace carbonaceous matter, poor visual and inferred porosity, no hydrocarbon fluorescence.
1578	1584	70	SILTSTONE: Light brownish grey to olive grey, predominantly arenaceous and grading to very fine Sandstone. Trace lithics, trace carbonaceous specks, soft to firm, occasionally dispersive, amorphous to subblocky.
		30	SANDSTONE: Clear to translucent to very light grey, light green in part, very fine to fine grained, subangular to subrounded, well sorted, predominantly loose quartz, abundant glauconite, trace pyrite nodules, common light grey to light green aggregates with moderately firm siliceous cement, glauconitic sandstone in part, trace pyrite, trace carbonaceous matter, poor visual and inferred porosity, no hydrocarbon fluorescence.
1584	1590	70	SILTSTONE: Off white to olive grey, predominantly arenaceous and grading to very fine Sandstone. Trace lithics, trace carbonaceous specks, soft to firm, occasionally dispersive, amorphous to subblocky.
		30	SANDSTONE: Clear to translucent to very light grey, light green in part, very fine to fine grained, subangular to subrounded, well sorted, predominantly loose quartz, abundant glauconite, trace pyrite nodules, common light grey to light green aggregates with moderately firm siliceous cement, glauconitic sandstone in part, trace pyrite, trace carbonaceous matter, poor visual and inferred porosity, no hydrocarbon fluorescence.
1590	1596	80	SILTSTONE: Light brownish grey to olive grey, predominantly arenaceous and grading to very fine Sandstone. Trace lithics, trace carbonaceous specks, soft to firm, occasionally dispersive, amorphous to subblocky.

Depth From (m)	Depth To (m)	%	Descriptions
		20	SANDSTONE: Clear to translucent to very light grey, light green in part, very fine to fine grained, subangular to subrounded, well sorted, predominantly loose quartz, abundant glauconite, trace pyrite nodules, common light grey to light green aggregates with moderately firm siliceous cement, glauconitic sandstone in part, trace pyrite, trace carbonaceous matter, poor visual and inferred porosity, no hydrocarbon fluorescence.
1596	1602	90	SILTSTONE: Light brownish grey to olive grey, predominantly arenaceous and grading to very fine Sandstone. Trace lithics, trace carbonaceous specks, soft to firm, occasionally dispersive, amorphous to subblocky.
		10	SANDSTONE: Clear to translucent to very light grey, light green in part, very fine to fine grained, subangular to subrounded, well sorted, predominantly loose quartz, abundant glauconite, trace pyrite nodules, common light grey to light green aggregates with moderately firm siliceous cement, glauconitic sandstone in part, trace pyrite, trace carbonaceous matter, poor visual and inferred porosity, no hydrocarbon fluorescence.
1602	1608	100	SILTSTONE: Light brownish grey to olive grey, predominantly arenaceous and grading to very fine Sandstone. Trace lithics, trace carbonaceous specks, soft to firm, occasionally dispersive, amorphous to subblocky.
1608	1614	100	SILTSTONE: Light brownish grey to olive grey, predominantly arenaceous and grading to very fine Sandstone. Trace lithics, trace carbonaceous specks, soft to firm, occasionally dispersive, amorphous to subblocky.
1614	1620	100	SILTSTONE: Light brownish grey to olive grey, predominantly arenaceous and grading to very fine Sandstone. Trace lithics, trace carbonaceous specks, soft to firm, occasionally dispersive, amorphous to subblocky.
1620	1626	100	SILTSTONE: Medium grey to olive grey to olive black, predominantly argillaceous, trace arenaceous, trace to common carbonaceous specks and streaks, trace glauconite, soft to firm, amorphous to subblocky.
1626	1632	100	SILTSTONE: Medium grey to olive grey to olive black, predominantly argillaceous, trace arenaceous, trace to common carbonaceous specks and streaks, trace glauconite, soft to firm, amorphous to subblocky.
1632	1638	100	SILTSTONE: Medium grey to olive grey to olive black, predominantly argillaceous, trace arenaceous, trace to common carbonaceous specks and streaks, trace glauconite, soft to firm, amorphous to subblocky.

Depth From (m)	Depth To (m)	%	Descriptions
1638	1644	100	SILTSTONE: Medium grey to olive grey to olive black, predominantly argillaceous, trace arenaceous, trace to common carbonaceous specks and streaks, trace glauconite, soft to firm, amorphous to subblocky.
1644	1650	100	SILTSTONE: Brownish grey to olive black, predominantly argillaceous, trace arenaceous, trace carbonaceous specks, trace glauconite, firm to moderately hard, subblocky.
1650	1656	100	SILTSTONE: Brownish grey to olive black, predominantly argillaceous, trace arenaceous, trace carbonaceous specks, trace glauconite, firm to moderately hard, subblocky.
1656	1662	100	SILTSTONE: Brownish grey to olive black, predominantly argillaceous, trace arenaceous, trace carbonaceous specks, trace glauconite, firm to moderately hard, subblocky.
1662	1668	100	SILTSTONE: Brownish grey to olive black, predominantly argillaceous, trace arenaceous, trace carbonaceous specks, trace glauconite, firm to moderately hard, subblocky.
1668	1674	100	SILTSTONE: Brownish grey to olive black, predominantly argillaceous, trace arenaceous, trace carbonaceous specks, trace glauconite, firm to moderately hard, subblocky.
1674	1680	100	SILTSTONE: Brownish grey to olive black, predominantly argillaceous, trace arenaceous, trace carbonaceous specks, trace glauconite, firm to moderately hard, subblocky.
1680	1686	100	SILTSTONE: Brownish grey to olive black, predominantly argillaceous, trace arenaceous, trace carbonaceous specks, trace glauconite, firm to moderately hard, subblocky.
1686	1692	100	SILTSTONE: Brownish grey to olive black, predominantly argillaceous, trace arenaceous, trace carbonaceous specks, trace glauconite, firm to moderately hard, subblocky.
1692	1698	100	SILTSTONE: Brownish grey to olive black, predominantly argillaceous, trace arenaceous, trace carbonaceous specks, trace glauconite, firm to moderately hard, subblocky.
1698	1704	100	SILTSTONE: Brownish grey to olive black, predominantly argillaceous, trace arenaceous, trace carbonaceous specks, trace glauconite, firm to moderately hard, subblocky.
1704	1710	100	SILTSTONE: Brownish grey to olive black, predominantly argillaceous, trace arenaceous, trace carbonaceous specks, trace glauconite, firm to moderately hard, subblocky.
1710	1716	100	SILTSTONE: Brownish grey to olive black, predominantly argillaceous, trace arenaceous, trace carbonaceous specks, trace glauconite, firm to moderately hard, subblocky.



Depth From (m)	Depth To (m)	%	Descriptions
1716	1722	100	SILTSTONE: Brownish grey to olive black, predominantly argillaceous, trace arenaceous, trace carbonaceous specks, trace glauconite, firm to moderately hard, subblocky.
1722	1728	100	SILTSTONE: Brownish grey to olive black, predominantly argillaceous, trace arenaceous, trace carbonaceous specks, trace glauconite, firm to moderately hard, subblocky.
1728	1734	100	SILTSTONE: Brownish grey to olive black, predominantly argillaceous, trace arenaceous, trace carbonaceous specks, trace glauconite, firm to moderately hard, subblocky.
1734	1740	100	SILTSTONE: Brownish grey to olive black, predominantly argillaceous, trace arenaceous, trace carbonaceous specks, trace glauconite, firm to moderately hard, subblocky.
1740	1746	100	SILTSTONE: Brownish grey to olive black, predominantly argillaceous, trace arenaceous, trace carbonaceous specks, trace glauconite, firm to moderately hard, subblocky.
1746	1752	100	SILTSTONE: Brownish grey to olive black, predominantly argillaceous, trace arenaceous, trace carbonaceous specks, trace glauconite, firm to moderately hard, subblocky.
1752	1758	100	SILTSTONE: Brownish grey to olive black, predominantly argillaceous, trace arenaceous, trace carbonaceous specks, trace glauconite, firm to moderately hard, subblocky.
1758	1764	100	SILTSTONE: Brownish grey to olive black, predominantly argillaceous, trace arenaceous, trace carbonaceous specks, trace glauconite, firm to moderately hard, subblocky.
1764	1770	100	SILTSTONE: Brownish grey to olive black, predominantly argillaceous, trace arenaceous, trace carbonaceous specks, trace glauconite, firm to moderately hard, subblocky.
1770	1776	100	SILTSTONE: Brownish grey to olive black, predominantly argillaceous, trace arenaceous, trace carbonaceous specks, trace glauconite, firm to moderately hard, subblocky.
1776	1782	100	SILTSTONE: Brownish grey to olive black, predominantly argillaceous, trace arenaceous, trace carbonaceous specks, trace glauconite, firm to moderately hard, subblocky.
1782	1788	100	SILTSTONE: Brownish grey to olive black, predominantly argillaceous, trace arenaceous, trace carbonaceous specks, trace glauconite, firm to moderately hard, subblocky.
1788	1794	100	SILTSTONE: Brownish grey to olive black, predominantly argillaceous, trace arenaceous, trace carbonaceous specks, trace glauconite, firm to moderately hard, subblocky.

Depth From (m)	Depth To (m)	%	Descriptions
1794	1800	100	SILTSTONE: Brownish grey to olive black, predominantly argillaceous, trace arenaceous, trace very coarse loose quartz grains, trace carbonaceous specks, trace glauconite, firm to moderately hard, subblocky.
1800	1806	90	SILTSTONE: Brownish grey to olive black, predominantly argillaceous, trace arenaceous, trace carbonaceous specks, trace glauconite, trace nodular pyrite firm to moderately hard, subblocky.
1806	1812	100	SILTSTONE: Brownish grey to olive black, predominantly argillaceous, trace arenaceous, common carbonaceous specks, trace glauconite, trace nodular pyrite firm to moderately hard, subblocky.
1812	1818	100	SILTSTONE: Brownish grey to olive black, predominantly argillaceous, trace arenaceous, common carbonaceous specks, trace glauconite, trace nodular pyrite firm to moderately hard, subblocky.
1818	1824	100	SILTSTONE: Brownish grey to olive black, predominantly argillaceous, trace arenaceous, common carbonaceous specks, trace glauconite, trace nodular pyrite firm to moderately hard, subblocky.
1824	1830	100	SILTSTONE: Dark to medium grey brown, argillaceous, trace glauconite grains trace to common nodular pyrite, firm, dispersive in part, subblocky to blocky.
1830	1836	100	SILTSTONE: Dark to medium grey brown, argillaceous, trace glauconite grains trace to common nodular pyrite, firm, dispersive in part, subblocky to blocky.
1836	1842	100	SILTSTONE: Dark to medium grey brown, argillaceous, trace glauconite grains trace to common nodular pyrite, firm, dispersive in part, subblocky to blocky.
1842	1845	100	SILTSTONE: Dark to medium grey brown, argillaceous, trace glauconite grains trace to common nodular pyrite, firm, dispersive in part, subblocky to blocky.
1845	1848	100	SILTSTONE: Dark to medium grey brown, argillaceous, trace glauconite grains trace to common nodular pyrite, firm, dispersive in part, subblocky to blocky.
1848	1851	100	SILTSTONE: Dark to medium grey brown, argillaceous, trace glauconite grains trace to common nodular pyrite, firm, dispersive in part, subblocky to blocky.
1851	1854	100	SILTSTONE: Dark to medium grey brown, argillaceous, trace glauconite grains trace to common nodular pyrite, firm, dispersive in part, subblocky to blocky.

Depth From (m)	Depth To (m)	%	Descriptions
1854	1857	100	SILTSTONE: Dark to medium grey brown, argillaceous, trace glauconite grains trace to common nodular pyrite, firm, dispersive in part, subblocky to blocky.
1857	1860	100	SILTSTONE: Dark to medium grey brown occasionally pale brown, argillaceous, trace glauconite grains trace to common nodular pyrite, firm, dispersive in part, subblocky to blocky.
1860	1866	100	SILTSTONE: Dark to medium grey brown occasionally pale brown, argillaceous, trace glauconite grains trace to common nodular pyrite, trace lithics, firm, dispersive in part, subblocky to blocky.
1866	1872	100	SILTSTONE: Dark to medium grey brown occasionally pale brown, argillaceous, trace glauconite grains trace to common nodular pyrite, trace lithics, firm, dispersive in part, subblocky to blocky.
1872	1875	100	SILTSTONE: Dark to medium grey brown occasionally pale brown, argillaceous, trace glauconite grains trace to common nodular pyrite, trace lithics, firm, dispersive in part, subblocky to blocky.
1875	1878	100	SILTSTONE: Dark to medium grey brown occasionally pale brown, argillaceous, trace glauconite grains trace to common nodular pyrite, trace lithics, firm, subblocky.
1878	1881	100	SILTSTONE: Dark to medium grey brown occasionally pale brown, argillaceous, trace glauconite grains trace to common nodular pyrite, trace lithics, firm, subblocky.
1881	1884	100	SILTSTONE: Dark to medium grey brown occasionally pale brown, argillaceous, trace glauconite grains trace to common nodular pyrite, trace lithics, firm, subblocky.
1887	1890	100	SILTSTONE: Dark to medium grey brown occasionally pale brown, argillaceous, trace glauconite grains trace to common nodular pyrite, trace lithics, firm, subblocky.
1890	1893	100	SILTSTONE: Dark to medium grey brown occasionally pale brown, argillaceous, trace glauconite grains trace to common nodular pyrite, trace lithics, firm, subblocky.
1893	1896	100	SILTSTONE: Dark to medium grey brown occasionally pale brown, argillaceous, trace glauconite grains trace to common nodular pyrite, trace lithics, firm, subblocky.
1896	1899	100	SILTSTONE: Dark to medium grey brown occasionally pale brown, argillaceous, trace glauconite grains trace to common nodular pyrite, common white to off white argillaceous material , trace lithics, firm, subblocky.

Depth From (m)	Depth To (m)	%	Descriptions
1899	1902	100	SILTSTONE: Dark to medium grey brown occasionally pale brown, argillaceous, trace glauconite grains trace to common nodular pyrite, common white to off white argillaceous material, trace lithics, firm, subblocky.
1902	1905	100	SILTSTONE: Dark to medium grey brown occasionally pale brown, argillaceous, trace glauconite grains trace to common nodular pyrite, common white to off white argillaceous material, trace lithics, firm, subblocky.
1905	1908	100	SILTSTONE: Dark to medium grey brown occasionally pale brown, argillaceous, trace glauconite grains trace to common nodular pyrite, common white to off white argillaceous material, trace lithics, firm, subblocky.
1905	1908	100	SILTSTONE: Dark to medium grey brown occasionally pale brown, argillaceous, trace glauconite grains trace to common nodular pyrite, common white to off white argillaceous material, trace lithics, firm, subblocky.
1908	1911	100	SILTSTONE: Dark to medium grey brown occasionally pale brown, argillaceous, trace glauconite grains trace to common nodular pyrite, common white to off white argillaceous material, trace lithics, firm, subblocky.
1911	1914	100	SILTSTONE: Dark to medium grey brown occasionally pale brown, argillaceous, trace glauconite grains trace to common nodular pyrite, common white to off white argillaceous material, trace lithics, firm, subblocky.
1914	1917	100	SILTSTONE: Dark to medium grey brown occasionally pale brown, argillaceous, trace glauconite grains trace to common nodular pyrite, common white to off white argillaceous material, trace lithics, firm, blocky.
1917	1920	100	SILTSTONE: Dark to medium grey brown occasionally pale brown, argillaceous, trace glauconite grains trace to common nodular pyrite, common white to off white argillaceous material, trace lithics, firm, blocky.
1920	1923	100	SILTSTONE: Dark to medium grey brown occasionally pale brown, argillaceous, trace glauconite grains trace to common nodular pyrite, common white to off white argillaceous material, trace lithics, firm, blocky.
1923	1926	100	SILTSTONE: Dark to medium grey brown occasionally pale brown, argillaceous, trace glauconite grains trace to common nodular pyrite, common white to off white argillaceous material, trace lithics, firm, blocky.

Depth From (m)	Depth To (m)	%	Descriptions
1926	1929	100	SILTSTONE: Dark to medium grey brown occasionally pale brown, argillaceous, common nodular glauconite, trace to common nodular pyrite, common white to off white argillaceous material, trace lithics, firm, blocky.
1929	1932	100	SILTSTONE: Dark to medium grey brown occasionally pale brown, argillaceous, abundant nodular glauconite, common nodular pyrite, common white to off white argillaceous material, trace lithics, firm, blocky.
1932	1935	100	SILTSTONE: Dark to medium grey brown occasionally pale brown, argillaceous, abundant nodular glauconite, common nodular pyrite, common white to off white argillaceous material, trace lithics, firm, blocky.
1935	1938	100	SILTSTONE: Medium grey to brown grey to olive black, argillaceous to arenaceous, occasionally glauconitic in part, trace carbonaceous specks, firm to moderately hard, subblocky.
1938	1941	100	SILTSTONE: Medium grey to brown grey to olive black, argillaceous to arenaceous, occasionally glauconitic in part, trace carbonaceous specks, firm to moderately hard, subblocky.
1941	1944	100	SILTSTONE: Olive grey to olive black, trace light olive grey, argillaceous to arenaceous, occasionally glauconitic in part, trace carbonaceous specks, firm to moderately hard, subblocky.
1944	1947	100	SILTSTONE: Olive grey to olive black, trace light olive grey, argillaceous to arenaceous, occasionally glauconitic in part, trace carbonaceous specks, firm to moderately hard, subblocky.
1947	1950	100	SILTSTONE: Olive grey to olive black, argillaceous to arenaceous, occasionally glauconitic in part, trace carbonaceous specks, firm to moderately hard, subblocky.
1950	1953	100	SILTSTONE: Medium grey to brown grey to olive black, argillaceous to arenaceous, occasionally glauconitic in part, trace carbonaceous specks, firm to moderately hard, subblocky.
1953	1956	100	SILTSTONE: Medium grey to brown grey to olive black, argillaceous to arenaceous, occasionally glauconitic in part, trace carbonaceous specks, firm to moderately hard, subblocky.
1956	1959	100	SILTSTONE: Medium grey to brown grey to olive black, argillaceous to arenaceous, occasionally grading to very fine Sandstone, occasionally glauconitic in part, trace carbonaceous specks, trace pyrite, firm to moderately hard, subblocky.
1959	1962	100	SILTSTONE: Medium grey to brown grey to olive black, argillaceous to arenaceous, occasionally grading to very fine Sandstone, occasionally glauconitic in part, trace carbonaceous specks, trace pyrite, firm to moderately hard, subblocky.

Depth From (m)	Depth To (m)	%	Descriptions
1962	1965	100	SILTSTONE: Medium grey to brown grey to olive black, argillaceous to arenaceous, occasionally grading to very fine Sandstone, occasionally glauconitic in part, trace carbonaceous specks, trace pyrite, firm to moderately hard, subblocky.
1965	1968	100	SILTSTONE: Medium grey to brown grey to olive black, argillaceous to arenaceous, occasionally grading to very fine Sandstone, occasionally glauconitic in part, trace carbonaceous specks, trace pyrite, firm to moderately hard, subblocky.
1968	1971	100	SILTSTONE: Medium grey to brown grey to olive black, argillaceous to arenaceous, occasionally grading to very fine Sandstone, occasionally glauconitic in part, trace carbonaceous specks, trace pyrite, firm to moderately hard, subblocky.
1971	1974	100	SILTSTONE: Medium grey to brown grey to olive black, argillaceous to arenaceous, occasionally grading to very fine Sandstone, occasionally glauconitic in part, trace carbonaceous specks, trace pyrite, firm to moderately hard, subblocky.
1974	1977	100	SILTSTONE: Medium grey to brown grey to olive black, argillaceous to arenaceous, occasionally grading to very fine Sandstone, occasionally glauconitic in part, trace carbonaceous specks, trace pyrite, firm to moderately hard, subblocky.
1977	1980	100	SILTSTONE: Medium grey to brown grey to olive black, argillaceous to arenaceous, occasionally grading to very fine Sandstone, occasionally glauconitic in part, trace carbonaceous specks, trace pyrite, firm to moderately hard, subblocky.
1980	1983	100	SILTSTONE: Medium grey to brown grey to olive black, argillaceous to arenaceous, trace glauconitic, trace carbonaceous specks, trace pyrite nodules, firm to moderately hard, subblocky.
1983	1986	100	SILTSTONE: Medium grey to brown grey to olive black, argillaceous to arenaceous, trace glauconitic, trace carbonaceous specks, trace pyrite nodules, firm to moderately hard, subblocky.
1986	1989	100	SILTSTONE: Medium grey to brown grey to olive black, argillaceous to arenaceous, trace glauconitic, trace carbonaceous specks, trace pyrite nodules, firm to moderately hard, subblocky.
1989	1992	95	SILTSTONE: Medium grey to brown grey to olive black, argillaceous to arenaceous, trace glauconitic, trace carbonaceous specks, trace pyrite nodules, firm to moderately hard, subblocky.
		5	SANDSTONE: Clear to translucent, very fine –medium grained, trace coarse grains, angular to subangular, moderately sorted, predominantly loose quartz, trace pyrite, poor visual and inferred porosity, no hydrocarbon fluorescence.

Depth From (m)	Depth To (m)	%	Descriptions
1992	1995	80	SILTSTONE: Medium grey to brown grey to olive black, argillaceous to arenaceous, trace glauconitic, trace carbonaceous specks, trace pyrite nodules, firm to moderately hard, subblocky.
		20	SANDSTONE: Clear to translucent, fine to medium grained, trace coarse grains, angular to subrounded, moderately sorted, predominantly loose quartz, trace pyrite, poor visual and inferred porosity, no hydrocarbon fluorescence.
1995	1998	60	SILTSTONE: Medium grey to brown grey to olive black, argillaceous to arenaceous, trace glauconitic, trace carbonaceous specks, trace pyrite nodules, firm to moderately hard, subblocky.
		40	SANDSTONE: Clear to translucent, trace light grey, fine to coarse grained, predominantly fine to medium grained, angular to subrounded, moderately to poorly sorted, predominantly loose quartz, occasional aggregates with weak to firm white siliceous cement, poor visual porosity, fair inferred porosity, no hydrocarbon fluorescence.
1998	2001	90	SANDSTONE: Clear to translucent, trace light grey, fine to coarse grained, predominantly to medium fine grained, angular to subrounded, moderately to poorly sorted, predominantly loose quartz, occasional aggregates with weak to firm white siliceous cement, poor visual porosity, fair inferred porosity, no fluorescence.
		10	SILTSTONE: Medium grey to brown grey to olive black, argillaceous to arenaceous, trace glauconitic, trace carbonaceous specks, trace pyrite nodules, firm to moderately hard, subblocky.
2001	2004	90	SANDSTONE: Clear to translucent, white to off white, very light grey, fine to coarse, moderately to poorly sorted, subangular to subrounded, locally common to abundant calcareous cement, white to off white argillaceous matrix, common rock flour, rare pyrite, trace lithics, friable to moderately hard, tight to poor visual porosity, no fluorescence.
		10	SILTSTONE: Medium to dark grey, arenaceous, occasionally common pyrite, occasionally glauconite grains, common carbonaceous laminations and specks, firm, subblocky to subfissile
2004	2007	90	SANDSTONE: Clear to translucent, white to off white, very light grey, fine to coarse, moderately to poorly sorted, subangular to subrounded, locally common to abundant calcareous cement, white to off white argillaceous matrix, common rock flour, rare pyrite, trace lithics, trace quartz grains, friable to moderately hard, tight to poor visual porosity, no fluorescence.

Depth From (m)	Depth To (m)	%	Descriptions
		10	SILTSTONE: Medium to dark grey, arenaceous, occasionally common pyrite, occasionally glauconite grains, common carbonaceous laminations and specks, firm, subblocky to subfissile
2007	2010	90	SANDSTONE: Clear to translucent, white to off white, very light grey, fine to coarse, moderately to poorly sorted, subangular to subrounded, locally common calcareous cement, white to off white argillaceous matrix, rare pyrite, trace lithics, predominately friable to moderately hard, tight to poor visual porosity, no fluorescence.
		10	SILTSTONE: Medium to dark grey, arenaceous, occasionally common pyrite, occasionally glauconite grains, common carbonaceous laminations and specks, firm, subblocky to subfissile
2010	2013	80	SANDSTONE: Clear to translucent, white to off white, very light grey, fine to coarse, moderately to poorly sorted, subangular to subrounded, locally common to abundant calcareous cement, white to off white argillaceous matrix, common rock flour, rare pyrite, trace lithics, trace quartz grains, predominately friable to moderately hard, tight to poor visual porosity, no fluorescence.
		20	SILTSTONE: Medium to dark grey, arenaceous, occasionally common pyrite, occasionally glauconite grains, common carbonaceous laminations and specks, firm, subblocky to subfissile.
2013	2016	70	SANDSTONE: Clear to translucent, white to off white, very light grey, fine to coarse, moderately to poorly sorted, subangular to subrounded, locally common to abundant calcareous cement, white to off white argillaceous matrix, common rock flour, rare pyrite, trace lithics, trace quartz grains, predominately friable to moderately hard, tight to poor visual porosity, no fluorescence.
		30	SILTSTONE: Medium to dark grey, arenaceous, occasionally common pyrite, occasionally glauconite grains, common carbonaceous laminations and specks, firm, subblocky to subfissile
2016	2019	90	SANDSTONE: Clear to translucent, white to off white, very light grey, fine to medium, moderately sorted, subangular to subrounded, common aggregates, common to abundant calcareous cement, white to off white argillaceous/ silty matrix, rare pyrite, trace lithics, friable to moderately hard, tight to poor visual porosity, no fluorescence.
		10	SILTSTONE: Medium to dark grey, arenaceous, occasionally common pyrite, occasionally glauconite grains, common carbonaceous laminations and specks, firm, subblocky to subfissile



Depth From (m)	Depth To (m)	%	Descriptions
2019	2022	100	SANDSTONE: Clear to translucent, white to off white, very light grey, fine to medium, moderately sorted, subangular to subrounded, common aggregates, common to abundant calcareous cement, white to off white argillaceous to silty matrix, rare pyrite, trace lithics, friable to moderately hard, tight to poor visual porosity, no fluorescence.
2022	2025	100	SANDSTONE: Clear to translucent, white to off white, very light grey, fine to medium, moderately sorted, subangular to subrounded, common aggregates, common to abundant calcareous cement, white to off white argillaceous to silty matrix, rare pyrite, trace lithics, friable to moderately hard, tight to poor visual porosity, no fluorescence.
2025	2028	20	SANDSTONE: Clear to translucent, white to off white, very light grey, fine to medium, poorly sorted, subangular to subrounded, common very fine to medium aggregates, common to abundant calcareous cement, white to off white argillaceous to silty matrix, rare pyrite, trace lithics, friable to moderately hard, tight to poor visual porosity, no fluorescence.
		80	SILTSTONE: Medium to dark grey, arenaceous, very fine sandstone laminations, occasionally common pyrite, occasionally glauconite grains, common carbonaceous laminations and specks, firm, subblocky to subfissile
2028	2031	70	SANDSTONE: Clear to translucent, white to off white, very light grey, fine to medium, mod sorted, subangular to subrounded, very fine to medium aggregates, abundant calcareous cement, white to off white argillaceous to silty matrix, rare pyrite, occasionally carbonaceous inc, common lithics, friable to moderately hard, tight to poor visual porosity, no fluorescence.
		30	SILTSTONE: Medium to dark grey, arenaceous, very fine sandstone laminations, occasionally common pyrite, occasionally glauconite grains, common carbonaceous laminations and specks, firm, subblocky to subfissile
2031	2034	50	SANDSTONE: Clear to translucent, white to off white, very light grey, fine to medium, mod sorted, subangular to subrounded, very fine to medium aggregates, abundant calcareous cement, white to off white argillaceous to silty matrix, rare pyrite, occasionally carbonaceous inc, common lithics, friable to moderately hard, tight to poor visual porosity, no fluorescence.
		50	SILTSTONE: Medium to dark grey, arenaceous, very fine sandstone laminations, occasionally common pyrite, occasionally glauconite grains, common carbonaceous laminations and specks, firm, subblocky to subfissile

Depth From (m)	Depth To (m)	%	Descriptions
2034	2037	70	SANDSTONE: Clear to translucent, white to off white, very light grey, fine to medium, mod sorted, subangular to subrounded, very fine to medium aggregates, abundant calcareous cement, white to off white argillaceous/ silty matrix, rare pyrite, occasionally carbonaceous inc, common lithics, friable to moderately hard, tight to poor visual porosity, no fluorescence.
		30	SILTSTONE: Medium to dark grey, arenaceous, very fine sandstone laminations, occasionally common pyrite, occasionally glauconite grains, common carbonaceous laminations & specks, firm, subblocky to subfissile
2037	2040	80	SANDSTONE: Clear to translucent, off white to occasionally tan, fine to medium, subangular to subrounded, predominately aggregates, occasionally loose grains, moderately calcareous cement, common argillaceous silty matrix, common lithics, trace pyrite, fair inferred porosity, poor visual porosity, no fluorescence.
		20	SILTSTONE: Medium to dark grey, arenaceous, very fine sandstone laminations, locally common pyrite, occasionally glauconite grains, common carbonaceous laminations and specks, firm, subblocky to subfissile
2040	2043	40	SANDSTONE: Clear to translucent, off white to occasionally tan, fine to medium, subangular to subrounded, predominately aggregates, occasionally loose grains, moderately calcareous cement, common argillaceous silty matrix, common lithics, trace pyrite, fair inferred porosity, poor visual porosity, no fluorescence.
		60	SILTSTONE: Medium to dark grey, arenaceous, very fine sandstone laminations, occasionally common pyrite, occasionally glauconite grains, common carbonaceous laminations and specks, firm, subblocky to subfissile
2043	2046	50	SANDSTONE: Clear to translucent, off white to occasionally tan, fine to medium, subangular to subrounded, predominately aggregates, occasionally loose grains, moderately calcareous cement, common argillaceous silty matrix, common lithics, trace pyrite, fair inferred porosity, poor visual porosity, no fluorescence.
		50	SILTSTONE: Medium to dark grey, arenaceous, very fine sandstone laminations, occasionally common pyrite, rare glauconite grains, common carbonaceous laminations and specks, firm, subblocky to subfissile
2046	2049	70	SANDSTONE: Clear to translucent, off white to occasionally tan, fine to medium, subangular to subrounded, predominately aggregates, occasionally loose grains, moderately calcareous cement, common argillaceous silty matrix, common lithics, fair inferred porosity, poor visual porosity, no fluorescence.
		30	SILTSTONE: Medium to dark grey, arenaceous, very fine

Depth From (m)	Depth To (m)	%	Descriptions
			sandstone laminations, occasionally common pyrite, rare glauconite grains, common carbonaceous laminations and specks, firm, subblocky to subfissile
2049	2052	60	SANDSTONE: Clear to translucent, off white to occasionally tan, fine to medium, subangular to subrounded, predominately aggregates, occasionally loose grains, moderately calcareous cement, common argillaceous silty matrix, common lithics, fair inferred porosity, poor visual porosity, no fluorescence.
		40	SILTSTONE: Medium to dark grey, arenaceous, very fine sandstone laminations, rare glauconite grains, common carbonaceous laminations and specks, firm, subblocky to subfissile
2052	2055	60	SANDSTONE: Clear to translucent, off white to occasionally tan, fine to medium, subangular to subrounded, predominately aggregates, occasionally loose medium to coarse grains, moderately calcareous cement, common argillaceous silty matrix, common lithics, fair inferred porosity, poor visual porosity, no fluorescence.
		40	SILTSTONE: Medium to dark grey, arenaceous, very fine sandstone laminations, rare glauconite grains, common carbonaceous laminations and specks, firm, subblocky to subfissile
2055	2058	60	SANDSTONE: Clear to translucent, off white to occasionally tan with common translucent brown,, fine to medium, subangular to subrounded, predominately aggregates, occasionally loose medium to coarse grains, moderately calcareous cement, common argillaceous silty matrix, common lithics, fair inferred porosity, poor visual porosity, no fluorescence.
		40	SILTSTONE: Medium to dark grey, arenaceous, very fine sandstone laminations, common carbonaceous laminations and specks, firm, subblocky to subfissile
2058	2061	60	SANDSTONE: Clear to translucent, off white to occasionally tan with common translucent brown,, fine to medium, subangular to subrounded, predominately aggregates with common loose medium to coarse grains, moderately calcareous cement, common argillaceous silty matrix, common lithics, fair inferred porosity, poor visual porosity, no fluorescence.
		40	SILTSTONE: Medium to dark grey, arenaceous, very fine sandstone laminations, common carbonaceous laminations and specks, firm, subblocky to subfissile

Depth From (m)	Depth To (m)	%	Descriptions
2061	2064	50	SANDSTONE: Clear to translucent, off white to occasionally tan with common translucent brown,, fine to medium, subangular to subrounded, predominately aggregates with abundant loose medium and common coarse grains, moderately calcareous cement, common argillaceous silty matrix, common lithics, fair inferred porosity, poor visual porosity, no fluorescence.
		50	SILTSTONE: Medium to dark grey, arenaceous, very fine sandstone laminations, common carbonaceous laminations and specks, firm, subblocky to subfissile
2064	2067	60	SANDSTONE: Clear to translucent, off white to occasionally tan with common translucent brown,, fine to medium, subangular to subrounded, predominately aggregates with abundant loose medium and common coarse grains, moderately calcareous cement, common argillaceous silty matrix, common lithics, fair inferred porosity, poor visual porosity, no fluorescence.
		40	SILTSTONE: Medium to dark grey, arenaceous, very fine sandstone laminations, common carbonaceous laminations and specks, firm, subblocky to subfissile
2067	2070	60	SANDSTONE: Clear to translucent, off white to occasionally tan with common translucent brown,, fine to medium, subangular to subrounded, predominately aggregates with abundant loose medium and common coarse grains, moderately calcareous cement, common argillaceous silty matrix, common lithics, fair inferred porosity, poor visual porosity, no fluorescence.
		40	SILTSTONE: Medium to dark grey, arenaceous, very fine sandstone laminations, common carbonaceous laminations and specks, firm, subblocky to subfissile
2070	2073	70	SANDSTONE: Clear to translucent, off white to occasionally tan with common translucent brown,, fine to medium, subangular to subrounded, predominately aggregates with abundant loose medium and common coarse grains, moderately calcareous cement, common argillaceous silty matrix, common lithics, fair inferred porosity, poor visual porosity, no fluorescence.
		30	SILTSTONE: Medium to dark grey, arenaceous, very fine sandstone laminations, common carbonaceous laminations and specks, firm, subblocky to subfissile
2073	2076	70	SANDSTONE: Clear to translucent, off white to occasionally tan with common translucent brown,, fine to medium, subangular to subrounded, predominately aggregates with abundant loose medium and common coarse grains, moderately calcareous cement, common argillaceous silty matrix, common lithics, fair inferred porosity, poor visual porosity, no fluorescence.

Depth From (m)	Depth To (m)	%	Descriptions
		30	SILTSTONE: Medium to dark grey, arenaceous, very fine sandstone laminations, common carbonaceous laminations and specks, firm, subblocky to subfissile
2076	2079	90	SANDSTONE: Clear to translucent, off white to occasionally tan with common translucent brown,, fine to medium, subangular to subrounded, predominately loose with common aggregates, weak calcareous cement, common argillaceous silty matrix, common lithics, fair inferred porosity, poor visual porosity, no fluorescence.
		10	SILTSTONE: Medium to dark grey, arenaceous, very fine sandstone laminations, common carbonaceous laminations and specks, firm, subblocky to subfissile
2079	2082	100	SANDSTONE: Clear to translucent, fine-very coarse, subangular to subrounded, poorly sorted, trace weak siliceous cement, loose predominately clean with trace light grey argillaceous matrix, trace lithics, trace carbonaceous specks, fair to good inferred and visual porosity, no fluorescence.
2082	2085	100	SANDSTONE: Clear to translucent, fine-very coarse, subangular to subrounded, poorly sorted, trace weak siliceous cement, loose predominately clean with trace light grey argillaceous matrix, trace lithics, trace carbonaceous specks, good inferred and fair visual porosity, no fluorescence.
2085	2088	100	SANDSTONE: Clear to translucent, fine-very coarse subangular to subrounded, poorly sorted, trace weak siliceous cement, loose predominately clean with trace light grey argillaceous matrix, trace lithics, trace carbonaceous specks, fair to good inferred and visual porosity, no fluorescence.
2088	2091	100	SANDSTONE: Clear to translucent, fine-very coarse, subangular to subrounded, poorly sorted, trace weak siliceous cement, loose predominately clean with trace light grey argillaceous matrix, trace lithics, trace carbonaceous specks, fair to good inferred and visual porosity, no fluorescence.
2091	2094	100	SANDSTONE: Clear to translucent, fine-very coarse, subangular to subrounded, poorly sorted, trace weak siliceous cement, loose predominately clean with trace light grey argillaceous matrix, trace lithics, trace carbonaceous specks, good inferred and visual porosity, no fluorescence.
2094	2097	100	SANDSTONE: Clear to translucent, fine-very coarse, subangular to subrounded, poorly sorted, trace weak siliceous cement, loose predominately clean with trace light grey argillaceous matrix, trace lithics, trace carbonaceous specks, good inferred and visual porosity, no fluorescence.

Depth From (m)	Depth To (m)	%	Descriptions
2097	2100	100	SANDSTONE: Clear to translucent, fine-very coarse, subangular to subrounded, poorly sorted, trace weak siliceous cement, loose predominately clean with trace light grey argillaceous matrix, trace lithics, trace carbonaceous specks, good inferred and visual porosity, no fluorescence.
2100	2103	100	SANDSTONE: Clear to translucent, med to very coarse, subangular to subrounded, moderately sorted, trace weak siliceous cement, loose predominately clean with trace light grey argillaceous matrix, trace lithics, trace carbonaceous specks, good inferred and visual porosity, no fluorescence.
2103	2106	100	SANDSTONE: Clear to translucent, med -very coarse, subangular to subrounded, moderately sorted, trace weak siliceous cement, loose predominately clean with trace light grey argillaceous matrix, trace lithics, trace carbonaceous specks, good inferred and visual porosity, no fluorescence.
2106	2109	100	SANDSTONE: Clear to translucent, med to coarse, subangular to subrounded, moderately sorted, trace weak siliceous cement, loose predominately clean with trace light grey argillaceous matrix, trace lithics, common carbonaceous specks, good inferred and visual porosity, no fluorescence.
2109	2112	100	SANDSTONE: Clear to translucent, med to coarse, subangular to subrounded, moderately sorted, trace weak siliceous cement, loose predominately clean with trace light grey argillaceous matrix, trace lithics, common carbonaceous specks, good inferred and visual porosity, no fluorescence.
2112	2115	100	SANDSTONE: Clear to translucent, fine to med rare coarse, subrounded to subangular, moderately sorted, trace weak occasionally moderately strong siliceous cement, loose predominately clean with trace light grey argillaceous matrix, trace lithics, common carbonaceous detritus, good inferred and visual porosity, no fluorescence.
2115	2118	100	SANDSTONE: Clear to translucent, fine to med rare coarse, subrounded to subangular, moderately sorted, trace weak siliceous cement, loose predominately clean with trace light grey argillaceous matrix, trace lithics, common carbonaceous detritus, good inferred and visual porosity, no fluorescence.
2118	2121	100	SANDSTONE: Clear to translucent, fine to med rare coarse, subrounded to subangular, moderately sorted, trace weak siliceous cement, loose predominately clean with trace light grey argillaceous matrix, trace lithics, common carbonaceous detritus, good inferred and visual porosity, no fluorescence.

Depth From (m)	Depth To (m)	%	Descriptions
2121	2124	100	SANDSTONE: Clear to translucent, fine to med rare coarse, subrounded to subangular, moderately sorted, trace weak siliceous cement, loose predominately clean with trace light grey argillaceous matrix, trace lithics, common carbonaceous detritus, good inferred and visual porosity, no fluorescence.
2124	2127	100	SANDSTONE: Clear to translucent, fine to medium with common coarse, rare overgrowths, subrounded to subangular, poorly sorted, trace weak siliceous cement, loose predominately clean with trace light grey argillaceous matrix, trace lithics, common carbonaceous detritus, good inferred and visual porosity, no fluorescence.
2127	2130	100	SANDSTONE: Clear to translucent, fine to medium with common coarse, rare overgrowths, subrounded to subangular, poorly sorted, trace weak siliceous cement, loose predominately clean with trace light grey argillaceous matrix, trace lithics, common carbonaceous detritus, good inferred and visual porosity, no fluorescence.
2130	2133	100	SANDSTONE: Clear to translucent, fine to medium with common coarse, rare overgrowths, subrounded to subangular, poorly sorted, trace weak siliceous cement, loose predominately clean with trace light grey argillaceous matrix, trace lithics, common carbonaceous detritus, good inferred and visual porosity, no fluorescence.
2133	2136	100	SANDSTONE: Clear to translucent, fine to medium with occasional coarse, rare overgrowths, subrounded to subangular, poorly sorted, trace weak siliceous cement, loose predominately clean with trace light grey argillaceous matrix, trace lithics, common carbonaceous detritus, good inferred and visual porosity, no fluorescence.
2136	2139	100	SANDSTONE: Clear to translucent, fine to medium with occasional coarse, subrounded to subangular, poorly sorted, trace weak siliceous cement, loose predominately clean with trace light grey argillaceous matrix, trace lithics, common carbonaceous detritus, good inferred and visual porosity, no fluorescence.
2139	2142	100	SANDSTONE: Clear to translucent, fine to medium with occasional coarse, subangular to subrounded, poorly sorted, trace weak siliceous cement, loose predominately clean with trace light grey argillaceous matrix, trace lithics, trace nodular pyrite common carbonaceous detritus, good inferred and visual porosity, no fluorescence.

Depth From (m)	Depth To (m)	%	Descriptions
2142	2145	100	SANDSTONE: Clear to translucent, fine to medium with common coarse, subangular to subrounded, poorly sorted, trace weak siliceous cement, predominately loose with abundant aggregates and light grey argillaceous matrix, trace lithics, trace nodular pyrite common carbonaceous detritus, trace arenaceous siltstone, fair to poor inferred and visual porosity, no fluorescence.
2145	2148	100	SANDSTONE: Clear to translucent, fine to medium with common coarse, subangular to subrounded, poorly sorted, trace weak siliceous cement, predominately loose with abundant aggregates and light grey argillaceous matrix, trace lithics, trace nodular pyrite common carbonaceous detritus, trace arenaceous siltstone, fair to poor inferred and visual porosity, no fluorescence.
2148	2151	100	SANDSTONE: Clear to translucent, fine to medium with occasional coarse, subangular to subrounded, poorly sorted, trace weak siliceous cement, predominately loose with abundant aggregates and light grey argillaceous matrix, trace lithics, trace nodular pyrite common carbonaceous detritus, trace arenaceous siltstone, fair to poor inferred and visual porosity, no fluorescence.
2151	2154	100	SANDSTONE: Clear to translucent, fine to medium with occasional coarse, subangular to subrounded, poorly sorted, trace weak siliceous cement, predominately loose with abundant aggregates and light grey argillaceous matrix, trace lithics, trace nodular pyrite common carbonaceous detritus, trace arenaceous siltstone, fair to poor inferred and visual porosity, no fluorescence.
2154	2157	100	SANDSTONE: Clear to translucent, very fine to medium, subangular to subrounded, moderately sorted, trace weak siliceous cement, predominately loose with rare aggregates and light grey argillaceous matrix, trace lithics, trace arenaceous siltstone, fair to good inferred porosity, no fluorescence.
2157	2160	100	SANDSTONE: Clear to translucent, very fine to medium, subangular to subrounded, moderately sorted, trace weak siliceous cement, predominately loose with rare aggregates and light grey argillaceous matrix, trace lithics, fair to good inferred porosity, no fluorescence.
2160	2163	100	SANDSTONE: Clear to translucent, very fine to medium, subangular to subrounded, moderately sorted, trace weak siliceous cement, predominately loose with rare aggregates and light grey argillaceous matrix, trace lithics, fair to good inferred porosity, no fluorescence.



Depth From (m)	Depth To (m)	%	Descriptions
2163	2166	100	SANDSTONE: Clear to translucent, very fine to medium, subangular to subrounded, moderately sorted, trace weak siliceous cement, predominately loose with occasional aggregates and light grey argillaceous matrix, trace lithics, fair to good inferred porosity, no fluorescence.
2166	2169	100	SANDSTONE: Clear to translucent, very fine to medium, subangular to subrounded, moderately sorted, trace weak siliceous cement, predominately loose with occasional aggregates and light grey argillaceous matrix, trace lithics, fair to good inferred porosity, no fluorescence.
2169	2172	100	SANDSTONE: Clear to translucent, very fine to medium, subangular to subrounded, moderately sorted, trace weak siliceous cement, predominately loose with occasional aggregates and light grey argillaceous matrix, trace lithics, fair to good inferred porosity, no fluorescence.
2172	2175	100	SANDSTONE: Clear to translucent, very fine to medium, subangular to subrounded, moderately sorted, trace weak siliceous cement, predominately loose with occasional aggregates and light grey argillaceous matrix, trace lithics, fair to good inferred porosity, no fluorescence.
2175	2178	100	SANDSTONE: Clear to translucent, fine to medium, subangular to subrounded, well sorted, abundant loose, weak to firm siliceous cement, white to light grey argillaceous matrix, trace lithics and carbonaceous inclusions, fair visual porosity, fair to good inferred porosity, no fluorescence.
2178	2181	100	SANDSTONE: Clear to translucent, fine to medium, subangular to subrounded, well sorted, abundant loose, weak to firm siliceous cement, white to light grey argillaceous matrix, trace lithics and carbonaceous inclusions, fair visual porosity, fair to good inferred porosity, no fluorescence.
2181	2184	100	SANDSTONE: Clear to translucent, fine to medium, subangular to subrounded, well sorted, abundant loose, weak to firm siliceous cement, white to light grey argillaceous matrix, trace lithics and carbonaceous inclusions, fair visual porosity, fair to good inferred porosity, no fluorescence.
2184	2187	100	SANDSTONE: Clear to translucent, fine to medium, subangular to subrounded well sorted, abundant loose, weak to firm siliceous cement, white to light grey argillaceous matrix, trace lithics and carbonaceous inclusions, fair visual porosity, fair to good inferred porosity, no fluorescence.

Depth From (m)	Depth To (m)	%	Descriptions
2190	2193	100	SANDSTONE: Clear to translucent, fine to medium, subangular to subrounded, well sorted, abundant loose, weak to firm siliceous cement, white to light grey argillaceous matrix, trace lithics and carbonaceous inclusions, fair visual porosity, fair to good inferred porosity, no fluorescence.
2193	2196	100	SANDSTONE: Clear to translucent, fine to medium, subangular to subrounded, well sorted, common loose, weak to firm siliceous cement, white to light grey argillaceous matrix, trace lithics and carbonaceous inclusions, fair visual porosity, fair to good inferred porosity, no fluorescence.
2196	2199	100	SANDSTONE: Clear to translucent, fine to medium, trace loose coarse grains, subangular to subrounded, well sorted, common loose, weak to firm siliceous cement, white to light grey argillaceous matrix, trace lithics and carbonaceous inclusions, fair visual porosity, fair to good inferred porosity, no fluorescence.
2199	2202	100	SANDSTONE: Clear to translucent, fine to medium, rare loose coarse grains, subangular to subrounded, well sorted, common loose, weak to firm siliceous cement, white to light grey argillaceous matrix, trace to common black lithic fragments, trace carbonaceous inclusions, fair visual porosity, fair to good inferred porosity, no fluorescence.
2202	2205	100	SANDSTONE: Clear to translucent, trace yellow, fine to medium grained, subangular to subrounded, well sorted, predominantly loose, occasional aggregates with weak to firm siliceous cement, white to light grey argillaceous matrix, common black lithic grains, trace carbonaceous fragments, fair visual porosity, fair to good inferred porosity, no fluorescence.
2205	2208	100	SANDSTONE: Clear to translucent, trace yellow, fine to medium grained, subangular to subrounded, well sorted, predominantly loose, occasional aggregates with weak to firm siliceous cement, white to light grey argillaceous matrix, common black lithic grains, trace carbonaceous fragments, fair visual porosity, fair to good inferred porosity, no fluorescence.
2208	2211	100	SANDSTONE: Clear to translucent, trace yellow, fine to medium grained, subangular to subrounded, well sorted, predominantly loose, occasional aggregates with weak to firm siliceous cement, white to light grey argillaceous matrix, common black lithic grains, trace carbonaceous fragments, fair visual porosity, fair to good inferred porosity, no fluorescence.
2211	2214	100	SANDSTONE: Clear to translucent, trace yellow, fine to medium grained, subangular to subrounded, well sorted, predominantly loose, occasional aggregates with weak to firm siliceous cement, white to light grey argillaceous matrix, common black lithic grains, trace carbonaceous fragments, fair visual porosity, fair to good inferred porosity, no fluorescence.

Depth From (m)	Depth To (m)	%	Descriptions
2214	2217	100	SANDSTONE: Clear to translucent, trace yellow, fine to medium grained, subangular to subrounded, well sorted, predominantly loose, occasional aggregates with weak to firm siliceous cement, white to light grey argillaceous matrix, common black lithic grains, trace carbonaceous fragments, fair visual porosity, fair to good inferred porosity, no fluorescence.
2217	2220	100	SANDSTONE: Clear to translucent, trace yellow, fine to medium grained, subangular to subrounded, well sorted, predominantly loose, occasional aggregates with weak to firm siliceous cement, white to light grey argillaceous matrix, common black lithic grains, trace carbonaceous fragments, fair visual porosity, fair to good inferred porosity, no fluorescence.
2220	2223	100	SANDSTONE: Clear to translucent, trace yellow, fine to medium grained, subangular to subrounded, well sorted, predominantly loose, occasional aggregates with weak to firm siliceous cement, white to light grey argillaceous matrix, common black lithic grains, trace carbonaceous fragments, fair visual porosity, fair to good inferred porosity, no fluorescence.
2223	2226	100	SANDSTONE: Clear to translucent, trace yellow to orange, fine to medium grained, subangular to subrounded, well sorted, predominantly loose, occasional aggregates with weak to firm siliceous cement, white to light grey argillaceous matrix, common black lithic grains, trace carbonaceous fragments, fair visual porosity, fair to good inferred porosity, no fluorescence.
2226	2229	100	SANDSTONE: Clear to translucent, trace yellow to orange, fine to medium grained, subangular to subrounded, well sorted, predominantly loose, trace aggregates with weak to firm siliceous cement, white to light grey argillaceous matrix, common black lithic grains, trace carbonaceous fragments, fair visual porosity, fair to good inferred porosity, no fluorescence.
2229	2232	100	SANDSTONE: Clear to translucent, trace yellow to orange, fine to medium grained, subangular to subrounded, well sorted, predominantly loose, trace aggregates with weak to firm siliceous cement, white to light grey argillaceous matrix, common black lithic grains, trace carbonaceous fragments, fair visual porosity, fair to good inferred porosity, no fluorescence.
2232	2235	100	SANDSTONE: Clear to translucent, trace yellow to orange, fine to medium grained, subangular to subrounded, well sorted, predominantly loose, trace aggregates with weak to firm siliceous cement, white to light grey argillaceous matrix, common black lithic grains, trace carbonaceous fragments, fair visual porosity, fair to good inferred porosity, no fluorescence.

Depth From (m)	Depth To (m)	%	Descriptions
2235	2238	100	SANDSTONE: Clear to translucent, trace yellow to orange, fine to medium grained, subangular to subrounded, well sorted, predominantly loose, trace aggregates with weak to firm siliceous cement, white to light grey argillaceous matrix, common black lithic grains, trace carbonaceous fragments, fair visual porosity, fair to good inferred porosity, no fluorescence.
2238	2241	100	SANDSTONE: Clear to translucent, trace yellow to orange, fine to medium grained, subangular to subrounded, well sorted, predominantly loose, trace aggregates with weak to firm siliceous cement, white to light grey argillaceous matrix, common black lithic grains, trace carbonaceous fragments, fair visual porosity, fair to good inferred porosity, no fluorescence.
2241	2244	100	SANDSTONE: Clear to translucent, trace yellow to orange, fine to medium grained, subangular to subrounded, well sorted, predominantly loose, trace aggregates with weak to firm siliceous cement, white to light grey argillaceous matrix, trace coarse angular siliceous overgrowths, common black lithic grains, trace carbonaceous fragments, fair to good visual and inferred porosity, no fluorescence.
2244	2247	100	SANDSTONE: Clear to translucent, trace yellow to orange, fine to medium grained, subangular to subrounded, well sorted, predominantly loose, trace aggregates with weak to firm siliceous cement, white to light grey argillaceous matrix, trace to common coarse angular siliceous overgrowths, common black lithic grains, trace dark grey chert fragments, trace carbonaceous fragments, fair to good visual and inferred porosity, no fluorescence.
2247	2250	100	SANDSTONE: Clear to translucent, trace yellow to orange, fine to medium grained, subangular to subrounded, well sorted, predominantly loose, rare aggregates with weak siliceous cement, light grey argillaceous matrix, trace coarse angular siliceous overgrowths, common black lithic grains, trace carbonaceous fragments, fair to good visual and inferred porosity, no fluorescence.
2250	2253	100	SANDSTONE: Clear to translucent, trace yellow to orange, fine to medium grained, subangular to subrounded, well sorted, predominantly loose, rare aggregates with weak siliceous cement, light grey argillaceous matrix, trace coarse angular siliceous overgrowths, common black lithic grains, trace carbonaceous fragments, fair to good visual and inferred porosity, no fluorescence.
2256	2259	100	SANDSTONE: Clear to translucent, trace yellow, fine to medium grained, subangular to subrounded, well sorted, predominantly loose, rare aggregates with weak siliceous cement, light grey argillaceous matrix, trace coarse angular siliceous overgrowths, common black lithic grains, fair to good visual and inferred porosity, no fluorescence.
2259	2262	100	SANDSTONE: Clear to translucent, trace yellow, fine to medium

Depth From (m)	Depth To (m)	%	Descriptions
			grained, subangular to subrounded, well sorted, predominantly loose, rare aggregates with weak siliceous cement, light grey argillaceous matrix, trace coarse angular siliceous overgrowths, common black lithic grains, fair to good visual and inferred porosity, no fluorescence.
2262	2265	100	SANDSTONE: Clear to translucent, trace yellow, fine to medium grained, subangular to subrounded, well sorted, predominantly loose, rare aggregates with weak siliceous cement, light grey argillaceous matrix, trace coarse angular siliceous overgrowths, common black lithic grains, fair to good visual and inferred porosity, no fluorescence.
2265	2268	100	SANDSTONE: Clear to translucent, trace yellow to orange, fine to medium grained, subangular to subrounded, well sorted, predominantly loose, rare aggregates with weak siliceous cement, light grey argillaceous matrix, trace coarse angular siliceous overgrowths, common to abundant black lithic grains, trace dark grey chert fragments, fair to good visual and inferred porosity, no fluorescence.
2268	2271	100	SANDSTONE: Clear to translucent, trace yellow to orange, fine to medium grained, subangular to subrounded, well sorted, predominantly loose, rare aggregates with weak siliceous cement, light grey argillaceous matrix, trace coarse angular siliceous overgrowths, common to abundant black lithic grains, fair to good visual and inferred porosity, no fluorescence.
2271	2274	100	SANDSTONE: Clear to translucent, trace yellow to orange, fine to medium grained, subangular to subrounded, well sorted, predominantly loose, rare aggregates with weak siliceous cement, light grey argillaceous matrix, trace coarse angular siliceous overgrowths, common to abundant black lithic grains, fair to good visual and inferred porosity, no fluorescence.
2274	2277	100	SANDSTONE: Clear to translucent, trace yellow to orange, fine to medium grained, subangular to subrounded, well sorted, predominantly loose, rare aggregates with weak siliceous cement, light grey argillaceous matrix, trace coarse angular siliceous overgrowths, common to abundant black lithic grains, fair to good visual and inferred porosity, no fluorescence.

Depth From (m)	Depth To (m)	%	Descriptions
2277	2280	100	SANDSTONE: Clear to translucent, trace yellow to orange, fine to medium grained, subangular to subrounded, well sorted, predominantly loose, rare aggregates with weak siliceous cement, light grey argillaceous matrix, trace coarse angular siliceous overgrowths, common to abundant black lithic grains, fair to good visual and inferred porosity, no fluorescence.
2280	2283	100	SANDSTONE: Clear to translucent, trace yellow to orange, fine to medium grained, subangular to subrounded, well sorted, predominantly loose, rare aggregates with weak siliceous cement, light grey argillaceous matrix, trace coarse angular siliceous overgrowths, common black lithic grains, fair to good visual and inferred porosity, no fluorescence.
2283	2286	100	SANDSTONE: Clear to translucent, trace yellow to orange, fine to medium grained, subangular to subrounded, well sorted, predominantly loose, rare aggregates with weak siliceous cement, light grey argillaceous matrix, trace coarse angular siliceous overgrowths, common black lithic grains, fair to good visual and inferred porosity, no fluorescence.
2286	2289	100	SANDSTONE: Clear to translucent, trace yellow to orange, fine to medium grained, subangular to subrounded, well sorted, predominantly loose, rare aggregates with weak siliceous cement, light grey argillaceous matrix, trace coarse angular siliceous overgrowths, common black lithic grains, fair to good visual and inferred porosity, no fluorescence.
2289	2292	100	SANDSTONE: Clear to translucent, fine to coarse grained, subangular to subrounded, poorly sorted, predominantly loose quartz, trace aggregates with firm siliceous cement, white slightly calcareous matrix, common coarse to very coarse angular to subangular siliceous fragments, common black lithic grains fair to poor visual porosity, fair to good inferred porosity, no fluorescence.
2292	2295	100	SANDSTONE: Clear to translucent, fine to coarse grained, subangular to subrounded, poorly sorted, predominantly loose quartz, trace aggregates with firm siliceous cement, white slightly calcareous matrix, common coarse to very coarse angular to subangular siliceous fragments, common black lithic grains, fair to poor visual porosity, fair to good inferred porosity, no fluorescence.
2295	2298	100	SANDSTONE: Clear to translucent, fine to medium grained, trace coarse grained, subangular to subrounded, moderately to poorly sorted, predominantly loose quartz, trace aggregates with firm siliceous cement, white slightly calcareous matrix, trace to common coarse to very coarse angular to subangular siliceous fragments, common black lithic grains, fair to poor visual porosity, fair to good inferred porosity, no fluorescence.

Depth From (m)	Depth To (m)	%	Descriptions
2298	2301	100	SANDSTONE: Clear to translucent, fine to medium grained, trace coarse grains, subangular to subrounded, moderately to well sorted, predominantly loose quartz, trace aggregates with firm siliceous cement, white slightly calcareous matrix, trace very coarse angular to subangular siliceous fragments, abundant pyrite nodules (also cement), common black lithic grains, fair to poor visual porosity, fair to good inferred porosity, no fluorescence.
2301	2304	100	SANDSTONE: Clear to translucent, fine to coarse grained, subangular to subrounded, poorly sorted, predominantly loose quartz, trace aggregates with firm siliceous cement, white slightly calcareous matrix, common coarse to very coarse angular to subangular siliceous fragments, common black lithic grains, trace to common pyrite nodules, fair to poor visual porosity, fair to good inferred porosity, no fluorescence.
2304	2307	100	SANDSTONE: Clear to translucent, fine to coarse grained, subangular to subrounded, poorly sorted, predominantly loose quartz, trace aggregates with firm siliceous cement, white slightly calcareous matrix, common coarse to very coarse angular to subangular siliceous fragments, common black lithic grains, trace pyrite nodules, fair to poor visual porosity, fair to good inferred porosity, no fluorescence.
2307	2310	100	SANDSTONE: Clear to translucent, fine to coarse grained, subangular to subrounded, poorly sorted, predominantly loose quartz, trace aggregates with firm siliceous cement, white slightly calcareous matrix, common coarse to very coarse angular to subangular siliceous fragments, common black lithic grains, trace pyrite nodules, fair to poor visual porosity, fair to good inferred porosity, no fluorescence.
2310	2313	100	SANDSTONE: Clear to translucent, fine to coarse grained, predominantly fine to medium grained, subangular to subrounded, moderately sorted, predominantly loose quartz, trace aggregates with firm siliceous cement, white slightly calcareous matrix, trace coarse to very coarse angular to subangular siliceous fragments, common black lithic grains, trace to common pyrite nodules, fair to poor visual porosity, fair to good inferred porosity, no fluorescence.
2313	2316	100	SANDSTONE: Clear to translucent, fine to coarse grained, predominantly fine to medium grained, subangular to subrounded, moderately sorted, predominantly loose quartz, trace aggregates with firm siliceous cement, white slightly calcareous matrix, trace coarse to very coarse angular to subangular siliceous fragments, common black lithic grains, trace to common pyrite nodules, fair to poor visual porosity, fair to good inferred porosity, no fluorescence.

Depth From (m)	Depth To (m)	%	Descriptions
2316	2319	100	SANDSTONE: Clear to translucent, fine to medium grained, trace coarse grains, subangular to subrounded, moderately to well sorted, predominantly loose quartz, trace aggregates with firm siliceous cement, white moderately calcareous matrix, rare to trace coarse to very coarse angular to subangular siliceous fragments, trace black lithic grains, rare pyrite nodules, fair to poor visual porosity, fair to good inferred porosity, no fluorescence.
2319	2322	100	SANDSTONE: Clear to translucent, fine to medium grained, subangular to subrounded, well sorted, predominantly loose quartz, trace aggregates with firm siliceous cement, trace white weakly calcareous matrix, trace black lithic grains, rare pyrite nodules, fair to poor visual porosity, fair to good inferred porosity, no fluorescence.
2322	2325	100	SANDSTONE: Clear to translucent, fine to medium grained, subangular to subrounded, well sorted, predominantly loose quartz, trace aggregates with firm siliceous cement, trace white weakly calcareous matrix, trace black lithic grains, rare pyrite nodules, fair to poor visual porosity, fair to good inferred porosity, no fluorescence.
2325	2328	100	SANDSTONE: Clear to translucent, fine to medium grained, subangular to subrounded, well sorted, predominantly loose quartz, trace aggregates with firm siliceous cement, trace white weakly calcareous matrix, trace black lithic grains, rare pyrite nodules, fair to poor visual porosity, fair to good inferred porosity, no fluorescence.
2328	2331	100	SANDSTONE: Clear to translucent, fine to medium grained, subangular to subrounded, well sorted, predominantly loose quartz, trace aggregates with firm siliceous cement, trace white weakly calcareous matrix, trace black lithic grains, rare pyrite nodules, fair to poor visual porosity, fair to good inferred porosity, no fluorescence.
2331	2334	100	SANDSTONE: Clear to translucent, fine to medium grained, subangular to subrounded, well sorted, predominantly loose quartz, rare aggregates with firm white siliceous cement, trace white moderately calcareous matrix, trace black lithic grains, trace pyrite nodules, fair to poor visual porosity, fair to good inferred porosity, no fluorescence.
2334	2337	100	SANDSTONE: Clear to translucent, fine to medium grained, subangular to subrounded, well sorted, predominantly loose quartz, rare aggregates with firm white siliceous cement, trace white moderately calcareous matrix, trace black lithic grains, trace pyrite nodules, fair to poor visual porosity, fair to good inferred porosity, no fluorescence.



Depth From (m)	Depth To (m)	%	Descriptions
2337	2340	100	SANDSTONE: Clear to translucent, fine to medium grained, subangular to subrounded, well sorted, predominantly loose quartz, rare aggregates with firm white calcareous cement, trace white moderately calcareous matrix, trace black lithic grains, trace pyrite nodules, fair to poor visual porosity, fair to good inferred porosity, no fluorescence.
2340	2343	100	SANDSTONE: Clear to translucent, fine to medium grained, rare coarse, subangular to subrounded, moderately well sorted, predominantly loose quartz, rare aggregates with firm white calcareous cement, trace white moderately calcareous matrix, trace black lithic grains, trace pyrite nodules, fair to poor visual porosity, fair to good inferred porosity, no fluorescence.
2343	2346	100	SANDSTONE: Clear to translucent, fine to medium grained, rare coarse, subangular to subrounded, moderately well sorted, predominantly loose quartz, rare aggregates with firm white calcareous cement, trace white moderately calcareous matrix, trace black lithic grains, trace pyrite nodules, fair to poor visual porosity, fair to good inferred porosity, no fluorescence.
2346	2349	100	SANDSTONE: Clear to translucent, fine to medium grained, rare coarse, subangular to subrounded, moderately well sorted, predominantly loose quartz, rare aggregates with firm white calcareous cement, trace white moderately calcareous matrix, trace black lithic grains, trace pyrite nodules, fair to poor visual porosity, fair to good inferred porosity, no fluorescence.
2349	2352	100	SANDSTONE: Clear to translucent, fine to medium grained, rare coarse, subangular to subrounded, moderately well sorted, predominantly loose quartz, rare aggregates with firm white calcareous cement, trace white moderately calcareous matrix, trace black lithic grains, trace pyrite nodules, fair to poor visual porosity, fair to good inferred porosity, no fluorescence.
2352	2355	100	SANDSTONE: Clear to translucent, fine to medium grained, rare coarse, subangular to subrounded, moderately well sorted, predominantly loose quartz, rare aggregates with firm white calcareous cement, trace white moderately calcareous matrix, trace black lithic grains, trace pyrite nodules, fair to poor visual porosity, fair to good inferred porosity, no fluorescence.
2355	2358	90	SANDSTONE: Clear to translucent, fine to medium grained, rare coarse, subangular to subrounded, moderately well sorted, predominantly loose quartz, rare aggregates with firm white calcareous cement, trace white moderately calcareous matrix, trace black lithic grains, trace pyrite nodules, fair to poor visual porosity, fair to good inferred porosity, no fluorescence.
		10	SILTSTONE: Medium to dark grey to olive brown, arenaceous, carbonaceous inclusions, firm to hard, sub-blocky.

Depth From (m)	Depth To (m)	%	Descriptions
2358	2361	90	SANDSTONE: Clear to translucent, fine to medium grained, rare coarse, subangular to subrounded, moderately well sorted, predominantly loose quartz, rare aggregates with firm white calcareous cement, trace white moderately calcareous matrix, trace black lithic grains, trace pyrite nodules, fair to poor visual porosity, fair to good inferred porosity, no fluorescence.
		10	SILTSTONE: Medium to dark grey to olive brown, arenaceous, carbonaceous inclusions, firm to hard, sub-blocky.
2361	2364	90	SANDSTONE: Clear to translucent pale grey-white, very fine-very coarse predominately fine to coarse, subangular to angular, very poorly sorted, abundant aggregates, common loose grains, moderately to strong siliceous/calcareous cement, white argillaceous matrix, common carbonaceous inc, common lithic fragments, trace glauconite grains/inc, occasionally pale brown, hard, blocky, calcite, friable to hard, poorly visual and inferred porosity, no fluorescence.
		10	SILTSTONE: Medium to dark grey to olive brown, arenaceous grading to very fine sandstone in part, abundant carbonaceous inclusions, firm to hard, sub-blocky to sub-fissile.
2364	2367	80	SANDSTONE: Clear to translucent pale grey-white, very fine-very coarse predominately fine to coarse, subangular to angular, very poorly sorted, abundant aggregates, common loose grains, moderately to strong siliceous/calcareous cement, white argillaceous matrix, common carbonaceous inc, common lithic fragments, trace glauconite grains/inc, occasionally pale brown, hard, blocky, calcite, friable to hard, poorly visual and inferred porosity, no fluorescence.
		20	SILTSTONE: Medium to dark grey to olive brown, arenaceous grading to very fine sandstone in part, abundant carbonaceous inclusions, firm to hard, sub-blocky to sub-fissile.
2367	2370	40	SANDSTONE: Clear to translucent pale grey-white, very fine-very coarse predominately fine to coarse, subangular to angular, very poorly sorted, abundant aggregates, common loose grains, moderately to strong siliceous/calcareous cement, white argillaceous matrix, common carbonaceous inc, common lithic fragments, trace glauconite grains/inc, occasionally pale brown, hard, blocky, calcite, friable to hard, poorly visual and inferred porosity, no fluorescence.
		60	SILTSTONE: Medium to dark grey to olive brown, arenaceous grading to very fine sandstone in part, abundant carbonaceous inclusions, firm to hard, sub-blocky to sub-fissile.

Depth From (m)	Depth To (m)	%	Descriptions
2370	2373	20	SANDSTONE: Clear to translucent pale grey-white, very fine-very coarse predominately fine to coarse, subangular to angular, very poorly sorted, abundant aggregates, common loose grains, moderately to strong siliceous/calcareous cement, white argillaceous matrix, common carbonaceous inc, common lithic fragments, trace glauconite grains/inc, occasionally pale brown, hard, blocky, calcite, friable to hard, poorly visual and inferred porosity, no fluorescence.
		80	SILTSTONE: Medium to dark grey to olive brown, arenaceous grading to very fine sandstone in part, abundant carbonaceous inclusions, firm to hard, sub-blocky to sub-fissile.
2373	2376	30	SANDSTONE: Clear to translucent pale grey-white, very fine-very coarse predominately fine to coarse, subangular to angular, very poorly sorted, abundant aggregates, common loose grains, moderately to strong siliceous/calcareous cement, white argillaceous matrix, common carbonaceous inc, common lithic fragments, trace glauconite grains/inc, occasionally pale brown, hard, blocky, calcite, friable to hard, poorly visual and inferred porosity, no fluorescence.
		70	SILTSTONE: Medium to dark grey to olive brown, arenaceous grading to very fine sandstone in part, abundant carbonaceous inclusions, firm to hard, sub-blocky to sub-fissile.
2376	2379	60	SANDSTONE: Light grey to white, dominantly very fine to medium with locally common coarse grains, subrounded to angular, poorly sorted, weak to moderately siliceous cement, abundant fine grained aggregates, abundant white argillaceous matrix, common carbonaceous inclusions, friable to hard, poor visual inferred porosity, no fluorescence.
		40	SILTSTONE: Medium to dark grey to olive brown, arenaceous grading to very fine sandstone in part, abundant carbonaceous inclusions, firm to hard, sub-blocky to sub-fissile.
2379	2382	60	SANDSTONE: Light grey to white, dominantly very fine to medium with locally common coarse grains, subrounded to angular, poorly sorted, weak to moderately siliceous cement, abundant fine grained aggregates, abundant white argillaceous matrix, common carbonaceous inclusions, friable to hard, poor visual inferred porosity, no fluorescence.
		40	SILTSTONE: Medium to dark grey to olive brown, arenaceous grading to very fine sandstone in part, abundant carbonaceous inclusions, firm to hard, sub-blocky to sub-fissile.

Depth From (m)	Depth To (m)	%	Descriptions
2382	2385	50	SANDSTONE: Light grey to white, dominantly very fine to medium with locally common coarse grains, subrounded to angular, poorly sorted, weak to moderately siliceous cement, abundant fine grained aggregates, abundant white argillaceous matrix, common carbonaceous inclusions, friable to hard, poor visual inferred porosity, no fluorescence.
		50	SILTSTONE: Medium to dark grey to olive brown, arenaceous grading to very fine sandstone in part, abundant carbonaceous inclusions, firm to hard, sub-blocky to sub-fissile.
2385	2388	60	SANDSTONE: Light grey to white, dominantly very fine to medium with locally common coarse grains, subrounded to angular, poorly sorted, weak to moderately siliceous cement, abundant fine grained aggregates, abundant white argillaceous matrix, common carbonaceous inclusions, friable to hard, poor visual inferred porosity, no fluorescence.
		40	SILTSTONE: Medium to dark grey to olive brown, arenaceous grading to very fine sandstone in part, abundant carbonaceous inclusions, firm to hard, sub-blocky to sub-fissile.
2388	2391	60	SANDSTONE: Light grey to white, dominantly very fine to medium with locally common coarse grains, subrounded to angular, poorly sorted, weak to moderately siliceous cement, abundant fine grained aggregates, abundant white argillaceous matrix, common carbonaceous inclusions, friable to hard, poor visual inferred porosity, no fluorescence.
		40	SILTSTONE: Medium to dark grey to olive brown, arenaceous grading to very fine sandstone in part, abundant carbonaceous inclusions, firm to hard, sub-blocky to sub-fissile.
2391	2394	40	SANDSTONE: Light grey to white, dominantly very fine to medium with locally common coarse grains, subrounded to angular, poorly sorted, weak to moderately siliceous cement, abundant fine grained aggregates, abundant white argillaceous matrix, common carbonaceous inclusions, friable to hard, poor visual inferred porosity, no fluorescence.
		60	SILTSTONE: Medium to dark grey to olive brown, arenaceous grading to very fine sandstone in part, abundant carbonaceous inclusions, firm to hard, sub-blocky to sub-fissile.
2394	2397	40	SANDSTONE: Light grey to white, dominantly very fine to medium with locally common coarse grains, subrounded to angular, poorly sorted, weak to moderately siliceous cement, abundant fine grained aggregates, abundant white argillaceous matrix, common carbonaceous inclusions, friable to hard, poor visual inferred porosity, no fluorescence.

Depth From (m)	Depth To (m)	%	Descriptions
		60	SILTSTONE: Medium to dark grey to olive brown, arenaceous grading to very fine sandstone in part, abundant carbonaceous inclusions, firm to hard, sub-blocky to sub-fissile.
2397	2400	60	SANDSTONE: Light grey to white, dominantly very fine to medium with locally common coarse grains, subrounded to angular, poorly sorted, weak to moderately siliceous cement, abundant fine grained aggregates, abundant white argillaceous matrix, common carbonaceous inclusions, friable to hard, poor visual inferred porosity, no fluorescence.
		40	SILTSTONE: Medium to dark grey to olive brown, arenaceous grading to very fine sandstone in part, abundant carbonaceous inclusions, firm to hard, sub-blocky to sub-fissile.
2400	2404	60	SANDSTONE: Light grey to white, dominantly very fine to medium with locally common coarse grains, subrounded to angular, poorly sorted, weak to moderately siliceous cement, abundant fine grained aggregates, abundant white argillaceous matrix, common carbonaceous inclusions, friable to hard, poor visual inferred porosity, no fluorescence.
		40	SILTSTONE: Medium to dark grey to olive brown, arenaceous grading to very fine sandstone in part, abundant carbonaceous inclusions, firm to hard, sub-blocky to sub-fissile.

**TOTAL DEPTH DRILLER : 2404 m**

**SECTION 2.3: CATALOGUE OF WELLSITE SAMPLES**  
**CASINO-4DW1**

**SAMPLE MANIFEST**

CLIENT: SANTOS  
 WELL: CASINO 4DW1  
 TD: 1662m MD  
 CONTAINER:

**WASHED & DRIED CUTTINGS – 6 SETS IN PLASTIC BAGS**

2 SETS : SANTOS ( 100 grams )  
 1 SET : A.W.E ( 100grams )  
 1 SET : MITSUI ( 100grams )  
 1 SET : DNRE ( 200grams )  
 1 SET : GEOSCIENCE ( 200 grams )

FREQUENCY 6m SAMPLES 1308m – 1662m

**SANTOS (2 SETS)----- 2 small boxes taped together**

Box	#	From (m)	To (m)
<b>1</b>	1	1308	1566
	2	1556	1662

**A.W.E.----- 2 small boxes taped together**

Box	#	From (m)	To (m)
<b>1</b>	1	1308	1566
	2	1556	1662

**MITSUI-----2 small boxes taped together**

Box	#	From (m)	To (m)
<b>1</b>	1	1308	1566
	2	1556	1662

**DNRE-----2 small boxes taped together**

Box	#	From (m)	To (m)
<b>1</b>	1	1308	1566
	2	1556	1662

**GEOSCIENCE-----2 small boxes taped together**

<b>Box</b>	<b>#</b>	<b>From (m)</b>	<b>To (m)</b>
<b>1</b>	1	1308	1566
	2	1556	1662

SAMPLEX TRAYS - 3 SETS FOR SANTOS

**1 Box : 1308m to 1662m TD**

SUMMARY:

NUMBER OF BOXES:        WASHED & DRIED: 6  
                                       SAMPLEX TRAYS : 1

TOTAL NUMBER OF BOXES :                                7



## **SECTION 2.3: CATALOGUE OF WELLSITE SAMPLES**

### **CASINO-4DW2**

**SAMPLE MANIFEST**

CLIENT: SANTOS  
 WELL: CASINO 4DW2  
 TD: 2404m MD  
 CONTAINER: 266

**WASHED & DRIED CUTTINGS – 6 SETS IN PLASTIC BAGS**

2 SETS : SANTOS ( 100 grams )  
 1 SET : A.W.E ( 100grams )  
 1 SET : MITSUI ( 100grams )  
 1 SET : DNRE ( 200grams )  
 1 SET : GEOSCIENCE ( 200 grams )

FREQUENCY 6m SAMPLES 1110m – 1842m  
 3m SAMPLES 1842m – 2404m

**SANTOS (2 SETS)----- 4 boxes**

Box	#	From (m)	To (m)
1	1	1110	1512
	2	1512	1881
	3	1881	2031
	4	2031	2187

Box	#	From (m)	To (m)
2	5	2187	2352
	6	2352	2404

**A.W.E.----- 2 boxes**

Box	#	From (m)	To (m)
1	1	1110	1512
	2	1512	1881
	3	1881	2031
	4	2031	2187

Box	#	From (m)	To (m)
2	5	2187	2352
	6	2352	2404

**MITSUI-----2 boxes**

Box	#	From (m)	To (m)
1	1	1110	1512
	2	1512	1881
	3	1881	2031
	4	2031	2187

Box	#	From (m)	To (m)
2	5	2187	2352
	6	2352	2404

**DNRE-----2 boxes**

Box	#	From (m)	To (m)
<b>1</b>	1	1110	1344
	2	1344	1578
	3	1578	1796
	4	1796	1944

Box	#	From (m)	To (m)
<b>2</b>	5	1944	2079
	6	2079	2214
	7	2214	2343
	8	2343	2404

**GEOSCIENCE-----2 boxes**

Box	#	From (m)	To (m)
<b>1</b>	1	1110	1344
	2	1344	1578
	3	1578	1796
	4	1796	1944

Box	#	From (m)	To (m)
<b>2</b>	5	1944	2079
	6	2079	2214
	7	2214	2343
	8	2343	2404

**SAMPLEX TRAYS - 3 SETS FOR SANTOS**

**3 Boxes : 1100m to 2404m TD**

**MUD SAMPLES FOR SANTOS**

1Box: Contains 7 1L Samples

**SUMMARY:**

NUMBER OF BOXES:	WASHED & DRIED:	12
	SAMPLEX TRAYS :	3
	MUD SAMPLES:	1
TOTAL NUMBER OF BOXES :		16

## **SECTION 3.1: WIRELINE LOGGING REPORTS**

**Wireline logs were not run on Casino-4DW1 or Casino-4DW2**

**SECTION 3.2: MWD / LWD END OF WELL REPORT  
(Sperry Sun)**



**HALLIBURTON**  
**Sperry Drilling Services**

**End of Well Report**

**for**

**Santos Ltd**

**Casino-4DW1 & DW2**

**Rig: Ocean Patriot**

**Field: Casino**

**Country: Australia**

**Job No: AU-FE -0003530356  
& AU-FE -0003735541**

**Date: 21<sup>st</sup> May 2005**

**HALLIBURTON**

## Table of Contents

1. General Information
2. Operational Overview
3. Summary of MWD Runs
4. Bitrun Summary
5. Directional Survey Data
6. Service Interrupt Report

## General Information

Company:	Santos Ltd	
Rig:	Ocean Patriot	
Well:	Casino-4 DW1 and DW2	
Field:	Casino	
Country:	Australia	
API Number:		
Sperry-Sun Job Number:	AU-FE-3530356 and 3735541	
Job start date:	21-May-05	
Job end date:	04-Jun-05	
North reference:	Grid	
Declination:	10.942	deg
Dip angle:	-69.993	deg
Total magnetic field:	60916	nT
Date of magnetic data:	08-May-05	
Wellhead coordinates N:	38 deg. 47 min 13.030 sec South	
Wellhead coordinates E:	142 deg. 41 min 54.490 sec East	
Vertical section direction:	289.9	deg
MWD Engineers:	A.Rule	J.Nicolson
	M.Saunders	B.Cooper
Company Representatives:	C.Wise	
	R.King	
Company Geologist:	R. Subramanian	
Lease Name:	Vic P-44	
Unit Number:	197	
State:	Victoria	
County:		



## Operational Overview

Sperry Drilling Services, a division of Halliburton, was contracted by Santos Ltd to provide Surveying and Logging While Drilling (LWD) services on the wells, Casino-4DW1 and Casino-4DW2, located in the Bass Strait, offshore Victoria.

The development well was kicked off from the pilot hole Casino-4.

### Casino-4DW1 12 1/4" Hole Section

The hole section was drilled with a rotary steerable assembly and a logging while drilling (LWD) tool was used to provide realtime and recorded drilling and formation evaluation data. The tool incorporated a positive pulser, Geo-Pilot Rotary Steerable Tool, Directional Module (DM), Dual Gamma Ray (DGR), Electromagnetic Wave Resistivity (EWR) and a Pressure While Drilling (PWD) tool to enable communications with the Geopilot.

The well was drilled to 1662.0 mMDRT using the Geo-Pilot rotary steerable tool but the required hole angle could not be built. The rotary steerable assembly was changed out for a mud motor with a 1.5° bend. The new BHA was unable to go down the casing and the well was plugged back and a new sidetrack drilled.

### Casino-4DW2 12 1/4" Hole Section

The hole section was kicked off with two mud motor runs and then a Geo-Pilot rotary steerable assembly was used to build hole angle to 78° at the top of the reservoir. The hole was logged with the same LWD tool as DW1 with the addition of Gamma Ray at Bit (GABI) to provide realtime and recorded drilling and formation evaluation data. This section was drilled to 1998.0 mMDRT.

### Casino-4DW2 8 1/2" Hole Section

The section was drilled in one bit run using a Geo-Pilot rotary steerable assembly to build hole angle and steer through the reservoir. The hole was logged with a LWD tool that incorporated a positive pulser, DGR, EWR, PWD, DM, Stabilised Litho-Density (SLD) and Compensated Neutron Porosity (CNP).

The well was drilled to a total depth of 2404.0 mMDRT.



## Bitrun Summary

Run Time Data		Drilling Data		Mud Data																																																																							
MWD Run :	0500	Start Depth :	1308.00 m	Mud Type :	KCl/Polymer																																																																						
Rig Bit No:	7	End Depth :	1662.00 m	Weight / Visc :	1.29	sg /	58.00 spqt																																																																				
Hole Size :	311.00 mm	Footage :	354.00 m	Chlorides :	47000 ppm																																																																						
Run Start :	20-May-05 19:36	Avg. Flow Rate :	965 gpm	PV / YP :	22.00	cp /	38.00 lhf2																																																																				
Run End :	23-May-05 00:33	Avg. RPM :	147 rpm	Solids/Sand :	13	% /	0.01 %																																																																				
BRT Hrs :	52.94	Avg. WOB :	16.40 klb	%Oil / O:W:	N/A	% /	N/A																																																																				
Circ. Hrs :	30.30	Avg. ROP :	17.28 m/hr	pH/Fluid Loss:	9.20	pH /	3.80 mptm																																																																				
Oper. Hrs :	52.94	Avg. SPP :	3036 psig	Max. Temp. :	67.00 degC																																																																						
MWD Schematics		BHA Schematics																																																																									
<p>(7) Mk8 Pulser 1200 system SN: 8270</p> <p>(6) DM SN: 10581139 19.90 m From Bit</p> <p>(5) HCIM SN: 110349</p> <p>(4) PWD SN: 104432 15.98 m From Bit</p> <p>(3) EWR-P4 SN: 123048 13.47 m From Bit</p> <p>(2) DGR SN: 084171 11.14 m From Bit</p> <p>(1) GeoPilot SN: GP1225TL062 5.71 m From Bit</p>		<table border="1"> <thead> <tr> <th>Component</th> <th>Length (m)</th> <th>O.D. (mm)</th> <th>I.D. (mm)</th> </tr> </thead> <tbody> <tr> <td>(8)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(7)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(6)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(5)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(4)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(3)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(2)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(1)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>08. HWDP</td> <td>45.59</td> <td>127.000</td> <td>79.400</td> </tr> <tr> <td>07. Cross Over Sub</td> <td>1.02</td> <td>190.500</td> <td>73.025</td> </tr> <tr> <td>06. Drilling Jars</td> <td>9.67</td> <td>206.375</td> <td>76.200</td> </tr> <tr> <td>05. HWDP</td> <td>84.30</td> <td>127.000</td> <td>77.756</td> </tr> <tr> <td>04. Cross Over Sub</td> <td>1.09</td> <td>203.200</td> <td>71.438</td> </tr> <tr> <td>03. Float Sub</td> <td>1.05</td> <td>203.200</td> <td>76.200</td> </tr> <tr> <td>02. MWD</td> <td>23.67</td> <td>206.829</td> <td>75.473</td> </tr> <tr> <td>01. Security DBS FS2663 (PDC)</td> <td>0.64</td> <td>311.000</td> <td>76.200</td> </tr> </tbody> </table>						Component	Length (m)	O.D. (mm)	I.D. (mm)	(8)				(7)				(6)				(5)				(4)				(3)				(2)				(1)				08. HWDP	45.59	127.000	79.400	07. Cross Over Sub	1.02	190.500	73.025	06. Drilling Jars	9.67	206.375	76.200	05. HWDP	84.30	127.000	77.756	04. Cross Over Sub	1.09	203.200	71.438	03. Float Sub	1.05	203.200	76.200	02. MWD	23.67	206.829	75.473	01. Security DBS FS2663 (PDC)	0.64	311.000	76.200
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Comments				MWD Performance																																																																							
Kicked off with Geopilot at 1308.0 mMDRT. Unable to build angle with the Geo-Pilot. Pulled out to pick up a motor.				Tool OD / Type : 203.00 mm / P4M MWD Real-time%: 99.00 % MWD Recorded%: 100.00 % Min. Inc. : 5.69 deg / 1318.55 m Max. Inc. : 39.79 deg / 1605.77 m Final Az. : 313.00 deg Max Op. Press. : 2983 psig																																																																							

## Bitrun Summary

Run Time Data		Drilling Data		Mud Data																																																																									
MWD Run :	0600	Start Depth :	1662.00 m	Mud Type :	KCl/Polymer																																																																								
Rig Bit No:	8	End Depth :	1662.00 m	Weight / Visc :	1.29	sg /	65.00 spqt																																																																						
Hole Size :	311.00 mm	Footage :	0.00 m	Chlorides :	48000	ppm																																																																							
Run Start :	23-May-05 05:00	Avg. Flow Rate :	N/A gpm	PV / YP :	19.00	cp /	37.00 lhf2																																																																						
Run End :	23-May-05 08:35	Avg. RPM :	N/A rpm	Solids/Sand :	13	% /	0.1 %																																																																						
BRT Hrs :	3.58	Avg. WOB :	N/A klb	%Oil / O:W:	N/A	% /	N/A																																																																						
Circ. Hrs :	0.00	Avg. ROP :	N/A m/hr	pH/Fluid Loss:	9.00	pH /	3.20 mptm																																																																						
Oper. Hrs :	3.58	Avg. SPP :	N/A psig	Max. Temp. :	N/A	degC																																																																							
MWD Schematics		BHA Schematics																																																																											
<p>(7) 7. Mk8 Pulser 1200 system SN: 8270</p> <p>(6) 6. DM SN: 10581139 24.24 m From Bit</p> <p>(5) 5. HCIM SN: 163155</p> <p>(4) 4. PWD SN: 161846 19.06 m From Bit</p> <p>(3) 3. EWR-P4</p> <p>(2) 2. DGR SN: 45162 16.54 m From Bit</p> <p>(1) 1. DDS SN: 151078 14.20 m From Bit</p> <p>0.00 m From Bit</p>		<table border="1"> <thead> <tr> <th>Component</th> <th>Length (m)</th> <th>O.D. (mm)</th> <th>I.D. (mm)</th> </tr> </thead> <tbody> <tr><td>(10)</td><td></td><td></td><td></td></tr> <tr><td>(9)</td><td></td><td></td><td></td></tr> <tr><td>(8)</td><td></td><td></td><td></td></tr> <tr><td>(7)</td><td></td><td></td><td></td></tr> <tr><td>(6)</td><td>10. HWDP</td><td>45.59</td><td>127.000</td><td>76.200</td></tr> <tr><td>(5)</td><td>09. Drilling Jars</td><td>9.87</td><td>165.100</td><td>73.025</td></tr> <tr><td>(4)</td><td>08. HWDP</td><td>83.17</td><td>127.000</td><td>79.375</td></tr> <tr><td>(3)</td><td>07. Cross Over Sub</td><td>1.09</td><td>165.100</td><td>71.438</td></tr> <tr><td>(2)</td><td>06. MWD</td><td>14.32</td><td>203.200</td><td>81.679</td></tr> <tr><td>(1)</td><td>05. Cross Over Sub</td><td>1.22</td><td>203.200</td><td>100.013</td></tr> <tr><td></td><td>04. Integral Blade Stabilizer</td><td>1.90</td><td>203.200</td><td>76.200</td></tr> <tr><td></td><td>03. Float Sub</td><td>1.05</td><td>215.900</td><td>76.200</td></tr> <tr><td></td><td>02. 9-5/8" SperryDrill Lobe 3/4</td><td>8.56</td><td>244.602</td><td>76.200</td></tr> <tr><td></td><td>01. Smith MA89PX (PDC)</td><td>0.38</td><td>311.000</td><td>25.400</td></tr> </tbody> </table>						Component	Length (m)	O.D. (mm)	I.D. (mm)	(10)				(9)				(8)				(7)				(6)	10. HWDP	45.59	127.000	76.200	(5)	09. Drilling Jars	9.87	165.100	73.025	(4)	08. HWDP	83.17	127.000	79.375	(3)	07. Cross Over Sub	1.09	165.100	71.438	(2)	06. MWD	14.32	203.200	81.679	(1)	05. Cross Over Sub	1.22	203.200	100.013		04. Integral Blade Stabilizer	1.90	203.200	76.200		03. Float Sub	1.05	215.900	76.200		02. 9-5/8" SperryDrill Lobe 3/4	8.56	244.602	76.200		01. Smith MA89PX (PDC)	0.38	311.000	25.400
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Comments				MWD Performance																																																																									
<p>Picked up a mud motor and RIH. Unable to go down casing. POOH and racked in derrick. Picked up cement stinger and plugged back.</p>				<p>Tool OD / Type : 203.00 mm / P4M</p> <p>MWD Real-time%: N/A %</p> <p>MWD Recorded%: N/A %</p> <p>Min. Inc. : N/A deg / N/A m</p> <p>Max. Inc. : N/A deg / N/A m</p> <p>Final Az. : N/A deg</p> <p>Max Op. Press. : 1813 psig</p>																																																																									

## Bitrun Summary

Run Time Data		Drilling Data		Mud Data				
MWD Run :	0700	Start Depth :	1200.00 m	Mud Type :	KCl/Polymer			
Rig Bit No:	10	End Depth :	1265.00 m	Weight / Visc :	1.27	sg /	60.00 spqt	
Hole Size :	311.00 mm	Footage :	65.00 m	Chlorides :	47000 ppm			
Run Start :	24-May-05 15:01	Avg. Flow Rate :	826 gpm	PV / YP :	16.00	cp /	35.00 lhf2	
Run End :	25-May-05 16:35	Avg. RPM :	76 rpm	Solids/Sand :	12	% /	0.1 %	
BRT Hrs :	25.55	Avg. WOB :	4.10 klb	%Oil / O:W:	N/A	% /	N/A	
Circ. Hrs :	7.37	Avg. ROP :	17.40 m/hr	pH/Fluid Loss:	10.50	pH /	3.40 mptm	
Oper. Hrs :	25.55	Avg. SPP :	2276 psig	Max. Temp. :	22.00 degC			
MWD Schematics		BHA Schematics						
						Length	O.D.	I.D.
						(m)	(mm)	(mm)
(7)		(8)	Component					
(6)	7. Mk8 Pulser 1200 System SN: 8270	(7)						
(5)	6. DM SN: 581139	(6)						
(4)	20.13 m From Bit	(5)	08. HWDP	46.07	127.000	79.400		
(3)	5. HCIM SN: 163155	(4)	07. Drilling Jars	9.87	203.200	76.200		
(2)	4. PWD SN: 161846	(3)	06. HWDP	82.69	127.000	77.788		
(1)	16.17 m From Bit	(2)	05. Cross Over Sub	1.09	203.200	76.200		
	3. EWR-P4 SN: 45162	(1)	04. Float Sub	1.05	203.200	76.200		
	13.65 m From Bit		03. MWD	23.74	206.829	75.473		
	2. DGR SN: 151078		02. Integral Blade Stabilizer	0.46	203.200	76.200		
	11.31 m From Bit		01. TCI MXCS03	0.34	311.000	76.200		
	1. GeoPilot SN: GP1225TL062							
	6.23 m From Bit							
Comments				MWD Performance				
MWD tool failed pre-run confidence test. Picked up backup tool. RIH, unable to kick off from 1200.0 mMDRT. POOH at 1265.0 mMDRT to set another plug.				Tool OD / Type :	203.00	mm /	P4M	
				MWD Real-time%:	98.50	%		
				MWD Recorded%:	100.00	%		
				Min. Inc. :	4.40	deg /	1230.61 m	
				Max. Inc. :	4.44	deg /	1202.14 m	
				Final Az. :	205.11	deg		
		Max Op. Press. :	2320	psig				

## Bitrun Summary

Run Time Data		Drilling Data		Mud Data																																															
MWD Run :	0800	Start Depth :	1146.00 m	Mud Type :	KCl/Polymer																																														
Rig Bit No:	12	End Depth :	1157.00 m	Weight / Visc :	1.27	sg /	68.00 spqt																																												
Hole Size :	311.00 mm	Footage :	11.00 m	Chlorides :	46000 ppm																																														
Run Start :	26-May-05 12:47	Avg. Flow Rate :	866 gpm	PV / YP :	18.00	cp /	42.00 lhf2																																												
Run End :	27-May-05 10:26	Avg. RPM :	167 rpm	Solids/Sand :	12	% /	0.01 %																																												
BRT Hrs :	21.65	Avg. WOB :	6.00 klb	%Oil / O:W :	N/A	% /	N/A																																												
Circ. Hrs :	13.27	Avg. ROP :	1.10 m/hr	pH/Fluid Loss:	11.00	pH /	4.40 mptm																																												
Oper. Hrs :	21.65	Avg. SPP :	2681 psig	Max. Temp. :	57.00 degC																																														
MWD Schematics		BHA Schematics																																																	
<p>(6) 6. Mk8 Pulser 1200 System SN: 8270 0.00 m From Bit</p> <p>(5) 5. DM SN: 581139 20.91 m From Bit</p> <p>(4) 4. HCIM SN: 163155</p> <p>(3) 3. PWD SN: 161846 16.95 m From Bit</p> <p>(2) 2. EWR-P4 SN: 45162 14.43 m From Bit</p> <p>(1) 1. DGR SN: 151078 12.09 m From Bit</p>		<table border="1"> <thead> <tr> <th>Component</th> <th>Length (m)</th> <th>O.D. (mm)</th> <th>I.D. (mm)</th> </tr> </thead> <tbody> <tr><td>10. HWDP</td><td>46.12</td><td>127.000</td><td>79.400</td></tr> <tr><td>09. Drilling Jars</td><td>9.87</td><td>203.200</td><td>76.200</td></tr> <tr><td>08. HWDP</td><td>138.37</td><td>127.000</td><td>79.400</td></tr> <tr><td>07. Cross Over Sub</td><td>1.09</td><td>203.200</td><td>70.000</td></tr> <tr><td>06. Drill Collar</td><td>26.59</td><td>203.200</td><td>76.200</td></tr> <tr><td>05. MWD</td><td>17.31</td><td>203.200</td><td>76.396</td></tr> <tr><td>04. Cross Over Sub</td><td>1.22</td><td>203.200</td><td>70.000</td></tr> <tr><td>03. Float Sub</td><td>1.05</td><td>203.200</td><td>70.000</td></tr> <tr><td>02. 9-5/8" SperryDrill Lobe 3/4</td><td>8.56</td><td>244.602</td><td>70.000</td></tr> <tr><td>01. HYCALOG DS43GTS (PDC)</td><td>0.17</td><td>311.000</td><td>76.200</td></tr> </tbody> </table>						Component	Length (m)	O.D. (mm)	I.D. (mm)	10. HWDP	46.12	127.000	79.400	09. Drilling Jars	9.87	203.200	76.200	08. HWDP	138.37	127.000	79.400	07. Cross Over Sub	1.09	203.200	70.000	06. Drill Collar	26.59	203.200	76.200	05. MWD	17.31	203.200	76.396	04. Cross Over Sub	1.22	203.200	70.000	03. Float Sub	1.05	203.200	70.000	02. 9-5/8" SperryDrill Lobe 3/4	8.56	244.602	70.000	01. HYCALOG DS43GTS (PDC)	0.17	311.000	76.200
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Comments				MWD Performance																																															
Kicked off 1146.0 mMDRT. POOH at 1157.0 mMDRT to change the bit.				Tool OD / Type : 203.00 mm / P4M MWD Real-time%: 99.25 % MWD Recorded%: 100.00 % Min. Inc. : 3.91 deg / 1133.97 m Max. Inc. : 3.91 deg / 1133.97 m Final Az. : 191.68 deg Max Op. Press. : 2086 psig																																															

## Bitrun Summary

Run Time Data		Drilling Data		Mud Data																																																																														
MWD Run :	0900	Start Depth :	1157.00 m	Mud Type :	KCl/Polymer																																																																													
Rig Bit No:	13	End Depth :	1274.00 m	Weight / Visc :	1.27	sg /	60.00 spqt																																																																											
Hole Size :	311.00 mm	Footage :	117.00 m	Chlorides :	46000	ppm																																																																												
Run Start :	27-May-05 11:09	Avg. Flow Rate :	843 gpm	PV / YP :	16.00	cp /	37.00 lhf2																																																																											
Run End :	28-May-05 15:49	Avg. RPM :	72 rpm	Solids/Sand :	13	% /	0.1 %																																																																											
BRT Hrs :	28.67	Avg. WOB :	19.20 klb	%Oil / O:W:	N/A	% /	N/A																																																																											
Circ. Hrs :	15.58	Avg. ROP :	8.80 m/hr	pH/Fluid Loss:	10.80	pH /	4.20 mptm																																																																											
Oper. Hrs :	28.67	Avg. SPP :	2625 psig	Max. Temp. :	58.00	degC																																																																												
MWD Schematics		BHA Schematics																																																																																
<p>6. Mk8 Pulser 1200 System SN: 8270 0.00 m From Bit</p> <p>5. DM SN: 581139 22.98 m From Bit</p> <p>4. HCIM SN: 163155</p> <p>3. PWD SN: 161846 19.02 m From Bit</p> <p>2. EWR-P4 SN: 45162 16.50 m From Bit</p> <p>1. DGR SN: 151078 14.16 m From Bit</p>		<table border="1"> <thead> <tr> <th>Component</th> <th>Length (m)</th> <th>O.D. (mm)</th> <th>I.D. (mm)</th> </tr> </thead> <tbody> <tr><td>(11)</td><td></td><td></td><td></td></tr> <tr><td>(10)</td><td></td><td></td><td></td></tr> <tr><td>(9)</td><td></td><td></td><td></td></tr> <tr><td>(8)</td><td></td><td></td><td></td></tr> <tr><td>(7)</td><td>11. HWDP</td><td>46.12</td><td>127.000</td><td>79.400</td></tr> <tr><td>(6)</td><td>10. Drilling Jars</td><td>9.87</td><td>203.200</td><td>76.200</td></tr> <tr><td>(5)</td><td>09. HWDP</td><td>138.37</td><td>127.000</td><td>79.400</td></tr> <tr><td>(4)</td><td>08. Cross Over Sub</td><td>1.09</td><td>203.200</td><td>70.000</td></tr> <tr><td>(3)</td><td>07. Drill Collar</td><td>26.59</td><td>203.200</td><td>76.200</td></tr> <tr><td>(2)</td><td>06. MWD</td><td>14.31</td><td>203.200</td><td>76.396</td></tr> <tr><td>(1)</td><td>05. Cross Over Sub</td><td>1.22</td><td>203.200</td><td>70.000</td></tr> <tr><td></td><td>04. Integral Blade Stabilizer</td><td>1.90</td><td>203.200</td><td>70.000</td></tr> <tr><td></td><td>03. Float Sub</td><td>1.05</td><td>203.200</td><td>70.000</td></tr> <tr><td></td><td>02. 9-5/8" SperryDrill Lobe 3/4</td><td>8.56</td><td>244.602</td><td>70.000</td></tr> <tr><td></td><td>01. Security DBS XL12D (Tricone)</td><td>0.34</td><td>311.000</td><td>50.800</td></tr> </tbody> </table>						Component	Length (m)	O.D. (mm)	I.D. (mm)	(11)				(10)				(9)				(8)				(7)	11. HWDP	46.12	127.000	79.400	(6)	10. Drilling Jars	9.87	203.200	76.200	(5)	09. HWDP	138.37	127.000	79.400	(4)	08. Cross Over Sub	1.09	203.200	70.000	(3)	07. Drill Collar	26.59	203.200	76.200	(2)	06. MWD	14.31	203.200	76.396	(1)	05. Cross Over Sub	1.22	203.200	70.000		04. Integral Blade Stabilizer	1.90	203.200	70.000		03. Float Sub	1.05	203.200	70.000		02. 9-5/8" SperryDrill Lobe 3/4	8.56	244.602	70.000		01. Security DBS XL12D (Tricone)	0.34	311.000	50.800
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Comments				MWD Performance																																																																														
Completed kick-off program with mud motor. Pulled out at 1274.0 mMDRT to pick up the Geopilot.				Tool OD / Type : 203.00 mm / P4M																																																																														
				MWD Real-time%: 98.25 %																																																																														
				MWD Recorded%: 100.00 %																																																																														
				Min. Inc. : 5.08 deg / 1166.38 m																																																																														
				Max. Inc. : 10.24 deg / 1250.01 m																																																																														
				Final Az. : 1250.01 deg																																																																														
				Max Op. Press. : 2353 psig																																																																														

## Bitrun Summary


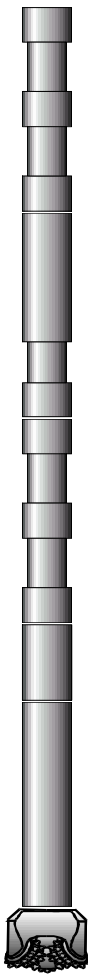
Run Time Data		Drilling Data		Mud Data				
MWD Run :	1000	Start Depth :	1274.00 m	Mud Type :	KCl/Polymer			
Rig Bit No:	14	End Depth :	1998.00 m	Weight / Visc :	1.28	sg /	69.00 spqt	
Hole Size :	311.00 mm	Footage :	724.00 m	Chlorides :	46000	ppm		
Run Start :	28-May-05 18:30	Avg. Flow Rate :	960 gpm	PV / YP :	20.00	cp /	43.00 lhf2	
Run End :	31-May-05 23:02	Avg. RPM :	140 rpm	Solids/Sand :	14	% /	0.1 %	
BRT Hrs :	76.54	Avg. WOB :	24.00 klb	%Oil / O:W:	N/A	% /	N/A	
Circ. Hrs :	52.30	Avg. ROP :	24.96 m/hr	pH/Fluid Loss:	8.50	pH /	4.60 mptm	
Oper. Hrs :	76.54	Avg. SPP :	3230 psig	Max. Temp. :	76.00	degC		
MWD Schematics		BHA Schematics						
		Component				Length	O.D.	I.D.
						(m)	(mm)	(mm)
(7)		(7)						
(6)	7. Mk8 Pulser 1200 System SN: 8270 0.00 m From Bit	(6)						
(5)	6. DM SN: 581139 19.97 m From Bit	(5)						
(4)	5. HCIM SN: 163155	(4)						
(3)	4. PWD SN: 161846 16.01 m From Bit	(3)						
(2)	3. EWR-P4 SN: 45162 13.49 m From Bit	(2)						
(1)	2. DGR SN: 151078 11.15 m From Bit	(2)						
	1. GeoPilot SN: GP1225TL062 5.71 m From Bit	(1)						
				07. HWDP	138.06	127.000	79.400	
				06. Drill Collar	27.81	171.450	76.200	
				05. Cross Over Sub	1.09	203.200	76.200	
				04. Drilling Jars	9.67	203.200	76.200	
				03. Drill Collar	88.33	203.200	76.200	
				02. MWD	23.63	207.433	76.364	
				01. Security DBS FS2663 (PDC)	0.64	311.000	50.800	
Comments				MWD Performance				
Steered with Geopilot to section TD at 1998.0 mMDRT.				Tool OD / Type :	203.00	mm /	P4M	
				MWD Real-time%:	98.00	%		
				MWD Recorded%:	67.00	%		
				Min. Inc. :	10.53	deg /	1287.27 m	
				Max. Inc. :	76.28	deg /	1975.04 m	
				Final Az. :	287.89	deg		
				Max Op. Press. :	3195	psig		



## Bitrun Summary

Run Time Data		Drilling Data		Mud Data			
MWD Run :	1100	Start Depth :	1998.00 m	Mud Type :	Flo Pro		
Rig Bit No:	15	End Depth :	2404.00 m	Weight / Visc :	1.27	sg /	57.00 spqt
Hole Size :	216.00 mm	Footage :	406.00 m	Chlorides :	120000	ppm	
Run Start :	02-Jun-05 09:17	Avg. Flow Rate :	745 gpm	PV / YP :	17.00	cp /	41.00 lhf2
Run End :	04-Jun-05 15:29	Avg. RPM :	92 rpm	Solids/Sand :	15	% /	0.25 %
BRT Hrs :	54.20	Avg. WOB :	16.50 klb	%Oil / O:W:	N/A	% /	N/A
Circ. Hrs :	35.80	Avg. ROP :	18.10 m/hr	pH/Fluid Loss:	9.70	pH /	3.80 mptm
Oper. Hrs :	54.20	Avg. SPP :	3220 psig	Max. Temp. :	78.00	degC	

MWD Schematics		BHA Schematics				
 <p>(9)</p> <p>(8)</p> <p>(7)</p> <p>(6)</p> <p>(5)</p> <p>(4)</p> <p>(3)</p> <p>(2)</p> <p>(1)</p>	<p>9. Mk8 Pulser 650 System SN: 8047 0.00 m From Bit</p> <p>8. CNP SN: 74044 24.52 m From Bit</p> <p>7. SLD SN: 121808 21.05 m From Bit</p> <p>6. HCIM SN: 093281</p> <p>5. PWD SN: 159816 16.31 m From Bit</p> <p>4. EWR-P4 SN: 138389 13.78 m From Bit</p> <p>3. DGR SN: 126021 11.44 m From Bit</p> <p>2. DM SN: 149865 8.97 m From Bit</p> <p>1. GeoPilot SN: GP0850TL084 4.66 m From Bit</p>	 <p>(6)</p> <p>(5)</p> <p>(4)</p> <p>(3)</p> <p>(2)</p> <p>(1)</p>	Component	Length	O.D.	I.D.
			(m)	(mm)	(mm)	
	06. HWDP		46.12	127.000	79.400	
	05. Drilling Jars		9.24	171.450	76.200	
	04. HWDP		55.28	139.700	76.200	
	03. Float Sub		0.79	165.100	76.200	
	02. MWD		28.67	174.228	75.152	
	01. Security DBS FMF3553 (PDC)		0.42	216.000	50.800	

Comments	MWD Performance
Built hole angle with Geopilot and drilled horizontal hole along reservoir to 2404.0 mMDRT.	<p>Tool OD / Type : 171.00 mm / P4M</p> <p>MWD Real-time%: 95.60 %</p> <p>MWD Recorded%: 100.00 %</p> <p>Min. Inc. : 76.66 deg / 2020.94 m</p> <p>Max. Inc. : 87.78 deg / 2193.21 m</p> <p>Final Az. : 287.71 deg</p> <p>Max Op. Press. : 3176 psig</p>

## Directional Survey Data

Measured Depth (metres)	Inclination (degrees)	Direction (degrees)	Vertical Depth (metres)	Latitude (metres)	Departure (metres)	Vertical Section (metres)	Dogleg (deg/30m)
1146.00	4.50	204.71	1145.63	2.70 S	1.75 E	-2.56	TIE-IN
1166.38	5.08	197.94	1165.94	4.28 S	1.14 E	-2.53	1.19
1196.52	6.90	204.40	1195.91	7.20 S	0.02 W	-2.43	1.93
1225.28	9.13	213.00	1224.39	10.69 S	1.98 W	-1.78	2.63
1250.01	10.24	216.17	1248.77	14.11 S	4.34 W	-0.72	1.49
1257.46	10.16	218.79	1256.10	15.16 S	5.15 W	-0.32	1.90
1287.27	10.53	234.54	1285.43	18.79 S	9.01 W	2.08	2.86
1314.96	11.47	254.15	1312.62	21.01 S	13.72 W	5.75	4.16
1342.92	12.82	274.39	1339.97	21.53 S	19.49 W	11.00	4.76
1371.81	14.63	289.92	1368.04	20.04 S	26.12 W	17.74	4.25
1403.35	16.96	298.16	1398.39	16.51 S	33.93 W	26.28	3.07
1430.21	19.64	303.85	1423.89	12.15 S	41.13 W	34.54	3.59
1460.58	23.39	309.06	1452.15	5.50 S	50.05 W	45.19	4.15
1487.44	26.26	311.42	1476.52	1.79 N	58.65 W	55.76	3.39
1515.92	30.69	310.65	1501.55	10.70 N	68.90 W	68.42	4.68
1544.45	35.01	308.80	1525.51	20.57 N	80.80 W	82.98	4.66
1574.02	39.48	307.90	1549.05	31.67 N	94.84 W	99.95	4.57
1601.66	43.46	306.39	1569.75	42.71 N	109.43 W	117.43	4.45
1630.50	47.12	305.12	1590.04	54.68 N	126.06 W	137.15	3.92
1659.47	51.07	302.67	1609.01	66.87 N	144.24 W	158.39	4.52
1688.15	54.91	300.23	1626.27	78.81 N	163.78 W	180.82	4.50
1716.83	59.06	298.06	1641.90	90.51 N	184.78 W	204.55	4.74
1745.43	62.89	296.17	1655.77	101.90 N	207.04 W	229.36	4.38
1775.14	65.13	291.82	1668.79	112.74 N	231.43 W	255.99	4.55
1803.18	66.82	288.55	1680.21	121.57 N	255.46 W	281.59	3.67
1832.10	67.00	288.55	1691.55	130.04 N	280.69 W	308.19	0.19
1861.05	70.00	287.81	1702.16	138.44 N	306.27 W	335.11	3.19
1889.71	70.27	288.54	1711.90	146.85 N	331.88 W	362.05	0.77
1918.35	71.02	288.14	1721.39	155.35 N	357.53 W	389.06	0.88
1946.76	73.24	288.85	1730.11	163.93 N	383.17 W	416.09	2.45
1975.04	76.28	287.89	1737.54	172.52 N	409.07 W	443.36	3.37
2020.94	76.66	287.87	1748.28	186.22 N	451.54 W	487.96	0.25
2049.61	78.96	288.67	1754.34	195.01 N	478.14 W	515.97	2.54
2078.36	82.52	288.53	1758.96	204.06 N	505.03 W	544.33	3.72
2107.04	86.73	289.13	1761.65	213.27 N	532.05 W	572.88	4.45
2135.83	87.47	289.13	1763.10	222.70 N	559.22 W	601.63	0.77
2164.51	87.78	290.18	1764.29	232.33 N	586.20 W	630.28	1.14
2193.21	87.78	290.62	1765.40	242.33 N	613.08 W	658.96	0.46
2221.71	87.29	289.70	1766.63	252.14 N	639.81 W	687.43	1.10
2250.28	85.93	289.24	1768.32	261.65 N	666.70 W	715.95	1.51

## Directional Survey Data

Measured Depth (metres)	Inclination (degrees)	Direction (degrees)	Vertical Depth (metres)	Latitude (metres)	Departure (metres)	Vertical Section (metres)	Dogleg (deg/30m)
2279.03	86.30	289.25	1770.27	271.10 N	693.78 W	744.63	0.39
2307.85	85.37	288.38	1772.36	280.37 N	720.99 W	773.37	1.32
2336.65	82.20	287.82	1775.48	289.27 N	748.20 W	801.98	3.35
2365.23	80.01	287.52	1779.90	297.84 N	775.10 W	830.20	2.32
2394.21	79.83	287.71	1784.97	306.47 N	802.30 W	858.71	0.27
2404.00	79.83	287.71	1786.70	309.40 N	811.48 W	868.34	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 A DIRECTION OF 289.90 DEGREES (GRID)

A TOTAL CORRECTION OF 12.01 DEG FROM MAGNETIC NORTH TO GRID NORTH HAS BEEN APPLIED

HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD.

HORIZONTAL DISPLACEMENT(CLOSURE) AT 2404.00 METRES

IS 868.46 METRES ALONG 290.87 DEGREES (GRID)

RT to LAT = 22.0 m.

Surveys are corrected for BHA sag.

Final Survey Projected to TD.

## Service Interrupt Report

MWD run number :	0700	Time/Date of Failure :	28-May-05 02:24
Rig Bit Number :		Depth at time of Failure :	0.00 m
MWD Run start time/date :	24-May-05 15:01	Lost Rig Hours :	3.00
MWD Run end time/date :	25-May-05 16:35		

### Rig Activity

Changing out BHA.

### Description of Failure

Tool failed confidence test. Subsequent attempts to communicate with the tool failed.

### Action Taken

Changed out RLL and RIH. Changed out the HCIM insert on failed tool after it was laid out but got the same problem.

### Operation Impact

Lost 3 hours of rig time.

### Reason for Failure

Unknown.

## Service Interrupt Report

MWD run number :	1100	Time/Date of Failure :	04-Jun-05 16:00
Rig Bit Number :	15	Depth at time of Failure :	0.00 m
MWD Run start time/date :	02-Jun-05 09:17	Lost Rig Hours :	0.00
MWD Run end time/date :	04-Jun-05 15:29		

### Rig Activity

Running production liner.

### Description of Failure

Unable to process SLD+ data after successfully reading tool.

### Action Taken

Repeated tool read but with same outcome. The data was later processed in the office.

### Operation Impact

Delivery of recorded SLD data delayed by three days.

### Reason for Failure

Surface computer error.

## **SECTION 4: PRODUCTION TEST REPORTS**

**Casino-4DW1 : No production tests were conducted.**

**Casino-4DW2 : The well was production tested and completed. The preliminary report is presented overleaf.**

**CASINO-4DW2 SUMMARY:**

Casino 4DW2 was drilled to TD in the Waarre A sand at 2404m MD RT. The lower completion Weatherford sandscreens were conveyed on 6 5/8" 13 chrome tubing and set in open hole (1998.75m to 2397.73m). The lower completion was suspended from a Weatherford Blackcat packer set at 1690.49m.

The upper completion was run on 7" 13-chrome tubing with a Halliburton HHT packer set at 1633.95m. The Upper completion also comprised a QN nipple and mule shoe below the packer, a chemical cut sub above the packer and a SSSV below the tubing hanger.

The landing string of 9 5/8" tubing included an Expro 7" SSTT and lubricator valve and a 7" surface Flowhead.

A diesel underbalance was displaced to the completion string before setting the packer. The well was cleaned up and a well test performed with an Expro surface well test package. The clean up and well test duration was 48.25 hrs. The total duration for the completion including the well test was 7 days.





## Well Site Test Report

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<b>Client</b>	Santos Ltd
<b>Well No.</b>	Casino 4 DW2
<b>Test No.</b>	Completion
<b>Location</b>	Ocean Patriot
<b>Dates From/To</b>	08/06/05-11/06/05
<b>Country</b>	Australia
<b>Field</b>	Casino
<b>Formation</b>	Waarre A Sands
<b>Exal Engineer</b>	M. Hall / B. Tupman
<b>Expro Supervisor</b>	F. Beaton
<b>Client Engineer</b>	R. King / M. Andronov / P. Nardone
<b>Perforations</b>	Open Hole - Sand Screens

**Report Approved By (CHS) :**

**Date :**

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**Report Approved By (Welltest) :**

**Date :**

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## Index

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1	<b>Introduction</b>
2	<b>Sequence of Events</b>
	<u>EDGE Data</u>
3	<b>Clean Up Data Listing</b>
4	<b>Cartesian Plots</b>
5	<b>Main Flow Data Listing</b>
6	<b>Cartesian Plots</b>
7	<b>Main Flow Gas Calculation listing</b>
	<u>Gauge Data</u>
8	<b>Gauge Information Sheets</b>
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	<u>Additional Information</u>
13	<b>Data Disk / Information Sheets</b>



## Introduction

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Expro Cased Hole Services (Electrical) provided the surface data acquisition package for the completion welltest of well Casino 4 DW2 on the Ocean Patriot from the 8th to 11th of June 2005.

The Objectives of the Casino Completion programme were:

1. Install lower completion comprising packer, tubing and sand screens in 8 1/2" horizontal hole.
2. Install upper completion and tubing hanger using landing string.
3. Clean Up and Well Test.
4. Suspend Well.

The Well Test consisted of flowing the well to clean up for approximately 12 hours, closing the well in for one hour and then performing a 3 step rate test. Each step flow rate was of 6 hours duration. The well was then Shut-In for a 24 Hour buildup prior to suspension operations.

Prior to conducting the welltest three Expro gauges were run on slickline for measuring bottomhole pressure and temperature during the test and build up.

All operations were conducted safely and in accordance with Santos and Expro safe operating procedures and guidelines.

Gas specific gravity of 0.61 used for rate calculations based on PVT analysis performed on gas samples. This over rides the estimate gas specific gravity of 0.68 reported during the test.



## Sequence of Events

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<b>Client</b>	Santos Ltd
<b>Well No.</b>	Casino 4 DW2
<b>Test No.</b>	Completion
<b>Location</b>	Ocean Patriot
<b>Dates From/To</b>	08/06/05-11/06/05
<b>Country</b>	Australia
<b>Field</b>	Casino
<b>Formation</b>	Waarre A Sands
<b>Exal Engineer</b>	M. Hall / B. Tupman
<b>Expro Supervisor</b>	F. Beaton
<b>Client Engineer</b>	R. King / M. Andronov / P. Nardone
<b>Perforations</b>	Open Hole - Sand Screens

<b>Client</b>	Santos Ltd	<b>Exal Engineer</b>	M. Hall / B. Tupman
<b>Well No.</b>	Casino 4 DW2	<b>Location</b>	Ocean Patriot
<b>Test No.</b>	Completion	<b>Dates From/To</b>	08/06/05-11/06/05

Time Comment

08/06/05

03:55:00 Opened Master Valve (MV), Kill Wing Valve(KWV) and Flow Wing Valve(FWV) on 7" Flowhead Hydraulic Master Valve.

03:57:00 Closed Sub Sea Lubricator Valve (SSLV).

04:10:00 Commenced pressure testing 7" Flowhead and surface lines to 300 psi.

04:15:00 Increased pressure to 5000 psi.

04:20:00 Leak observed on co-flexip connection, bled pressure to zero.

04:44:00 Closed choke manifold.

04:50:00 Commenced pressure testing 7" Flowhead and surface lines to 5000 psi.

05:08:00 Good test, bled surface pressure to zero.

05:25:00 Opened SSLV.

05:27:00 Opened Sub Sea Annular Access Valve (SSAAV).

05:28:00 Opened Sub Sea Annulus Master Valve (SSAMV).

05:29:00 Opened Sub Sea Production Master Valve (SSPMV).

05:30:00 Opened Sub Sea Crossover Valve (SSXOV).

06:00:00 Commenced landing tubing hanger as per completion programme.

08:00:00 Opened SSAAV.

08:10:00 Pressure tested choke and kill lines below closed Middle Pipe Rams.

08:35:00 Expro wireline commenced rigging up.

09:10:00 Closed 7" Flowhead Hydraulic Master Valve.

10:25:00 Completed lock testing tubing hanger.

10:30:00 Commenced rigging up 2.0" drain line hose.

11:00:00 Closed Lo-torque valves and removed flow line actuator cap.

11:50:00 Flushed choke manifold prior pressure to testing wireline lubricator to 3500 psi.

12:00:00 Bled off surface pressure to zero.

12:05:00 Wireline commenced running in hole (RIH) to retrieve Tubing Hanger (TH) isolation sleeve.

12:30:00 Wireline at surface, closed 7" Flowhead Hydraulic Master Valve.

13:00:00 Flushed surface lines through choke manifold.

13:05:00 Commenced pressure testing above 7" Flowhead Hydraulic Master Valve to 3500 psi.

13:10:00 Bled off surface pressure to zero.

13:15:00 Wireline commenced RIH to set short protection sleeve in Tubing Hanger.

14:05:00 Wireline at surface, closed 7" Flowhead Hydraulic Master Valve.

14:29:00 Closed in at choke manifold for pressure test to 5000psi.

14:56:00 Bled off surface pressure to zero at choke manifold.

15:00:00 Hold JSA prior to to displacing string with diesel.

15:13:00 Opened 7" Flowhead Hydraulic Master Valve and close Swab valve.

15:15:00 Closed choke manifold and rigged in line to pump diesel from cement pump unit.

15:20:00 Commenced pumping diesel.

15:26:00 Initial reading on rig tank volume 214bbls water.

15:36:00 Rig tank volume 241 bbls water.

15:42:00 Diesel pumping in hole from cement unit 41bbls at 338psi tubing head pressure.

15:51:00 Rig tank volume 281bbls water.

15:53:00 Diesel pumping in hole from cement unit 75bbls at 370psi tubing head pressure.

16:04:00 Diesel pumping in hole from cement unit 108bbls at 502psi tubing head pressure.

16:05:00 Rig tank volume 316bbls water.

16:18:00 Diesel pumping in hole from cement unit 145bbls at 660psi tubing head pressure.

16:18:00 Rig tank volume 352bbls water.

16:18:00 Diesel pumping in hole from cement unit 175bbls at 802psi tubing head pressure.

16:33:00 Rig tank volume 395bbls water.

16:38:00 Diesel pumping in hole from cement unit 200bbls at 872psi tubing head pressure.

16:41:00 Diesel pumping in hole from cement unit 207bbls at 827psi tubing head pressure.

16:41:00 Stopped pumping diesel and bled off surface pressure via choke manifold to surge tank.

16:45:00 Rigged up wireline toolstring to run standing valve.

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**08/06/05**

17:06:00 Equalized pressure above master valve to prior to opening.  
17:10:00 Opened master valve RIH to set standing valve.  
17:40:00 Lined up Gas and Oil lines to port side.  
17:40:00 Lined up downstream choke to surge tank.  
18:29:00 Wireline at surface, closed 7" Flowhead Hydraulic Master Valve.  
18:30:00 Bled off surface pressure via choke manifold to surge tank.  
18:32:00 Closed choke manifold.  
19:12:00 Equalized pressure above master valve to prior to opening.  
19:15:00 Closed kill wing valve, opened master valve.  
19:18:00 Held safety meeting prior to setting packer.  
19:31:00 Kill wing valve opened.  
19:32:00 Commence setting packer, pressured up tubing to 4000psi.  
20:20:00 Packer set complete.  
20:24:00 Closed SSSV.  
20:25:00 Cameron SSSV closed.  
20:27:00 Bled off pressure to 1500psi at choke manifold.  
20:29:00 Closed in choke manifold.  
20:35:00 Increased tubing pressure to 3500psi above SSSV.  
20:45:00 Opened SSSV.  
20:50:00 Bled tubing pressure to 850psi at choke manifold.  
21:06:00 Commenced pressuring up annulus to 3500psi.  
21:12:00 Annulus pressure of 3596psi obtained and held, tubing head pressure up to 1329psi.  
21:29:00 Closed Sub Sea Annular Access Valve.  
21:33:00 Bled off pressure to 250psi from cement unit to inflow test SSAAV, held for 10 min.  
21:43:00 Good test, equalized pressure across SSAAV to 3500psi and opened SSAAV.  
21:45:00 Closed Sub Sea Annulus Master Valve.  
21:46:00 Bled off pressure to 250psi from cement unit to inflow test SSAMV, held for 10 min.  
21:55:00 Good test, equalized pressure across SSAMV and opened SSAMV.  
22:00:00 Closed Sub Sea Production Master Valve.  
22:01:00 Opened Sub Sea Production Master Valve in order to correctly follow programme.  
22:06:00 Bled pressure from annulus to 100psi via rig choke/kill line.  
22:12:00 Closed Sub Sea Production Master Valve.  
22:18:00 Opened Sub Sea Crossover Valve.  
22:19:00 Closed Sub Sea Crossover Valve.  
22:20:00 Closed 7" Flowhead Hydraulic Master Valve.  
22:25:00 Bled surface pressure to 0psi via choke manifold and closed choke manifold.  
22:28:00 Opened 7" Flowhead Swab Valve.  
22:30:00 Opened 7" Flowhead Kill Wing Valve.  
22:31:00 Equalized pressure above 7" Flowhead Hydraulic Master valve prior to opening.  
22:34:00 Opened 7" Flowhead Hydraulic Master Valve.  
22:36:00 Closed 7" Flowhead Kill Wing Valve.  
22:37:00 RIH with wireline to retrieve standing valve.  
23:22:00 Latched and pulled standing valve, POOH.  
23:56:00 Wireline at surface, shut Sub Sea Upper Ball Valve.

**09/06/05**

00:00:00 Attempted bleed back to 100psi via choke manifold.  
00:04:00 Not bleeding down properly, shut in choke manifold and applied pressure to assist close on Sub Sea Upper Ball Valve to 2500psi.  
00:08:00 Bled back to 100psi via choke manifold and held for 10min.  
00:20:00 Test good, bled pressure down to 0psi at choke manifold and closed choke manifold.  
00:24:00 Closed Sub Sea Lubricator Valve.

<b>Client</b>	Santos Ltd	<b>Exal Engineer</b>	M. Hall / B. Tupman
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01:27:00 Started top gauge MP2CH042-51084 by connecting to battery 20466, gauge sampling at 1 second intervals.

01:29:00 Started middle gauge MP2CH228-51248 by connecting to battery FC15708, gauge sampling at 1 second intervals.

01:32:00 Started bottom gauge MP2CH185-40586 by connecting to battery FC15692, gauge sampling at 2 second intervals.

01:40:00 Installed gauge toolstring in lubricator, stabbed on.

01:56:00 Opened Sub Sea Lubricator Valve.

02:00:00 Equalized above Sub Sea Upper Ball Valve.

02:03:00 Opened Sub Sea Upper Ball Valve.

02:08:00 Wireline commenced running in hole with pressure/temperature gauges.

02:15:00 Pressure detected in Sub Sea assist close line, operations halted.

02:18:00 Issue resolved, operations recommenced.

03:37:00 Wireline at surface, shut Sub Sea Upper Ball Valve.

03:41:00 Bled surface pressure down to 74psi at choke manifold and held for 10min.

03:52:00 Test good, bled surface pressure down to 0psi at choke manifold and closed choke manifold.

03:55:00 Closed Sub Sea Lubricator Valve.

04:00:00 Opened 7" Flowhead Kill Wing Valve.

04:06:00 Closed 7" Flowhead Swab Valve and made up downhole gauge recovery toolstring.

04:12:00 Opened Sub Sea Lubricator Valve.

04:14:00 Equalized pressure in order to open Sub Sea Upper Ball Valve.

04:16:00 Closed 7" Flowhead Kill Wing Valve.

04:17:00 Opened Sub Sea Upper Ball Valve.

04:21:00 Conducted Safety meeting prior to flowing well.

04:59:00 Commenced pumping pilot diesel to flare, set one compressor on half load to bring flare ignition system online.

05:12:00 Opened well to surge tank via 16/64 adjustable choke.

05:13:00 Increased to 20/64 adjustable choke.

05:15:00 Increased to 24/64 adjustable choke.

05:16:00 Increased to 28/64 adjustable choke.

05:18:00 11.4 bbls cumulative recovered at surge tank.

05:20:00 13.9 bbls cumulative recovered at surge tank.

05:21:00 Increased to 32/64 adjustable choke.

05:25:00 20.7 bbls cumulative recovered at surge tank.

05:30:00 28 bbls cumulative recovered at surge tank.

05:35:00 35 bbls cumulative recovered at surge tank.

05:40:00 Diverted flow to port flareboom.

05:41:00 Increased to 36/64 adjustable choke.

05:49:00 Increased to 40/64 adjustable choke.

05:55:00 Increased to 44/64 adjustable choke.

05:58:00 Increased to 48/64 adjustable choke.

06:01:00 Increased to 52/64 adjustable choke.

06:12:00 Brine at surface, port flareboom extinguished, diverted flow via gas line to flare boom.

06:15:00 BS&W at choke manifold 100% mud.

06:17:00 Gas at surface.

06:18:00 Lo-pilot upstream safety valve armed, set at 150psi.

06:21:00 Increased to 56/64 adjustable choke.

06:22:00 Increased to 60/64 adjustable choke.

06:24:00 Increased to 64/64 adjustable choke.

06:30:00 BS&W at choke manifold 100% mud.

06:57:00 Decreased to 56/64 adjustable choke.

07:00:00 BS&W at choke manifold 100% mud.

<b>Client</b>	Santos Ltd	<b>Exal Engineer</b>	M. Hall / B. Tupman
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07:00:00 Draeger indicated 0.7% C02 and 0.3 ppm H2S.  
07:05:00 Flare ignited on port flareboom.  
07:09:00 Increased to 64/64 adjustable choke.  
07:15:00 Draeger indicated 0.7% C02 and 0.3 ppm H2S.  
07:30:00 BS&W at choke 100% mud.  
07:30:00 Draeger indicated 1.0% C02 and 0.3 ppm H2S.  
07:45:00 Draeger indicated 1.0% C02 and 0.3 ppm H2S.  
08:00:00 BS&W at choke 100% mud.  
08:00:00 Draeger indicated 1.0% C02 and 0.3 ppm H2S.  
08:15:00 Draeger indicated 1.0% C02 and 0.3 ppm H2S.  
08:30:00 BS&W at choke 100% mud.  
08:30:00 Draeger indicated 1.0% C02 and 0.3 ppm H2S.  
08:43:00 Annulus transducer producing spurious data, drillfloor monitoring.  
08:45:00 Draeger indicated 1.0% C02 and 0.3 ppm H2S.  
09:00:00 BS&W at choke 100% mud.  
09:00:00 Draeger indicated 1.0% C02 and 0.1 ppm H2S.  
09:15:00 Draeger indicated 1.0% C02 and 0.1 ppm H2S.  
09:16:00 Increased to 72/64 adjustable choke.  
09:20:00 Annulus transducer back on line.  
09:26:00 Increased to 76/64 adjustable choke.  
09:30:00 BS&W at choke 100% mud.  
09:30:00 Draeger indicated 1.0% C02 and 0.1 ppm H2S.  
09:31:00 Increased to 96/64 adjustable choke.  
09:45:00 Draeger indicated 1.0% C02 and 0.1 ppm H2S.  
10:00:00 BS&W at choke 100% mud.  
10:00:00 Draeger indicated 0.5% C02 and 0.1 ppm H2S.  
10:30:00 BS&W at choke 100% mud.  
10:30:00 Draeger indicated 0.5% C02 and 0.1 ppm H2S.  
11:00:00 BS&W at choke 100% mud.  
11:00:00 Draeger indicated 1.0% C02 and 0.1 ppm H2S.  
11:30:00 BS&W at choke 100% mud.  
11:30:00 Draeger indicated 1.0% C02 and 0.1 ppm H2S.  
12:00:00 BS&W at choke 100% mud.  
12:00:00 Draeger indicated 0.3% C02 and 0.0 ppm H2S.  
12:30:00 BS&W at choke 100% mud.  
13:00:00 Unable obtain BS&W due to plugging in sampling lines.  
13:47:00 Diverted flow through 64/64" fixed choke.  
13:50:00 No liquids at surface.  
14:00:00 Draeger indicated 0.6% C02 and 0.1 ppm H2S.  
14:23:00 Diverted flow through test separator.  
14:39:00 Installed 4.50" orifice plate in test separator gas meter run.  
14:45:00 Draeger indicated 0.6% C02 and 0.1 ppm H2S.  
14:45:00 Gas SG 0.716.  
15:00:00 Draeger indicated 0.6% C02 and 0.1 ppm H2S.  
15:00:00 Gas SG 0.692.  
15:00:00 Mercury: 0.94 micrograms/m3.  
15:07:00 Removed orifice plate.  
15:10:00 Radon: 381 Bq/m3.  
15:11:00 Lowered pressure in test separator.  
15:17:00 Installed 4.50" orifice plate in test separator gas meter run.  
15:30:00 Draeger indicated 0.6% C02 and 0.1 ppm H2S.  
15:30:00 Gas SG 0.684.



<b>Client</b>	Santos Ltd	<b>Exal Engineer</b>	M. Hall / B. Tupman
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Time Comment

**09/06/05**

15:50:00 Mercury: 0.59 micrograms/m3.  
15:50:00 Lowered pressure in test separator.  
16:00:00 Draeger indicated 0.5% CO2 and 0.1 ppm H2S.  
16:00:00 Oil SG 0.773 @ 60 degF.  
16:00:00 Well Test sample attained by Geoservices 0.6% CO2 and <0.5ppm H2S.  
16:15:00 Petrotech commenced taking gas sample 1.01 : s/n A4786.  
16:30:00 Completed taking gas sample.  
16:45:00 Total liquid returns; 3 bbls - Estimated LGR 0.65 bbl/MMscf.  
17:00:00 Draeger indicated 0.6% CO2 and 0.1 ppm H2S.  
17:00:00 Gas SG 0.693.  
17:05:00 Clean-up criteria established: 1: BS&W <3% - not measurable, 2: Stable THP - <10 psi/5 min change over 2 hours - 15 psi stable increase over 2 hours, 3: Stable gas rate - 47.3 MMscf/d, 4: WGR < 1 bbl/MMscf - Estimated LGR<0.65 bbl/MMscf  
17:08:00 Raised orifice plate and bypassed test separator.  
17:09:00 Closed in well at choke manifold.  
18:38:00 Commenced methanol injection upstream of surface safety valve.  
18:39:00 Opened well up to port flareboom on 16/64 adjustable choke through heat exchanger and separator.  
18:40:00 Increased to 24/64 adjustable choke.  
18:41:00 Increased to 32/64 adjustable choke.  
18:41:00 Gas flare lit.  
18:45:00 Well shut in due to burst steam hose.  
19:03:00 Commenced methanol injection upstream of surface safety valve.  
19:03:00 Opened well up to port flareboom on 16/64 adjustable choke through heat exchanger and separator.  
19:04:00 Increased to 32/64 adjustable choke.  
19:05:00 Diverted flow through 32/64 fixed choke.  
19:06:00 Gas flare lit.  
19:07:00 Shut in due to leak on Weco seal downstream of choke manifold caused by hydrating.  
19:10:00 Opened well up to port flareboom on 24/64 adjustable choke through heat exchanger and separator.  
19:11:00 Increased to 32/64 adjustable choke.  
19:12:00 Diverted flow through 32/64 fixed choke.  
19:13:00 Steam delivery to heat exchanger halted to fix minor leak in union.  
19:13:00 Gas flare lit.  
19:13:00 Recommenced steam delivery to heat exchanger.  
19:19:00 Ceased methanol injection upstream of surface safety valve.  
19:37:00 Installed 2.75" orifice plate in test separator gas meter run.  
19:38:00 Gas SG 0.684.  
19:52:00 Draeger indicated 1% CO2 and 0.1 ppm H2S, 0% mercaptan.  
20:32:00 Draeger indicated 1% CO2 and 0.1 ppm H2S.  
21:10:00 Radon: 396 Bq/m3.  
21:28:00 Gas SG 0.682.  
21:29:00 Flushed line to downstream choke pressure transducer.  
21:30:00 Draeger indicated 1% CO2 and 0.1 ppm H2S, 0% mercaptan.  
21:36:00 Adjusted separator pressure control.  
22:10:00 Commenced pumping methanol upstream of SSV to eliminate hydrates across heater choke.  
22:30:00 Draeger indicated 1% CO2 and 0.1 ppm H2S.  
22:40:00 Mercury: 0.24 micrograms/m3.  
23:23:00 Gas SG 0.683.  
23:30:00 Mercury: 0.35 micrograms/m3.  
23:50:00 Chlorides 45,000 mg/L.  
23:50:00 Water density: 1.054 g/cm3 @ 17.1 degC.

<b>Client</b>	Santos Ltd	<b>Exal Engineer</b>	M. Hall / B. Tupman
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10/06/05

00:30:00 Petrotech commenced taking gas sample 1.02 : s/n A2006.  
00:45:00 Completed taking sample.  
01:00:00 Draeger indicated 1.2% CO2 and 0.1 ppm H2S.  
01:07:00 Removed orifice plate.  
01:08:00 Heater and separator bypass opened.  
01:09:00 Increased to 48/64 fixed choke.  
01:11:00 Diverted flow back through heat exchanger.  
01:14:00 Diverted flow back through separator.  
01:16:00 Closed separator bypass.  
01:55:00 Opened separator bypass.  
02:00:00 Draeger indicated 1.1% CO2 and 0.1 ppm H2S.  
02:00:00 Mercury: 0.27 micrograms/m3.  
02:00:00 Drained 4 bbl's of fluid from separator to surge tank.  
02:13:00 Closed separator bypass.  
02:14:00 Surface Safety Valve tripped, well shut in.  
02:29:00 Closed in well at choke manifold.  
02:29:00 Opened Surface Safety Valve.  
02:32:00 Commenced pumping methanol upstream of SSV.  
02:35:00 Opened well up to port flareboom on 24/64 adjustable choke through heat exchanger and separator.  
02:37:00 Gas flare lit.  
02:37:00 Increased to 32/64 adjustable choke.  
02:42:00 Increased to 48/64 adjustable choke.  
02:48:00 Diverted flow through 48/64 fixed choke.  
02:52:00 Attempted to increase separator pressure to 750psi.  
02:54:00 Lowered 3.75 orifice plate.  
03:00:00 Lowered 4.25 orifice plate.  
03:02:00 Gas SG 0.684.  
03:05:00 Draeger indicated 0.7% CO2 and 0.1 ppm H2S.  
03:10:00 Ceased methanol injection upstream of SSV.  
03:10:00 Radon: 285 Bq/m3.  
04:00:00 Commenced dumping fluid from separator to surge tank, established level on surge tank.  
04:00:00 Draeger indicated 1% CO2 and 0.1 ppm H2S.  
04:00:00 Mercury: 0.47 micrograms/m3.  
05:00:00 Draeger indicated 1% CO2 and 0.1 ppm H2S.  
05:00:00 Liquid returns at surge tank 0.8 bbls.  
05:00:00 Tank Liquid Rate: 14.4 bbls/d.  
05:05:00 Chlorides 21,000 mg/L.  
05:05:00 Water density: 1.026 g/cm3 @ 15.7 degC.  
05:11:00 Water SG 1.03 at 55 Deg F.  
06:00:00 Draeger indicated 1% CO2 and 0.1 ppm H2S.  
06:00:00 Liquid returns at surge tank 1.30 bbls.  
06:00:00 Tank Liquid Rate: 9.60 bbls/d.  
06:30:00 Petrotech commenced taking gas sample 1.03 : s/n A-5768.  
06:45:00 Completed taking sample.  
07:00:00 Liquid returns at surge tank 1.80 bbls.  
07:00:00 Draeger indicated 1% CO2 and 0.1 ppm H2S.  
07:02:00 Raised orifice plate.  
07:06:00 Opened separator bypass.  
07:10:00 Diverted flow through 48/64" adjustable choke.  
07:12:00 Increased adjustable choke to 52/64".  
07:15:00 Increased adjustable choke to 64/64".  
07:19:00 Diverted flow through 64/64" fixed choke.

<b>Client</b>	Santos Ltd	<b>Exal Engineer</b>	M. Hall / B. Tupman
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**10/06/05**

07:21:00 Closed separator bypass.  
07:24:00 Installed 4.50" orifice plate in test separator gas meter run.  
07:45:00 Gas SG 0.698.  
08:00:00 Water SG 1.022 @ 60 degF.  
08:00:00 Liquid returns at surge tank 2.00 bbls.  
08:00:00 Tank Liquid Rate: 9.60 bbls/d.  
08:15:00 Draeger indicated 0.7% CO2 and 0.1 ppm H2S.  
08:30:00 Chlorides 15,000 mg/L.  
08:30:00 Water density: 1.018 g/cm3 @ 16.1 degC.  
08:30:00 pH: 6.69 @ 15.3 degC, Conductivity 35.8 mS/cm @ 15.3 degC, Resistivity 0.028 Ohm-m @ 15.3 degC.  
09:00:00 Liquid returns at surge tank 2.70 bbls.  
09:00:00 Tank Liquid Rate: 43.30 bbls/d.  
09:30:00 Draeger indicated 1% CO2 and 0.1 ppm H2S.  
10:00:00 Liquid returns at surge tank 4.60 bbls.  
10:00:00 Tank Liquid Rate: 57.60 bbls/d.  
10:00:00 Gas SG 0.703.  
10:20:00 Petrotech obtained water samples: 1.04, 1.05, 1.06, 1.07.  
10:45:00 Chlorides 45,000 mg/L.  
10:45:00 Water density: 1.051 g/cm3 @ 16.5 degC.  
10:45:00 pH: 6.62 @ 19.0 degC, Conductivity 97.6 mS/cm @ 19.0 degC, Resistivity 0.010 Ohm-m @ 19.0 degC.  
11:00:00 Draeger indicated 1% CO2 and 0.1 ppm H2S.  
11:00:00 Liquid returns at surge tank 6.80 bbls.  
11:00:00 Tank Liquid Rate: 48.00 bbls/d.  
11:00:00 Draeger indicated 1% CO2 and 0.1 ppm H2S.  
12:00:00 Liquid returns at surge tank 8.30 bbls.  
12:00:00 Tank Liquid Rate: 24.00 bbls/d.  
12:35:00 Petrotech commenced taking gas sample 1.08 : s/n A-1984.  
12:45:00 Completed taking sample.  
13:00:00 Petrotech commenced taking gas sample 1.13 : s/n A-1979.  
13:00:00 Petrotech obtained water samples: 1.09, 1.10, 1.11, 1.12.  
13:00:00 Liquid returns at surge tank 9.40 bbls.  
13:00:00 Tank Liquid Rate: 24.00 bbls/d.  
13:15:00 Completed taking sample.  
13:25:00 Closed Annulus Master Valve.  
13:26:00 Opened separator bypass valve.  
13:31:00 Closed in well at choke manifold. Commenced build up survey.

**11/06/05**

04:30:00 Closed 7" Flowhead Master Valve.  
04:35:00 Bled surface pressure to 0psi via choke manifold.  
04:35:00 Opened 7" Flowhead Swab Valve.  
04:37:00 ESD Tripped closing 7" Flowhead Flow Wing Valve.  
04:47:00 Opened 7" Flowhead Wing Valve.  
04:48:00 Opened Opened 7" Flowhead Swab Valve.  
04:48:00 Closed in at choke manifold.  
04:49:00 Opened 7" Flowhead Kill Wing Valve.  
04:52:00 Equalized pressure above 7" Flowhead Master Valve with glycol water mixture.  
05:01:00 Opened 7" Flowhead Master Valve.  
05:02:00 Closed 7" Flowhead Kill Wing Valve.  
05:03:00 Commenced RIH with wireline to retrieve pressure temperature gauges.

<b>Client</b>	Santos Ltd	<b>Exal Engineer</b>	M. Hall / B. Tupman
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Time Comment

11/06/05

05:30:00 Wireline at depth.  
05:33:00 Wireline latched pressure temperature gauges, POOH.  
06:30:00 Wireline at surface.  
06:50:00 Closed Lower Ball Valve(LBV) on SST.  
06:55:00 Commenced bleeding off surface pressure to 100 psi via choke manifold.  
07:00:00 Closed choke manifold, LBV on STT not closed.  
07:07:00 Closed Upper Ball Valve(UBV) on SSTT.  
07:10:00 Commenced bleeding off surface pressure to 100 psi via choke manifold.  
07:13:00 Closed choke manifold, commenced inflow test on UBV.  
07:24:00 Good test, closed SSLV.  
07:27:00 Bled off surface pressure, broke out and retrieved gauges.  
08:25:00 Opened SSLV.  
08:28:00 Bled off surface pressure to zero, closed choke manifold.  
08:30:00 Opened KVV on 7" Flowhead.  
08:45:00 Pressured up to 2100 psi to equalise above.  
08:53:00 Opened UBV on SSTT.  
08:54:00 Closed SSSV.  
08:55:00 Commenced bleeding off surface pressure to 100psi.  
09:35:00 Commenced inflow test on SSSV.  
09:55:00 Good test, bled off surface pressure to zero.  
10:00:00 Opened Swab Valve on 7" Flowhead.  
10:02:00 Wireline commenced running in hole to pull short protection sleeve.  
10:30:00 Wireline at surface, broke out toolstring.  
10:50:00 Closed 7" Flowhead Hydraulic Master Valve.  
10:52:00 Commenced pressure testing above 7" Flowhead Hydraulic Master Valve to 5000 psi.  
11:03:00 Good test, bled off surface pressure to 100 psi.  
11:05:00 Wireline commenced running in hole to set 6.71" crown plug.  
11:30:00 Pressured up to 3000 psi to set plug.  
11:54:00 Increased tubing pressure to 5000 psi for pressure test.  
12:16:00 Good test, wireline commenced pulling out of hole.  
12:21:00 Wireline at surface, closed 7" Flowhead Hydraulic Master Valve to 5000 psi.  
12:22:00 Closed Swab Valve on 7" Flowhead.  
12:50:00 Commenced pressure testing below 6.71" plug to 1000 psi.  
14:45:00 Good test, bled off pressure.  
15:20:00 Opened 7" Flowhead Hydraulic Master Valve, commenced inflow test on 6.71" crown plug.  
15:30:00 Good test, commenced landing string retrieval operations.  
15:30:00 End of Test.



## Cleanup Data Listing

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<b>Client</b>	Santos Ltd
<b>Well No.</b>	Casino 4 DW2
<b>Test No.</b>	Completion
<b>Location</b>	Ocean Patriot
<b>Dates From/To</b>	08/06/05-11/06/05
<b>Country</b>	Australia
<b>Field</b>	Casino
<b>Formation</b>	Waarre A Sands
<b>Exal Engineer</b>	M. Hall / B. Tupman
<b>Expro Supervisor</b>	F. Beaton
<b>Client Engineer</b>	R. King / M. Andronov / P. Nardone
<b>Perforations</b>	Open Hole - Sand Screens

Gas specific gravity of 0.61 used for rate calculations based on PVT analysis performed on gas samples. This over rides the estimate gas specific gravity of 0.68 reported during the test.

Client Santos Ltd

Exal Engineer M. Hall / B. Tupman

Well No. Casino 4 DW2

Location Ocean Patriot

Test No. Completion

Dates From/To 08/06/05-11/06/05

Time hh:mm:ss	40586P PSIA	40586T °F	Choke 64th	UcP PSIG	UcT °F	DcP PSIG	DcT °F	AnnP PSIG	GasP PSIG	GasT °F	GasD INWG	QGas1av MMscf/d	QChkgAv MMscf/d	Co2 mol%	H2S ppm
<u>09/06/05</u>															
05:10:00	2559	162.78	0.00	618.9	57.5	3.6	57.4	37.3	0.0	57.8	0.0	0.000	0.000	0.00	0.00
05:12:00	Opened well to surge tank via 16/64 adjustable choke.														
05:13:00	Increased to 20/64 adjustable choke.														
05:15:00	2527	162.81	24.00	586.0	57.5	12.2	57.4	33.9	0.0	57.8	0.0	0.000	0.800	0.00	0.00
05:15:00	Increased to 24/64 adjustable choke.														
05:16:00	Increased to 28/64 adjustable choke.														
05:18:00	11.4 bbls cumulative recovered at surge tank.														
05:20:00	2533	164.43	28.00	567.8	59.3	20.2	57.8	33.9	0.0	57.8	0.0	0.000	2.450	0.00	0.00
05:20:00	13.9 bbls cumulative recovered at surge tank.														
05:21:00	Increased to 32/64 adjustable choke.														
05:25:00	2545	166.83	32.00	549.6	59.4	26.9	58.6	32.4	0.0	57.9	0.0	0.000	3.100	0.00	0.00
05:25:00	20.7 bbls cumulative recovered at surge tank.														
05:30:00	2557	168.00	32.00	542.1	59.2	30.8	59.1	38.4	0.0	58.0	0.0	0.000	3.170	0.00	0.00
05:30:00	28 bbls cumulative recovered at surge tank.														
05:35:00	2571	168.73	32.00	547.0	60.6	31.2	59.5	40.8	0.0	58.0	0.0	0.000	3.160	0.00	0.00
05:35:00	35 bbls cumulative recovered at surge tank.														
05:40:00	2583	169.17	32.00	564.4	64.1	27.7	60.3	57.0	0.0	57.9	0.0	0.000	3.230	0.00	0.00
05:40:00	Diverted flow to port flareboom.														
05:41:00	Increased to 36/64 adjustable choke.														
05:45:00	2602	169.64	36.00	592.8	67.3	26.7	61.6	62.3	0.0	58.0	0.0	0.000	4.020	0.00	0.00
05:49:00	Increased to 40/64 adjustable choke.														
05:50:00	2597	170.12	40.00	645.9	70.0	40.2	63.0	78.8	0.0	58.0	0.0	0.000	4.740	0.00	0.00
05:55:00	2604	170.55	44.00	725.6	72.3	21.4	64.6	102.3	0.0	58.0	0.0	0.000	6.160	0.00	0.00
05:55:00	Increased to 44/64 adjustable choke.														
05:58:00	Increased to 48/64 adjustable choke.														
06:00:00	2603	171.18	48.00	815.2	74.7	45.7	66.2	141.2	0.0	58.1	0.0	0.000	8.840	0.00	0.00
06:01:00	Increased to 52/64 adjustable choke.														
06:05:00	2600	172.07	52.00	917.2	80.4	287.1	67.9	237.9	0.0	58.1	0.0	0.000	12.170	0.00	0.00
06:10:00	2627	173.49	52.00	1168.3	88.5	350.5	70.8	368.1	0.0	58.1	0.0	0.000	15.640	0.00	0.00
06:12:00	Brine at surface, port flareboom extinguished, diverted flow via gas line to flare boom.														
06:15:00	2649	174.54	52.00	1189.9	89.2	491.0	73.0	477.1	0.0	58.1	0.0	0.000	18.140	0.00	0.00

Client Santos Ltd

Exal Engineer M. Hall / B. Tupman

Well No. Casino 4 DW2

Location Ocean Patriot

Test No. Completion

Dates From/To 08/06/05-11/06/05

Time hh:mm:ss	40586P PSIA	40586T °F	Choke 64th	UcP PSIG	UcT °F	DcP PSIG	DcT °F	AnnP PSIG	GasP PSIG	GasT °F	GasD INWG	QGas1av MMscf/d	QChkgAv MMscf/d	Co2 mol%	H2S ppm
<u>09/06/05</u>															
06:15:00															
06:17:00															
06:18:00															
06:20:00	2687	175.04	52.00	1462.4	92.8	557.0	73.8	480.9	0.0	58.3	0.0	0.000	19.720	0.00	0.00
06:21:00															
06:22:00															
06:24:00															
06:25:00	2668	175.08	64.00	1663.4	102.9	1007.1	76.6	463.8	0.0	58.3	0.0	0.000	32.180	0.00	0.00
06:30:00	2649	175.26	64.00	1897.3	108.2	1184.0	80.1	512.6	0.0	58.3	0.0	0.000	40.580	0.00	0.00
06:30:00															
06:35:00	2634	175.72	64.00	1927.1	107.4	1183.2	81.9	452.7	0.0	58.3	0.0	0.000	42.890	0.00	0.00
06:40:00	2636	176.08	64.00	2033.2	108.7	1251.2	81.8	520.0	0.0	58.4	0.0	0.000	44.580	0.00	0.00
06:45:00	2624	176.27	64.00	2058.3	108.9	1253.5	81.2	440.7	0.0	58.4	0.0	0.000	45.440	0.00	0.00
06:50:00	2609	176.41	64.00	2052.6	108.2	1230.8	79.7	476.7	0.0	58.4	0.0	0.000	45.720	0.00	0.00
06:55:00	2603	176.55	64.00	2067.3	107.5	1246.3	77.8	507.3	0.0	58.5	0.0	0.000	45.760	0.00	0.00
06:57:00															
07:00:00	2614	176.73	56.00	2140.9	107.3	1045.4	75.7	429.4	0.0	58.5	0.0	0.000	38.380	0.70	0.30
07:00:00															
07:00:00															
07:05:00	2611	176.86	56.00	2139.5	106.7	1042.3	72.8	441.3	0.0	58.6	0.0	0.000	36.630	0.70	0.30
07:05:00															
07:09:00															
07:10:00	2591	176.92	64.00	2069.8	106.6	1211.4	70.3	451.5	0.0	58.7	0.0	0.000	40.420	0.70	0.30
07:15:00	2581	176.92	64.00	2069.2	108.0	1223.8	69.8	476.7	0.0	58.7	0.0	0.000	45.910	0.70	0.30
07:15:00															
07:20:00	2575	176.97	64.00	2069.8	108.9	1217.5	70.3	511.2	0.0	58.8	0.0	0.000	45.930	0.70	0.30
07:25:00	2569	177.04	64.00	2070.0	109.6	1213.0	71.0	533.3	0.0	58.8	0.0	0.000	45.940	0.70	0.30
07:30:00	2563	177.09	64.00	2067.7	110.3	1206.9	71.5	556.0	0.0	59.0	0.0	0.000	45.900	1.00	0.30
07:30:00															
07:30:00															
07:35:00	2558	177.14	64.00	2066.7	111.0	1204.4	71.9	539.8	0.0	59.0	0.0	0.000	45.870	1.00	0.30

Client Santos Ltd

Exal Engineer M. Hall / B. Tupman

Well No. Casino 4 DW2

Location Ocean Patriot

Test No. Completion

Dates From/To 08/06/05-11/06/05

Time hh:mm:ss	40586P PSIA	40586T °F	Choke 64th	UcP PSIG	UcT °F	DcP PSIG	DcT °F	AnnP PSIG	GasP PSIG	GasT °F	GasD INWG	QGas1av MMscf/d	QChkgAv MMscf/d	Co2 mol%	H2S ppm
<u>09/06/05</u>															
07:40:00	2554	177.18	64.00	2066.3	111.7	1199.3	72.3	486.1	0.0	59.1	0.0	0.000	45.850	1.00	0.30
07:45:00	2551	177.22	64.00	2067.5	112.2	1190.5	72.6	493.2	0.0	59.3	0.0	0.000	45.880	1.00	0.30
07:45:00	Draeger indicated 1.0% C02 and 0.3 ppm H2S.														
07:50:00	2547	177.25	64.00	2066.1	112.7	1187.5	72.9	504.7	0.0	59.4	0.0	0.000	45.860	1.00	0.30
07:55:00	2544	177.29	64.00	2064.5	113.2	1184.6	73.2	538.2	0.0	59.5	0.0	0.000	45.820	1.00	0.30
08:00:00	2541	177.31	64.00	2064.5	113.5	1185.0	73.5	509.0	0.0	59.5	0.0	0.000	45.810	1.00	0.30
08:00:00	BS&W at choke 100% mud.														
08:00:00	Draeger indicated 1.0% C02 and 0.3 ppm H2S.														
08:05:00	2538	177.33	64.00	2063.4	113.9	1182.6	73.8	543.7	0.0	59.4	0.0	0.000	45.800	1.00	0.30
08:10:00	2535	177.35	64.00	2063.4	114.2	1179.9	74.0	549.6	0.0	59.5	0.0	0.000	45.790	1.00	0.30
08:15:00	2532	177.37	64.00	2062.4	114.6	1177.8	74.2	578.9	0.0	59.5	0.0	0.000	45.770	1.00	0.30
08:15:00	Draeger indicated 1.0% C02 and 0.3 ppm H2S.														
08:20:00	2529	177.39	64.00	2061.4	114.9	1176.0	74.4	590.7	0.0	59.5	0.0	0.000	45.750	1.00	0.30
08:25:00	2527	177.41	64.00	2061.2	115.2	1174.0	74.6	590.5	699.0	59.7	0.0	0.000	45.740	1.00	0.30
08:30:00	2524	177.42	64.00	2060.6	115.5	1172.1	74.8	598.7	699.0	59.7	0.0	0.000	45.730	1.00	0.30
08:30:00	BS&W at choke 100% mud.														
08:30:00	Draeger indicated 1.0% C02 and 0.3 ppm H2S.														
08:35:00	2521	177.43	64.00	2059.8	115.8	1171.1	75.1	633.0	699.0	59.8	0.0	0.000	45.710	1.00	0.30
08:40:00	2519	177.44	64.00	2058.8	116.0	1169.5	75.5	663.3	0.0	59.9	0.0	0.000	45.690	1.00	0.30
08:43:00	Annulus transducer producing spurious data, drillfloor monitoring.														
08:45:00	2517	177.46	64.00	2058.3	116.1	1166.6	75.5	659.0	0.0	60.0	0.0	0.000	45.680	1.00	0.30
08:45:00	Draeger indicated 1.0% C02 and 0.3 ppm H2S.														
08:50:00	2515	177.47	64.00	2057.5	116.3	1166.2	75.6	784.7	0.0	60.0	0.0	0.000	45.660	1.00	0.30
08:55:00	2513	177.48	64.00	2057.1	116.5	1165.0	75.7	1059.1	0.0	60.1	0.0	0.000	45.650	1.00	0.30
09:00:00	2511	177.49	64.00	2056.9	116.8	1163.8	75.9	846.5	0.0	60.3	0.0	0.000	45.640	1.00	0.10
09:00:00	BS&W at choke 100% mud.														
09:00:00	Draeger indicated 1.0% C02 and 0.1 ppm H2S.														
09:05:00	2509	177.50	64.00	2056.1	117.0	1162.5	76.2	1255.1	0.0	60.3	0.0	0.000	45.630	1.00	0.10
09:10:00	2507	177.51	64.00	2055.9	117.3	1162.7	76.5	1136.0	0.0	60.5	0.0	0.000	45.620	1.00	0.10
09:15:00	2504	177.52	64.00	2055.1	117.5	1159.9	76.8	1458.1	0.0	60.6	0.0	0.000	45.600	1.00	0.10
09:15:00	Draeger indicated 1.0% C02 and 0.1 ppm H2S.														



Client Santos Ltd

Exal Engineer M. Hall / B. Tupman

Well No. Casino 4 DW2

Location Ocean Patriot

Test No. Completion

Dates From/To 08/06/05-11/06/05

Time hh:mm:ss	40586P PSIA	40586T °F	Choke 64th	UcP PSIG	UcT °F	DcP PSIG	DcT °F	AnnP PSIG	GasP PSIG	GasT °F	GasD INWG	QGas1av MMscf/d	QChkgAv MMscf/d	Co2 mol%	H2S ppm
<u>09/06/05</u>															
09:16:00	Increased to 72/64 adjustable choke.														
09:20:00	2479	177.44	72.00	1968.8	117.9	1383.7	77.7	0.0	0.0	60.8	0.0	0.000	55.720	1.00	0.10
09:20:00	Annulus transducer back on line.														
09:25:00	2472	177.36	72.00	1968.4	118.9	1375.3	79.5	453.4	0.0	60.9	0.0	0.000	54.860	1.00	0.10
09:26:00	Increased to 76/64 adjustable choke.														
09:30:00	2457	177.31	76.00	1932.0	119.2	1456.7	81.3	451.1	0.0	60.9	0.0	0.000	59.860	1.00	0.10
09:30:00	BS&W at choke 100% mud.														
09:30:00	Draeger indicated 1.0% CO2 and 0.1 ppm H2S.														
09:31:00	Increased to 96/64 adjustable choke.														
09:35:00	2433	177.21	96.00	1874.3	119.3	1568.9	83.3	445.4	0.0	61.0	0.0	0.000	91.890	1.00	0.10
09:40:00	2425	177.13	96.00	1866.0	119.7	1562.6	85.2	445.2	0.0	61.0	0.0	0.000	90.810	1.00	0.10
09:45:00	2418	177.10	96.00	1859.2	119.9	1557.1	86.6	444.6	0.2	61.1	0.0	0.000	90.460	1.00	0.10
09:45:00	Draeger indicated 1.0% CO2 and 0.1 ppm H2S.														
09:50:00	2413	177.08	96.00	1856.2	120.2	1554.6	87.8	442.1	0.2	61.4	0.0	0.000	90.250	1.00	0.10
09:55:00	2410	177.07	96.00	1852.5	120.3	1551.6	88.7	439.6	0.0	61.3	0.0	0.000	90.070	1.00	0.10
10:00:00	2407	177.07	96.00	1850.0	120.5	1548.7	89.6	436.0	0.0	61.5	0.0	0.000	89.930	0.50	0.10
10:00:00	BS&W at choke 100% mud.														
10:00:00	Draeger indicated 0.5% CO2 and 0.1 ppm H2S.														
10:05:00	2404	177.08	96.00	1848.2	120.6	1547.1	90.5	432.1	0.0	61.5	0.0	0.000	89.840	0.50	0.10
10:10:00	2400	177.08	96.00	1845.1	120.8	1544.8	91.1	427.6	0.0	61.5	0.0	0.000	89.720	0.50	0.10
10:15:00	2397	177.08	96.00	1843.5	121.3	1543.8	91.7	423.3	0.0	61.6	0.0	0.000	89.580	0.50	0.10
10:20:00	2394	177.08	96.00	1843.9	121.6	1543.6	92.3	418.4	0.0	61.6	0.0	0.000	89.580	0.50	0.10
10:25:00	2391	177.09	96.00	1843.3	121.7	1543.2	92.5	413.1	0.0	61.9	0.0	0.000	89.570	0.50	0.10
10:30:00	2388	177.08	96.00	1842.3	121.8	1542.0	92.8	408.4	0.0	62.0	0.0	0.000	89.520	0.50	0.10
10:30:00	BS&W at choke 100% mud.														
10:30:00	Draeger indicated 0.5% CO2 and 0.1 ppm H2S.														
10:35:00	2385	177.08	96.00	1840.6	121.9	1540.9	92.9	402.9	0.0	62.1	0.0	0.000	89.440	0.50	0.10
10:40:00	2383	177.08	96.00	1840.4	121.9	1540.1	93.0	397.8	0.0	62.1	0.0	0.000	89.420	0.50	0.10
10:45:00	2380	177.08	96.00	1839.0	122.0	1539.3	93.1	393.0	0.0	62.2	0.0	0.000	89.370	0.50	0.10
10:50:00	2377	177.08	96.00	1837.1	122.0	1537.7	93.3	387.3	0.0	62.4	0.0	0.000	89.310	0.50	0.10
10:55:00	2374	177.07	96.00	1836.7	122.1	1536.8	93.6	381.8	0.0	62.5	0.0	0.000	89.240	0.50	0.10

Client Santos Ltd

Exal Engineer M. Hall / B. Tupman

Well No. Casino 4 DW2

Location Ocean Patriot

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Time hh:mm:ss	40586P PSIA	40586T °F	Choke 64th	UcP PSIG	UcT °F	DcP PSIG	DcT °F	AnnP PSIG	GasP PSIG	GasT °F	GasD INWG	QGas1av MMscf/d	QChkgAv MMscf/d	Co2 mol%	H2S ppm
<u>09/06/05</u>															
11:00:00	2372	177.07	96.00	1835.5	122.3	1536.0	93.8	375.7	0.0	62.6	0.0	0.000	89.190	1.00	0.10
11:00:00	BS&W at choke 100% mud.														
11:00:00	Draeger indicated 1.0% C02 and 0.1 ppm H2S.														
11:05:00	2369	177.06	96.00	1834.1	122.4	1535.4	93.9	369.3	0.0	62.8	0.0	0.000	89.140	1.00	0.10
11:10:00	2366	177.06	96.00	1833.0	122.4	1535.0	94.0	363.6	0.0	62.9	0.0	0.000	89.090	1.00	0.10
11:15:00	2364	177.05	96.00	1832.0	122.5	1534.6	93.9	356.9	0.0	62.9	0.0	0.000	89.040	1.00	0.10
11:20:00	2361	177.05	96.00	1830.2	122.6	1533.4	94.0	350.9	0.0	63.0	0.0	0.000	88.960	1.00	0.10
11:25:00	2359	177.04	96.00	1829.2	122.7	1532.8	94.2	346.0	0.0	63.1	0.0	0.000	88.900	1.00	0.10
11:30:00	2357	177.04	96.00	1827.7	122.8	1531.3	94.6	340.5	0.0	63.2	0.0	0.000	88.840	1.00	0.10
11:30:00	BS&W at choke 100% mud.														
11:30:00	Draeger indicated 1.0% C02 and 0.1 ppm H2S.														
11:35:00	2355	177.04	96.00	1827.1	123.0	1530.5	95.1	335.4	0.0	63.5	0.0	0.000	88.790	1.00	0.10
11:40:00	2353	177.03	96.00	1826.7	123.1	1529.5	95.4	330.1	0.0	63.6	0.0	0.000	88.750	1.00	0.10
11:45:00	2351	177.03	96.00	1825.5	123.3	1528.3	95.6	323.3	0.0	63.7	0.0	0.000	88.720	1.00	0.10
11:50:00	2349	177.03	96.00	1824.3	123.3	1527.6	95.9	317.2	0.0	64.0	0.0	0.000	88.660	1.00	0.10
11:55:00	2347	177.03	96.00	1823.2	123.4	1526.2	96.1	310.9	0.0	64.0	0.0	0.000	88.600	1.00	0.10
12:00:00	2345	177.02	96.00	1822.2	123.5	1525.0	96.4	305.6	0.0	64.3	0.0	0.000	88.550	0.30	0.00
12:00:00	BS&W at choke 100% mud.														
12:00:00	Draeger indicated 0.3% C02 and 0.0 ppm H2S.														
12:05:00	2343	177.02	96.00	1821.4	123.7	1524.2	96.6	299.4	0.0	64.5	0.0	0.000	88.530	0.30	0.00
12:10:00	2341	177.02	96.00	1820.6	123.7	1524.0	96.7	293.9	0.0	64.5	0.0	0.000	88.480	0.30	0.00
12:15:00	2339	177.02	96.00	1819.8	123.8	1523.1	97.0	288.8	0.0	64.8	0.0	0.000	88.440	0.30	0.00
12:20:00	2337	177.01	96.00	1819.2	123.8	1522.7	97.3	283.1	0.0	64.9	0.0	0.000	88.400	0.30	0.00
12:25:00	2336	177.01	96.00	1818.5	123.9	1522.3	97.6	278.6	0.1	65.1	0.0	0.000	88.370	0.30	0.00
12:30:00	2334	177.00	96.00	1817.9	123.9	1521.7	97.8	273.4	0.0	65.2	0.0	0.000	88.350	0.30	0.00
12:30:00	BS&W at choke 100% mud.														
12:35:00	2332	177.00	96.00	1817.1	124.0	1520.5	98.1	268.1	0.0	65.6	0.0	0.000	88.310	0.30	0.00
12:40:00	2330	177.00	96.00	1815.3	124.0	1519.7	98.4	262.2	0.0	65.9	0.0	0.000	88.250	0.30	0.00
12:45:00	2329	176.99	96.00	1815.1	124.0	1519.7	98.6	257.1	0.0	66.0	0.0	0.000	88.230	0.30	0.00
12:50:00	2328	176.99	96.00	1814.9	124.1	1518.4	98.7	252.4	0.0	66.2	0.0	0.000	88.190	0.30	0.00
12:55:00	2326	176.99	96.00	1814.3	124.2	1517.6	98.8	247.9	0.0	66.6	0.0	0.000	88.150	0.30	0.00

Client Santos Ltd

Exal Engineer M. Hall / B. Tupman

Well No. Casino 4 DW2

Location Ocean Patriot

Test No. Completion

Dates From/To 08/06/05-11/06/05

Time hh:mm:ss	40586P PSIA	40586T °F	Choke 64th	UcP PSIG	UcT °F	DcP PSIG	DcT °F	AnnP PSIG	GasP PSIG	GasT °F	GasD INWG	QGas1av MMscf/d	QChkgAv MMscf/d	Co2 mol%	H2S ppm
<u>09/06/05</u>															
13:00:00	2324	176.99	96.00	1812.8	124.2	1517.4	98.9	242.8	0.0	66.9	0.0	0.000	88.100	0.30	0.00
13:00:00	Unable obtain BS&W due to plugging in sampling lines.														
13:05:00	2323	176.98	96.00	1812.2	124.3	1517.0	99.2	237.5	0.0	67.1	0.0	0.000	88.070	0.30	0.00
13:10:00	2321	176.98	96.00	1811.4	124.3	1516.2	99.6	231.9	0.0	67.3	0.0	0.000	88.040	0.30	0.00
13:15:00	2320	176.98	96.00	1810.4	124.3	1514.5	100.0	226.4	0.0	67.2	0.0	0.000	87.980	0.30	0.00
13:20:00	2318	176.98	96.00	1809.8	124.4	1513.1	100.2	221.5	0.0	67.1	0.0	0.000	87.940	0.30	0.00
13:25:00	2317	176.97	96.00	1808.7	124.5	1513.3	100.3	216.0	0.0	67.2	0.0	0.000	87.900	0.30	0.00
13:30:00	2316	176.97	96.00	1808.1	124.6	1512.3	100.4	211.1	0.0	67.3	0.0	0.000	87.870	0.30	0.00
13:35:00	2314	176.97	96.00	1807.5	124.7	1511.9	100.4	207.0	0.0	67.4	0.0	0.000	87.840	0.30	0.00
13:40:00	2313	176.97	96.00	1806.7	124.7	1511.5	100.1	201.9	0.0	67.4	0.0	0.000	87.800	0.30	0.00
13:45:00	2311	176.97	96.00	1806.3	124.6	1510.9	100.0	197.4	0.0	67.4	0.0	0.000	87.770	0.30	0.00
13:47:00	Diverted flow through 64/64" fixed choke.														
13:50:00	2362	177.13	64.00	2004.8	125.7	980.2	98.7	214.4	0.0	67.4	0.0	0.000	52.000	0.30	0.00
13:50:00	No liquids at surface.														
13:55:00	2374	177.39	64.00	2014.4	124.2	990.2	93.7	206.6	0.0	67.3	0.0	0.000	44.650	0.30	0.00
14:00:00	2381	177.46	64.00	2016.0	123.4	1002.5	89.4	197.4	0.0	67.3	0.0	0.000	44.720	0.30	0.00
14:00:00	Draeger indicated 0.6% CO2 and 0.1 ppm H2S.														
14:05:00	2386	177.48	64.00	2017.0	123.0	1002.3	86.3	188.8	0.0	67.2	0.0	0.000	44.750	0.30	0.00
14:10:00	2390	177.48	64.00	2018.5	122.9	1023.5	84.2	181.3	0.0	67.0	0.0	0.000	44.790	0.30	0.00
14:15:00	2393	177.49	64.00	2021.3	122.7	1023.3	82.9	174.9	0.0	66.9	0.0	0.000	44.830	0.30	0.00
14:20:00	2395	177.49	64.00	2024.0	122.5	1020.4	82.1	169.0	0.0	66.7	0.0	0.000	44.890	0.30	0.00
14:23:00	Diverted flow through test separator.														
14:25:00	2397	177.50	64.00	2026.0	122.3	1003.3	81.5	163.9	130.6	84.9	0.0	0.000	44.930	0.30	0.00
14:30:00	2400	177.50	64.00	2027.3	122.2	1038.8	80.9	159.2	709.1	76.2	0.0	0.000	44.980	0.30	0.00
14:35:00	2402	177.52	64.00	2029.7	121.9	1038.6	80.7	154.7	710.0	76.0	170.8	0.000	45.020	0.30	0.00
14:39:00	Installed 4.50" orifice plate in test separator gas meter run.														
14:40:00	2402	177.52	64.00	2031.6	121.7	1170.3	80.7	149.8	890.8	83.4	90.5	9.446	45.060	0.30	0.00
14:45:00	2404	177.52	64.00	2032.8	121.5	1202.6	81.5	145.1	933.2	85.5	86.2	47.164	45.100	0.60	0.10
14:45:00	Draeger indicated 0.6% CO2 and 0.1 ppm H2S.														
14:45:00	Gas SG 0.716.														
14:50:00	2405	177.53	64.00	2033.6	121.4	1224.1	82.4	141.0	960.8	86.9	84.0	47.275	45.120	0.60	0.10

Client Santos Ltd

Exal Engineer M. Hall / B. Tupman

Well No. Casino 4 DW2

Location Ocean Patriot

Test No. Completion

Dates From/To 08/06/05-11/06/05

Time hh:mm:ss	40586P PSIA	40586T °F	Choke 64th	UcP PSIG	UcT °F	DcP PSIG	DcT °F	AnnP PSIG	GasP PSIG	GasT °F	GasD INWG	QGas1av MMscf/d	QChkgAv MMscf/d	Co2 mol%	H2S ppm
<u>09/06/05</u>															
14:55:00	2406	177.54	64.00	2034.8	121.2	1230.6	83.1	137.3	971.4	87.1	83.0	47.320	45.140	0.60	0.10
15:00:00	2407	177.55	64.00	2035.4	121.1	1243.9	83.5	133.4	988.2	87.9	82.8	47.458	45.160	0.60	0.10
15:00:00	Draeger indicated 0.6% CO2 and 0.1 ppm H2S.														
15:00:00	Gas SG 0.692.														
15:00:00	Mercury: 0.94 micrograms/m3.														
15:05:00	2407	177.56	64.00	2037.1	121.0	1250.8	83.9	129.9	997.0	88.5	82.2	47.525	45.190	0.60	0.10
15:07:00	Removed orifice plate.														
15:10:00	2408	177.56	64.00	2037.3	121.2	1223.7	84.3	126.5	961.5	87.6	0.0	9.521	45.210	0.60	0.10
15:10:00	Radon: 381 Bq/m3.														
15:11:00	Lowered pressure in test separator.														
15:15:00	2409	177.57	64.00	2037.5	121.2	1198.1	84.3	122.6	927.2	86.1	0.0	0.000	45.210	0.60	0.10
15:17:00	Installed 4.50" orifice plate in test separator gas meter run.														
15:20:00	2410	177.57	64.00	2039.5	121.2	1124.7	83.8	119.1	826.7	81.5	97.4	28.280	45.230	0.60	0.10
15:25:00	2411	177.58	64.00	2040.6	121.3	1123.5	83.2	116.5	827.2	81.4	97.9	47.121	45.270	0.60	0.10
15:30:00	2411	177.59	64.00	2042.4	121.5	1136.4	82.9	113.4	844.7	82.0	96.1	47.210	45.300	0.60	0.10
15:30:00	Draeger indicated 0.6% CO2 and 0.1 ppm H2S.														
15:30:00	Gas SG 0.684.														
15:35:00	2411	177.59	64.00	2043.4	121.6	1141.7	82.8	110.9	852.8	82.4	95.5	47.331	45.320	0.60	0.10
15:40:00	2412	177.59	64.00	2044.2	121.7	1146.6	82.7	107.3	857.7	82.6	94.8	47.351	45.350	0.60	0.10
15:45:00	2412	177.60	64.00	2045.3	121.7	1145.3	82.8	104.6	858.8	82.5	94.5	47.364	45.370	0.60	0.10
15:50:00	2412	177.60	64.00	2046.5	121.8	1144.9	82.8	101.9	859.3	82.7	95.0	47.457	45.390	0.60	0.10
15:50:00	Mercury: 0.59 micrograms/m3.														
15:50:00	Lowered pressure in test separator.														
15:55:00	2413	177.60	64.00	2046.1	121.9	1118.6	82.7	99.3	818.4	81.0	98.9	43.323	45.400	0.60	0.10
16:00:00	2413	177.61	64.00	2047.5	121.8	1115.9	82.5	96.6	819.5	80.9	99.2	47.368	45.410	0.50	0.10
16:00:00	Draeger indicated 0.5% CO2 and 0.1 ppm H2S.														
16:00:00	Oil SG 0.773 @ 60 degF.														
16:00:00	Well Test sample attained by Geoservices 0.6% CO2 and <0.5ppm H2S.														
16:05:00	2413	177.61	64.00	2048.5	121.7	1115.7	82.3	94.0	819.5	80.8	99.7	47.406	45.430	0.50	0.10
16:10:00	2413	177.61	64.00	2048.9	121.7	1115.9	82.1	91.7	819.5	80.8	99.2	47.305	45.460	0.50	0.10
16:15:00	2413	177.62	64.00	2048.5	121.7	1120.0	82.0	89.1	818.9	80.9	97.1	46.959	45.470	0.50	0.10

Client Santos Ltd

Exal Engineer M. Hall / B. Tupman

Well No. Casino 4 DW2

Location Ocean Patriot

Test No. Completion

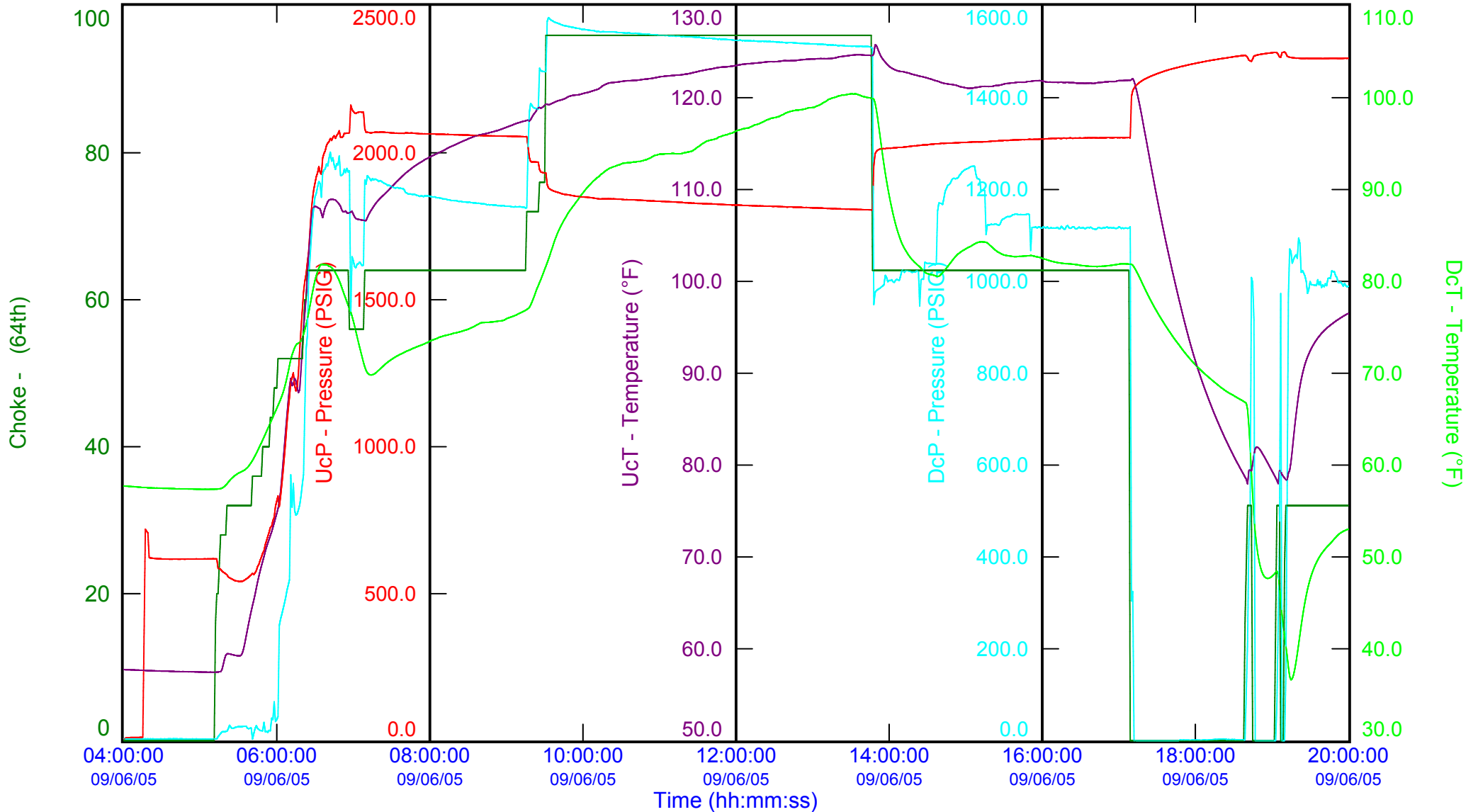
Dates From/To 08/06/05-11/06/05

Time hh:mm:ss	40586P PSIA	40586T °F	Choke 64th	UcP PSIG	UcT °F	DcP PSIG	DcT °F	AnnP PSIG	GasP PSIG	GasT °F	GasD INWG	QGas1av MMscf/d	QChkgAv MMscf/d	Co2 mol%	H2S ppm
<u>09/06/05</u>															
16:15:00	Petrotech commenced taking gas sample 1.01 : s/n A4786.														
16:20:00	2413	177.62	64.00	2050.2	121.7	1121.6	81.9	87.0	819.5	80.9	98.8	46.998	45.490	0.50	0.10
16:25:00	2414	177.62	64.00	2050.4	121.6	1118.6	81.9	84.6	820.0	80.9	98.2	46.921	45.490	0.50	0.10
16:30:00	2414	177.63	64.00	2050.8	121.6	1116.1	81.8	82.7	820.6	80.8	98.9	47.155	45.500	0.50	0.10
16:30:00	Completed taking gas sample.														
16:35:00	2414	177.63	64.00	2050.8	121.6	1116.9	81.7	80.1	820.5	80.9	97.7	46.939	45.500	0.50	0.10
16:40:00	2414	177.63	64.00	2051.6	121.6	1114.5	81.6	77.8	820.6	80.9	97.5	47.101	45.520	0.50	0.10
16:45:00	2414	177.63	64.00	2051.0	121.7	1117.1	81.7	75.2	820.1	80.9	97.4	47.114	45.510	0.50	0.10
16:45:00	Total liquid returns; 3 bbls - Estimated LGR 0.65 bbl/MMscf.														
16:50:00	2414	177.64	64.00	2051.4	121.7	1117.5	81.7	73.1	820.1	81.0	97.7	47.177	45.510	0.50	0.10
16:55:00	2414	177.65	64.00	2051.2	121.8	1115.9	81.8	70.5	820.6	81.0	98.4	47.223	45.530	0.50	0.10
17:00:00	2414	177.65	64.00	2051.8	121.9	1118.8	81.9	68.6	820.0	81.1	98.5	47.357	45.530	0.60	0.10
17:00:00	Draeger indicated 0.6% CO2 and 0.1 ppm H2S.														
17:00:00	Gas SG 0.693.														
17:05:00	2414	177.65	64.00	2051.6	121.9	1116.5	81.9	66.2	820.6	81.1	98.6	47.195	45.520	0.60	0.10
17:05:00	Clean-up criteria established: 1: BS&W <3% - not measurable, 2: Stable THP - <10 psi/5 min change over 2 hours - 15 psi stable increase over 2 hours, 3: Stable gas rate - 47.2 MMscf/d, 4: WGR < 1 bbl/MMscf - Estimated LGR<0.65 bbl/MMscf														
17:08:00	Raised orifice plate and bypassed test separator.														
17:09:00	Closed in well at choke manifold.														
17:10:00	2467	177.69	0.00	2192.0	122.0	304.1	81.9	71.1	305.1	72.4	0.0	18.862	36.120	0.60	0.10



Client Santos Ltd  
Well No. Casino 4 DW2  
Test No. Completion  
Location Ocean Patriot

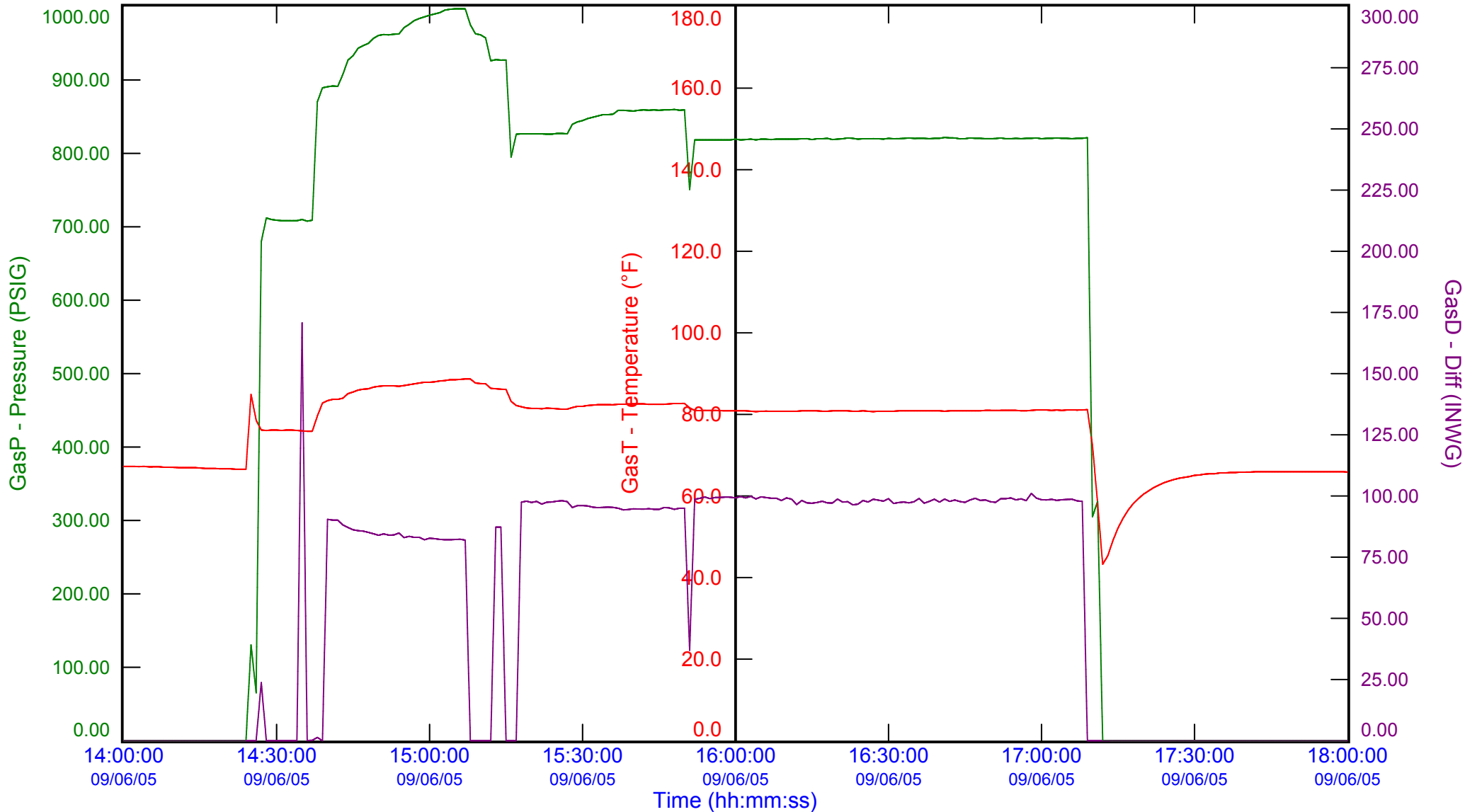
Data Type EDGE Data  
Comments Clean Up Flow Period  
Choke Manifold Parameters





Client Santos Ltd  
Well No. Casino 4 DW2  
Test No. Completion  
Location Ocean Patriot

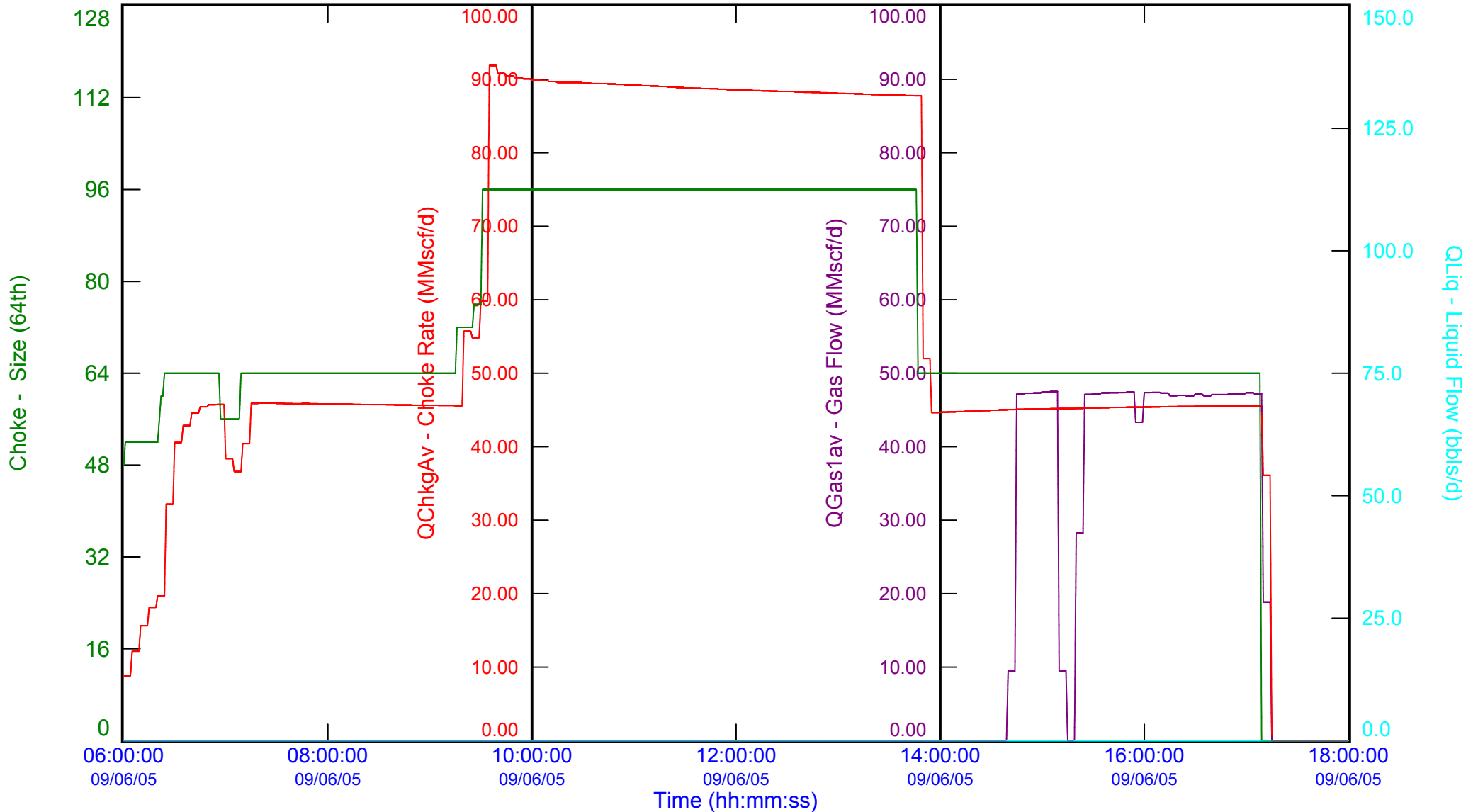
Data Type EDGE Data  
Comments Clean Up Flow Period  
Separator Parameters





Client Santos Ltd  
Well No. Casino 4 DW2  
Test No. Completion  
Location Ocean Patriot

Data Type EDGE Data  
Comments Clean Up Flow Period  
Production Rates

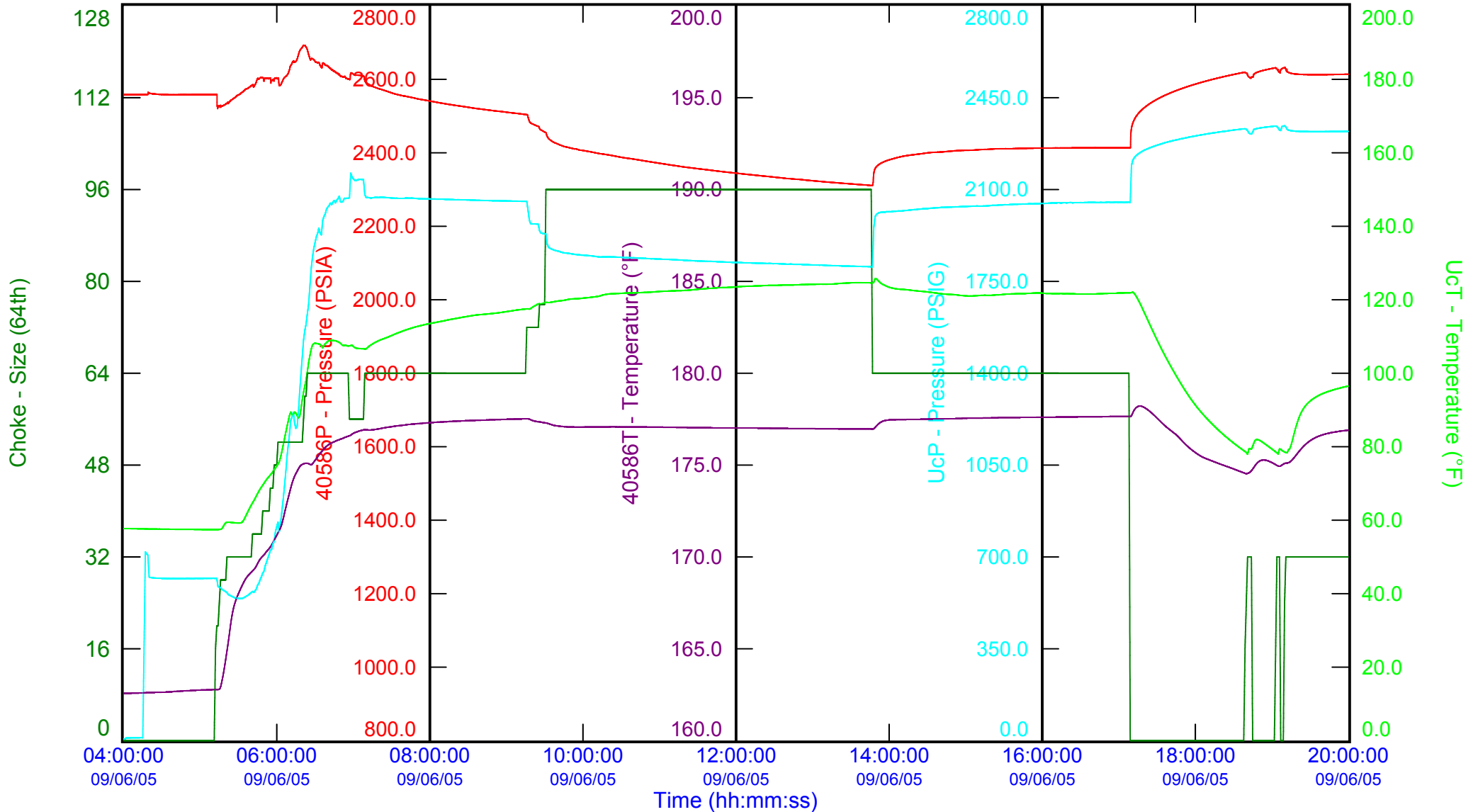






Client Santos Ltd  
Well No. Casino 4 DW2  
Test No. Completion  
Location Ocean Patriot

Data Type EDGE Data  
Comments Clean Up Flow Period.  
Choke Manifold & Bottomhole  
Parameters.





## Main Flow Data Listing

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<b>Client</b>	Santos Ltd
<b>Well No.</b>	Casino 4 DW2
<b>Test No.</b>	Completion
<b>Location</b>	Ocean Patriot
<b>Dates From/To</b>	08/06/05-11/06/05
<b>Country</b>	Australia
<b>Field</b>	Casino
<b>Formation</b>	Waarre A Sands
<b>Exal Engineer</b>	M. Hall / B. Tupman
<b>Expro Supervisor</b>	F. Beaton
<b>Client Engineer</b>	R. King / M. Andronov / P. Nardone
<b>Perforations</b>	Open Hole - Sand Screens

Gas specific gravity of 0.61 used for rate calculations based on PVT analysis performed on gas samples. This over rides the estimate gas specific gravity of 0.68 reported during the test.

Client Santos Ltd

Exal Engineer M. Hall / B. Tupman

Well No. Casino 4 DW2

Location Ocean Patriot

Test No. Completion

Dates From/To 08/06/05-11/06/05

Time hh:mm:ss	Choke 64th	40586P PSIA	40586T °F	UcP PSIG	UcT °F	DcP PSIG	DcT °F	AnnP PSIG	GasP PSIG	GasT °F	GasD INWG	QGas1s MMscf/d	QGas1av MMscf/d	QChkgAv MMscf/d	Gas1Cum MMscf/d	QLiq bbls/d	LiqCum bbls	Co2 mol%	H2S ppm
<u>09/06/05</u>																			
18:30:00	0	2613.36	174.80	2327.0	81.0	2.4	67.6	0.0	0.0	65.6	0.0	0.000	0.000	0.000	4.482	0.00	0.00	0.60	0.10
18:35:00	0	2616.96	174.66	2329.8	79.7	1.8	67.2	0.0	0.0	65.4	0.0	0.000	0.000	0.000	4.482	0.00	0.00	0.60	0.10
18:38:00	Commenced methanol injection upstream of surface safety valve.																		
18:39:00	Opened well up to port flareboom on 16/64 adjustable choke through heat exchanger and separator.																		
18:40:00	24	2617.30	174.53	2329.8	78.5	107.9	66.8	0.0	53.9	73.8	0.0	0.000	0.000	2.260	4.482	0.00	0.00	0.60	0.10
18:40:00	Increased to 24/64 adjustable choke.																		
18:41:00	Increased to 32/64 adjustable choke.																		
18:41:00	Gas flare lit.																		
18:45:00	0	2606.53	174.78	2319.2	80.1	997.1	56.7	0.0	147.8	56.1	0.0	0.000	0.000	10.770	4.482	0.00	0.00	0.60	0.10
18:45:00	Well shut in due to burst steam hose.																		
18:50:00	0	2621.22	175.20	2334.3	81.8	0.0	49.6	0.0	0.0	53.7	0.0	0.000	0.000	0.000	4.482	0.00	0.00	0.60	0.10
18:55:00	0	2625.91	175.27	2337.8	80.7	0.0	47.8	0.0	0.0	57.5	0.0	0.000	0.000	0.000	4.482	0.00	0.00	0.60	0.10
19:00:00	0	2629.61	175.14	2340.4	79.4	0.0	47.9	0.0	0.0	59.5	0.0	0.000	0.000	0.000	4.482	0.00	0.00	0.60	0.10
19:03:00	Commenced methanol injection upstream of surface safety valve.																		
19:03:00	Opened well up to port flareboom on 16/64 adjustable choke through heat exchanger and separator.																		
19:04:00	Increased to 32/64 adjustable choke.																		
19:05:00	32	2623.54	174.95	2334.9	78.0	255.5	48.1	0.0	121.2	72.5	0.0	0.000	0.000	6.150	4.482	0.00	0.00	0.60	0.10
19:05:00	Diverted flow through 32/64 fixed choke.																		
19:06:00	Gas flare lit.																		
19:07:00	Shut in due to leak on Weco seal downstream of choke manifold caused by hydrating.																		
19:10:00	24	2632.10	175.09	2343.1	78.6	0.0	41.4	0.0	0.0	47.6	0.0	0.000	0.000	4.270	4.482	0.00	0.00	0.60	0.10
19:10:00	Opened well up to port flareboom on 24/64 adjustable choke through heat exchanger and separator.																		
19:11:00	Increased to 32/64 adjustable choke.																		
19:12:00	Diverted flow through 32/64 fixed choke.																		
19:13:00	Steam delivery to heat exchanger halted to fix minor leak in union.																		
19:13:00	Gas flare lit.																		
19:13:00	Recommenced steam delivery to heat exchanger.																		
19:15:00	32	2616.59	175.22	2324.5	80.3	1065.0	36.6	0.0	219.0	37.7	0.0	0.000	0.000	13.530	4.482	0.00	0.00	0.60	0.10
19:19:00	Ceased methanol injection upstream of surface safety valve.																		
19:20:00	32	2614.21	175.63	2322.5	86.6	1050.3	39.5	0.0	578.2	59.6	0.0	0.000	0.000	13.500	4.482	0.00	0.00	0.60	0.10
19:25:00	32	2613.21	176.03	2321.2	90.5	1018.2	44.3	0.0	685.5	63.7	0.0	0.000	0.000	13.490	4.482	0.00	0.00	0.60	0.10

Client Santos Ltd

Exal Engineer M. Hall / B. Tupman

Well No. Casino 4 DW2

Location Ocean Patriot

Test No. Completion

Dates From/To 08/06/05-11/06/05

Time hh:mm:ss	Choke 64th	40586P PSIA	40586T °F	UcP PSIG	UcT °F	DcP PSIG	DcT °F	AnnP PSIG	GasP PSIG	GasT °F	GasD INWG	QGas1s MMscf/d	QGas1av MMscf/d	QChkgAv MMscf/d	Gas1Cum MMscf/d	QLiq bbls/d	LiqCum bbls	Co2 mol%	H2S ppm
<u>09/06/05</u>																			
19:30:00	32	2612.85	176.33	2321.0	92.4	999.8	47.6	0.0	731.8	63.4	0.0	0.000	0.000	13.490	4.482	0.00	0.00	0.60	0.10
19:35:00	32	2612.74	176.52	2321.0	93.6	990.8	49.4	0.0	746.7	66.0	0.0	0.000	0.000	13.490	4.482	0.00	0.00	0.60	0.10
19:37:00	Installed 2.75" orifice plate in test separator gas meter run.																		
19:38:00	Gas SG 0.684.																		
19:40:00	32	2612.84	176.65	2320.8	94.5	992.4	50.5	0.0	747.7	66.7	105.2	7.100	8.727	13.490	4.512	0.00	0.00	0.60	0.10
19:45:00	32	2613.06	176.74	2321.4	95.1	1007.4	51.3	0.0	748.3	67.1	104.2	12.090	14.531	13.490	4.563	0.00	0.00	0.60	0.10
19:50:00	32	2613.34	176.81	2321.4	95.7	1012.3	52.1	0.0	771.3	63.4	100.8	13.726	14.510	13.490	4.613	0.00	0.00	0.60	0.10
19:52:00	Draeger indicated 1% C02 and 0.1 ppm H2S, 0% mercaptan.																		
19:55:00	32	2613.73	176.86	2321.2	96.1	995.1	52.7	0.0	748.8	67.6	104.8	14.288	14.575	13.490	4.664	0.00	0.00	1.00	0.10
20:00:00	32	2614.14	176.90	2322.1	96.5	990.2	53.0	0.0	743.2	69.0	106.1	14.464	14.530	13.490	4.714	0.00	0.00	1.00	0.10
20:05:00	32	2614.58	176.94	2322.3	96.8	998.6	53.2	0.0	743.2	69.1	106.2	14.524	14.524	13.490	4.765	0.00	0.00	1.00	0.10
20:10:00	32	2615.08	176.97	2322.7	96.9	1002.0	53.5	0.0	750.6	67.6	104.6	14.514	14.505	13.500	4.815	0.00	0.00	1.00	0.10
20:15:00	32	2615.56	177.00	2322.9	97.1	988.5	53.6	0.0	745.6	68.9	106.2	14.532	14.542	13.500	4.866	0.00	0.00	1.00	0.10
20:20:00	32	2616.07	177.03	2323.5	97.3	992.2	53.8	0.0	742.7	69.5	106.8	14.540	14.542	13.500	4.916	0.00	0.00	1.00	0.10
20:25:00	32	2616.56	177.06	2323.9	97.4	1051.9	53.9	0.0	756.2	66.3	102.8	14.499	14.484	13.500	4.966	0.00	0.00	1.00	0.10
20:30:00	32	2617.10	177.08	2324.3	97.5	987.1	54.4	0.0	751.7	67.7	106.4	14.573	14.591	13.500	5.017	0.00	0.00	1.00	0.10
20:32:00	Draeger indicated 1% C02 and 0.1 ppm H2S.																		
20:35:00	32	2617.65	177.10	2324.7	97.7	999.6	54.6	0.0	745.2	69.3	106.8	14.561	14.550	13.510	5.068	0.00	0.00	1.00	0.10
20:40:00	32	2618.17	177.12	2325.1	97.8	1013.7	54.6	0.0	742.6	69.5	106.7	14.558	14.555	13.510	5.118	0.00	0.00	1.00	0.10
20:45:00	32	2618.69	177.14	2325.3	98.0	1039.0	54.5	0.0	767.5	69.9	102.7	14.418	14.338	13.510	5.168	0.00	0.00	1.00	0.10
20:50:00	32	2619.22	177.16	2325.9	98.1	1010.2	54.7	0.0	768.0	70.5	103.5	14.511	14.554	13.510	5.218	0.00	0.00	1.00	0.10
20:55:00	32	2619.77	177.18	2326.3	98.2	1021.0	55.0	0.0	766.4	71.0	103.7	14.529	14.535	13.520	5.269	0.00	0.00	1.00	0.10
21:00:00	32	2620.31	177.20	2326.1	98.2	1026.2	55.0	0.0	762.5	71.4	103.4	14.537	14.545	13.520	5.319	0.00	0.00	1.00	0.10
21:05:00	32	2620.81	177.21	2327.0	98.3	1057.5	55.1	0.0	785.2	66.6	98.9	14.508	14.489	13.520	5.370	0.00	0.00	1.00	0.10
21:10:00	32	2621.34	177.23	2327.2	98.4	1032.3	55.3	0.0	771.6	69.7	102.4	14.559	14.589	13.520	5.420	0.00	0.00	1.00	0.10
21:10:00	Radon: 396 Bq/m3.																		
21:15:00	32	2621.83	177.24	2327.6	98.5	1016.4	55.4	0.0	770.3	70.4	103.3	14.562	14.560	13.520	5.471	0.00	0.00	1.00	0.10
21:20:00	32	2622.35	177.25	2328.0	98.5	1034.5	55.4	0.0	770.9	70.1	102.6	14.554	14.544	13.530	5.521	0.00	0.00	1.00	0.10
21:25:00	32	2622.82	177.26	2328.4	98.5	1049.1	55.4	0.0	784.7	67.9	100.0	14.529	14.519	13.530	5.572	0.00	0.00	1.00	0.10
21:28:00	Gas SG 0.682.																		
21:29:00	Flushed line to downstream choke pressure transducer.																		

Client Santos Ltd

Exal Engineer M. Hall / B. Tupman

Well No. Casino 4 DW2

Location Ocean Patriot

Test No. Completion

Dates From/To 08/06/05-11/06/05

Time hh:mm:ss	Choke 64th	40586P PSIA	40586T °F	UcP PSIG	UcT °F	DcP PSIG	DcT °F	AnnP PSIG	GasP PSIG	GasT °F	GasD INWG	QGas1s MMscf/d	QGas1av MMscf/d	QChkgAv MMscf/d	Gas1Cum MMscf/d	QLiq bbls/d	LiqCum bbls	Co2 mol%	H2S ppm
<u>09/06/05</u>																			
21:30:00	32	2623.29	177.28	2328.6	98.5	962.2	55.4	0.0	774.4	69.1	102.2	14.573	14.584	13.530	5.623	0.00	0.00	1.00	0.10
21:30:00	Draeger indicated 1% C02 and 0.1 ppm H2S, 0% mercaptan.																		
21:35:00	32	2623.78	177.29	2329.0	98.3	966.5	55.1	0.0	774.9	69.6	102.2	14.562	14.557	13.530	5.673	0.00	0.00	1.00	0.10
21:36:00	Adjusted separator pressure control.																		
21:40:00	32	2624.29	177.30	2329.2	98.2	970.2	54.9	0.0	738.1	68.4	107.3	14.537	14.585	13.530	5.724	0.00	0.00	1.00	0.10
21:45:00	32	2624.75	177.31	2329.4	98.2	971.0	54.6	0.0	740.6	68.0	106.5	14.514	14.546	13.540	5.774	0.00	0.00	1.00	0.10
21:50:00	32	2625.25	177.32	2329.6	98.1	1011.6	54.5	0.0	756.6	64.7	103.8	14.580	14.519	13.540	5.825	0.00	0.00	1.00	0.10
21:55:00	32	2625.66	177.33	2330.2	98.1	1047.2	54.4	0.0	741.5	68.1	107.0	14.561	14.594	13.540	5.875	0.00	0.00	1.00	0.10
22:00:00	32	2626.09	177.34	2330.2	98.1	1076.3	54.4	0.0	746.7	69.4	105.4	14.492	14.577	13.540	5.926	0.00	0.00	1.00	0.10
22:05:00	32	2626.57	177.35	2330.6	98.0	928.6	54.2	0.0	748.8	70.4	106.5	14.576	14.575	13.540	5.977	0.00	0.00	1.00	0.10
22:10:00	32	2627.04	177.36	2331.3	98.0	966.3	53.8	0.0	759.0	67.9	103.7	14.547	14.537	13.550	6.027	0.00	0.00	1.00	0.10
22:10:00	Commenced pumping methanol upstream of SSV to eliminate hydrates across heater choke.																		
22:15:00	32	2627.28	177.36	2331.1	97.8	889.8	53.3	0.0	740.3	68.8	108.9	14.634	14.665	13.550	6.078	0.00	0.00	1.00	0.10
22:20:00	32	2627.71	177.38	2331.3	97.6	860.0	52.8	0.0	740.3	68.7	109.0	14.666	14.680	13.550	6.129	0.00	0.00	1.00	0.10
22:25:00	32	2628.04	177.38	2331.3	97.7	852.8	51.8	0.0	740.3	69.0	108.8	14.670	14.674	13.550	6.180	0.00	0.00	1.00	0.10
22:30:00	32	2628.39	177.39	2331.9	97.7	851.4	50.8	0.0	738.1	68.2	108.7	14.664	14.665	13.550	6.231	0.00	0.00	1.00	0.10
22:30:00	Draeger indicated 1% C02 and 0.1 ppm H2S.																		
22:35:00	32	2628.79	177.40	2332.1	97.7	853.8	50.0	0.0	739.7	68.5	108.7	14.676	14.682	13.550	6.282	0.00	0.00	1.00	0.10
22:40:00	32	2629.17	177.41	2332.3	97.6	856.7	49.6	0.0	740.3	69.1	109.0	14.678	14.681	13.550	6.333	0.00	0.00	1.00	0.10
22:40:00	Mercury: 0.24 micrograms/m3.																		
22:45:00	32	2629.51	177.41	2332.5	97.6	858.3	49.4	0.0	740.9	68.9	109.0	14.682	14.683	13.550	6.384	0.00	0.00	1.00	0.10
22:50:00	32	2629.92	177.42	2332.7	97.5	867.7	49.2	0.0	762.8	65.1	101.5	14.635	14.632	13.550	6.434	0.00	0.00	1.00	0.10
22:55:00	32	2630.26	177.42	2332.5	97.4	861.4	49.1	0.0	757.2	67.1	106.0	14.681	14.703	13.550	6.486	0.00	0.00	1.00	0.10
23:00:00	32	2630.60	177.43	2332.9	97.4	857.5	49.0	0.0	758.4	68.7	106.2	14.695	14.703	13.560	6.537	0.00	0.00	1.00	0.10
23:05:00	32	2631.00	177.44	2333.3	97.3	857.3	49.0	0.0	758.9	68.9	106.4	14.695	14.693	13.560	6.588	0.00	0.00	1.00	0.10
23:10:00	32	2631.33	177.44	2333.5	97.3	854.2	49.0	0.0	756.2	67.9	105.7	14.685	14.687	13.560	6.639	0.00	0.00	1.00	0.10
23:15:00	32	2631.65	177.45	2333.5	97.2	855.9	49.0	0.0	756.6	65.7	106.0	14.696	14.694	13.560	6.690	0.00	0.00	1.00	0.10
23:20:00	32	2631.93	177.45	2333.7	97.2	856.3	48.9	0.0	758.4	67.9	106.1	14.704	14.709	13.560	6.741	0.00	0.00	1.00	0.10
23:23:00	Gas SG 0.683.																		
23:25:00	32	2632.24	177.46	2333.9	97.1	849.3	48.8	0.0	758.9	68.6	106.1	14.708	14.712	13.560	6.792	0.00	0.00	1.00	0.10
23:30:00	32	2632.53	177.47	2334.1	97.0	846.7	48.6	0.0	759.0	68.8	106.4	14.716	14.721	13.560	6.843	0.00	0.00	1.00	0.10

Client Santos Ltd

Exal Engineer M. Hall / B. Tupman

Well No. Casino 4 DW2

Location Ocean Patriot

Test No. Completion

Dates From/To 08/06/05-11/06/05

Time hh:mm:ss	Choke 64th	40586P PSIA	40586T °F	UcP PSIG	UcT °F	DcP PSIG	DcT °F	AnnP PSIG	GasP PSIG	GasT °F	GasD INWG	QGas1s MMscf/d	QGas1av MMscf/d	QChkgAv MMscf/d	Gas1Cum MMscf/d	QLiq bbls/d	LiqCum bbls	Co2 mol%	H2S ppm
<u>09/06/05</u>																			
23:30:00	Mercury: 0.35 micrograms/m3.																		
23:35:00	32	2632.94	177.47	2334.1	97.0	845.9	48.4	0.0	757.8	66.2	106.2	14.718	14.711	13.560	6.894	0.00	0.00	1.00	0.10
23:40:00	32	2633.32	177.48	2334.7	97.2	853.6	48.4	0.0	759.0	68.1	104.9	14.666	14.652	13.570	6.945	0.00	0.00	1.00	0.10
23:45:00	32	2633.62	177.48	2334.7	97.1	859.1	48.6	0.0	760.7	68.7	104.5	14.656	14.653	13.570	6.996	0.00	0.00	1.00	0.10
23:50:00	32	2634.04	177.48	2334.7	97.1	867.7	48.9	0.0	770.3	69.0	103.3	14.624	14.609	13.570	7.046	0.00	0.00	1.00	0.10
23:50:00	Chlorides 45,000 mg/L.																		
23:50:00	Water density: 1.054 g/cm3 @ 17.1 degC.																		
23:55:00	32	2634.26	177.49	2335.1	96.9	855.7	49.2	0.0	760.1	64.4	105.3	14.669	14.664	13.570	7.097	0.00	0.00	1.00	0.10
<u>10/06/05</u>																			
00:00:00	32	2634.62	177.49	2335.1	97.0	868.8	49.2	0.0	770.9	67.7	103.0	14.641	14.625	13.570	7.148	0.00	0.00	1.00	0.10
00:05:00	32	2634.86	177.49	2335.6	97.0	871.4	49.3	0.0	772.7	68.8	103.2	14.633	14.626	13.570	7.199	0.00	0.00	1.00	0.10
00:10:00	32	2635.21	177.50	2335.6	97.0	873.9	49.5	0.0	774.4	69.0	103.2	14.631	14.626	13.570	7.250	0.00	0.00	1.00	0.10
00:15:00	32	2635.53	177.50	2336.2	96.9	885.9	49.8	0.0	783.6	66.0	100.0	14.603	14.595	13.570	7.300	0.00	0.00	1.00	0.10
00:20:00	32	2635.88	177.51	2336.0	96.8	871.2	49.9	0.0	767.6	66.3	103.7	14.634	14.645	13.570	7.351	0.00	0.00	1.00	0.10
00:25:00	32	2636.07	177.51	2336.0	96.7	866.9	50.0	0.0	761.9	67.8	104.7	14.641	14.644	13.580	7.402	0.00	0.00	1.00	0.10
00:30:00	32	2636.32	177.51	2336.4	96.7	881.8	49.9	0.0	778.4	68.2	102.0	14.622	14.614	13.570	7.453	0.00	0.00	1.00	0.10
00:30:00	Petrotech commenced taking gas sample 1.02 : s/n A2006.																		
00:35:00	32	2636.61	177.52	2336.4	96.6	881.0	49.9	0.0	777.3	68.3	101.7	14.622	14.628	13.580	7.504	0.00	0.00	1.00	0.10
00:40:00	32	2636.92	177.52	2336.6	96.6	887.8	49.9	0.0	774.4	64.3	101.8	14.634	14.639	13.580	7.554	0.00	0.00	1.00	0.10
00:45:00	32	2637.07	177.52	2336.8	96.5	884.3	49.9	0.0	779.6	67.6	101.8	14.626	14.627	13.580	7.605	0.00	0.00	1.00	0.10
00:45:00	Completed taking sample.																		
00:50:00	32	2637.44	177.53	2336.4	96.5	879.4	49.9	0.0	774.4	68.6	103.0	14.631	14.630	13.580	7.656	0.00	0.00	1.00	0.10
00:55:00	32	2637.55	177.53	2336.6	96.5	880.2	49.8	0.0	774.4	68.7	102.9	14.636	14.635	13.580	7.707	0.00	0.00	1.00	0.10
01:00:00	32	2637.87	177.53	2336.8	96.4	900.2	49.8	0.0	787.4	65.0	99.5	14.612	14.603	13.580	7.758	0.00	0.00	1.20	0.10
01:00:00	Draeger indicated 1.2% CO2 and 0.1 ppm H2S.																		
01:05:00	32	2638.10	177.54	2336.8	96.4	875.5	49.9	0.0	765.9	66.9	104.0	14.650	14.669	13.580	7.809	0.00	0.00	1.20	0.10
01:07:00	Removed orifice plate.																		
01:08:00	Heater and separator bypass opened.																		
01:09:00	Increased to 48/64 fixed choke.																		
01:10:00	48	2638.43	177.54	2337.0	96.3	444.1	49.8	0.0	348.3	65.1	0.0	5.991	2.907	20.040	7.819	0.00	0.00	1.20	0.10

Client Santos Ltd

Exal Engineer M. Hall / B. Tupman

Well No. Casino 4 DW2

Location Ocean Patriot

Test No. Completion

Dates From/To 08/06/05-11/06/05

Time hh:mm:ss	Choke 64th	40586P PSIA	40586T °F	UcP PSIG	UcT °F	DcP PSIG	DcT °F	AnnP PSIG	GasP PSIG	GasT °F	GasD INWG	QGas1s MMscf/d	QGas1av MMscf/d	QChkgAv MMscf/d	Gas1Cum MMscf/d	QLiq bbls/d	LiqCum bbls	Co2 mol%	H2S ppm
<b>10/06/05</b>																			
01:11:00	Diverted flow back through heat exchanger.																		
01:14:00	Diverted flow back through separator.																		
01:15:00	48	2609.71	177.49	2285.9	99.1	724.4	48.3	0.0	303.9	61.0	0.0	1.963	0.000	29.160	7.819	0.00	0.00	1.20	0.10
01:16:00	Closed separator bypass.																		
01:20:00	48	2603.92	177.56	2277.3	102.4	949.1	47.8	0.0	821.7	66.7	0.0	0.643	0.000	29.020	7.819	0.00	0.00	1.20	0.10
01:25:00	48	2599.95	177.67	2268.9	104.0	876.1	49.3	0.0	741.0	63.4	0.0	0.211	0.000	28.920	7.819	0.00	0.00	1.20	0.10
01:30:00	48	2597.58	177.76	2263.6	104.8	849.7	51.8	0.0	711.8	61.9	0.0	0.069	0.000	28.830	7.819	0.00	0.00	1.20	0.10
01:35:00	48	2594.70	177.83	2265.4	105.7	785.1	53.5	0.0	636.5	62.0	0.0	0.023	0.000	28.820	7.819	0.00	0.00	1.20	0.10
01:40:00	48	2592.23	177.86	2267.1	106.3	776.1	54.2	0.0	625.7	60.9	0.0	0.000	0.000	28.840	7.819	0.00	0.00	1.20	0.10
01:45:00	48	2590.07	177.89	2267.9	106.8	932.5	54.6	0.0	791.2	60.4	0.0	0.000	0.000	28.850	7.819	0.00	0.00	1.20	0.10
01:50:00	48	2588.14	177.91	2268.9	107.2	889.2	54.9	0.0	734.6	59.1	0.0	0.000	0.000	28.870	7.819	0.00	0.00	1.20	0.10
01:55:00	48	2586.32	177.93	2269.5	107.7	791.1	55.1	0.0	655.1	62.6	0.0	0.000	0.000	28.870	7.819	0.00	0.00	1.20	0.10
01:55:00	Opened separator bypass.																		
02:00:00	48	2584.67	177.94	2269.9	108.0	649.2	55.0	0.0	459.0	55.5	0.0	0.000	0.000	28.880	7.819	0.00	0.00	1.10	0.10
02:00:00	Dräger indicated 1.1% CO2 and 0.1 ppm H2S.																		
02:00:00	Mercury: 0.27 micrograms/m3.																		
02:00:00	Drained 4 bbl's of fluid from separator to surge tank.																		
02:05:00	48	2583.17	177.95	2270.1	108.2	649.2	53.7	0.0	457.1	59.1	0.0	0.000	0.000	28.880	7.819	0.00	0.00	1.10	0.10
02:10:00	48	2581.79	177.96	2270.5	108.5	651.0	52.8	0.0	456.8	60.0	0.0	0.000	0.000	28.890	7.819	0.00	0.00	1.10	0.10
02:13:00	Closed separator bypass.																		
02:14:00	Surface Safety Valve tripped, well shut in.																		
02:15:00	48	2613.72	178.02	2327.2	108.1	39.4	52.4	0.0	42.1	66.4	0.0	0.000	0.000	28.960	7.819	0.00	0.00	1.10	0.10
02:20:00	48	2631.88	178.34	2345.4	103.9	0.0	53.5	0.0	0.0	62.0	0.0	0.000	0.000	29.770	7.819	0.00	0.00	1.10	0.10
02:25:00	48	2640.88	178.30	2352.9	100.7	0.0	54.5	0.0	0.0	62.2	0.0	0.000	0.000	29.900	7.819	0.00	0.00	1.10	0.10
02:29:00	Closed in well at choke manifold.																		
02:29:00	Opened Surface Safety Valve.																		
02:30:00	0	2647.33	177.97	2358.4	97.6	0.0	55.0	0.0	0.0	61.7	0.0	0.000	0.000	17.980	7.819	0.00	0.00	1.10	0.10
02:32:00	Commenced pumping methanol upstream of SSV.																		
02:35:00	24	2652.45	177.58	2362.3	93.2	0.0	55.3	0.0	0.0	61.3	0.0	0.000	0.000	1.570	7.819	0.00	0.00	1.10	0.10
02:35:00	Opened well up to port flareboom on 24/64 adjustable choke through heat exchanger and separator.																		
02:37:00	Gas flare lit.																		

Client Santos Ltd

Exal Engineer M. Hall / B. Tupman

Well No. Casino 4 DW2

Location Ocean Patriot

Test No. Completion

Dates From/To 08/06/05-11/06/05

Time hh:mm:ss	Choke 64th	40586P PSIA	40586T °F	UcP PSIG	UcT °F	DcP PSIG	DcT °F	AnnP PSIG	GasP PSIG	GasT °F	GasD INWG	QGas1s MMscf/d	QGas1av MMscf/d	QChkgAv MMscf/d	Gas1Cum MMscf/d	QLiq bbls/d	LiqCum bbls	Co2 mol%	H2S ppm
<b>10/06/05</b>																			
02:37:00	Increased to 32/64 adjustable choke.																		
02:40:00	32	2641.57	177.24	2349.9	90.0	383.8	50.0	0.0	337.9	39.8	0.0	0.000	0.000	11.390	7.819	0.00	0.00	1.10	0.10
02:42:00	Increased to 48/64 adjustable choke.																		
02:45:00	48	2613.49	177.11	2300.2	92.7	696.2	38.9	0.0	447.6	36.9	0.0	0.000	0.000	23.260	7.819	0.00	0.00	1.10	0.10
02:48:00	Diverted flow through 48/64 fixed choke.																		
02:50:00	48	2603.13	177.23	2288.5	100.7	673.7	38.9	0.0	460.7	44.6	0.0	0.000	0.000	29.180	7.819	0.00	0.00	1.10	0.10
02:52:00	Attempted to increase separator pressure to 750psi.																		
02:54:00	Lowered 3.75 orifice plate.																		
02:55:00	48	2598.13	177.33	2284.2	104.2	664.3	43.0	0.0	457.8	46.8	20.1	2.013	2.013	29.080	7.826	0.00	0.00	1.10	0.10
03:00:00	48	2594.34	177.41	2279.7	105.9	675.2	46.1	0.0	455.1	49.8	0.0			29.030	7.847	0.00	0.00	1.10	0.10
03:00:00	Lowered 4.25 orifice plate.																		
03:02:00	Gas SG 0.684.																		
03:05:00	48	2591.34	177.49	2277.1	106.9	682.9	48.1	0.0	455.7	51.6	100.9	23.104	30.598	28.990	7.953	0.00	0.00	0.70	0.10
03:05:00	Dräger indicated 0.7% CO2 and 0.1 ppm H2S.																		
03:10:00	48	2588.84	177.59	2275.7	107.5	690.3	49.5	0.0	455.7	52.5	100.9	28.119	30.557	28.970	8.059	0.00	0.00	0.70	0.10
03:10:00	Ceased methanol injection upstream of SSV.																		
03:10:00	Radon: 285 Bq/m3.																		
03:15:00	48	2586.73	177.67	2274.0	107.8	695.2	50.4	0.0	453.3	49.6	100.3	29.725	30.511	28.940	8.165	0.00	0.00	0.70	0.10
03:20:00	48	2584.84	177.73	2271.8	108.1	693.1	51.0	0.0	448.7	44.6	99.2	30.176	30.405	28.920	8.271	0.00	0.00	0.70	0.10
03:25:00	48	2583.11	177.77	2270.7	108.3	717.3	51.5	0.0	449.3	40.4	98.7	30.341	30.416	28.900	8.376	0.00	0.00	0.70	0.10
03:30:00	48	2581.60	177.80	2269.1	108.3	733.0	51.9	0.0	452.2	39.1	97.1	30.384	30.403	28.880	8.482	0.00	0.00	0.70	0.10
03:35:00	48	2580.27	177.83	2268.9	108.4	729.9	52.3	0.0	450.7	39.2	97.1	30.370	30.380	28.870	8.587	0.00	0.00	0.70	0.10
03:40:00	48	2579.24	177.85	2266.9	108.6	696.0	52.7	0.0	449.9	40.6	96.3	30.198	30.132	28.840	8.692	0.00	0.00	0.70	0.10
03:45:00	48	2577.95	177.87	2266.9	108.9	695.0	53.0	0.0	449.9	40.1	96.8	30.202	30.195	28.840	8.797	0.00	0.00	0.70	0.10
03:50:00	48	2576.88	177.88	2266.2	109.0	709.7	53.1	0.0	448.7	40.0	96.6	30.191	30.186	28.840	8.902	0.00	0.00	0.70	0.10
03:55:00	48	2575.83	177.90	2265.8	109.3	714.8	53.2	0.0	449.3	40.4	97.0	30.177	30.158	28.830	9.006	0.00	0.00	0.70	0.10
04:00:00	48	2574.79	177.91	2265.4	109.5	716.5	53.5	0.0	455.7	40.9	95.0	30.151	30.139	28.830	9.111	14.40	0.00	1.00	0.10
04:00:00	Commenced dumping fluid from separator to surge tank, established level on surge tank.																		
04:00:00	Dräger indicated 1% CO2 and 0.1 ppm H2S.																		
04:00:00	Mercury: 0.47 micrograms/m3.																		
04:05:00	48	2573.82	177.93	2265.2	109.8	715.4	53.7	0.0	464.0	41.4	93.7	30.145	30.137	28.820	9.216	14.40	0.00	1.00	0.10



Client Santos Ltd

Exal Engineer M. Hall / B. Tupman

Well No. Casino 4 DW2

Location Ocean Patriot

Test No. Completion

Dates From/To 08/06/05-11/06/05

Time hh:mm:ss	Choke 64th	40586P PSIA	40586T °F	UcP PSIG	UcT °F	DcP PSIG	DcT °F	AnnP PSIG	GasP PSIG	GasT °F	GasD INWG	QGas1s MMscf/d	QGas1av MMscf/d	QChkgAv MMscf/d	Gas1Cum MMscf/d	QLiq bbls/d	LiqCum bbls	Co2 mol%	H2S ppm
<b>10/06/05</b>																			
04:10:00	48	2572.89	177.94	2264.4	110.1	712.2	54.0	0.0	469.0	42.0	92.6	30.130	30.128	28.820	9.320	14.40	0.00	1.00	0.10
04:15:00	48	2572.01	177.95	2263.6	110.2	716.0	54.2	0.0	473.7	42.2	91.7	30.136	30.129	28.810	9.425	14.40	0.00	1.00	0.10
04:20:00	48	2571.24	177.96	2262.4	110.3	709.5	54.4	0.0	470.7	42.3	91.4	30.107	30.105	28.790	9.529	14.40	0.00	1.00	0.10
04:25:00	48	2570.45	177.96	2261.9	110.4	710.7	54.4	0.0	476.4	42.7	90.8	30.082	30.065	28.780	9.634	14.40	0.00	1.00	0.10
04:30:00	48	2569.73	177.97	2261.3	110.5	714.6	54.5	0.0	477.0	43.0	90.7	30.073	30.073	28.780	9.738	24.00	0.30	1.00	0.10
04:35:00	48	2569.00	177.98	2260.9	110.6	717.9	54.6	0.0	479.3	43.3	90.1	30.047	30.032	28.770	9.843	24.00	0.30	1.00	0.10
04:40:00	48	2568.35	177.98	2260.5	110.7	717.3	54.8	0.0	483.4	43.5	89.5	30.067	30.076	28.770	9.947	24.00	0.30	1.00	0.10
04:45:00	48	2567.68	177.99	2260.1	110.7	713.8	54.8	0.0	488.5	43.6	88.8	30.089	30.094	28.760	10.051	24.00	0.30	1.00	0.10
04:50:00	48	2567.10	177.99	2259.9	110.8	718.3	54.9	0.0	492.0	43.8	88.3	30.121	30.138	28.760	10.156	24.00	0.30	1.00	0.10
04:55:00	48	2566.50	178.00	2259.5	110.9	714.6	55.0	0.0	494.2	44.0	88.1	30.157	30.174	28.750	10.261	24.00	0.30	1.00	0.10
05:00:00	48	2565.91	178.00	2259.3	111.0	717.9	55.1	0.0	498.5	44.3	87.5	30.181	30.190	28.750	10.366	14.40	0.80	1.00	0.10
05:00:00	Draeger indicated 1% C02 and 0.1 ppm H2S.																		
05:00:00	Liquid returns at surge tank 0.8 bbls.																		
05:00:00	Tank Liquid Rate: 14.4 bbls/d.																		
05:05:00	48	2565.32	178.01	2258.7	111.1	718.1	55.2	0.0	501.9	44.5	87.4	30.218	30.227	28.740	10.471	14.40	0.80	1.00	0.10
05:05:00	Chlorides 21,000 mg/L.																		
05:05:00	Water density: 1.026 g/cm3 @ 15.7 degC.																		
05:10:00	48	2564.75	178.01	2258.3	111.3	717.7	55.3	0.0	503.0	44.8	87.2	30.254	30.269	28.740	10.576	14.40	0.80	1.00	0.10
05:11:00	Water SG 1.03 at 55 Deg F.																		
05:15:00	48	2564.20	178.02	2257.7	111.4	720.1	55.4	0.0	506.3	45.0	86.7	30.276	30.294	28.730	10.681	14.40	0.80	1.00	0.10
05:20:00	48	2563.67	178.02	2257.0	111.4	721.1	55.4	0.0	509.8	45.2	86.2	30.299	30.306	28.720	10.786	14.40	0.80	1.00	0.10
05:25:00	48	2563.14	178.02	2256.8	111.4	721.4	55.5	0.0	513.6	45.4	85.6	30.295	30.293	28.720	10.891	14.40	0.80	1.00	0.10
05:30:00	48	2562.65	178.02	2256.8	111.3	721.0	55.5	0.0	518.1	45.6	84.4	30.253	30.240	28.710	10.996	9.60	1.10	1.00	0.10
05:35:00	48	2562.16	178.03	2256.4	111.3	715.6	55.5	0.0	510.9	45.4	85.3	30.233	30.231	28.710	11.101	9.60	1.10	1.00	0.10
05:40:00	48	2561.70	178.03	2256.0	111.3	718.7	55.5	0.0	515.3	45.6	84.5	30.189	30.170	28.710	11.206	9.60	1.10	1.00	0.10
05:45:00	48	2561.26	178.03	2255.8	111.4	723.4	55.6	0.0	523.2	45.9	82.5	30.141	30.131	28.700	11.311	9.60	1.10	1.00	0.10
05:50:00	48	2560.81	178.03	2255.2	111.4	726.1	55.7	0.0	529.0	46.3	81.6	30.061	30.025	28.700	11.415	9.60	1.10	1.00	0.10
05:55:00	48	2560.40	178.03	2254.8	111.4	726.7	55.8	0.0	530.5	46.4	80.6	29.967	29.932	28.690	11.519	9.60	1.10	1.00	0.10
06:00:00	48	2559.96	178.03	2254.4	111.5	715.4	55.8	0.0	519.9	46.1	82.2	29.915	29.902	28.690	11.623	9.60	1.30	1.00	0.10
06:00:00	Draeger indicated 1% C02 and 0.1 ppm H2S.																		
06:00:00	Liquid returns at surge tank 1.30 bbls.																		

Client Santos Ltd

Exal Engineer M. Hall / B. Tupman

Well No. Casino 4 DW2

Location Ocean Patriot

Test No. Completion

Dates From/To 08/06/05-11/06/05

Time hh:mm:ss	Choke 64th	40586P PSIA	40586T °F	UcP PSIG	UcT °F	DcP PSIG	DcT °F	AnnP PSIG	GasP PSIG	GasT °F	GasD INWG	QGas1s MMscf/d	QGas1av MMscf/d	QChkgAv MMscf/d	Gas1Cum MMscf/d	QLiq bbls/d	LiqCum bbls	Co2 mol%	H2S ppm
10/06/05																			
06:00:00																			
06:05:00	48	2559.55	178.04	2253.8	111.5	719.1	55.8	0.0	524.3	46.2	81.5	29.889	29.875	28.680	11.726	9.60	1.30	1.00	0.10
06:10:00	48	2559.14	178.04	2253.6	111.5	724.8	55.8	0.0	532.3	46.6	80.5	29.888	29.886	28.680	11.830	9.60	1.30	1.00	0.10
06:15:00	48	2558.77	178.04	2253.6	111.5	724.6	55.9	0.0	531.6	46.7	80.6	29.883	29.881	28.680	11.934	9.60	1.30	1.00	0.10
06:20:00	48	2558.38	178.04	2252.6	111.5	725.6	56.0	0.0	533.9	46.9	80.1	29.876	29.866	28.670	12.038	9.60	1.30	1.00	0.10
06:25:00	48	2558.00	178.04	2252.3	111.5	728.5	56.1	0.0	538.3	46.9	79.2	29.887	29.901	28.660	12.141	9.60	1.30	1.00	0.10
06:30:00	48	2557.63	178.04	2252.3	111.4	737.1	56.2	0.0	550.8	47.4	77.6	29.884	29.890	28.660	12.245	14.40	1.50	1.00	0.10
06:30:00																			
06:35:00	48	2557.27	178.04	2251.9	111.4	735.7	56.3	0.0	559.3	48.0	76.6	29.908	29.912	28.660	12.349	14.40	1.50	1.00	0.10
06:40:00	48	2556.89	178.05	2251.7	111.4	745.7	56.4	0.0	573.5	48.6	74.2	29.883	29.879	28.650	12.453	14.40	1.50	1.00	0.10
06:45:00	48	2556.55	178.05	2251.5	111.5	731.2	56.4	0.0	554.1	48.0	76.9	29.901	29.954	28.650	12.557	14.40	1.50	1.00	0.10
06:45:00																			
06:50:00	48	2556.24	178.05	2251.1	111.5	740.4	56.4	0.0	566.2	48.2	75.7	29.890	29.882	28.640	12.661	14.40	1.50	1.00	0.10
06:55:00	48	2555.90	178.05	2250.7	111.4	765.3	56.5	0.0	600.6	49.5	71.2	29.919	29.930	28.640	12.765	14.40	1.50	1.00	0.10
07:00:00	48	2555.56	178.05	2250.3	111.4	767.1	56.9	0.0	603.8	49.9	70.6	29.905	29.897	28.640	12.868	0.00	1.80	1.00	0.10
07:00:00																			
07:00:00																			
07:00:00																			
07:02:00																			
07:05:00	48	2555.25	178.05	2250.1	111.4	755.3	57.2	0.0	601.7	50.6	0.0			28.630	12.931	0.00	1.80	1.00	0.10
07:06:00																			
07:10:00	48	2554.92	178.05	2249.9	111.4	693.6	57.1	0.0	544.0	49.5	0.0			28.630	12.931	0.00	1.80	1.00	0.10
07:10:00																			
07:12:00																			
07:15:00	64	2507.19	177.88	2150.5	113.3	1086.5	58.8	0.0	742.0	63.1	0.0			36.150	12.933	0.00	1.80	1.00	0.10
07:15:00																			
07:19:00																			
07:20:00	64	2499.22	177.77	2140.1	116.7	1075.8	63.8	0.0	742.0	68.2	0.0			47.310	12.933	0.00	1.80	1.00	0.10
07:21:00																			
07:24:00																			
07:25:00	64	2493.91	177.85	2136.4	117.9	1080.3	67.5	0.0	748.8	70.2	118.3	33.774	22.174	47.440	13.003	0.00	1.80	1.00	0.10
07:30:00	64	2488.18	177.90	2130.1	118.7	1077.5	70.0	0.0	746.1	71.3	119.6	44.572	49.838	47.320	13.176	9.60	1.80	1.00	0.10

Client Santos Ltd

Exal Engineer M. Hall / B. Tupman

Well No. Casino 4 DW2

Location Ocean Patriot

Test No. Completion

Dates From/To 08/06/05-11/06/05

Time hh:mm:ss	Choke 64th	40586P PSIA	40586T °F	UcP PSIG	UcT °F	DcP PSIG	DcT °F	AnnP PSIG	GasP PSIG	GasT °F	GasD INWG	QGas1s MMscf/d	QGas1av MMscf/d	QChkgAv MMscf/d	Gas1Cum MMscf/d	QLiq bbls/d	LiqCum bbls	Co2 mol%	H2S ppm
<b>10/06/05</b>																			
07:35:00	64	2482.83	177.91	2121.1	119.2	1072.4	71.5	0.0	743.2	72.1	118.7	48.031	49.748	47.150	13.348	9.60	1.80	1.00	0.10
07:40:00	64	2478.54	177.92	2113.3	119.6	1068.9	72.5	0.0	740.8	72.7	117.8	48.943	49.414	46.960	13.520	9.60	1.80	1.00	0.10
07:45:00	64	2474.39	177.91	2106.6	119.9	1065.0	73.4	0.0	738.1	73.2	117.6	49.081	49.159	46.790	13.691	9.60	1.80	1.00	0.10
07:45:00	Gas SG 0.698.																		
07:50:00	64	2471.41	177.90	2101.5	120.2	1062.3	74.0	0.0	737.5	73.5	116.7	49.014	49.002	46.670	13.861	9.60	1.80	1.00	0.10
07:55:00	64	2469.38	177.89	2089.2	120.3	1055.0	74.5	0.0	731.8	73.6	116.5	48.864	48.828	46.500	14.030	9.60	1.80	1.00	0.10
08:00:00	64	2468.83	177.89	2079.0	120.1	1066.2	74.7	0.0	721.6	74.2	115.4	48.488	48.379	46.210	14.198	9.60	2.00	1.00	0.10
08:00:00	Water SG 1.022 @ 60 degF.																		
08:00:00	Liquid returns at surge tank 2.00 bbls.																		
08:00:00	Tank Liquid Rate: 9.60 bbls/d.																		
08:05:00	64	2466.91	177.90	2074.9	120.5	1069.7	75.3	0.0	729.5	75.0	115.2	48.259	48.117	46.070	14.365	9.60	2.00	1.00	0.10
08:10:00	64	2465.28	177.90	2073.1	120.7	1064.2	75.7	0.0	722.8	74.7	115.5	48.157	48.126	46.010	14.533	9.60	2.00	1.00	0.10
08:15:00	64	2463.70	177.90	2071.0	120.7	1059.9	76.0	0.0	719.4	74.6	116.3	48.103	48.072	45.980	14.700	9.60	2.00	0.70	0.10
08:15:00	Draeger indicated 0.7% CO2 and 0.1 ppm H2S.																		
08:20:00	64	2462.18	177.90	2069.2	120.8	1059.5	76.1	0.0	721.1	74.7	116.1	48.095	48.091	45.930	14.866	9.60	2.00	0.70	0.10
08:25:00	64	2460.81	177.90	2067.7	120.9	1057.5	76.2	0.0	721.2	74.8	116.3	48.067	48.042	45.890	15.033	9.60	2.00	0.70	0.10
08:30:00	64	2459.58	177.90	2065.5	121.0	1055.4	76.3	0.0	719.7	74.9	116.2	48.037	48.011	45.850	15.200	24.00	2.20	0.70	0.10
08:30:00	Chlorides 15,000 mg/L.																		
08:30:00	Water density: 1.018 g/cm3 @ 16.1 degC.																		
08:30:00	pH: 6.69 @ 15.3 degC, Conductivity 35.8 mS/cm @ 15.3 degC, Resistivity 0.028 Ohm-m @ 15.3 degC.																		
08:35:00	64	2458.38	177.90	2064.1	121.1	1055.6	76.4	0.0	721.2	75.0	115.7	48.003	47.984	45.810	15.367	24.00	2.20	0.70	0.10
08:40:00	64	2457.15	177.90	2062.0	121.2	1051.7	76.5	0.0	715.1	75.2	116.5	47.933	47.908	45.770	15.533	24.00	2.20	0.70	0.10
08:45:00	64	2455.96	177.90	2061.2	121.4	1051.5	76.7	0.0	714.5	75.4	116.1	47.868	47.838	45.740	15.699	24.00	2.20	0.70	0.10
08:50:00	64	2454.85	177.90	2060.2	121.7	1051.5	76.8	0.0	715.0	75.8	116.2	47.855	47.848	45.720	15.865	24.00	2.20	0.70	0.10
08:55:00	64	2453.74	177.90	2059.2	121.9	1053.0	77.0	0.0	714.5	76.1	115.7	47.785	47.752	45.700	16.031	24.00	2.20	0.70	0.10
09:00:00	64	2452.71	177.90	2057.5	122.1	1054.6	77.2	0.0	715.1	76.4	115.7	47.720	47.685	45.670	16.197	43.20	2.70	0.70	0.10
09:00:00	Liquid returns at surge tank 2.70 bbls.																		
09:00:00	Tank Liquid Rate: 43.30 bbls/d.																		
09:05:00	64	2451.70	177.90	2056.9	122.1	1055.2	77.3	0.0	714.0	76.6	116.0	47.686	47.665	45.650	16.362	43.20	2.70	0.70	0.10
09:10:00	64	2450.75	177.90	2056.1	122.0	1055.4	77.3	0.0	712.2	76.6	115.5	47.616	47.589	45.630	16.527	43.20	2.70	0.70	0.10
09:15:00	64	2449.81	177.90	2055.9	122.0	1054.4	77.1	0.0	710.6	76.7	116.0	47.579	47.562	45.620	16.692	43.20	2.70	0.70	0.10

Client Santos Ltd

Exal Engineer M. Hall / B. Tupman

Well No. Casino 4 DW2

Location Ocean Patriot

Test No. Completion

Dates From/To 08/06/05-11/06/05

Time hh:mm:ss	Choke 64th	40586P PSIA	40586T °F	UcP PSIG	UcT °F	DcP PSIG	DcT °F	AnnP PSIG	GasP PSIG	GasT °F	GasD INWG	QGas1s MMscf/d	QGas1av MMscf/d	QChkgAv MMscf/d	Gas1Cum MMscf/d	QLiq bbls/d	LiqCum bbls	Co2 mol%	H2S ppm
<u>10/06/05</u>																			
09:20:00	64	2448.80	177.90	2055.5	122.1	1055.2	77.1	0.0	711.5	76.9	115.7	47.566	47.567	45.610	16.858	43.20	2.70	0.70	0.10
09:25:00	64	2447.77	177.90	2055.3	122.1	1055.2	77.0	0.0	711.6	76.9	116.0	47.585	47.592	45.600	17.023	43.20	2.70	0.70	0.10
09:30:00	64	2446.84	177.90	2055.3	122.1	1055.0	77.0	0.0	711.6	76.8	115.9	47.553	47.535	45.600	17.188	48.00	3.60	1.00	0.10
09:30:00	Draeger indicated 1% CO2 and 0.1 ppm H2S.																		
09:35:00	64	2445.90	177.89	2055.3	122.0	1054.2	76.8	0.0	711.1	76.6	115.8	47.553	47.560	45.610	17.353	48.00	3.60	1.00	0.10
09:40:00	64	2444.88	177.89	2055.1	121.9	1054.4	76.5	0.0	711.6	76.7	115.8	47.569	47.569	45.600	17.518	48.00	3.60	1.00	0.10
09:45:00	64	2443.90	177.89	2055.5	122.0	1055.2	76.4	0.0	712.2	76.8	115.4	47.532	47.525	45.600	17.683	48.00	3.60	1.00	0.10
09:50:00	64	2442.93	177.89	2055.3	121.9	1055.2	76.3	0.0	713.3	76.8	115.6	47.552	47.558	45.600	17.848	48.00	3.60	1.00	0.10
09:55:00	64	2442.01	177.89	2055.5	122.0	1053.8	76.2	0.0	712.2	76.8	116.0	47.566	47.573	45.610	18.014	48.00	3.60	1.00	0.10
10:00:00	64	2441.08	177.88	2055.5	122.0	1053.4	76.2	0.0	711.1	76.8	115.7	47.536	47.530	45.610	18.179	57.60	4.60	1.00	0.10
10:00:00	Liquid returns at surge tank 4.60 bbls.																		
10:00:00	Tank Liquid Rate: 57.60 bbls/d.																		
10:00:00	Gas SG 0.703.																		
10:05:00	64	2440.17	177.88	2055.5	122.1	1052.1	76.4	0.0	711.1	76.8	115.8	47.511	47.500	45.610	18.344	57.60	4.60	1.00	0.10
10:10:00	64	2439.27	177.88	2055.5	122.1	1051.5	76.4	0.0	710.5	76.8	115.5	47.494	47.484	45.610	18.508	57.60	4.60	1.00	0.10
10:15:00	64	2438.29	177.88	2055.1	122.1	1051.3	76.5	0.0	710.6	76.7	115.8	47.497	47.495	45.610	18.673	57.60	4.60	1.00	0.10
10:20:00	64	2437.41	177.88	2055.3	122.1	1051.1	76.5	0.0	711.1	76.8	116.2	47.556	47.584	45.610	18.839	57.60	4.60	1.00	0.10
10:20:00	Petrotech obtained water samples: 1.04, 1.05, 1.06, 1.07.																		
10:25:00	64	2436.66	177.88	2055.5	122.1	1050.7	76.5	0.0	711.6	76.7	115.8	47.571	47.581	45.600	19.004	57.60	4.60	1.00	0.10
10:30:00	64	2435.86	177.87	2055.1	122.0	1050.1	76.5	0.0	711.2	76.7	115.5	47.545	47.534	45.600	19.169	48.00	5.80	1.00	0.10
10:35:00	64	2435.09	177.87	2054.9	122.0	1050.7	76.5	0.0	712.8	76.7	115.3	47.504	47.484	45.600	19.334	48.00	5.80	1.00	0.10
10:40:00	64	2434.31	177.87	2054.9	122.0	1049.5	76.6	0.0	710.5	76.6	115.9	47.487	47.468	45.600	19.499	48.00	5.80	1.00	0.10
10:45:00	64	2433.56	177.87	2054.9	122.0	1049.9	76.7	0.0	711.1	76.7	115.7	47.507	47.521	45.600	19.664	48.00	5.80	1.00	0.10
10:45:00	Chlorides 45,000 mg/L.																		
10:45:00	Water density: 1.051 g/cm3 @ 16.5 degC.																		
10:45:00	pH: 6.62 @ 19.0 degC, Conductivity 97.6 mS/cm @ 19.0 degC, Resistivity 0.010 Ohm-m @ 19.0 degC.																		
10:50:00	64	2432.77	177.87	2054.7	122.0	1050.9	76.7	0.0	713.4	76.7	115.4	47.517	47.527	45.600	19.829	48.00	5.80	1.00	0.10
10:55:00	64	2431.98	177.87	2054.7	122.0	1047.8	76.7	0.0	710.6	76.7	115.6	47.504	47.503	45.590	19.993	48.00	5.80	1.00	0.10
11:00:00	64	2431.21	177.87	2054.7	122.0	1047.2	76.7	0.0	710.6	76.5	115.9	47.513	47.509	45.590	20.158	48.00	6.80	1.00	0.10
11:00:00	Draeger indicated 1% CO2 and 0.1 ppm H2S.																		
11:00:00	Liquid returns at surge tank 6.80 bbls.																		

Client Santos Ltd

Exal Engineer M. Hall / B. Tupman

Well No. Casino 4 DW2

Location Ocean Patriot

Test No. Completion

Dates From/To 08/06/05-11/06/05

Time hh:mm:ss	Choke 64th	40586P PSIA	40586T °F	UcP PSIG	UcT °F	DcP PSIG	DcT °F	AnnP PSIG	GasP PSIG	GasT °F	GasD INWG	QGas1s MMscf/d	QGas1av MMscf/d	QChkgAv MMscf/d	Gas1Cum MMscf/d	QLiq bbls/d	LiqCum bbls	Co2 mol%	H2S ppm
<b>10/06/05</b>																			
11:00:00	Tank Liquid Rate: 48.00 bbls/d.																		
11:00:00	Drager indicated 1% C02 and 0.1 ppm H2S.																		
11:05:00	64	2430.45	177.86	2054.3	121.8	1048.9	76.5	0.0	711.7	76.3	115.0	47.506	47.514	45.580	20.323	48.00	6.80	1.00	0.10
11:10:00	64	2429.72	177.86	2054.3	121.7	1051.3	76.1	0.0	712.7	76.3	115.2	47.519	47.525	45.580	20.488	48.00	6.80	1.00	0.10
11:15:00	64	2429.02	177.86	2053.6	121.6	1048.5	75.7	0.0	711.1	76.3	115.4	47.510	47.520	45.570	20.653	48.00	6.80	1.00	0.10
11:20:00	64	2428.30	177.86	2053.6	121.6	1045.0	75.5	0.0	709.5	76.1	115.7	47.478	47.458	45.570	20.818	48.00	6.80	1.00	0.10
11:25:00	64	2427.63	177.86	2053.4	121.6	1045.0	75.5	0.0	710.1	76.2	115.6	47.500	47.510	45.560	20.983	48.00	6.80	1.00	0.10
11:30:00	64	2426.95	177.86	2053.4	121.6	1046.2	75.5	0.0	711.1	76.2	115.6	47.489	47.476	45.560	21.148	24.00	7.80	1.00	0.10
11:35:00	64	2426.31	177.85	2052.6	121.6	1046.8	75.5	0.0	713.4	76.3	115.3	47.499	47.499	45.550	21.313	24.00	7.80	1.00	0.10
11:40:00	64	2425.64	177.85	2052.6	121.6	1047.6	75.6	0.0	713.3	76.5	115.0	47.464	47.448	45.550	21.478	24.00	7.80	1.00	0.10
11:45:00	64	2425.01	177.85	2052.4	121.7	1046.4	75.7	0.0	711.6	76.5	115.0	47.473	47.488	45.550	21.643	24.00	7.80	1.00	0.10
11:50:00	64	2424.41	177.85	2051.8	121.7	1045.2	75.7	0.0	712.7	76.5	115.1	47.484	47.498	45.540	21.808	24.00	7.80	1.00	0.10
11:55:00	64	2423.84	177.85	2051.4	121.7	1046.4	75.9	0.0	713.4	76.5	114.8	47.477	47.481	45.530	21.972	24.00	7.80	1.00	0.10
12:00:00	64	2423.23	177.85	2051.4	121.7	1045.8	76.0	0.0	713.4	76.5	114.7	47.455	47.447	45.520	22.137	24.00	8.30	1.00	0.10
12:00:00	Liquid returns at surge tank 8.30 bbls.																		
12:00:00	Tank Liquid Rate: 24.00 bbls/d.																		
12:05:00	64	2422.66	177.85	2051.4	121.7	1042.3	76.0	0.0	710.0	76.5	115.4	47.444	47.443	45.520	22.302	24.00	8.30	1.00	0.10
12:10:00	64	2422.05	177.85	2051.0	121.6	1040.9	76.0	0.0	707.2	76.3	116.1	47.447	47.450	45.510	22.467	24.00	8.30	1.00	0.10
12:15:00	64	2421.41	177.84	2051.0	121.6	1040.3	75.9	0.0	709.1	76.2	116.1	47.478	47.481	45.510	22.632	24.00	8.30	1.00	0.10
12:20:00	64	2420.96	177.84	2050.8	121.6	1040.5	75.9	0.0	709.5	76.3	116.1	47.498	47.501	45.500	22.796	24.00	8.30	1.00	0.10
12:25:00	64	2420.34	177.84	2050.4	121.6	1043.1	75.8	0.0	711.1	76.4	115.2	47.451	47.434	45.490	22.961	24.00	8.30	1.00	0.10
12:30:00	64	2419.80	177.84	2050.0	121.6	1044.0	75.7	0.0	713.4	76.4	114.8	47.443	47.447	45.490	23.126	28.80	8.80	1.00	0.10
12:35:00	64	2419.26	177.84	2050.2	121.7	1041.7	75.8	0.0	710.0	76.5	115.3	47.435	47.430	45.490	23.291	28.80	8.80	1.00	0.10
12:35:00	Petrotech commenced taking gas sample 1.08 : s/n A-1984.																		
12:40:00	64	2418.75	177.84	2049.1	121.7	1040.3	75.8	0.0	706.3	76.4	116.0	47.402	47.368	45.480	23.455	28.80	8.80	1.00	0.10
12:45:00	64	2418.17	177.84	2049.1	121.8	1038.6	75.8	0.0	705.9	76.3	116.0	47.397	47.413	45.470	23.620	28.80	8.80	1.00	0.10
12:45:00	Completed taking sample.																		
12:50:00	64	2417.72	177.83	2048.7	121.9	1040.7	75.9	0.0	706.0	76.5	115.8	47.388	47.426	45.470	23.784	28.80	8.80	1.00	0.10
12:55:00	64	2417.12	177.83	2048.7	121.8	1038.2	76.0	0.0	708.5	76.4	116.1	47.528	47.466	45.460	23.949	28.80	8.80	1.00	0.10
13:00:00	64	2416.73	177.83	2048.5	122.0	1038.8	76.0	0.0	708.5	76.7	116.1	47.495	47.505	45.460	24.114	28.80	9.40	1.00	0.10
13:00:00	Petrotech commenced taking gas sample 1.13 : s/n A-1979.																		

Client Santos Ltd

Exal Engineer M. Hall / B. Tupman

Well No. Casino 4 DW2

Location Ocean Patriot

Test No. Completion

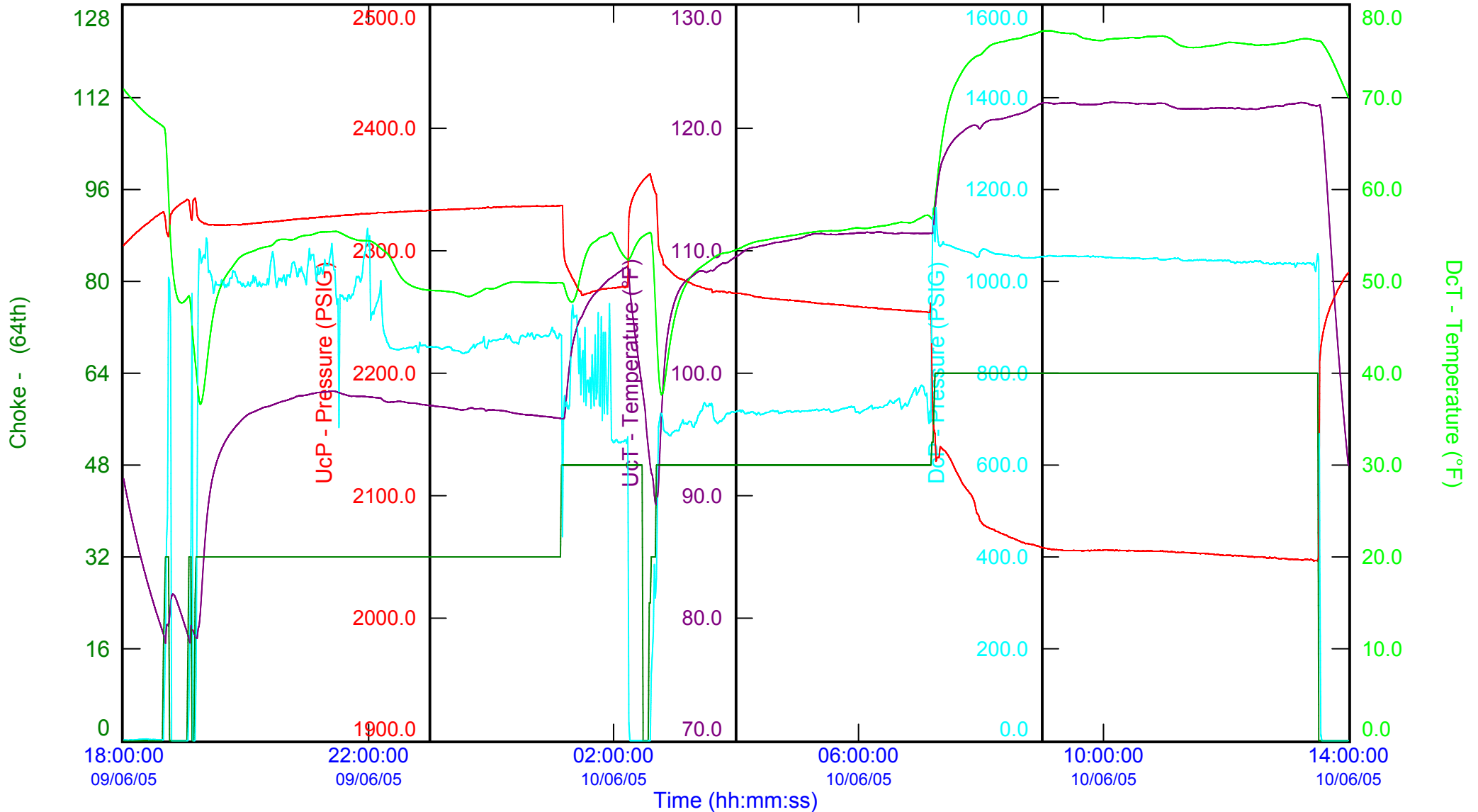
Dates From/To 08/06/05-11/06/05

Time hh:mm:ss	Choke 64th	40586P PSIA	40586T °F	UcP PSIG	UcT °F	DcP PSIG	DcT °F	AnnP PSIG	GasP PSIG	GasT °F	GasD INWG	QGas1s MMscf/d	QGas1av MMscf/d	QChkgAv MMscf/d	Gas1Cum MMscf/d	QLiq bbls/d	LiqCum bbls	Co2 mol%	H2S ppm
<b>10/06/05</b>																			
13:00:00	Petrotech obtained water samples: 1.09, 1.10, 1.11, 1.12.																		
13:00:00	Liquid returns at surge tank 9.40 bbls.																		
13:00:00	Tank Liquid Rate: 24.00 bbls/d.																		
13:05:00	64	2416.18	177.83	2048.3	122.0	1037.4	76.2	0.0	708.5	76.6	116.3	47.492	47.486	45.450	24.279	28.80	9.40	1.00	0.10
13:10:00	64	2415.80	177.83	2048.1	122.0	1040.3	76.3	0.0	707.2	76.6	116.2	47.354	47.301	45.440	24.443	28.80	9.40	1.00	0.10
13:15:00	64	2415.34	177.83	2047.3	122.1	1039.5	76.4	0.0	708.4	76.7	116.2	47.483	47.478	45.440	24.608	28.80	9.40	1.00	0.10
13:15:00	Completed taking sample.																		
13:20:00	64	2414.86	177.83	2048.1	122.0	1040.5	76.4	0.0	707.8	76.5	116.2	47.520	47.507	45.440	24.773	28.80	9.40	1.00	0.10
13:25:00	64	2414.37	177.83	2047.7	121.9	1036.2	76.3	0.0	708.5	76.4	116.1	47.531	47.508	45.440	24.938	28.80	9.40	1.00	0.10
13:25:00	Closed Annulus Master Valve.																		
13:26:00	Opened separator bypass valve.																		
13:30:00	64	2413.94	177.83	2046.7	121.9	1060.5	76.2	0.0	734.8	77.0	118.0	49.149	46.856	45.420	25.101	0.00	9.90	1.00	0.10
13:31:00	Closed in well at choke manifold. Commenced build up survey.																		



Client Santos Ltd  
Well No. Casino 4 DW2  
Test No. Completion  
Location Ocean Patriot

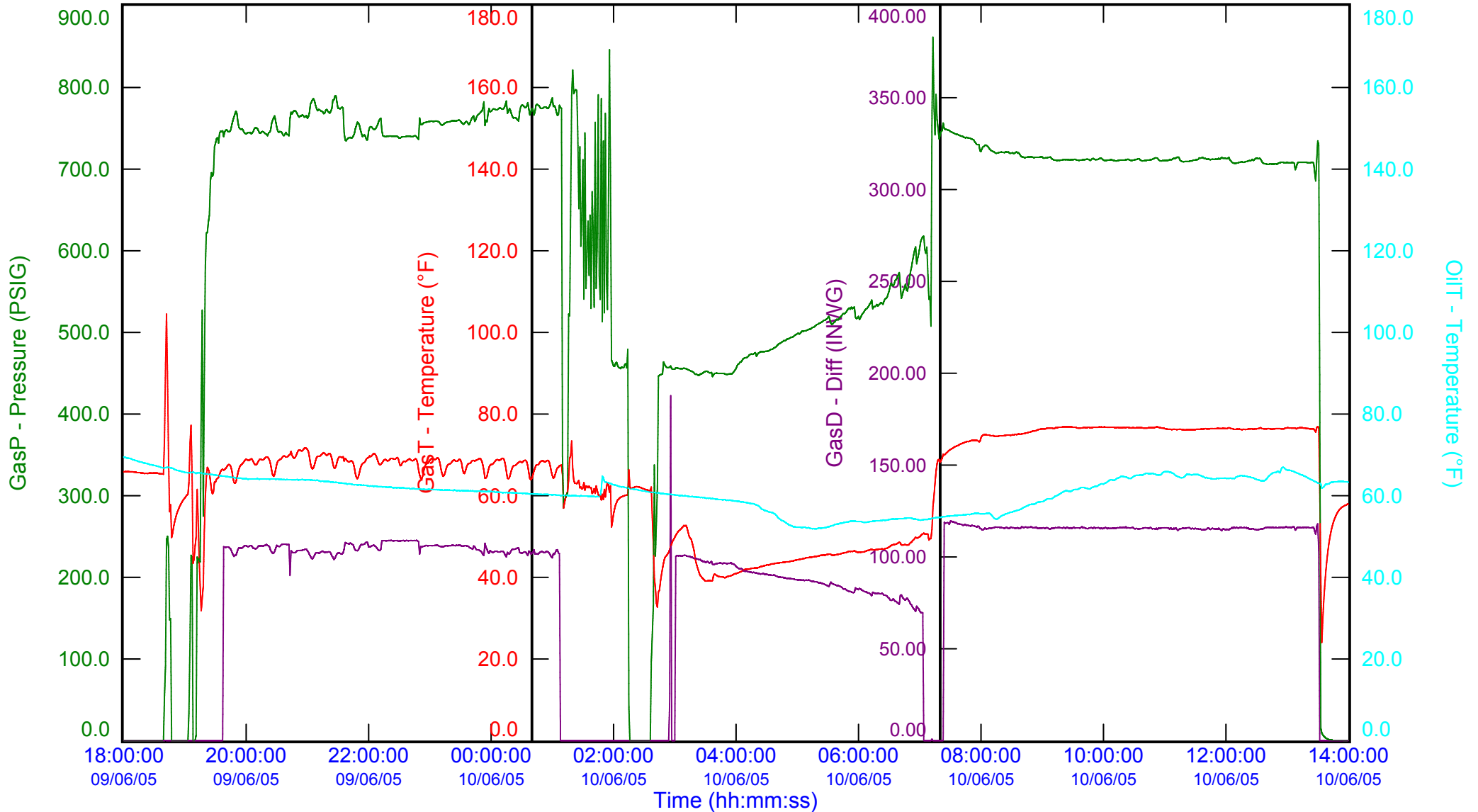
Data Type EDGE Data  
Comments Main Flow Period  
Choke Manifold Parameters





Client Santos Ltd  
Well No. Casino 4 DW2  
Test No. Completion  
Location Ocean Patriot

Data Type EDGE Data  
Comments Main Flow Period  
Separator Parameters

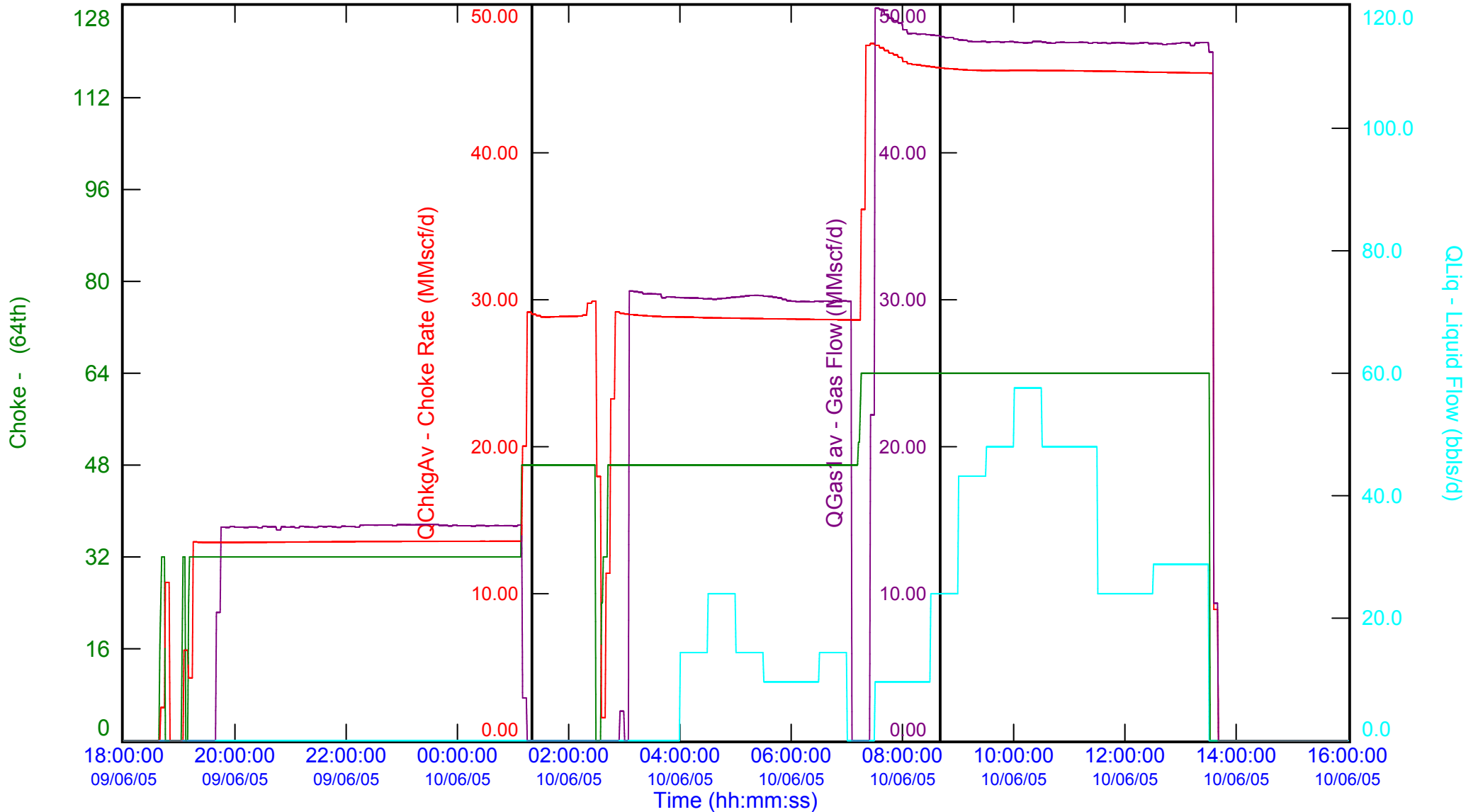






Client Santos Ltd  
Well No. Casino 4 DW2  
Test No. Completion  
Location Ocean Patriot

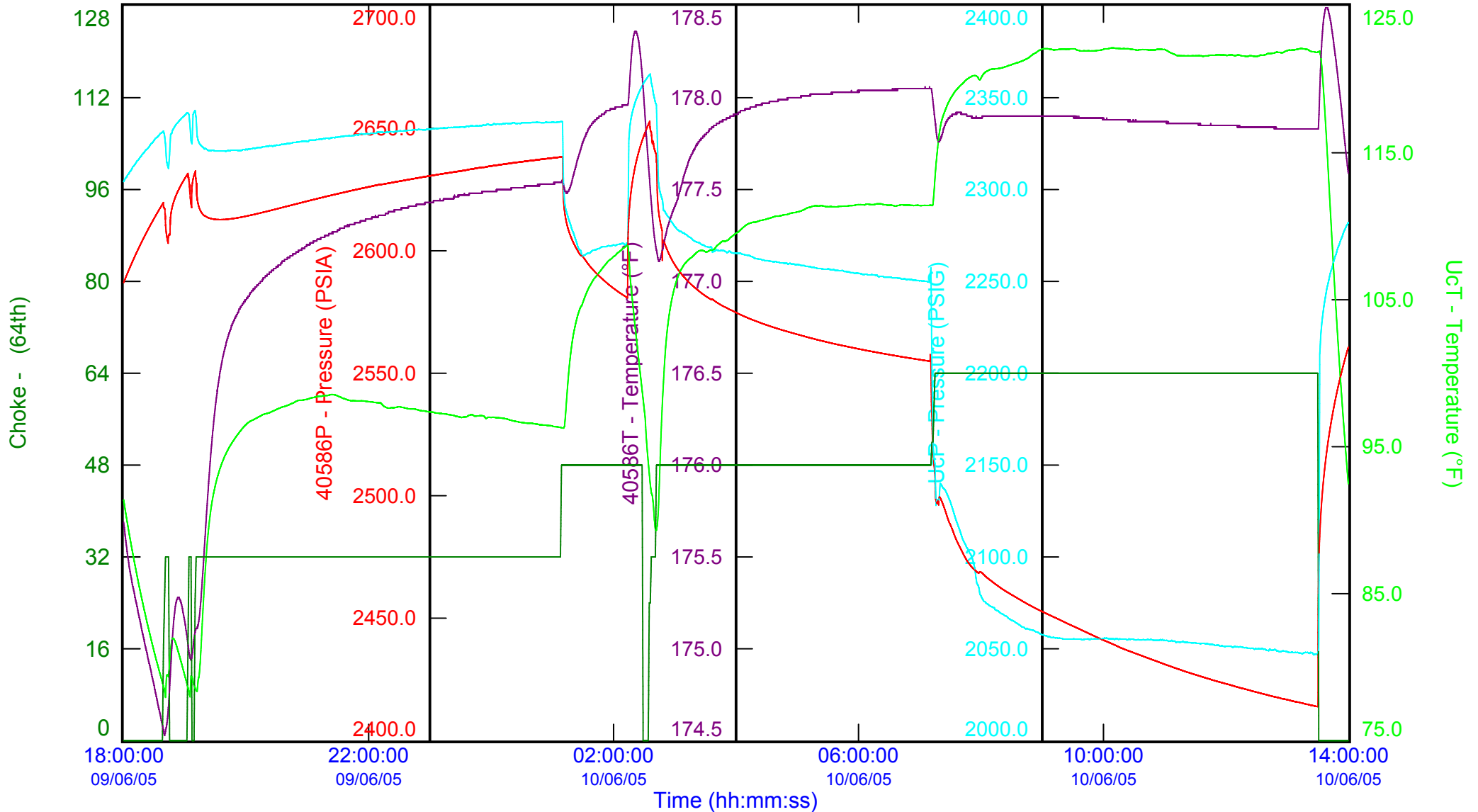
Data Type EDGE Data  
Comments Main Flow Period  
Production Rates





Client Santos Ltd  
Well No. Casino 4 DW2  
Test No. Completion  
Location Ocean Patriot

Data Type EDGE Data  
Comments Main Flow Period  
Choke Manifold and BH  
Parameters





## MF Gas Calculation Data Listing

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<b>Client</b>	Santos Ltd
<b>Well No.</b>	Casino 4 DW2
<b>Test No.</b>	Completion
<b>Location</b>	Ocean Patriot
<b>Dates From/To</b>	08/06/05-11/06/05
<b>Country</b>	Australia
<b>Field</b>	Casino
<b>Formation</b>	Waarre A Sands
<b>Exal Engineer</b>	M. Hall / B. Tupman
<b>Expro Supervisor</b>	F. Beaton
<b>Client Engineer</b>	R. King / M. Andronov / P. Nardone
<b>Perforations</b>	Open Hole - Sand Screens

Gas specific gravity of 0.61 used for rate calculations based on PVT analysis performed on gas samples. This over rides the estimate gas specific gravity of 0.68 reported during the test.

Client Santos Ltd

Exal Engineer M. Hall / B. Tupman

Well No. Casino 4 DW2

Location Ocean Patriot

Test No. Completion

Dates From/To 08/06/05-11/06/05

Time hh:mm:ss	UcP PSIG	OrifSize ins	GasP PSIG	GasT °F	GasD INWG	GasSG Factor	Co2 mol%	H2S ppm	GasFb Factor	GasFr Factor	GasY Factor	GasFpb Factor	GasFtb Factor	GasFtf Factor	GasFgr Factor	GasFpv Factor	GasC Factor	QGas1av MMscf/d	Gas1Cum MMscf/d
<u>09/06/05</u>																			
18:38:00																			
18:38:00																			
18:39:00	2331.87	0.00	0.00	65.26	0.000	0.610	0.60	0.10	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	4.482
18:39:00																			
18:40:00																			
18:41:00																			
18:41:00																			
18:45:00	2319.19	0.00	147.84	56.06	0.000	0.610	0.60	0.10	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	4.482
18:45:00																			
19:00:00	2340.45	0.00	0.00	59.47	0.000	0.610	0.60	0.10	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	4.482
19:03:00																			
19:03:00																			
19:04:00																			
19:05:00																			
19:06:00																			
19:07:00																			
19:10:00																			
19:11:00																			
19:12:00																			
19:13:00																			
19:13:00																			
19:15:00	2324.51	0.00	218.98	37.71	0.000	0.610	0.60	0.10	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	4.482
19:19:00																			
19:30:00	2321.03	0.00	731.82	63.36	0.000	0.610	0.60	0.10	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	4.482
19:37:00																			
19:38:00																			
19:45:00	2321.44	2.75	748.31	67.14	104.220	0.610	0.60	0.10	1582.09	1.000	0.998	1.000	1.000	0.993	1.280	1.066	2141.41	14.531	4.563
19:52:00																			
20:00:00	2322.06	2.75	743.16	68.98	106.130	0.610	1.00	0.10	1582.09	1.000	0.998	1.000	1.000	0.991	1.280	1.064	2133.24	14.530	4.714
20:15:00	2322.87	2.75	745.61	68.87	106.170	0.610	1.00	0.10	1582.09	1.000	0.998	1.000	1.000	0.992	1.280	1.064	2134.01	14.542	4.866
20:30:00	2324.30	2.75	751.69	67.70	106.380	0.610	1.00	0.10	1582.09	1.000	0.998	1.000	1.000	0.993	1.280	1.065	2138.61	14.591	5.017

Client Santos Ltd

Exal Engineer M. Hall / B. Tupman

Well No. Casino 4 DW2

Location Ocean Patriot

Test No. Completion

Dates From/To 08/06/05-11/06/05

Time hh:mm:ss	UcP PSIG	OrifSize ins	GasP PSIG	GasT °F	GasD INWG	GasSG Factor	Co2 mol%	H2S ppm	GasFb Factor	GasFr Factor	GasY Factor	GasFpb Factor	GasFtb Factor	GasFtf Factor	GasFgr Factor	GasFpv Factor	GasC Factor	QGas1av MMscf/d	Gas1Cum MMscf/d
<u>09/06/05</u>																			
20:32:00	Draeger indicated 1% C02 and 0.1 ppm H2S.																		
20:45:00	2325.32	2.75	767.51	69.87	102.730	0.610	1.00	0.10	1582.09	1.000	0.998	1.000	1.000	0.991	1.280	1.066	2135.03	14.338	5.168
21:00:00	2326.14	2.75	762.48	71.37	103.400	0.610	1.00	0.10	1582.09	1.000	0.998	1.000	1.000	0.989	1.280	1.064	2129.63	14.545	5.319
21:10:00	Radon: 396 Bq/m3.																		
21:15:00	2327.58	2.75	770.33	70.36	103.260	0.610	1.00	0.10	1582.09	1.000	0.998	1.000	1.000	0.990	1.280	1.066	2134.03	14.560	5.471
21:28:00	Gas SG 0.682.																		
21:29:00	Flushed line to downstream choke pressure transducer.																		
21:30:00	2328.60	2.75	774.38	69.06	102.160	0.610	1.00	0.10	1582.09	1.000	0.998	1.000	1.000	0.991	1.280	1.067	2138.73	14.584	5.623
21:30:00	Draeger indicated 1% C02 and 0.1 ppm H2S, 0% mercaptan.																		
21:36:00	Adjusted separator pressure control.																		
21:45:00	2329.41	2.75	740.65	67.97	106.510	0.610	1.00	0.10	1582.09	1.000	0.998	1.000	1.000	0.992	1.280	1.064	2135.78	14.546	5.774
22:00:00	2330.23	2.75	746.66	69.36	105.380	0.610	1.00	0.10	1582.09	1.000	0.998	1.000	1.000	0.991	1.280	1.064	2132.76	14.577	5.926
22:10:00	Commenced pumping methanol upstream of SSV to eliminate hydrates across heater choke.																		
22:15:00	2331.05	2.75	740.34	68.76	108.880	0.610	1.00	0.10	1582.09	1.000	0.998	1.000	1.000	0.992	1.280	1.064	2133.29	14.665	6.078
22:30:00	2331.87	2.75	738.07	68.17	108.690	0.610	1.00	0.10	1582.09	1.000	0.998	1.000	1.000	0.992	1.280	1.064	2134.65	14.665	6.231
22:30:00	Draeger indicated 1% C02 and 0.1 ppm H2S.																		
22:40:00	Mercury: 0.24 micrograms/m3.																		
22:45:00	2332.48	2.75	740.89	68.86	109.000	0.610	1.00	0.10	1582.09	1.000	0.998	1.000	1.000	0.992	1.280	1.064	2133.09	14.683	6.384
23:00:00	2332.89	2.75	758.43	68.67	106.220	0.610	1.00	0.10	1582.09	1.000	0.998	1.000	1.000	0.992	1.280	1.065	2136.91	14.703	6.537
23:15:00	2333.50	2.75	756.65	65.67	106.050	0.610	1.00	0.10	1582.09	1.000	0.998	1.000	1.000	0.995	1.280	1.067	2145.75	14.694	6.690
23:23:00	Gas SG 0.683.																		
23:30:00	2334.12	2.75	758.98	68.77	106.400	0.610	1.00	0.10	1582.09	1.000	0.998	1.000	1.000	0.992	1.280	1.065	2136.71	14.721	6.843
23:30:00	Mercury: 0.35 micrograms/m3.																		
23:45:00	2334.73	2.75	760.70	68.66	104.480	0.610	1.00	0.10	1582.09	1.000	0.998	1.000	1.000	0.992	1.280	1.066	2137.42	14.653	6.996
23:50:00	Chlorides 45,000 mg/L.																		
23:50:00	Water density: 1.054 g/cm3 @ 17.1 degC.																		
<u>10/06/05</u>																			
00:00:00	2335.14	2.75	770.88	67.67	103.030	0.610	1.00	0.10	1582.09	1.000	0.998	1.000	1.000	0.993	1.280	1.067	2142.34	14.625	7.148
00:15:00	2336.16	2.75	783.58	65.96	100.050	0.610	1.00	0.10	1582.09	1.000	0.999	1.000	1.000	0.994	1.280	1.069	2150.05	14.595	7.300
00:30:00	2336.37	2.75	778.36	68.16	102.000	0.610	1.00	0.10	1582.09	1.000	0.998	1.000	1.000	0.992	1.280	1.067	2142.23	14.614	7.453

Client Santos Ltd

Exal Engineer M. Hall / B. Tupman

Well No. Casino 4 DW2

Location Ocean Patriot

Test No. Completion

Dates From/To 08/06/05-11/06/05

Time hh:mm:ss	UcP PSIG	OrifSize ins	GasP PSIG	GasT °F	GasD INWG	GasSG Factor	Co2 mol%	H2S ppm	GasFb Factor	GasFr Factor	GasY Factor	GasFpb Factor	GasFtb Factor	GasFtf Factor	GasFgr Factor	GasFpv Factor	GasC Factor	QGas1av MMscf/d	Gas1Cum MMscf/d
<u>10/06/05</u>																			
00:30:00	Petrotech commenced taking gas sample 1.02 : s/n A2006.																		
00:45:00	2336.77	2.75	779.59	67.57	101.780	0.610	1.00	0.10	1582.09	1.000	0.998	1.000	1.000	0.993	1.280	1.068	2144.27	14.627	7.605
00:45:00	Completed taking sample.																		
01:00:00	2336.77	2.75	787.44	64.97	99.540	0.610	1.20	0.10	1582.09	1.000	0.999	1.000	1.000	0.995	1.280	1.069	2153.03	14.603	7.758
01:00:00	Draeger indicated 1.2% CO2 and 0.1 ppm H2S.																		
01:07:00	Removed orifice plate.																		
01:08:00	Heater and separator bypass opened.																		
01:09:00	Increased to 48/64 fixed choke.																		
01:11:00	Diverted flow back through heat exchanger.																		
01:14:00	Diverted flow back through separator.																		
01:15:00	2285.87	0.00	303.86	61.05	0.000	0.610	1.20	0.10	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	7.819
01:16:00	Closed separator bypass.																		
01:30:00	2263.59	0.00	711.76	61.93	0.000	0.610	1.20	0.10	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	7.819
01:45:00	2267.88	0.00	791.24	60.36	0.000	0.610	1.20	0.10	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	7.819
01:55:00	Opened separator bypass.																		
02:00:00	2269.92	0.00	458.96	55.55	0.000	0.610	1.10	0.10	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	7.819
02:00:00	Draeger indicated 1.1% CO2 and 0.1 ppm H2S.																		
02:00:00	Mercury: 0.27 micrograms/m3.																		
02:00:00	Drained 4 bbl's of fluid from separator to surge tank.																		
02:13:00	Closed separator bypass.																		
02:14:00	Surface Safety Valve tripped, well shut in.																		
02:15:00	2327.17	0.00	42.11	66.37	0.000	0.610	1.10	0.10	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	7.819
02:29:00	Closed in well at choke manifold.																		
02:29:00	Opened Surface Safety Valve.																		
02:30:00	2358.44	0.00	0.00	61.66	0.000	0.610	1.10	0.10	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	7.819
02:32:00	Commenced pumping methanol upstream of SSV.																		
02:35:00	Opened well up to port flareboom on 24/64 adjustable choke through heat exchanger and separator.																		
02:37:00	Gas flare lit.																		
02:37:00	Increased to 32/64 adjustable choke.																		
02:42:00	Increased to 48/64 adjustable choke.																		
02:45:00	2300.18	0.00	447.62	36.87	0.000	0.610	1.10	0.10	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	7.819

Client Santos Ltd

Exal Engineer M. Hall / B. Tupman

Well No. Casino 4 DW2

Location Ocean Patriot

Test No. Completion

Dates From/To 08/06/05-11/06/05

Time hh:mm:ss	UcP PSIG	OrifSize ins	GasP PSIG	GasT °F	GasD INWG	GasSG Factor	Co2 mol%	H2S ppm	GasFb Factor	GasFr Factor	GasY Factor	GasFpb Factor	GasFtb Factor	GasFtf Factor	GasFgr Factor	GasFpv Factor	GasC Factor	QGas1av MMscf/d	Gas1Cum MMscf/d
<b>10/06/05</b>																			
02:48:00	Diverted flow through 48/64 fixed choke.																		
02:52:00	Attempted to increase separator pressure to 750psi.																		
02:54:00	Lowered 3.75 orifice plate.																		
03:00:00	2279.74	4.25	455.10	49.83	0.000	0.610	1.10	0.10	4354.86		1.000	1.000	1.000	1.010	1.280	1.044			7.847
03:00:00	Lowered 4.25 orifice plate.																		
03:02:00	Gas SG 0.684.																		
03:05:00	Draeger indicated 0.7% C02 and 0.1 ppm H2S.																		
03:10:00	Ceased methanol injection upstream of SSV.																		
03:10:00	Radon: 285 Bq/m3.																		
03:15:00	2274.01	4.25	453.26	49.64	100.250	0.610	0.70	0.10	4354.86	1.000	0.997	1.000	1.000	1.010	1.280	1.045	5867.37	30.511	8.165
03:30:00	2269.11	4.25	452.16	39.11	97.060	0.610	0.70	0.10	4354.86	1.000	0.997	1.000	1.000	1.021	1.280	1.048	5949.25	30.403	8.482
03:45:00	2266.86	4.25	449.89	40.12	96.810	0.610	0.70	0.10	4354.86	1.000	0.997	1.000	1.000	1.020	1.280	1.047	5939.77	30.195	8.797
04:00:00	2265.43	4.25	455.71	40.91	94.960	0.610	1.00	0.10	4354.86	1.000	0.997	1.000	1.000	1.019	1.280	1.047	5935.29	30.139	9.111
04:00:00	Commenced dumping fluid from separator to surge tank, established level on surge tank.																		
04:00:00	Draeger indicated 1% C02 and 0.1 ppm H2S.																		
04:00:00	Mercury: 0.47 micrograms/m3.																		
04:15:00	2263.59	4.25	473.74	42.21	91.740	0.610	1.00	0.10	4354.86	1.000	0.997	1.000	1.000	1.018	1.280	1.049	5937.17	30.129	9.425
04:30:00	2261.34	4.25	476.99	43.02	90.680	0.610	1.00	0.10	4354.86	1.000	0.997	1.000	1.000	1.017	1.280	1.049	5932.98	30.073	9.738
04:45:00	2260.11	4.25	488.46	43.61	88.780	0.610	1.00	0.10	4354.86	1.000	0.997	1.000	1.000	1.016	1.280	1.050	5935.89	30.094	10.051
05:00:00	2259.29	4.25	498.52	44.32	87.540	0.610	1.00	0.10	4354.86	1.000	0.998	1.000	1.000	1.015	1.280	1.051	5936.73	30.190	10.366
05:00:00	Draeger indicated 1% C02 and 0.1 ppm H2S.																		
05:00:00	Liquid returns at surge tank 0.8 bbls.																		
05:00:00	Tank Liquid Rate: 14.4 bbls/d.																		
05:05:00	Chlorides 21,000 mg/L.																		
05:05:00	Water density: 1.026 g/cm3 @ 15.7 degC.																		
05:11:00	Water SG 1.03 at 55 Deg F.																		
05:15:00	2257.66	4.25	506.31	45.02	86.690	0.610	1.00	0.10	4354.86	1.000	0.998	1.000	1.000	1.015	1.280	1.051	5936.13	30.294	10.681
05:30:00	2256.84	4.25	518.08	45.62	84.430	0.610	1.00	0.10	4354.86	1.000	0.998	1.000	1.000	1.014	1.280	1.052	5938.98	30.240	10.996
05:45:00	2255.82	4.25	523.17	45.94	82.550	0.610	1.00	0.10	4354.86	1.000	0.998	1.000	1.000	1.014	1.280	1.053	5939.87	30.131	11.311
06:00:00	2254.39	4.25	519.86	46.13	82.210	0.610	1.00	0.10	4354.86	1.000	0.998	1.000	1.000	1.014	1.280	1.052	5936.39	29.902	11.623
06:00:00	Draeger indicated 1% C02 and 0.1 ppm H2S.																		

Client Santos Ltd

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Well No. Casino 4 DW2

Location Ocean Patriot

Test No. Completion

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Time hh:mm:ss	UcP PSIG	OrifSize ins	GasP PSIG	GasT °F	GasD INWG	GasSG Factor	Co2 mol%	H2S ppm	GasFb Factor	GasFr Factor	GasY Factor	GasFpb Factor	GasFtb Factor	GasFtf Factor	GasFgr Factor	GasFpv Factor	GasC Factor	QGas1av MMscf/d	Gas1Cum MMscf/d
10/06/05																			
06:00:00																			
06:00:00																			
06:15:00	2253.57	4.25	531.64	46.73	80.590	0.610	1.00	0.10	4354.86	1.000	0.998	1.000	1.000	1.013	1.280	1.053	5939.03	29.881	11.934
06:30:00	2252.34	4.25	550.77	47.43	77.580	0.610	1.00	0.10	4354.86	1.000	0.998	1.000	1.000	1.012	1.280	1.055	5945.50	29.890	12.245
06:30:00																			
06:30:00																			
06:45:00	2251.53	4.25	554.15	48.03	76.880	0.610	1.00	0.10	4354.86	1.000	0.998	1.000	1.000	1.012	1.280	1.055	5942.73	29.954	12.557
06:45:00																			
07:00:00	2250.30	4.25	603.76	49.93	70.630	0.610	1.00	0.10	4354.86	1.000	0.998	1.000	1.000	1.010	1.280	1.059	5957.72	29.897	12.868
07:00:00																			
07:00:00																			
07:02:00																			
07:06:00																			
07:10:00																			
07:12:00																			
07:15:00	2150.54	4.25	742.00	63.15	0.000	0.610	1.00	0.10	4354.86		1.000	1.000	1.000	0.997	1.280	1.067			12.933
07:15:00																			
07:19:00																			
07:21:00																			
07:24:00																			
07:30:00	2130.09	4.50	746.10	71.30	119.560	0.610	1.00	0.10	5135.80	1.000	0.998	1.000	1.000	0.989	1.280	1.063	6900.18	49.838	13.176
07:45:00	2106.58	4.50	738.07	73.16	117.580	0.610	1.00	0.10	5135.80	1.000	0.998	1.000	1.000	0.988	1.280	1.061	6878.13	49.159	13.691
07:45:00																			
08:00:00	2078.98	4.50	721.63	74.17	115.390	0.610	1.00	0.10	5135.80	1.000	0.998	1.000	1.000	0.987	1.280	1.060	6859.74	48.379	14.198
08:00:00																			
08:00:00																			
08:15:00	2071.01	4.50	719.43	74.56	116.270	0.610	0.70	0.10	5135.80	1.000	0.998	1.000	1.000	0.986	1.280	1.060	6858.24	48.072	14.700
08:15:00																			
08:30:00	2065.49	4.50	719.67	74.88	116.240	0.610	0.70	0.10	5135.80	1.000	0.998	1.000	1.000	0.986	1.280	1.060	6855.43	48.011	15.200
08:30:00																			
08:30:00																			
08:30:00																			



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<u>10/06/05</u>																			
08:30:00	pH: 6.69 @ 15.3 degC, Conductivity 35.8 mS/cm @ 15.3 degC, Resistivity 0.028 Ohm-m @ 15.3 degC.																		
08:45:00	2061.20	4.50	714.52	75.37	116.060	0.610	0.70	0.10	5135.80	1.000	0.998	1.000	1.000	0.986	1.280	1.059	6848.01	47.838	15.699
09:00:00	2057.52	4.50	715.07	76.37	115.700	0.610	0.70	0.10	5135.80	1.000	0.998	1.000	1.000	0.985	1.280	1.059	6839.11	47.685	16.197
09:00:00	Liquid returns at surge tank 2.70 bbls.																		
09:00:00	Tank Liquid Rate: 43.30 bbls/d.																		
09:15:00	2055.88	4.50	710.60	76.68	115.950	0.610	0.70	0.10	5135.80	1.000	0.998	1.000	1.000	0.984	1.280	1.058	6833.78	47.562	16.692
09:30:00	2055.27	4.50	711.64	76.77	115.930	0.610	1.00	0.10	5135.80	1.000	0.998	1.000	1.000	0.984	1.280	1.058	6830.17	47.535	17.188
09:30:00	Draeger indicated 1% CO2 and 0.1 ppm H2S.																		
09:45:00	2055.47	4.50	712.19	76.77	115.390	0.610	1.00	0.10	5135.80	1.000	0.998	1.000	1.000	0.984	1.280	1.058	6830.55	47.525	17.683
10:00:00	2055.47	4.50	711.09	76.78	115.670	0.610	1.00	0.10	5135.80	1.000	0.998	1.000	1.000	0.984	1.280	1.058	6829.80	47.530	18.179
10:00:00	Liquid returns at surge tank 4.60 bbls.																		
10:00:00	Tank Liquid Rate: 57.60 bbls/d.																		
10:00:00	Gas SG 0.703.																		
10:15:00	2055.07	4.50	710.60	76.67	115.780	0.610	1.00	0.10	5135.80	1.000	0.998	1.000	1.000	0.984	1.280	1.058	6830.51	47.495	18.673
10:20:00	Petrotech obtained water samples: 1.04, 1.05, 1.06, 1.07.																		
10:30:00	2055.07	4.50	711.21	76.68	115.540	0.610	1.00	0.10	5135.80	1.000	0.998	1.000	1.000	0.984	1.280	1.058	6830.77	47.534	19.169
10:45:00	2054.86	4.50	711.15	76.68	115.680	0.610	1.00	0.10	5135.80	1.000	0.998	1.000	1.000	0.984	1.280	1.058	6830.72	47.521	19.664
10:45:00	Chlorides 45,000 mg/L.																		
10:45:00	Water density: 1.051 g/cm3 @ 16.5 degC.																		
10:45:00	pH: 6.62 @ 19.0 degC, Conductivity 97.6 mS/cm @ 19.0 degC, Resistivity 0.010 Ohm-m @ 19.0 degC.																		
11:00:00	2054.66	4.50	710.60	76.47	115.910	0.610	1.00	0.10	5135.80	1.000	0.998	1.000	1.000	0.985	1.280	1.058	6832.28	47.509	20.158
11:00:00	Draeger indicated 1% CO2 and 0.1 ppm H2S.																		
11:00:00	Liquid returns at surge tank 6.80 bbls.																		
11:00:00	Tank Liquid Rate: 48.00 bbls/d.																		
11:00:00	Draeger indicated 1% CO2 and 0.1 ppm H2S.																		
11:15:00	2053.64	4.50	711.09	76.28	115.420	0.610	1.00	0.10	5135.80	1.000	0.998	1.000	1.000	0.985	1.280	1.058	6834.42	47.520	20.653
11:30:00	2053.43	4.50	711.15	76.18	115.640	0.610	1.00	0.10	5135.80	1.000	0.998	1.000	1.000	0.985	1.280	1.058	6835.31	47.476	21.148
11:45:00	2052.41	4.50	711.64	76.47	114.950	0.610	1.00	0.10	5135.80	1.000	0.998	1.000	1.000	0.985	1.280	1.058	6833.00	47.488	21.643
12:00:00	2051.39	4.50	713.36	76.47	114.690	0.610	1.00	0.10	5135.80	1.000	0.998	1.000	1.000	0.985	1.280	1.058	6833.98	47.447	22.137
12:00:00	Liquid returns at surge tank 8.30 bbls.																		
12:00:00	Tank Liquid Rate: 24.00 bbls/d.																		

Client Santos Ltd

Exal Engineer M. Hall / B. Tupman

Well No. Casino 4 DW2

Location Ocean Patriot

Test No. Completion

Dates From/To 08/06/05-11/06/05

Time hh:mm:ss	UcP PSIG	OrifSize ins	GasP PSIG	GasT °F	GasD INWG	GasSG Factor	Co2 mol%	H2S ppm	GasFb Factor	GasFr Factor	GasY Factor	GasFpb Factor	GasFtb Factor	GasFtf Factor	GasFgr Factor	GasFpv Factor	GasC Factor	QGas1av MMscf/d	Gas1Cum MMscf/d
<b>10/06/05</b>																			
12:15:00	2050.98	4.50	709.06	76.22	116.110	0.610	1.00	0.10	5135.80	1.000	0.998	1.000	1.000	0.985	1.280	1.058	6833.76	47.481	22.632
12:30:00	2049.96	4.50	713.36	76.37	114.750	0.610	1.00	0.10	5135.80	1.000	0.998	1.000	1.000	0.985	1.280	1.058	6834.87	47.447	23.126
12:35:00	Petrotech commenced taking gas sample 1.08 : s/n A-1984.																		
12:45:00	2049.14	4.50	705.93	76.28	116.000	0.610	1.00	0.10	5135.80	1.000	0.998	1.000	1.000	0.985	1.280	1.057	6831.49	47.413	23.620
12:45:00	Completed taking sample.																		
13:00:00	2048.53	4.50	708.45	76.67	116.060	0.610	1.00	0.10	5135.80	1.000	0.998	1.000	1.000	0.984	1.280	1.057	6829.29	47.505	24.114
13:00:00	Petrotech commenced taking gas sample 1.13 : s/n A-1979.																		
13:00:00	Petrotech obtained water samples: 1.09, 1.10, 1.11, 1.12.																		
13:00:00	Liquid returns at surge tank 9.40 bbls.																		
13:00:00	Tank Liquid Rate: 24.00 bbls/d.																		
13:15:00	2047.30	4.50	708.39	76.67	116.220	0.610	1.00	0.10	5135.80	1.000	0.998	1.000	1.000	0.984	1.280	1.057	6829.23	47.478	24.608
13:15:00	Completed taking sample.																		
13:25:00	Closed Annulus Master Valve.																		
13:26:00	Opened separator bypass valve.																		
13:30:00	2046.69	4.50	734.76	76.96	118.040	0.610	1.00	0.10	5135.80	1.000	0.998	1.000	1.000	0.984	1.280	1.059	6840.74	46.856	25.101
13:31:00	Closed in well at choke manifold. Commenced build up survey.																		



## Gauge Information

**Client** Santos Ltd

**Well No.** Casino 4 DW2

**Test No.** Completion

**Dates From/To** 08/06/05-11/06/05

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<b>Gauge Number</b>	40586	51248	51804
<b>Gauge Type</b>	400 SQ	400 SQ	400 SQ
<b>Range</b>	0 - 16,000	0 - 16,000	0 - 16,000
<b>Depth (m MDBRT)</b>	1661.5	1660.1	1656.86

### Gauge Program

<b>Start Date</b>	09/06/05	09/06/05	09/06/05
<b>Start Time</b>	01:32:00	01:29:00	01:27:00
<b>Sample Rate</b>	2 seconds	1 second	1 second
<b>Stop Date</b>	11/06/05	11/06/05	11/06/05
<b>Stop Time</b>	08:28:00	08:27:00	08:24:00



## Gauge Comparison

**Client** Santos Ltd

**Well No.** Casino 4 DW2

**Test No.** Completion

**Dates From/To** 08/06/05-11/06/05

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<b>Gauge Number</b>	40586	51248	51804
<b>Gauge Type</b>	400 SQ	400 SQ	400 SQ
<b>Maximum Temperature (°F)</b>	178.49	177.20	177.78

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<b>Time / Date</b>	<b>Event / End Of</b>	<b>Pressure (PSIA)</b>		
00:00:00 10/06/05	Main Flow - 32/64" Choke	2634.62	2636.21	2636.73
06:00:00 10/06/05	Main Flow - 48/64" Choke	2559.96	2561.58	2562.02
12:00:00 10/06/05	Main Flow - 64/64" Choke	2423.23	2424.79	2425.14
05:00:00 11/06/05	Build Up	2735.68	2737.14	2737.57

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1) Full data recovered has been supplied on floppy disc in .TPR file format.

2) All gauges utilised have been post verified at the reservoir pressure and temperature encountered.

Gauge Toolstring

WELL : Casino 4 DW2  
 FIELD : Casino  
 DATE : 09/06/05  
 TEST : Completion

CUSTOMER : Santos  
 ENGINEER : M. Hall  
 LOCATION : Ocean Patriot  
 PERFS : Open Hole - Sand Screens



	Length meters	O.D. inches
4.625 QX Lock Mandrell. . . . .	0.94	4.68
Shock Absorber . . . . .	0.97	2.20
Crossover . . . . .	0.10	1.88
400 SQ memory gauge. . . . . SENSING DEPTH 1656.86mMDBRT	1.52	1.25
Crossover . . . . .	0.10	1.88
Inline Slickline Bowspring Centrali:	1.09	1.88
Crossover . . . . .	0.10	1.50
400 SQ memory gauge. . . . . SENSING DEPTH 1660.1mMDBRT	1.52	1.25
400 SQ memory gauge. . . . . SENSING DEPTH 1661.5mMDBRT	1.52	1.25
Crossover . . . . .	0.10	1.88
Inline Slickline Bowspring Centrali:	1.09	1.88

GAUGE TYPE	400 SQ
GAUGE NO.	51804
RANGE (psi)	0 - 16,000
START DATE	01:27 09/06/05
SAMPLE RATE	1 second
MEMORY SIZE	400k
END DATE	08:24 11/06/05

GAUGE TYPE	400 SQ
GAUGE NO.	51248
RANGE (psi)	0 - 16,000
START DATE	01:29 09/06/05
SAMPLE RATE	1 second
MEMORY SIZE	400k
END DATE	08:27 11/06/05

GAUGE TYPE	400 SQ
GAUGE NO.	40586
RANGE (psi)	0 - 16,000
START DATE	01:32 09/06/05
SAMPLE RATE	2 seconds
MEMORY SIZE	400k
END DATE	08:28 11/06/05

ToolString Length = 9.06 m



## Combined Memory Gauge Data Listing

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<b>Client</b>	Santos Ltd
<b>Well No.</b>	Casino 4 DW2
<b>Test No.</b>	Completion
<b>Location</b>	Ocean Patriot
<b>Dates From/To</b>	08/06/05-11/06/05
<b>Country</b>	Australia
<b>Field</b>	Casino
<b>Formation</b>	Waarre A Sands
<b>Exal Engineer</b>	M. Hall / B. Tupman
<b>Expro Supervisor</b>	F. Beaton
<b>Client Engineer</b>	R. King / M. Andronov / P. Nardone
<b>Perforations</b>	Open Hole - Sand Screens

Gas specific gravity of 0.61 used for rate calculations based on PVT analysis performed on gas samples. This over rides the estimate gas specific gravity of 0.68 reported during the test.

<b>Client</b>	Santos Ltd	<b>Exal Engineer</b>	M. Hall / B. Tupman
<b>Well No.</b>	Casino 4 DW2	<b>Location</b>	Ocean Patriot
<b>Test No.</b>	Completion	<b>Dates From/To</b>	08/06/05-11/06/05

Time hh:mm:ss	40586P PSIA	40586T °F	51804P PSIA	51804T °F	51248P PSIA	51248T °F
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**09/06/05**

01:27:00 Started top gauge MP2CH042-51084 by connecting to battery 20466, gauge sampling at 1 second intervals.

01:27:19

01:28:00 14.49 64.34

01:29:00 0.00 0.00 14.53 64.25 1.19 5.10

01:29:00 Started middle gauge MP2CH228-51248 by connecting to battery FC15708, gauge sampling at 1 second intervals.

01:30:00 14.56 64.10 16.49 70.43

01:31:00 14.57 63.95 16.58 70.13

01:32:00 14.59 63.75 16.62 69.78

01:32:00 Started bottom gauge MP2CH185-40586 by connecting to battery FC15692, gauge sampling at 2 second intervals.

01:33:00 12.33 65.19 14.61 63.52 16.67 69.39

01:34:00 12.41 65.16 14.64 63.26 16.72 68.94

01:35:00 12.19 65.06 14.67 63.00 16.64 68.58

01:36:00 12.25 64.92 14.68 62.71 16.67 68.24

01:37:00 12.23 64.75 14.67 62.43 16.70 67.87

01:38:00 12.25 64.59 14.67 62.18 16.79 67.43

01:39:00 17.26 64.37 14.71 61.88 18.75 66.87

01:40:00 17.23 64.20 14.68 61.65 18.70 66.41

01:40:00 Installed gauge toolstring in lubricator, stabbed on.

01:40:01 17.23 64.19 14.68 61.64 18.71 66.40

01:45:00 17.19 63.67 14.57 61.07 18.51 64.88

01:56:00 Opened Sub Sea Lubricator Valve.

02:00:00 23.46 63.40 20.66 61.86 24.37 63.08

02:00:00 Equalized above Sub Sea Upper Ball Valve.

02:03:00 Opened Sub Sea Upper Ball Valve.

02:08:00 Wireline commenced running in hole with pressure/temperature gauges.

02:15:00 712.10 61.52 708.99 60.80 710.53 61.13

02:15:00 Pressure detected in Sub Sea assist close line, operations halted.

02:18:00 Issue resolved, operations recommenced.

02:30:00 1098.89 80.54 1096.57 81.33 1101.81 81.78

02:45:00 1757.07 116.20 1754.75 117.18 1760.51 117.48

03:00:00 2399.51 141.86 2397.18 142.31 2402.86 142.50

03:15:00 2561.00 158.57 2558.66 158.10 2560.62 158.03

03:30:00 2551.16 161.66 2548.86 160.70 2551.31 160.54

03:37:00 Wireline at surface, shut Sub Sea Upper Ball Valve.

03:41:00 Bled surface pressure down to 74psi at choke manifold and held for 10min.

03:45:00 2557.32 162.45 2555.10 161.26 2557.36 161.04

03:52:00 Test good, bled surface pressure down to 0psi at choke manifold and closed choke manifold.

03:55:00 Closed Sub Sea Lubricator Valve.

04:00:00 2558.36 162.58 2556.22 161.40 2558.47 161.16

04:00:00 Opened 7" Flowhead Kill Wing Valve.

04:06:00 Closed 7" Flowhead Swab Valve and made up downhole gauge recovery toolstring.

04:12:00 Opened Sub Sea Lubricator Valve.

04:14:00 Equalized pressure in order to open Sub Sea Upper Ball Valve.

04:15:00 2558.61 162.60 2556.44 161.46 2558.72 161.19

04:16:00 Closed 7" Flowhead Kill Wing Valve.

04:17:00 Opened Sub Sea Upper Ball Valve.

04:21:00 Conducted Safety meeting prior to flowing well.

04:30:00 2558.81 162.64 2556.65 161.49 2559.12 161.21

<b>Client</b>	Santos Ltd	<b>Exal Engineer</b>	M. Hall / B. Tupman
<b>Well No.</b>	Casino 4 DW2	<b>Location</b>	Ocean Patriot
<b>Test No.</b>	Completion	<b>Dates From/To</b>	08/06/05-11/06/05

Time hh:mm:ss	40586P PSIA	40586T °F	51804P PSIA	51804T °F	51248P PSIA	51248T °F
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**09/06/05**

04:45:00	2558.16	162.70	2556.45	161.52	2558.51	161.21
04:59:00	Commenced pumping pilot diesel to flare, set one compressor on half load to bring flare ignition system online.					
05:00:00	2558.56	162.75	2556.47	161.53	2558.65	161.23
05:12:00	Opened well to surge tank via 16/64 adjustable choke.					
05:13:00	Increased to 20/64 adjustable choke.					
05:15:00	2526.90	162.81	2523.96	161.62	2527.16	161.32
05:15:00	Increased to 24/64 adjustable choke.					
05:16:00	Increased to 28/64 adjustable choke.					
05:18:00	11.4 bbls cumulative recovered at surge tank.					
05:20:00	13.9 bbls cumulative recovered at surge tank.					
05:21:00	Increased to 32/64 adjustable choke.					
05:25:00	20.7 bbls cumulative recovered at surge tank.					
05:30:00	2557.42	168.00	2554.91	167.28	2557.85	166.92
05:30:00	28 bbls cumulative recovered at surge tank.					
05:35:00	35 bbls cumulative recovered at surge tank.					
05:40:00	Diverted flow to port flareboom.					
05:41:00	Increased to 36/64 adjustable choke.					
05:45:00	2602.22	169.64	2600.20	168.92	2603.02	168.51
05:49:00	Increased to 40/64 adjustable choke.					
05:55:00	Increased to 44/64 adjustable choke.					
05:58:00	Increased to 48/64 adjustable choke.					
06:00:00	2603.26	171.18	2602.49	170.55	2603.41	170.06
06:01:00	Increased to 52/64 adjustable choke.					
06:12:00	Brine at surface, port flareboom extinguished, diverted flow via gas line to flare boom.					
06:15:00	2649.19	174.54	2649.32	173.94	2650.48	173.45
06:15:00	BS&W at choke manifold 100% mud.					
06:17:00	Gas at surface.					
06:18:00	Lo-pilot upstream safety valve armed, set at 150psi.					
06:21:00	Increased to 56/64 adjustable choke.					
06:22:00	Increased to 60/64 adjustable choke.					
06:24:00	Increased to 64/64 adjustable choke.					
06:30:00	2649.11	175.26	2649.79	174.56	2649.62	174.05
06:30:00	BS&W at choke manifold 100% mud.					
06:45:00	2623.68	176.27	2624.57	175.57	2624.52	175.03
06:57:00	Decreased to 56/64 adjustable choke.					
07:00:00	2614.47	176.73	2615.63	176.01	2615.41	175.47
07:00:00	BS&W at choke manifold 100% mud.					
07:00:00	Draeger indicated 0.7% CO2 and 0.3 ppm H2S.					
07:05:00	Flare ignited on port flareboom.					
07:09:00	Increased to 64/64 adjustable choke.					
07:15:00	2581.23	176.92	2582.40	176.20	2582.46	175.64
07:15:00	Draeger indicated 0.7% CO2 and 0.3 ppm H2S.					
07:30:00	2563.22	177.09	2564.44	176.37	2564.48	175.82
07:30:00	BS&W at choke 100% mud.					
07:30:00	Draeger indicated 1.0% CO2 and 0.3 ppm H2S.					
07:45:00	2551.25	177.22	2552.55	176.50	2552.54	175.94
07:45:00	Draeger indicated 1.0% CO2 and 0.3 ppm H2S.					
08:00:00	2540.99	177.31	2542.26	176.58	2542.27	176.03
08:00:00	BS&W at choke 100% mud.					
08:00:00	Draeger indicated 1.0% CO2 and 0.3 ppm H2S.					
08:15:00	2531.85	177.37	2533.18	176.65	2533.19	176.09



<b>Client</b>	Santos Ltd	<b>Exal Engineer</b>	M. Hall / B. Tupman
<b>Well No.</b>	Casino 4 DW2	<b>Location</b>	Ocean Patriot
<b>Test No.</b>	Completion	<b>Dates From/To</b>	08/06/05-11/06/05

Time hh:mm:ss	40586P PSIA	40586T °F	51804P PSIA	51804T °F	51248P PSIA	51248T °F
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**09/06/05**

08:15:00	Draeger indicated 1.0% CO2 and 0.3 ppm H2S.					
08:30:00	2524.08	177.42	2525.45	176.70	2525.36	176.14
08:30:00	BS&W at choke 100% mud.					
08:30:00	Draeger indicated 1.0% CO2 and 0.3 ppm H2S.					
08:43:00	Annulus transducer producing spurious data, drillfloor monitoring.					
08:45:00	2516.98	177.46	2518.33	176.73	2518.32	176.17
08:45:00	Draeger indicated 1.0% CO2 and 0.3 ppm H2S.					
09:00:00	2510.77	177.49	2512.11	176.77	2512.04	176.21
09:00:00	BS&W at choke 100% mud.					
09:00:00	Draeger indicated 1.0% CO2 and 0.1 ppm H2S.					
09:15:00	2504.44	177.52	2505.85	176.79	2505.77	176.23
09:15:00	Draeger indicated 1.0% CO2 and 0.1 ppm H2S.					
09:16:00	Increased to 72/64 adjustable choke.					
09:20:00	Annulus transducer back on line.					
09:26:00	Increased to 76/64 adjustable choke.					
09:30:00	2456.73	177.31	2457.97	176.57	2457.90	176.01
09:30:00	BS&W at choke 100% mud.					
09:30:00	Draeger indicated 1.0% CO2 and 0.1 ppm H2S.					
09:31:00	Increased to 96/64 adjustable choke.					
09:45:00	2417.67	177.10	2418.76	176.37	2418.86	175.81
09:45:00	Draeger indicated 1.0% CO2 and 0.1 ppm H2S.					
10:00:00	2406.51	177.07	2407.63	176.35	2407.80	175.79
10:00:00	BS&W at choke 100% mud.					
10:00:00	Draeger indicated 0.5% CO2 and 0.1 ppm H2S.					
10:15:00	2397.04	177.08	2398.24	176.36	2398.31	175.80
10:30:00	2388.05	177.08	2389.21	176.36	2389.31	175.80
10:30:00	BS&W at choke 100% mud.					
10:30:00	Draeger indicated 0.5% CO2 and 0.1 ppm H2S.					
10:45:00	2380.11	177.08	2381.33	176.36	2381.34	175.80
11:00:00	2371.68	177.07	2372.93	176.35	2373.04	175.79
11:00:00	BS&W at choke 100% mud.					
11:00:00	Draeger indicated 1.0% CO2 and 0.1 ppm H2S.					
11:15:00	2363.80	177.05	2365.08	176.33	2365.10	175.77
11:30:00	2356.94	177.04	2358.21	176.32	2358.31	175.76
11:30:00	BS&W at choke 100% mud.					
11:30:00	Draeger indicated 1.0% CO2 and 0.1 ppm H2S.					
11:45:00	2350.62	177.03	2351.89	176.31	2352.00	175.75
12:00:00	2344.68	177.02	2346.01	176.30	2346.04	175.74
12:00:00	BS&W at choke 100% mud.					
12:00:00	Draeger indicated 0.3% CO2 and 0.0 ppm H2S.					
12:15:00	2339.20	177.02	2340.52	176.29	2340.56	175.74
12:30:00	2333.88	177.00	2335.20	176.29	2335.22	175.73
12:30:00	BS&W at choke 100% mud.					
12:45:00	2328.80	176.99	2330.15	176.28	2330.18	175.72
13:00:00	2324.10	176.99	2325.45	176.27	2325.48	175.71
13:00:00	Unable obtain BS&W due to plugging in sampling lines.					
13:15:00	2319.55	176.98	2320.91	176.26	2320.96	175.70
13:30:00	2315.52	176.97	2316.90	176.26	2316.93	175.69
13:45:00	2311.44	176.97	2312.83	176.25	2312.87	175.68
13:47:00	Diverted flow through 64/64" fixed choke.					
13:50:00	No liquids at surface.					
14:00:00	2380.85	177.46	2382.54	176.75	2382.46	176.19

<b>Client</b>	Santos Ltd	<b>Exal Engineer</b>	M. Hall / B. Tupman
<b>Well No.</b>	Casino 4 DW2	<b>Location</b>	Ocean Patriot
<b>Test No.</b>	Completion	<b>Dates From/To</b>	08/06/05-11/06/05

Time hh:mm:ss	40586P PSIA	40586T °F	51804P PSIA	51804T °F	51248P PSIA	51248T °F
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**09/06/05**

14:00:00 Draeger indicated 0.6% CO2 and 0.1 ppm H2S.

14:15:00 2393.06 177.49 2394.81 176.77 2394.66 176.20

14:23:00 Diverted flow through test separator.

14:30:00 2399.94 177.50 2401.69 176.79 2401.51 176.22

14:39:00 Installed 4.50" orifice plate in test separator gas meter run.

14:45:00 2403.59 177.52 2405.33 176.80 2405.24 176.23

14:45:00 Draeger indicated 0.6% CO2 and 0.1 ppm H2S.

14:45:00 Gas SG 0.716.

15:00:00 2407.00 177.55 2408.74 176.83 2408.52 176.27

15:00:00 Draeger indicated 0.6% CO2 and 0.1 ppm H2S.

15:00:00 Gas SG 0.692.

15:00:00 Mercury: 0.94 micrograms/m3.

15:07:00 Removed orifice plate.

15:10:00 Radon: 381 Bq/m3.

15:11:00 Lowered pressure in test separator.

15:15:00 2409.39 177.57 2411.14 176.85 2410.93 176.28

15:17:00 Installed 4.50" orifice plate in test separator gas meter run.

15:30:00 2411.33 177.59 2413.07 176.87 2412.83 176.30

15:30:00 Draeger indicated 0.6% CO2 and 0.1 ppm H2S.

15:30:00 Gas SG 0.684.

15:45:00 2412.21 177.60 2414.00 176.88 2413.76 176.31

15:50:00 Mercury: 0.59 micrograms/m3.

15:50:00 Lowered pressure in test separator.

16:00:00 2412.92 177.61 2414.68 176.89 2414.45 176.32

16:00:00 Draeger indicated 0.5% CO2 and 0.1 ppm H2S.

16:00:00 Oil SG 0.773 @ 60 degF.

16:00:00 Well Test sample attained by Geoservices 0.6% CO2 and <0.5ppm H2S.

16:15:00 2413.37 177.62 2415.13 176.90 2414.94 176.33

16:15:00 Petrotech commenced taking gas sample 1.01 : s/n A4786.

16:30:00 2413.67 177.63 2415.43 176.91 2415.18 176.34

16:30:00 Completed taking gas sample.

16:45:00 2413.72 177.63 2415.51 176.92 2415.27 176.35

16:45:00 Total liquid returns; 3 bbls - Estimated LGR 0.65 bbl/MMscf.

17:00:00 2413.74 177.65 2415.52 176.93 2415.29 176.36

17:00:00 Draeger indicated 0.6% CO2 and 0.1 ppm H2S.

17:00:00 Gas SG 0.693.

17:05:00 Clean-up criteria established: 1: BS&W <3% - not measurable, 2: Stable THP - <10 psi/5 min change over 2 hours - 15 psi stable increase over 2 hours, 3: Stable gas rate - 47.1 MMscf/d, 4: WGR < 1 bbl/MMscf - Estimated LGR<0.65 bbl/MMscf

17:08:00 Raised orifice plate and bypassed test separator.

17:09:00 Closed in well at choke manifold.

17:15:00 2505.59 178.19 2507.59 177.48 2507.50 176.92

17:30:00 2545.80 177.57 2547.84 176.83 2547.55 176.23

17:45:00 2569.40 176.65 2571.43 175.89 2571.07 175.31

18:00:00 2587.02 175.69 2589.05 174.94 2588.65 174.37

18:15:00 2601.35 175.18 2603.37 174.41 2602.95 173.87

18:30:00 2613.36 174.80 2615.38 173.98 2614.95 173.47

18:38:00 Commenced methanol injection upstream of surface safety valve.

18:39:00 Opened well up to port flareboom on 16/64 adjustable choke through heat exchanger and separator.

18:40:00 Increased to 24/64 adjustable choke.

18:41:00 Increased to 32/64 adjustable choke.

<b>Client</b>	Santos Ltd	<b>Exal Engineer</b>	M. Hall / B. Tupman
<b>Well No.</b>	Casino 4 DW2	<b>Location</b>	Ocean Patriot
<b>Test No.</b>	Completion	<b>Dates From/To</b>	08/06/05-11/06/05

Time hh:mm:ss	40586P PSIA	40586T °F	51804P PSIA	51804T °F	51248P PSIA	51248T °F
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**09/06/05**

18:41:00	Gas flare lit.					
18:45:00	2606.53	174.78	2608.48	174.00	2608.12	173.53
18:45:00	Well shut in due to burst steam hose.					
19:00:00	2629.61	175.14	2631.65	174.40	2631.22	173.86
19:03:00	Commenced methanol injection upstream of surface safety valve.					
19:03:00	Opened well up to port flareboom on 16/64 adjustable choke through heat exchanger and separator.					
19:04:00	Increased to 32/64 adjustable choke.					
19:05:00	Diverted flow through 32/64 fixed choke.					
19:06:00	Gas flare lit.					
19:07:00	Shut in due to leak on Weco seal downstream of choke manifold caused by hydrating.					
19:10:00	Opened well up to port flareboom on 24/64 adjustable choke through heat exchanger and separator.					
19:11:00	Increased to 32/64 adjustable choke.					
19:12:00	Diverted flow through 32/64 fixed choke.					
19:13:00	Steam delivery to heat exchanger halted to fix minor leak in union.					
19:13:00	Gas flare lit.					
19:13:00	Recommenced steam delivery to heat exchanger.					
19:15:00	2616.59	175.22	2618.57	174.47	2618.07	173.97
19:19:00	Ceased methanol injection upstream of surface safety valve.					
19:30:00	2612.85	176.33	2614.85	175.61	2614.42	175.10
19:37:00	Installed 2.75" orifice plate in test separator gas meter run.					
19:38:00	Gas SG 0.684.					
19:45:00	2613.06	176.74	2615.08	176.03	2614.65	175.49
19:52:00	Draeger indicated 1% CO2 and 0.1 ppm H2S, 0% mercaptan.					
20:00:00	2614.14	176.90	2616.17	176.17	2615.73	175.63
20:15:00	2615.56	177.00	2617.59	176.27	2617.14	175.73
20:30:00	2617.10	177.08	2619.14	176.35	2618.71	175.80
20:32:00	Draeger indicated 1% CO2 and 0.1 ppm H2S.					
20:45:00	2618.69	177.14	2620.75	176.41	2620.31	175.86
21:00:00	2620.31	177.20	2622.34	176.46	2621.88	175.91
21:10:00	Radon: 396 Bq/m3.					
21:15:00	2621.83	177.24	2623.88	176.51	2623.46	175.95
21:28:00	Gas SG 0.682.					
21:29:00	Flushed line to downstream choke pressure transducer.					
21:30:00	2623.29	177.28	2625.34	176.55	2624.91	176.00
21:30:00	Draeger indicated 1% CO2 and 0.1 ppm H2S, 0% mercaptan.					
21:36:00	Adjusted separator pressure control.					
21:45:00	2624.75	177.31	2626.79	176.58	2626.34	176.03
22:00:00	2626.09	177.34	2628.13	176.61	2627.71	176.05
22:10:00	Commenced pumping methanol upstream of SSV to eliminate hydrates across heater choke.					
22:15:00	2627.28	177.36	2629.34	176.63	2628.82	176.08
22:30:00	2628.39	177.39	2630.44	176.66	2630.03	176.11
22:30:00	Draeger indicated 1% CO2 and 0.1 ppm H2S.					
22:40:00	Mercury: 0.24 micrograms/m3.					
22:45:00	2629.51	177.41	2631.57	176.68	2631.14	176.13
23:00:00	2630.60	177.43	2632.66	176.70	2632.20	176.15
23:15:00	2631.65	177.45	2633.66	176.72	2633.21	176.16
23:23:00	Gas SG 0.683.					
23:30:00	2632.53	177.47	2634.61	176.73	2634.22	176.18

<b>Client</b>	Santos Ltd	<b>Exal Engineer</b>	M. Hall / B. Tupman
<b>Well No.</b>	Casino 4 DW2	<b>Location</b>	Ocean Patriot
<b>Test No.</b>	Completion	<b>Dates From/To</b>	08/06/05-11/06/05

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**09/06/05**

23:30:00	Mercury: 0.35 micrograms/m3.					
23:45:00	2633.62	177.48	2635.69	176.75	2635.29	176.19
23:50:00	Chlorides 45,000 mg/L.					
23:50:00	Water density: 1.054 g/cm3 @ 17.1 degC.					
24:00:00	2634.62	177.49	2636.73	176.76	2636.20	176.20

**10/06/05**

00:15:00	2635.53	177.50	2637.61	176.77	2637.11	176.21
00:30:00	2636.32	177.51	2638.41	176.78	2637.92	176.22
00:30:00	Petrotech commenced taking gas sample 1.02 : s/n A2006.					
00:45:00	2637.07	177.52	2639.24	176.79	2638.77	176.23
00:45:00	Completed taking sample.					
01:00:00	2637.87	177.53	2639.90	176.80	2639.52	176.25
01:00:00	Draeger indicated 1.2% CO2 and 0.1 ppm H2S.					
01:07:00	Removed orifice plate.					
01:08:00	Heater and separator bypass opened.					
01:09:00	Increased to 48/64 fixed choke.					
01:11:00	Diverted flow back through heat exchanger.					
01:14:00	Diverted flow back though separator.					
01:15:00	2609.71	177.49	2611.74	176.75	2611.22	176.20
01:16:00	Closed separator bypass.					
01:30:00	2597.58	177.76	2599.60	177.04	2599.16	176.48
01:45:00	2590.07	177.89	2592.09	177.18	2591.64	176.61
01:55:00	Opened separator bypass.					
02:00:00	2584.67	177.94	2586.69	177.22	2586.26	176.65
02:00:00	Draeger indicated 1.1% CO2 and 0.1 ppm H2S.					
02:00:00	Mercury: 0.27 micrograms/m3.					
02:00:00	Drained 4 bbl's of fluid from seperator to surge tank.					
02:13:00	Closed separator bypass.					
02:14:00	Surface Safety Valve tripped, well shut in.					
02:15:00	2613.72	178.02	2615.99	177.30	2615.69	176.74
02:29:00	Closed in well at choke manifold.					
02:29:00	Opened Surface Safety Valve.					
02:30:00	2647.33	177.97	2649.44	177.24	2649.03	176.64
02:32:00	Commenced pumping methanol upstream of SSV.					
02:35:00	Opened well up to port flareboom on 24/64 adjustable choke through heat exchanger and separator.					
02:37:00	Gas flare lit.					
02:37:00	Increased to 32/64 adjustable choke.					
02:42:00	Increased to 48/64 adjustable choke.					
02:45:00	2613.49	177.11	2615.51	176.35	2614.92	175.80
02:48:00	Diverted flow through 48/64 fixed choke.					
02:52:00	Attempted to increase separator pressure to 750psi.					
02:54:00	Lowered 3.75 orifice plate.					
03:00:00	2594.34	177.41	2596.34	176.69	2595.90	176.13
03:00:00	Lowered 4.25 orifice plate.					
03:02:00	Gas SG 0.684.					
03:05:00	Draeger indicated 0.7% CO2 and 0.1 ppm H2S.					
03:10:00	Ceased methanol injection upstream of SSV.					
03:10:00	Radon: 285 Bq/m3.					
03:15:00	2586.73	177.67	2588.72	176.96	2588.29	176.40
03:30:00	2581.60	177.80	2583.63	177.08	2583.18	176.52

<b>Client</b>	Santos Ltd	<b>Exal Engineer</b>	M. Hall / B. Tupman
<b>Well No.</b>	Casino 4 DW2	<b>Location</b>	Ocean Patriot
<b>Test No.</b>	Completion	<b>Dates From/To</b>	08/06/05-11/06/05

Time hh:mm:ss	40586P PSIA	40586T °F	51804P PSIA	51804T °F	51248P PSIA	51248T °F
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**10/06/05**

03:45:00	2577.95	177.87	2579.97	177.15	2579.54	176.58
04:00:00	2574.79	177.91	2576.82	177.19	2576.40	176.62
04:00:00	Commenced dumping fluid from separator to surge tank, established level on surge tank.					
04:00:00	Draeger indicated 1% CO2 and 0.1 ppm H2S.					
04:00:00	Mercury: 0.47 micrograms/m3.					
04:15:00	2572.01	177.95	2574.05	177.22	2573.61	176.66
04:30:00	2569.73	177.97	2571.75	177.25	2571.32	176.68
04:45:00	2567.68	177.99	2569.72	177.27	2569.28	176.70
05:00:00	2565.91	178.00	2567.93	177.28	2567.50	176.71
05:00:00	Draeger indicated 1% CO2 and 0.1 ppm H2S.					
05:00:00	Liquid returns at surge tank 0.8 bbls.					
05:00:00	Tank Liquid Rate: 14.4 bbls/d.					
05:05:00	Chlorides 21,000 mg/L.					
05:05:00	Water density: 1.026 g/cm3 @ 15.7 degC.					
05:11:00	Water SG 1.03 at 55 Deg F.					
05:15:00	2564.20	178.02	2566.24	177.29	2565.82	176.72
05:30:00	2562.65	178.02	2564.69	177.30	2564.26	176.73
05:45:00	2561.26	178.03	2563.30	177.31	2562.88	176.73
06:00:00	2559.96	178.03	2562.02	177.31	2561.58	176.74
06:00:00	Draeger indicated 1% CO2 and 0.1 ppm H2S.					
06:00:00	Liquid returns at surge tank 1.30 bbls.					
06:00:00	Tank Liquid Rate: 9.60 bbls/d.					
06:15:00	2558.77	178.04	2560.81	177.32	2560.38	176.74
06:30:00	2557.63	178.04	2559.69	177.32	2559.24	176.75
06:30:00	Petrotech commenced taking gas sample 1.03 : s/n A-5768.					
06:45:00	2556.55	178.05	2558.62	177.32	2558.15	176.75
06:45:00	Completed taking sample.					
07:00:00	2555.56	178.05	2557.62	177.33	2557.18	176.76
07:00:00	Liquid returns at surge tank 1.80 bbls.					
07:00:00	Draeger indicated 1% CO2 and 0.1 ppm H2S.					
07:02:00	Raised orifice plate.					
07:06:00	Opened separator bypass.					
07:10:00	Diverted flow through 48/64" adjustable choke.					
07:12:00	Increased adjustable choke to 52/64".					
07:15:00	2507.19	177.88	2509.25	177.15	2508.06	176.57
07:15:00	Increased adjustable choke to 64/64".					
07:19:00	Diverted flow through 64/64" fixed choke.					
07:21:00	Closed separator bypass.					
07:24:00	Installed 4.50" orifice plate in test separator gas meter run.					
07:30:00	2488.18	177.90	2490.04	177.18	2489.71	176.61
07:45:00	2474.39	177.91	2476.27	177.19	2475.94	176.62
07:45:00	Gas SG 0.698.					
08:00:00	2468.83	177.89	2470.62	177.18	2470.35	176.60
08:00:00	Water SG 1.022 @ 60 degF.					
08:00:00	Liquid returns at surge tank 2.00 bbls.					
08:00:00	Tank Liquid Rate: 9.60 bbls/d.					
08:15:00	2463.70	177.90	2465.48	177.18	2465.22	176.61
08:15:00	Draeger indicated 0.7% CO2 and 0.1 ppm H2S.					
08:30:00	2459.58	177.90	2461.39	177.18	2461.09	176.61
08:30:00	Chlorides 15,000 mg/L.					
08:30:00	Water density: 1.018 g/cm3 @ 16.1 degC.					

<b>Client</b>	Santos Ltd	<b>Exal Engineer</b>	M. Hall / B. Tupman
<b>Well No.</b>	Casino 4 DW2	<b>Location</b>	Ocean Patriot
<b>Test No.</b>	Completion	<b>Dates From/To</b>	08/06/05-11/06/05

Time hh:mm:ss	40586P PSIA	40586T °F	51804P PSIA	51804T °F	51248P PSIA	51248T °F
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**10/06/05**

08:30:00 pH: 6.69 @ 15.3 degC, Conductivity 35.8 mS/cm @ 15.3 degC, Resistivity 0.028 Ohm-m @ 15.3 degC.

08:45:00 2455.96 177.90 2457.81 177.19 2457.50 176.61

09:00:00 2452.71 177.90 2454.57 177.19 2454.30 176.61

09:00:00 Liquid returns at surge tank 2.70 bbls.

09:00:00 Tank Liquid Rate: 43.30 bbls/d.

09:15:00 2449.81 177.90 2451.65 177.18 2451.34 176.61

09:30:00 2446.84 177.90 2448.72 177.18 2448.38 176.60

09:30:00 Draeger indicated 1% CO2 and 0.1 ppm H2S.

09:45:00 2443.90 177.89 2445.79 177.18 2445.47 176.60

10:00:00 2441.08 177.88 2442.94 177.16 2442.66 176.59

10:00:00 Liquid returns at surge tank 4.60 bbls.

10:00:00 Tank Liquid Rate: 57.60 bbls/d.

10:00:00 Gas SG 0.703.

10:15:00 2438.29 177.88 2440.17 177.16 2439.82 176.59

10:20:00 Petrotech obtained water samples: 1.04, 1.05, 1.06, 1.07.

10:30:00 2435.86 177.87 2437.74 177.15 2437.39 176.58

10:45:00 2433.56 177.87 2435.43 177.15 2435.09 176.58

10:45:00 Chlorides 45,000 mg/L.

10:45:00 Water density: 1.051 g/cm3 @ 16.5 degC.

10:45:00 pH: 6.62 @ 19.0 degC, Conductivity 97.6 mS/cm @ 19.0 degC, Resistivity 0.010 Ohm-m @ 19.0 degC.

11:00:00 2431.21 177.87 2433.08 177.15 2432.78 176.57

11:00:00 Draeger indicated 1% CO2 and 0.1 ppm H2S.

11:00:00 Liquid returns at surge tank 6.80 bbls.

11:00:00 Tank Liquid Rate: 48.00 bbls/d.

11:00:00 Draeger indicated 1% CO2 and 0.1 ppm H2S.

11:15:00 2429.02 177.86 2430.90 177.14 2430.58 176.57

11:30:00 2426.95 177.86 2428.85 177.14 2428.53 176.56

11:45:00 2425.01 177.85 2426.93 177.13 2426.61 176.56

12:00:00 2423.23 177.85 2425.14 177.13 2424.79 176.56

12:00:00 Liquid returns at surge tank 8.30 bbls.

12:00:00 Tank Liquid Rate: 24.00 bbls/d.

12:15:00 2421.41 177.84 2423.33 177.13 2423.02 176.55

12:30:00 2419.80 177.84 2421.71 177.12 2421.36 176.55

12:35:00 Petrotech commenced taking gas sample 1.08 : s/n A-1984.

12:45:00 2418.17 177.84 2420.10 177.12 2419.75 176.54

12:45:00 Completed taking sample.

13:00:00 2416.73 177.83 2418.61 177.12 2418.29 176.54

13:00:00 Petrotech commenced taking gas sample 1.13 : s/n A-1979.

13:00:00 Petrotech obtained water samples: 1.09, 1.10, 1.11, 1.12.

13:00:00 Liquid returns at surge tank 9.40 bbls.

13:00:00 Tank Liquid Rate: 24.00 bbls/d.

13:15:00 2415.34 177.83 2417.23 177.11 2416.91 176.54

13:15:00 Completed taking sample.

13:25:00 Closed Annulus Master Valve.

13:26:00 Opened separator bypass valve.

13:30:00 2413.94 177.83 2415.81 177.10 2415.50 176.53

13:31:00 Closed in well at choke manifold. Commenced build up survey.

13:45:00 2534.41 178.33 2536.52 177.61 2536.15 177.02

14:00:00 2560.70 177.59 2562.80 176.86 2562.37 176.27

14:15:00 2578.93 176.88 2581.06 176.14 2580.60 175.55



<b>Client</b>	Santos Ltd	<b>Exal Engineer</b>	M. Hall / B. Tupman
<b>Well No.</b>	Casino 4 DW2	<b>Location</b>	Ocean Patriot
<b>Test No.</b>	Completion	<b>Dates From/To</b>	08/06/05-11/06/05

Time hh:mm:ss	40586P PSIA	40586T °F	51804P PSIA	51804T °F	51248P PSIA	51248T °F
<b>10/06/05</b>						
14:30:00	2593.34	176.24	2595.46	175.51	2594.97	174.93
14:45:00	2605.21	175.92	2607.33	175.17	2606.81	174.61
15:00:00	2615.29	175.64	2617.39	174.86	2616.88	174.32
15:15:00	2624.01	175.33	2626.14	174.55	2625.59	174.02
15:30:00	2631.71	175.05	2633.82	174.26	2633.28	173.73
15:45:00	2638.55	174.77	2640.66	173.99	2640.12	173.46
16:00:00	2644.70	174.52	2646.80	173.73	2646.27	173.22
16:15:00	2650.28	174.31	2652.39	173.51	2651.82	173.00
16:30:00	2655.37	174.10	2657.48	173.29	2656.91	172.80
16:45:00	2660.03	173.91	2662.14	173.11	2661.57	172.60
17:00:00	2664.31	173.72	2666.44	172.92	2665.86	172.42
17:15:00	2668.30	173.55	2670.40	172.75	2669.84	172.25
17:30:00	2671.97	173.40	2674.09	172.59	2673.51	172.10
17:45:00	2675.41	173.25	2677.51	172.43	2676.94	171.95
18:00:00	2678.62	173.10	2680.73	172.29	2680.15	171.81
18:15:00	2681.62	172.97	2683.72	172.16	2683.16	171.67
18:30:00	2684.43	172.84	2686.54	172.03	2685.96	171.55
18:45:00	2687.10	172.72	2689.19	171.91	2688.61	171.43
19:00:00	2689.59	172.61	2691.69	171.79	2691.11	171.32
19:15:00	2691.95	172.50	2694.06	171.68	2693.48	171.21
19:30:00	2694.18	172.40	2696.30	171.57	2695.71	171.11
19:45:00	2696.31	172.30	2698.41	171.47	2697.83	171.01
20:00:00	2698.32	172.20	2700.43	171.37	2699.84	170.91
20:15:00	2700.24	172.11	2702.34	171.28	2701.75	170.82
20:30:00	2702.06	172.02	2704.18	171.19	2703.58	170.74
20:45:00	2703.80	171.94	2705.91	171.11	2705.31	170.66
21:00:00	2705.46	171.86	2707.55	171.02	2706.97	170.58
21:15:00	2707.03	171.79	2709.16	170.95	2708.57	170.49
21:30:00	2708.54	171.71	2710.66	170.87	2710.09	170.43
21:45:00	2710.00	171.64	2712.11	170.80	2711.53	170.36
22:00:00	2711.40	171.57	2713.49	170.72	2712.91	170.29
22:15:00	2712.73	171.51	2714.82	170.66	2714.24	170.23
22:30:00	2714.02	171.44	2716.10	170.59	2715.51	170.16
22:45:00	2715.23	171.38	2717.34	170.53	2716.76	170.10
23:00:00	2716.42	171.31	2718.53	170.46	2717.93	170.04
23:15:00	2717.55	171.25	2719.64	170.40	2719.07	169.98
23:30:00	2718.64	171.20	2720.75	170.35	2720.16	169.92
23:45:00	2719.71	171.14	2721.80	170.29	2721.22	169.86
24:00:00	2720.71	171.09	2722.81	170.23	2722.24	169.81

<b>11/06/05</b>						
00:15:00	2721.70	171.03	2723.79	170.17	2723.21	169.76
00:30:00	2722.66	170.98	2724.76	170.12	2724.16	169.70
00:45:00	2723.57	170.93	2725.67	170.07	2725.08	169.66
01:00:00	2724.45	170.88	2726.55	170.02	2725.96	169.61
01:15:00	2725.31	170.83	2727.40	169.98	2726.80	169.56
01:30:00	2726.13	170.79	2728.21	169.94	2727.63	169.51
01:45:00	2726.94	170.75	2729.03	169.89	2728.44	169.48
02:00:00	2727.70	170.71	2729.81	169.85	2729.22	169.44
02:15:00	2728.48	170.66	2730.57	169.81	2729.97	169.39
02:30:00	2729.20	170.62	2731.29	169.76	2730.69	169.35
02:45:00	2729.91	170.58	2732.01	169.72	2731.41	169.31

<b>Client</b>	Santos Ltd	<b>Exal Engineer</b>	M. Hall / B. Tupman
<b>Well No.</b>	Casino 4 DW2	<b>Location</b>	Ocean Patriot
<b>Test No.</b>	Completion	<b>Dates From/To</b>	08/06/05-11/06/05

Time hh:mm:ss	40586P PSIA	40586T °F	51804P PSIA	51804T °F	51248P PSIA	51248T °F
------------------	----------------	--------------	----------------	--------------	----------------	--------------

**11/06/05**

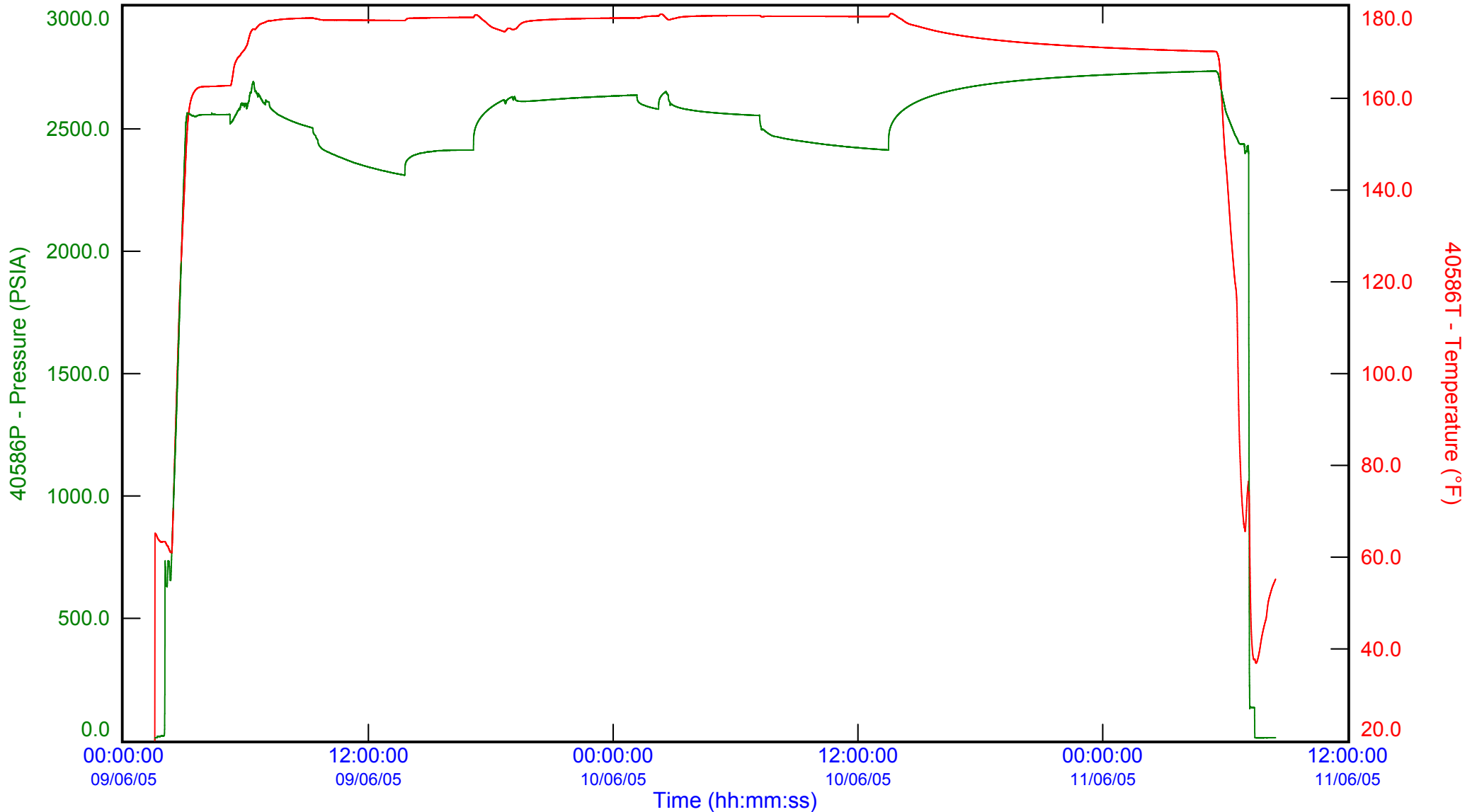
03:00:00	2730.60	170.55	2732.70	169.69	2732.09	169.27
03:15:00	2731.27	170.50	2733.37	169.64	2732.77	169.24
03:30:00	2731.93	170.47	2734.02	169.60	2733.43	169.20
03:45:00	2732.56	170.43	2734.67	169.56	2734.05	169.16
04:00:00	2733.17	170.39	2735.27	169.52	2734.67	169.12
04:15:00	2733.77	170.36	2735.86	169.49	2735.27	169.09
04:30:00	2734.35	170.32	2736.45	169.46	2735.84	169.06
04:30:00	Closed 7" Flowhead Master Valve.					
04:35:00	Bled surface pressure to 0psi via choke manifold.					
04:35:00	Opened 7" Flowhead Swab Valve.					
04:37:00	ESD Tripped closing 7" Flowhead Flow Wing Valve.					
04:45:00	2734.92	170.30	2737.02	169.43	2736.41	169.03
04:47:00	Opened 7" Flowhead Wing Valve.					
04:48:00	Opened Opened 7" Flowhead Swab Valve.					
04:48:00	Closed in at choke manifold.					
04:49:00	Opened 7" Flowhead Kill Wing Valve.					
04:52:00	Equalized pressure above 7" Flowhead Master Valve with glycol water mixture.					
05:00:00	2735.68	170.27	2737.57	169.40	2737.14	169.00
05:01:00	Opened 7" Flowhead Master Valve.					
05:02:00	Closed 7" Flowhead Kill Wing Valve.					
05:03:00	Commenced RIH with wireline to retrieve pressure temperature gauges.					
05:15:00	2736.00	170.27	2738.11	169.39	2737.50	169.00
05:30:00	2736.54	170.22	2738.64	169.35	2738.03	168.95
05:30:00	Wireline at depth.					
05:33:00	Wireline latched pressure temperature gauges, POOH.					
05:45:00	2690.31	166.52	2692.76	165.54	2691.91	164.97
06:00:00	2585.06	147.69	2587.36	146.43	2586.33	145.84
06:15:00	2525.42	133.02	2527.62	131.77	2526.48	131.37
06:30:00	2473.77	119.59	2475.83	118.68	2474.56	118.33
06:30:00	Wireline at surface.					
06:45:00	2438.39	80.08	2440.69	77.82	2439.33	77.70
06:50:00	Closed Lower Ball Valve(LBV) on SST.					
06:55:00	Commenced bleeding off surface pressure to 100 psi via choke manifold.					
07:00:00	2408.70	66.12	2406.85	62.79	2409.20	65.11
07:00:00	Closed choke manifold, LBV on SST not closed.					
07:07:00	Closed Upper Ball Valve(UBV) on SSTT.					
07:10:00	Commenced bleeding off surface pressure to 100 psi via choke manifold.					
07:13:00	Closed choke manifold, commenced inflow test on UBV.					
07:15:00	137.73	49.89	137.72	47.99	137.18	47.61
07:24:00	Good test, closed SSLV.					
07:27:00	Bled off surface pressure, broke out and retrieved gauges.					





Client Santos Ltd  
Well No. Casino 4 DW2  
Test No. Completion  
Location Ocean Patriot

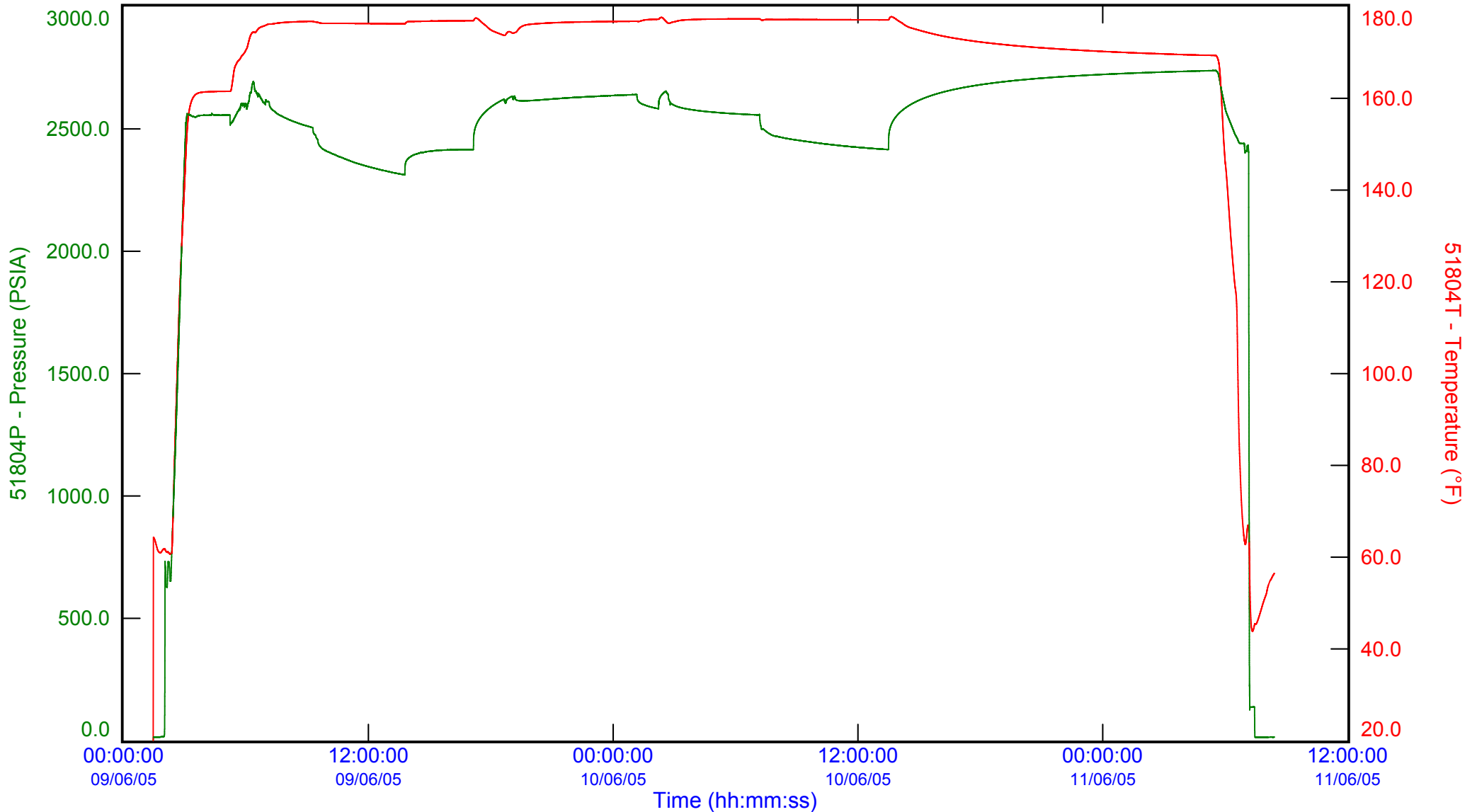
Data Type Memory Gauge Data  
Comments Memory Gauge s/n 40586  
Complete Test  
Sensing Depth 1661.5m MDBRT





Client Santos Ltd  
Well No. Casino 4 DW2  
Test No. Completion  
Location Ocean Patriot

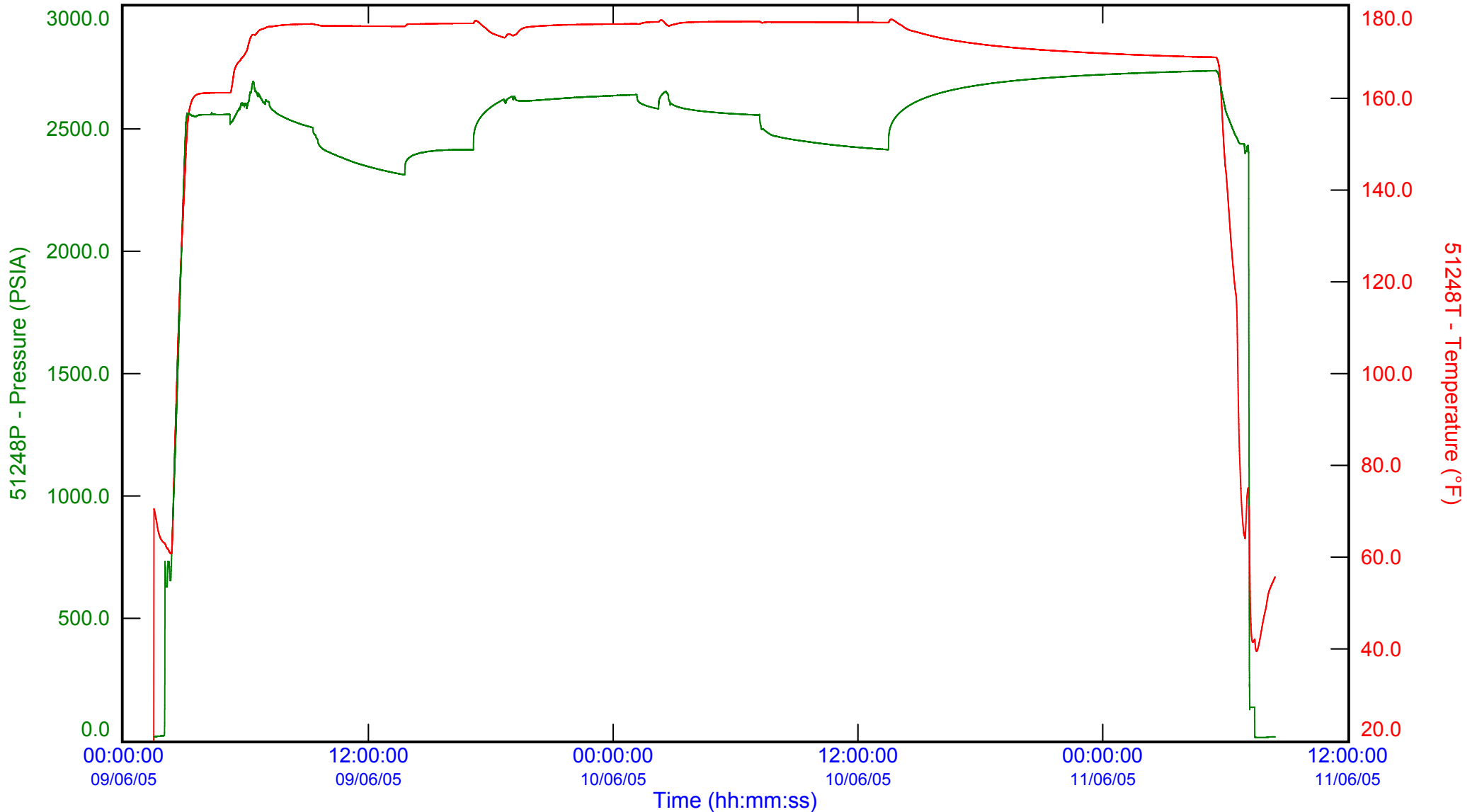
Data Type Memory Gauge Data  
Comments Memory Gauge s/n 51804  
Complete Test  
Sensing Depth 1656.86m MDBRT





Client Santos Ltd  
Well No. Casino 4 DW2  
Test No. Completion  
Location Ocean Patriot

Data Type Memory Gauge Data  
Comments Memory Gauge s/n 51248  
Complete Test  
Sensing Depth 1660.1m MDBRT



## Gas Calculation

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$$Q_g = C' \sqrt{h_w \times P_f}$$

(Equation 3-D-1 AGA 3)

Where,

Q<sub>g</sub> = Gas Rate (scf/hr)  
C' = Orifice Flow Constant  
h<sub>w</sub> = Differential flow in inches of water  
P<sub>f</sub> = Flowing pressure in psia.

**C' (Orifice Flow Constant)** is further broken down to: -

$$C' = F_b \cdot F_r \cdot Y \cdot F_{pb} \cdot F_{tb} \cdot F_{tf} \cdot F_{gr} \cdot F_{pv} \quad (3-D-2)$$

Where,

F<sub>b</sub> = Basic Orifice Factor  
F<sub>r</sub> = Reynolds Number Factor  
Y = Expansion Factor  
F<sub>pb</sub> = Pressure Base Factor  
F<sub>tb</sub> = Temperature Base Factor  
F<sub>tf</sub> = Flowing Temperature Factor  
F<sub>gr</sub> = Specific Gravity Factor  
F<sub>pv</sub> = Supercompressibility Factor

### *Comments/References*

*The gas calculations quoted within this standard have been taken from the AGA report No3, which is the accepted standard for natural gas fluid measurement through an orifice meter. The compressibility factor used is based upon the Dranchuk et al calculation.*

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## **SECTION 5: DAILY GEOLOGICAL REPORTS**

# Santos

A.C.N. 007 550 923

## WELL PROGRESS REPORT

### CASINO 4DW1

DATE: 22/05/05

REPORT NO: 1

(As at 2400 hours 21/05/05)      **DEPTH :** 1574 m      **PROGRESS:** 266m      **DAYS FROM SPUD :** 1  
**DAYS ON WELL:** 1  
**OPERATION:**      DRILLING 311mm (12.25") DIRECTIONAL HOLE.

(As at 0600 hours 22/05/05)      **DEPTH :** 1599 m      **PROGRESS (0600-0600 hrs):** 291m  
**OPERATION :**      PULLING OUT OF HOLE TO CASING SHOE FOR TOP DRIVE REPAIRS.

---

#### AFE COST

#### CUMULATIVE COST

**340mm (13.375") CASING DEPTH:** 727.87m (In Casino-4)

**RIG: OCEAN PATRIOT**

**RT – MUDLINE: 92.8 m**

**PROGRAMMED TD:** 2624m

**ROTARY TABLE:** 22m LAT

**WATER DEPTH: 70.8 m**

---

MUD DATA	Mud Type:	Wt: (SG/PPG)	Vis:	FL:	Ph:	KCl%	Cl :	PV/YP:	Rmf :
(2400 Hours)	PHG	1.26 / 10.5	58	4.0	10.0	8.0	40000	19 / 39	

---

BIT DATA	No.	Make	Type	Size (mm)	Hours	Drilled	Condition
(2400 Hours)	6	Sec-DBS	FS2663	311	12.24	266	-

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SURVEYS:	<u>MD (m)</u>	<u>INC (°)</u>	<u>AZIM (°T)</u>	<u>CLOSURE (m)</u>	<u>DIRECTION (°)</u>
	1490.95	22.05	304.6		
	1519.82	26.05	307.69		
	1548.46	30.47	308.86	59	279

---

#### PREVIOUS 24 HOURS OPERATIONS SUMMARY:

CONTINUE WITH ATTEMPTS TO SIDETRACK FROM KICK-OFF PLUG. OBSERVE 70% FORMATION FROM 1308m SAMPLE. CASINO-4DW KICKED OFF FROM 1308m AT 09:30 HRS ON 21-05-05. DRILL AHEAD 311mm DIRECTIONAL HOLE FROM 1308m TO 1337m. OBSERVE DROP IN TORQUE AND SLOW PENETRATION RATE. PUMP WATER PILL TO CLEAR BALLED-UP BIT. DRILL AHEAD 311mm (12.25") DIRECTIONAL HOLE FROM 1337m TO 1574m BUILDING ANGLE AS PER PROGRAM.

#### 00:00 – 06:00 HOURS 22/05/05 :

DRILL AHEAD FROM 1574m TO 1599m. TOP DRIVE SYSTEM FAILED – NO ROTARY AVAILABLE. RIG UP CEMENTING HEAD AND LINES. CIRCULATE HOLE CLEAN. RIG DOWN CEMENTING HEAD & LINES. PULL OUT OF HOLE FROM 1599m TO 1300m AT 06:00HRS.

#### ANTICIPATED OPERATIONS:

PULL OUT TO CASING SHOE. REPAIR TOP DRIVE SYSTEM. RUN BACK IN HOLE. DRILL AHEAD DIRECTIONAL HOLE.

**MWD SENSOR OFFSETS FROM BIT:** GAMMA RAY 11.14m, RESISTIVITY 13.47m, SURVEY 19.90m

# Santos

A.C.N. 007 550 923

## WELL PROGRESS REPORT

### CASINO 4DW1

DATE: 22/05/05

REPORT NO: 1

FORMATION TOPS: (Preliminary Field Picks)	MD RT (m)	TVD RT (m)	Subsea (m)	H/L to Prognosis (m)	H/L to Casino-4 (m)

#### HYDROCARBON SHOW SUMMARY

<u>INTERVAL</u>	<u>LITHOLOGY</u>	<u>GAS</u>
	Nil	

#### GEOLOGICAL SUMMARY

<u>INTERVAL</u> <u>ROP (m/hr)</u>	<u>LITHOLOGY</u>	<u>GAS</u>
1308-1458 ROP: 1 - 58 Ave:	MASSIVE SILTSTONE SILTSTONE: Medium brown to yellow brown, brown grey, dominantly very finely arenaceous, slightly argillaceous, minor to locally common glauconite grains and disseminated glauconite, trace carbonaceous specks, trace pyrite, trace loose coarse and fine quartz grains, soft, firm in part, subblocky.	
1458-1578m ROP: 9-71 Ave: 36.1	SILTSTONE INTERBEDDED WITH SANDSTONE SILTSTONE: Medium brown to yellow brown, brown grey, dominantly very finely arenaceous, slightly argillaceous, minor glauconite grains, trace disseminated glauconite, trace carbonaceous specks, trace pyrite, firm, subblocky. SANDSTONE: Light brown to light grey, clear to translucent, fine to coarse, dominantly medium grained, moderately well sorted, subangular to subrounded, moderately strong siliceous cement, locally abundant light brown argillaceous matrix, minor glauconite, rare very coarse loose grains, common loose, friable to hard aggregates, poor visual porosity, no fluorescence.	13.5 – 67.3 units 99/1/trace %

# Santos

A.C.N. 007 550 923

## WELL PROGRESS REPORT

### CASINO 4DW1

DATE: 22/05/05

REPORT NO: 1

#### GEOLOGICAL SUMMARY

<u>INTERVAL</u> <u>ROP (m/hr)</u>	<u>LITHOLOGY</u>	<u>GAS</u>
1578-1599m ROP: 15-32 Ave: 24.4	MASSIVE SILTSTONE SILTSTONE: Medium to light brown, dominantly argillaceous, minor arenaceous, trace carbonaceous specks, trace lithic fragments, locally common glauconite, trace pyrite, trace loose coarse quartz grains, soft to dominantly firm, occasionally moderately hard, subblocky.	21 – 43 units 98/1/trace/1/trace %



# Santos

A.C.N. 007 550 923

## WELL PROGRESS REPORT

### CASINO 4DW1

DATE: 23/05/05

REPORT NO: 2

(As at 2400 hours 22/05/05)      **DEPTH :** 1662 m      **PROGRESS:** 88m      **DAYS FROM SPUD :** 2**DAYS ON WELL:** 2**OPERATION:** PULLING OUT OF HOLE TO CHANGE DIRECTIONAL BHA(As at 0600 hours 23/05/05)      **DEPTH :** 1662 m      **PROGRESS (0600-0600 hrs):** 63m**OPERATION :** RUNNING IN HOLE WITH NEW DIRECTIONAL BHA AT 87m. REPLACED GEOPILLOT WITH MUD MOTOR.

---

**AFE COST**
**CUMULATIVE COST****340mm (13.375") CASING DEPTH:** 727.87m (In Casino-4)**RIG: OCEAN PATRIOT****RT – MUDLINE: 92.8 m****PROGRAMMED TD:** 2624m**ROTARY TABLE:** 22m LAT**WATER DEPTH: 70.8 m**


---

<b>MUD DATA</b>	Mud Type:	Wt: (SG/PPG)	Vis:	FL:	Ph:	KCl%	Cl :	PV/YP:	Rmf :
(2400 Hours)	PHG	1.29 / 10.7	58	3.8	9.2	8.0	47000	22 / 38	0.78 @ 78° F

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<b>BIT DATA</b>	No.	Make	Type	Size (mm)	Hours	Drilled	Condition
(2400 Hours)	6	Sec-DBS	FS2663	311	20.3	354	-

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<b>SURVEYS:</b>	<u>MD (m)</u>	<u>INC (°)</u>	<u>AZIM (°T)</u>	<u>CLOSURE (m)</u>	<u>DIRECTION (°)</u>
	1577	34.31	310.08		
	1605.77	37.79	310.41		
	1634.45	39.67	313.00	105	293

---

**PREVIOUS 24 HOURS OPERATIONS SUMMARY:**

DRILL AHEAD FROM 1574m TO 1599m. OILER PUMP IN TOP DRIVE SYSTEM FAILED – NO ROTARY AVAILABLE. RIG UP CEMENTING HEAD AND LINES. CIRCULATE HOLE CLEAN. RIG DOWN CEMENTING HEAD & LINES. PULL OUT OF HOLE FROM 1599m TO CASING SHOE. UNDERTAKE REPAIRS TO TOP DRIVE SYSTEM. RUN BACK IN HOLE TO BOTTOM. DRILL AHEAD 311mm (12.25") DIRECTIONAL HOLE FROM 1599m TO 1662m. OBSERVE REQUIRED BUILD RATE NOT BEING ACHIEVED (ESPECIALLY AFTER ENTERING THE SKULL CREEK FORMATION). CIRCULATE HOLE CLEAN OFF BOTTOM AND EVALUATE OPTIONS. PULL OUT OF HOLE TO CHANGE BHA.

**00:00 – 06:00 HOURS 23/05/05 :**

ATTEMPT TO DOWNLOAD MWD MEMORY DATA. UNABLE TO COMMUNICATE WITH TOOL. LAYOUT MWD TOOLS, BIT & GEOPILLOT STEERABLE UNIT. PICK UP 244mm (9 7/8") MOTOR (1.5° BEND). MAKE UP MWD TOOLS, ALIGN MOTOR TO HIGH SIDE OF HOLE, RUN IN HOLE TO 87m AT 06:00 HRS.

**ANTICIPATED OPERATIONS:**

RUN BACK IN HOLE. DRILL AHEAD DIRECTIONAL HOLE.

# Santos

A.C.N. 007 550 923

## WELL PROGRESS REPORT

### CASINO 4DW1

DATE: 23/05/05

REPORT NO: 2

FORMATION TOPS: (Preliminary Field Picks)	MD RT (m)	TVD RT (m)	Subsea (m)	H/L to Prognosis (m)	H/L to Casino-4 (m)

#### HYDROCARBON SHOW SUMMARY

<u>INTERVAL</u>	<u>LITHOLOGY</u>	<u>GAS</u>
	Nil	

#### GEOLOGICAL SUMMARY

<u>INTERVAL</u> <u>ROP (m/hr)</u>	<u>LITHOLOGY</u>	<u>GAS</u>
1599-1662m ROP: 17-44 Ave: 27.0	MASSIVE SILTSTONE SILTSTONE: Olive grey, brown grey, arenaceous, grades to very fine Sandstone in part, occasionally argillaceous, trace carbonaceous specks, trace lithic fragments, trace glauconite, trace pyrite, firm to moderately hard, subblocky	12 – 45 units 99/1/trace/trace %

# Santos

A.C.N. 007 550 923

## WELL PROGRESS REPORT

### CASINO 4DW1

DATE: 24/05/05

REPORT NO: 3

(As at 2400 hours 23/05/05)

DEPTH : 1662 m

PROGRESS: 0m

DAYS FROM SPUD : 3

DAYS ON WELL: 3

OPERATION: PRESSURE TESTING BOP STACK WHILE WAITING ON CEMENT

(As at 0600 hours 24/05/05)

DEPTH : 1662 m

PROGRESS (0600-0600 hrs): 0m

OPERATION : PREPARING TO MAKE UP 311mm (12.25") STEERABLE BHA FOR KICK-OFF HAVING PRESSURE TESTED BOP STACK &amp; SURFACE EQUIPMENT.

#### AFE COST

#### CUMULATIVE COST

340mm (13.375") CASING DEPTH: 727.87m (In Casino-4)

RIG: OCEAN PATRIOT

RT – MUDLINE: 92.8 m

PROGRAMMED TD: 2624m

ROTARY TABLE: 22m LAT

WATER DEPTH: 70.8 m

MUD DATA	Mud Type:	Wt: (SG/PPG)	Vis:	FL:	Ph:	KCl%	Cl :	PV/YP:	Rmf :
(2400 Hours)	PHG	1.29 / 10.75	65	4.8	9.0	8.0	48000	22 / 38	0.78 @ 78° F

BIT DATA	No.	Make	Type	Size (mm)	Hours	Drilled	Condition
(2400 Hours)	6	Sec-DBS	FS2663	311	20.3	354	1-2-WT-G-X-I-ER-BHA

SURVEYS:	MD (m)	INC (°)	AZIM (°T)	CLOSURE (m)	DIRECTION (°)
	1605.77	37.79	310.41		
	1634.45	39.67	313.00	105	293

#### PREVIOUS 24 HOURS OPERATIONS SUMMARY:

ATTEMPT TO DOWNLOAD MWD MEMORY DATA. UNABLE TO COMMUNICATE WITH TOOL. LAYOUT MWD TOOLS, BIT & GEOPILOT STEERABLE UNIT. PICK UP 244mm (9 7/8") MOTOR (1.5° BEND). MAKE UP MWD TOOLS, ALIGN MOTOR TO HIGH SIDE OF HOLE. START RUNNING IN HOLE. UNABLE TO LOWER MOTOR ASSEMBLY INSIDE CASING DUE TO EXCESSIVE FRICTION. PULL OUT & LAYOUT MOTOR. SERVICE TOP DRIVE SYSTEM. RECEIVE INSTRUCTIONS TO PLUG BACK TO 1200m AND SIDETRACK WELL TO CASINO-4DW2. PULL OUT & RACK BACK BHA. MAKE UP CEMENT STINGER AND RUN IN HOLE TO 1450m. CIRCULATE HOLE CLEAN & SPOT 9.5 m<sup>3</sup> (60 BBL) HI-VIS PILL. PULL OUT TO 1350m. RIG UP CEMENTING LINES & PRESSURE TEST SAME. SET CEMENT PLUG 1200-1350m. PULL OUT OF HOLE SLOWLY THROUGH CEMENT TO 1150m. REVERSE CIRCULATE THE STRING CLEAN. PULL OUT OF HOLE. WAIT ON CEMENT. RUN IN HOLE WITH TEST PLUG & ATTEMPT TO PRESSURE TEST BOP STACK. OBSERVE TEST PLUG SEALS LEAKING. PULL OUT OF HOLE & INSTALL NEW SEALS ON TEST PLUG. RUN BACK IN HOLE WITH TEST PLUG. COMMENCE PRESSURE TESTING BOP STACK.

#### 00:00 – 06:00 HOURS 23/05/05 :

COMPLETE PRESSURE TESTING BOP STACK ON BLUE POD. FUNCTION TEST ON YELLOW POD. PULL OUT OF HOLE WITH TEST PLUG & LAYOUT SAME. PRESSURE TEST SURFACE EQUIPMENT.

#### ANTICIPATED OPERATIONS:

MAKE UP CASING HANGER RUNNING TOOL. MAKE UP DIRECTIONAL ASSEMBLY WITH GEOPILOT STEERABLE ASSEMBLY AND 311mm (12.25") ROCK BIT, KICK-OFF FROM APPROX 1200m, BUILDING ANGLE. SIDETRACK WELL TO BE DESIGNATED CASINO-4DW2.

# Santos

A.C.N. 007 550 923

## WELL PROGRESS REPORT

### CASINO 4DW

DATE: 24/05/05

REPORT NO: 3

FORMATION TOPS: (Preliminary Field Picks)	MD RT (m)	TVD RT (m)	Subsea (m)	H/L to Prognosis (m)	H/L to Casino-4 (m)

#### HYDROCARBON SHOW SUMMARY

<u>INTERVAL</u>	<u>LITHOLOGY</u>	<u>GAS</u>
	Nil	

#### GEOLOGICAL SUMMARY

<u>INTERVAL ROP (m/hr)</u>	<u>LITHOLOGY</u>	<u>GAS</u>

# Santos

A.C.N. 007 550 923

## WELL PROGRESS REPORT

### CASINO 4DW1

DATE: 25/05/05

REPORT NO: 4

(As at 2400 hours 24/05/05)      **DEPTH :** 1662 m      **PROGRESS:** 0m      **DAYS FROM SPUD : 4**  
**DAYS ON WELL: 4**

**OPERATION:** ATTEMPTING TO KICK OFF FROM PLUG #2.

(As at 0600 hours 25/05/05)      **DEPTH :** 1662 m      **PROGRESS (0600-0600 hrs):** 0m

**OPERATION :** PULLING OUT OF HOLE - UNABLE TO KICK-OFF.

#### AFE COST

#### CUMULATIVE COST

**340mm (13.375") CASING DEPTH:** 727.87m (In Casino-4)

**RIG: OCEAN PATRIOT**

**RT – MUDLINE: 92.8 m**

**PROGRAMMED TD:** 2624m

**ROTARY TABLE:** 22m LAT

**WATER DEPTH: 70.8 m**

MUD DATA	Mud Type:	Wt. (SG/PPG)	Vis:	FL:	Ph:	KCl%	Cl :	PV/YP:	Rmf :
(2400 Hours)	PHG	1.29 / 10.75	65	4.8	9.0	8.0	48000	22 / 38	0.78 @ 78° F

BIT DATA	No.	Make	Type	Size (mm)	Hours	Drilled	Condition
(2400 Hours)	7	Hughes	MSCS03	311	-	-	-
	6	Sec-DBS	FS2663	311	20.3	354	1-2-WT-G-X-I-ER-BHA

SURVEYS:	MD (m)	INC (°)	AZIM (°T)	CLOSURE (m)	DIRECTION (°)
	1605.77	37.79	310.41		
	1634.45	39.67	313.00	105	293

#### PREVIOUS 24 HOURS OPERATIONS SUMMARY:

WHILE WAITING ON CEMENT, COMPLETE PRESSURE TESTING BOP STACK ON BLUE POD. FUNCTION TEST ON YELLOW POD. PULL OUT OF HOLE WITH TEST PLUG & LAYOUT SAME. PRESSURE TEST SURFACE EQUIPMENT. WHILE WAITING ON CEMENT MAKE UP 244mm (9.625") CASING HANGER RUNNING TOOL ASSEMBLY IN PREPARATION FOR NEXT JOB. LAYOUT MUD MOTOR & MWD TOOLSTRING (WITH ECCENTRICALLY WORN STABILISER). MAKE UP 311mm (12.25") ROCK BIT WITH GEOPILOT STEERABLE ASSEMBLY & MWD TOOLS. TOOLSTRING FAILED SURFACE TEST. LAYOUT FAULTY TOOLS. PICK UP ORIGINAL MWD TOOLSTRING & SURFACE TEST. RUN IN HOLE TO TAG TOP OF CEMENT (SOFT) AT 1176m. CLEAN OUT SOFT CEMENT TO TAG HARD CEMENT AT 1200m. ATTEMPT TO KICK-OFF FROM 1200m TO 1265m. SIDETRACK ATTEMPTS UNSUCCESSFUL.

#### 00:00 – 06:00 HOURS 25/05/05 :

CIRCULATE BOTTOMS UP AT 1265m. PULL OUT OF HOLE TO PICK UP CEMENT STINGER.

#### ANTICIPATED OPERATIONS:

RUN IN HOLE WITH CEMENT STINGER. SET KICK-OFF PLUG #3: 1100m-1265m. WAIT ON CEMENT. RUN IN HOLE & KICK-OFF TO CASINO-4DW2.

# Santos

A.C.N. 007 550 923

## WELL PROGRESS REPORT

### CASINO 4DW1

DATE: 25/05/05

REPORT NO: 4

FORMATION TOPS: (Preliminary Field Picks)	MD RT (m)	TVD RT (m)	Subsea (m)	H/L to Prognosis (m)	H/L to Casino-4 (m)

#### HYDROCARBON SHOW SUMMARY

<u>INTERVAL</u>	<u>LITHOLOGY</u>	<u>GAS</u>
	Nil	

#### GEOLOGICAL SUMMARY

<u>INTERVAL ROP (m/hr)</u>	<u>LITHOLOGY</u>	<u>GAS</u>

# Santos

A.C.N. 007 550 923

## WELL PROGRESS REPORT

### CASINO 4DW1

DATE: 26/05/05

REPORT NO: 5

(As at 2400 hours 25/05/05)      **DEPTH :** 1662 m      **PROGRESS:** 0m      **DAYS FROM SPUD : 5**  
**DAYS ON WELL: 5**

**OPERATION:** RUNNING IN HOLE WITH TCI BIT & MOTOR ASSEMBLY.

(As at 0600 hours 26/05/05)      **DEPTH :** 1662 m      **PROGRESS (0600-0600 hrs):** 0m

**OPERATION :** PULLING OUT OF HOLE WITH TCI BIT & MOTOR ASSEMBLY.

#### AFE COST

#### CUMULATIVE COST

**340mm (13.375") CASING DEPTH:** 727.87m (In Casino-4)

**RIG: OCEAN PATRIOT**

**RT – MUDLINE: 92.8 m**

**PROGRAMMED TD:** 2624m

**ROTARY TABLE:** 22m LAT

**WATER DEPTH: 70.8 m**

MUD DATA	Mud Type:	Wt: (SG/PPG)	Vis:	FL:	Ph:	KCl%	Cl :	PV/YP:	Rmf :
(2400 Hours)	PHG	1.27 / 10.6	90	4.0	11.5	8.0	47000	17 / 36	0.78 @ 78° F

BIT DATA	No.	Make	Type	Size (mm)	Hours	Drilled	Condition
(2400 Hours)	8		DS43	311			
	7	Hughes	MSCS03	311	-	-	-
	6	Sec-DBS	FS2663	311	20.3	354	1-2-WT-G-X-I-ER-BHA

SURVEYS:	<u>MD (m)</u>	<u>INC (°)</u>	<u>AZIM (°T)</u>	<u>CLOSURE (m)</u>	<u>DIRECTION (°)</u>
	1605.77	37.79	310.41		
	1634.45	39.67	313.00	105	293

#### PREVIOUS 24 HOURS OPERATIONS SUMMARY:

CIRCULATE HOLE CLEAN AT 1265m. PULL OUT OF HOLE. RUN IN HOLE WITH 127mm (5") CEMENT STINGER TO 1265m. CIRCULATE BOTTOMS UP. RIG UP & PRESSURE TEST CEMENTING LINES. PUMP CEMENT & SET KICK-OFF PLUG #3: 1100m-1265m. PULL OUT OF HOLE SLOWLY THROUGH CEMENT TO 1070m. REVERSE CIRCULATE STRING CLEAN DUMPING CEMENT CONTAMINATED MUD. PULL OUT OF HOLE. WAIT ON CEMENT. LAYOUT GEOPILLOT ASSEMBLY & FLEX JOINT. MAKE UP DIRECTIONAL ASSEMBLY WITH 311mm (12.25") PDC BIT & MOTOR (1.15° BEND). UNABLE TO LOWER BELOW WELLHEAD. PULL OUT, MAKE UP ADDITIONAL DRILL COLLAR AND ATTEMPT TO LOWER BELOW WELLHEAD, EXCESSIVE DRAG OBSERVED, PULL OUT. MAKE UP TCI BIT & RUN IN HOLE WITH MOTOR ASSEMBLY.

#### 00:00 – 06:00 HOURS 26/05/05 :

CONTINUE TO RUN IN HOLE WITH TCI BIT & MOTOR ASSEMBLY. UNABLE TO DESCEND BELOW WELLHEAD. PULL OUT OF HOLE. REMOVE STRING STABILISER & ATTEMPT TO LOWER BHA, ROTATING THROUGH HANG-UP POINTS. UNABLE TO LOWER BELOW 138m. PULL OUT OF HOLE. A TOTAL OF 4 BHA CONFIGURATIONS HAVE BEEN ATTEMPTED SO FAR.

#### ANTICIPATED OPERATIONS:

PULL OUT OF HOLE. EVALUATE OPTIONS. RUN IN HOLE WITH DIRECTIONAL BHA. TAG PLUG & KICK-OFF TO CASINO-4DW2.

# Santos

A.C.N. 007 550 923

## WELL PROGRESS REPORT

### CASINO 4DW1

DATE: 26/05/05

REPORT NO: 5

FORMATION TOPS: (Preliminary Field Picks)	MD RT (m)	TVD RT (m)	Subsea (m)	H/L to Prognosis (m)	H/L to Casino-4 (m)

#### HYDROCARBON SHOW SUMMARY

<u>INTERVAL</u>	<u>LITHOLOGY</u>	<u>GAS</u>
	Nil	

#### GEOLOGICAL SUMMARY

<u>INTERVAL</u> <u>ROP (m/hr)</u>	<u>LITHOLOGY</u>	<u>GAS</u>



# Santos

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## WELL PROGRESS REPORT

### CASINO 4DW1

DATE: 27/05/05

REPORT NO: 6

(As at 2400 hours 26/05/05)

DEPTH : 1146 m

PROGRESS:64m

DAYS FROM SPUD : 6

DAYS ON WELL: 6

**OPERATION:** ACTIVITIES CEASED ON CASINO-4DW1 AT 24:00 HRS ON 26-05-05. WELL SIDETRACKED TO CASINO-4DW2 AT 00:00 HRS ON 27-05-05.

#### AFE COST

#### CUMULATIVE COST

340mm (13.375") CASING DEPTH: 727.87m (In Casino-4)

RIG: OCEAN PATRIOT

RT – MUDLINE: 92.8 m

PROGRAMMED TD: 2624m

ROTARY TABLE: 22m LAT

WATER DEPTH: 70.8 m

MUD DATA	Mud Type:	Wt: (SG/PPG)	Vis:	FL:	Ph:	KCl%	Cl :	PV/YP:	Rmf :
(2400 Hours)	PHG	1.27 / 10.6	68	4.4	11.0	8.0	46000	17 / 36	0.78 @ 78° F

BIT DATA	No.	Make	Type	Size (mm)	Hours	Drilled	Condition
(2400 Hours)	9	Hycalog	DS43ST	311	3.4	64	

SURVEYS:	MD (m)	INC (°)	AZIM (°T)	CLOSURE (m)	DIRECTION (°)
	1111.9	3.5	195.6	-	-

#### PREVIOUS 24 HOURS OPERATIONS SUMMARY:

CONTINUE TO RUN IN HOLE WITH TCI BIT & MOTOR ASSEMBLY TO 116m. STRING INTERMITTENTLY STANDING UP WITH 1.5m RIG HEAVE ON COMPENSATOR. PULL OUT OF HOLE. REMOVE STRING STABILISER & RUN IN WITH BHA TO 138m, ROTATING THROUGH HANG-UP POINTS. AT 138m, 1-2m RIG HEAVE PREVENTED MAKING PIPE CONNECTION WITH STRING STANDING UP INTERMITTENTLY. PULL OUT OF HOLE. INSPECT BHA - NO WEAR OBSERVED ON BHA. CHANGE OUT MOTOR SLEEVE, PICK UP 2 ADDITIONAL DRILL COLLARS, RUN IN HOLE WITH TCI BIT, MOTOR (1.15°) & ON A TEST DRIFT RUN TO 163m. PULL OUT OF HOLE TO CHANGE BIT. PICK UP PDC SIDETRACK BIT, MOTOR (1.15° BEND) ASSEMBLY, SHALLOW TEST MWD TOOLS AND RUN IN HOLE TO 1168m. WASH DOWN & TAG TOP OF CEMENT AT 1078.6m. WASH & REAM TO HARD CEMENT AT 1082m. DRILL CEMENT FROM 1082m WITH INCREASING RETURNS OF FORMATION TO 1145m (1096m-15% FORMATION, 1132m-50%, 1135m-80%, 1140m-90% FORMATION). SLIDE FROM 1145m TO 1146m AT 24:00m. ACTIVITIES CEASED ON CASINO-4DW1 AT 24:00 HRS ON 26-05-05.

#### 00:00 – 06:00 HOURS 27/05/05 :

WELL SIDETRACKED TO CASINO-4DW2 FROM 1146m AT 00:00 HRS ON 27-05-05. ACTIVITIES TRANSFERRED TO CASINO-4DW2 AS OF 00:00 HRS ON 27-05-05

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## WELL PROGRESS REPORT

### CASINO 4DW1

DATE: 27/05/05

REPORT NO: 6

FORMATION TOPS: (Preliminary Field Picks)	MD RT (m)	TVD RT (m)	Subsea (m)	H/L to Prognosis (m)	H/L to Casino-4 (m)

#### HYDROCARBON SHOW SUMMARY

<u>INTERVAL</u>	<u>LITHOLOGY</u>	<u>GAS</u>
	Nil	

#### GEOLOGICAL SUMMARY

<u>INTERVAL</u> <u>ROP (m/hr)</u>	<u>LITHOLOGY</u>	<u>GAS</u>

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## WELL PROGRESS REPORT

### CASINO 4DW2

DATE: 27/05/05

REPORT NO: 1

(As at 2400 hours 26/05/05)

DEPTH : 1146 m

PROGRESS: 0m

DAYS FROM SPUD : 0

DAYS ON WELL: 0

OPERATION: ACTIVITIES CEASED ON CASINO-4DW1 AT 24:00 HRS ON 26-05-05. WELL SIDETRACKED TO CASINO-4DW2 AT 00:00 HRS ON 27-05-05.

(As at 0600 hours 27/05/05)

DEPTH : 1155 m

PROGRESS (0600-0600 hrs): 9m

OPERATION : SIDETRACKING WELL – SLIDING AT 1155m

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#### AFE COST

#### CUMULATIVE COST

340mm (13.375") CASING DEPTH: 727.87m (In Casino-4)

RIG: OCEAN PATRIOT

RT – MUDLINE: 92.8 m

PROGRAMMED TD: 2624m

ROTARY TABLE: 22m LAT

WATER DEPTH: 70.8 m

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MUD DATA	Mud Type:	Wt: (SG/PPG)	Vis:	FL:	Ph:	KCl%	Cl:	PV/YP:	Rmf:
(2400 Hours)	PHG	1.27 / 10.6	68	4.4	11.0	8.0	46000	17 / 36	0.78 @ 78° F

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BIT DATA	No.	Make	Type	Size (mm)	Hours	Drilled	Condition
(2400 Hours)	9	Hycalog	DS43ST	311	3.4	64	

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SURVEYS:	<u>MD (m)</u>	<u>INC (°)</u>	<u>AZIM (°T)</u>	<u>CLOSURE (m)</u>	<u>DIRECTION (°)</u>
	1111.9	3.5	195.6	-	-

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#### PREVIOUS 24 HOURS OPERATIONS SUMMARY:

ACTIVITIES CEASED ON CASINO-4DW1 AT 24:00 HRS ON 26-05-05.

#### 00:00 – 06:00 HOURS 27/05/05 :

WELL SIDETRACKED TO CASINO-4DW2 FROM 1146m AT 00:00 HRS ON 27-05-05. SLIDE FROM 1146m TO 1155m AT 06:00 HRS. (LOW RATE OF PENETRATION OBSERVED WITH PYRITE COMMON IN SAMPLES).

#### ANTICIPATED OPERATIONS:

TRIP TO PICK UP TCI BIT TO COMPLETE SIDETRACK BELOW HARD STRINGERS. TRIP TO PICK UP PDC BIT & GEOPILLOT ASSEMBLY. DRILL DIRECTIONAL HOLE TO CASING POINT.

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## WELL PROGRESS REPORT

### CASINO 4DW2

DATE: 27/05/05

REPORT NO: 1

FORMATION TOPS: (Preliminary Field Picks)	MD RT (m)	TVD RT (m)	Subsea (m)	H/L to Prognosis (m)	H/L to Casino-4 (m)

#### HYDROCARBON SHOW SUMMARY

<u>INTERVAL</u>	<u>LITHOLOGY</u>	<u>GAS</u>
	Nil	

#### GEOLOGICAL SUMMARY

<u>INTERVAL ROP (m/hr)</u>	<u>LITHOLOGY</u>	<u>GAS</u>
1146-1154m ROP: 0.5-60 Ave: 3.0  (Sliding)	<p><b>MASSIVE SANDSTONE WITH MINOR SILTSTONE INTERBEDS</b></p> <p><b>SANDSTONE:</b> Clear to translucent, pale grey, fine to coarse, dominantly med to coarse, moderately well sorted, subangular to subrounded, occasionally rounded, dominantly loose, occasional moderately hard aggregates with moderately hard siliceous cement, pyrite cement in part, common disseminated pyrite, common pyrite dispersed in quartz grains in slower sections, trace glauconite, poor to fair visual and inferred porosity, no fluorescence.</p> <p><b>SILTSTONE:</b> Brown grey, olive grey, argillaceous to arenaceous in part, trace carbonaceous specks, trace disseminated pyrite, soft to firm, dispersive in part, subblocky.</p>	Trace to 2 units 100 % C1

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## WELL PROGRESS REPORT

### CASINO 4DW2

DATE: 28/05/05

REPORT NO: 2

(As at 2400 hours 27/05/05)      **DEPTH :** 1182 m      **PROGRESS:** 36m      **DAYS FROM SPUD : 1**  
**DAYS ON WELL: 1**

**OPERATION:** DRILLING DIRECTIONAL HOLE

(As at 0600 hours 28/05/05)      **DEPTH :** 1226 m      **PROGRESS (0600-0600 hrs):** 71m

**OPERATION :** DRILLING 311mm (12.25") DIRECTIONAL HOLE

#### AFE COST

#### CUMULATIVE COST

**340mm (13.375") CASING DEPTH:** 727.87m (In Casino-4)

**RIG: OCEAN PATRIOT**

**RT – MUDLINE: 92.8 m**

**PROGRAMMED TD:** 2624m

**ROTARY TABLE:** 22m LAT

**WATER DEPTH: 70.8 m**

MUD DATA	Mud Type:	Wt: (SG/PPG)	Vis:	FL:	Ph:	KCl%	Cl :	PV/YP:	Rmf :
(2400 Hours)	PHG	1.26 / 10.5	68	4.0	10.8	8.0	45000	17 / 42	0.78 @ 78° F

BIT DATA	No.	Make	Type	Size (mm)	Hours	Drilled	Condition
(2400 Hours)	10	Security	FXL12D	311	3.4	25	
	9	Hycalog	DS43ST	311	3.4	11	3-4-CT-C-X-I-WT-PR

SURVEYS:	MD (m)	INC (°)	AZIM (°T)	CLOSURE (m)	DIRECTION (°)
	1146.0	4.5	204.7		
	1166.3	5.2	197.9		
	1196.5	7.0	204.4	7.2	180.4

#### PREVIOUS 24 HOURS OPERATIONS SUMMARY:

WELL SIDETRACKED TO CASINO-4DW2 FROM 1146m AT 00:00 HRS ON 27-05-05. DRILL 311mm (12.25") DIRECTIONAL HOLE FROM 1146m TO 1157m. CIRCULATE HOLE CLEAN. PULL OUT OF HOLE DUE TO SLOW ROP. RUN IN HOLE WITH TCI BIT & MOTOR ASSEMBLY TO CASING SHOE. SLIP & CUT DRILLING LINE. RUN IN HOLE, DRILL DIRECTIONAL HOLE TO 1182m.

#### 00:00 – 06:00 HOURS 28/05/05 :

DRILL DIRECTIONAL HOLE FROM 1182m TO 1226m.

#### ANTICIPATED OPERATIONS:

DRILL DIRECTIONAL HOLE TO CASING POINT.

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## WELL PROGRESS REPORT

### CASINO 4DW2

DATE: 28/05/05

REPORT NO: 2

FORMATION TOPS: (Preliminary Field Picks)	MD RT (m)	TVD RT (m)	Subsea (m)	H/L to Prognosis (m)	H/L to Casino-4 (m)

#### HYDROCARBON SHOW SUMMARY

<u>INTERVAL</u>	<u>LITHOLOGY</u>	<u>GAS</u>
	Nil	

#### GEOLOGICAL SUMMARY

<u>INTERVAL</u> <u>ROP (m/hr)</u>	<u>LITHOLOGY</u>	<u>GAS</u>
1154-1226m ROP: 1-56 Ave: 7.7	<p>MASSIVE SANDSTONE WITH MINOR INTERBEDDED SILTSTONE</p> <p>SANDSTONE: Clear to translucent, pale grey, fine to medium grained, minor coarse, moderately well sorted, subangular to subrounded, dominantly loose quartz, trace moderately hard aggregates with moderately hard siliceous cement, trace to locally common pyrite, rare glauconite, poor to fair visual and inferred porosity, no fluorescence.</p> <p>SILTSTONE: Medium grey, brown grey, arenaceous, common pyrite, trace glauconite, soft to dominantly firm, subblocky.</p>	Trace to 5 units 99/1/trace %

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## WELL PROGRESS REPORT

### CASINO 4DW2

DATE: 29/05/05

REPORT NO: 3

(As at 2400 hours 28/05/05)      **DEPTH :** 1274 m      **PROGRESS:** 92m      **DAYS FROM SPUD :** 2  
**DAYS ON WELL:** 2

**OPERATION:** RUNNING IN HOLE WITH PDC BIT & GEOPILLOT STEERING ASSEMBLY

(As at 0600 hours 29/05/05)      **DEPTH :** 1372 m      **PROGRESS (0600-0600 hrs):** 146m

**OPERATION :** DRILLING 311mm (12.25") DIRECTIONAL HOLE AT 20 M/HR

#### AFE COST

#### CUMULATIVE COST

**340mm (13.375") CASING DEPTH:** 727.87m (In Casino-4)

**RIG: OCEAN PATRIOT**

**RT – MUDLINE: 92.8 m**

**PROGRAMMED TD:** 2624m

**ROTARY TABLE:** 22m LAT

**WATER DEPTH: 70.8 m**

MUD DATA	Mud Type:	Wt. (SG/PPG)	Vis:	FL:	Ph:	KCl%	Cl :	PV/YP:	Rmf :
(2400 Hours)	KCL/Poly	1.30 / 10.8	53	3.8	10.0	8.0	47000	15 / 37	0.8 @ 78° F

BIT DATA	No.	Make	Type	Size (mm)	Hours	Drilled	Condition
(2400 Hours)	11RR	Sec-DBS	FS2663	311	-	-	-
	10	Security	FXL12D	311	13.3	117	1-1-WT-A-E-I-NO-BHA
	9	Hycalog	DS43ST	311	3.4	11	3-4-CT-C-X-I-WT-PR

SURVEYS:	MD (m)	INC (°)	AZIM (°T)	CLOSURE (m)	DIRECTION (°)
	1287.3	10.5	234.5		
	1314.9	11.5	254.1		
	1342.9	13.0	274.4	29	222

#### PREVIOUS 24 HOURS OPERATIONS SUMMARY:

DRILL FROM 1226m TO 1274m. PULL OUT OF HOLE, MAKE UP PDC BIT & GEOPILLOT ASSEMBLY, RUN IN HOLE TO 1186m. WASH & REAM FROM 1186m TO 1200m.

#### 00:00 – 06:00 HOURS 29/05/05 :

WASH & REAM TO BOTTOM. DRILL 311mm (12.25") DIRECTIONAL HOLE FROM 1274m TO 1372m, BUILDING ANGLE.

#### ANTICIPATED OPERATIONS:

DRILL DIRECTIONAL HOLE TO CASING POINT.

**MWD OFFSETS FROM BIT:** GAMMA RAY 11.1m, RESISTIVITY 13.4m, SURVEYS 19.97m  
(GAMMA RAY ON GEOPILLOT 1.7m)

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## WELL PROGRESS REPORT

### CASINO 4DW2

DATE: 29/05/05

REPORT NO: 3

FORMATION TOPS: (Preliminary Field Picks)	MD RT (m)	TVD RT (m)	Subsea (m)	H/L to Prognosis (m)	H/L to Casino-4 (m)

#### HYDROCARBON SHOW SUMMARY

<u>INTERVAL</u>	<u>LITHOLOGY</u>	<u>GAS</u>
	Nil	

#### GEOLOGICAL SUMMARY

<u>INTERVAL ROP (m/hr)</u>	<u>LITHOLOGY</u>	<u>GAS</u>
1226-1274m ROP: 2 - 67 Ave: 24.4	<p><b>MASSIVE SANDSTONE WITH MINOR INTERBEDDED SILTSTONE</b></p> <p><b>SANDSTONE:</b> Clear to translucent, pale grey, fine to medium grained, occasionally coarse to very coarse grained, poorly sorted, angular to subangular, dominantly subangular, commonly loose quartz, common fine to very fine aggregates with moderately hard siliceous cement, trace pyrite, rare glauconite, trace to common lithic fragments, poor to fair visual and inferred porosity, no fluorescence.</p> <p><b>SILTSTONE:</b> Medium grey, medium olive brown, brown grey in part, arenaceous, common disseminated pyrite, minor glauconite, soft to dominantly firm, subblocky.</p>	4 – 7 units 100/trace/trace %
1274m-1306m ROP: 6 - 44 Ave: 20.4	<p><b>INTERBEDDED SANDSTONE AND SILTSTONE</b></p> <p><b>SANDSTONE:</b> Clear to translucent, pale grey, fine to coarse grained, poorly sorted, angular to subangular, moderately strong siliceous cement, trace pyrite cement, trace light brown argillaceous matrix, trace lithic fragments, trace glauconite, trace nodular pyrite, moderately hard to hard aggregates, common loose grains, poor visual and inferred porosity, no fluorescence.</p> <p><b>SILTSTONE:</b> Dominantly medium to dark brown grey, olive grey in part, arenaceous, commonly grading to very fine grained Sandstone, locally common glauconite grains, common pyrite, common carbonaceous specks, soft to firm, subblocky to subfissile.</p>	5 – 12 units 99/1/trace/trace %



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## WELL PROGRESS REPORT

### CASINO 4DW2

DATE: 29/05/05

REPORT NO: 3

#### GEOLOGICAL SUMMARY

<u>INTERVAL</u> <u>ROP (m/hr)</u>	<u>LITHOLOGY</u>	<u>GAS</u>
1306m-1370m ROP: 9-41 Ave: 23.2	<p><b>MASSIVE SILTSTONE WITH MINOR SANDSTONE</b></p> <p><b>SILTSTONE:</b> Medium to dominantly dark brown grey, olive grey in part, arenaceous, grades to very fine grained Sandstone in part, locally common glauconite grains, common pyrite decreasing with depth, trace carbonaceous specks, firm, subblocky to subfissile.</p> <p><b>SANDSTONE:</b> Clear to translucent, pale grey, pale yellow brown in part, fine to coarse grained, poorly sorted, angular to subangular, moderately strong siliceous cement, minor pyrite cement, trace light brown argillaceous matrix, trace lithic fragments, trace glauconite, trace nodular pyrite, moderately hard to hard aggregates, common loose grains, poor visual and inferred porosity, no fluorescence.</p>	5-12 units 99/1/trace/trace %

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## WELL PROGRESS REPORT

### CASINO 4DW2

DATE: 30/05/05

REPORT NO: 4

(As at 2400 hours 29/05/05)      **DEPTH :** 1763 m      **PROGRESS:** 489m      **DAYS FROM SPUD : 3**  
**DAYS ON WELL: 3**

**OPERATION:** DRILLING 311mm (12.25") DIRECTIONAL HOLE

(As at 0600 hours 30/05/05)      **DEPTH :** 1834 m      **PROGRESS (0600-0600 hrs):** 462m

**OPERATION :** DRILLING 311mm (12.25") DIRECTIONAL HOLE AT 20 M/HR

#### AFE COST

#### CUMULATIVE COST

**340mm (13.375") CASING DEPTH:** 727.87m (In Casino-4)

**RIG: OCEAN PATRIOT**

**RT – MUDLINE: 92.8 m**

**PROGRAMMED TD:** 2624m

**ROTARY TABLE:** 22m LAT

**WATER DEPTH: 70.8 m**

MUD DATA	Mud Type:	Wt: (SG/PPG)	Vis:	FL:	Ph:	KCl%	Cl :	PV/YP:	Rmf :
(2400 Hours)	KCL/Poly	1.30 / 10.8	54	4.2	8.9	8.0	47000	18 / 38	0.8 @ 78° F

BIT DATA	No.	Make	Type	Size (mm)	Hours	Drilled	Condition
(2400 Hours)	11	Sec-DBS	FS2663	311	18.7	489	-
	10	Security	FXL12D	311	13.3	117	1-1-WT-A-E-I-NO-BHA
	9	Hycalog	DS43ST	311	3.4	11	3-4-CT-C-X-I-WT-PR

SURVEYS:	MD (m)	INC (°)	AZIM (°T)	CLOSURE (m)	DIRECTION (°)
	1775.1	65.1	291.8		
	1803.2	66.8	288.5		
	1832.1	67.0	288.5	309	295

#### PREVIOUS 24 HOURS OPERATIONS SUMMARY:

DRILL 311mm (12.25") DIRECTIONAL HOLE FROM 1274m TO 1763m.

#### 00:00 – 06:00 HOURS 30/05/05 :

DRILL 311mm (12.25") DIRECTIONAL HOLE FROM 1763m TO 1796m. CIRCULATE WHILE WORKING ON TOP DRIVE (IBOP BACKED OUT DURING CONNECTION). CONTINUE TO DRILL AHEAD FROM 1796m TO 1834m , BUILDING ANGLE.

#### ANTICIPATED OPERATIONS:

DRILL DIRECTIONAL HOLE TO CASING POINT. CIRCULATE HOLE CLEAN. PULL OUT OF HOLE. RUN CASING.

**MWD OFFSETS FROM BIT:** GAMMA RAY 11.1m, RESISTIVITY 13.4m, SURVEYS 19.97m  
(GAMMA RAY ON GEOPILLOT 1.7m)

# Santos

A.C.N. 007 550 923

## WELL PROGRESS REPORT

### CASINO 4DW2

DATE: 30/05/05

REPORT NO: 4

FORMATION TOPS: (Preliminary Field Picks)	MD RT (m)	TVD RT (m)	Subsea (m)	H/L to Prognosis (m)	H/L to Casino-4 (m)

#### HYDROCARBON SHOW SUMMARY

<u>INTERVAL</u>	<u>LITHOLOGY</u>	<u>GAS</u>
	Nil	

#### GEOLOGICAL SUMMARY

<u>INTERVAL</u> <u>ROP (m/hr)</u>	<u>LITHOLOGY</u>	<u>GAS</u>
1370m-1490m ROP: 11-52 Ave: 32.1	<p><b>MASSIVE SILTSTONE</b></p> <p>SILTSTONE: Medium brown, light brown, dominantly argillaceous, occasionally arenaceous, trace glauconite, trace to locally common pyrite, trace lithic fragments, firm to moderately hard, subblocky.</p>	10 – 27 units 98/1/1/trace %
1490m-1545m ROP: 20-72 Ave: 44.9	<p><b>INTERBEDDED SILTSTONE AND SANDSTONE</b></p> <p>SILTSTONE: Medium brown, medium brown grey, dark grey, light grey in part, dominantly argillaceous, occasionally arenaceous, trace glauconite, trace to locally common pyrite, trace lithic fragments, firm to moderately hard, subblocky.</p> <p>SANDSTONE: Light to medium grey brown, white to very light grey, dominantly fine to medium grained, occasionally coarse grained, moderately sorted, subangular to subrounded, common glauconite, minor pyrite, dominantly loose, trace weak siliceous cement, trace light brown argillaceous matrix, friable to moderately hard aggregates, poor to occasionally fair inferred porosity, no fluorescence.</p>	20 – 53 units 99/1/trace/trace %

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A.C.N. 007 550 923

## WELL PROGRESS REPORT

### CASINO 4DW2

DATE: 30/05/05

REPORT NO: 4

#### GEOLOGICAL SUMMARY

<u>INTERVAL</u> <u>ROP (m/hr)</u>	<u>LITHOLOGY</u>	<u>GAS</u>
1545m-1592m ROP: 10-57 Ave: 33.3	<b>INTERBEDDED SANDSTONE AND SILTSTONE:</b> <b>SANDSTONE:</b> Clear to translucent, very light grey, light green, very fine to medium grained, subangular to subrounded, moderately sorted, trace moderately strong siliceous cement, trace pyrite, trace glauconite, dominantly loose quartz, poor visual porosity, poor to fair visual porosity, no fluorescence. <b>SILTSTONE:</b> Medium grey, brown grey, dark grey in part, argillaceous to arenaceous in part, occasionally grades to very fine grained Sandstone, common carbonaceous specks, trace to common glauconite, trace lithic fragments, firm to occasionally moderately hard, subblocky.	27 – 62 units 99/1/trace/trace %
1592m-1825m ROP: 7 - 50 Ave: 23.3	<b>MASSIVE SILTSTONE</b> <b>SILTSTONE:</b> Medium brown to brown grey, dark brown grey in part, trace very light grey, dominantly argillaceous, slightly arenaceous in part, trace to common carbonaceous specks, trace glauconite, firm to moderately hard, subblocky.	25 – 57 units 98/2/trace/trace/trace %

# Santos

A.C.N. 007 550 923

## WELL PROGRESS REPORT

### CASINO 4DW2

DATE: 31/05/05

REPORT NO: 5

(As at 2400 hours 30/05/05)

DEPTH : 1998 mMD  
1743 mTVD

PROGRESS: 235 mMD

DAYS FROM SPUD : 4

DAYS ON WELL: 4

OPERATION: BACKREAMING OUT OF TIGHT HOLE AT 1708m

(As at 0600 hours 31/05/05)

DEPTH : 1998 mMD  
1743 mTVD

PROGRESS (0600-0600 hrs): 164m

OPERATION : BACKREAMING OUT OF TIGHT HOLE AT 1278m

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#### AFE COST

#### CUMULATIVE COST

340mm (13.375") CASING DEPTH: 727.87m (In Casino-4)

RIG: OCEAN PATRIOT

PROGRAMMED TD: 2624m

ROTARY TABLE: 22m LAT

RT – MUDLINE: 92.8 m

WATER DEPTH: 70.8 m

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MUD DATA	Mud Type:	Wt: (SG/PPG)	Vis:	FL:	Ph:	KCl%	Cl :	PV/YP:	Rmf :
(2400 Hours)	KCL/Poly	1.29 / 10.8	54	4.6	8.5	8.0	46000	20 / 34	0.8 @ 78° F

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BIT DATA	No.	Make	Type	Size (mm)	Hours	Drilled	Condition
(2400 Hours)	11	Sec-DBS	FS2663	311	29.1	724	IN HOLE
	10	Security	FXL12D	311	13.3	117	1-1-WT-A-E-I-NO-BHA
	9	Hycalog	DS43ST	311	3.4	11	3-4-CT-C-X-I-WT-PR

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SURVEYS:	<u>MD (m)</u>	<u>INC (°)</u>	<u>AZIM (°T)</u>	<u>CLOSURE (m)</u>	<u>DIRECTION (°)</u>
	1918.3	71.0	288.1		
	1946.7	73.2	288.8		
	1975.0	76.3	287.9	444	293

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#### PREVIOUS 24 HOURS OPERATIONS SUMMARY:

DRILL 311mm (12.25") DIRECTIONAL HOLE FROM 1763m TO 1796m. CIRCULATE WHILE WORKING ON TOP DRIVE (LOWER IBOP BACKED OUT DURING CONNECTION). DRILL AHEAD FROM 1796m TO THE CASING POINT AT 1998m. PUMP HI-VIS SWEEP & CIRCULATE HOLE CLEAN. BACKREAM OUT OF TIGHT HOLE TO 1708m.

#### 00:00 – 06:00 HOURS 31/05/05 :

CONTINUE TO BACKREAM OUT OF TIGHT HOLE FROM 1708m TO 1278m AT 06:00 HRS.

#### ANTICIPATED OPERATIONS:

WIPER TRIP. PULL OUT OF HOLE. RUN 244mm (9.625") CASING.

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## WELL PROGRESS REPORT

### CASINO 4DW2

DATE: 31/05/05

REPORT NO: 5

FORMATION TOPS: (Preliminary Field Picks)	MD RT (m)	TVD RT (m)	Subsea (m)	H/L to Prognosis (m)	H/L to Casino-4 (m)

#### HYDROCARBON SHOW SUMMARY

<u>INTERVAL</u>	<u>LITHOLOGY</u>	<u>GAS</u>
1992m-1998m ROP: 9 - 26 Ave: 18.1	SANDSTONE: Clear to translucent, very light grey, fine to coarse grained, dominantly fine to medium grained, moderately to poorly sorted, angular to subrounded, occasional rounded, dominantly loose clean quartz, trace nodular pyrite, trace glauconite, occasional aggregates with weak to moderately strong siliceous cement, poor visual porosity, fair inferred porosity, no fluorescence.	37 – 135 units 97/2/1/trace/trace%

#### GEOLOGICAL SUMMARY

<u>INTERVAL</u> <u>ROP (m/hr)</u>	<u>LITHOLOGY</u>	<u>GAS</u>
1825m-1992m ROP: 7 - 50 Ave: 26.6	MASSIVE SILTSTONE SILTSTONE: Medium brown to brown grey, dark brown grey in part, trace very light grey, dominantly argillaceous, arenaceous in part, trace carbonaceous specks, common glauconite, firm to moderately hard, subblocky.	26 – 77 units 97/3/trace/trace/trace %
1992m-1998m ROP: 9 - 26 Ave: 18.1	SANDSTONE: Clear to translucent, very light grey, fine to coarse grained, dominantly fine to medium grained, moderately to poorly sorted, angular to subrounded, occasional rounded, dominantly loose clean quartz, trace nodular pyrite, trace glauconite, occasional aggregates with weak to moderately strong siliceous cement, poor visual porosity, fair inferred porosity, no fluorescence.	37 – 135 units 97/2/1/trace/trace%

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## WELL PROGRESS REPORT

### CASINO 4DW2

DATE: 01/06/05

REPORT NO: 6

(As at 2400 hours 31/05/05)

DEPTH : 1998 mMD  
1743 mTVD

PROGRESS: 0 mMD

DAYS FROM SPUD : 5

DAYS ON WELL: 5

OPERATION: PULLED OUT OF HOLE WITH DIRECTIONAL ASSEMBLY - BREAKING OUT BIT.

(As at 0600 hours 01/06/05)

DEPTH : 1998 mMD  
1743 mTVD

PROGRESS (0600-0600 hrs): 0m

OPERATION : RUNNING 244mm (9 5/8") CASING – 23 OF 160 JOINTS RUN.

#### AFE COST

#### CUMULATIVE COST

340mm (13.375") CASING DEPTH: 727.87m (In Casino-4)

RIG: OCEAN PATRIOT

PROGRAMMED TD: 2624m

ROTARY TABLE: 22m LAT

RT – MUDLINE: 92.8 m

WATER DEPTH: 70.8 m

MUD DATA	Mud Type:	Wt: (SG/PPG)	Vis:	FL:	Ph:	KCl%	Cl:	PV/YP:	Rmf:
(2400 Hours)	KCL/Poly	1.29 / 10.76	52	5	8.6	8.0	44000	17 / 30	-

BIT DATA	No.	Make	Type	Size (mm)	Hours	Drilled	Condition
(2400 Hours)	11	Sec-DBS	FS2663	311	29.1	724	1-1-WT-A-X-I-NO-TD
	10	Security	FXL12D	311	13.3	117	1-1-WT-A-E-I-NO-BHA
	9	Hycalog	DS43ST	311	3.4	11	3-4-CT-C-X-I-WT-PR

SURVEYS:	MD (m)	INC (°)	AZIM (°T)	CLOSURE (m)	DIRECTION (°)
	1918.3	71.0	288.1		
	1946.7	73.2	288.8		
	1975.0	76.3	287.9	444	293

#### PREVIOUS 24 HOURS OPERATIONS SUMMARY:

BACKREAM OUT OF HOLE TO 1050m. PULL OUT FROM 1050m TO 965m. CIRCULATE BOTTOMS UP. RUN IN HOLE TO 1670m. WASH & REAM FROM 1670m TO BOTTOM. CIRCULATE HOLE CLEAN. PULL OUT OF HOLE TO RUN CASING. DOWNLOAD MWD MEMORY DATA. BREAK OUT BIT.

#### 00:00 – 06:00 HOURS 01/06/05 :

RUN IN HOLE & RETRIEVE WEAR BUSHING. RIG UP TO RUN CASING. RUN IN HOLE WITH 244mm (9 5/8") CASING. 23 OF 160 JOINTS RUN AT 06:00 HRS.

#### ANTICIPATED OPERATIONS:

RUN, LAND AND CEMENT 244mm (9 5/8") CASING. RUN WEAR BUSHING. MAKE UP 216mm (8.5") ASSEMBLY.

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## WELL PROGRESS REPORT

### CASINO 4DW2

DATE: 01/06/05

REPORT NO: 6

FORMATION TOPS: (Preliminary Field Picks)	MD RT (m)	TVD RT (m)	Subsea (m)	H/L to Prognosis (m)	H/L to Casino-4 (m)

#### HYDROCARBON SHOW SUMMARY

<u>INTERVAL</u>	<u>LITHOLOGY</u>	<u>GAS</u>

#### GEOLOGICAL SUMMARY

<u>INTERVAL ROP (m/hr)</u>	<u>LITHOLOGY</u>	<u>GAS</u>



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## WELL PROGRESS REPORT

### CASINO 4DW2

DATE: 01/06/05

REPORT NO: 7

(As at 2400 hours 01/06/05)

DEPTH : 1998 mMD  
1743 mTVD

PROGRESS: 0 mMD

DAYS FROM SPUD : 6

DAYS ON WELL: 6

OPERATION: PULLING OUT OF HOLE WITH LANDING STRING

(As at 0600 hours 02/06/05)

DEPTH : 1998 mMD  
1743 mTVD

PROGRESS (0600-0600 hrs): 0m

OPERATION : COMMENCED MAKING UP 216mm (8.5") DIRECTIONAL BHA WITH GEOPILOT &amp; MWD.

#### AFE COST

#### CUMULATIVE COST

340mm (13.375") CASING DEPTH: 727.87m (Casino-4)

RIG: OCEAN PATRIOT

244mm (9.625") CASING DEPTH : 1989.85m

RT – MUDLINE: 92.8 m

PROGRAMMED TD: 2624m

ROTARY TABLE: 22m LAT

WATER DEPTH: 70.8 m

MUD DATA	Mud Type:	Wt: (SG/PPG)	Vis:	FL:	Ph:	KCl%	Cl:	PV/YP:	Rmf:
(2400 Hours)	KCL/Poly	1.3 / 10.82	52	4.7	8.5	8.5	43000	17 / 30	-

BIT DATA	No.	Make	Type	Size (mm)	Hours	Drilled	Condition
(2400 Hours)	12	-	-	216	-	-	-
	11	Sec-DBS	FS2663	311	29.1	724	1-1-WT-A-X-I-NO-TD
	10	Security	FXL12D	311	13.3	117	1-1-WT-A-E-I-NO-BHA
	9	Hycalog	DS43ST	311	3.4	11	3-4-CT-C-X-I-WT-PR

SURVEYS:	MD (m)	INC (°)	AZIM (°T)	CLOSURE (m)	DIRECTION (°)
	1918.3	71.0	288.1		
	1946.7	73.2	288.8		
	1975.0	76.3	287.9	444	293

#### PREVIOUS 24 HOURS OPERATIONS SUMMARY:

RETRIEVE WEAR BUSHING. RIG UP CASING RUNNING EQUIPMENT. RUN IN HOLE WITH 244mm (9 5/8") CASING. LAND & CEMENT CASING. SET & PRESSURE TEST SEAL ASSEMBLY. PULL OUT OF HOLE WITH LANDING STRING.

#### 00:00 – 06:00 HOURS 02/06/05 :

LAYOUT LANDING STRING & CEMENT STAND. LAYOUT 311mm (12.25") BHA.

#### ANTICIPATED OPERATIONS:

MAKE UP 216mm (8.5") DIRECTIONAL BHA WITH GEOPILOT & MWD. RUN IN HOLE, DRILL CEMENT & SHOE TRACK, DRILL 216mm (8.5") PRODUCTION HOLE.

#### MWD SENSOR OFFSETS (216mm Section):

GR (Geopilot) 1.4m, GR (MWD) 11.4m, Resistivity 13.8m, Density 21.3m, Neutron 24.5m

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## WELL PROGRESS REPORT

### CASINO 4DW2

DATE: 02/06/05

REPORT NO: 7

FORMATION TOPS: (Preliminary Field Picks)	MD RT (m)	TVD RT (m)	Subsea (m)	H/L to Prognosis (m)	H/L to Casino-4 (m)

#### HYDROCARBON SHOW SUMMARY

<u>INTERVAL</u>	<u>LITHOLOGY</u>	<u>GAS</u>

#### GEOLOGICAL SUMMARY

<u>INTERVAL ROP (m/hr)</u>	<u>LITHOLOGY</u>	<u>GAS</u>

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## WELL PROGRESS REPORT

### CASINO 4DW2

DATE: 03/06/05

REPORT NO: 8

(As at 2400 hours 02/06/05)

DEPTH : 2001 mMD  
1743.6 mTVD

PROGRESS: 3 mMD

DAYS FROM SPUD : 7

DAYS ON WELL: 7

OPERATION: DRILLING 216mm (8.5") DIRECTIONAL HOLE.

(As at 0600 hours 03/06/05)

DEPTH : 2107 mMD  
1762 mTVD

PROGRESS (0600-0600 hrs): 109m

OPERATION : DRILLING 216mm (8.5") DIRECTIONAL HOLE AT 35 M/HR.

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#### AFE COST

#### CUMULATIVE COST

340mm (13.375") CASING DEPTH: 727.87m (Casino-4)

RIG: OCEAN PATRIOT

244mm (9.625") CASING DEPTH : 1989.85m

RT – MUDLINE: 92.8 m

PROGRAMMED TD: 2624m

ROTARY TABLE: 22m LAT

WATER DEPTH: 70.8 m

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MUD DATA	Mud Type:	Wt: (SG/PPG)	Vis:	FL:	Ph:	KCl%	Cl:	PV/YP:	Rmf:
(2400 Hours)	FLOPRO	1.26 / 10.5	56	4.9	8.9	8.9	127000	12 / 23	-

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BIT DATA	No.	Make	Type	Size (mm)	Hours	Drilled	Condition
(2400 Hours)	12	Security	FMF3553	216	0.2	3	-
	11	Sec-DBS	FS2663	311	29.1	724	1-1-WT-A-X-I-NO-TD

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SURVEYS:	<u>MD (m)</u>	<u>INC (°)</u>	<u>AZIM (°T)</u>	<u>CLOSURE (m)</u>	<u>DIRECTION (°)</u>
	2020.94	76.66	288.38		
	2049.61	78.9	288.51		
	2078.36	82.46	287.26	545	292

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#### PREVIOUS 24 HOURS OPERATIONS SUMMARY:

LAYOUT CEMENTING HEAD ASSEMBLY AND LANDING STRING. LAYOUT 311mm (12.25") ASSEMBLY. MAKE UP 216mm (8.5") DIRECTIONAL BHA WITH GEOPILLOT STEERING UNIT AND MWD TOOLS. RUN IN HOLE TO 283m. SERVICE TOP DRIVE SYSTEM. CONTINUE TO RUN IN HOLE TO TAG TOP OF CEMENT AT 1960m. DRILL CEMENT, PLUGS, SHOE TRACK AND RATHOLE. DISPLACE HOLE TO FLOPRO MUD SYSTEM. DRILL 216mm (8.5") DIRECTIONAL HOLE FROM 1998m TO 2001m.

#### 00:00 – 06:00 HOURS 03/06/05 :

DRILL 216mm (8.5") DIRECTIONAL HOLE FROM 2001m TO 2107m.

#### ANTICIPATED OPERATIONS:

DRILL 216mm (8.5") PRODUCTION HOLE, HOLDING ANGLE AT 88°.

#### MWD SENSOR OFFSETS (216mm Section):

GR 11.4m, SURVEY 9m, RESISTIVITY 13.8m, DENSITY 21.3m, NEUTRON 24.5m

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## WELL PROGRESS REPORT

### CASINO 4DW2

DATE: 03/06/05

REPORT NO: 8

FORMATION TOPS: (Preliminary Field Picks)	MD RT (m)	TVD RT (m)	Subsea (m)	H/L to Prognosis (m)	H/L to Casino-4 (m)

#### HYDROCARBON SHOW SUMMARY

<u>INTERVAL</u>	<u>LITHOLOGY</u>	<u>GAS</u>
	FULL 216mm SECTION – SEE BELOW	

#### GEOLOGICAL SUMMARY

<u>INTERVAL</u> <u>ROP (m/hr)</u>	<u>LITHOLOGY</u>	<u>GAS</u>
1998m-2082m ROP: 7-46 Ave 18.8	<p>SANDSTONE INTERBEDDED WITH SILTSTONE</p> <p>SANDSTONE: Clear to translucent, off white to occasionally light brown, common translucent brown, fine to medium grained, subangular to subrounded, predominately aggregates, abundant loose medium quartz grains, common coarse quartz grains, moderately strong calcareous cement, common light grey argillaceous to silty matrix, common lithic fragments, fair inferred porosity, poor visual porosity, no fluorescence.</p> <p>SILTSTONE: Medium to dark grey, arenaceous, common very fine Sandstone laminations, common carbonaceous specks, firm, subblocky-subfissile</p>	<p>9 – 529 units</p> <p>97/2/1/trace/trace %</p>

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## WELL PROGRESS REPORT

### CASINO 4DW2

DATE: 03/06/05

REPORT NO: 8

#### GEOLOGICAL SUMMARY

<u>INTERVAL</u> <u>ROP (m/hr)</u>	<u>LITHOLOGY</u>	<u>GAS</u>
2082m-2103m ROP: 35-54 Ave: 42.9	SANDSTONE: Clear to translucent, fine to very coarse grained, subangular to subrounded, poorly sorted, trace weak siliceous cement, predominately clean and loose quartz, trace light grey argillaceous matrix, trace lithic fragments, trace carbonaceous specks, good inferred porosity, poor to fair visual porosity, no fluorescence.	530-956 units 97/2/1/trace/trace %
2103m-2112m ROP: 14-47 Ave: 32.1	SANDSTONE: Clear to translucent, medium to coarse grained, subangular to subrounded, moderately sorted, trace weak siliceous cement, predominately clean and loose quartz, with trace light grey argillaceous matrix, trace lithics, trace carbonaceous specks, good inferred porosity, fair visual porosity, no fluorescence.	374-939 units 97/2/1/trace/trace %

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## WELL PROGRESS REPORT

### CASINO 4DW2

DATE: 04/06/05

REPORT NO: 9

(As at 2400 hours 03/06/05)

DEPTH : 2358 mMD  
1775 mTVD

PROGRESS: 357 mMD

DAYS FROM SPUD : 8

DAYS ON WELL: 8

OPERATION: DRILLING 216mm (8.5") DIRECTIONAL HOLE.

(As at 0600 hours 04/06/05)

DEPTH : 2404 mMD  
1786 mTVD

PROGRESS (0600-0600 hrs): 297m

OPERATION : RUNNING BACK TO BOTTOM ON WIPER TRIP AT TOTAL DEPTH

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**AFE COST**
**CUMULATIVE COST**

340mm (13.375") CASING DEPTH: 727.87m (Casino-4)

RIG: OCEAN PATRIOT

244mm (9.625") CASING DEPTH : 1989.85m

RT – MUDLINE: 92.8 m

PROGRAMMED TD: 2624m

ROTARY TABLE: 22m LAT

WATER DEPTH: 70.8 m

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MUD DATA	Mud Type:	Wt: (SG/PPG)	Vis:	FL:	Ph:	KCl%	Cl:	PV/YP:	Rmf:
(2400 Hours)	FLO PRO	1.26 / 10.5	54	4.0	10.3	6	120000	12 / 23	0.05 @ 73°F

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BIT DATA	No.	Make	Type	Size (mm)	Hours	Drilled	Condition
(2400 Hours)	12	Security	FMF3553	216	19.38	360	-
	11	Sec-DBS	FS2663	311	29.1	724	1-1-WT-A-X-I-NO-TD

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SURVEYS:	<u>MD (m)</u>	<u>INC (°)</u>	<u>AZIM (°T)</u>	<u>CLOSURE (m)</u>	<u>DIRECTION (°)</u>
	2336.6	82.2	287.8		
	2365.2	80.0	287.5		
	2394.2	79.8	267.7	858	291

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**PREVIOUS 24 HOURS OPERATIONS SUMMARY:**

DRILL 216mm (8.5") DIRECTIONAL HOLE FROM 2001m TO 2358m.

**00:00 – 06:00 HOURS 04/06/05 :**
DRILL 216mm (8.5") DIRECTIONAL HOLE FROM 2358m TO 2404m. TOTAL DEPTH REACHED AT 03:30 HRS 04-06-05. CIRCULATE BOTTOMS UP. PULL OUT OF HOLE TO CASING SHOE. CIRCULATE & RUN BACK IN HOLE ON WIPER TRIP.
**ANTICIPATED OPERATIONS:**

CIRCULATE HOLE CLEAN AT BOTTOM. PULL OUT OF HOLE TO RUN LOWER COMPLETION.

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## WELL PROGRESS REPORT

### CASINO 4DW2

DATE: 04/06/05

REPORT NO: 9

FORMATION TOPS: (Preliminary Field Picks)	MD RT (m)	TVD RT (m)	Subsea (m)	H/L to Prognosis (m)	H/L to Casino-4 (m)

#### HYDROCARBON SHOW SUMMARY

<u>INTERVAL</u>	<u>LITHOLOGY</u>	<u>GAS</u>
1212m-2362m	SEE SUMMARY BELOW	100 – 950 units 97/2/1/trace/trace %

#### GEOLOGICAL SUMMARY

<u>INTERVAL</u> <u>ROP (m/hr)</u>	<u>LITHOLOGY</u>	<u>GAS</u>
1212-2238m ROP: 7-52 Ave: 22.9	SANDSTONE: Clear to translucent, trace orange to yellow, fine to medium, subangular to subrounded, generally well sorted, predominantly loose and clean, occasional aggregates with weak to firm siliceous cement, white to light grey argillaceous matrix, common black lithic grains, trace quartz overgrowths, trace angular siliceous fragments in slower sections, trace carbonaceous fragments, fair visual porosity, fair to good inferred porosity, no fluorescence.	400 – 950 units 97/2/1/trace/trace %

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## WELL PROGRESS REPORT

### CASINO 4DW2

DATE: 04/06/05

REPORT NO: 9

#### GEOLOGICAL SUMMARY

<u>INTERVAL</u> <u>ROP (m/hr)</u>	<u>LITHOLOGY</u>	<u>GAS</u>
2238m-2362m ROP: 6-30 Ave: 18.9	<p>SANDSTONE: Clear to translucent, very pale grey, fine to medium grained, locally fine to coarse grained, subangular to subrounded, moderately well sorted becoming moderately sorted to poorly sorted with depth, trace weak siliceous cement in aggregates, trace light grey argillaceous matrix, trace carbonaceous specks, trace to locally common black lithic fragments, locally common coarse angular siliceous fragments (chert?), trace pyrite increasing occasionally in the slower sections, poor to fair visual porosity, fair to good inferred porosity, no fluorescence.</p>	103 – 617 units 97/2/1/trace/trace %
2362m-2404m ROP: 5-31 Ave: 15.7	<p>SANDSTONE: Clear to translucent, pale grey to off white, very fine to very coarse grained, predominately fine to coarse grained, subangular to angular, very poorly sorted, abundant moderately hard aggregates, common loose quartz grains, trace to locally common moderately strong siliceous to calcareous cement/matrix, common white argillaceous matrix, common carbonaceous matter and micro-laminations, common lithic fragments, trace glauconite grains, occasional pale brown to off white hard blocky calcareous fragments, friable to hard, poorly visual and poor to fair inferred porosity, no fluorescence.</p> <p>SILTSTONE: Medium to dark grey, olive brown, arenaceous grading to very fine Sandstone in part, abundant carbonaceous micro-laminations and detritus, firm to hard, subblocky to subfissile.</p>	18 – 147 units 97/2/1/trace/trace %



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## WELL PROGRESS REPORT

### CASINO 4DW2

DATE: 05/06/05

REPORT NO: 10

(As at 2400 hours 04/06/05)

**DEPTH :** 2404 mMD  
1786 mTVD

**PROGRESS:** 0 mMD

**DAYS FROM SPUD : 9**  
**DAYS ON WELL: 9**

**OPERATION:** RUNNING IN HOLE WITH LOWER COMPLETION SAND EXCLUSION SCREENS

(As at 0600 hours 05/06/05)

**DEPTH :** 2404 mMD  
1786 mTVD

**PROGRESS (0600-0600 hrs):** 0m

**OPERATION :** RUNNING IN HOLE WITH SAND EXCLUSION SCREENS ON DRILLPIPE @ 1370m

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#### AFE COST

#### CUMULATIVE COST

**340mm (13.375") CASING DEPTH:** 727.87m (Casino-4)  
**244mm (9.625") CASING DEPTH :** 1990m

**RIG: OCEAN PATRIOT**

**RT – MUDLINE: 92.8 m**  
**WATER DEPTH: 70.8 m**

**PROGRAMMED TD:** 2624m

**ROTARY TABLE:** 22m LAT

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MUD DATA	Mud Type:	Wt: (SG/PPG)	Vis:	FL:	Ph:	KCl%	Cl :	PV/YP:	Rmf :
(2400 Hours)	FLO PRO	1.28 / 10.66	54	4.0	9.7	6	120000	17 / 39	0.05 @ 73°F

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BIT DATA	No.	Make	Type	Size (mm)	Hours	Drilled	Condition
(2400 Hours)	12	Security	FMF3553	216	22.4	406	1-2-CT-G-X-I-NO-TD
	11	Sec-DBS	FS2663	311	29.1	724	1-1-WT-A-X-I-NO-TD

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SURVEYS:	<u>MD</u> (m)	<u>INC</u> (°)	<u>AZIM</u> (°T)	<u>CLOSURE</u> (m)	<u>DIRECTION</u> (°)
	2336.6	82.2	287.8		
	2365.2	80.0	287.5		
	2394.2	79.8	267.7	858	291

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#### PREVIOUS 24 HOURS OPERATIONS SUMMARY:

PERFORM WIPER TRIP TO SHOE. CIRCULATE HOLE CLEAN. PULL OUT OF HOLE. LAYOUT DIRECTIONAL BHA. FUNCTION TEST PIPE RAMS. RUN SAND EXCLUSION SCREENS.

#### 00:00 – 06:00 HOURS 05/06/05 :

CONTINUE TO RUN IN HOLE WITH SAND EXCLUSION SCREENS ON TUBING. MAKE UP LOWER COMPLETION PACKER ASSEMBLY. CONTINUE TO RUN SAND SCREENS ON DRILLPIPE.

#### ANTICIPATED OPERATIONS:

COMPLETE RUNNING SAND SCREENS. CASING SCRAPER RUN. RUN & SET UPPER PACKER.

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## WELL PROGRESS REPORT

### CASINO 4DW2

DATE: 06/06/05

REPORT NO: 11

(As at 2400 hours 05/06/05)

**DEPTH :** 2404 mMD  
1786 mTVD
**PROGRESS:** 0 mMD**DAYS FROM SPUD :** 11**DAYS ON WELL:** 11**OPERATION:** PREPARING BRINE AND MAKING UP CASING SCRAPER ASSEMBLY.

(As at 0600 hours 06/06/05)

**DEPTH :** 2404 mMD  
1786 mTVD
**PROGRESS (0600-0600 hrs):** 0m**OPERATION :** SCRAPING CASING @ 1580m AND CLEANING RISER SIMULTANEOUSLY.

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**AFE COST**
**CUMULATIVE COST****340mm (13.375") CASING DEPTH:** 727.87m (Casino-4)**RIG: OCEAN PATRIOT****244mm (9.625") CASING DEPTH :** 1990m**RT – MUDLINE: 92.8 m****PROGRAMMED TD:** 2624m**ROTARY TABLE:** 22m LAT**WATER DEPTH: 70.8 m**


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MUD DATA	Mud Type:	Wt: (SG/PPG)	Vis:	FL:	Ph:	KCl%	Cl:	PV/YP:	Rmf :
(2400 Hours)	FLO PRO	1.28 / 10.66	54	3.8	9.7	6	120000	17 / 37	0.05 @ 73°F

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BIT DATA	No.	Make	Type	Size (mm)	Hours	Drilled	Condition
(2400 Hours)	12	Security	FMF3553	216	22.4	406	1-2-CT-G-X-I-NO-TD
	11	Sec-DBS	FS2663	311	29.1	724	1-1-WT-A-X-I-NO-TD

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SURVEYS:	<u>MD</u> (m)	<u>INC</u> (°)	<u>AZIM</u> (°T)	<u>CLOSURE</u> (m)	<u>DIRECTION</u> (°)
	2336.6	82.2	287.8		
	2365.2	80.0	287.5		
	2394.2	79.8	267.7	858	291

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**PREVIOUS 24 HOURS OPERATIONS SUMMARY:**

CONTINUE TO RUN IN HOLE WITH SAND EXCLUSION SCREENS ON TUBING. MAKE UP LOWER COMPLETION PACKER ASSEMBLY. CONTINUE RUNNING THE LOWER COMPLETION STRING TO BOTTOM, SET THE PACKER. PULL OUT WITH DRILLPIPE AND PACKER SETTING TOOL AND LAY OUT SETTING TOOL. PREPARE BRINE AS PER PROGRAM. MAKE UP CASING SCRAPER ASSEMBLY AND RIG UP TO RUN IN HOLE.

**00:00 – 06:00 HOURS 06/06/05 :**

RUN IN HOLE CASING SCRAPER ASSEMBLY WITH RISER CLEANING TOOLS (RISER BRUSHES), AND BEGIN CLEANING CASING FROM 1550M TO 1580M WHILE CLEANING RISER SIMULTANEOUSLY.

**ANTICIPATED OPERATIONS:**

COMPLETE CASING SCRAPER RUN TO 1645M. DISPLACE THE HOLE TO CALCIUM CHLORIDE BRINE. POOH CASING SCRAPER STRING.

# Santos

A.C.N. 007 550 923

## WELL PROGRESS REPORT

### CASINO 4DW2

DATE: 07/06/05

REPORT NO: 12

(As at 2400 hours 06/06/05)

DEPTH : 2404 mMD  
1786 mTVD

PROGRESS: 0 mMD

DAYS FROM SPUD : 12

DAYS ON WELL: 12

OPERATION: RUN IN HOLE UPPER COMPLETION 7" TUBING.

(As at 0600 hours 07/06/05)

DEPTH : 2404 mMD  
1786 mTVD

PROGRESS (0600-0600 hrs): 0m

OPERATION : MAKE UP TRSV, TEST AND RIH.

#### AFE COST

#### CUMULATIVE COST

340mm (13.375") CASING DEPTH: 727.87m (Casino-4)

RIG: OCEAN PATRIOT

244mm (9.625") CASING DEPTH : 1990m

RT – MUDLINE: 92.8 m

PROGRAMMED TD: 2624m

ROTARY TABLE: 22m LAT

WATER DEPTH: 70.8 m

MUD DATA	Mud Type:	Wt: (SG/PPG)	Vis:	FL:	Ph:	KCl%	Cl:	PV/YP:	Rmf:
(2400 Hours)	FLO PRO	1.28 / 10.66	54	3.8	9.7	6	120000	17 / 37	0.05 @ 73°F

BIT DATA	No.	Make	Type	Size (mm)	Hours	Drilled	Condition
(2400 Hours)	12	Security	FMF3553	216	22.4	406	1-2-CT-G-X-I-NO-TD
	11	Sec-DBS	FS2663	311	29.1	724	1-1-WT-A-X-I-NO-TD

SURVEYS:	MD (m)	INC (°)	AZIM (°T)	CLOSURE (m)	DIRECTION (°)
	2336.6	82.2	287.8		
	2365.2	80.0	287.5		
	2394.2	79.8	267.7	858	291

#### PREVIOUS 24 HOURS OPERATIONS SUMMARY:

COMPLETE CASING SCRAPER RUN TO 1645M. DISPLACE THE HOLE TO CALCIUM CHLORIDE BRINE. POOH CASING SCRAPER STRING. RETRIEVE BORE PROTECTOR AND JET THE XTREE / BOPs IN BRINE. MAKE UP UPPER COMPLETION TAILPIPE / PACKER / CHEMICAL CUT SUB. RUN IN HOLE UPPER COMPLETION 7" TUBING.

#### 00:00 – 06:00 HOURS 07/06/05 :

RUN IN HOLE UPPER COMPLETION 7" TUBING TO 1525M. MAKE UP TUBING RETRIEVABLE SUB SURFACE SAFETY VALVE (TRSV), TEST AND RIH.

#### ANTICIPATED OPERATIONS:

CONTINUE TO RUN IN HOLE UPPER COMPLETION 7" TUBING TO 1600M. MAKE UP TUBING HANGER AND TERMINATE TRSV. (SEE POINTS 9 & 10 ON ATTACHED PLAN).

**NB. WELL TESTING TO BEGIN ABOUT 39 HOURS FROM NOW ACCORDING TO PLAN.**

## Casino 4DW Completion &amp; Test Time Estimate

Step	Operation Description	Time (Hrs)
1	Function blind & 10 ¾"rams. Scrape 9 5/8" casing and riser & jet BOP's.	14
2	Make up sintered sand screens, 6 5/8" tubing & Lower Completion Packer Assembly.	12
3	RIH Lower Completion on Drill pipe to 2600m & set packer and unlatch running tools.	9
4	Cycle open SABS and displace 9 5/8" casing to inhibited calcium chloride brine at 1700m. POOH running tools.	6
5	Retrieve bore protector & jet the XT / BOP's in brine	1
6	Run upper completion tailpipe and packer and chemical cut sub	2
7	RIH upper completion 7" 13Cr80 KSBear tubing to 1500m	9
8	Make up SSSV and test	2
9	RIH upper completion 7" 13Cr80 KSBear tubing to 1600m	0.5
10	Make up TH and terminate SSSV.	4
11	Install THRT/SSTT onto TH and function test.	4.5
12	RIH Completion on 9 5/8" New Vam landing string. Install LV. Install flowhead and rig up / test welltest lines and slickline PCE.	12
13	Land off completion and lock and test TH. Retrieve Isolation sleeve and run TH wireline short protection sleeve on slickline.	6
14	Displace approx. 205bbl diesel cushion for underbalance.	2
15	Run standing valve on slickline and set packer. Pressure test completion, retrieve standing valve. Run pressure gauges on slickline and set in 4.625" QN nipple (1700m).	8
16	Perform pre flow checks. Clean up and test the well.	26
17	Shut in well and Perform build up.	24
18	Retrieve pressure gauges from 4.625" QN nipple. Retrieve TH wireline short protection sleeve from THRT.	4
15	Inflow test SSSV. Run and set lower plug on slickline in TH.	2
16	Unlatch THRT from TH. Rig down surface lines, slickline PCE and flowhead.	6
17	POOH THRT/SSTT laying down 9 5/8" land string and LV.	2
18	RIH and jet TH / XT. Run and set / test ITC (c/w upper plug) on THRT/SSTT. POOH.	6
19	Pull BOP's.	20
20	Run XT debris cap.	3
21	Pull anchors & move to next well	12
Total (Hrs)		197
Total (Days)		8.2

# Santos

A.C.N. 007 550 923

## WELL PROGRESS REPORT

### CASINO 4DW2

DATE: 08/06/05

REPORT NO: 13

(As at 2400 hours 07/06/05)

DEPTH : 2404 mMD  
1786 mTVD

PROGRESS: 0 mMD

DAYS FROM SPUD : 13  
DAYS ON WELL: 13

OPERATION: RIG UP AND TEST FLOWHEAD LINES AND SLICKLINE PRESSURE CONTROL EQUIPMENT.

(As at 0600 hours 08/06/05)

DEPTH : 2404 mMD  
1786 mTVD

PROGRESS (0600-0600 hrs): 0m

OPERATION : FUNCTION TEST FLOWHEAD LINES AND PRESSURE CONTROL EQUIPMENT.

#### AFE COST

#### CUMULATIVE COST

340mm (13.375") CASING DEPTH: 727.87m (Casino-4)  
244mm (9.625") CASING DEPTH : 1990m

RIG: OCEAN PATRIOT

RT - MUDLINE: 92.8 m  
WATER DEPTH: 70.8 m

PROGRAMMED TD: 2624m

ROTARY TABLE: 22m LAT

MUD DATA	Mud Type:	Wt: (SG/PPG)	Vis:	FL:	Ph:	KCl%	Cl:	PV/YP:	Rmf :
(2400 Hours)	FLO PRO	1.28 / 10.66	54	3.8	9.7	6	120000	17 / 37	0.05 @ 73°F

BIT DATA	No.	Make	Type	Size (mm)	Hours	Drilled	Condition
(2400 Hours)	12	Security	FMF3553	216	22.4	406	1-2-CT-G-X-I-NO-TD
	11	Sec-DBS	FS2663	311	29.1	724	1-1-WT-A-X-I-NO-TD

SURVEYS:	<u>MD (m)</u>	<u>INC (°)</u>	<u>AZIM (°T)</u>	<u>CLOSURE (m)</u>	<u>DIRECTION (°)</u>
	2336.6	82.2	287.8		
	2365.2	80.0	287.5		
	2394.2	79.8	267.7	858	291

#### PREVIOUS 24 HOURS OPERATIONS SUMMARY:

RUN IN HOLE UPPER COMPLETION 7" TUBING TO 1525M. MAKE UP TUBING RETRIEVABLE SUB SURFACE SAFETY VALVE (TRSV), TEST AND RIH.CONTINUE TO RUN IN HOLE UPPER COMPLETION 7" TUBING TO 1600M. MAKE UP TUBING HANGER AND TERMINATE TRSV. INSTALL THRT / SSTT ONTO TH AND FUNCTION TEST. RIH COMPLETION ON 9 5/8" LANDING STRING. INSTALL LUBRICATOR VALVE. INSTALL FLOWHEAD AND RIG UP / TEST WELLTEST LINES AND SLICKLINE PRESSURE CONTROL EQUIPMENT.

#### 00:00 – 06:00 HOURS 08/06/05 :

CONTINUE RIGGING UP FLOWHEAD LINES AND PRESSURE CONTROL EQUIPMENT, RUN PRESSURE TESTS.

#### ANTICIPATED OPERATIONS:

LAND OFF COMPLETION AND LOCK AND TEST TUBING HANGER. (SEE POINT 13 ON ATTACHED PLAN).

**NB. WELL TESTING TO BEGIN ABOUT 20 HOURS FROM NOW ACCORDING TO PLAN.**

## Casino 4DW Completion &amp; Test Time Estimate

Step	Operation Description	Time (Hrs)
1	Function blind & 10 ¾"rams. Scrape 9 5/8" casing and riser & jet BOP's.	14
2	Make up sintered sand screens, 6 5/8" tubing & Lower Completion Packer Assembly.	12
3	RIH Lower Completion on Drill pipe to 2600m & set packer and unlatch running tools.	9
4	Cycle open SABS and displace 9 5/8" casing to inhibited calcium chloride brine at 1700m. POOH running tools.	6
5	Retrieve bore protector & jet the XT / BOP's in brine	1
6	Run upper completion tailpipe and packer and chemical cut sub	2
7	RIH upper completion 7" 13Cr80 KSBear tubing to 1500m	9
8	Make up SSSV and test	2
9	RIH upper completion 7" 13Cr80 KSBear tubing to 1600m	0.5
10	Make up TH and terminate SSSV.	4
11	Install THRT/SSTT onto TH and function test.	4.5
12	RIH Completion on 9 5/8" New Vam landing string. Install LV. Install flowhead and rig up / test welltest lines and slickline PCE.	12
13	Land off completion and lock and test TH. Retrieve Isolation sleeve and run TH wireline short protection sleeve on slickline.	6
14	Displace approx. 205bbl diesel cushion for underbalance.	2
15	Run standing valve on slickline and set packer. Pressure test completion, retrieve standing valve. Run pressure gauges on slickline and set in 4.625" QN nipple (1700m).	8
16	Perform pre flow checks. Clean up and test the well.	26
17	Shut in well and Perform build up.	24
18	Retrieve pressure gauges from 4.625" QN nipple. Retrieve TH wireline short protection sleeve from THRT.	4
15	Inflow test SSSV. Run and set lower plug on slickline in TH.	2
16	Unlatch THRT from TH. Rig down surface lines, slickline PCE and flowhead.	6
17	POOH THRT/SSTT laying down 9 5/8" land string and LV.	2
18	RIH and jet TH / XT. Run and set / test ITC (c/w upper plug) on THRT/SSTT. POOH.	6
19	Pull BOP's.	20
20	Run XT debris cap.	3
21	Pull anchors & move to next well	12
Total (Hrs)		197
Total (Days)		8.2

# Santos

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## WELL PROGRESS REPORT

### CASINO 4DW2

DATE: 09/06/05

REPORT NO: 14

(As at 2400 hours 08/06/05)

DEPTH : 2404 mMD  
1786 mTVD

PROGRESS: 0 mMD

DAYS FROM SPUD : 14

DAYS ON WELL: 14

OPERATION: POOH WITH SLICKLINE AFTER INSTALLING THE STANDING VALVE IN THE 4.625" QN LANDING NIPPLE IN THE TAIL PIPE BENEATH THE PACKER.

(As at 0600 hours 09/06/05)

DEPTH : 2404 mMD  
1786 mTVD

PROGRESS (0600-0600 hrs): 0m

OPERATION : CLEAN UP, FLARING DIESEL

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**AFE COST**
**CUMULATIVE COST**

340mm (13.375") CASING DEPTH: 727.87m (Casino-4)

RIG: OCEAN PATRIOT

244mm (9.625") CASING DEPTH : 1990m

RT – MUDLINE: 92.8 m

PROGRAMMED TD: 2624m

ROTARY TABLE: 22m LAT

WATER DEPTH: 70.8 m

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MUD DATA	Mud Type:	Wt: (SG/PPG)	Vis:	FL:	Ph:	KCl%	Cl:	PV/YP:	Rmf:
(2400 Hours)	FLO PRO	1.28 / 10.66	54	3.8	9.7	6	120000	17 / 37	0.05 @ 73°F

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BIT DATA	No.	Make	Type	Size (mm)	Hours	Drilled	Condition
(2400 Hours)	12	Security	FMF3553	216	22.4	406	1-2-CT-G-X-I-NO-TD
	11	Sec-DBS	FS2663	311	29.1	724	1-1-WT-A-X-I-NO-TD

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SURVEYS:	<u>MD (m)</u>	<u>INC (°)</u>	<u>AZIM (°T)</u>	<u>CLOSURE (m)</u>	<u>DIRECTION (°)</u>
	2336.6	82.2	287.8		
	2365.2	80.0	287.5		
	2394.2	79.8	267.7	858	291

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**PREVIOUS 24 HOURS OPERATIONS SUMMARY:**

CONTINUE RIGGING UP FLOWHEAD LINES AND PRESSURE CONTROL EQUIPMENT, RUN PRESSURE TESTS. LAND OFF COMPLETION AND LOCK AND TEST TUBING HANGER. RUN TH WIRELINE SHORT PROTECTION SLEEVE ON SLICKLINE. DISPLACE COMPLETION STRING WITH 205 BBLs DIESEL CUSHION. RUN STANDING VALVE ON SLICK LINE AND INSTALL IN THE 4.625" QN LANDING NIPPLE, POOH WITH SLICK LINE.

**00:00 – 06:00 HOURS 09/06/05 :**

PERFORM PRESSURE TESTS AS REQUIRED WITH CMT UNIT. PERFORM PRE FLOW TESTS, CLEAN UP, FLARING DIESEL.

**ANTICIPATED OPERATIONS:**

TEST WELL, SHUT IN AND PERFORM BUILD UP

## Casino 4DW Completion &amp; Test Time Estimate

Step	Operation Description	Time (Hrs)
1	Function blind & 10 ¾"rams. Scrape 9 5/8" casing and riser & jet BOP's.	14
2	Make up sintered sand screens, 6 5/8" tubing & Lower Completion Packer Assembly.	12
3	RIH Lower Completion on Drill pipe to 2600m & set packer and unlatch running tools.	9
4	Cycle open SABS and displace 9 5/8" casing to inhibited calcium chloride brine at 1700m. POOH running tools.	6
5	Retrieve bore protector & jet the XT / BOP's in brine	1
6	Run upper completion tailpipe and packer and chemical cut sub	2
7	RIH upper completion 7" 13Cr80 KSBear tubing to 1500m	9
8	Make up SSSV and test	2
9	RIH upper completion 7" 13Cr80 KSBear tubing to 1600m	0.5
10	Make up TH and terminate SSSV.	4
11	Install THRT/SSTT onto TH and function test.	4.5
12	RIH Completion on 9 5/8" New Vam landing string. Install LV. Install flowhead and rig up / test welltest lines and slickline PCE.	12
13	Land off completion and lock and test TH. Retrieve Isolation sleeve and run TH wireline short protection sleeve on slickline.	6
14	Displace approx. 205bbl diesel cushion for underbalance.	2
15	Run standing valve on slickline and set packer. Pressure test completion, retrieve standing valve. Run pressure gauges on slickline and set in 4.625" QN nipple (1700m).	8
16	Perform pre flow checks. Clean up and test the well.	26
17	Shut in well and Perform build up.	24
18	Retrieve pressure gauges from 4.625" QN nipple. Retrieve TH wireline short protection sleeve from THRT.	4
15	Inflow test SSSV. Run and set lower plug on slickline in TH.	2
16	Unlatch THRT from TH. Rig down surface lines, slickline PCE and flowhead.	6
17	POOH THRT/SSTT laying down 9 5/8" land string and LV.	2
18	RIH and jet TH / XT. Run and set / test ITC (c/w upper plug) on THRT/SSTT. POOH.	6
19	Pull BOP's.	20
20	Run XT debris cap.	3
21	Pull anchors & move to next well	12
Total (Hrs)		197
Total (Days)		8.2



# Santos

A.C.N. 007 550 923

## WELL PROGRESS REPORT

### CASINO 4DW2

DATE: 10/06/05

REPORT NO: 15

(As at 2400 hours 09/06/05)

DEPTH : 2404 mMD  
1786 mTVD

PROGRESS: 0 mMD

DAYS FROM SPUD : 15  
DAYS ON WELL: 15

OPERATION: PERFORM PRE-FLOW CHECKS. CLEAN UP AND TEST WELL WITH ½” CHOKE.

(As at 0600 hours 10/06/05)

DEPTH : 2404 mMD  
1786 mTVD

PROGRESS (0600-0600 hrs): 0m

OPERATION : PERFORM FLOW TEST WITH ¾” CHOKE.

#### A FE COST

#### CUMULATIVE COST

340mm (13.375”) CASING DEPTH: 727.87m (Casino-4)  
244mm (9.625”) CASING DEPTH : 1990m

RIG: OCEAN PATRIOT

RT – MUDLINE: 92.8 m  
WATER DEPTH: 70.8 m

PROGRAMMED TD: 2624m

ROTARY TABLE: 22m LAT

MUD DATA	Mud Type:	Wt: (SG/PPG)	Vis:	FL:	Ph:	KCl%	Cl:	PV/YP:	Rmf:
(2400 Hours)	FLO PRO	1.28 / 10.66	54	3.8	9.7	6	120000	17 / 37	0.05 @ 73°F

BIT DATA	No.	Make	Type	Size (mm)	Hours	Drilled	Condition
(2400 Hours)	12	Security	FMF3553	216	22.4	406	1-2-CT-G-X-I-NO-TD
	11	Sec-DBS	FS2663	311	29.1	724	1-1-WT-A-X-I-NO-TD

SURVEYS:	MD (m)	INC (°)	AZIM (°T)	CLOSURE (m)	DIRECTION (°)
	2336.6	82.2	287.8		
	2365.2	80.0	287.5		
	2394.2	79.8	267.7	858	291

#### PREVIOUS 24 HOURS OPERATIONS SUMMARY:

PERFORM PRESSURE TESTS AS REQUIRED WITH CMT UNIT. PERFORM PRE-FLOW TESTS, CLEAN UP, AND FLARE DIESEL. CHANGE TO GAS FLARE (INITIALLY WITH 1” CHOKE), THEN TEST WELL WITH ½” CHOKE FOR 6 HOURS.

#### 00:00 – 06:00 HOURS 10/06/05 :

SHUT-IN AND CHANGE CHOKE. PERFORM FLOW TEST WITH ¾” CHOKE FOR 6 HOURS.

#### ANTICIPATED OPERATIONS:

CHANGE TO 62/64” CHOKE AND TEST WELL FOR 6 HOURS. IF NO PROBLEMS, SHUT IN AND PERFORM BUILD UP FOR 15+ HOUR PERIOD.

## Casino 4DW Completion &amp; Test Time Estimate

Step	Operation Description	Time (Hrs)
1	Function blind & 10 ¾"rams. Scrape 9 5/8" casing and riser & jet BOP's.	14
2	Make up sintered sand screens, 6 5/8" tubing & Lower Completion Packer Assembly.	12
3	RIH Lower Completion on Drill pipe to 2600m & set packer and unlatch running tools.	9
4	Cycle open SABS and displace 9 5/8" casing to inhibited calcium chloride brine at 1700m. POOH running tools.	6
5	Retrieve bore protector & jet the XT / BOP's in brine	1
6	Run upper completion tailpipe and packer and chemical cut sub	2
7	RIH upper completion 7" 13Cr80 KSBear tubing to 1500m	9
8	Make up SSSV and test	2
9	RIH upper completion 7" 13Cr80 KSBear tubing to 1600m	0.5
10	Make up TH and terminate SSSV.	4
11	Install THRT/SSTT onto TH and function test.	4.5
12	RIH Completion on 9 5/8" New Vam landing string. Install LV. Install flowhead and rig up / test welltest lines and slickline PCE.	12
13	Land off completion and lock and test TH. Retrieve Isolation sleeve and run TH wireline short protection sleeve on slickline.	6
14	Displace approx. 205bbl diesel cushion for underbalance.	2
15	Run standing valve on slickline and set packer. Pressure test completion, retrieve standing valve. Run pressure gauges on slickline and set in 4.625" QN nipple (1700m).	8
16	Perform pre flow checks. Clean up and test the well.	26
17	Shut in well and Perform build up.	24
18	Retrieve pressure gauges from 4.625" QN nipple. Retrieve TH wireline short protection sleeve from THRT.	4
15	Inflow test SSSV. Run and set lower plug on slickline in TH.	2
16	Unlatch THRT from TH. Rig down surface lines, slickline PCE and flowhead.	6
17	POOH THRT/SSTT laying down 9 5/8" land string and LV.	2
18	RIH and jet TH / XT. Run and set / test ITC (c/w upper plug) on THRT/SSTT. POOH.	6
19	Pull BOP's.	20
20	Run XT debris cap.	3
21	Pull anchors & move to next well	12
Total (Hrs)		197
Total (Days)		8.2

# Santos

A.C.N. 007 550 923

## WELL PROGRESS REPORT

### CASINO 4DW2

DATE: 11/06/05

REPORT NO: 16

(As at 2400 hours 10/06/05)

DEPTH : 2404 mMD  
1786 mTVD

PROGRESS: 0 mMD

DAYS FROM SPUD : 16

DAYS ON WELL: 16

OPERATION: SHUT IN AND PERFORM BUILD UP.

(As at 0600 hours 11/06/05)

DEPTH : 2404 mMD  
1786 mTVD

PROGRESS (0600-0600 hrs): 0m

OPERATION: RUN IN TO RETRIEVE SLICKLINE GAUGES AND RECOVER WIRELINE SHORT PROTECTION SLEEVE.

#### AFE COST

#### CUMULATIVE COST

340mm (13.375") CASING DEPTH: 727.87m (Casino-4)

RIG: OCEAN PATRIOT

244mm (9.625") CASING DEPTH : 1990m

RT – MUDLINE: 92.8 m

PROGRAMMED TD: 2624m

ROTARY TABLE: 22m LAT

WATER DEPTH: 70.8 m

MUD DATA	Mud Type:	Wt: (SG/PPG)	Vis:	FL:	Ph:	KCl%	Cl :	PV/YP:	Rmf :
(2400 Hours)	FLO PRO	1.28 / 10.66	54	3.8	9.7	6	120000	17 / 37	0.05 @ 73°F

BIT DATA	No.	Make	Type	Size (mm)	Hours	Drilled	Condition
(2400 Hours)	12	Security	FMF3553	216	22.4	406	1-2-CT-G-X-I-NO-TD
	11	Sec-DBS	FS2663	311	29.1	724	1-1-WT-A-X-I-NO-TD

SURVEYS:	MD (m)	INC (°)	AZIM (°T)	CLOSURE (m)	DIRECTION (°)
	2336.6	82.2	287.8		
	2365.2	80.0	287.5		
	2394.2	79.8	267.7	858	291

#### PREVIOUS 24 HOURS OPERATIONS SUMMARY:

FINISH TESTING WELL WITH ½" CHOKE. SHUT-IN AND CHANGE CHOKE. PERFORM FLOW TEST WITH ¾" CHOKE FOR 6 HOURS. CHANGE TO 62/64" CHOKE AND TEST WELL FOR 6 HOURS. THEN SHUT IN AND PERFORM BUILD UP FOR 15 HOUR PERIOD.

00:00 – 06:00 HOURS 11/06/05 : CONTINUE TO PERFORM BUILD UP WITH WELL SHUT IN UNTIL 04:00 HRS. RUN IN TO RETRIEVE SLICKLINE GAUGES AND RECOVER WIRELINE SHORT PROTECTION SLEEVE.

#### ANTICIPATED OPERATIONS:

RUN INFLOW TEST ON SUB-SURFACE SAFETY VALVE (SSSV). RUN AND SET LOWER PLUG ON SLICKLINE IN TUBING HANGER. (SEE POINT 19 BELOW). APPROX. 50 HOURS UNTIL BEGIN MOVE TO NEXT WELL.

## Casino 4DW Completion &amp; Test Time Estimate

Step	Operation Description	Time (Hrs)
1	Function blind & 10 3/4" rams. Scrape 9 5/8" casing and riser & jet BOP's.	14
2	Make up sintered sand screens, 6 5/8" tubing & Lower Completion Packer Assembly.	12
3	RIH Lower Completion on Drill pipe to 2600m & set packer and unlatch running tools.	9
4	Cycle open SABS and displace 9 5/8" casing to inhibited calcium chloride brine at 1700m. POOH running tools.	6
5	Retrieve bore protector & jet the XT / BOP's in brine	1
6	Run upper completion tailpipe and packer and chemical cut sub	2
7	RIH upper completion 7" 13Cr80 KSBear tubing to 1500m	9
8	Make up SSSV and test	2
9	RIH upper completion 7" 13Cr80 KSBear tubing to 1600m	0.5
10	Make up TH and terminate SSSV.	4
11	Install THRT/SSTT onto TH and function test.	4.5
12	RIH Completion on 9 5/8" New Vam landing string. Install LV. Install flowhead and rig up / test welltest lines and slickline PCE.	12
13	Land off completion and lock and test TH. Retrieve Isolation sleeve and run TH wireline short protection sleeve on slickline.	6
14	Displace approx. 205bbl diesel cushion for underbalance.	2
15	Run standing valve on slickline and set packer. Pressure test completion, retrieve standing valve. Run pressure gauges on slickline and set in 4.625" QN nipple (1700m).	8
16	Perform pre flow checks. Clean up and test the well.	26
17	Shut in well and Perform build up.	24
18	Retrieve pressure gauges from 4.625" QN nipple. Retrieve TH wireline short protection sleeve from THRT.	4
19	Inflow test SSSV. Run and set lower plug on slickline in TH.	2
20	Unlatch THRT from TH. Rig down surface lines, slickline PCE and flowhead.	6
21	POOH THRT/SSTT laying down 9 5/8" land string and LV.	2
22	RIH and jet TH / XT. Run and set / test ITC (c/w upper plug) on THRT/SSTT. POOH.	6
23	Pull BOP's.	20
24	Run XT debris cap.	3
25	Pull anchors & move to next well	12

Total (Hrs)	197
Total (Days)	8.2

# Santos

A.C.N. 007 550 923

## WELL PROGRESS REPORT

### CASINO 4DW2

DATE: 12/06/05

REPORT NO: 17

(As at 2400 hours 11/06/05)

**DEPTH :** 2404 mMD  
1786 mTVD**PROGRESS:** 0 mMD**DAYS FROM SPUD : 17**  
**DAYS ON WELL: 17****OPERATION:** POOH THRT/SSTT, LAYING DOWN 9 5/8" LANDING STRING AND LV.

(As at 0600 hours 12/06/05)

**DEPTH :** 2404 mMD  
1786 mTVD**PROGRESS (0600-0600 hrs):** 0m**OPERATION :** BEGIN RUN AND SET / TEST ITC ON THRT / SSTT.

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**AFE COST****CUMULATIVE COST****340mm (13.375") CASING DEPTH:** 727.87m (Casino-4)  
**244mm (9.625") CASING DEPTH :** 1990m**RIG:** OCEAN PATRIOT**PROGRAMMED TD:** 2624m**ROTARY TABLE:** 22m LAT**RT – MUDLINE:** 92.8 m  
**WATER DEPTH:** 70.8 m

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<b>MUD DATA</b>	Mud Type:	Wt: (SG/PPG)	Vis:	FL:	Ph:	KCl%	Cl:	PV/YP:	Rmf:
(2400 Hours)	FLO PRO	1.28 / 10.66	54	3.8	9.7	6	120000	17 / 37	0.05 @ 73°F

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<b>BIT DATA</b>	No.	Make	Type	Size (mm)	Hours	Drilled	Condition
(2400 Hours)	12	Security	FMF3553	216	22.4	406	1-2-CT-G-X-I-NO-TD
	11	Sec-DBS	FS2663	311	29.1	724	1-1-WT-A-X-I-NO-TD

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<b>SURVEYS:</b>	<u>MD (m)</u>	<u>INC (°)</u>	<u>AZIM (°T)</u>	<u>CLOSURE (m)</u>	<u>DIRECTION (°)</u>
	2336.6	82.2	287.8		
	2365.2	80.0	287.5		
	2394.2	79.8	267.7	858	291

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**PREVIOUS 24 HOURS OPERATIONS SUMMARY:**

CONTINUE TO PERFORM BUILD UP WITH WELL SHUT IN UNTIL 04:00 HRS. RUN IN TO RETRIEVE SLICKLINE GAUGES AND RECOVER WIRELINE SHORT PROTECTION SLEEVE. RUN INFLOW TEST ON SUB-SURFACE SAFETY VALVE (SSSV). RUN AND SET LOWER PLUG ON SLICKLINE IN TUBING HANGER. UNLATCH THRT FROM TH. RIG DOWN SURFACE LINES, SLICKLINE PCE AND FLOWHEAD. POOH THRT/SSTT, LAYING DOWN 9 5/8" LANDING STRING AND LV.

**00:00 – 06:00 HOURS 12/06/05 :** RIH AND JET TH / XT. BEGIN RUN AND SET / TEST ITC ON THRT / SSTT.**ANTICIPATED OPERATIONS:**

CONTINUE RUN AND SET / TEST ITC ON THRT / SSTT. POOH. PULL BOPs. (SEE POINT2 22 & 23 BELOW).  
**APPROX. 35 HOURS UNTIL BEGIN MOVE TO NEXT WELL.**

## Casino 4DW Completion &amp; Test Time Estimate

Step	Operation Description	Time (Hrs)
1	Function blind & 10 3/4" rams. Scrape 9 5/8" casing and riser & jet BOP's.	14
2	Make up sintered sand screens, 6 5/8" tubing & Lower Completion Packer Assembly.	12
3	RIH Lower Completion on Drill pipe to 2600m & set packer and unlatch running tools.	9
4	Cycle open SABS and displace 9 5/8" casing to inhibited calcium chloride brine at 1700m. POOH running tools.	6
5	Retrieve bore protector & jet the XT / BOP's in brine	1
6	Run upper completion tailpipe and packer and chemical cut sub	2
7	RIH upper completion 7" 13Cr80 KSBear tubing to 1500m	9
8	Make up SSSV and test	2
9	RIH upper completion 7" 13Cr80 KSBear tubing to 1600m	0.5
10	Make up TH and terminate SSSV.	4
11	Install THRT/SSTT onto TH and function test.	4.5
12	RIH Completion on 9 5/8" New Vam landing string. Install LV. Install flowhead and rig up / test welltest lines and slickline PCE.	12
13	Land off completion and lock and test TH. Retrieve Isolation sleeve and run TH wireline short protection sleeve on slickline.	6
14	Displace approx. 205bbl diesel cushion for underbalance.	2
15	Run standing valve on slickline and set packer. Pressure test completion, retrieve standing valve. Run pressure gauges on slickline and set in 4.625" QN nipple (1700m).	8
16	Perform pre flow checks. Clean up and test the well.	26
17	Shut in well and Perform build up.	24
18	Retrieve pressure gauges from 4.625" QN nipple. Retrieve TH wireline short protection sleeve from THRT.	4
19	Inflow test SSSV. Run and set lower plug on slickline in TH.	2
20	Unlatch THRT from TH. Rig down surface lines, slickline PCE and flowhead.	6
21	POOH THRT/SSTT laying down 9 5/8" land string and LV.	2
22	RIH and jet TH / XT. Run and set / test ITC (c/w upper plug) on THRT/SSTT. POOH.	6
23	Pull BOP's.	20
24	Run XT debris cap.	3
25	Pull anchors & move to next well	12
Total (Hrs)		197
Total (Days)		8.2

# Santos

A.C.N. 007 550 923

## WELL PROGRESS REPORT

### CASINO 4DW2

DATE: 13/06/05

REPORT NO: 18

(As at 2400 hours 12/06/05)

**DEPTH :** 2404 mMD  
1786 mTVD
**PROGRESS:** 0 mMD**DAYS FROM SPUD :** 18**DAYS ON WELL:** 18**OPERATION:** UNLATCH THRT FROM ITC AND POOH.

(As at 0600 hours 13/06/05)

**DEPTH :** 2404 mMD  
1786 mTVD
**PROGRESS (0600-0600 hrs):** 0m**OPERATION :** PREPARE TO PULL BOPs.**AFE COST****CUMULATIVE COST****340mm (13.375") CASING DEPTH:** 727.87m (Casino-4)**RIG:** OCEAN PATRIOT**244mm (9.625") CASING DEPTH :** 1990m**RT – MUDLINE:** 92.8 m**PROGRAMMED TD:** 2624m**ROTARY TABLE:** 22m LAT**WATER DEPTH:** 70.8 m

MUD DATA	Mud Type:	Wt: (SG/PPG)	Vis:	FL:	Ph:	KCl%	Cl:	PV/YP:	Rmf:
(2400 Hours)	FLO PRO	1.28 / 10.66	54	3.8	9.7	6	120000	17 / 37	0.05 @ 73°F

BIT DATA	No.	Make	Type	Size (mm)	Hours	Drilled	Condition
(2400 Hours)	12	Security	FMF3553	216	22.4	406	1-2-CT-G-X-I-NO-TD
	11	Sec-DBS	FS2663	311	29.1	724	1-1-WT-A-X-I-NO-TD

SURVEYS:	<u>MD</u> (m)	<u>INC</u> (°)	<u>AZIM</u> (°T)	<u>CLOSURE</u> (m)	<u>DIRECTION</u> (°)
	2336.6	82.2	287.8		
	2365.2	80.0	287.5		
	2394.2	79.8	267.7	858	291

**PREVIOUS 24 HOURS OPERATIONS SUMMARY:**

RIH AND JET TH / XT. RUN AND SET / TEST ITC ON THRT / SSTT. ENCOUNTER PROBLEM SETTING AND LOCKING ITC. POOH AND RE-RUN. CONFIRM LOCK ON NEXT ATTEMPT. PRESSURE TEST AND POOH.

**00:00 – 06:00 HOURS 13/06/05 :** CONTINUE POOH AFTER UNLATCHING THRT FROM ITC. PREPARE TO PULL BOPs.

**ANTICIPATED OPERATIONS:**

PULL BOPs. (SEE POINTS 23 BELOW). **APPROX. 30 HOURS UNTIL BEGIN MOVE TO NEXT WELL.**

Step	Operation Description	Time (Hrs)
1	Function blind & 10 ¾"rams. Scrape 9 5/8" casing and riser & jet BOP's.	14
2	Make up sintered sand screens, 6 5/8" tubing & Lower Completion Packer Assembly.	12
3	RIH Lower Completion on Drill pipe to 2600m & set packer and unlatch running tools.	9
4	Cycle open SABS and displace 9 5/8" casing to inhibited calcium chloride brine at 1700m. POOH running tools.	6
5	Retrieve bore protector & jet the XT / BOP's in brine	1
6	Run upper completion tailpipe and packer and chemical cut sub	2
7	RIH upper completion 7" 13Cr80 KSBear tubing to 1500m	9
8	Make up SSSV and test	2
9	RIH upper completion 7" 13Cr80 KSBear tubing to 1600m	0.5
10	Make up TH and terminate SSSV.	4
11	Install THRT/SSTT onto TH and function test.	4.5
12	RIH Completion on 9 5/8" New Vam landing string. Install LV. Install flowhead and rig up / test welltest lines and slickline PCE.	12
13	Land off completion and lock and test TH. Retrieve Isolation sleeve and run TH wireline short protection sleeve on slickline.	6
14	Displace approx. 205bbl diesel cushion for underbalance.	2
15	Run standing valve on slickline and set packer. Pressure test completion, retrieve standing valve. Run pressure gauges on slickline and set in 4.625" QN nipple (1700m).	8
16	Perform pre flow checks. Clean up and test the well.	26
17	Shut in well and Perform build up.	24
18	Retrieve pressure gauges from 4.625" QN nipple. Retrieve TH wireline short protection sleeve from THRT.	4
19	Inflow test SSSV. Run and set lower plug on slickline in TH.	2
20	Unlatch THRT from TH. Rig down surface lines, slickline PCE and flowhead.	6
21	POOH THRT/SSTT laying down 9 5/8" land string and LV.	2
22	RIH and jet TH / XT. Run and set / test ITC (c/w upper plug) on THRT/SSTT. POOH.	6
23	Pull BOP's.	20
24	Run XT debris cap.	3
25	Pull anchors & move to next well	12
Total (Hrs)		197
Total (Days)		8.2



# Santos

A.C.N. 007 550 923

## WELL PROGRESS REPORT

### CASINO 4DW2

DATE: 14/06/05

REPORT NO: 19

(As at 2400 hours 13/06/05)

DEPTH : 2404 mMD  
1786 mTVD

PROGRESS: 0 mMD

DAYS FROM SPUD : 19  
DAYS ON WELL: 19

OPERATION: UNLATCH THRT FROM ITC AND POOH.

(As at 0600 hours 14/06/05)

DEPTH : 2404 mMD  
1786 mTVD

PROGRESS (0600-0600 hrs): 0m

OPERATION : PULLING ANCHORS.

#### AFE COST

#### CUMULATIVE COST

340mm (13.375") CASING DEPTH: 727.87m (Casino-4)  
244mm (9.625") CASING DEPTH : 1990m

RIG: OCEAN PATRIOT

RT – MUDLINE: 92.8 m  
WATER DEPTH: 70.8 m

PROGRAMMED TD: 2624m

ROTARY TABLE: 22m LAT

<b>MUD DATA</b>	Mud Type:	Wt: (SG/PPG)	Vis:	FL:	Ph:	KCl%	Cl :	PV/YP:	Rmf :
(2400 Hours)	FLO PRO	1.28 / 10.66	54	3.8	9.7	6	120000	17 / 37	0.05 @ 73°F

<b>BIT DATA</b>	No.	Make	Type	Size (mm)	Hours	Drilled	Condition
(2400 Hours)	12	Security	FMF3553	216	22.4	406	1-2-CT-G-X-I-NO-TD
	11	Sec-DBS	FS2663	311	29.1	724	1-1-WT-A-X-I-NO-TD

SURVEYS:	<u>MD</u> (m)	<u>INC</u> (°)	<u>AZIM</u> (°T)	<u>CLOSURE</u> (m)	<u>DIRECTION</u> (°)
	2336.6	82.2	287.8		
	2365.2	80.0	287.5		
	2394.2	79.8	267.7	858	291

**PREVIOUS 24 HOURS OPERATIONS SUMMARY:**

CONTIUED PULL BOP'S / RUN XT DEBRIS CAP / POOH RUNNING TOOL / START PULLING ANCHORS / LAY OUT DP

00:00 – 06:00 HOURS 13/06/05 : CONTINUED LAYING OUT DP / PULL ANCHORS

**ANTICIPATED OPERATIONS:**

PULL ANCHORS AND MOVE RIG TO NEXT LOCATION

Step	Operation Description	Time (Hrs)
1	Function blind & 10 3/4" rams. Scrape 9 5/8" casing and riser & jet BOP's.	14
2	Make up sintered sand screens, 6 5/8" tubing & Lower Completion Packer Assembly.	12
3	RIH Lower Completion on Drill pipe to 2600m & set packer and unlatch running tools.	9
4	Cycle open SABS and displace 9 5/8" casing to inhibited calcium chloride brine at 1700m. POOH running tools.	6
5	Retrieve bore protector & jet the XT / BOP's in brine	1
6	Run upper completion tailpipe and packer and chemical cut sub	2
7	RIH upper completion 7" 13Cr80 KSBear tubing to 1500m	9
8	Make up SSSV and test	2
9	RIH upper completion 7" 13Cr80 KSBear tubing to 1600m	0.5
10	Make up TH and terminate SSSV.	4
11	Install THRT/SSTT onto TH and function test.	4.5
12	RIH Completion on 9 5/8" New Vam landing string. Install LV. Install flowhead and rig up / test welltest lines and slickline PCE.	12
13	Land off completion and lock and test TH. Retrieve Isolation sleeve and run TH wireline short protection sleeve on slickline.	6
14	Displace approx. 205bbl diesel cushion for underbalance.	2
15	Run standing valve on slickline and set packer. Pressure test completion, retrieve standing valve. Run pressure gauges on slickline and set in 4.625" QN nipple (1700m).	8
16	Perform pre flow checks. Clean up and test the well.	26
17	Shut in well and Perform build up.	24
18	Retrieve pressure gauges from 4.625" QN nipple. Retrieve TH wireline short protection sleeve from THRT.	4
19	Inflow test SSSV. Run and set lower plug on slickline in TH.	2
20	Unlatch THRT from TH. Rig down surface lines, slickline PCE and flowhead.	6
21	POOH THRT/SSTT laying down 9 5/8" land string and LV.	2
22	RIH and jet TH / XT. Run and set / test ITC (c/w upper plug) on THRT/SSTT. POOH.	6
23	Pull BOP's.	20
24	Run XT debris cap.	3
25	Pull anchors & move to next well	12

Total (Hrs)	197
Total (Days)	8.2

## **SECTION 6: DAILY DRILLING REPORTS**

**From : Chris Wise / Pat King**  
**OIM : Sean De Freitas**

**Well Data**

Country	Australia	M. Depth	1574.0m	Cur. Hole Size	311mm	AFE Cost	
Field	Casino	TVD	1560.0m	Casing OD	340mm	AFE No.	5746022
Drill Co.	DOGC	Progress	266.0m	Shoe TVD	727.9m	Daily Cost	
Rig	Ocean Patriot	Days from spud	0.60	F.I.T. / L.O.T.	Osg / Osg	Cum Cost	
Wtr Dpth(LAT)	70.8m	Days on well	0.60			Planned TD	2642.0m
RT-ASL(LAT)	22.0m	Current Op @ 0600	POH with 311 mm (12 1/4") BHA at 1300 m to repair TDS.				
RT-ML	92.8m	Planned Op	Continue to POH to shoe @ 728 m. Repair TDS. Replace Module on Pump #3. RIH and continue drilling 311 mm (12 1/4") directional hole from 1599 m.				

**Summary of Period 0000 to 2400 Hrs**

Drilled 311mm (12 1/4") sidetrack off Casino 4 from 1308 m to 1574m.

**Operations For Period 0000 Hrs to 2400 Hrs on 21 May 2005**

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
IH	P	DA	0930	1100	1.50	1335.0m	Drilled 311mm (12 1/4") directional hole from 1308 m to 1335 m, attempting to build angle with GeoPilot rotary steerable BHA. Sample: 1308 m - 70% formation
IH	P	DA	1100	1200	1.00	1337.0m	Drilled 311 mm (12 1/4") directional hole from 1335 m to 1337 m. ROP reduced to < 2 m/hr. Difficulty building angle due to low ROP and torque. Suspected bit balled.
IH	P	OA	1200	1230	0.50	1337.0m	Picked up off bottom and attempted to clear bit. Attempted to drill ahead. No ROP response.
IH	P	OA	1230	1400	1.50	1337.0m	POH to 1280 m. Pumped 7.95m3 (50 bbl) drill water pill and rotated (190 rpm) to clear balled bit. 13:40 Inspected noise coming from TDS. Oiler pump bearing suspected.
IH	P	TI	1400	1415	0.25	1337.0m	RIH with 311mm (12 1/4") BHA on 127 mm (5") drill pipe from 1280 m to 1337 m.
IH	P	DA	1415	1530	1.25	1350.0m	Drilled 311 mm (12 1/4") directional hole from 1337 m to 1350 m building angle to approx. 7.5 deg.
IH	P	DA	1530	1630	1.00	1370.0m	Drilled 311 mm (12 1/4") directional hole from 1350 m to 1370 m
IH	P	DA	1630	1800	1.50	1411.0m	Drilled ahead 311 mm (12 1/4") directional hole from 1370 m to 1411 m inclination at approx. 13 deg.
IH	P	DA	1800	2000	2.00	1472.0m	Drilled ahead 311 mm (12 1/4") directional hole from 1411 m to 1472 m inclination at approx. 20 deg.
IH	P	DA	2000	2400	4.00	1574.0m	Drilled ahead 311 mm (12 1/4") directional hole from 1472 m to 1574 m inclination at approx. 31 deg. Note: Took SCRs at 1484 m.

**Operations For Period 0000 Hrs to 0600 Hrs on 22 May 2005**

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
IH	P	DA	0000	0130	1.50	1599.0m	Drilled 311 mm (12 1/4") directional hole from 1574 m to 1599 m with GeoPilot rotary steerable BHA, inclination at approx. 33 deg.
IH	TP (RE)	RR	0130	0200	0.50	1599.0m	Fault in TDS oiler pump motor during connection. No rotary operation on TDS. Racked back first stand off bottom. (1570 m)
IH	TP (RE)	RR	0200	0230	0.50	1599.0m	Worked pipe whilst rigging up cementing hose and circulating sub.
IH	TP (RE)	CHC	0230	0330	1.00	1599.0m	Worked pipe whilst circulating bottoms up and boosted riser until shakers clean. Note: 02:30 Pump #3 Module washed.
IH	TP (RE)	TOT	0330	0600	2.50	1599.0m	(IN PROGRESS) Rigged down cementing hose and circulating sub. POH with 311 mm (12 1/4") rotary steerable BHA from 1570 m to 1170 m. Worked through tight spots from 1428 m to 1170 m. Max 23 t (50000 lb) overpull.

**WBM Data**

Mud Type:	KCL/IDCAP-D/Polymer	API FL:	4cm³/30m	Cl:	45000	Solids:	2.6	Viscosity:	0sec/L
Sample-From:	Pit 3	Filter-Cake:	1mm	K+C*1000:	8%	H2O:	89%	PV:	0.019Pa/s
Time:	20:10	HTHP-FL:	0cm³/30m	Hard/Ca:	560	Oil:	0%	YP:	0.187MPa
Weight:	1.26sg	HTHP-Cake:	0mm	MBT:	11	Sand:		Gels 10s:	0.067
Temp:	0C°			PM:	0.5	pH:	10	Gels 10m:	0.129
				PF:	0.1	PHPA:	Oppb	Fann 003:	12
								Fann 006:	15
								Fann 100:	37
								Fann 200:	49
								Fann 300:	58
								Fann 600:	77

Comment IDCAP-D = 3 ppb

Bit # 6				Wear	I	O1	D	L	B	G	O2	R
Size ("):	311mm	IADC#	S323	<b>Nozzles</b>		<b>Drilled over last 24 hrs</b>			<b>Calculated over Bit Run</b>			
Mfr:	SECURITY-DBS	WOB(avg)	0.68mt	No.	Size	Progress	266.0m	Cum. Progress		266.0m		
Type:	PDC	RPM(avg)	165	g	16/32nd"	On Bottom Hrs	12.24h	Cum. On Btm Hrs		12.24h		
Serial No.:	10387397	F.Rate	3785lpm			IADC Drill Hrs	14.80h	Cum IADC Drill Hrs		14.80h		
Bit Model	FS2663	SPP	22063kPa			Total Revs	0	Cum Total Revs		0		
Depth In	1308.0m	TFA	1.767			ROP(avg)	21.73 m/hr	ROP(avg)		21.73 m/hr		
Depth Out												
Run Comment	Integral Stabiliser Sleeve, Box up connection. Drilled from 1273 m (top cement plug) to KOP @ 1308m in Casino 4.											

BHA # 7									
Weight(Wet)	0.91mt	Length	167.0m	Torque(max)	0Nm	D.C. (1) Ann Velocity			
Wt Below Jar(Wet)	1.54mt	String	9.98mt	Torque(Off.Btm)	5440.0Nm	D.C. (2) Ann Velocity			
		Pick-Up	9.98mt	Torque(On.Btm)	0Nm	H.W.D.P. Ann Velocity			
		Slack-Off	9.98mt			D.P. Ann Velocity			
BHA Run Description	311 mm (12 1/4") Bit, 244 mm (9 5/8") Geopilot, 203 mm (8") NM Flex Pony, Sperry FEWD/MWD, 203 mm (8") Float Sub, X/O, 9 x 127 mm (5") HWDP, X/O, 203 mm (8") Jars, X/O, 9 x 127 mm (5") HWDP								
Equipment	Length	OD	ID	Serial #	Comment				
Bit	0.64m	311mm	0mm	10387397	SDBS FS2663 Bit #6				
Geopilot Steerable Tool	6.62m	245mm	0mm	GP1225 TLOG					
NM Flex Pony	2.80m	203mm	0mm	CP773036					
FEWD Tools	14.25m	203mm	0mm		FEWD - DM90072523XH1 WRG8 DM Sub - 128402 Pulser - 10645028				
Float Sub	1.05m	203mm	0mm	49079	Ported Float				
X/O	1.09m	203mm	0mm	SANTOS					
HWDP	83.17m	162mm	0mm						
X/O	1.13m	203mm	0mm	186-010					
Jar	9.67m	207mm	0mm	DAH03786					
X/O	1.02m	191mm	0mm	186-011					
5in HWDP	45.59m	161mm	0mm						

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
1404.64	12.3	280.6	1402.78	8.92	4.57	-17.61	-15.70	MWD
1433.44	15.6	293.2	1430.74	15.79	4.65	-15.53	-22.26	MWD
1462.22	19.3	300.1	1458.20	24.32	4.41	-11.63	-29.92	MWD
1490.95	22.1	304.6	1485.08	34.18	3.35	-6.19	-38.46	MWD
1519.82	26.1	307.7	1511.44	45.44	4.36	0.77	-47.94	MWD
1548.46	30.5	308.9	1536.66	58.28	4.67	9.17	-58.58	MWD

Bulk Stocks						Personnel On Board		
Name	Unit	In	Used	Adjust	Balance	Company		Pax
Fuel	m3	0	17.6	0	334.7	Santos		4
Drill Water	m3	0	42.3	0	438.7	DOGC		49
Potable Water	m3	33	21.9	0	184.7	ESS		8
Gel	sx	0	0	0	868.0	Dowell		2
Cement	sx	0	0	0	2,309.0	MI		2
Barite	sx	0	0	0	1,976.0	Geoservices		6
KCl Brine	bbl	0	0	0	0.0	Fugro		3
						Sperry-Sun		5
						Baker Atlas		1
						Cameron		3
						Expro		3
						Weatherford		4
							Total	90

HSE Summary			
Events	Date of Last	Days Since	Remarks
Abandon Drill	15 May 2005	6 Days	Abandon Drill
BOP Test	12 May 2005	9 Days	BOP Test
Environmental Incident	02 May 2005	19 Days	None reported since commencement of campaign.
Fire Drill	15 May 2005	6 Days	Fire Drill
First Aid	04 May 2005	17 Days	Person struck on nose with metal bar
Lost Time Incident	02 May 2005	19 Days	None reported since commencement of campaign.
Man Overboard Drill	02 May 2005	19 Days	None undertaken since commencement of campaign.
Near Miss	02 May 2005	19 Days	None reported since commencement of campaign.
Safety Meeting	15 May 2005	6 Days	Weekly Safety Meeting
Stop Cards	21 May 2005	0 Days	9 Stop Cards

Marine									
Weather check on 21 May 2005 at 2400							Rig Support		
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (mt)
14.8km	37km/h	293deg	1017.00bar	15.0C°	0.5m	293deg	2m/sec	1	9.98
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather Comments			
1.0deg	1.0deg	0.50m	1.0m	293deg	2m/sec				
Rig Dir.	Ris. Tension	VDL	Comments						
249.0deg	12.25mt	212.92mt							
								8	10.39

Boats	Arrived (date/time)	Departed (date/time)	Status	Bulks		
Far Grip			Ocean Patriot	Item	Unit	Quantity
				Fuel	M3	359
				Drill Water	M3	387
				Potable Water	M3	571
				Barite	MT	37
				Gel	MT	42.3
				Cement	MT	0
KCl Brine	bbf	1000				
Pacific Wrangler			Portland	Item	Unit	Quantity
				Fuel	M3	536
				Drill Water	M3	303
				Potable Water	M3	325
				Barite	MT	0
				Gel	MT	0
				Cement	MT	0
KCl Brine	bbf	2000				

**From : Chris Wise / Pat King**  
**OIM : Sean De Freitas**

**Well Data**

Country	Australia	M. Depth	1575.0m	Cur. Hole Size	311mm	AFE Cost	
Field	Casino	TVD	1560.0m	Casing OD	340mm	AFE No.	5746022
Drill Co.	DOGC	Progress	88.0m	Shoe TVD	727.9m	Daily Cost	
Rig	Ocean Patriot	Days from spud	1.60	F.I.T. / L.O.T.	Osg / Osg	Cum Cost	
Wtr Dpth(LAT)	70.8m	Days on well	1.60			Planned TD	2642.0m
RT-ASL(LAT)	22.0m	Current Op @ 0600	RIH with 311 mm (12 1/4") directional BHA (c/w mud motor) at 87 m, attempting to work through wellhead.				
RT-ML	92.8m	Planned Op	RIH with 311 mm (12 1/4") directional BHA (c/w mud motor) to 1662 mMD. Drill 311 mm (12 1/4") directional hole to section TD.				

**Summary of Period 0000 to 2400 Hrs**

Drilled 311 mm (12 1/4") directional hole from 1574 m to 1599 m. POH to repair TDS. RIH. Drilled 311 mm (12 1/4") directional hole from 1599 m to 1662 m. POH to change BHA.

**Operations For Period 0000 Hrs to 2400 Hrs on 22 May 2005**

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
IH	P	DA	0000	0130	1.50	1599.0m	Drilled 311 mm (12 1/4") directional hole from 1574 m to 1599 m with GeoPilot rotary steerable BHA, inclination at approx. 33 deg.
IH	TP (RE)	RR	0130	0200	0.50	1599.0m	Fault in TDS oiler pump motor during connection. No rotary operation on TDS. Racked back first stand off bottom. (1570 m)
IH	TP (RE)	RR	0200	0230	0.50	1599.0m	Worked pipe whilst rigging up cementing hose and circulating sub.
IH	TP (RE)	CHC	0230	0330	1.00	1599.0m	Worked pipe whilst circulating bottoms up and boosted riser until shakers clean. Note: 02:30 Pump #3 Module washed.
IH	TP (RE)	TOT	0330	0800	4.50	1599.0m	Rigged down cementing hose and circulating sub. POH with 311 mm (12 1/4") rotary steerable BHA from 1570 m to 1170 m. Worked through tight spots from 1428 m to 1170 m. Max 23 t (50000 lb) overpull.
IH	TP (RE)	TOT	0800	0900	1.00	1599.0m	Circulated bottoms up to clean hole.
IH	TP (RE)	TOT	0900	1000	1.00	1599.0m	Continued to POH from 1170 m to 727 m (340 mm (13 3/8") casing shoe)
IH	TP (RE)	RR	1000	1200	2.00	1599.0m	Changed out TDS oiler pump motor. (Partially serviced TDS block and dolly rollers whilst changing out motor)
IH	TP (RE)	TOT	1200	1400	2.00	1599.0m	RIH from 727 m to 1565 m. Took weight (13.6 t / 30,000 lb) at 1565 m. Broke circulation and washed / reamed to 1599 m.
IH	P	DA	1400	1430	0.50	1610.0m	Drilled 311 mm (12 1/4") directional hole from 1599 m to 1610 m in Skull Creek mudstone with GeoPilot rotary steerable BHA.
IH	P	CHC	1430	1500	0.50	1610.0m	Picked up off bottom and circulated at reduced rate (400 gpm) to kerb losses at shakers.
IH	P	DA	1500	1730	2.50	1662.0m	Drilled 311 mm (12 1/4") directional hole from 1610 m to 1622 m in Skull Creek mudstone.
IH	P	CHC	1730	1930	2.00	1662.0m	Circulated hole clean whilst waiting on further instruction. (Insufficient inclination being built to reach target)
IH	P	TO	1930	2230	3.00	1662.0m	Flow checked. POH from 1662 m to 167 m, pumping slug at 1255 m. (Flow checked at shoe and before BHA through BOP)
IH	P	HBHA	2230	2400	1.50	1662.0m	Continued POH from 167 m with BHA, laying out X/O, jars and stabilisers.

**Operations For Period 0000 Hrs to 0600 Hrs on 23 May 2005**

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
IH	P	HT	0000	0030	0.50	1662.0m	Attempted to download FEWD memory. Could not establish communication with FEWD tool.
IH	P	HT	0030	0130	1.00	1662.0m	Laid out FEWD, Directional (DM) sub and Pulser sub.
IH	P	HT	0130	0200	0.50	1662.0m	Broke out bit. Laid out Geopilot tool.
IH	P	HBHA	0200	0230	0.50	1662.0m	Picked up 244 mm (9-5/8") Sperry Lobe 6/7 Mud Motor and made up same to PDC Bit #7. Set bent sub to 1.5 deg.
IH	P	HT	0230	0500	2.50	1662.0m	Picked up NM Bottleneck X/O, stabiliser, FEWD, Directional (DM) sub, Pulser sub. Made up same. Aligned scribes and oriented mud motor for high side of hole. Confidence tested, initialised and programmed FEWD tools.
IH	P	HBHA	0500	0600	1.00	1662.0m	Changed out elevators to handle 127 mm (5") HWDP. Commenced RIH with 311 mm (12 1/4") directional BHA (c/w mud motor) to 87 m. Attempted to work BHA through wellhead.

WBM Data									
Mud Type: KCL/IDCAP-D/Polymer	API FL:	4cm <sup>3</sup> /30m	Cl:	47000	Solids:	4.8	Viscosity:	0sec/L	
Sample-From: Suction	Filter-Cake:	1mm	K+C*1000:	8%	H2O:	87%	PV:	0.022Pa/s	
Time: 19:00	HTHP-FL:	0cm <sup>3</sup> /30m	Hard/Ca:	560	Oil:	0%	YP:	0.182MPa	
Weight: 1.29sg	HTHP-Cake:	0mm	MBT:	12	Sand:		Gels 10s:	0.057	
Temp: 0C°			PM:	0.25	pH:	10	Gels 10m:	0.125	
			PF:	0.1	PHPA:	Oppb	Fann 003:	12	
							Fann 006:	16	
							Fann 100:	42	
							Fann 200:	55	
							Fann 300:	60	
							Fann 600:	82	
Comment IDCAP-D = 3 ppb									

Bit # 6				Wear	I	O1	D	L	B	G	O2	R
Size ("):	311mm	IADC#	S323	Nozzles		Drilled over last 24 hrs			Calculated over Bit Run			
Mfr:	SECURITY-DBS	WOB(avg)	0.82mt	No.	Size	Progress	88.0m	Cum. Progress	354.0m			
Type:	PDC	RPM(avg)	150	9	16/32nd"	On Bottom Hrs	3.40h	Cum. On Btm Hrs	15.64h			
Serial No.:	10387397	F.Rate	3596rpm			IADC Drill Hrs	15.20h	Cum IADC Drill Hrs	30.00h			
Bit Model	FS2663	SPP	20684kPa			Total Revs	0	Cum Total Revs	0			
Depth In	1308.0m	TFA	1.767			ROP(avg)	25.88 m/hr	ROP(avg)	22.63 m/hr			
Depth Out	1662.0m											
Run Comment Integral Stabiliser Sleeve, Box up connection. Drilled from 1273 m (top cement plug) to KOP @ 1308m in Casino 4.												

BHA # 7						
Weight(Wet)	0.91mt	Length	167.0m	Torque(max)	0Nm	D.C. (1) Ann Velocity
Wt Below Jar(Wet)	1.54mt	String	0mt	Torque(Off.Btm)	0Nm	D.C. (2) Ann Velocity
		Pick-Up	0mt	Torque(On.Btm)	0Nm	H.W.D.P. Ann Velocity
		Slack-Off	0mt			D.P. Ann Velocity
BHA Run Description 311 mm (12 1/4") Bit, 244 mm (9 5/8") Geopilot, 203 mm (8") NM Flex Pony, Sperry FEWD/MWD, 203 mm (8") Float Sub, X/O, 9 x 127 mm (5") HWDP, X/O, 203 mm (8") Jars, X/O, 9 x 127 mm (5") HWDP						
Equipment	Length	OD	ID	Serial #	Comment	
Bit	0.64m	311mm	0mm	10387397	SDBS FS2663 Bit #6	
Geopilot Steerable Tool	6.62m	245mm	0mm	GP1225 TLOG		
NM Flex Pony	2.80m	203mm	0mm	CP773036		
FEWD Tools	14.25m	203mm	0mm		FEWD - DM90072523XH1 WRG8 DM Sub - 128402 Pulser - 10645028	
Float Sub	1.05m	203mm	0mm	49079	Ported Float	
X/O	1.09m	203mm	0mm	SANTOS		
HWDP	83.17m	162mm	0mm			
X/O	1.13m	203mm	0mm	186-010		
Jar	9.67m	207mm	0mm	DAH03786		
X/O	1.02m	191mm	0mm	186-011		
5in HWDP	45.59m	161mm	0mm			



Bulk Stocks						Personnel On Board	
Name	Unit	In	Used	Adjust	Balance	Company	Pax
Fuel	m3	199.8	20.5	0	514.0	Santos	4
Drill Water	m3	0	48.3	0	390.4	DOGC	49
Potable Water	m3	35.9	30.5	0	190.1	ESS	8
Gel	sx	0	0	0	868.0	Dowell	2
Cement	sx	0	0	0	2,309.0	MI	2
Barite	sx	0	359	0	1,617.0	Geoservices	6
KCl Brine	bbl	0	0	0	0.0	Fugro	3
						Sperry-Sun	5
						Baker Atlas	1
						Cameron	3
						Expro	3
						Weatherford	4
						<b>Total</b>	<b>90</b>

HSE Summary			
Events	Date of Last	Days Since	Remarks
Abandon Drill	22 May 2005	0 Days	Abandon Drill
BOP Test	12 May 2005	10 Days	BOP Test
Environmental Incident	02 May 2005	20 Days	None reported since commencement of campaign.
Fire Drill	22 May 2005	0 Days	Fire Drill
First Aid	04 May 2005	18 Days	Person struck on nose with metal bar
Lost Time Incident	02 May 2005	20 Days	None reported since commencement of campaign.
Man Overboard Drill	02 May 2005	20 Days	None undertaken since commencement of campaign.
Near Miss	02 May 2005	20 Days	None reported since commencement of campaign.
Safety Meeting	22 May 2005	0 Days	Weekly Safety Meeting
Stop Cards	22 May 2005	0 Days	6 Stop Cards

Marine										
Weather check on 22 May 2005 at 2400							Rig Support			
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (mt)	
14.8km	22km/h	293deg	1018.00bar	13.0C°	0.5m	293deg	2m/sec	1	10.30	
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather Comments				
1.0deg	1.0deg	0.50m	1.5m	293deg	2m/sec					
Rig Dir.	Ris. Tension	VDL	Comments				2	3	4	5
249.0deg	12.25mt	215.50mt					6	7	8	10.39

Boats	Arrived (date/time)	Departed (date/time)	Status	Bulks		
Far Grip			Ocean Patriot	Item	Unit	Quantity
				Fuel	M3	340
				Drill Water	M3	689
				Potable Water	M3	585
				Barite	MT	37
				Gel	MT	42.3
				Cement	MT	0
KCl Brine	bbl	0				
Pacific Wrangler			Portland	Item	Unit	Quantity
				Fuel	M3	319.3
				Drill Water	M3	303
				Potable Water	M3	315
				Barite	MT	0
				Gel	MT	0
				Cement	MT	0
KCl Brine	bbl	2000				

**From : Chris Wise / Pat King**  
**OIM : Sean De Freitas**

**Well Data**

Country	Australia	M. Depth	1662.0m	Cur. Hole Size	311mm	AFE Cost	
Field	Casino	TVD	1630.0m	Casing OD	340mm	AFE No.	5746022
Drill Co.	DOGC	Progress	88.0m	Shoe TVD	727.9m	Daily Cost	
Rig	Ocean Patriot	Days from spud	21.77	F.I.T. / L.O.T.	Osg / Osg	Cum Cost	
Wtr Dpth(LAT)	70.8m	Days on well	2.60			Planned TD	2642.0m
RT-ASL(LAT)	22.0m	Current Op @ 0600	Completing pressure test of surface equipment. Preparing to make up 311 mm (12 1/4") Geopilot directional BHA.				
RT-ML	92.8m	Planned Op	RIH with 311 mm (12 1/4") Geopilot Directional BHA. Kick-off from 1200 m. Drill 311 mm (12 1/4") directional hole to section TD.				

**Summary of Period 0000 to 2400 Hrs**

Laid out 311 mm (12 1/4") Geopilot directional BHA. Made up 311 mm (12 1/4") directional BHA w/ mud motor. Attempted to RIH. POH. Set kick-off plug from 1200 m to 1350 m. Commenced testing BOP whilst waiting on cement.

**Operations For Period 0000 Hrs to 2400 Hrs on 23 May 2005**

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
IH	P	HT	0000	0030	0.50	1662.0m	Attempted to download FEWD memory. Could not establish communication with FEWD tool.
IH	P	HT	0030	0130	1.00	1662.0m	Laid out FEWD, Directional (DM) sub and Pulser sub.
IH	P	HT	0130	0200	0.50	1662.0m	Broke out bit. Laid out Geopilot tool.
IH	P	HBHA	0200	0230	0.50	1662.0m	Picked up 244 mm (9-5/8") Sperry Lobe 6/7 Mud Motor and made up same to PDC Bit #7. Set bent sub to 1.5 deg.
IH	P	HT	0230	0500	2.50	1662.0m	Picked up NM Bottleneck X/O, stabiliser, FEWD, Directional (DM) sub, Pulser sub. Made up same. Aligned scribes and oriented mud motor for high side of hole. Confidence tested, initialised and programmed FEWD tools.
IH	P	HBHA	0500	0700	2.00	1662.0m	Changed out elevators to handle 127 mm (5") HWDP. Commenced RIH with 311 mm (12 1/4") directional BHA (c/w mud motor) to 87 m. Worked BHA through BOPs and 476 mm (18 3/4") wellhead. Unable to pass 340 mm (13 3/8") casing at approx 100 m due to excessive drag. Picked up above BOP.
IH	TP (OTH)	RS	0700	0730	0.50	1662.0m	Serviced TDS, blocks and rollers whilst waiting on forward plan.
IH	TP (OTH)	HBHA	0730	0900	1.50	1662.0m	POH with 311 mm (12 1/4") BHA and racked back same. Broke off PDC Bit #7.
IH	P	TI	0900	1200	3.00	1662.0m	Made up 127 mm (5") mule shoe to 127 mm (5") drill pipe and RIH to 1450 m.
IH	P	CHC	1200	1315	1.25	1662.0m	Circulated bottoms up. Spotted 9.5 m3 (60 bbl) hi-vis pill at 1450 m
IH	P	TO	1315	1345	0.50	1662.0m	POH with 127 mm (5") cementing string from 1450 m 1350 m. Rigged up surface cementing lines.
IH	P	CMP	1345	1445	1.00	1662.0m	Set kick-off cement plug from 1200 m to 1350 m (14.8 m3 / 93 bbl, 1.98sg / 16.5 ppg, 495 sx Class G)  13:47 Pumped 0.8 m3 (5 bbl) drill water 13:50 Pressure tested surface cementing lines to 7000 kPa (1000 psi) 13:58 Pumped 0.8 m3 (5 bbl) drill water 14:05 Mixed and pumped 14.8 m3 (93 bbl) cement slurry 14:30 Pumped 0.19 m3 drill water 14:32 Displaced cement with 10.4 m3 (65.3 bbl) mud using cement unit 14:41 Bled off pressure
IH	P	TO	1445	1600	1.25	1662.0m	Broke out cement stand. POH with 127 mm (5") cementing string from 1350 m to 1150 m.
IH	P	CHC	1600	1630	0.50	1662.0m	Rigged up surface lines and reverse circulated string clean. (Noted pressure increase at bottoms up. Dumped 7.15 m3 / 45 bbl contaminated mud )
IH	P	TO	1630	1830	2.00	1662.0m	POH with 127 mm (5") cementing string from 1150 m to 290 m.
IH	P	BOP	1830	1900	0.50	1662.0m	Made up Cameron test plug assembly and RIH on 127 mm (5") drill pipe (cementing string).
IH	TP (VE)	BOP	1900	2045	1.75	1662.0m	Attempted to pressure test BOP. Tested lower pipe rams - failed. Tested upper pipe rams - failed. Fluid up drill string. Test plug seals passing.
IH	TP (VE)	BOP	2045	2115	0.50	1662.0m	POH with test plug. Set down weight on tool at surface to test seal. Seal not energising.
IH	TP (VE)	OA	2115	2300	1.75	1662.0m	Laid out and troubleshooted test plug. Installed new inner and outer seals.
IH	P	BOP	2300	2330	0.50	1662.0m	Made up test plug and RIH. Landed out in wellhead.
IH	P	BOP	2330	2400	0.50	1662.0m	Commenced pressure testing BOP. Lower pipe rams tested - 1400 kPa (200 psi)/5 mins; 27500 kPa (4000 psi) / 10 mins.

**Operations For Period 0000 Hrs to 0600 Hrs on 24 May 2005**

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
IH	P	BOP	0000	0300	3.00	1662.0m	Continued to pressure test BOP with blue pod from driller's remote panel. Tested pipe rams and lower failsafes to 1400 kPa (200 psi) / 5 mins and 27500 kPa (4000 psi) / 10 mins. Tested annulars and upper failsafes to 1400 kPa (200 psi) / 5 mins and 20700 kPa (3000 psi). Tested Choke Manifold to 27500 kPa (4000 psi). Function tested BOP with yellow pod.
IH	P	BOP	0300	0415	1.25	1662.0m	POH with BOP test plug and laid out same. POH 10 stands of 127 mm (5") drill pipe and cementing mule shoe.
IH	P	BOP	0415	0600	1.75	1662.0m	Rigged up pressure test hose to TDS. Tested #1 standpipe valve, auto IBOP, lower manual IBOP to 1400 kPa (200 psi) / 5 min and 27500 kPa (4000 psi) / 10 min.

WBM Data									
Mud Type: KCL/IDCAP-D/Polymer	API FL:	3cm <sup>3</sup> /30m	Cl:	48000	Solids:	4.8	Viscosity:	0sec/L	
Sample-From: Pit 3	Filter-Cake:	1mm	K+C*1000:	8%	H2O:	87%	PV:	0.019Pa/s	
Time: 20:00	HTHP-FL:	0cm <sup>3</sup> /30m	Hard/Ca:	1200	Oil:	0%	YP:	0.177MPa	
Weight: 1.29sg	HTHP-Cake:	0mm	MBT:	13	Sand:		Gels 10s:	0.062	
Temp: 0C°			PM:	0.2	pH:	9	Gels 10m:	0.115	
			PF:	0.05	PHPA:	Oppb	Fann 003:	11	
							Fann 006:	14	
							Fann 100:	35	
							Fann 200:	48	
							Fann 300:	56	
							Fann 600:	75	
Comment	IDCAP-D = 3 ppb								

Bit # 6				Wear	I	O1	D	L	B	G	O2	R
					0	1	WT	G	X	I	NO	BHA
Size ("):	311mm	IADC#	S323	Nozzles		Drilled over last 24 hrs			Calculated over Bit Run			
Mfr:	SECURITY-DBS	WOB(avg)	0.82mt	No.	Size	Progress	88.0m	Cum. Progress	442.0m			
Type:	PDC	RPM(avg)	150	9	16/32nd"	On Bottom Hrs	3.40h	Cum. On Btm Hrs	19.04h			
Serial No.:	10387397	F.Rate	3596lpm			IADC Drill Hrs	15.20h	Cum IADC Drill Hrs	45.20h			
Bit Model	FS2663	SPP	20684kPa			Total Revs	0	Cum Total Revs	0			
Depth In	1308.0m	TFA	1.767			ROP(avg)	25.88 m/hr	ROP(avg)	23.21 m/hr			
Depth Out	1662.0m											
Run Comment	Integral Stabiliser Sleeve, Box up connection. Drilled from 1273 m (top cement plug) to KOP @ 1308m in Casino 4.											

Bit # 7				Wear	I	O1	D	L	B	G	O2	R
Size ("):	311mm	IADC#	M223	Nozzles		Drilled over last 24 hrs			Calculated over Bit Run			
Mfr:	SMITH	WOB(avg)	0mt	No.	Size	Progress	0m	Cum. Progress	0m			
Type:	PDC	RPM(avg)	0	7	20/32nd"	On Bottom Hrs	0h	Cum. On Btm Hrs	0h			
Serial No.:	JT6901	F.Rate	0lpm			IADC Drill Hrs	0h	Cum IADC Drill Hrs	0h			
Bit Model	MA89PX	SPP	0kPa			Total Revs	0	Cum Total Revs	0			
Depth In	1662.0m	TFA	2.148			ROP(avg)	N/A	ROP(avg)	0.00 m/hr			
Depth Out	1662.0m											
Run Comment	BHA POH after hanging up in 340 mm (13 3/8") casing.											
Bitwear Comment	Bit not run.											

BHA # 8									
Weight(Wet)	0.91mt	Length	168.4m	Torque(max)	0Nm	D.C. (1) Ann Velocity			
Wt Below Jar(Wet)	1.54mt	String	0mt	Torque(Off.Btm)	0Nm	D.C. (2) Ann Velocity			
		Pick-Up	0mt	Torque(On.Btm)	0Nm	H.W.D.P. Ann Velocity			
		Slack-Off	0mt			D.P. Ann Velocity			
BHA Run Description	311 mm (12 1/4") Bit, 244 mm (9 5/8") Sperry Mud Motor, 203 mm (8") NM X/O, 292 mm (11 1/2") String Stab, 203 mm (8") Contingency Sub, Sperry FEWD/MWD, 203 mm, X/O, 9 x 127 mm (5") HWDP, 171 mm (6 3/4") Jars, 9 x 127 mm (5") HWDP								

Equipment	Length	OD	ID	Serial #	Comment
Bit	0.38m	311mm	0mm	JT6901	Smith MA89PX Bit #7
9.625in Motor	8.56m	245mm	0mm	963116	1.5 deg bend
NM X/O	1.05m	203mm	0mm	A554	c/w Ported Float
String Stabiliser	1.90m	241mm	0mm	7090449	
Contingency Sub	1.22m	203mm	0mm	10659402	
FEWD Tools	15.54m	203mm	0mm		FEWD - WRG V8 DM Sub - 128402 Pulser - 10645028
X/O	1.09m	203mm	0mm	SANTOS	
HWDP	83.17m	162mm	0mm		
Jar	9.87m	165mm	0mm	MAH00160	
5in HWDP	45.59m	161mm	0mm		

Bulk Stocks						Personnel On Board	
Name	Unit	In	Used	Adjust	Balance	Company	Pax
Fuel	m3	0	22	0	492.0	Santos	4
Drill Water	m3	0	72.3	0	318.1	DOGC	49
Potable Water	m3	28	5.9	0	212.2	ESS	8
Gel	sx	0	0	0	868.0	Dowell	2
Cement	sx	0	362	0	1,947.0	MI	2
Barite	sx	0	128	0	1,489.0	Geoservices	6
KCl Brine	bbl	0	0	0	0.0	Fugro	3
						Sperry-Sun	5
						Baker Atlas	1
						Cameron	3
						Expro	3
						Weatherford	4
Total							90

HSE Summary			
Events	Date of Last	Days Since	Remarks
Abandon Drill	22 May 2005	1 Day	Abandon Drill
BOP Test	12 May 2005	11 Days	BOP Test
Environmental Incident	02 May 2005	21 Days	None reported since commencement of campaign.
Fire Drill	22 May 2005	1 Day	Fire Drill
First Aid	04 May 2005	19 Days	Person struck on nose with metal bar
Lost Time Incident	02 May 2005	21 Days	None reported since commencement of campaign.
Man Overboard Drill	02 May 2005	21 Days	None undertaken since commencement of campaign.
Near Miss	02 May 2005	21 Days	None reported since commencement of campaign.
Safety Meeting	22 May 2005	1 Day	Weekly Safety Meeting
Stop Cards	23 May 2005	0 Days	7 Stop Cards

Marine									
Weather check on 23 May 2005 at 2400							Rig Support		
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (mt)
14.8km	26km/h	023deg	1018.00bar	15.0C°	0.5m	023deg	2m/sec	1	10.30
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather Comments		2	8.98
1.0deg	1.0deg	0.50m	2.0m	225deg	2m/sec			3	7.62
Rig Dir.	Ris. Tension	VDL	Comments					4	8.21
249.0deg	12.25mt	219.99mt						5	8.62
								6	9.62
								7	10.70
								8	10.39

Boats	Arrived (date/time)	Departed (date/time)	Status	Bulks		
Far Grip		23 May 05 18:00	Portland	<b>Item</b>	<b>Unit</b>	<b>Quantity</b>
				Fuel	M3	330
				Drill Water	M3	689
				Potable Water	M3	562
				Barite	MT	37
				Gel	MT	42.3
				Cement	MT	0
				KCl Brine	bbf	0
Pacific Wrangler			Ocean Patriot	<b>Item</b>	<b>Unit</b>	<b>Quantity</b>
				Fuel	M3	309.2
				Drill Water	M3	303
				Potable Water	M3	310
				Barite	MT	0
				Gel	MT	0
				Cement	MT	0
				KCl Brine	bbf	2000

<b>From : Chris Wise / Jeff Thomson</b>						
<b>OIM : Sean De Freitas</b>						
<b>Well Data</b>						
Country	Australia	M. Depth	1575.0m	Cur. Hole Size	311mm	AFE Cost
Field	Casino	TVD	1560.0m	Casing OD	340mm	AFE No. 5746022
Drill Co.	DOGC	Progress	64.0m	Shoe TVD	727.9m	Daily Cost
Rig	Ocean Patriot	Days from spud	22.77	F.I.T. / L.O.T.	0sg / 2.14sg	Cum Cost
Wtr Dpth(LAT)	70.8m	Days on well	3.60			Planned TD 2642.0m
RT-ASL(LAT)	22.0m	Current Op @ 0600	Pull BHA prior to RIH with cementing string			
RT-ML	92.8m	Planned Op	RIH and set kick off plug #3, sidetrack well. Commence drilling Casino-4DW2 311mm (12 1/4") hole section.			

<b>Summary of Period 0000 to 2400 Hrs</b>						
While WOC, tested BOPs, IBOPs, #1 standpipe, made up casing hangar, deep sea express assembly, laid out 9.625" motor assembly, made up Geopilot 311mm (12 1/4") BHA, attempted to download to MWD failed, changed out FEWD, RIH to 165m, surface tested MWD/ Geopilot, RIH, tagged TOC at 1176mRT MD, washed/rotated to 1200mRT MD, attempted to KO from 1200m - 1265mRT MD - unsuccessful.						

<b>Operations For Period 0000 Hrs to 2400 Hrs on 24 May 2005</b>							
Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
IH	P	BOP	0000	0300	3.00	1662.0m	Continued to pressure test BOP with blue pod from driller's remote panel. Tested pipe rams and lower failsafes to 1400 kPa (200 psi) / 5 mins and 27500 kPa (4000 psi) / 10 mins. Tested annulars and upper failsafes to 1400 kPa (200 psi) / 5 mins and 20700 kPa (3000 psi). Tested Choke Manifold to 27500 kPa (4000 psi). Function tested BOP with yellow pod.
IH	P	BOP	0300	0415	1.25	1662.0m	POH with BOP test plug and laid out same. POH 10 stands of 127 mm (5") drill pipe and cementing mule shoe.
IH	P	XT	0415	0600	1.75	1662.0m	Rigged up pressure test hose to TDS. Tested #1 standpipe valve, auto IBOP, lower manual IBOP to 1400 kPa (200 psi) / 5 min and 27500 kPa (4000 psi) / 10 min.
IH	P	RRC	0600	0830	2.50	1662.0m	Made up and laid out 244mm (9 5/8") casing hanger and deep sea express assembly.
IH	TU (DTF)	HBHA	0830	1000	1.50	1662.0m	Laid down 244mm (9 5/8") Sperry Lobe 6/7 downhole motor and MWD assembly with worn integral stabiliser.
IH	TU (DTF)	HBHA	1000	1200	2.00	1662.0m	Picked up BHA #9 - 311mm (12 1/4") Geopilot BHA.
IH	TU (DTF)	HBHA	1200	1300	1.00	1662.0m	Unable to function test and program Sperry Sun MWD at surface.
IH	TU (DTF)	HBHA	1300	1430	1.50	1662.0m	Tool failure, MWD not functioning, laid out MWD and picked up original MWD.
IH	TU (DTF)	HBHA	1430	1530	1.00	1662.0m	Successfully function tested MWD.
IH	P	TI	1530	1630	1.00	1662.0m	RIH with BHA #9 to 165mRT MD and surface tested Geopilot / MWD.
IH	P	ST	1630	1830	2.00	1662.0m	RIH to 1120mRT MD, washed down to TOC at 1176mRT MD.
IH	P	ST	1830	1900	0.50	1662.0m	Drilled/washed through soft cement to 1200mRT MD.
IH	P	ST	1900	2400	5.00	1662.0m	Attempted to sidetrack well from 1200mRt MD to 1265mRT MD (unsuccessful).

<b>Operations For Period 0000 Hrs to 0600 Hrs on 25 May 2005</b>							
Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
IH	TP (OTH)	ST	0000	0130	1.50	1662.0m	Circulated 1.5 x bottoms up. Checked shakers and observed abundant cement returns. Circulated until shakers cleaned up.
IH	TP (OTH)	ST	0130	0500	3.50	1662.0m	Conducted flow check, POOH from 1265m - 1140mRT MD, pumped slug, POOH.
IH	TP (OTH)	ST	0500	0600	1.00	1662.0m	Flow checked at BOPs, Pulled and racked back BHA.

<b>WBM Data</b>									
Mud Type:	KLC/IDCAP-D/Polymer	API FL:	3cm <sup>3</sup> /30m	Cl:	46000	Solids:	13	Viscosity:	0sec/L
Sample-From:	Suction	Filter-Cake:	1mm	K+C*1000:	8%	H2O:	87%	PV:	0.020Pa/s
Time:	08:00	HTHP-FL:	0cm <sup>3</sup> /30m	Hard/Ca:	1200	Oil:	0%	YP:	0.168MPa
Weight:	1.28sg	HTHP-Cake:	0mm	MBT:	15	Sand:		Gels 10s:	0.053
Temp:	0C°			PM:	0	pH:	8.4	Gels 10m:	0.096
				PF:	0.05	PHPA:	Oppb	Fann 003:	11
								Fann 006:	13
								Fann 100:	35
								Fann 200:	46
								Fann 300:	55
								Fann 600:	75
Comment	IDCAP-D = 3 ppb								

Bit # 8				Wear	I	O1	D	L	B	G	O2	R
Size ("):	311mm	IADC#		<b>Nozzles</b>		<b>Drilled over last 24 hrs</b>			<b>Calculated over Bit Run</b>			
Mfr:	Hughes Christensen	WOB(avg)	0.14mt	No.	Size	Progress	64.0m	Cum. Progress		64.0m		
Type:	Rock	RPM(avg)	75			On Bottom Hrs	3.90h	Cum. On Btm Hrs		3.90h		
Serial No.:	5031197	F.Rate	3218lpm			IADC Drill Hrs	0h	Cum IADC Drill Hrs		0h		
Bit Model	MXCS03	SPP	15513kPa			Total Revs	0	Cum Total Revs		0		
Depth In	1176.0m	TFA	0.000			ROP(avg)	16.41 m/hr	ROP(avg)		16.41 m/hr		
Depth Out	0m											
Run Comment	TOC 1176m											

BHA # 9						
Weight(Wet)	1.09mt	Length	165.3m	Torque(max)	0Nm	D.C. (1) Ann Velocity
Wt Below Jar(Wet)	1.36mt	String	0mt	Torque(Off.Btm)	0Nm	D.C. (2) Ann Velocity
		Pick-Up	0mt	Torque(On.Btm)	0Nm	H.W.D.P. Ann Velocity
		Slack-Off	0mt			D.P. Ann Velocity

BHA Run Description 311 mm (12 1/4") rock bit, stb sleeve, 244 mm (9 5/8") Geopilot, 203 mm (8") NM Flex Pony, Sperry FEWD/MWD, 203 mm (8") Float Sub, X/O, 9 x 127 mm (5") HWDP, 165 mm (6.5") Jars, 9 x 127 mm (5") HWDP

Equipment	Length	OD	ID	Serial #	Comment
Bit	0.34m	311mm	0mm	5031197	Rock bit
Near Bit Stabiliser	0.46m	311mm	76mm	10625807	Stabiliser sleeve
Geopilot Steerable Tool	6.62m	245mm	0mm	GP1225 TLO62	
NM Flex Pony	2.80m	203mm	0mm	CP773036	
FEWD Tools	14.32m	203mm	0mm		FEWD - WRG8 DM Sub - 128402 Pulser - 10645028
Float Sub	1.05m	203mm	0mm	49079	Ported Float
X/O	1.09m	203mm	0mm	SANTOS	
HWDP	82.69m	162mm	0mm		
Jar	9.87m	165mm	73mm	MAH 00160	
5in HWDP	46.07m	161mm	0mm		

Bulk Stocks						Personnel On Board		
Name	Unit	In	Used	Adjust	Balance	Company		Pax
Fuel	m3	0	28.1	0	463.9	Santos		4
Drill Water	m3	0	78.4	0	239.7	DOGC		49
Potable Water	m3	30	42.2	0	200.0	ESS		8
Gel	sx	0	0	0	868.0	Dowell		2
Cement	sx	0	0	0	1,947.0	MI		2
Barite	sx	0	0	0	1,489.0	Geoservices		6
KCl Brine	bbl	0	0	0	0.0	Fugro		3
						Sperry-Sun		5
						Cameron		3
						Expro		3
						Weatherford		4
							Total	89

HSE Summary			
Events	Date of Last	Days Since	Remarks
Abandon Drill	22 May 2005	2 Days	Abandon Drill
BOP Test	24 May 2005	0 Days	BOP Test
Environmental Incident	02 May 2005	22 Days	None reported since commencement of campaign.
Fire Drill	22 May 2005	2 Days	Fire Drill
First Aid	04 May 2005	20 Days	Person struck on nose with metal bar
Lost Time Incident	02 May 2005	22 Days	None reported since commencement of campaign.
Man Overboard Drill	02 May 2005	22 Days	None undertaken since commencement of campaign.
Near Miss	02 May 2005	22 Days	None reported since commencement of campaign.
Safety Meeting	22 May 2005	2 Days	Weekly Safety Meeting
Stop Cards	24 May 2005	0 Days	8 Stop Cards

Marine								Rig Support		
Weather check on 24 May 2005 at 2400										
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (mt)	
14.8km	46km/h	270deg	1014.00bar	12.0C°	0.5m	315deg	2m/sec	1	10.39	
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather Comments				
1.0deg	1.0deg	0.50m	2.0m	248deg	2m/sec					
Rig Dir.	Ris. Tension	VDL	Comments							
249.0deg	12.25mt	216.09mt								
								2	8.89	
								3	7.48	
								4	7.80	
								5	8.48	
								6	9.80	
								7	9.62	
								8	10.39	

Boats	Arrived (date/time)	Departed (date/time)	Status	Bulks		
Far Grip		23 May 05 18:00	Portland	<b>Item</b>	<b>Unit</b>	<b>Quantity</b>
				Fuel	M3	330
				Drill Water	M3	689
				Potable Water	M3	562
				Barite	MT	37
				Gel	MT	42.3
				Cement	MT	0
KCl Brine	bbf	0				
Pacific Wrangler			Ocean Patriot	<b>Item</b>	<b>Unit</b>	<b>Quantity</b>
				Fuel	M3	298.9
				Drill Water	M3	303
				Potable Water	M3	305
				Barite	MT	0
				Gel	MT	0
				Cement	MT	0
KCl Brine	bbf	2000				

Helicopter Movement				
Flight #	Time	Destination	Comment	Pax
1	10:26	Ocean Patriot		8
1	10:40	Essendon		9



**From : Chris Wise / Jeff Thomson**  
**OIM : Sean De Freitas**

**Well Data**

Country	Australia	M. Depth	1265.0m	Cur. Hole Size	311mm	AFE Cost	
Field	Casino	TVD	1265.0m	Casing OD	340mm	AFE No.	5746022
Drill Co.	DOGC	Progress	64.0m	Shoe TVD	727.9m	Daily Cost	
Rig	Ocean Patriot	Days from spud	23.77	F.I.T. / L.O.T.	0sg / 2.14sg	Cum Cost	
Wtr Dpth(LAT)	70.8m	Days on well	4.60			Planned TD	2642.0m
RT-ASL(LAT)	22.0m	Current Op @ 0600	Wait on cement, POOH with with TCI bit / motor assembly.				
RT-ML	92.8m	Planned Op	Make up steering BHA,RIH to TOC and sidetrack hole. Trip to change to Geopilot / PDC assembly.				

**Summary of Period 0000 to 2400 Hrs**

Circulated hole clean, POOH, ran sidetrack plug #3, WOC. While WOC, conducted dummy trips with 1.15 deg bend motor assembly BHA w/ PDC, TCI bits and extra 203mm (8") drill collar to test ability to run BHA to bottom.

**Operations For Period 0000 Hrs to 2400 Hrs on 25 May 2005**

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
IH	TP (OTH)	ST	0000	0130	1.50	1662.0m	Circulated 1.5 x bottoms up. Checked shakers and observed abundant cement returns. Circulated until shakers cleaned up.
IH	TP (OTH)	ST	0130	0500	3.50	1662.0m	Conducted flow check, POOH from 1265m - 1140mRT MD, pumped slug, POOH.
IH	TP (OTH)	ST	0500	0630	1.50	1662.0m	Flow checked at BOPs, Pulled and racked back BHA.
IH	TP (OTH)	TI	0630	1000	3.50	1662.0m	Made up 127mm (5") cementing string and RIH to 1265mRT MD.
IH	TP (OTH)	CMD	1000	1100	1.00	1662.0m	Circulated hole at 1265mRt MD - 3800 LPM (1000 GPM)
IH	TP (OTH)	CMP	1100	1200	1.00	1662.0m	Rigged up surface cementing lines. Set kick off plug from 1265mRT - 1100 mRT. (16.3 m3 (102.6 bbls), 1.98 SG, cmt slurry at 1265mRT MD). 11:02 pumped 0.8 m3 (5 bbls) drill water 11:08 pressure tested surface lines to 6890 kPa (1000 psi) 11:10 pumped 0.8 m3 (5 bbls) drill water 11:13 mixed and pumped 16.3 m3 (102.6 bbls) of 1.98 SG (16.5 ppg) cmt slurry 11:54 displaced cmt with 60 bbls drilling mud
IH	TP (OTH)	TO	1200	1300	1.00	1662.0m	Rigged down cement stand, and POOH to to 1070mRT MD.
IH	TP (OTH)	CMP	1300	1330	0.50	1662.0m	Rigged up surface lines and reverse circulated string clean. Dumped 9.5 m3 (60 bbls) of cement contaminated mud.
IH	TP (OTH)	TO	1330	1600	2.50	1662.0m	Rigged down surface lines and POOH from 1070mRT MD, laid out mule shoe.
IH	TP (OTH)	HBHA	1600	1700	1.00	1662.0m	Wait on cement. RIH with GeoPilot assembly (BHA #9) to check wellhead/casing access. OK.
IH	TP (OTH)	HBHA	1700	1800	1.00	1662.0m	Laid down NM flex joint and Geopilot assembly.
IH	TP (OTH)	TI	1800	2100	3.00	1662.0m	Picked up 244mm (9.625") Sperry 6/7 lobe motor assembly, DS43 PDC bit and set motor bend at 1.15deg. RIH and took 2.25 MT (5 klb) weight at 89m (bit at wellhead), made up TDS, compensated and re-orientated. Ran into 98mRT (bit at casing swedge) - unable to progress/make connection, string standing up intermittently.
IH	TP (OTH)	TI	2100	2300	2.00	1662.0m	POOH and made up 1 x 203mm (8") additional drill collar and ran in to 89mRT MD. RIH and re-orientated w/ TDS in attempt to reduce drag at 98 mRT to 116mRT MD. Constant drag was experienced with the drillstring heaving up to 1.5 metre on the compensator when not running in hole.
IH	TP (OTH)	HBHA	2300	2400	1.00	1662.0m	POOH, laid out PDC bit, made up HC MXCS03 TCI bit and RIH with assembly.

**Operations For Period 0000 Hrs to 0600 Hrs on 26 May 2005**

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
IH	TP (OTH)	HBHA	0000	0100	1.00	1662.0m	RIH with motor assembly and TCI bit, re-orientated w/ TDS at in attempt to reduce drag at 89m and 98m. RIH to 116mRT and took weight with 1.5 metre heave on the compensator.  Attempted to break out TDS - string moved up in slips on breaking out connection, chasing TDS.
IH	TP (OTH)	TI	0100	0500	4.00	1662.0m	POOH with motor assembly, TCI bit and laid out 292mm (11.5") string stabiliser. RIH to 138mRT MD whilst re-orientating to reduce drag with link tilt/pipe handler at 89mRT, 98mRT and 117mRT. At 138mRT, 1-2 metre string heave on compensator prevented

Phse	Clis (RC)	Op	From	To	Hrs	Depth	Activity Description
IH	TP (OTH)	TO	0500	0600	1.00	1662.0m	making connection. Commenced POOH with TCI bit/ motor assembly. Inspected tools, no indication of wear on NBS or BHA.

### WBM Data

Mud Type: KCL/IDCAP-D/Polymer	API FL: 3cm³/30m	Cl: 46000	Solids: 11	Viscosity: 0sec/L	0.018Pa/s
Sample-From: Suction	Filter-Cake: 1mm	K+C*1000: 8%	H2O: 89%	PV: 0.163MPa	YP: 0.053
Time: 08:00	HTHP-FL: 0cm³/30m	Hard/Ca: 1000	Oil: 0%	Gels 10s: 0.172	Gels 10m: 10
Weight: 1.27sg	HTHP-Cake: 0mm	MBT: 12.5	Sand: trace	Fann 003: 12	Fann 006: 33
Temp: 0C°		PM: 0	pH: 11.8	Fann 100: 43	Fann 200: 52
		PF: 0.45	PHPA: 0ppb	Fann 300: 70	Fann 600: 70
Comment IDCAP-D = 3 ppb					

### Bit # 7

				Wear	I	O1	D	L	B	G	O2	R
Size ("):	311mm	IADC#	M223	<b>Nozzles</b>		<b>Drilled over last 24 hrs</b>			<b>Calculated over Bit Run</b>			
Mfr:	SMITH	WOB(avg)	0mt	No.	Size	Progress	0m	Cum. Progress	0m			
Type:	PDC	RPM(avg)	0	7	20/32nd"	On Bottom Hrs	0h	Cum. On Btm Hrs	0h			
Serial No.:	JT6901	F.Rate	0lpm			IADC Drill Hrs	0h	Cum IADC Drill Hrs	0h			
Bit Model	MA89PX	SPP	0kPa			Total Revs	0	Cum Total Revs	0			
Depth In	1662.0m	TFA	2.148			ROP(avg)	N/A	ROP(avg)	0.00 m/hr			
Depth Out	1662.0m											
Run Comment		BHA POH after hanging up in 340 mm (13 3/8") casing.										
Bitwear Comment		Bit not run.										

### Bit # 8

				Wear	I	O1	D	L	B	G	O2	R
Size ("):	311mm	IADC#		<b>Nozzles</b>		<b>Drilled over last 24 hrs</b>			<b>Calculated over Bit Run</b>			
Mfr:	Hughes Christensen	WOB(avg)	0.14mt	No.	Size	Progress	64.0m	Cum. Progress	128.0m			
Type:	Rock	RPM(avg)	75			On Bottom Hrs	3.90h	Cum. On Btm Hrs	7.80h			
Serial No.:	5031197	F.Rate	3218lpm			IADC Drill Hrs	0h	Cum IADC Drill Hrs	0h			
Bit Model	MXCS03	SPP	15513kPa			Total Revs	0	Cum Total Revs	0			
Depth In	1176.0m	TFA	0.000			ROP(avg)	16.41 m/hr	ROP(avg)	16.41 m/hr			
Depth Out	0m											
Run Comment		TOC 1176m										

### BHA # 9

Weight(Wet)	1.09mt	Length	165.3m	Torque(max)	0Nm	D.C. (1) Ann Velocity
Wt Below Jar(Wet)	1.36mt	String	0mt	Torque(Off.Btm)	0Nm	D.C. (2) Ann Velocity
		Pick-Up	0mt	Torque(On.Btm)	0Nm	H.W.D.P. Ann Velocity
		Slack-Off	0mt			D.P. Ann Velocity
BHA Run Description		311 mm (12 1/4") rock bit, stb sleeve, 244 mm (9 5/8") Geopilot, 203 mm (8") NM Flex Pony, Sperry FEWD/MWD, 203 mm (8") Float Sub, X/O, 9 x 127 mm (5") HWDP, 165 mm (6.5") Jars, 9 x 127 mm (5") HWDP				

Equipment	Length	OD	ID	Serial #	Comment
Bit	0.34m	311mm	0mm	5031197	Rock bit
Near Bit Stabiliser	0.46m	311mm	76mm	10625807	Stabiliser sleeve
Geopilot Steerable Tool	6.62m	245mm	0mm	GP1225 TLO62	
NM Flex Pony	2.80m	203mm	0mm	CP773036	
FEWD Tools	14.32m	203mm	0mm		FEWD - WRG8 DM Sub - 128402 Pulser - 10645028
Float Sub	1.05m	203mm	0mm	49079	Ported Float
X/O	1.09m	203mm	0mm	SANTOS	
HWDP	82.69m	162mm	0mm		
Jar	9.87m	165mm	73mm	MAH 00160	
5in HWDP	46.07m	161mm	0mm		

Bulk Stocks						Personnel On Board	
Name	Unit	In	Used	Adjust	Balance	Company	Pax
Fuel	m3	0	22.6	0	441.3	Santos	4
Drill Water	m3	0	101.7	0	138.0	DOGC	49
Potable Water	m3	30	25	0	205.0	ESS	8
Gel	sx	0	0	0	868.0	Dowell	2
Cement	sx	0	29	0	1,918.0	MI	2
Barite	sx	0	209	0	1,280.0	Geoservices	6
KCl Brine	bbl	0	0	0	0.0	Fugro	3
						Sperry-Sun	5
						Cameron	3
						Expro	3
						Weatherford	3
<b>Total</b>							<b>88</b>

HSE Summary			
Events	Date of Last	Days Since	Remarks
Abandon Drill	22 May 2005	3 Days	Abandon Drill
BOP Test	12 May 2005	13 Days	BOP Test
Environmental Incident	02 May 2005	23 Days	None reported since commencement of campaign.
Fire Drill	22 May 2005	3 Days	Fire Drill
First Aid	04 May 2005	21 Days	Person struck on nose with metal bar
Lost Time Incident	02 May 2005	23 Days	None reported since commencement of campaign.
Man Overboard Drill	02 May 2005	23 Days	None undertaken since commencement of campaign.
Near Miss	02 May 2005	23 Days	None reported since commencement of campaign.
Safety Meeting	22 May 2005	3 Days	Weekly Safety Meeting
Stop Cards	25 May 2005	0 Days	4 Stop Cards

Marine									
Weather check on 25 May 2005 at 2400							Rig Support		
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (mt)
14.8km	46km/h	225deg	1027.00bar	16.0C°	1.0m	225deg	2m/sec	1	10.30
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather Comments		2	8.48
1.0deg	1.0deg	0.50m	3.0m	225deg	2m/sec			3	6.89
Rig Dir.	Ris. Tension	VDL	Comments					4	7.48
249.0deg	12.25mt	214.19mt						5	8.80
								6	9.98
								7	9.89
								8	11.02

Boats	Arrived (date/time)	Departed (date/time)	Status	Bulks		
Far Grip			Ocean Patriot	Item	Unit	Quantity
				Fuel	M3	509
				Drill Water	M3	689
				Potable Water	M3	550
				Barite	MT	37
				Gel	MT	42.3
				Cement	MT	0
KCl Brine	bbf	0				
Pacific Wrangler		25 May 05 18:00	Portland	Item	Unit	Quantity
				Fuel	M3	287.9
				Drill Water	M3	303
				Potable Water	M3	301
				Barite	MT	0
				Gel	MT	0
				Cement	MT	0
KCl Brine	bbf	2000				
<b>Helicopter Movement</b>						
Flight #	Time	Destination	Comment			Pax
1	10:42	Ocean Patriot				6
1	15:07	Essendon				7

<b>From : Chris Wise / Jeff Thomson</b>						
<b>OIM : Sean De Freitas</b>						
<b>Well Data</b>						
Country	Australia	M. Depth	1146.0m	Cur. Hole Size	311mm	AFE Cost
Field	Casino	TVD	1146.0m	Casing OD	340mm	AFE No. 5746022
Drill Co.	DOGC	Progress	128.0m	Shoe TVD	727.9m	Daily Cost
Rig	Ocean Patriot	Days from spud	24.77	F.I.T. / L.O.T.	0sg / 2.14sg	Cum Cost
Wtr Dpth(LAT)	70.8m	Days on well	5.60			Planned TD 2642.0m
RT-ASL(LAT)	22.0m	Current Op @ 0600	Slide drilling at 1155mRT MD on Casino-4DW2			
RT-ML	92.8m	Planned Op	POOH to run Geopilot rotary steerable assembly and drill Casino-4DW2 311mm (12-1/4") hole section.			

<b>Summary of Period 0000 to 2400 Hrs</b>						
RIH with 244mm (9.625") steerable motor assembly and TCI bit to 116mRT. POOH due to excess drag/string heave, removed string stabiliser from assembly and RIH to 138mRT, POOH due to excess drag/string heave. Changed motor stab. sleeve to 305mm (12"). Added 2 extra 8" drill collars, RIH to 160mRT. POOH, changed bit to DS43 PDC sidetrack bit, RIH to 1050mRT. Reamed down to TOC at 1078.6mRT. Hard cement at 1082mRT. Drilled in rotary mode to 1145mRT. Slide drilled and sidetracked hole.						

<b>Operations For Period 0000 Hrs to 2400 Hrs on 26 May 2005</b>							
Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
IH	TP (OTH)	HBHA	0000	0100	1.00	1662.0m	WOC - RIH with motor assembly and TCI bit. Assembly taking weight with 1.5 metre heave on the compensator and 4-5 klb drag. Attempt to break out TDS - string moved up in slips on breaking out connection, chasing TDS.
IH	TP (OTH)	TI	0100	0530	4.50	1662.0m	WOC - POOH with motor assembly and TCI bit and laid out 11.5" string stabiliser. RIH to 138mRT MD. At 138mRT, 1-2 metre string heave on compensator prevented making connection. Attached cement hose to string and circulated at 150 gpm through motor to re-orientate bit while moving pipe. No improvement.
IH	TP (OTH)	TO	0530	0600	0.50	1662.0m	WOC - Commenced POOH with TCI bit/ motor assembly. Inspected tools, no indication of wear on NBS or BHA.
IH	TP (OTH)	CMD	0600	0730	1.50	1662.0m	Boosted riser and conditioned cement contaminated surface mud system
IH	TP (OTH)	HBHA	0730	1200	4.50	1662.0m	Changed out 244mm (9.625") motor sleeve stabiliser to 305mm (12") and picked up 2 extra 203mm (8") drill collars. Made up 311mm TCI bit, RIH to 163mRT MD without problems, POOH.
IH	TP (OTH)	HBHA	1200	1300	1.00	1662.0m	Broke out TCI bit and made up DS43 PDC sidetrack bit to assembly. Conducted surface download to MWD tool.
IH	TP (OTH)	TI	1300	1500	2.00	1662.0m	RIH with 311mm (12.25") sidetrack motor assembly to 52mRT, shallow tested MWD with 850 gpm.
IH	TP (OTH)	TI	1500	1730	2.50	1662.0m	RIH with sidetrack assembly to 1040mRT MD, Experienced approximately 4.5t (10 klb) drag with BHA entering 344mm (13.375") casing.
IH	TP (OTH)	DC	1730	1900	1.50	1662.0m	Recorded slow circulation rates, RIH to 1068m, washed/reamed down to TOC at 1078.6mRT MD. Reamed/washed to hard cement at 1082mRt MD with 5klb WOB.
IH	TP (OTH)	DC	1900	2330	4.50	1662.0m	Drilled cement from 1082mRt MD with increasing returns of formation to 1145mRT MD. 900 GPM, 90 surface RPM, 5-10, 20-60 m/hr  15% formation @ 1096m 60% formation @ 1105m 80% - 90% formation @ 1122 - 1140mRT
IH	TP (OTH)	ST	2330	2400	0.50	1662.0m	Slide drilled from 1145mRT - 1146mRT. Well sidetracked to Casino-4DW2 at 0000hrs 27th May 05 at 1146mRT MD.  850 GPM 112 RPM (downhole) 5-30klb WOB

<b>WBM Data</b>						
Mud Type: KCL/IDCAP-D/Polymer	API FL: 3cm <sup>3</sup> /30m	Cl: 45000	Solids: 12	Viscosity: 0sec/L		
Sample-From: Suction	Filter-Cake: 1mm	K+C*1000: 8%	H2O: 88%	PV: 0.019Pa/s		
Time: 08:00	HTHP-FL: 0cm <sup>3</sup> /30m	Hard/Ca: 800	Oil: 0%	YP: 0.163MPa		
Weight: 1.27sg	HTHP-Cake: 0mm	MBT: 10	Sand: trace	Gels 10s: 0.053		
Temp: 0C°		PM: 1.7	pH: 10.1	Gels 10m: 0.172		
		PF: 0.3	PHPA: Oppb	Fann 003: 10		
				Fann 006: 12		
				Fann 100: 34		
				Fann 200: 43		
				Fann 300: 53		
				Fann 600: 72		
Comment	IDCAP-D = 3 ppb					

Bit # 7				Wear	I	O1	D	L	B	G	O2	R	
Size ("):	311mm	IADC#	M223	<b>Nozzles</b>		<b>Drilled over last 24 hrs</b>			<b>Calculated over Bit Run</b>				
Mfr:	SMITH	WOB(avg)	0mt	No.	Size	Progress	0m	Cum. Progress					0m
Type:	PDC	RPM(avg)	0	7	20/32nd"	On Bottom Hrs	0h	Cum. On Btm Hrs					0h
Serial No.:	JT6901	F.Rate	0lpm			IADC Drill Hrs	0h	Cum IADC Drill Hrs					0h
Bit Model	MA89PX	SPP	0kPa			Total Revs	0	Cum Total Revs					0
Depth In	1662.0m	TFA	2.148			ROP(avg)	N/A	ROP(avg)					0.00 m/hr
Depth Out	1662.0m												
Run Comment	BHA POH after hanging up in 340 mm (13 3/8") casing.												
Bitwear Comment	Bit not run.												

Bit # 8				Wear	I	O1	D	L	B	G	O2	R	
Size ("):	311mm	IADC#		<b>Nozzles</b>		<b>Drilled over last 24 hrs</b>			<b>Calculated over Bit Run</b>				
Mfr:	Hughes Christensen	WOB(avg)	0.14mt	No.	Size	Progress	64.0m	Cum. Progress					192.0m
Type:	Rock	RPM(avg)	75			On Bottom Hrs	3.90h	Cum. On Btm Hrs					11.70h
Serial No.:	5031197	F.Rate	3218lpm			IADC Drill Hrs	0h	Cum IADC Drill Hrs					0h
Bit Model	MXCS03	SPP	15513kPa			Total Revs	0	Cum Total Revs					0
Depth In	1176.0m	TFA	0.000			ROP(avg)	16.41 m/hr	ROP(avg)					16.41 m/hr
Depth Out	0m												
Run Comment	TOC 1176m												

Bit # 9				Wear	I	O1	D	L	B	G	O2	R	
Size ("):	311mm	IADC#	S132	<b>Nozzles</b>		<b>Drilled over last 24 hrs</b>			<b>Calculated over Bit Run</b>				
Mfr:	HYCALOG	WOB(avg)	0mt	No.	Size	Progress	64.0m	Cum. Progress					64.0m
Type:	PDC	RPM(avg)	70			On Bottom Hrs	3.40h	Cum. On Btm Hrs					3.40h
Serial No.:	209747	F.Rate	3218lpm			IADC Drill Hrs	5.60h	Cum IADC Drill Hrs					5.60h
Bit Model	DS43ST	SPP	17926kPa			Total Revs	0	Cum Total Revs					0
Depth In	1078.6m	TFA	0.000			ROP(avg)	18.82 m/hr	ROP(avg)					18.82 m/hr
Depth Out	0m												
Run Comment	Top of cement at 1078.6m												

BHA # 9				Wear	I	O1	D	L	B	G	O2	R
Weight(Wet)	1.09mt	Length	165.3m	Torque(max)			0Nm	D.C. (1) Ann Velocity				
Wt Below Jar(Wet)	1.36mt	String	0mt	Torque(Off.Btm)			0Nm	D.C. (2) Ann Velocity				
		Pick-Up	0mt	Torque(On.Btm)			0Nm	H.W.D.P. Ann Velocity				
		Slack-Off	0mt					D.P. Ann Velocity				

BHA Run Description 311 mm (12 1/4") rock bit, stb sleeve, 244 mm (9 5/8") Geopilot, 203 mm (8") NM Flex Pony, Sperry FEWD/MWD, 203 mm (8") Float Sub, X/O, 9 x 127 mm (5") HWDP, 165 mm (6.5") Jars, 9 x 127 mm (5") HWDP

Equipment	Length	OD	ID	Serial #	Comment
Bit	0.34m	311mm	0mm	5031197	Rock bit
Near Bit Stabiliser	0.46m	311mm	76mm	10625807	Stabiliser sleeve
Geopilot Steerable Tool	6.62m	245mm	0mm	GP1225 TLO62	
NM Flex Pony	2.80m	203mm	0mm	CP773036	
FEWD Tools	14.32m	203mm	0mm		FEWD - WRG8 DM Sub - 128402 Pulser - 10645028
Float Sub	1.05m	203mm	0mm	49079	Ported Float
X/O	1.09m	203mm	0mm	SANTOS	
HWDP	82.69m	162mm	0mm		
Jar	9.87m	165mm	73mm	MAH 00160	
5in HWDP	46.07m	161mm	0mm		

BHA # 10						
Weight(Wet)	1.81mt	Length	247.4m	Torque(max)	0Nm	D.C. (1) Ann Velocity
Wt Below Jar(Wet)	2.27mt	String	0mt	Torque(Off.Btm)	0Nm	D.C. (2) Ann Velocity
		Pick-Up	0mt	Torque(On.Btm)	0Nm	H.W.D.P. Ann Velocity
		Slack-Off	0mt			D.P. Ann Velocity

BHA Run Description 311 mm (12 1/4") PDC sidetrack bit, 244mm motor, Geopilot, 241 mm (9.5") Float sub, cont sub, Sperry FEWD/MWD, 203 mm (8") Float Sub, X/O, 9 x 127 mm (5") HWDP, 165 mm (6.5") Jars, 9 x 127 mm (5") HWDP

Equipment	Length	OD	ID	Serial #	Comment
Bit	0.17m	311mm	0mm	5031197	DS43 PDC sidetrack bit
9.625in Motor	8.56m	311mm	156mm	963116	Sperry 6/7 lobe mud motor
Float Sub	1.05m	241mm	76mm	A544	
Contingency Sub	1.22m	203mm	0mm	10659402	
FEWD Tools	14.32m	203mm	0mm		FEWD - WRG8 DM Sub - 128402 Pulser - 10645028
Drill Collar	26.59m	203mm	0mm		
X/O	1.09m	203mm	0mm	SANTOS	
HWDP	138.37m	162mm	0mm		
Jar	9.87m	165mm	73mm	MAH 00160	
5in HWDP	46.12m	161mm	0mm		

Bulk Stocks						Personnel On Board	
Name	Unit	In	Used	Adjust	Balance	Company	Pax
Fuel	m3	0	11.1	0	430.2	Santos	4
Drill Water	m3	0	12.1	0	125.9	DOGC	48
Potable Water	m3	35	36	0	204.0	ESS	8
Gel	sx	0	0	0	868.0	Dowell	2
Cement	sx	0	0	0	1,918.0	MI	2
Barite	sx	0	0	0	1,280.0	Geoservices	6
KCl Brine	bbl	0	0	0	0.0	Fugro	3
						Sperry-Sun	5
						Cameron	3
						Expro	5
						Weatherford	3
Total							89

HSE Summary			
Events	Date of Last	Days Since	Remarks
Abandon Drill	22 May 2005	4 Days	Abandon Drill
BOP Test	12 May 2005	14 Days	BOP Test
Environmental Incident	02 May 2005	24 Days	None reported since commencement of campaign.
Fire Drill	22 May 2005	4 Days	Fire Drill
First Aid	04 May 2005	22 Days	Person struck on nose with metal bar
Lost Time Incident	02 May 2005	24 Days	None reported since commencement of campaign.
Man Overboard Drill	02 May 2005	24 Days	None undertaken since commencement of campaign.
Near Miss	02 May 2005	24 Days	None reported since commencement of campaign.
Safety Meeting	22 May 2005	4 Days	Weekly Safety Meeting
Stop Cards	25 May 2005	1 Day	3 Stop Cards

Marine										
Weather check on 26 May 2005 at 2400							Rig Support			
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (mt)	
7.4km	56km/h	247deg	1021.00bar	16.0C°	2.5m	247deg	2m/sec	1	10.89	
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather Comments				
1.0deg	1.8deg	1.80m	3.0m	247deg	2m/sec					
Rig Dir.	Ris. Tension	VDL	Comments							
249.0deg	12.25mt	210.60mt								
								2	9.12	
								3	7.21	
								4	7.39	
								5	8.21	
								6	9.30	
								7	9.71	
								8	11.11	

Boats	Arrived (date/time)	Departed (date/time)	Status	Bulks		
Far Grip			Ocean Patriot	Item	Unit	Quantity
				Fuel	M3	493
				Drill Water	M3	689
				Potable Water	M3	538
				Barite	MT	37
				Gel	MT	42.3
				Cement	MT	0
KCl Brine	bbf	0				
Pacific Wrangler		25 May 05 18:00	Portland	Item	Unit	Quantity
				Fuel	M3	0
				Drill Water	M3	303
				Potable Water	M3	301
				Barite	MT	0
				Gel	MT	0
				Cement	MT	0
KCl Brine	bbf	2000				
Helicopter Movement						
Flight #	Time	Destination	Comment			Pax
1	10:14	Ocean Patriot				12
1	10:27	Essendon				11



<b>From : Chris Wise Jeff Thomson</b>						
<b>OIM : Sean De Freitas</b>						
<b>Well Data</b>						
Country	Australia	M. Depth	1182.0m	Cur. Hole Size	311mm	AFE Cost
Field	Casino	TVD	1182.0m	Casing OD	340mm	AFE No. 5746022
Drill Co.	DOGC	Progress	36.0m	Shoe TVD	727.9m	Daily Cost
Rig	Ocean Patriot	Days from spud	25.77	F.I.T. / L.O.T.	0sg / 2.14sg	Cum Cost
Wtr Dpth(LAT)	70.8m	Days on well	1.00			Planned TD 2642.0m
RT-ASL(LAT)	22.0m	Current Op @ 0600	Drilling 311mm (12.25") hole at 1226mRT.			
RT-ML	92.8m	Planned Op	Continue to slide/rotate with motor assembly in accordance with Casino-4DW2 wellpath rev 6.			

<b>Summary of Period 0000 to 2400 Hrs</b>						
Casino-4DW2 commenced at 0000hrs 27 May 05. Proceeded to slide drill monitoring inclination / azimuth to 1157mRT. POOH due to low ROP, made up TCI bit, added string stab, RIH to 344mm shoe, slip and cut drilling line, RIH to bottom, drilled in slide / rotary mode from 1157mRT MD to 1182mRT MD.						

<b>Operations For Period 0000 Hrs to 2400 Hrs on 27 May 2005</b>							
Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
IH	TP (OTH)	ST	0000	0730	7.50	1157.0m	Sidetracked to Casino-4DW2 at 0000 hrs 27 May 05
IH	TP (OTH)	TUC	0730	1100	3.50	1157.0m	Slide drilled with motor assembly from 1146mRT - 1157mRT MD 850 GPM, 5-32 klb WOB, 0-5 m/hr. Very low ROP while drilling hard stringer 1152mRT - 1154.9mRT MD. Qtz and pyrite noted in samples.
IH	TP (OTH)	HBHA	1100	1300	2.00	1157.0m	POOH, racked back BHA, laid out DS43ST sidetrack PDC bit, downloaded Sperry Sun MWD tool at surface.
IH	TP (OTH)	TI	1300	1500	2.00	1157.0m	Made up Security FXL12D TCI bit. checked motor alignment, picked up 292mm (11.5") string stabiliser, RIH w/ BHA and shallow tested MWD w/ 3300 LPM (850 gpm).
IH	TP (OTH)	TOT	1500	1600	1.00	1157.0m	RIH, worked through wellhead and casing swedge. Experienced up to 20klb drag as BHA entered 344mm (13.375") casing.
IH	TP (OTH)	SLK	1600	1830	2.50	1157.0m	RIH with 311mm (12-1/4") assembly to 708m.
IH	TP (OTH)	TI	1830	2000	1.50	1157.0m	Held pre job safety meeting, hung off blocks and slipped and cut drilling line. Difficulties experienced with hang-off line due to weather conditions.
IH	TP (OTH)	DM	2000	2215	2.25	1168.0m	Continued RIH to 1157mRT MD
IH	TP (OTH)	DA	2215	2330	1.25	1177.8m	Slide drilled from 1157mRT - 1168mRT MD. Very low ROP drilling stringer at 1167mRT.
IH	TP (OTH)	DM	2330	2400	0.50	1182.0m	Drilled in rotary mode from 1168mRT - 1177.8mRT. Stringer drilled at 3-8 m/hr.
IH	TP (OTH)	DM	2330	2400	0.50	1182.0m	Slide drilled from 1177.8mRT - 1182mRT at 3-5 m/hr. 850 GPM, 110 bit RPM, 10-15 klb WOB

<b>Operations For Period 0000 Hrs to 0600 Hrs on 28 May 2005</b>							
Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
IH	TP (OTH)	DM	0000	0200	2.00	1191.0m	Drilled with motor assembly from 1182mRT - 1191m RT in slide mode
IH	TP (OTH)	DM	0200	0300	1.00	1202.0m	Drilled from 1191mRT - 1202mRT in rotary mode.
IH	TP (OTH)	DM	0300	0430	1.50	1220.0m	Drilled from 1202mRT - 1220mRT in slide mode.
IH	TP (OTH)	DM	0430	0600	1.50	1226.0m	Drilled from 1220mRT - 1226mRT in rotary mode. Conducted SCRs at 1224mRT.

<b>WBM Data</b>									
Mud Type:	KCL/IDCAP-D/Polymer	API FL:	4cm <sup>3</sup> /30m	Cl:	45000	Solids:	11	Viscosity:	0sec/L
Sample-From:	Suction	Filter-Cake:	1mm	K+C*1000:	8%	H2O:	89%	PV:	0.017Pa/s
Time:	08:30	HTHP-FL:	0cm <sup>3</sup> /30m	Hard/Ca:	920	Oil:	0%	YP:	0.201MPa
Weight:	1.26sg	HTHP-Cake:	0mm	MBT:	10	Sand:	trace	Gels 10s:	0.062
Temp:	0C°			PM:	1.4	pH:	10.8	Gels 10m:	0.091
				PF:	0.3	PHPA:	Oppb	Fann 003:	12
								Fann 006:	15
								Fann 100:	39
								Fann 200:	50
								Fann 300:	59
								Fann 600:	76
Comment	IDCAP-D = 3 ppb								

<b>Bit # 9</b>				Wear	I	O1	D	L	B	G	O2	R
					3	4	CT	C	X	I	WT	PR
Size ("):	311mm	IADC#	S132	<b>Nozzles</b>		<b>Drilled over last 24 hrs</b>			<b>Calculated over Bit Run</b>			
Mfr:	HYCALOG	WOB(avg)	0mt	No.	Size	Progress	11.0m	Cum. Progress		11.0m		
Type:	PDC	RPM(avg)	70	1	20/32nd"	On Bottom Hrs	6.90h	Cum. On Btm Hrs		6.90h		
Serial No.:	209747	F.Rate	3218lpm	3	18/32nd"	IADC Drill Hrs	7.10h	Cum IADC Drill Hrs		7.10h		
Bit Model	DS43ST	SPP	17926kPa			Total Revs	0	Cum Total Revs		0		
Depth In	1078.6m	TFA	1.052			ROP(avg)	1.59 m/hr	ROP(avg)		1.59 m/hr		
Depth Out	0m											
Run Comment	Top of cement at 1078.6m											

<b>Bit # 10</b>				Wear	I	O1	D	L	B	G	O2	R
					1	1	WT	A	E	I	NO	BHA
Size ("):	311mm	IADC#		<b>Nozzles</b>		<b>Drilled over last 24 hrs</b>			<b>Calculated over Bit Run</b>			
Mfr:	SECURITY-DBS	WOB(avg)	0.68mt	No.	Size	Progress	25.0m	Cum. Progress		25.0m		
Type:	Rock	RPM(avg)	0			On Bottom Hrs	3.40h	Cum. On Btm Hrs		3.40h		
Serial No.:	748557	F.Rate	3218lpm			IADC Drill Hrs	5.20h	Cum IADC Drill Hrs		5.20h		
Bit Model	FXL12D	SPP	17237kPa			Total Revs	0	Cum Total Revs		0		
Depth In	1157.0m	TFA	0.000			ROP(avg)	7.35 m/hr	ROP(avg)		7.35 m/hr		
Depth Out	1274.0m											
Bitwear Comment	Slight gauge reduction <1/32"											

<b>BHA # 10</b>						
Weight(Wet)	1.59mt	Length	247.4m	Torque(max)	0Nm	D.C. (1) Ann Velocity
Wt Below Jar(Wet)	2.27mt	String	0mt	Torque(Off.Btm)	0Nm	D.C. (2) Ann Velocity
		Pick-Up	0mt	Torque(On.Btm)	0Nm	H.W.D.P. Ann Velocity
		Slack-Off	0mt			D.P. Ann Velocity
BHA Run Description	311 mm (12 1/4") PDC sidetrack bit, 244mm motor, 241 mm (9.5") Float sub, cont sub, Sperry FEWD/MWD, 203 mm (8") Float Sub, X/O, 9 x 127 mm (5") HWDP, 165 mm (6.5") Jars, 9 x 127 mm (5") HWDP					
Equipment	Length	OD	ID	Serial #	Comment	
Bit	0.17m	311mm	0mm	5031197	DS43 PDC sidetrack bit	
9.625in Motor	8.56m	311mm	156mm	963116	Sperry 6/7 lobe mud motor	
Float Sub	1.05m	241mm	76mm	A544		
Contingency Sub	1.22m	203mm	0mm	10659402		
FEWD Tools	14.32m	203mm	0mm		FEWD - WRG8 DM Sub - 128402 Pulser - 10645028	
Drill Collar	26.59m	203mm	0mm			
X/O	1.09m	203mm	0mm	SANTOS		
HWDP	138.37m	162mm	0mm			
Jar	9.87m	165mm	73mm	MAH 00160		
5in HWDP	46.12m	161mm	0mm			

<b>BHA # 11</b>						
Weight(Wet)	1.59mt	Length	249.4m	Torque(max)	0Nm	D.C. (1) Ann Velocity
Wt Below Jar(Wet)	2.27mt	String	0mt	Torque(Off.Btm)	0Nm	D.C. (2) Ann Velocity
		Pick-Up	0mt	Torque(On.Btm)	0Nm	H.W.D.P. Ann Velocity
		Slack-Off	0mt			D.P. Ann Velocity
BHA Run Description	311 mm (12 1/4") TCI bit, 244mm motor, string stab, 241 mm (9.5") Float sub, cont sub, Sperry FEWD/MWD, 203 mm (8") Float Sub, X/O, 9 x 127 mm (5") HWDP, 165 mm (6.5") Jars, 9 x 127 mm (5") HWDP					

Equipment	Length	OD	ID	Serial #	Comment
Bit	0.34m	311mm	76mm	5031197	FXL12D
9.625in Motor	8.56m	311mm	156mm	963116	Sperry 6/7 lobe mud motor
Float Sub	1.05m	241mm	76mm	A544	
String Stabiliser	1.90m	203mm	76mm	7090449	
Contingency Sub	1.22m	203mm	0mm	10659402	
FEWD Tools	14.32m	203mm	0mm		FEWD - WRG8 DM Sub - 128402 Pulser - 10645028
Drill Collar	26.59m	203mm	0mm		
X/O	1.09m	203mm	0mm	SANTOS	
HWDP	138.37m	162mm	0mm		
Jar	9.87m	165mm	73mm	MAH 00160	
5in HWDP	46.12m	161mm	0mm		

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
1146.00	4.3	194.0	1146.00	-3.00	0	-3.00	0	Tie in
1148.40	4.3	194.2	1148.39	-1.02	0.23	-3.17	-0.04	MWD
1166.38	5.2	197.9	1166.31	-1.10	1.57	-4.61	-0.46	MWD

Bulk Stocks						Personnel On Board		
Name	Unit	In	Used	Adjust	Balance	Company		Pax
Fuel	m3	0	9.5	0	420.5	Santos		4
Drill Water	m3	0	40.4	0	86.5	DOGC		48
Potable Water	m3	31	36.5	0	198.7	ESS		8
Gel	sx	0	0	0	867.0	Dowell		2
Cement	sx	0	0	0	1,266.0	MI		2
Barite	sx	0	117	0	1,164.0	Geoservices		6
KCl Brine	bbl	0	0	0	0.0	Fugro		3
						Sperry-Sun		6
						Cameron		3
						Expro		5
						Weatherford		4
							Total	91

HSE Summary			
Events	Date of Last	Days Since	Remarks
Abandon Drill	22 May 2005	5 Days	Abandon Drill
BOP Test	12 May 2005	15 Days	BOP Test
Environmental Incident	02 May 2005	25 Days	None reported since commencement of campaign.
Fire Drill	22 May 2005	5 Days	Fire Drill
First Aid	04 May 2005	23 Days	Person struck on nose with metal bar
Lost Time Incident	02 May 2005	25 Days	None reported since commencement of campaign.
Man Overboard Drill	02 May 2005	25 Days	None undertaken since commencement of campaign.
Near Miss	02 May 2005	25 Days	None reported since commencement of campaign.
Safety Meeting	22 May 2005	5 Days	Weekly Safety Meeting
Stop Cards	27 May 2005	0 Days	5 Stop Cards

Marine										
Weather check on 27 May 2005 at 2400							Rig Support			
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (mt)	
18.5km	46km/h	225deg	1022.00bar	15.0C°	1.5m	225deg	2m/sec	1	10.89	
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather Comments				
1.0deg	1.5deg	3.00m	4.0m	225deg	3m/sec					
Rig Dir.	Ris. Tension	VDL	Comments							
249.0deg	12.25mt	206.38mt								
								2	8.89	
								3	6.99	
								4	7.30	
								5	8.71	
								6	9.80	
								7	10.30	
								8	11.70	

Boats	Arrived (date/time)	Departed (date/time)	Status	Bulks		
Far Grip			Ocean Patriot	Item	Unit	Quantity
				Fuel	M3	482
				Drill Water	M3	689
				Potable Water	M3	530
				Barite	MT	37
				Gel	MT	42.3
				Cement	MT	0
KCl Brine	bbf	0				
Pacific Wrangler		25 May 05 18:00	Portland	Item	Unit	Quantity
				Fuel	M3	0
				Drill Water	M3	303
				Potable Water	M3	301
				Barite	MT	0
				Gel	MT	0
				Cement	MT	0
KCl Brine	bbf	2000				

### Helicopter Movement

Flight #	Time	Destination	Comment	Pax
1	10:18	Ocean Patriot		14
1	10:32	Essendon		12

**From : Chris Wise Jeff Thomson**  
**OIM : Sean De Freitas**

**Well Data**

Country	Australia	M. Depth	1274.0m	Cur. Hole Size	311mm	AFE Cost	
Field	Casino	TVD	1272.4m	Casing OD	340mm	AFE No.	5746022
Drill Co.	DOGC	Progress	25.0m	Shoe TVD	727.9m	Daily Cost	
Rig	Ocean Patriot	Days from spud	26.77	F.I.T. / L.O.T.	0sg / 2.14sg	Cum Cost	
Wtr Dpth(LAT)	70.8m	Days on well	2.00			Planned TD	2642.0m
RT-ASL(LAT)	22.0m	Current Op @ 0600	Drill ahead and survey 311mm (12.25") hole with FEWD / Geopilot assembly.				
RT-ML	92.8m	Planned Op	Drill with 311mm (12.25") Geopilot assembly to 244mm (9.625") casing point				

**Summary of Period 0000 to 2400 Hrs**

Drilled from 1182mRT - 1274mRT with 244mm (9.625") motor assembly. POOH, made up 311mm (9.625") Geopilot rotary steerable assembly. RIH to 1186mRT, Worked and reamed through hang up points at 1186mRT, 1200mRT.

**Operations For Period 0000 Hrs to 2400 Hrs on 28 May 2005**

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
IH	TP (OTH)	DM	0000	0200	2.00	1191.0m	Drilled with motor assembly from 1182mRT - 1191m RT in slide mode
IH	TP (OTH)	DM	0200	0300	1.00	1202.0m	Drilled from 1191mRT - 1202mRT in rotary mode.
IH	TP (OTH)	DM	0300	0430	1.50	1220.0m	Drilled from 1202mRT - 1220mRT in slide mode.
IH	TP (OTH)	DM	0430	0600	1.50	1226.0m	Drilled from 1220mRT - 1226mRT in rotary mode. Conducted SCRs at 1224mRT.
IH	TP (OTH)	DM	0600	1030	4.50	1274.0m	Continued drilling in slide/rotary mode from 1182mRT - 1274mRT.
IH	TP (OTH)	CHC	1030	1130	1.00	1274.0m	Circulated bottoms up at 3400lpm (900 gpm).
IH	TP (OTH)	TO	1130	1430	3.00	1274.0m	POOH 127mm (5") DP
IH	TP (OTH)	TO	1430	1630	2.00	1274.0m	POOH and rack back BHA. Downloaded MWD while laying out 244mm (9.625") motor and FLX12D bit.
IH	TP (OTH)	HBHA	1630	2030	4.00	1274.0m	Picked up 311mm (12.25") Security FS2663 bit, 244mm (9.625") Geopilot, MWD. Uploaded and shallow tested MWD at 3220 LPM (850 GPM).
IH	TP (OTH)	TI	2030	2330	3.00	1274.0m	RIH slowly through wellhead with BHA due to weather conditions. Continue to RIH to 1186m.
IH	TP (OTH)	RW	2330	2400	0.50	1274.0m	Took weight at 1186mRT and 1200mRT. Connected TDS and reamed tight sections - minimal hole drag after reaming.

**Operations For Period 0000 Hrs to 0600 Hrs on 29 May 2005**

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
IH	TP (OTH)	RW	0000	0100	1.00	1274.0m	Washed / reamed from 1218mRT to bottom (1274mRT). Precautionary reamed last 2 stands.
IH	TP (OTH)	DA	0100	0600	5.00	1662.0m	(IN PROGRESS) Drilled 311mm (12.25") hole with Geopilot rotary steerable assembly from 1274mRT - 1662mRT. AVG ROP 27m/hr.

**WBM Data**

Mud Type:	KCL/IDCAP-D/Polymer	API FL:	0cm³/30m	Cl:	47000	Solids:	12	Viscosity:	0sec/L
Sample-From:	Suction	Filter-Cake:	1mm	K+C*1000:	8%	H2O:	88%	PV:	0.018Pa/s
Time:	04:30	HTHP-FL:	0cm³/30m	Hard/Ca:	1000	Oil:	0%	YP:	0.216MPa
Weight:	1.29sg	HTHP-Cake:	0mm	MBT:	10	Sand:	trace	Gels 10s:	0.072
Temp:	46.0C°			PM:	0.8	pH:	10.2	Gels 10m:	0.105
				PF:	0.2	PHPA:	Oppb	Fann 003:	11
								Fann 006:	14
								Fann 100:	42
								Fann 200:	53
								Fann 300:	63
								Fann 600:	81
Comment	IDCAP-D = 3 ppb								

<b>Bit # 10</b>				Wear	I	O1	D	L	B	G	O2	R
					1	1	WT	A	E	I	NO	BHA
Size ("):	311mm	IADC#		<b>Nozzles</b>		<b>Drilled over last 24 hrs</b>			<b>Calculated over Bit Run</b>			
Mfr:	SECURITY-DBS	WOB(avg)	0.68mt	No.	Size	Progress	25.0m	Cum. Progress		50.0m		
Type:	Rock	RPM(avg)	0			On Bottom Hrs	3.40h	Cum. On Btm Hrs		6.80h		
Serial No.:	748557	F.Rate	3218lpm			IADC Drill Hrs	5.20h	Cum IADC Drill Hrs		10.40h		
Bit Model	FXL12D	SPP	17237kPa			Total Revs	0	Cum Total Revs		0		
Depth In	1157.0m	TFA	0.000			ROP(avg)	7.35 m/hr	ROP(avg)		7.35 m/hr		
Depth Out	1274.0m											
Bitwear Comment				Slight gauge reduction <1/32"								

<b>Bit # 11</b>				Wear	I	O1	D	L	B	G	O2	R
					1	2	WT	G	X	I	NO	BHA
Size ("):	311mm	IADC#	S323	<b>Nozzles</b>		<b>Drilled over last 24 hrs</b>			<b>Calculated over Bit Run</b>			
Mfr:	SECURITY-DBS	WOB(avg)	0.54mt	No.	Size	Progress	0m	Cum. Progress		0m		
Type:	PDC	RPM(avg)	125	g	16/32nd"	On Bottom Hrs	0h	Cum. On Btm Hrs		0h		
Serial No.:	10387397	F.Rate	3672lpm			IADC Drill Hrs	0h	Cum IADC Drill Hrs		0h		
Bit Model	FS2663	SPP	20684kPa			Total Revs	0	Cum Total Revs		0		
Depth In	1274.0m	TFA	1.767			ROP(avg)	N/A	ROP(avg)		0.00 m/hr		
Depth Out	0m											
Run Comment				Integral Stabiliser Sleeve, Box up connection. Drilled from 1273 m (top cement plug) to KOP @ 1308m in Casino 4 and from 1308m - 1662m in Casino-4DW								

<b>BHA # 11</b>												
Weight(Wet)	1.59mt	Length	249.4m	Torque(max)	0Nm	D.C. (1) Ann Velocity						
Wt Below Jar(Wet)	2.27mt	String	0mt	Torque(Off.Btm)	0Nm	D.C. (2) Ann Velocity						
		Pick-Up	0mt	Torque(On.Btm)	0Nm	H.W.D.P. Ann Velocity						
		Slack-Off	0mt			D.P. Ann Velocity						
BHA Run Description		311 mm (12 1/4") TCI bit, 244mm motor, string stab, 241 mm (9.5") Float sub, cont sub, Sperry FEWD/MWD, 203 mm (8") Float Sub, X/O, 9 x 127 mm (5") HWDP, 165 mm (6.5") Jars, 9 x 127 mm (5") HWDP										

Equipment	Length	OD	ID	Serial #	Comment
Bit	0.34m	311mm	76mm	5031197	FXL12D
9.625in Motor	8.56m	311mm	156mm	963116	Sperry 6/7 lobe mud motor
Float Sub	1.05m	241mm	76mm	A544	
String Stabiliser	1.90m	203mm	76mm	7090449	
Contingency Sub	1.22m	203mm	0mm	10659402	
FEWD Tools	14.32m	203mm	0mm		FEWD - WRG8 DM Sub - 128402 Pulser - 10645028
Drill Collar	26.59m	203mm	0mm		
X/O	1.09m	203mm	0mm	SANTOS	
HWDP	138.37m	162mm	0mm		
Jar	9.87m	165mm	73mm	MAH 00160	
5in HWDP	46.12m	161mm	0mm		

<b>BHA # 12</b>												
Weight(Wet)	1.36mt	Length	220.7m	Torque(max)	0Nm	D.C. (1) Ann Velocity						
Wt Below Jar(Wet)	1.59mt	String	0mt	Torque(Off.Btm)	0Nm	D.C. (2) Ann Velocity						
		Pick-Up	0mt	Torque(On.Btm)	0Nm	H.W.D.P. Ann Velocity						
		Slack-Off	0mt			D.P. Ann Velocity						
BHA Run Description		311 mm (12 1/4") Bit, 244 mm (9 5/8") Geopilot, 203 mm (8") NM Flex Pony, Sperry FEWD/MWD, 203 mm (8") Float Sub, X/O, 15 x 127 mm (5") HWDP, 165 mm (6.5") Jars, X/O, 5 x 127 mm (5") HWDP										

Equipment	Length	OD	ID	Serial #	Comment
Bit	0.64m	311mm	0mm	10387397	SDBS FS2663 Bit # 11 (RR#6)
Geopilot Steerable Tool	6.62m	245mm	0mm	GP1225 TLOG	
NM Flex Pony	2.80m	203mm	0mm	CP773036	
FEWD Tools	14.32m	203mm	0mm		
Float Sub	1.05m	203mm	0mm	49079	FEWD - DM90072522 DM Sub - 128402 Pulser - 10645028 Ported Float
X/O	1.09m	203mm	0mm	SANTOS	
HWDP	138.37m	162mm	0mm		
Jar	9.87m	165mm	0mm	DAH03786	
5in HWDP	45.59m	161mm	0mm		

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
1196.52	7.0	204.4	1196.28	-0.99	1.93	-7.58	-1.64	MWD
1225.28	9.1	213.0	1224.75	-0.30	2.53	-11.10	-3.61	MWD
1250.01	10.2	216.2	1249.13	0.78	1.49	-14.52	-5.98	MWD
1257.46	10.2	218.8	1256.46	1.19	1.90	-15.56	-6.78	MWD

Bulk Stocks						Personnel On Board		
Name	Unit	In	Used	Adjust	Balance	Company		Pax
Fuel	m3	0	6.4	0	414.1	Santos		4
Drill Water	m3	0	27.9	0	58.6	DOGC		48
Potable Water	m3	22	24.8	0	195.9	ESS		8
Gel	sx	0	0	0	867.0	Dowell		2
Cement	sx	0	0	0	1,266.0	MI		2
Barite	sx	0	50	0	1,114.0	Geoservices		6
KCl Brine	bbl	0	0	0	0.0	Fugro		3
						Sperry-Sun		6
						Cameron		3
						Expro		5
						Weatherford		4
							Total	91

HSE Summary			
Events	Date of Last	Days Since	Remarks
Abandon Drill	22 May 2005	6 Days	Abandon Drill
BOP Test	24 May 2005	4 Days	BOP Test
Environmental Incident	02 May 2005	26 Days	None reported since commencement of campaign.
Fire Drill	22 May 2005	6 Days	Fire Drill
First Aid	04 May 2005	24 Days	Person struck on nose with metal bar
Lost Time Incident	02 May 2005	26 Days	None reported since commencement of campaign.
Man Overboard Drill	02 May 2005	26 Days	None undertaken since commencement of campaign.
Near Miss	02 May 2005	26 Days	None reported since commencement of campaign.
Safety Meeting	22 May 2005	6 Days	Weekly Safety Meeting
Stop Cards	28 May 2005	0 Days	4 Stop Cards

Marine										
Weather check on 28 May 2005 at 2400							Rig Support			
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (mt)	
18.5km	37km/h	220deg	1029.00bar	14.0C°	2.0m	220deg	2m/sec	1	10.39	
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather Comments				
2.0deg	1.5deg	2.00m	6.0m	225deg	3m/sec					
Rig Dir.	Ris. Tension	VDL	Comments							
249.0deg	12.25mt	206.64mt								
								2	8.71	
								3	6.99	
								4	6.99	
								5	8.62	
								6	10.39	
								7	10.61	
								8	9.62	

Boats	Arrived (date/time)	Departed (date/time)	Status	Bulks		
Far Grip			Ocean Patriot	<b>Item</b>	<b>Unit</b>	<b>Quantity</b>
				Fuel	M3	470
				Drill Water	M3	689
				Potable Water	M3	522
				Barite	MT	37
				Gel	MT	42.3
				Cement	MT	0
				KCl Brine	bbf	0
Pacific Wrangler		25 May 05 18:00	Portland	<b>Item</b>	<b>Unit</b>	<b>Quantity</b>
				Fuel	M3	0
				Drill Water	M3	303
				Potable Water	M3	301
				Barite	MT	0
				Gel	MT	0
				Cement	MT	0
				KCl Brine	bbf	2000



<b>From : Chris Wise Jeff Thomson</b>							
<b>OIM : Sean De Freitas</b>							
<b>Well Data</b>							
Country	Australia	M. Depth	1763.0m	Cur. Hole Size	311mm	AFE Cost	\$ 40,100,000
Field	Casino	TVD	1662.0m	Casing OD	340mm	AFE No.	5746022
Drill Co.	DOGC	Progress	489.0m	Shoe TVD	727.9m	Daily Cost	\$ 400,000
Rig	Ocean Patriot	Days from spud	27.77	F.I.T. / L.O.T.	0sg / 2.14sg	Cum Cost	\$ 13,250,000
Wtr Dpth(LAT)	70.8m	Days on well	3.00			Planned TD	2642.0m
RT-ASL(LAT)	22.0m	Current Op @ 0600 Drilling 311mm (12.25") hole at 1834mRT MD.					
RT-ML	92.8m	Planned Op Drill to 244mm (9.625") casing point, circulate hole clean, POOH, pull wear bushing, rig up and run 244mm (9.625") casing. Cement casing.					

<b>Summary of Period 0000 to 2400 Hrs</b>							
Washed and reamed from 1218RT to bottom (1274mRT), drilled 311mm (12.25") hole from 1274mRT - 1763mRT.							

<b>Operations For Period 0000 Hrs to 2400 Hrs on 29 May 2005</b>							
Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
IH	TP (OTH)	RW	0000	0100	1.00	1274.0m	Washed / reamed from 1218mRT to bottom (1274mRT). Precautionary reamed last 2 stands.
IH	TP (OTH)	DA	0100	1830	17.50	1662.0m	Drilled 311mm (12.25") hole with Geopilot rotary steerable assembly from 1274mRT - 1662mRT. AVG ROP 27m/hr.
IH	P	DA	1830	2400	5.50	1763.0m	Drilled 311mm (12.25") hole with Geopilot rotary steerable assembly from 1662mRT - 1763mRT. AVG ROP 24m/hr.

<b>Operations For Period 0000 Hrs to 0600 Hrs on 30 May 2005</b>							
Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
IH	P	DA	0000	0130	1.50	1796.0m	Drilled 311mm (12.25") hole from 1763mRT - 1796mRT MD. Average ROP 30 m/hr.
IH	TP (RE)	DA	0130	0330	2.00	1796.0m	Backed out lower IBOP while breaking TDS connection at 1796mRT MD. Laid out single, pulled and racked back one stand. Rigged up circulating hose and circulated at 650 GPM for 30 minutes while breaking out lower IBOP from single. Laid out single and re-installed lower IBOP to TDS. Broke circulation with TDS for 5 minutes, picked up single and circulated 1 stand to bottom.
IH	P	DA	0330	0600	2.50	1834.0m	Drilled 311mm (12.25") hole from 1796mRT - 1834mRT MD. Average ROP 22 m/hr.

<b>WBM Data</b>								<b>Cost Today \$ 2,570</b>							
Mud Type:	KCL/IDCAP-D/Polymer	API FL:	0cm³/30m	Cl:	47000	Solids:	13	Viscosity:	0sec/L						
Sample-From:	Suction	Filter-Cake:	1mm	K+C*1000:	8%	H2O:	87%	PV:	0.019Pa/s						
Time:	05:00	HTHP-FL:	0cm³/30m	Hard/Ca:	1280	Oil:	0%	YP:	0.225MPa						
Weight:	1.29sg	HTHP-Cake:	0mm	MBT:	10	Sand:	trace	Gels 10s:	0.072						
Temp:	51.0C°			PM:	0.3	pH:	9.5	Gels 10m:	0.110						
				PF:	0.1	PHPA:	3ppb	Fann 003:	14						
								Fann 006:	17						
								Fann 100:	45						
								Fann 200:	57						
								Fann 300:	66						
								Fann 600:	85						
Comment	IDCAP-D = 3 ppb														

<b>Bit # 11</b>				Wear	I	O1	D	L	B	G	O2	R
					1	2	WT	G	X	I	NO	BHA
Size ("):	311mm	IADC#	S323	<b>Nozzles</b>		<b>Drilled over last 24 hrs</b>			<b>Calculated over Bit Run</b>			
Mfr:	SECURITY-DBS	WOB(avg)	0.68mt	No.	Size	Progress	489.0m	Cum. Progress	489.0m			
Type:	PDC	RPM(avg)	125	9	16/32nd"	On Bottom Hrs	18.70h	Cum. On Btm Hrs	18.70h			
Serial No.:	10387397	F.Rate	3672lpm			IADC Drill Hrs	22.37h	Cum IADC Drill Hrs	22.37h			
Bit Model	FS2663	SPP	22753kPa			Total Revs	0	Cum Total Revs	0			
Depth In	1274.0m	TFA	1.767			ROP(avg)	26.15 m/hr	ROP(avg)	26.15 m/hr			
Depth Out	0m											
Run Comment	Integral Stabiliser Sleeve, Box up connection. Drilled from 1273 m (top cement plug) to KOP @ 1308m in Casino 4 and from 1308m - 1662m in Casino-4DW											

<b>BHA # 12</b>						
Weight(Wet)	1.36mt	Length	220.7m	Torque(max)	0Nm	D.C. (1) Ann Velocity
Wt Below Jar(Wet)	1.59mt	String	0mt	Torque(Off.Btm)	0Nm	D.C. (2) Ann Velocity
		Pick-Up	0mt	Torque(On.Btm)	0Nm	H.W.D.P. Ann Velocity
		Slack-Off	0mt			D.P. Ann Velocity

BHA Run Description 311 mm (12 1/4") Bit, 244 mm (9 5/8") Geopilot, 203 mm (8") NM Flex Pony, Sperry FEWD/MWD, 203 mm (8") Float Sub, X/O, 15 x 127 mm (5") HWDP, 165 mm (6.5") Jars, X/O, 5 x 127 mm (5") HWDP

Equipment	Length	OD	ID	Serial #	Comment
Bit	0.64m	311mm	0mm	10387397	SDBS FS2663 Bit # 11 (RR#6)
Geopilot Steerable Tool	6.62m	245mm	0mm	GP1225 TLOG	
NM Flex Pony	2.80m	203mm	0mm	CP773036	
FEWD Tools	14.32m	203mm	0mm		FEWD - DM90072522 DM Sub - 128402 Pulser - 10645028
Float Sub	1.05m	203mm	0mm	49079	Ported Float
X/O	1.09m	203mm	0mm	SANTOS	
HWDP	138.37m	162mm	0mm		
Jar	9.87m	165mm	0mm	DAH03786	
5in HWDP	45.59m	161mm	0mm		

Bulk Stocks						Personnel On Board	
Name	Unit	In	Used	Adjust	Balance	Company	Pax
Fuel	m3	0	12.3	0	401.8	Santos	4
Drill Water	m3	600	39.3	0	619.3	DOGC	48
Potable Water	m3	29	37.3	0	187.6	ESS	8
Gel	sx	818	0	0	1,685.0	Dowell	2
Cement	sx	0	0	0	1,266.0	MI	2
Barite	sx	545	0	0	1,659.0	Geoservices	6
KCl Brine	bbl	0	0	0	0.0	Fugro	3
						Sperry-Sun	6
						Cameron	3
						Expro	5
						Weatherford	4
<b>Total</b>							<b>91</b>

HSE Summary			
Events	Date of Last	Days Since	Remarks
Abandon Drill	29 May 2005	0 Days	Abandon Drill
BOP Test	24 May 2005	5 Days	BOP Test
Environmental Incident	02 May 2005	27 Days	None reported since commencement of campaign.
Fire Drill	29 May 2005	0 Days	Fire Drill
First Aid	04 May 2005	25 Days	Person struck on nose with metal bar
Lost Time Incident	02 May 2005	27 Days	None reported since commencement of campaign.
Man Overboard Drill	02 May 2005	27 Days	None undertaken since commencement of campaign.
Near Miss	02 May 2005	27 Days	None reported since commencement of campaign.
Safety Meeting	29 May 2005	0 Days	Weekly Safety Meeting
Stop Cards	29 May 2005	0 Days	9 Stop Cards

Marine										
Weather check on 29 May 2005 at 2400							Rig Support			
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (mt)	
18.5km	28km/h	240deg	1031.00bar	14.0C°	1.0m	240deg	1m/sec	1	10.61	
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather Comments				
1.0deg	1.0deg	1.00m	3.0m	200deg	2m/sec					
Rig Dir.	Ris. Tension	VDL	Comments							
249.0deg	12.25mt	216.41mt								
								2	8.89	
								3	6.62	
								4	6.71	
								5	8.89	
								6	9.80	
								7	10.21	
								8	8.71	

Boats	Arrived (date/time)	Departed (date/time)	Status	Bulks		
Far Grip			Ocean Patriot	<b>Item</b>	<b>Unit</b>	<b>Quantity</b>
				Fuel	M3	456
				Drill Water	M3	0
				Potable Water	M3	514
				Barite	MT	0
				Gel	MT	0
				Cement	MT	0
				KCl Brine	bbbl	0
Pacific Wrangler			Ocean Patriot	<b>Item</b>	<b>Unit</b>	<b>Quantity</b>
				Fuel	M3	466.5
				Drill Water	M3	303
				Potable Water	M3	315
				Barite	MT	0
				Gel	MT	0
				Cement	MT	86
				KCl Brine	bbbl	1000

<b>From : Chris Wise Jeff Thomson</b>						
<b>OIM : Sean De Freitas</b>						
<b>Well Data</b>						
Country	Australia	M. Depth	1998.0m	Cur. Hole Size	311mm	AFE Cost
Field	Casino	TVD	1743.0m	Casing OD	340mm	AFE No. 5746022
Drill Co.	DOGC	Progress	235.0m	Shoe TVD	727.9m	Daily Cost
Rig	Ocean Patriot	Days from spud	28.77	F.I.T. / L.O.T.	0sg / 2.14sg	Cum Cost
Wtr Dpth(LAT)	70.8m	Days on well	4.00			Planned TD 2642.0m
RT-ASL(LAT)	22.0m	Current Op @ 0600 POOH at 1278mRT MD. Backreaming tight hole.				
RT-ML	92.8m	Planned Op Wiper trip to TD @ 1998mRT MD, POOH, rig up and run 244mm (9.625") casing.				

**Summary of Period 0000 to 2400 Hrs**  
 Drilled 311mm (12.25" hole from 1763mRT - 1998mRT MD. Pumped hi vis sweep, circulated 3 x bottoms up. POOH backreaming and reworking tight stands.

**Operations For Period 0000 Hrs to 2400 Hrs on 30 May 2005**

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
IH	P	DA	0000	0130	1.50	1796.0m	Drilled 311mm (12.25") hole from 1763mRT - 1796mRT MD. Average ROP 30 m/hr.
IH	TP (RE)	DA	0130	0330	2.00	1796.0m	Backed out lower IBOP while breaking TDS connection at 1796mRT MD. Laid out single, pulled and racked back one stand. Rigged up circulating hose and circulated at 650 GPM for 30 minutes while breaking out lower IBOP from single. Laid out single and re-installed lower IBOP to TDS. Broke circulation with TDS for 5 minutes, picked up single and circulated 1 stand to bottom.
IH	P	DA	0330	1230	9.00	1970.0m	Drilled 311mm (12.25") hole from 1796mRT - 1970mRT MD. Limited ROP to <25m/hr from 1945mRT prior to drilling formation. .
IH	P	DA	1230	1330	1.00	1970.0m	Took survey at 1970mRT MD, cycled pumps several times to communicate survey to surface.
IH	P	DA	1330	1600	2.50	1998.0m	Drilled 311mm (12.25") hole from 1970mRT - 1998mRT MD. Limited ROP to <25m/hr.
IH	P	CHC	1600	1800	2.00	1998.0m	Circulated 9.5m3 (60 bbl), weighted high viscosity sweep, circulated and conditioned mud system (3 x bottoms up whilst rotating and working pipe at 150rpm).
IH	P	TO	1800	1930	1.50	1998.0m	Backreamed out 3 stands at 150RPM. Pumped 4000 strokes per stand @ 950 gpm.
IH	TP (RE)	TO	1930	2000	0.50	1998.0m	Backed out saver sub while breaking out TDS at connection. Reinstalled saver sub.
IH	P	TO	2000	2400	4.00	1998.0m	Attempted to pull w/o pumps, tight hole ~60 klb O/P max. Backreamed out from 1827mRT - 1708m RT @ 150 rpm, 950 gpm. High torque (max 15kftlbs) encountered in tight sections at 1855 - 1850mRT, 1821mRT, intermittent jarring down required to break free. Reamed back through tight sections.

**Operations For Period 0000 Hrs to 0600 Hrs on 31 May 2005**

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
IH	P	TO	0000	0345	3.75	1998.0m	Continued POOH backreaming out from 1708mRT - 1506m RT @ 150 rpm, 950 gpm. Backreamed slowly from 1585mRT - 1550mRT MD through tight section when BHA at top Skull Creek Formation (1585mRT - 1550mRT MD) with occasional high torque (15 kftlbs) and intermittent jarring down to break free. Reworked tight sections. Losses of 2m3 (12 bbl) /hr occurred while backreaming in the Paaratte Formation. Abundant cuttings observed at shakers.
IH	P	TO	0345	0400	0.25	1998.0m	Reworked stand w/o pumps or rotation after backreaming @ 1532mRT with minimal overpull. Attempted to pull w/o pumps from 1506mRT - experienced 60 klb O/P.
IH	P	TO	0400	0600	2.00	1998.0m	Continued backreaming stands from 1506mRT - 1250mRT MD @ 150rpm, 900 gpm with occasional high torque (10 kftlbs) and intermittent jarring down. Rereamed tight sections.

**WBM Data**

Mud Type: KCL/IDCAP-D/Polymer	API FL: 4cm³/30m	Cl: 46000	Solids: 14	Viscosity: 0sec/L
Sample-From: Suction	Filter-Cake: 1mm	K+C*1000: 8%	H2O: 86%	PV: 0.020Pa/s
Time: 21:00	HHTP-FL: 5cm³/30m	Hard/Ca: 1160	Oil: 0%	YP: 0.206MPa
Weight: 1.29sg	HHTP-Cake: 0mm	MBT: 12.5	Sand: trace	Gels 10s: 0.067
Temp: 50.0C°		PM: 0.15	pH: 8.5	Gels 10m: 0.129
		PF: 0.05	PHPA: 3ppb	Fann 003: 13
				Fann 006: 16
				Fann 100: 39
				Fann 200: 52
				Fann 300: 63
				Fann 600: 83
Comment	IDCAP-D = 3 ppb			

<b>Bit # 11</b>				Wear	I	O1	D	L	B	G	O2	R
					1	2	WT	G	X	I	NO	BHA
Size ("):	311mm	IADC#	S323	<b>Nozzles</b>		<b>Drilled over last 24 hrs</b>			<b>Calculated over Bit Run</b>			
Mfr:	SECURITY-DBS	WOB(avg)	0.68mt	No.	Size	Progress	235.0m	Cum. Progress		724.0m		
Type:	PDC	RPM(avg)	125	g	16/32nd"	On Bottom Hrs	10.40h	Cum. On Btm Hrs		29.10h		
Serial No.:	10387397	F.Rate	3672lpm			IADC Drill Hrs	18.38h	Cum IADC Drill Hrs		40.75h		
Bit Model	FS2663	SPP	22753kPa			Total Revs	0	Cum Total Revs		0		
Depth In	1274.0m	TFA	1.767			ROP(avg)	22.60 m/hr	ROP(avg)		24.88 m/hr		
Depth Out	1998.0m											
Run Comment	Integral Stabiliser Sleeve, Box up connection. Drilled from 1273 m (top cement plug) to KOP @ 1308m in Casino 4 and from 1308m - 1662m in Casino-4DW											

<b>BHA # 12</b>												
Weight(Wet)	1.36mt	Length	220.7m	Torque(max)	13.6Nm	D.C. (1) Ann Velocity						
Wt Below Jar(Wet)	1.59mt	String	9.98mt	Torque(Off.Btm)	6.8Nm	D.C. (2) Ann Velocity						
		Pick-Up	10.89mt	Torque(On.Btm)	9.5Nm	H.W.D.P. Ann Velocity						
		Slack-Off	9.07mt			D.P. Ann Velocity						
BHA Run Description	311 mm (12 1/4") Bit, 244 mm (9 5/8") Geopilot, 203 mm (8") NM Flex Pony, Sperry FEWD/MWD, 203 mm (8") Float Sub, X/O, 15 x 127 mm (5") HWDP, 165 mm (6.5") Jars, X/O, 5 x 127 mm (5") HWDP											
Equipment	Length	OD	ID	Serial #	Comment							
Bit	0.64m	311mm	0mm	10387397	SDBS FS2663 Bit # 11 (RR#6)							
Geopilot Steerable Tool	6.62m	245mm	0mm	GP1225 TLOG								
NM Flex Pony	2.80m	203mm	0mm	CP773036								
FEWD Tools	14.32m	203mm	0mm		FEWD - DM90072522 DM Sub - 128402 Pulser - 10645028							
Float Sub	1.05m	203mm	0mm	49079	Ported Float							
X/O	1.09m	203mm	0mm	SANTOS								
HWDP	138.37m	162mm	0mm									
Jar	9.87m	165mm	0mm	DAH03786								
5in HWDP	45.59m	161mm	0mm									

<b>Survey</b>								
MD (m)	Incl Deg (deg)	Corr. Az (deg)	TVD (m)	'V' Sect (m)	Dogleg (deg/30m)	N/S (m)	E/W (m)	Tool Type
1803.18	67.0	288.6	1680.19	282.99	3.42	121.23	-257.26	MWD
1861.05	70.0	287.8	1701.39	336.81	1.60	138.03	-308.41	MWD
1889.71	70.3	288.5	1711.13	363.75	0.77	146.43	-334.02	MWD
1918.35	71.0	288.1	1720.62	390.77	0.88	154.94	-359.67	MWD
1946.76	73.2	288.9	1729.34	417.80	2.45	163.51	-385.31	MWD
1975.04	76.3	287.9	1736.77	445.08	3.38	172.11	-411.21	MWD

<b>Bulk Stocks</b>						<b>Personnel On Board</b>		
Name	Unit	In	Used	Adjust	Balance	Company		Pax
Fuel	m3	0	16.7	0	385.1	Santos		4
Drill Water	m3	0	132.4	0	486.9	DOGC		48
Potable Water	m3	34	34	0	187.6	ESS		8
Gel	sx	0	0	0	1,685.0	Dowell		2
Cement	sx	0	0	0	1,266.0	MI		2
Barite	sx	0	90	0	1,569.0	Geoservices		6
KCl Brine	bbl	0	0	0	0.0	Fugro		3
						Sperry-Sun		6
						Cameron		3
						Expro		5
						Weatherford		4
<b>Total</b>								<b>91</b>

HSE Summary			
Events	Date of Last	Days Since	Remarks
Abandon Drill	29 May 2005	1 Day	Abandon Drill
BOP Test	24 May 2005	6 Days	BOP Test
Environmental Incident	02 May 2005	28 Days	None reported since commencement of campaign.
Fire Drill	29 May 2005	1 Day	Fire Drill
First Aid	04 May 2005	26 Days	Person struck on nose with metal bar
Lost Time Incident	02 May 2005	28 Days	None reported since commencement of campaign.
Man Overboard Drill	02 May 2005	28 Days	None undertaken since commencement of campaign.
Near Miss	02 May 2005	28 Days	None reported since commencement of campaign.
Safety Meeting	29 May 2005	1 Day	Weekly Safety Meeting
Stop Cards	26 May 2005	4 Days	8 Stop Cards

Marine										
Weather check on 30 May 2005 at 2400							Rig Support			
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (mt)	
18.5km	22km/h	001deg	1030.00bar	14.0C°	1.0m	260deg	1m/sec	1	10.80	
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather Comments				
0.8deg	0.9deg	1.00m	3.0m	225deg	2m/sec					
Rig Dir.	Ris. Tension	VDL	Comments				2	3	4	5
249.0deg	12.25mt	218.31mt					6	7	8	9.12

Boats	Arrived (date/time)	Departed (date/time)	Status	Bulks		
Far Grip			Ocean Patriot	Item	Unit	Quantity
				Fuel	M3	443
				Drill Water	M3	0
				Potable Water	M3	506
				Barite	MT	0
				Gel	MT	0
				Cement	MT	0
KCl Brine	bbf	0				
Pacific Wrangler			Ocean Patriot	Item	Unit	Quantity
				Fuel	M3	455.8
				Drill Water	M3	303
				Potable Water	M3	310
				Barite	MT	0
				Gel	MT	0
				Cement	MT	86
KCl Brine	bbf	1000				

**From : Ron King Jeff Thomson**  
**OIM : Sean De Freitas**

**Well Data**

Country	Australia	M. Depth	1998.0m	Cur. Hole Size	311mm	AFE Cost	
Field	Casino	TVD	1763.0m	Casing OD	340mm	AFE No.	5746022
Drill Co.	DOGC	Progress	0m	Shoe TVD	727.9m	Daily Cost	
Rig	Ocean Patriot	Days from spud	29.77	F.I.T. / L.O.T.	0sg / 2.14sg	Cum Cost	
Wtr Dpth(LAT)	70.8m	Days on well	5.00			Planned TD	2642.0m
RT-ASL(LAT)	22.0m	Current Op @ 0600	Running 244mm (9.625") casing at 300 mRT				
RT-ML	92.8m	Planned Op	Run and cement 244mm (9.625") casing to 1991mRT MD, run wear bushing, make up 216mm (8.5") BHA, RIH to TOC.				

**Summary of Period 0000 to 2400 Hrs**

Continued back reaming out of hole from 1708mRT to 1050mRT MD, pulled without pumps to 965mRT, circulated bottoms up, RIH to TD at 1998mRT, reaming and washing in hole from 1670mRT. Circulated hole clean and condition mud, POOH, racked back BHA, downloaded MWD.

**Operations For Period 0000 Hrs to 2400 Hrs on 31 May 2005**

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
IH	P	TO	0000	0345	3.75	1998.0m	Continued POOH backreaming out from 1708mRT - 1506m RT @ 150 rpm, 950 gpm. Backreamed slowly from 1585mRT - 1550mRT MD through tight section when BHA at 1585mRT - 1550mRT MD with occasional high torque (15 kftlbs) and jarring down to break free. Reworked tight sections. Losses of 2m3 (12 bb) /hr occurred while backreaming. Abundant cuttings observed at shakers.
IH	P	TO	0345	0400	0.25	1998.0m	Reworked stand w/o pumps or rotation after backreaming @ 1532mRT with minimal overpull. Attempted to pull w/o pumps from 1506mRT - experienced 60 klb O/P.
IH	P	TO	0400	0730	3.50	1998.0m	Continued backreaming stands from 1506mRT - 1050mRT MD @ 150rpm, 900 gpm with occasional high torque (10 kftlbs) and intermittent jarring down. Rereamed tight sections.
IH	P	TO	0730	0800	0.50	1998.0m	POOH from 1050mRT to 965mRT MD without TDS, minor drag observed.
IH	P	TO	0800	0830	0.50	1998.0m	Circulated bottoms up at 965mRT MD while boosting riser.
IH	TP (HC)	WT	0830	1000	1.50	1998.0m	RIH without pumps to 965mRT MD, string took weight at 1670mRT MD
IH	TP (HC)	WT	1000	1500	5.00	1998.0m	Washed and reamed from 1670mRT to 1998mRT MD with low rpm and flow rate.
IH	TP (HC)	WT	1500	1700	2.00	1998.0m	Circulated hole clean and conditioned mud at 1998mRT while slowly reciprocating pipe. GPM 900, RPM 150.
IH	TP (HC)	WT	1700	2130	4.50	1998.0m	POOH without pumps re-working through tight sections from 1998mRT to 1500mRT MD with minor overpull. Pulled from 1500 mRT to 965 mRT MD with occasional overpull, pumped slug at 1250 mRT MD.
IH	P	TO	2130	2400	2.50	1998.0m	POOH from 965mRT MD with minimal overpull. Racked back BHA, downloaded MWD data while breaking out bit.

**Operations For Period 0000 Hrs to 0600 Hrs on 01 Jun 2005**

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
IC	P	RRC	0000	0200	2.00	1998.0m	RIH to retrieve wear bushing on HWDP. HWDP previously drifted with 67mm (2.625"), circulated wash tool through wellhead, latched onto wear bushing and pulled same with 40klbs overpull. Set index line marker and POOH, washing through wellhead with wash tool. Wear bushing on retrievable was found to be damaged.
IC	P	RRC	0200	0230	0.50	1998.0m	Rigged up to run 244mm (9.625") casing string, picked up casing handling gear, ran FMS.
IC	P	SM	0230	0245	0.25	1998.0m	Held JSA for 244mm (9.625") casing run.
IC	P	CRN	0245	0345	1.00	1998.0m	Ran and Baker-locked shoe track joints, tested floats with sea water - ok. Centralisers installed on first three joints.
IC	P	CRN	0345	0430	0.75	1998.0m	Rigged up TAM packer and 350 ton side door elevators.
IC	P	CRN	0430	0600	1.50	1998.0m	Ran 244mm (9.625") casing to 300 mRT MD.



WBM Data									
Mud Type: KCL/IDCAP-D/Polymer	API FL:	5cm <sup>3</sup> /30m	Cl:	44000	Solids:	13	Viscosity:	0sec/L	
Sample-From: Suction	Filter-Cake:	1mm	K+C*1000:	8%	H2O:	87%	PV:	0.017Pa/s	
Time: 04:30	HTHP-FL:	0cm <sup>3</sup> /30m	Hard/Ca:	1000	Oil:	0%	YP:	0.144MPa	
Weight: 1.29sg	HTHP-Cake:	0mm	MBT:	15	Sand:	trace	Gels 10s:	0.048	
Temp: 53.0C°			PM:	0.1	pH:	8.6	Gels 10m:	0.129	
			PF:	0.05	PHPA:	3ppb	Fann 003:	10	
							Fann 006:	13	
							Fann 100:	30	
							Fann 200:	39	
							Fann 300:	47	
							Fann 600:	64	
Comment IDCAP-D = 3 ppb									

Bit # 11				Wear	I	O1	D	L	B	G	O2	R		
					1	1	WT	A	X	I	NO	TD		
Size ("):	311mm	IADC#	S323	Nozzles		Drilled over last 24 hrs			Calculated over Bit Run					
Mfr:	SECURITY-DBS	WOB(avg)	0.68mt	No.	Size	Progress			0m			Cum. Progress	724.0m	
Type:	PDC	RPM(avg)	125	9	16/32nd"	On Bottom Hrs			0h			Cum. On Btm Hrs	29.10h	
Serial No.:	10387397	F.Rate	3672lpm			IADC Drill Hrs			0h			Cum IADC Drill Hrs	40.75h	
Bit Model	FS2663	SPP	22753kPa			Total Revs			0			Cum Total Revs	0	
Depth In	1274.0m	TFA	1.767			ROP(avg)			N/A			ROP(avg)	24.88 m/hr	
Depth Out	1998.0m													
Run Comment													Integral Stabiliser Sleeve, Box up connection. Drilled from 1273 m (top cement plug) to KOP @ 1308m in Casino 4 and from 1308m - 1662m in Casino-4DW	

BHA # 12						
Weight(Wet)	1.36mt	Length	220.7m	Torque(max)	13.6Nm	D.C. (1) Ann Velocity
Wt Below Jar(Wet)	1.59mt	String	9.98mt	Torque(Off.Btm)	6.8Nm	D.C. (2) Ann Velocity
		Pick-Up	10.89mt	Torque(On.Btm)	9.5Nm	H.W.D.P. Ann Velocity
		Slack-Off	9.07mt			D.P. Ann Velocity
BHA Run Description 311 mm (12 1/4") Bit, 244 mm (9 5/8") Geopilot, 203 mm (8") NM Flex Pony, Sperry FEWD/MWD, 203 mm (8") Float Sub, X/O, 15 x 127 mm (5") HWDP, 165 mm (6.5") Jars, X/O, 5 x 127 mm (5") HWDP						
Equipment		Length	OD	ID	Serial #	Comment
Bit		0.64m	311mm	0mm	10387397	SDBS FS2663 Bit # 11 (RR#6)
Geopilot Steerable Tool		6.62m	245mm	0mm	GP1225 TLOG	
NM Flex Pony		2.80m	203mm	0mm	CP773036	
FEWD Tools		14.32m	203mm	0mm		FEWD - DM90072522 DM Sub - 128402 Pulser - 10645028
Float Sub		1.05m	203mm	0mm	49079	Ported Float
X/O		1.09m	203mm	0mm	SANTOS	
HWDP		138.37m	162mm	0mm		
Jar		9.87m	165mm	0mm	DAH03786	
5in HWDP		45.59m	161mm	0mm		

Bulk Stocks						Personnel On Board	
Name	Unit	In	Used	Adjust	Balance	Company	Pax
Fuel	m3	0	8.9	0	376.2	Santos	5
Drill Water	m3	0	84.3	0.1	402.7	DOGC	45
Potable Water	m3	30	30	-0.2	187.4	ESS	8
Gel	sx	0	0	0	1,685.0	Dowell	2
Cement	sx	0	0	0	1,266.0	MI	2
Barite	sx	0	16	2	1,555.0	Geoservices	6
KCl Brine	bbl	0	0	0	0.0	Fugro	3
						Sperry-Sun	6
						Cameron	3
						Expro	5
						Weatherford	4
Total							89



HSE Summary			
Events	Date of Last	Days Since	Remarks
Abandon Drill	29 May 2005	2 Days	Abandon Drill
BOP Test	24 May 2005	7 Days	BOP Test
Environmental Incident	02 May 2005	29 Days	None reported since commencement of campaign.
Fire Drill	29 May 2005	2 Days	Fire Drill
First Aid	04 May 2005	27 Days	Person struck on nose with metal bar
Lost Time Incident	02 May 2005	29 Days	None reported since commencement of campaign.
Man Overboard Drill	02 May 2005	29 Days	None undertaken since commencement of campaign.
Near Miss	02 May 2005	29 Days	None reported since commencement of campaign.
Safety Meeting	29 May 2005	2 Days	Weekly Safety Meeting
Stop Cards	31 May 2005	0 Days	10 Stop Cards

Marine									
Weather check on 31 May 2005 at 2400							Rig Support		
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (mt)
18.5km	30km/h	225deg	1029.00bar	13.0C°	1.0m	225deg	1m/sec	1	10.61
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather Comments			
0.7deg	0.6deg	0.60m	2.5m	202deg	2m/sec	Mainly Cloudy Conditions			
Rig Dir.	Ris. Tension	VDL	Comments						
249.0deg	12.25mt	219.78mt							
								2	8.89
								3	6.49
								4	6.99
								5	8.39
								6	11.11
								7	10.89
								8	8.80

Boats	Arrived (date/time)	Departed (date/time)	Status	Bulks		
Far Grip		18:00	Portland	Item	Unit	Quantity
				Fuel	M3	433
				Drill Water	M3	0
				Potable Water	M3	500
				Barite	MT	0
				Gel	MT	0
				Cement	MT	0
KCl Brine	bbl	0				
Pacific Wrangler			Ocean Patriot	Item	Unit	Quantity
				Fuel	M3	445.8
				Drill Water	M3	303
				Potable Water	M3	305
				Barite	MT	0
				Gel	MT	0
				Cement	MT	86
KCl Brine	bbl	1000				

Helicopter Movement				
Flight #	Time	Destination	Comment	Pax
1	12:12	Ocean Patriot		11
1	12:23	Essendon		13

**From : Ron King / Jeff Thomson**  
**OIM : Sean De Freitas**

**Well Data**

Country	Australia	M. Depth	1998.0m	Cur. Hole Size	311mm	AFE Cost	
Field	Casino	TVD	1743.0m	Casing OD	340mm	AFE No.	5746022
Drill Co.	DOGC	Progress	0m	Shoe TVD	727.9m	Daily Cost	
Rig	Ocean Patriot	Days from spud	30.77	F.I.T. / L.O.T.	0sg / 2.14sg	Cum Cost	
Wtr Dpth(LAT)	70.8m	Days on well	6.00			Planned TD	2642.0m
RT-ASL(LAT)	22.0m	Current Op @ 0600	Prepare to run 216mm (8.5") drilling assembly and preparing drill-in fluid.				
RT-ML	92.8m	Planned Op	RIH with 216mm (8.5"), drill cement, floats and shoe. Drill ahead				

**Summary of Period 0000 to 2400 Hrs**

Run 244mm (9.625") casing joints to 1900mRT, RIH with landing string to 1989mRT, land out casing, pressure test lines, cement casing, set seal assembly, POOH with landing string.

**Operations For Period 0000 Hrs to 2400 Hrs on 01 Jun 2005**

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
IC	P	RRC	0000	0200	2.00	1998.0m	RIH to retrieve wear bushing on HWDP. HWDP previously drifted with 67mm (2.625"), circulated wash tool through wellhead, latched onto wear bushing and pulled same with 40klbs overpull. Set index line marker and POOH, washing through wellhead with wash tool.
IC	P	RRC	0200	0230	0.50	1998.0m	Rigged up to run 244mm (9.625") casing string, picked up casing handling gear, installed FMS.
IC	P	SM	0230	0245	0.25	1998.0m	Held JSA for 244mm (9.625") casing run.
IC	P	CRN	0245	0345	1.00	1998.0m	Ran and Baker-locked shoe track joints, tested floats with sea water - ok. Centralisers installed on first three joints.
IC	P	CRN	0345	0430	0.75	1998.0m	Rigged up TAM packer and 350 ton side door elevators.
IC	P	CRN	0430	1330	9.00	1998.0m	Ran 244mm (9.625") casing to 1700mRT MD.
IC	P	CRN	1330	1600	2.50	1998.0m	Ran 244mm (9.625") casing to 1898.5m, intermittently washed through tight sections.
IC	P	CRN	1600	1800	2.00	1998.0m	Made up landing string assembly, casing hanger and Deep Sea Express plug basket, washed in on 127mm (5") HWDP @ 1520 lpm (400 gpm). and landed casing hanger in wellhead with 36MT (80 klb) weight down. Engaged CHSART per Cameron directions and held 18 MT (40 klb) overpull at CHSART.
IC	P	CIC	1800	1930	1.50	1998.0m	Circulated casing while holding cementing JSA, staging up flow rate to 1520 LPM, 400 gpm. No losses observed.
IC	P	CMC	1930	2200	2.50	1998.0m	Connected and pressure tested cement lines to 34500 kPa (5000 psi). Cemented 244mm (9.625") casing with shoe at 1989.5mRT MD: Preflush 10bbls drill water. Pressure tested lines to 34500 kPa (5000 psi) Bottom plug release pressure: 13800 kPa (2000 psi) Lead: 12.7 m3 (80 bbls) 1.5sg (12.5ppg) Class G Tail: 7.15 m3 (45 bbl) 1.9sg (15.8ppg) Class G Top plug release pressure: 6900 kPa (1000 psi) Displacement: 0.3 m3 (2 bbl) slurry, 1.6 m3 (10 bbls) drill water, 72 m3 (448bbbls) drilling fluid. Bumped plug to 3450 kPa (500 psi) over final circulating pressure. Tested casing to 25800 kPa (4000 psi) for 10 minutes
IC	P	CMC	2200	2230	0.50	1998.0m	Set 20 klb down weight, pressured to 34500 kPa (5000 psi) with cement unit to set seal assembly.
IC	P	CRN	2230	2300	0.50	1998.0m	Rigged up cement unit to choke line, closed pipe rams pressure tested seal assembly to 34500 kPa (5000 psi) for 10 minutes.
IC	P	CRN	2300	2400	1.00	1998.0m	Applied 4.5 MT (10 klb) overpull to CHSART, released CHSART and commenced POOH with landing string.

**Operations For Period 0000 Hrs to 0600 Hrs on 02 Jun 2005**

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
IC	P	WOC	0000	0100	1.00	1998.0m	Continued laying out cement head, landing string
IC	P	CRF	0100	0200	1.00	1998.0m	Changed out bails, cleared casing running equipment from rig floor.
IC	P	HT	0200	0300	1.00	1998.0m	Rig down Deep Sea Express cement head assembly, laid out cmt head, HWDP.
IC	P	HT	0300	0330	0.50	1998.0m	Laid out wear bushing running tool assembly.
IC	P	HBHA	0330	0600	2.50	1998.0m	Laid out 311mm (12.25") rotary steerable BHA, 3 x 203mm (8") DCs

WBM Data									
Mud Type:	Suction	API FL:	5cm³/30m	Cl:	43000	Solids:	13	Viscosity:	0sec/L
Sample-From:		Filter-Cake:	4mm	K+C*1000:	7.8%	H2O:	87%	PV:	0.017Pa/s
Time:	9:00	HTHP-FL:	0cm³/30m	Hard/Ca:	880	Oil:	0%	YP:	0.144MPa
Weight:	1.29sg	HTHP-Cake:	0mm	MBT:	15	Sand:	Trace	Gels 10s:	0.048
Temp:	49.0C°			PM:	0.1	pH:	8.5	Gels 10m:	0.115
				PF:	0.05	PHPA:	3ppb	Fann 003:	9
								Fann 006:	12
								Fann 100:	30
								Fann 200:	39
								Fann 300:	47
								Fann 600:	64

Bulk Stocks						Personnel On Board	
Name	Unit	In	Used	Adjust	Balance	Company	Pax
Fuel	m3	0	16.5	0	359.7	Santos	5
Drill Water	m3	0	24.1	0	378.6	DOGC	45
Potable Water	m3	31	28.3	0	190.1	ESS	8
Gel	sx	0	0	0	1,685.0	Dowell	2
Cement	sx	0	488	0	778.0	MI	2
Barite	sx	0	0	0	1,555.0	Geoservices	6
KCl Brine	bbl	0	0	0	0.0	Fugro	3
						Sperry-Sun	6
						Cameron	3
						Expro	5
						Weatherford	4
<b>Total</b>							<b>89</b>

HSE Summary			
Events	Date of Last	Days Since	Remarks
Abandon Drill	29 May 2005	3 Days	Abandon Drill
BOP Test	24 May 2005	8 Days	BOP Test
Environmental Incident	02 May 2005	30 Days	None reported since commencement of campaign.
Fire Drill	29 May 2005	3 Days	Fire Drill
First Aid	04 May 2005	28 Days	Person struck on nose with metal bar
Lost Time Incident	02 May 2005	30 Days	None reported since commencement of campaign.
Man Overboard Drill	02 May 2005	30 Days	None undertaken since commencement of campaign.
Near Miss	02 May 2005	30 Days	None reported since commencement of campaign.
Safety Meeting	29 May 2005	3 Days	Weekly Safety Meeting
Stop Cards	01 Jun 2005	0 Days	4 Stop Cards

Marine									
Weather check on 01 Jun 2005 at 2400							Rig Support		
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (mt)
18.5km	19km/h	202deg	1029.00bar	13.0C°	0.5m	202deg	1m/sec	1	10.61
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather Comments		2	8.89
0.5deg	0.5deg	0.20m	2.5m	202deg	2m/sec	Overcast Conditions		3	6.49
Rig Dir.	Ris. Tension	VDL	Comments					4	7.12
249.0deg	12.25mt	211.66mt						5	8.48
								6	11.02
								7	10.89
								8	8.98

Boats	Arrived (date/time)	Departed (date/time)	Status	Bulks		
Far Grip	23:00		Portland	<b>Item</b>	<b>Unit</b>	<b>Quantity</b>
				Fuel	M3	515
				Drill Water	M3	550
				Potable Water	M3	490
				Barite	MT	37
				Gel	MT	43
				Cement	MT	0
KCl Brine	dbl	0				
Pacific Wrangler			Ocean Patriot	<b>Item</b>	<b>Unit</b>	<b>Quantity</b>
				Fuel	M3	434.3
				Drill Water	M3	303
				Potable Water	M3	300
				Barite	MT	0
				Gel	MT	0
				Cement	MT	86
KCl Brine	dbl	1000				

**From : Ron King Jeff Thomson**  
**OIM : Sean De Freitas**

**Well Data**

Country	Australia	M. Depth	2001.0m	Cur. Hole Size	216mm	AFE Cost	
Field	Casino	TVD	1743.1m	Casing OD	244mm	AFE No.	5746022
Drill Co.	DOGC	Progress	3.0m	Shoe TVD	1742.0m	Daily Cost	
Rig	Ocean Patriot	Days from spud	31.77	F.I.T. / L.O.T.	Osg / Osg	Cum Cost	
Wtr Dpth(LAT)	70.8m	Days on well	7.00			Planned TD	2642.0m
RT-ASL(LAT)	22.0m	Current Op @ 0600 Drilling 216mm (8.5") hole with rotary steerable assembly at 2107mRT MD.					
RT-ML	92.8m	Planned Op Drill 216mm (8.5") hole to section TD. Circulate hole clean, POOH					

**Summary of Period 0000 to 2400 Hrs**

Laid out cementing head, landing string, wear bushing running tool & 311mm (12.25") rotary steerable assembly. Made up 216mm (8.5") Geopilot/FEWD rotary steerable BHA. Serviced TDS & RIH to 1948mRT. Reamed/washed to TOC at 1960m. Drilled cement, plugs, floats, shoe and rat-hole. Pumped vis sweep and circulated the hole to Flo-Pro mud system. Commenced drilling ahead.

**Operations For Period 0000 Hrs to 2400 Hrs on 02 Jun 2005**

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
IC	P	WOC	0000	0100	1.00	1998.0m	Continued laying out cement head, landing string
IC	P	CRF	0100	0200	1.00	1998.0m	Changed out bails, cleared casing running equipment from rig floor.
IC	P	HT	0200	0300	1.00	1998.0m	Rig down Deep Sea Express cement head assembly, laid out cmt head, HWDP.
IC	P	HT	0300	0330	0.50	1998.0m	Laid out wear bushing running tool assembly.
IC	P	HBHA	0330	0630	3.00	1998.0m	Laid out 311mm (12.25") rotary steerable BHA, 3 x 203mm (8") DCs
IC	P	HBHA	0630	0900	2.50	1998.0m	Made up 216mm (8.5") Geopilot/FEWD assembly with Security FMF 3553 PDC bit.
IC	P	HBHA	0900	1000	1.00	1998.0m	Downloaded to FEWD tool and loaded radioactive sources.
IC	P	HBHA	1000	1130	1.50	1998.0m	RIH with BHA to 140mRT MD, laid out used 165mm (6.5") jars and picked up a new replacement.
IC	P	HBHA	1130	1200	0.50	1998.0m	RIH on drillpipe to 283mRT MD, tested FEWD / Geopilot assembly at 2460 lpm (650 gpm) and 2840 lpm (750 gpm).
IC	P	HBHA	1200	1300	1.00	1998.0m	Conducted service of top drive, block and dolly rollers.
IC	P	HBHA	1300	1400	1.00	1998.0m	Made up coflex test hose to test line in derrick.
IC	P	HBHA	1400	1730	3.50	1998.0m	Continued to RIH with 216mm (8.5") rotary steerable drilling assembly to 1948mRT, washed/reamed down last stand to TOC at 1960mRT.
IC	P	HBHA	1730	2115	3.75	1998.0m	Drilled 4m of cement, DSE plug at 1964mRT and float at 1966mRT,
IC	P	DC	2115	2300	1.75	1998.0m	Drilled cement to top of float shoe. Varied drilling parameters and worked string to clear debris from drilled plugs from BHA.
IC	P	DFS	2300	2315	0.25	1998.0m	Drilled 244mm (12.25") float shoe 1989.5mRT.
IC	P	CMD	2315	2400	0.75	2001.0m	Reamed through shoe, drilled rathole cement and pumped 5 m3 (30 bbl) high vis sweep with flourescene dye, displaced hole to new Flo-Pro drilling fluid. Drilled new hole from 1998mRT - 2001mRT MD.

**Operations For Period 0000 Hrs to 0600 Hrs on 03 Jun 2005**

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
IC	P	DA	0000	0600	6.00	2001.0m	Drilled 216mm (8.5") hole with rotary steerable drilling assembly from 2001mRT to 2107mRT per directional wellplan. Conducted SCRs @ 2034mRT (Mud Density 1.26SG)

**WBM Data**

Mud Type:	KCl / IDCAP	API FL:	5cm³/30m	Cl:	0	Solids:	14	Viscosity:	0sec/L
Sample-From:	Suction	Filter-Cake:	1mm	K+C*1000:	8%	H2O:	86%	PV:	0.020Pa/s
Time:	22:00	HTHP-FL:	0cm³/30m	Hard/Ca:	0	Oil:	0%	YP:	0.163MPa
Weight:	1.28sg	HTHP-Cake:	0mm	MBT:	0	Sand:	tr	Gels 10s:	0.067
Temp:	0C°			PM:	0	pH:	8.9	Gels 10m:	0.125
				PF:	0	PHPA:	3ppb	Fann 003:	11
								Fann 006:	14
								Fann 100:	35
								Fann 200:	45
								Fann 300:	54
								Fann 600:	74

Comment Drilled cement and shoe track with old mud form previous hole section

Bit # 12				Wear	I	O1	D	L	B	G	O2 NO	R
Size ("):	216mm	IADC#	M423	<b>Nozzles</b>		<b>Drilled over last 24 hrs</b>			<b>Calculated over Bit Run</b>			
Mfr:	SECURITY-DBS	WOB(avg)	0.59mt	No.	Size	Progress		3.0m	Cum. Progress			3.0m
Type:	PDC	RPM(avg)	104	5	16/32nd"	On Bottom Hrs		0.20h	Cum. On Btm Hrs			0.20h
Serial No.:	10708926	F.Rate	2290lpm			IADC Drill Hrs		7.00h	Cum IADC Drill Hrs			7.00h
Bit Model	FMF3553	SPP	15168kPa			Total Revs		0	Cum Total Revs			0
Depth In	1998.0m	TFA	0.982			ROP(avg)		15.00 m/hr	ROP(avg)			15.00 m/hr
Depth Out	0m											
Run Comment				Wash down and tag TOC @ 1960mRT MD, drill out cement, wiper plugs, Float collar, shoe track, float shoe and circulate new mud system.								

BHA # 13						
Weight(Wet)	1.09mt	Length	140.5m	Torque(max)	10.9Nm	D.C. (1) Ann Velocity
Wt Below Jar(Wet)	0.82mt	String	9.53mt	Torque(Off.Btm)	6.8Nm	D.C. (2) Ann Velocity
		Pick-Up	9.98mt	Torque(On.Btm)	8.2Nm	H.W.D.P. Ann Velocity
		Slack-Off	9.07mt			D.P. Ann Velocity

BHA Run Description 216 mm (8.5") Bit, 171 mm (6.75") Geopilot, 171 mm (6.75") NM Pony DC, Sperry FEWD, 171 mm (6.75") Float Sub, 6 x 127 mm (5") HWDP, 165 mm (6.5") Jars, 5 x 127 mm (5") HWDP

Equipment	Length	OD	ID	Serial #	Comment
Bit	0.42m	216mm	0mm	10708926	FMF3553
Geopilot Steerable Tool	7.08m	171mm	51mm	7600-084	
NM Pony Drill Collar	2.80m	171mm	73mm	CD773684	
6.75in FEWD Tools	18.79m	171mm	49mm		FEWD - 90073263 DM Sub - 90074558 Pulser - 10599301
Float Sub	0.79m	171mm	73mm	A-263	Ported Float with Totco
5in HWDP	55.28m	127mm	76mm		1: 186-002 2: 186-017 3: 186-006 4: 186.014 5: 186-018 6: 506A-617
Jar	9.24m	165mm	70mm	DAH 01114	
5in HWDP	46.12m	127mm	76mm		1: 506A510 2: 186-025 3: 506A5980 4: 186-012 5: 186-022

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
2020.94	76.7	288.4	1747.51	489.69	0.39	186.00	-453.62	MWD
2049.61	79.0	288.5	1753.56	517.71	2.41	194.87	-480.20	MWD
2078.36	82.5	287.3	1758.19	546.07	3.93	203.58	-507.20	MWD

Bulk Stocks						Personnel On Board		
Name	Unit	In	Used	Adjust	Balance	Company		Pax
Fuel	m3	200	19.4	0	540.3	Santos		5
Drill Water	m3	0	48.2	0	330.4	DOGC		45
Potable Water	m3	31	25.4	0	195.7	ESS		8
Gel	sx	0	0	0	1,685.0	Dowell		2
Cement	sx	0	0	0	778.0	MI		2
Barite	sx	0	0	0	1,555.0	Geoservices		6
KCl Brine	bbl	0	0	0	0.0	Fugro		3
						Sperry-Sun		6
						Cameron		3
						Expro		5
						Weatherford		4
Total								89

HSE Summary			
Events	Date of Last	Days Since	Remarks
Abandon Drill	29 May 2005	4 Days	Abandon Drill
BOP Test	24 May 2005	9 Days	BOP Test
Environmental Incident	02 May 2005	31 Days	None reported since commencement of campaign.
Fire Drill	29 May 2005	4 Days	Fire Drill
First Aid	04 May 2005	29 Days	Person struck on nose with metal bar
Lost Time Incident	02 May 2005	31 Days	None reported since commencement of campaign.
Man Overboard Drill	02 May 2005	31 Days	None undertaken since commencement of campaign.
Near Miss	02 May 2005	31 Days	None reported since commencement of campaign.
Safety Meeting	29 May 2005	4 Days	Weekly Safety Meeting
Stop Cards	02 Jun 2005	0 Days	9 Stop Cards

Marine										
Weather check on 02 Jun 2005 at 2400							Rig Support			
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (mt)	
18.5km	6km/h	270deg	1029.00bar	14.0C°	0.1m	270deg	0m/sec	1	10.30	
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather Comments				
0.3deg	0.3deg	1.00m	3.0m	202deg	2m/sec	Mainly Cloudy				
Rig Dir.	Ris. Tension	VDL	Comments				2	3	4	5
249.0deg	12.25mt	212.88mt					6	7	8	

Boats	Arrived (date/time)	Departed (date/time)	Status	Bulks		
Far Grip			Portland	Item	Unit	Quantity
				Fuel	M3	302
				Drill Water	M3	550
				Potable Water	M3	482
				Barite	MT	37
				Gel	MT	43
				Cement	MT	0
KCl Brine	bbf	0				
Pacific Wrangler	23:10	02:00	Ocean Patriot	Item	Unit	Quantity
				Fuel	M3	425.5
				Drill Water	M3	448
				Potable Water	M3	315
				Barite	MT	0
				Gel	MT	0
				Cement	MT	86
KCl Brine	bbf	650				

<b>From : Ron King, Jeff Thomson</b>								
<b>OIM : Sean De Freitas</b>								
<b>Well Data</b>								
Country	Australia	M. Depth	2358.0m	Cur. Hole Size	216mm	AFE Cost		
Field	Casino	TVD	1774.9m	Casing OD	244mm	AFE No.	5746022	
Drill Co.	DOGC	Progress	357.0m	Shoe TVD	1741.0m	Daily Cost		
Rig	Ocean Patriot	Days from spud	32.77	F.I.T. / L.O.T.	0sg / 0sg	Cum Cost		
Wtr Dpth(LAT)	70.8m	Days on well	8.00			Planned TD	2642.0m	
RT-ASL(LAT)	22.0m	Current Op @ 0600					Back reamed from TD (2404 m MD) to 1990 m MD (9-5/8" shoe). Started to RIH to TD without rotating.	
RT-ML	92.8m	Planned Op					Continue to RIH to TD without rotating. Circulate hole until shakers are clean. POOH to run lower completion.	

<b>Summary of Period 0000 to 2400 Hrs</b>							
Drilled 216mm (8.5") hole from 2001m MD to 2358 m MD.							

<b>Operations For Period 0000 Hrs to 2400 Hrs on 03 Jun 2005</b>							
Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
PH	P	DA	0000	0600	6.00	2107.0m	Drilled 216 mm (8-1/2") hole with rotary steerable drilling assembly from 2001 m to 2107 m per directional plan, in Waarre A formation.
PH	P	DA	0600	2400	18.00	2358.0m	Continued to drill 216 mm (8-1/2") hole section to 2358 m MD. Repaired pump #2,3  Avg parameters (24 MPa (3500 psi), 740 gpm, 90 rpm, 8.2 MT (18 klb) WOB)  Conducted SCRs @ 2318m MD (Mud Density 1.27 sg)

<b>Operations For Period 0000 Hrs to 0600 Hrs on 04 Jun 2005</b>							
Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
PH	P	DA	0000	0330	3.50	2404.0m	Drilled 216 mm (8-1/2") hole with rotary steerable drilling assembly from 2358 m MD total depth at 2404 m MD.  Final survey @ 2394.21 m MD (1784.98 m TVD) Inc 79.83 Az 287.71
PH	P	CHC	0330	0400	0.50	2404.0m	Circulated hole at TD while preparing for trip, conducted 15 minute flow check.
PH	P	TO	0400	0600	2.00	2404.0m	Backreamed out to the shoe at 1990 m MD @ 2300 lpm (600 gpm). No hole problems experienced.

<b>General Comments</b>		
Comments	Rig Requirements	Lessons Learnt
NOPSA reviewed well testing area. Continued with welltest RU. Prepared completion equipment.		

<b>WBM Data</b>									
Mud Type:	Flo Pro	API FL:	4cm³/30m	Cl:	120000	Solids:	15	Viscosity:	0sec/L
Sample-From:	Suction	Filter-Cake:	1mm	K+C*1000:	6%	H2O:	85%	PV:	0.016Pa/s
Time:	16:00	HTHP-FL:	0cm³/30m	Hard/Ca:	280	Oil:	0%	YP:	0.168MPa
Weight:	1.27sg	HTHP-Cake:	0mm	MBT:	0	Sand:	0.25	Gels 10s:	0.062
Temp:	60.0C°			PM:	1.4	pH:	10.3	Gels 10m:	0.081
				PF:	0.1	PHPA:	Oppb	Fann 003:	12
								Fann 006:	15
								Fann 100:	35
								Fann 200:	44
								Fann 300:	51
								Fann 600:	67



Bit # 12				Wear	I	O1	D	L	B	G	O2	R
Size ("):	216mm	IADC#	M423	<b>Nozzles</b>		<b>Drilled over last 24 hrs</b>			<b>Calculated over Bit Run</b>			
Mfr:	SECURITY-DBS	WOB(avg)	0.82mt	No.	Size	Progress	357.0m	Cum. Progress		360.0m		
Type:	PDC	RPM(avg)	90	5	16/32nd"	On Bottom Hrs	19.18h	Cum. On Btm Hrs		19.38h		
Serial No.:	10708926	F.Rate	2801lpm			IADC Drill Hrs	22.75h	Cum IADC Drill Hrs		29.75h		
Bit Model	FMF3553	SPP	20684kPa			Total Revs	0	Cum Total Revs		0		
Depth In	1998.0m	TFA	0.982			ROP(avg)	18.61 m/hr	ROP(avg)		18.58 m/hr		
Depth Out												
Run Comment				Continue Drilling 216mm 8.5" hole with geopilot assembly in the Waarre A sand. Reached TD POOH								

BHA # 13						
Weight(Wet)	1.09mt	Length	140.5m	Torque(max)	25.8Nm	D.C. (1) Ann Velocity
Wt Below Jar(Wet)	0.82mt	String	9.07mt	Torque(Off.Btm)	12.9Nm	D.C. (2) Ann Velocity
		Pick-Up	11.34mt	Torque(On.Btm)	23.1Nm	H.W.D.P. Ann Velocity
		Slack-Off	7.71mt			D.P. Ann Velocity
BHA Run Description		216 mm (8.5") Bit, 171 mm (6.75") Geopilot, 171 mm (6.75") NM Pony DC, Sperry FEWD, 171 mm (6.75") Float Sub, 6 x 127 mm (5") HWDP, 165 mm (6.5") Jars, 5 x 127 mm (5") HWDP				
Equipment	Length	OD	ID	Serial #	Comment	
Bit	0.42m	216mm	0mm	10708926	FMF3553	
Geopilot Steerable Tool	7.08m	171mm	51mm	7600-084		
NM Pony Drill Collar	2.80m	171mm	73mm	CD773684		
6.75in FEWD Tools	18.79m	171mm	49mm		FEWD - 90073263 DM Sub - 90074558 Pulser - 10599301	
Float Sub	0.79m	171mm	73mm	A-263	Ported Float with Totco	
5in HWDP	55.28m	127mm	76mm		1: 186-002 2: 186-017 3: 186-006 4: 186.014 5: 186-018 6: 506A-617	
Jar	9.24m	165mm	70mm	DAH 01114		
5in HWDP	46.12m	127mm	76mm		1: 506A510 2: 186-025 3: 506A5980 4: 186-012 5: 186-022	

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
2193.21	87.8	290.6	1764.63	660.70	0.46	241.92	-615.22	MWD
2221.71	87.3	289.7	1765.85	689.17	1.10	251.73	-641.95	MWD
2250.28	85.9	289.2	1767.54	717.69	1.51	261.24	-668.84	MWD
2279.03	86.3	289.3	1769.49	746.37	0.39	270.69	-695.92	MWD
2307.85	85.4	288.4	1771.58	775.11	1.32	279.96	-723.13	MWD
2336.65	82.2	287.8	1774.70	803.73	3.35	288.86	-750.34	MWD

Bulk Stocks						Personnel On Board	
Name	Unit	In	Used	Adjust	Balance	Company	Pax
Fuel	m3	0	19.8	0	520.5	Santos	7
Drill Water	m3	0	60.2	0	270.2	DOGC	45
Potable Water	m3	32	26.5	0	201.2	ESS	8
Gel	sx	0	0	0	1,685.0	Dowell	2
Cement	sx	0	0	0	778.0	MI	2
Barite	sx	0	0	0	1,555.0	Geoservices	6
KCl Brine	bbl	0	1000	1000	0.0	Fugro	3
						Sperry-Sun	6
						Cameron	3
						Expro	7
						Weatherford	5
						Total	94

HSE Summary			
Events	Date of Last	Days Since	Remarks
Abandon Drill	29 May 2005	5 Days	Abandon Drill
BOP Test	24 May 2005	10 Days	BOP Test
Environmental Incident	02 May 2005	32 Days	None reported since commencement of campaign.
Fire Drill	29 May 2005	5 Days	Fire Drill
First Aid	04 May 2005	30 Days	Person struck on nose with metal bar
Lost Time Incident	02 May 2005	32 Days	None reported since commencement of campaign.
Man Overboard Drill	02 May 2005	32 Days	None undertaken since commencement of campaign.
Near Miss	02 May 2005	32 Days	None reported since commencement of campaign.
Safety Meeting	29 May 2005	5 Days	Weekly Safety Meeting
Stop Cards	03 Jun 2005	0 Days	8 Stop Cards

Marine									
Weather check on 03 Jun 2005 at 2400							Rig Support		
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (mt)
18.5km	9km/h	045deg	1024.00bar	13.0C°	0m	045deg	0m/sec	1	10.48
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather Comments			
0.3deg	0.3deg	0.80m	3.0m	202deg	2m/sec	Clear			
Rig Dir.	Ris. Tension	VDL	Comments					5	8.39
249.0deg	12.25mt	197.74mt						6	11.11
							7	10.70	
							8	8.80	

Boats	Arrived (date/time)	Departed (date/time)	Status	Bulks		
				Item	Unit	Quantity
Far Grip			Ocean Patriot	Fuel	M3	290
				Drill Water	M3	550
				Potable Water	M3	474
				Barite	MT	37
				Gel	MT	43
				Cement	MT	0
				KCl Brine	bbl	0
Pacific Wrangler			Ocean Patriot	Fuel	M3	414.2
				Drill Water	M3	448
				Potable Water	M3	310
				Barite	MT	0
				Gel	MT	0
				Cement	MT	86
				KCl Brine	bbl	650

Helicopter Movement				
Flight #	Time	Destination	Comment	Pax
1	10:12	Ocean Patriot		14
1	10:29	Essendon		9
2	15:20	Ocean Patriot		4
2	15:29	Essendon		4

**From : Ron King, Phil Deshon**  
**OIM : Sean De Freitas**

**Well Data**

Country	Australia	M. Depth	2404.0m	Cur. Hole Size	216mm	AFE Cost	
Field	Casino	TVD	1786.0m	Casing OD	244mm	AFE No.	5746022
Drill Co.	DOGC	Progress	46.0m	Shoe TVD	1740.8m	Daily Cost	
Rig	Ocean Patriot	Days from spud	33.77	F.I.T. / L.O.T.	Osg / Osg	Cum Cost	
Wtr Dpth(LAT)	70.8m	Days on well	9.19			Planned TD	2642.0m
RT-ASL(LAT)	22.0m	Current Op @ 0600	RIH lower completion on drill pipe in preparation to tag TD and set packer. Current depth 1370 m MD.				
RT-ML	92.8m	Planned Op	Continue RIH with sand screens and 168mm (6-5/8") tubing with packer assembly. Set packer at approx. 1690 m MD and POOH. RIH casing scraper and riser cleaning assembly.				

**Summary of Period 0000 to 2400 Hrs**

Drilled ahead from 2358m MD to TD at 2404m MD. Circulated sample up, made a wiper trip to shoe and ran in back to TD and circulated hole clean. POOH with 216 mm (8-1/2") directional tools. Rigged up and RIH lower completion string (sand screens). Ran in 31 joints of sand screens to 256 m.

**Operations For Period 0000 Hrs to 2400 Hrs on 04 Jun 2005**

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
PH	P	DA	0000	0330	3.50	2404.0m	Drilled 216 mm (8-1/2") hole with rotary steerable drilling assembly from 2358 m MD total depth at 2404 m MD.  Final survey @ 2394.21 m MD (1784.98 m TVD) Inc 79.83 Az 287.71
PH	P	CHC	0330	0400	0.50	2404.0m	Circulated hole at TD while preparing for trip, conducted 15 minute flow check.
PH	P	TO	0400	0600	2.00	2404.0m	Backreamed out to the shoe at 1990 m MD @ 2300 lpm (600 gpm). No hole problems experienced.
PH	P	TI	0600	0700	1.00	2404.0m	Flow checked and RIH to TD @ 2404 m MD.
PH	P	CHC	0700	0800	1.00	2404.0m	Circulated hole until shakers clean, boosting riser and rotating and reciprocating pipe.
PH	P	TO	0800	1300	5.00	2404.0m	POOH to 244 mm (9-5/8") casing shoe at 1990 m MD and circulated bottoms up (riser boost on) until shakers clean. Flow checked, pumped slug and POOH.
PH	P	HBHA	1300	1500	2.00	2404.0m	Unloaded radioactive sources from directional tools and laid down directional tools and geo-pilot.
CTB	P	RCM	1500	1700	2.00	2404.0m	Held JSA and picked up Halliburton Black Cat packer and drifted pup joint. Function tested 273 mm (10-3/4") pipe rams and shear rams.
CTB	P	SM	1700	1715	0.25	2404.0m	Conducted JSA prior to lower completion operations.
CTB	P	RCM	1715	1815	1.00	2404.0m	Picked up lower completion sub assembly 168 mm (6-5/8") guide shoe. Attempted to make up sintered sand screen #52 to top of guideshoe. Insufficient torque obtained before thread shouldered. Backed out screen and observed damage to thread. First thread stripped. Laid out screen #52.
CTB	P	RCM	1815	1845	0.50	2404.0m	Replaced collar on guideshoe with collar from 168 mm (6-5/8") pup joint. Picked up and made up sintered sand screen #51 to guideshoe.
CTB	P	RCM	1845	2400	5.25	2404.0m	Made up and ran 168mm (6-5/8") sand screens as per tally.
CTB	P	RIC	1930	2400	4.50	2404.0m	Continued running sand screens as per tally.

**Operations For Period 0000 Hrs to 0600 Hrs on 05 Jun 2005**

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
CTB	P	RIC	0000	0100	1.00	2404.0m	Ran final 402 m of 168 mm (6-5/8") 24# 13-Cr KS Bear sand screens.
CTB	P	RIC	0100	0400	3.00	2404.0m	Ran 27 joints of 168 mm (6-5/8") 24# 13-Cr KS Bear tubing.
CTB	P	RIC	0400	0430	0.50	2404.0m	Held JSA prior to making up Lower Completion packer. Witnessed installing 6 x 1720 kPa (250 psi) shear pins and adjusted set sleeve.
CTB	P	RIC	0430	0600	1.50	2404.0m	RIH with lower completion on 127 mm (5") drill pipe to 1370 m MD. Ran slowly through wellhead with packer. Limited run speed with packer to 15 m/min. Drifted drillpipe whilst RIH.

WBM Data									
Mud Type:	Flo Pro	API FL:	4cm³/30m	Cl:	120000	Solids:	15	Viscosity:	0sec/L
Sample-From:	Suction	Filter-Cake:	1mm	K+C*1000:	6%	H2O:	85%	PV:	0.017Pa/s
Time:	20:00	HTHP-FL:	0cm³/30m	Hard/Ca:	280	Oil:	0%	YP:	0.187MPa
Weight:	1.28sg	HTHP-Cake:	0mm	MBT:	0	Sand:	0.25	Gels 10s:	0.062
Temp:	0C°			PM:	1.4	pH:	9.7	Gels 10m:	0.081
				PF:	0.1	PHPA:	Oppb	Fann 003:	13
								Fann 006:	16
								Fann 100:	39
								Fann 200:	49
								Fann 300:	56
								Fann 600:	73

Bit # 12				Wear	I	O1	D	L	B	G	O2	R
					1	2	CT	G	X	I	NO	TD
Size ("):	216mm	IADC#	M423	Nozzles		Drilled over last 24 hrs			Calculated over Bit Run			
Mfr:	SECURITY-DBS	WOB(avg)	0.82mt	No.	Size	Progress	46.0m	Cum. Progress	406.0m			
Type:	PDC	RPM(avg)	80	5	16/32nd"	On Bottom Hrs	3.02h	Cum. On Btm Hrs	22.40h			
Serial No.:	10708926	F.Rate	2801rpm			IADC Drill Hrs	3.30h	Cum IADC Drill Hrs	33.05h			
Bit Model	FMF3553	SPP	23787kPa			Total Revs	0	Cum Total Revs	0			
Depth In	1998.0m	TFA	0.982			ROP(avg)	15.23 m/hr	ROP(avg)	18.12 m/hr			
Depth Out	2404.0m											
Run Comment	Continue Drilling 216mm 8.5" hole with geopilot assembly in the Waarre A sand. Reached TD POOH											

BHA # 13						
Weight(Wet)	1.09mt	Length	140.5m	Torque(max)	25.8Nm	D.C. (1) Ann Velocity
Wt Below Jar(Wet)	0.82mt	String	9.07mt	Torque(Off.Btm)	13.6Nm	D.C. (2) Ann Velocity
		Pick-Up	11.34mt	Torque(On.Btm)	23.1Nm	H.W.D.P. Ann Velocity
		Slack-Off	7.71mt			D.P. Ann Velocity
BHA Run Description	216 mm (8.5") Bit, 171 mm (6.75") Geopilot, 171 mm (6.75") NM Pony DC, Sperry FEWD, 171 mm (6.75") Float Sub, 6 x 127 mm (5") HWDP, 165 mm (6.5") Jars, 5 x 127 mm (5") HWDP					

Equipment	Length	OD	ID	Serial #	Comment
Bit	0.42m	216mm	0mm	10708926	FMF3553
Geopilot Steerable Tool	7.08m	171mm	51mm	7600-084	
NM Pony Drill Collar	2.80m	171mm	73mm	CD773684	
6.75in FEWD Tools	18.79m	171mm	49mm		FEWD - 90073263 DM Sub - 90074558 Pulser - 10599301
Float Sub	0.79m	171mm	73mm	A-263	Ported Float with Totco
5in HWDP	55.28m	127mm	76mm		1: 186-002 2: 186-017 3: 186-006 4: 186.014 5: 186-018 6: 506A-617
Jar	9.24m	165mm	70mm	DAH 01114	
5in HWDP	46.12m	127mm	76mm		1: 506A510 2: 186-025 3: 506A5980 4: 186-012 5: 186-022

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
2365.23	80.0	287.5	1779.12	831.95	2.32	297.43	-777.24	MWD
2394.21	79.8	287.7	1784.19	860.47	0.27	306.06	-804.44	MWD

Bulk Stocks						Personnel On Board	
Name	Unit	In	Used	Adjust	Balance	Company	Pax
Fuel	m3	0	17.5	0	503.0	Santos	7
Drill Water	m3	0	42.1	0	228.1	DOGC	45
Potable Water	m3	30	23	0	208.2	ESS	8
Gel	sx	0	0	0	1,685.0	Dowell	2
Cement	sx	0	0	0	778.0	MI	2
Barite	sx	0	0	0	1,555.0	Geoservices	2
KCl Brine	bbl	0	0	0	0.0	Fugro	3
						Sperry-Sun	6
						Cameron	3
						Expro	7
						Weatherford	5
						Total	90

HSE Summary			
Events	Date of Last	Days Since	Remarks
Abandon Drill	29 May 2005	6 Days	Abandon Drill
BOP Test	24 May 2005	11 Days	BOP Test
Environmental Incident	02 May 2005	33 Days	None reported since commencement of campaign.
Fire Drill	29 May 2005	6 Days	Fire Drill
First Aid	04 May 2005	31 Days	Person struck on nose with metal bar
Lost Time Incident	02 May 2005	33 Days	None reported since commencement of campaign.
Man Overboard Drill	02 May 2005	33 Days	None undertaken since commencement of campaign.
Near Miss	02 May 2005	33 Days	None reported since commencement of campaign.
Safety Meeting	29 May 2005	6 Days	Weekly Safety Meeting
Stop Cards	04 Jun 2005	0 Days	10 Stop Cards

Marine									
Weather check on 04 Jun 2005 at 2400							Rig Support		
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (mt)
18.5km	9km/h	315deg	1021.00bar	22.0C°	0m	315deg	0m/sec	1	10.48
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather Comments		2	8.80
0.2deg	0.2deg	0.30m	2.0m	225deg	2m/sec	Part Cloud		3	6.71
Rig Dir.	Ris. Tension	VDL	Comments				4	7.21	
249.0deg	12.25mt	216.07mt					5	8.48	
							6	11.20	
							7	10.80	
							8	8.89	

Boats	Arrived (date/time)	Departed (date/time)	Status	Bulks		
				Item	Unit	Quantity
Far Grip			Ocean Patriot	Fuel	M3	278
				Drill Water	M3	550
				Potable Water	M3	466
				Barite	MT	37
				Gel	MT	43
				Cement	MT	0
				KCl Brine	bbl	0
Pacific Wrangler		17:24	Portland	Fuel	M3	404.4
				Drill Water	M3	448
				Potable Water	M3	312
				Barite	MT	0
				Gel	MT	0
				Cement	MT	86
				KCl Brine	bbl	650

Helicopter Movement				
Flight #	Time	Destination	Comment	Pax
1	12:43	Ocean Patriot		1
1	12:53	Essendon		5

Lessons Learned				
Categories		Event Descr.	Post Event Descr.	Lesson
Short Descr.	Sand screen handling section too short	Handling neck at the top of the Scintered sand screens are only just long enough to permit the slips to engage. The elevators have to be removed to permit the dog collar to be attached. In addition the short length makes it difficult to engage the make up tongs.	Tied slip handles with rope before removing elevators. Attached dog collar immediately. Elevators kept latched for any delay in operation.	Specifcation of sand screens should include sufficient handling section length. Suggest ~2m.
Phase	Completion			
Category				
Resp. Party	Santos			
Closed/Open	Open			

**From : Ron King, Phil Deshon**  
**OIM : Sean De Freitas**

### Well Data

Country	Australia	M. Depth	2404.0m	Cur. Hole Size	216mm	AFE Cost	
Field	Casino	TVD	1786.0m	Casing OD	244mm	AFE No.	5746022
Drill Co.	DOGC	Progress	0m	Shoe TVD	1740.8m	Daily Cost	
Rig	Ocean Patriot	Days from spud	34.77	F.I.T. / L.O.T.	Osg / Osg	Cum Cost	
Wtr Dpth(LAT)	70.8m	Days on well	10.19			Planned TD	2642.0m
RT-ASL(LAT)	22.0m	Current Op @ 0600	RIH with Scraper BHA and riser brush. Current depth 1560m MD.				
RT-ML	92.8m	Planned Op	Continue to Scrape packer setting depth (1554 - 1645 m MD) whilst circulating with mud at max. rate and brush riser. Circulate viscous brine pill and follow with CaCl2 brine until clean returns are observed. POOH. Retrieve XT Bore Protector.				

### Summary of Period 0000 to 2400 Hrs

RIH with lower completion, tagged TD at 2404m MD, pulled up and set packer at 1690m MD. Confirmed packer slips set by setting 13.6 t (30 klbs) overpull. Pressure tested packer against upper rams. Difficulty experienced in unstabbing from packer. POOH. Tested BOPs.

### Operations For Period 0000 Hrs to 2400 Hrs on 05 Jun 2005

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
CTB	P	RIC	0000	0100	1.00	2404.0m	Ran final 402 m of 168 mm (6-5/8") 24# 13-Cr KS Bear sand screens.
CTB	P	RIC	0100	0400	3.00	2404.0m	Ran 27 joints of 168 mm (6-5/8") 24# 13-Cr KS Bear tubing.
CTB	P	RIC	0400	0430	0.50	2404.0m	Held JSA prior to making up Lower Completion packer. Witnessed installing 6 x 1720 kPa (250 psi) shear pins and adjusted set sleeve.
CTB	P	RIC	0430	0600	1.50	2404.0m	RIH with lower completion on 127 mm (5") drill pipe to 1370 m MD. Ran slowly through wellhead with packer. Limited run speed with packer to 15 m/min. Drifted drillpipe whilst RIH.
CTB	P	RPK	0600	0900	3.00	2404.0m	Continued RIH with lower completion and tagged TD at 2404 m MD.
CTB	P	RPK	0900	0930	0.50	2404.0m	Dropped setting ball and spaced out at 2400 m MD to set packer at 1690m MD.
CTB	P	RPK	0930	1030	1.00	2404.0m	Circulated/seated ball and set packer, staging up in 3447 kPa (500 psi) increments to 23440 kPa (3400 psi), holding 15 minutes at each stage. Packer set at 11700 kPa (1700 psi). Confirmed packer slips set with 13.6 t (30 klbs) overpull and slacked off.
CTB	P	RPK	1030	1100	0.50	2404.0m	Pressure tested packer elements to 6890 kPa (1000 psi) for 10 min against upper rams.
CTB	TP (DTF)	RPK	1100	1330	2.50	2404.0m	Attempted to release packer running tool. String torquing up. Worked torque into string and rotated approx 30 turns. Unable to pull running tool out of packer with 29.5 t (65 klbs) overpull. Pressured up on drill pipe with 17200 kPa (2500 psi). Rotated drill pipe a further 12 turns. Pulled running tool free with 15.9 t (35 klbs) overpull.
CTB	P	RIC	1330	1830	5.00	2404.0m	Flow checked well at 1690m MD and POOH. Flow checked well at BOPs.
CTB	P	RIC	1830	2400	5.50	2404.0m	Picked up jetting sub and weight set test tool and RIH. Jetted BOP and wellhead and circulated 1.25 times riser volume. Pressure tested BOP. Tested annular to 1380 kPa (200 psi) / 5 min and 20700 kPa (3000 psi) / 10 min. Tested pipe rams to 1380 kPa (200 psi) / 5 min and 27600 kPa (4000 psi) / 10 min. Rigged down pressure test hose and unseated test plug.

### Operations For Period 0000 Hrs to 0600 Hrs on 06 Jun 2005

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
CTB	P	BOP	0000	0215	2.25	2404.0m	Jetted through wellhead and BOP and circulated 1.25 times riser volume. POOH and laid out BOP test tool. Variable rams measured at 3.12m from bottom joint (connector).
CTB	P	SM	0215	0230	0.25	2404.0m	Held JSA on RIH with casing scraper and checked depths.
CTB	P	HBHA	0230	0300	0.50	2404.0m	Made up 244mm (9-5/8") scraper BHA.
CTB	P	TI	0300	0530	2.50	2404.0m	RIH with casing scraper BHA.
CTB	P	CHC	0530	0600	0.50	2404.0m	(IN PROGRESS) Commenced scraping 244mm (9-5/8") casing (3 times per stand) from 1554 m MD. Made up riser brush tool. Continued to scrape casing to 1645 m MD and brushed riser to 3 m above flex joint. Rotated at 60 rpm and circulated mud @ 3.8 m3/min (1000 gpm) during scraping.

### General Comments

Comments	Rig Requirements	Lessons Learnt
Conducted Santos Induction presentations after each safety meeting.		

WBM Data									
Mud Type:	FloPro	API FL:	4cm³/30m	Cl:	120000	Solids:	15	Viscosity:	0sec/L
Sample-From:	Suction	Filter-Cake:	1mm	K+C*1000:	6%	H2O:	85%	PV:	0.017Pa/s
Time:	21:00	HTHP-FL:	0cm³/30m	Hard/Ca:	280	Oil:	0%	YP:	0.177MPa
Weight:	1.28sg	HTHP-Cake:	0mm	MBT:	5	Sand:	0.25	Gels 10s:	0.062
Temp:	0C°			PM:	1.4	pH:	9.7	Gels 10m:	0.081
				PF:	0.1	PHPA:	Oppb	Fann 003:	12
								Fann 006:	15
								Fann 100:	33
								Fann 200:	42
								Fann 300:	54
								Fann 600:	71
Comment Daily cost adjustment made to 1023 bbls CaCl brine of \$ 27,621 (not in yesterdays report).									

Bulk Stocks						Personnel On Board			
Name	Unit	In	Used	Adjust	Balance	Company		Pax	
Fuel	m3	0	8.3	0	494.7	Santos		7	
Drill Water	m3	0	30.1	0	198.0	DOGC		45	
Potable Water	m3	30	23.1	0	215.1	ESS		8	
Gel	sx	0	0	0	1,685.0	Dowell		2	
Cement	sx	0	0	0	778.0	MI		2	
Barite	sx	0	0	0	1,555.0	Geoservices		2	
KCl Brine	bbl	0	0	0	0.0	Fugro		3	
						Halliburton		1	
						Cameron		4	
						Expro		11	
						Weatherford		5	
						Baker Oil Tools		1	
							Total	91	

HSE Summary			
Events	Date of Last	Days Since	Remarks
Abandon Drill	05 Jun 2005	0 Days	Abandon Drill
BOP Test	05 Jun 2005	0 Days	BOP Test
Environmental Incident	02 May 2005	34 Days	None reported since commencement of campaign.
Fire Drill	29 May 2005	7 Days	Fire Drill
First Aid	04 May 2005	32 Days	Person struck on nose with metal bar
Lost Time Incident	02 May 2005	34 Days	None reported since commencement of campaign.
Man Overboard Drill	02 May 2005	34 Days	None undertaken since commencement of campaign.
Near Miss	02 May 2005	34 Days	None reported since commencement of campaign.
Safety Meeting	05 Jun 2005	0 Days	Weekly Safety Meeting
Stop Cards	05 Jun 2005	0 Days	4 Stop Cards

Marine									
Weather check on 05 Jun 2005 at 2400							Rig Support		
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (mt)
18.5km	26km/h	112deg	1012.00bar	17.0C°	0.5m	112deg	1m/sec	1	10.30
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather Comments		2	8.71
0.2deg	0.2deg	0.60m	2.0m	112deg	2m/sec	Part Cloud		3	6.71
Rig Dir.	Ris. Tension	VDL	Comments					4	7.39
249.0deg	12.25mt	208.63mt						5	8.62
								6	11.20
								7	10.48
								8	8.62



Boats	Arrived (date/time)	Departed (date/time)	Status	Bulks		
Far Grip		20:40	Portland	<b>Item</b>	<b>Unit</b>	<b>Quantity</b>
				Fuel	M3	0
				Drill Water	M3	0
				Potable Water	M3	0
				Barite	MT	0
				Gel	MT	0
				Cement	MT	0
KCl Brine	bbf	0				
Pacific Wrangler	05:50		Ocean Patriot	<b>Item</b>	<b>Unit</b>	<b>Quantity</b>
				Fuel	M3	386.2
				Drill Water	M3	448
				Potable Water	M3	300
				Barite	MT	0
				Gel	MT	0
				Cement	MT	86
KCl Brine	bbf	503				

**Helicopter Movement**

Flight #	Time	Destination	Comment	Pax
1	10:17	Ocean Patriot		11
1	10:32	Essendon		10

**From : Ron King, Mike Andronov, Phil Deshon**  
**OIM : Sean De Freitas**

**Well Data**

Country	Australia	M. Depth	2404.0m	Cur. Hole Size	216mm	AFE Cost	
Field	Casino	TVD	1786.0m	Casing OD	244mm	AFE No.	5746022
Drill Co.	DOGC	Progress	0m	Shoe TVD	1740.8m	Daily Cost	
Rig	Ocean Patriot	Days from spud	35.77	F.I.T. / L.O.T.	Osg / Osg	Cum Cost	
Wtr Dpth(LAT)	70.8m	Days on well	11.19			Planned TD	2642.0m
RT-ASL(LAT)	22.0m	Current Op @ 0600	Terminating and testing SSSV assembly at RT.				
RT-ML	92.8m	Planned Op	Finish terminating SSSV control line to SSSV assembly. RIH upper completion and make up tubing hanger (UC06-01). Install THRT/SSTT. RIH completion on 244mm (9-5/8") L80 New Vam tubing. Install flowhead and slickline PCE. Landoff upper completion and pressure test XT and completion. Displace diesel underbalance.				

**Summary of Period 0000 to 2400 Hrs**

Scraped 244 mm (9-5/8") 13Cr casing and brushed riser as per programme. Displaced casing with CaCl2 brine. Retrieved Bore Protector, Jetted XT, BOP ram and annular cavities. Commenced RIH upper completion.

**Operations For Period 0000 Hrs to 2400 Hrs on 06 Jun 2005**

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
CTB	P	BOP	0000	0215	2.25	2404.0m	Jetted through wellhead and BOP and circulated 1.25 times riser volume. POOH and laid out BOP test tool. Variable rams measured at 3.12m from bottom joint (connector).
CTB	P	SM	0215	0230	0.25	2404.0m	Held JSA on RIH with casing scraper and checked depths.
CTB	P	HBHA	0230	0300	0.50	2404.0m	Made up 244mm (9-5/8") scraper BHA.
CTB	P	TI	0300	0530	2.50	2404.0m	RIH with casing scraper BHA.
CTB	P	CHC	0530	0730	2.00	2404.0m	Commenced scraping 244mm (9-5/8") casing (3 times per stand) from 1554 m MD. Made up riser brush tool. Continued to scrape casing to 1645 m MD and brushed riser to 3 m above flex joint. Rotated at 60 rpm and circulated mud @ 3.8 m3/min (1000 gpm) during scraping.
CTB	P	CMD	0730	1430	7.00	2404.0m	At 1656 m MD pumped 9.5 m3 (60 bbl) high viscosity brine pill. Cleaned surface lines, flushed choke and kill lines with sea water and displaced same to CaCl2 brine. Displaced mud and viscous pill from drillpipe/casing with 1.21sg (10.1 ppg) CaCl2 brine @ 3.8 m3/min (1000 gpm) / 15860 kPa (2300 psi) dumping returns. POOH with riser brush tool (no debris in junk basket) and 244mm (9-5/8") casing scraper BHA. Small amount of rubber missing from riser brush tool.
CTB	P	XT	1430	1530	1.00	2404.0m	Picked up and RIH jetting sub and Bore Protector Running and Retrieval tool on 127mm (5") drill pipe. Set down 2.3 t (5 klbs) and latched into Bore Protector.
CTB	P	CHC	1530	1630	1.00	2404.0m	Attempted to pull Bore Protector with 20.4 t (45 klbs) overpull with no success. Sheared out secondary pins with 52.6 t (116 klbs) overpull. Jetted XT and BOP rams and annular cavities, whilst boosting riser to lift debris. POOH Bore Protector, retrieval tool and jet sub. Bore Protector in good condition and o-rings intact.
CTB	P	SM	1630	1900	2.50	2404.0m	Cleared rig floor and rigged up to run upper completion. Conducted JSA on handling and running chrome tubulars and completion assemblies.
CTB	P	RIC	1900	1945	0.75	2404.0m	Made up mule shoe (UC01-01), QN Nipple (UC02-01), Production packer (UC03-01) and Chemical Cut Sub (UC04-01) as per upper completion tally.
CTB	P	RIC	1945	2400	4.25	2404.0m	RIH upper completion on 178mm (7") 13Cr80 KSBear to 733 m MD.

**Operations For Period 0000 Hrs to 0600 Hrs on 07 Jun 2005**

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
CTB	P	RIC	0000	0500	5.00	2404.0m	RIH upper completion on 178mm (7") 13Cr80 KSBear tubing as per upper completion tally 1524m MD.
CTB	P	SM	0500	0600	1.00	2404.0m	Conducted JSA on making up and running SSSV sub assembly (UC05-01) and RU SSSV sheave. Made up SSSV and 1 joint of 178mm (7") 13Cr80 KSBear tubing. Commenced termination of SSSV control line.

**General Comments**

Comments	Rig Requirements	Lessons Learnt
<p>Expro Pressure tested Flowhead, SSTT and SSLV. Function tested where appropriate.</p> <p>Pressure tested slickline pressure control equipment and prepared running tools.</p> <p>Installed IWOCS umbilical onto x-tree. Function and pressure tested IWOCS noted leak on SSSV control line (see subsea report). Preparing ROV to recover IWOCS.</p>		

WBM Data									
Mud Type:	CaCl2 Brine	API FL:	0cm³/30m	Cl:	226000	Solids:	0	Viscosity:	0sec/L
Sample-From:	Suction	Filter-Cake:	0mm	K+C*1000:	0%	H2O:	0%	PV:	0Pa/s
Time:	21:00	HTHP-FL:	0cm³/30m	Hard/Ca:	0	Oil:	0%	YP:	0MPa
Weight:	1.21sg	HTHP-Cake:	0mm	MBT:	0	Sand:		Gels 10s:	0
Temp:	0C°			PM:	0	pH:	0	Gels 10m:	0
				PF:	0	PHPA:	Oppb	Fann 003:	0
								Fann 006:	0
								Fann 100:	0
								Fann 200:	0
								Fann 300:	0
								Fann 600:	0

BHA # 14						
Weight(Wet)	0mt	Length	140.5m	Torque(max)	25.8Nm	D.C. (1) Ann Velocity
Wt Below Jar(Wet)	0mt	String	0mt	Torque(Off.Btm)	13.6Nm	D.C. (2) Ann Velocity
		Pick-Up	0mt	Torque(On.Btm)	23.1Nm	H.W.D.P. Ann Velocity
		Slack-Off	0mt			D.P. Ann Velocity
BHA Run Description		216 mm (8.5") Bit (Nozzles Removed), Bit Sub & XO to 114 mm (4.5") IF, 127 mm (5") DP, 244 mm (9-5/8") Scraper				
Equipment	Length	OD	ID	Serial #	Comment	
Bit	0.25m	216mm	0mm			
Bit Sub	0.95m	0mm	0mm			
5in HWDP	9.58m	127mm	76mm			
9.625in Casing Scraper	2.17m	222mm	49mm	SPS5445	Razor Back Casing Clean-Up Tool.	

Bulk Stocks						Personnel On Board		
Name	Unit	In	Used	Adjust	Balance	Company		Pax
Fuel	m3	0	10.2	0	484.5	Santos		7
Drill Water	m3	430	87	0	541.0	DOGC		43
Potable Water	m3	29	23.5	0	220.6	ESS		8
Gel	sx	0	0	0	1,685.0	Dowell		2
Cement	sx	0	0	0	778.0	MI		2
Barite	sx	0	0	0	1,555.0	Geoservices		2
KCl Brine	bbl	0	0	0	0.0	Fugro		6
						Halliburton		1
						Cameron		4
						Expro		11
						Weatherford		4
						Baker Oil Tools		1
						Expro		1
						Total		92

HSE Summary			
Events	Date of Last	Days Since	Remarks
Abandon Drill	05 Jun 2005	1 Day	Abandon Drill
BOP Test	05 Jun 2005	1 Day	BOP Test
Environmental Incident	02 May 2005	35 Days	None reported since commencement of campaign.
Fire Drill	29 May 2005	8 Days	Fire Drill
First Aid	04 May 2005	33 Days	Person struck on nose with metal bar
Lost Time Incident	02 May 2005	35 Days	None reported since commencement of campaign.
Man Overboard Drill	02 May 2005	35 Days	None undertaken since commencement of campaign.
Near Miss	02 May 2005	35 Days	None reported since commencement of campaign.
Safety Meeting	05 Jun 2005	1 Day	Weekly Safety Meeting
Stop Cards	06 Jun 2005	0 Days	9 Stop Cards

Marine								Rig Support		
Weather check on 06 Jun 2005 at 2400										
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (mt)	
18.5km	22km/h	023deg	1019.00bar	12.0C°	0.5m	023deg	0m/sec	1	10.30	
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather Comments				
0.2deg	0.2deg	0.60m	1.5m	225deg	2m/sec	Part Cloud				
Rig Dir.	Ris. Tension	VDL	Comments							
249.0deg	12.25mt	206.67mt								
								8	8.71	

Boats	Arrived (date/time)	Departed (date/time)	Status	Bulks		
Far Grip			Portland	Item	Unit	Quantity
				Fuel	M3	0
				Drill Water	M3	0
				Potable Water	M3	0
				Barite	MT	0
				Gel	MT	0
				Cement	MT	0
				KCl Brine	bbf	0
Pacific Wrangler			Ocean Patriot	Item	Unit	Quantity
				Fuel	M3	375.1
				Drill Water	M3	0
				Potable Water	M3	245
				Barite	MT	0
				Gel	MT	0
				Cement	MT	86
				KCl Brine	bbf	503

Helicopter Movement				
Flight #	Time	Destination	Comment	Pax
1	10:05	Ocean Patriot		5
1	10:14	Essendon		4

**From : Ron King, Mike Andronov**  
**OIM : Sean De Freitas**

**Well Data**

Country	Australia	M. Depth	2404.0m	Cur. Hole Size	216mm	AFE Cost	
Field	Casino	TVD	1786.0m	Casing OD	244mm	AFE No.	5746022
Drill Co.	DOGC	Progress	0m	Shoe TVD	1740.8m	Daily Cost	
Rig	Ocean Patriot	Days from spud	36.77	F.I.T. / L.O.T.	Osg / Osg	Cum Cost	
Wtr Dpth(LAT)	70.8m	Days on well	12.19			Planned TD	2642.0m
RT-ASL(LAT)	22.0m	Current Op @ 0600	Landing off tubing hanger in XT.				
RT-ML	92.8m	Planned Op	Pressure test completion and XT. Circulate diesel underbalance. Install standing valve. Set production packer. Install gauges. Prepare to flow well.				

**Summary of Period 0000 to 2400 Hrs**

Made up SSSV and TH. Installed THRT to TH. RIH with 244mm (9-5/8") L80 New Vam landing string. Installed Lubricator Valve. Made up flowhead. Installed coflexip and slickline pressure control equipment.

**Operations For Period 0000 Hrs to 2400 Hrs on 07 Jun 2005**

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
CTB	P	RIC	0000	0500	5.00	2404.0m	RIH upper completion on 178mm (7") 13Cr80 KSBear tubing as per upper completion tally 1524m MD.
CTB	P	SM	0500	0700	2.00	2404.0m	Conducted JSA on making up and running Sub-sea Safety Valve (SSSV) sub assembly (UC05-01) and rigging up SSSV sheave. Made up SSSV and 1 joint of 178mm (7") 13Cr80 KSBear tubing. Terminated SSSV control line and pressure tested to 51700 kPa (7500 psi) / 15 minutes.
CTB	P	SM	0700	0730	0.50	2404.0m	RIH 178mm (7") 13Cr80 KSBear tubing installing control line clamps.
CTB	P	SM	0730	0800	0.50	2404.0m	Held JSA on making up/RIH Tubing Hanger (TH). Made up TH (UC06-01).
CTB	P	PT	0800	0930	1.50	2404.0m	Removed TH Helix Terminated SSSV control line to TH and performed SSSV function tests. Pressure tested SSSV control line to 51720 kPa (7,500 psi) / 15 minutes [opening pressure @ 11030 kPa (1600 psi) and closing pressure @ 8275 kPa (1200 psi)] and 34475 kPa (5,000 psi) / 5 minutes [opening pressure @ 11030 kPa (1600 psi) and closing pressure @ 8275 kPa (1200 psi)]
CTB	P	RCM	0930	1000	0.50	2404.0m	Re-installed TH Helix. Turned string to align tubing hanger production bore 45 degrees port of forward. Landed TH in rotary table (RT) and removed Tubing Hanger Handling & Testing Tool (THHTT).
CTB	P	RCM	1000	1015	0.25	2404.0m	Rigged up to run 244mm (9-5/8") L80 New Vam landing string.
CTB	P	SM	1015	1230	2.25	2404.0m	Conducted JHA on Installing Expro IWOCS sheave and picking up Tubing Hanger Running Tool (THRT)/Sub-sea Test Tree (SSTT) assembly. Installed Expro IWOCS sheave. Picked up THRT/SSTT to rig floor and latched in elevators.
CTB	P	PT	1230	1300	0.50	2404.0m	Set TH into locked position using THRT/SSTT assembly. Performed THRT/SSTT function tests. Stabbed THRT into TH. Latched THRT to TH. Performed TH/THRT interface connection test - 34475 kPa (5000 psi) / 5 minutes. SSSV confidence test - 34475 kPa (5000 psi) / 5 minutes. Functioned TH lock and confirmed returns from TH lock. Unlocked TH and installed 2 shear pins into actuator ring. Checked control line pressures ready for running. Locked in pressures and removed jumpers.
CTB	P	RCM	1300	1345	0.75	2404.0m	Picked up and removed landing bowls - Completion weight with THRT/SSTT assembly installed 111 t / (245 klbs). Removed protection from TH seals. Installed shear pins into TH circuit ring.
CTB	P	RIC	1345	1515	1.50	2404.0m	Rigged up 508mm (20") split bowls and slips. RIH on 244mm (9-5/8") L80 New vam landing string.
CTB	P	RCM	1515	1615	1.00	2404.0m	Installed Lubricator Valve. Made up control line to lubricator valve (LV) and function tested.
CTB	P	RIC	1615	1645	0.50	2404.0m	RIH LV and 2 joints 244mm (9-5/8") L80 New vam landing string.
CTB	P	RCM	1645	1800	1.25	2404.0m	Removed the 4.6 m (15 ft) bails. Installed top drive sub and slickline tugger onto top drive. Installed 6.8 m (22 ft) bails and shackled 14 m (45 ft) bails to 6.8 m (22 ft) bails.
CTB	P	SM	1800	1815	0.25	2404.0m	JSA on picking up flowhead from deck.
CTB	P	SM	1815	1945	1.50	2404.0m	Picked up and installed no cross coupling on the 244mm (9-5/8") L80 New Vam landing string. Picked up flowhead from deck to drill floor. Installed 273 mm (10-3/4") elevators onto flowhead. Connected bails to the elevators.
CTB	P	SM	1945	2200	2.25	2404.0m	Held JSA on picking up flowhead to vertical position. Removed bridle from flowhead. Picked up flowhead to vertical position. Torqued up 244mm (9-5/8") L80 saver pup and 244mm (9-5/8") L80 flowhead landing joint to the landing string. Rigged down casing tongs.
CTB	P	RCM	2200	2400	2.00	2404.0m	Held JSA on installing coflexip and slickline pressure control equipment to flowhead. Installed coflexip. Commenced rigging up slickline pressure control equipment on flow head.

**Operations For Period 0000 Hrs to 0600 Hrs on 08 Jun 2005**

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
CTB	P	RCM	0000	0345	3.75	2404.0m	Continued rigging up slickline pressure control equipment. Closed Swab Valve. Installed Drain line sub, BOPs and Lubricator.
CTB	P	RCM	0345	0515	1.50	2404.0m	Conducted JSA on pressure testing of well test surface lines. Pressure tested flowhead against lubricator valve / choke manifold and swab valve 34475 kPa (5000 psi) / 10 minutes.
CTB	P	RIC	0515	0600	0.75	2404.0m	Conducted JSA on RIH and landing off. Pulled bushings and RIH 244 mm (9-5/8") L80 New Vam landing string. Checked pick up and slackoff weight 127 t (280 kibs). Landed off tubing hanger good indication - helix rotation.

### WBM Data

Mud Type:	CaCl2 Brine	API FL:	0cm³/30m	Cl:	226000	Solids:	0	Viscosity:	0sec/L
Sample-From:	Suction	Filter-Cake:	0mm	K+C*1000:	0%	H2O:	0%	PV:	0Pa/s
Time:		HTHP-FL:	0cm³/30m	Hard/Ca:	0	Oil:	0%	YP:	0MPa
Weight:	1.21sg	HTHP-Cake:	0mm	MBT:	0	Sand:		Gels 10s:	0
Temp:	0C°			PM:	0	pH:	9	Gels 10m:	0
				PF:	0	PHPA:	Oppb	Fann 003:	0
								Fann 006:	0
								Fann 100:	0
								Fann 200:	0
								Fann 300:	0
								Fann 600:	0

### Bulk Stocks

Name	Unit	In	Used	Adjust	Balance
Fuel	m3	0	10.7	0	473.8
Drill Water	m3	0	30.1	0	510.9
Potable Water	m3	27	24.2	0	223.4
Gel	sx	0	0	0	1,685.0
Cement	sx	0	0	0	778.0
Barite	sx	0	0	0	1,555.0
KCl Brine	bbl	0	0	0	0.0

### Personnel On Board

Company	Pax
Santos	7
DOGC	42
ESS	8
Dowell	2
Geoservices	2
Fugro	6
Halliburton	1
Cameron	4
Expro	16
Weatherford	4
Baker Oil Tools	1
Expro	1
<b>Total</b>	<b>94</b>

### HSE Summary

Events	Date of Last	Days Since	Remarks
Abandon Drill	05 Jun 2005	2 Days	Abandon Drill
BOP Test	05 Jun 2005	2 Days	BOP Test
Environmental Incident	02 May 2005	36 Days	None reported since commencement of campaign.
Fire Drill	29 May 2005	9 Days	Fire Drill
First Aid	04 May 2005	34 Days	Person struck on nose with metal bar
Lost Time Incident	02 May 2005	36 Days	None reported since commencement of campaign.
Man Overboard Drill	02 May 2005	36 Days	None undertaken since commencement of campaign.
Near Miss	02 May 2005	36 Days	None reported since commencement of campaign.
Safety Meeting	05 Jun 2005	2 Days	Weekly Safety Meeting
Stop Cards	06 Jun 2005	1 Day	9 Stop Cards

### Marine

Weather check on 07 Jun 2005 at 2400								Rig Support	
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (mt)
18.5km	19km/h	045deg	1019.00bar	15.0C°	0.5m	045deg	0m/sec	1	10.30
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather Comments			
0.2deg	0.2deg	0.60m	1.0m	225deg	2m/sec	Part Cloud			
Rig Dir.	Ris. Tension	VDL	Comments						
249.0deg	12.25mt	202.44mt							
								2	8.62
								3	6.80
								4	7.30
								5	8.48
								6	11.11
								7	10.61
								8	8.71

Boats	Arrived (date/time)	Departed (date/time)	Status	Bulks		
Far Grip	22:40		Ocean Patriot	Item	Unit	Quantity
				Fuel	M3	449
				Drill Water	M3	730
				Potable Water	M3	442
				Barite	MT	81
				Gel	MT	43
				Cement	MT	40
KCl Brine	MT	0				
Pacific Wrangler			Ocean Patriot	Item	Unit	Quantity
				Fuel	M3	364.6
				Drill Water	M3	0
				Potable Water	M3	240
				Barite	MT	0
				Gel	MT	0
				Cement	MT	86
KCl Brine	MT	503				

### Helicopter Movement

Flight #	Time	Destination	Comment	Pax
1	10:05	Ocean Patriot		6
1	10:14	Essendon		4

### Lessons Learned

Categories		Event Descr.	Post Event Descr.	Lesson
Short Descr.	SV should be closed before RU	Identified that SV (Swab Valve) should be closed prior to slickline pressure control RU.	Closed swab valve before RU.	Close SV (Swab Valve) before RU to act as a barrier if anything should fall down the flowhead.
Phase	Completion			
Category	Rig Up			
Resp. Party				
Closed/Open	Open			



**From : Ron King, Philip Deshon, Mike Andronov, Paul Nardone**  
**OIM : Sean De Freitas**

**Well Data**

Country	Australia	M. Depth	2404.0m	Cur. Hole Size	216mm	AFE Cost	
Field	Casino	TVD	1786.0m	Casing OD	244mm	AFE No.	5746022
Drill Co.	DOGC	Progress	0m	Shoe TVD	1740.8m	Daily Cost	
Rig	Ocean Patriot	Days from spud	37.77	F.I.T. / L.O.T.	Osg / Osg	Cum Cost	
Wtr Dpth(LAT)	70.8m	Days on well	13.19			Planned TD	2642.0m
RT-ASL(LAT)	22.0m	Current Op @ 0600	Flowing diesel to burner on variable choke for clean-up.				
RT-ML	92.8m	Planned Op	Clean-up well and SI for one hour build-up. Conduct three rate well test.				

**Summary of Period 0000 to 2400 Hrs**

Landed off and tested TH and XT. Displaced brine with diesel. Set production packer and pressure test tubing, annulus and inflow test SSSV.

**Operations For Period 0000 Hrs to 2400 Hrs on 08 Jun 2005**

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
CTB	P	RCM	0000	0345	3.75	2404.0m	Rigged up slickline lubricator and BOP's to flowhead.
CTB	P	RCM	0345	0515	1.50	2404.0m	Held JSA - Pressure Testing. Pressure tested flowhead against LV, welltest choke manifold and SV to 34,475 kPa (5,000 psi) for 10 minutes.
CTB	P	RIC	0515	0615	1.00	2404.0m	Held JSA - Landing Off Upper Completion. Open AAV, AMV, PMV and XO.V. CSM vented. Confirmed with ROV. Pulled bushings. PU and slackoff weight 127 MT (280,000 lbs). Landed off tubing hanger with 13.6 MT (30,000 lbs) in XT. Clockwise (righthand) helix rotation of 10 deg noted.
CTB	P	RIC	0615	0645	0.50	2404.0m	Opened SIV with ROV and flushed from XT IWOCS. Slacked off full completion weight in XT in stages 56.7 MT (125,000 lbs). 3.4 litres returned from Soft Land. Closed AMV and AAV.
CTB	P	RIC	0645	0800	1.25	2404.0m	Attempted to lock TH. No returns from Lock Verify. Closed 273mm (10-3/4") Middel Pipe Rams (MPR) around slick joint and pressured below closed rams to 10,340 kPa (1500 psi). 1 L of extra flow observed from Soft Land. Locked TH, returns received from Lock Verify. Bleed off pressure below pipe rams and opened pipe rams. Performed 22.7 MT (50,000 lbs) overpull to confirm TH locked. Slacked off to leave THRT/SSTT in 11.3 MT (25,000 lbs) tension. Opened AAV.
CTB	P	RIC	0800	0900	1.00	2404.0m	Closed 273mm (10-3/4") MPR and pressure tested to 27,580 kPa (4,000 psi) for 10 minutes. Bled off pressure to 0 psi. Cycled SSSV twice [opened with 11,030 kPa (1,600 psi)]. Pressure tested SSSV control line down XT IWOCS to 44,820 kPa (6,500 psi) for 15 minutes. [Offline: Continued with Slickline RU on rig floor]
CTB	P	RIC	0900	1300	4.00	2404.0m	Rigged up remainder of slickline surface equipment. Made slickline TH isolation sleeve retrieval tool string. Pressure tested slickline equipment to 24,130 kPa (3,500 psi) against MV. RIH and retrieved TH isolation sleeve with 178 mm (7") GS tool.
CTB	P	RIC	1300	1500	2.00	2404.0m	Made up slickline TH wireline short protector sleeve toolstring. RIH and set in THRT at 88.3m MD RT (slickline depth). POOH slickline. Made up standing valve toolstring.
CTB	P	RIC	1500	1645	1.75	2404.0m	Held JSA - Pumping Diesel Cushion. Circulated 33 m <sup>3</sup> (207 bbls) diesel down tubing taking returns to the pits at 415 L/min (2.6 bpm). Chased diesel with 3 bbls seawater. Final SITHP approx. 5450 kPa (790 psi).
CTB	P	RPP	1645	1900	2.25	2404.0m	RIH with slickline and installed standing valve in the 117 mm (4.625") QN landing nipple at 1656 m MD RT. POOH with Slickline. Closed MV and bleed off pressure through welltest choke. Broke out lubricator and recovered/inspected slickline standing valve retrieval toolstring.
CTB	P	PT	1900	2030	1.50	2404.0m	Held JSA - Packer Setting. Pressure tested tubing to 14,480 kPa (2,100 psi) for 10 mins against 117 mm (4.625") RNQN standing valve. Increased pressure to 27,580 kPa (4,000 psi) for 10 minutes to set HHT packer. Upper completion packer set depth - 1633.95 m MD RT at midpoint of packer elements.
CTB	P	PT	2030	2100	0.50	2404.0m	Closed the SSSV. Bled off pressure at welltest choke to 10,345 kPa (1,500 psi) and inflow tested SSSV for 10 minutes. Increased pressure to 24,130 kPa (3500 psi), 3450 kPa (500 psi) differential on SSSV. Opened SSSV - pressure increased to 27580 kPa (4,000 psi). Bleed back THP to to 5860 kPa (850 psi).
CTB	P	PT	2100	2200	1.00	2404.0m	Pressure tested the annulus to 24,130 kPa (3,500 psi) for 10 mins. Inflow tested AAV by bleeding off pressure to 1725 kPa (250 psi) for 10 mins [Differential across AAV of 3,250 psi]. Equalised across AAV, opened AAV and closed AMV. Inflow tested AMV by bleeding off pressure from 24,130 kPa (3,500 psi) to 1,725 kPa (250 psi) for 10 mins. Equalised and opened AMV. Bled annular pressure to 690 kPa (100 psi).
CTB	P	SLK	2200	2400	2.00	2404.0m	Rigged up slickline and retrieved 117 mm (4.625") RNQN standing valve from QN Nipple.

**Operations For Period 0000 Hrs to 0600 Hrs on 09 Jun 2005**

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
CTB	P	SLK	0000	0100	1.00	2404.0m	POOH with slickline. Closed UBV and bled off pressure via choke to 690 kPa (100 psi) and inflow tested UBV. Bled pressure to 0 kPa and closed LV. Broke out



Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
CTB	P	SLK	0100	0330	2.50	2404.0m	lubricator and retrieved 117mm (4.625") RNQN standing valve. Made up bomb hanger and 3 quartz memory gauges. Pressure tested Cromar sub to 34,475 kPa (5,000 psi). Opened LV and equalised above UBV and opened UBV. RIH with 117mm (4.625") QX lock and bomb hanger and gauges in the 117mm (4.625") QN landing nipple in tailpipe at 1657 m MD RT (tide corrected). Gauge measuring points below nipple no-go #51084 (2.175m), #51284 (5.435m), #40586 (6.835m.) POOH with running string.
CTB	P	SLK	0330	0415	0.75	2404.0m	Slickline at surface. Closed UBV and bled off pressure to 690 kPa (100 psi) via choke and inflow tested UBV. Bled pressure to 0 kPa, inspected and removed toolstring. Made up downhole recovery string for pulling gauges after welltest. Confirmed valve status on XT.
CTB	P	PT	0415	0515	1.00	2404.0m	Held JSA - Well Test Operations and RU familiarity.
CTB	P	OA	0515	0600	0.75	2404.0m	Opened well gradually to surge tank on adjustable choke (initially 16/64"). Diverted flow to burner and increasing choke settings.

Bulk Stocks						Personnel On Board		
Name	Unit	In	Used	Adjust	Balance	Company		Pax
Fuel	m3	0	46.2	0.1	427.7	Santos		8
Drill Water	m3	0	2.4	0.1	508.6	DOGC		41
Potable Water	m3	44	41.2	0	226.2	ESS		8
Gel	sx	0	0	0	1,685.0	Dowell		2
Cement	sx	0	0	0	778.0	Geoservices		2
Barite	sx	0	0	0	1,555.0	Fugro		6
KCl Brine	bbl	0	0	0	0.0	Halliburton		1
						Cameron		4
						Expro		16
						Weatherford		4
						Baker Oil Tools		1
						Expro		2
							<b>Total</b>	<b>95</b>

HSE Summary			
Events	Date of Last	Days Since	Remarks
Abandon Drill	05 Jun 2005	3 Days	Abandon Drill
BOP Test	05 Jun 2005	3 Days	BOP Test
Environmental Incident	02 May 2005	37 Days	None reported since commencement of campaign.
Fire Drill	29 May 2005	10 Days	Fire Drill
First Aid	04 May 2005	35 Days	Person struck on nose with metal bar
Lost Time Incident	02 May 2005	37 Days	None reported since commencement of campaign.
Man Overboard Drill	02 May 2005	37 Days	None undertaken since commencement of campaign.
Near Miss	02 May 2005	37 Days	None reported since commencement of campaign.
Safety Meeting	05 Jun 2005	3 Days	Weekly Safety Meeting
Stop Cards	06 Jun 2005	2 Days	9 Stop Cards

Marine								Rig Support	
Weather check on 08 Jun 2005 at 2400									
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (mt)
18.5km	28km/h	040deg	1015.00bar	17.0C°	1.0m	040deg	0m/sec	1	10.39
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather Comments		2	8.80
0.2deg	0.2deg	0.60m	2.0m	220deg	2m/sec	Mainly Cloudy		3	6.89
Rig Dir.	Ris. Tension	VDL	Comments		4			7.39	
249.0deg	12.25mt	207.87mt			5	8.48			
								6	11.20
								7	10.70
								8	8.80

Boats	Arrived (date/time)	Departed (date/time)	Status	Bulks		
Far Grip			Ocean Patriot	Item	Unit	Quantity
				Fuel	M3	437
				Drill Water	M3	730
				Potable Water	M3	434
				Barite	MT	81
				Gel	MT	43
				Cement	MT	40
KCl Brine	MT	0				
Pacific Wrangler		19:45	Sailing to Portland	Item	Unit	Quantity
				Fuel	M3	0
				Drill Water	M3	0
				Potable Water	M3	0
				Barite	MT	0
				Gel	MT	0
				Cement	MT	0
KCl Brine	MT	0				

### Helicopter Movement

Flight #	Time	Destination	Comment	Pax
1	10:06	Essendon		2
1	9:57	Ocean Patriot		3

**From : Ron King, Philip Deshon, Mike Andronov, Paul Nardone**  
**OIM : Scott Barry**

**Well Data**

Country	Australia	M. Depth	2404.0m	Cur. Hole Size	216mm	AFE Cost	
Field	Casino	TVD	1786.0m	Casing OD	244mm	AFE No.	5746022
Drill Co.	DOGC	Progress	0m	Shoe TVD	1740.8m	Daily Cost	
Rig	Ocean Patriot	Days from spud	38.77	F.I.T. / L.O.T.	Osg / Osg	Cum Cost	
Wtr Dpth(LAT)	70.8m	Days on well	14.19			Planned TD	2642.0m
RT-ASL(LAT)	22.0m	Current Op @ 0600	Well flowing on second flow period of main flow on 19 mm (48/64") choke.				
RT-ML	92.8m	Planned Op	Continue with second flow period for well test. Increase choke for third flow period to 25mm (64/64"). Shut in well for Build-up.				

**Summary of Period 0000 to 2400 Hrs**

Retrieved standing valve. Set BH gauges. Open well for clean-up flow period. Shut in well for initial BU. Opened well on 13 mm (32/64") choke for first 6hr flow period.

**Operations For Period 0000 Hrs to 2400 Hrs on 09 Jun 2005**

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
CTB	P	SLK	0000	0100	1.00	2404.0m	POOH with slickline and retrieved 117mm (4.625") RNQN standing valve.
CTB	P	SLK	0100	0330	2.50	2404.0m	Made up bomb hanger and 3 quartz memory gauges. RIH with 117mm (4.625") QX lock and bomb hanger and gauges in the 117mm (4.625") QN landing nipple in tailpipe at 1657mRT MD (tide corrected). Gauge Measuring points below nipple no-go #51084 (1656.86mRT MD), #51284 (1660.1mRT MD), #40586 (1661.5mRT MD) POOH with running string.
CTB	P	SLK	0330	0415	0.75	2404.0m	Slickline at surface. Made up downhole recovery string for pulling gauges after welltest. Confirmed valve status on subsea tree (Closed: PWV, AWV, PMV and XOV and TCT and CSM needle valves. Open: AAV, and AMV. SIV needle valve open with SSSV control line pressure to 34,475 kPa [5,000 psi]).
CTB	P	SM	0415	0515	1.00	2404.0m	JSA - Well Test Operations and Rig Up Familiarity
CTB	P	OA	0515	0615	1.00	2404.0m	Opened well on 6 mm (16/64") adjustable choke increasing gradually to 13 mm (32/64") for clean-up flow.
CTB	P	OA	0615	1345	7.50	2404.0m	Continued increasing choke on 21 mm (52/64"). Recovered diesel and CaCl2 brine at surface. Flare extinguished, diverted flow via gas line to flare boom. Gas to surface after 5 minutes. Gradually increased adjustable choke to 38 mm (96/64") for well clean-up.
CTB	P	OA	1345	1700	3.25	2404.0m	Reduced choke to 25 mm (64/64") fixed and flowed to separator. Took gas PVT sample (s/n A4786) at 16:15. Final clean-up flowing conditions (17:08): 25 mm (64/64") choke, FTHP = 14,150 kPag (2,052 psig), WHTemp = 50 deg C (122 deg F), D/Stream Pressure = 7,696 kPag (1,116 psig), D/Stream Temp = 27.7 deg C (82 deg F), Separator Pressure = 5658 kPag (821 psig), Sep Temp = 27.3 deg C (82 deg F), Orifice plate = 114 mm (4.5"), No measurable BS&W, 0.1% CO2 and 0.6 ppm H2S. SG = 0.693, Estimated rate 1.28E6 m <sup>3</sup> /day (45.1 MMscfd).
CTB	P	OA	1700	1830	1.50	2404.0m	Shut in well (17:09) for build-up.
CTB	P	OA	1830	2400	5.50	2404.0m	Open well (18:39) at choke manifold on 13 mm (32/64") adjustable choke through steam exchanger. SI well (18:45) and replaced steam hose on exchanger. Opened well @ 19:02, observed leak downstream of choke manifold. SI well. Fixed seal and opened well (19:10). Flowing conditions @ 0000 hrs: 13 mm (32/64") choke, FTHP = 16,100 kPag (2,335 psig), WHTemp = 36.1 deg C (97 deg F), D/Stream Pressure = 5,990 kPag (869 psig), D/Stream Temp = 9.5 deg C (49 deg F), Separator Pressure = 5,315 kPag (771 psig), Sep Temp = 19.8 deg C (68 deg F), Orifice plate = 70 mm (2.75"), No measurable BS&W, 1.0% CO2 and 0.1 ppm H2S. SG = 0.683, Estimated rate 3.99E6 m <sup>3</sup> /day (14.1 MMscfd).

**Operations For Period 0000 Hrs to 0600 Hrs on 10 Jun 2005**

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
CTB	P	OA	0000	0100	1.00	2404.0m	Took PVT samples (s/n A2006) at 00:30. Final flowing conditions for first flow period (01:08): 13 mm (32/64") choke, FTHP = 16,113 kPag (2,337 psig), WHTemp = 35.7 deg C (96 deg F), D/Stream Pressure = 6,097 kPag (884 psig), D/Stream Temp. = 9.9 deg C (50 deg F), Separator Pressure = 5,347 kPag (775 psig), Sep Temp = 19.6 deg C (67 deg F), Orifice plate = 70 mm (2.75"), No measurable BS&W, 1.0% CO2 and 0.1 ppm H2S. SG = 0.683, Estimated rate 3.99E6 m <sup>3</sup> /day (14.1 MMscfd). No hydrates observed.
CTB	TP (OTH)	OA	0100	0215	1.25	2404.0m	Increased choke to 19 mm (48/64") for second rate flow period @ 01:09. Pressure controller instrumentation had difficulties while flowing through separator - bypassed separator to troubleshoot. Tripped ESD when flowed back to separator. Opened well again at 02:35 on 19 mm (48/64"). OK.
CTB	P	OA	0215	0600	3.75	2404.0m	Flowing conditions at 06:00: 19 mm (48/64") choke, FTHP = 15,541 kPag (2,254 psig), WHTemp = 44.2 deg C (111 deg F), D/Stream Pressure = 4,958 kPag (719

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
							psig), D/Stream Temp. = 13.2 deg C (56 deg F), Separator Pressure = 3,627 kPag (526 psig), Sep Temp = 7.9 deg C (46 deg F), Orifice plate = 108 mm (4.25"), 1.0% CO2 and 0.1 ppm H2S. SG = 0.684, Estimated rate 810E6 m <sup>3</sup> /day (28.6 MMscfd).

### General Comments

Comments	Rig Requirements	Lessons Learnt
Well Test sample - sample taken from separator @ 23:00 hrs (Geoservices chromatograph). CO2: 0.8%, H2S <0.3 ppm. C1: 929955 ppm (96.8%), C2: 22136 ppm (2.3%), C3: 5901 ppm (0.6%), iC4: 1013 ppm (0.1%), nC4: 1050 ppm (0.1%), iC5: 271 ppm (<0.1%), nC5: 200 ppm (<0.1%).		

Bulk Stocks						Personnel On Board		
Name	Unit	In	Used	Adjust	Balance	Company		Pax
Fuel	m3	0	5.6	0	422.1	Santos		7
Drill Water	m3	0	7.2	0	501.4	DOGC		45
Potable Water	m3	20	22.3	-0.1	223.8	ESS		8
Gel	sx	0	0	0	1,685.0	Dowell		1
Cement	sx	0	0	0	778.0	Geoservices		2
Barite	sx	0	0	0	1,555.0	Fugro		6
KCl Brine	bbl	0	0	0	0.0	Cameron		4
						Expro		16
						Weatherford		2
						Expro		2
							<b>Total</b>	<b>93</b>

### HSE Summary

Events	Date of Last	Days Since	Remarks
Abandon Drill	05 Jun 2005	4 Days	Abandon Drill
BOP Test	05 Jun 2005	4 Days	BOP Test
Environmental Incident	02 May 2005	38 Days	None reported since commencement of campaign.
Fire Drill	29 May 2005	11 Days	Fire Drill
First Aid	04 May 2005	36 Days	Person struck on nose with metal bar
Lost Time Incident	02 May 2005	38 Days	None reported since commencement of campaign.
Man Overboard Drill	02 May 2005	38 Days	None undertaken since commencement of campaign.
Near Miss	02 May 2005	38 Days	None reported since commencement of campaign.
Safety Meeting	05 Jun 2005	4 Days	Weekly Safety Meeting
Stop Cards	09 Jun 2005	0 Days	3 Stop Cards

### Marine

Weather check on 09 Jun 2005 at 2400								Rig Support	
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (mt)
18.5km	15km/h	045deg	1019.00bar	16.0C°	0.5m	045deg	0m/sec	1	10.61
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather Comments		2	8.89
0.3deg	0.3deg	0.60m	0.5m	180deg	0m/sec	Mainly Cloudy		3	6.89
Rig Dir.	Ris. Tension	VDL	Comments					4	7.39
249.0deg	12.25mt	207.71mt						5	8.48
								6	11.11
								7	10.48
								8	8.80

Boats	Arrived (date/time)	Departed (date/time)	Status	Bulks		
Far Grip			Ocean Patriot	Item	Unit	Quantity
				Fuel	M3	426
				Drill Water	M3	730
				Potable Water	M3	426
				Barite	MT	81
				Gel	MT	43
				Cement	MT	40
KCl Brine	MT	0				
Pacific Wrangler			Portland	Item	Unit	Quantity
				Fuel	M3	0
				Drill Water	M3	0
				Potable Water	M3	0
				Barite	MT	0
				Gel	MT	0
				Cement	MT	0
KCl Brine	MT	0				

### Helicopter Movement

Flight #	Time	Destination	Comment	Pax
1	10:28	Essendon		13
1	10:41	Ocean Patriot		14
2	16:35	Essendon		0
2	16:44	Ocean Patriot		1

### Lessons Learned

Categories		Event Descr.	Post Event Descr.	Lesson
Short Descr.	Steam hose required replacement on steam exchanger	Steam hose failed during testing.	Shut in well and replaced steam hose.	Review inspection and commissioning of steam lines from boiler.
Phase	Testing			
Category				
Resp. Party				
Closed/Open	Open			

**From : Ron King, Philip Deshon, Mike Andronov, Paul Nardone**  
**OIM : Sean De Freitas**

### Well Data

Country	Australia	M. Depth	2404.0m	Cur. Hole Size	216mm	AFE Cost	
Field	Casino	TVD	1786.0m	Casing OD	244mm	AFE No.	5746022
Drill Co.	DOGC	Progress	0m	Shoe TVD	1740.8m	Daily Cost	
Rig	Ocean Patriot	Days from spud	39.77	F.I.T. / L.O.T.	Osg / Osg	Cum Cost	
Wtr Dpth(LAT)	70.8m	Days on well	15.19			Planned TD	2642.0m
RT-ASL(LAT)	22.0m	Current Op @ 0600	POOH with BH pressure gauges.				
RT-ML	92.8m	Planned Op	Retrive pressure gauges from tailpipe. Retrieve TH wireline short protection sleeve from THRT. Inflow test SSSV. Run and set lower plug in TH. Unlatch THRT from TH. RD surface lines, slickline and flowhead.				

### Summary of Period 0000 to 2400 Hrs

Continued flowing well for three rate flow test on 13 mm (32/64"), 19 mm (48/64") and 25 mm (64/64") fixed chokes. Shut-in well for build-up.

### Operations For Period 0000 Hrs to 2400 Hrs on 10 Jun 2005

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
CTB	P	OA	0000	0100	1.00	2404.0m	Continued to flow well. Took PVT samples (s/n A2006) at 00:30. Final flowing conditions for first flow period (01:08): 13 mm (32/64") choke, FTHP = 16,113 kPag (2,337 psig), WHTemp = 35.7 deg C (96 deg F), D/Stream Pressure = 6,097 kPag (884 psig), D/Stream Temp. = 9.9oC (50 deg F), Separator Pressure = 5,347 kPag (775 psig), Sep Temp = 19.6 deg C (67 deg F), Orifice plate = 70 mm (2.75"), No measurable BS&W, 1.0% CO2 and 0.1 ppm H2S. SG = 0.683, Estimated rate 0.40E6 m <sup>3</sup> /day (14.1 MMscfd). No hydrates observed.
CTB	TP (OTH)	OA	0100	0215	1.25	2404.0m	Increased choke to 19 mm (48/64") for second rate flow period @ 1:09. Experienced pressure controller instrumentation problem while flowing through separator - bypassed separator to troubleshoot. Tripped ESD when flowed to separator. Opened well again at 02:35 on 19 mm (48/64") and continued to flow well. OK.
CTB	P	OA	0215	0715	5.00	2404.0m	Took PVT samples (s/n A-5768) at 06:30. Final flowing conditions for second flow period (07:11): 19 mm (48/64") choke, FTHP = 15,514 kPag (2,250 psig), WHTemp = 44.1 deg C (111 deg F), D/Stream Pressure = 5,320 kPag (772 psig), D/Stream Temp. = 13.9 deg C (57 deg F), Separator Pressure = 4,257 kPag (617 psig), Sep Temp = 10.3 deg C (51 deg F), Orifice plate = 108 mm (4.25"), 1.0% CO2 and 0.1 ppm H2S. SG = 0.684, Estimated rate 0.82E6 m <sup>3</sup> /day (28.8 MMscfd).
CTB	P	OA	0715	1330	6.25	2404.0m	Increased choke to 25 mm (64/64") for third rate flow period @ 07:15. Took PVT samples (s/n A-1984) at 12:45. Closed Annular Master Valve (AMV) at 13:25. Final flowing conditions for third flow period (13:31): 25 mm (64/64") choke, FTHP = 14,116 kPag (2,047 psig), WHTemp = 49.9 deg C (122 deg F), D/Stream Pressure = 7,185 kPag (1,042 psig), D/Stream Temp. = 24.5 deg C (76 deg F), Separator Pressure = 4,902 kPag (711 psig), Sep Temp = 24.8 deg C (77 deg F), Orifice plate = 114 mm (4.5"), 1.0% CO2 and 0.1 ppm H2S. SG = 0.703, Estimated rate 1.28E6 m <sup>3</sup> /day (45.3 MMscfd).
CTB	P	OA	1330	2400	10.50	2404.0m	SI well for pressure build-up at well test choke manifold (13:31). SITHP @ 24:00 = 16,641 kPag (2,413 psig), WHTemp. = 16.2 deg C (61 deg F).

### Operations For Period 0000 Hrs to 0600 Hrs on 11 Jun 2005

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
CTB	P	OA	0000	0430	4.50	2404.0m	Well shut-in for pressure build-up. SITHP @ 04:30 = 16,711 kPag (2,424 psig), WHTemp = 13 deg C (56 deg F).
CTB	P	SLK	0430	0600	1.50	2404.0m	(IN PROGRESS) Held JSA for slickline operations. Closed MV and bled off pressure. Opened SV and KWV. Equalised pressure to 16,890 kPag (2,450 psig) above the MV and opened same. RIH with gauge hanger retrieval string on slickline to 117 mm (4.625") QN landing nipple and latched hanger and gauges with 127 mm (5") DU pulling tool (05:35). POOH.

Bulk Stocks						Personnel On Board	
Name	Unit	In	Used	Adjust	Balance	Company	Pax
Fuel	m3	0	7	0	415.1	Santos	7
Drill Water	m3	0	12	0	489.4	DOGC	47
Potable Water	m3	31.2	22.7	0	232.3	ESS	8
Gel	sx	0	0	0	1,685.0	Dowell	1
Cement	sx	0	0	0	778.0	Geoservices	1
Barite	sx	0	0	0	1,555.0	Fugro	6
KCl Brine	bbl	0	0	0	0.0	Cameron	3
						Expro	16
						Weatherford	2
						Expro	2
						<b>Total</b>	<b>93</b>

HSE Summary			
Events	Date of Last	Days Since	Remarks
Abandon Drill	05 Jun 2005	5 Days	Abandon Drill
BOP Test	05 Jun 2005	5 Days	BOP Test
Environmental Incident	02 May 2005	39 Days	None reported since commencement of campaign.
Fire Drill	29 May 2005	12 Days	Fire Drill
First Aid	04 May 2005	37 Days	Person struck on nose with metal bar
Lost Time Incident	02 May 2005	39 Days	None reported since commencement of campaign.
Man Overboard Drill	02 May 2005	39 Days	None undertaken since commencement of campaign.
Near Miss	02 May 2005	39 Days	None reported since commencement of campaign.
Safety Meeting	05 Jun 2005	5 Days	Weekly Safety Meeting
Stop Cards	10 Jun 2005	0 Days	5 Stop Cards

Marine									
Weather check on 10 Jun 2005 at 2400							Rig Support		
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (mt)
18.5km	37km/h	022deg	1011.00bar	15.0C°	1.0m	022deg	0m/sec	1	10.48
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather Comments			
0.3deg	0.3deg	0.60m	0.5m	225deg	0m/sec	Mainly Cloudy			
Rig Dir.	Ris. Tension	VDL	Comments					5	8.62
249.0deg	12.25mt	207.89mt						6	11.11
							7	10.39	
							8	8.62	

Boats	Arrived (date/time)	Departed (date/time)	Status	Bulks		
Far Grip			Ocean Patriot	Item	Unit	Quantity
				Fuel	M3	415
Drill Water	M3	730				
Potable Water	M3	418				
Barite	MT	81				
Gel	MT	43				
Cement	MT	40				
KCl Brine	MT	0				
Pacific Wrangler	20:15		Ocean Patriot	Item	Unit	Quantity
Fuel	M3	526.9				
Drill Water	M3	287				
Potable Water	M3	233				
Barite	MT	37				
Gel	MT	42				
Cement	MT	121				
KCl Brine	MT	900				

Helicopter Movement				
Flight #	Time	Destination	Comment	Pax
1	10:00	Essendon		6
1	10:10	Ocean Patriot		6

Lessons Learned				
Categories		Event Descr.	Post Event Descr.	Lesson
Short Descr.	Modify Fire & Escape Plan - Shutdown Compressors	Fire & Escape Plan evaluated on rig, agreed modification to Well Test Emergency Response - Shutdown Compressors if there is an alarm	Modification made to Fire & Escape Plan Signed by relevant parties.	Modify Fire & Escape Plan accordingly for future operations
Phase	Testing			
Category				
Resp. Party	Santos			
Closed/Open	Closed			
Short Descr.	Isolation of lo-pilot at end of test	Tripped ESD while bleeding off THP at section 16.1.3.	Isolated lo-pilot and re-pened ESD.	Section 16.1.3 Ensure lo-pilot is isolated prior to bleeding off THP.
Phase	Testing			
Category				
Resp. Party	Santos			
Closed/Open	Open			
Short Descr.	Slickline tools on Swab Valve	Observed omission from programme in respect of slickline tools on swab valve.		Section 16.1.3 Ensure slickline tools are not sitting on swab valve prior to opening swab valve.
Phase	Testing			
Category				
Resp. Party				
Closed/Open	Open			
Short Descr.	Close KVV and bleed off pressure.	Observed omission from programme in respect of bleeding off pressure from flowhead to cement unit.		After section 16.1.3 close KVV and bleed off pressure at cement unit.
Phase	Testing			
Category				
Resp. Party				
Closed/Open	Open			



**From : Ron King, Philip Deshon, Mike Andronov, Paul Nardone**  
**OIM : Sean De Freitas**

**Well Data**

Country	Australia	M. Depth	2404.0m	Cur. Hole Size	216mm	AFE Cost	
Field	Casino	TVD	1786.0m	Casing OD	244mm	AFE No.	5746022
Drill Co.	DOGC	Progress	0m	Shoe TVD	1740.8m	Daily Cost	
Rig	Ocean Patriot	Days from spud	40.77	F.I.T. / L.O.T.	Osg / Osg	Cum Cost	
Wtr Dpth(LAT)	70.8m	Days on well	16.19			Planned TD	2642.0m
RT-ASL(LAT)	22.0m	Current Op @ 0600	RIH with ITC on landing string.				
RT-ML	92.8m	Planned Op	Set ITC. Pull BOP's, Run XT debis cap and pull anchors.				

**Summary of Period 0000 to 2400 Hrs**

Retrieved pressure gauges. Retrieved TH wireline short protection sleeve. Inflow tested SSSV. Set lower plug in TH. Unlatched THRT/SSTT from TH and POOH.

**Operations For Period 0000 Hrs to 2400 Hrs on 11 Jun 2005**

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
CTB	P	OA	0000	0430	4.50	2404.0m	Well shut-in for pressure build-up. SITHP @ 04:30 = 16,711 kPag (2,424 psig), WHTemp = 13 deg C (56 deg F).
CTB	P	SLK	0430	0645	2.25	2404.0m	Held JSA for slickline operations. Closed MV and bled off pressure. Opened SV and KWV. Equalised pressure to 16,890 kPag (2,450 psig) above the MV and opened same. RIH with gauge hanger retrieval string on slickline to 117 mm (4.625") QN landing nipple and latched hanger and gauges with 127 mm (5") DU pulling tool (05:35). POOH.
CTB	P	SLK	0645	0800	1.25	2404.0m	Recovered DH gauges and MU TH wireline short protection sleeve pulling toolstring. Attempted to close LBV and bleed off to 690 kPa (100 psi). LBV did not close. Close UBV, inflow tested and closed LV. Bled off to 0 kPa.
CTB	P	PT	0800	0945	1.75	2404.0m	Confirmed valve status on subsea tree, Closed: PMV, PWV, XOY, AMV and AMV, Open: AAV. Closed SV and SSSV. Open LV. Pressured above UBV to 14,485 kPa (2,100 psi) with 50/50 water/glycol mix with 3.9 KL (24.5 bbls) i.e. 300 psi below SITHP. Bled pressure to 690 kPa (100 psi) through welltest choke manifold in stages and lubricated water/glycol mix onto the SSSV. Performed inflow test of SSSV for 15 mins.
CTB	P	SLK	0945	1100	1.25	2404.0m	RIH slickline and retrieved TH wireline short protection sleeve from 87.2 m (0.3m tide) wireline depth - 0.01 MT (30 lb) weight increase - POOH. MU 170 mm (6.7") wireline plug toolstring. Opened XOY and PMV.
CTB	P	SLK	1100	1245	1.75	2404.0m	RIH 170 mm (6.7") wireline plug to 90.2 m wireline depth (0.5m tide). Pressured above plug to 20,685 kPa (3,000 psi) with 50/50 water/glycol mix with 3.2 m <sup>3</sup> (20 bbls) and set plug in TH. POOH slickline to surface and closed SV. Pressure tested above 170 mm (6.7") wireline plug to 34,475 (5,000 psi) for 10 mins from above. Bled pressure down to 0 psi.
CTB	P	PT	1245	1430	1.75	2404.0m	Broke out toolstring. Tell tale indicated 170 mm (6.7") wireline plug had set. Attempted to pressure test below wireline plug from choke / kill lines (via AAV, XOY and PMV) to 6,890 kPa (1,000 psi) with 0.32 m <sup>3</sup> (2 bbls). After reaching 6,890 kPa (1,000 psi) pressure in rig choke line increased to 15,170 kPa (2,200 psi). Bled pressure off to 4,140 kPa (600 psi). Rig Choke line pressure increased to 16,550 kPa (24,00 psi). XT IWOCs HPU opened all XT valves. Closed XOY.
CTB	P	PT	1430	1515	0.75	2404.0m	Closed PMV. Opened PWV and XOY. Bled off pressure to 0 kPa from rig choke. Brine returns noted. SI rig choke for 5 mins and inflow tested PMV. Closed PWV and XOY. Opened AMV to check for pressure in annulus - 0KPa observed. Closed AMV and AAV. Lined up cement unit to flowhead and flushed surface welltest lines with drillwater.
CTB	P	PUP	1515	1730	2.25	2404.0m	Held JSA - Rig down slickline and pressure control equipment. RD wireline and slickline PCE. [offline: opened TCT and closed SIV with ROV]
CTB	P	PUP	1730	1815	0.75	2404.0m	Opened 273 mm (10-3/4") rams. Set down 6.8 MT (15,000 lbs) at THRT. Unlatched THRT and PU to 5 m above TH. Removed Expro bushing inserts and rig up 508 mm (20") split bowls and slips. Set 244 mm (9-5/8") L80 New Vam landing string in slips.
CTB	P	PLD	1815	2030	2.25	2404.0m	Held JSA - Breaking out and laying down flowhead. Broke out flowhead and laid out. Saver pup pin thread damaged prior to thread protectors being installed.
CTB	P	PLD	2030	2400	3.50	2404.0m	Laid out both sets of bails and changed handling gear, cleared rig floor. POOH laying down 244 mm (9-5/8") L80 New Vam. Laid down lubricator valve. POOH THRT/SSTT to surface.  [Offline ROV activities: Removed umbilical from cutter gate. Removed electrical downline from PCA on SCM and installed dummy Tronic plug.

**Operations For Period 0000 Hrs to 0600 Hrs on 12 Jun 2005**

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
CTB	P	XT	0000	0115	1.25	2404.0m	Laid down Tubing Hanger Running Tool (THRT) / Sub-Sea Test Tree (SSTT) on catwalk with umbilical attached.
CTB	P	XT	0115	0315	2.00	2404.0m	Picked up Internal Jetting Tool and RIH on 127 mm (5") DP. Tagged top of tubing hanger (TH) and forward circulated sea water to jet Internal Tree Cap (ITC) profile (01:50) while reciprocating jetting tool. Returns of rubber shavings observed at shakers. Boosted riser - max circulating rate at 3400 litres (900 gals) / min. Jetted until no solid returns observed at shakers (02:30). Flushed through TCT. POH internal jetting tool to surface. Less than 1 litre of pipe dope and rubber shavings noted in junk basket.
CTB	P	XT	0315	0600	2.75	2404.0m	(IN PROGRESS) Held JSA - Handling ITC on THRT / SSTT. Prepared and functioned the THRT / SSTT. Made up the THRT/SSTT to the ITC. Performed 5,000 psi separation test. RIH with the ITC on 244 mm (9-5/8") L80 New vam landing string, attaching umbilical at each connection.

Bulk Stocks						Personnel On Board		
Name	Unit	In	Used	Adjust	Balance	Company	Pax	
Fuel	m3	0	7.6	0	407.5	Santos	7	
Drill Water	m3	0	50.6	0	438.8	DOGC	55	
Potable Water	m3	31.3	25	0.1	238.7	ESS	8	
Gel	sx	0	0	0	1,685.0	Dowell	1	
Cement	sx	0	0	0	778.0	Geoservices	1	
Barite	sx	0	0	0	1,555.0	Fugro	6	
KCl Brine	bbl	0	0	0	0.0	Cameron	3	
						Expro	11	
						Weatherford	2	
						Total	94	

HSE Summary			
Events	Date of Last	Days Since	Remarks
Abandon Drill	05 Jun 2005	6 Days	Abandon Drill
BOP Test	05 Jun 2005	6 Days	BOP Test
Environmental Incident	02 May 2005	40 Days	None reported since commencement of campaign.
Fire Drill	05 Jun 2005	6 Days	Fire Drill
First Aid	04 May 2005	38 Days	Person struck on nose with metal bar
Lost Time Incident	02 May 2005	40 Days	None reported since commencement of campaign.
Man Overboard Drill	02 May 2005	40 Days	None undertaken since commencement of campaign.
Near Miss	02 May 2005	40 Days	None reported since commencement of campaign.
Safety Meeting	05 Jun 2005	6 Days	Weekly Safety Meeting
Stop Cards	11 Jun 2005	0 Days	4 Stop Cards

Marine								Rig Support	
Weather check on 11 Jun 2005 at 2400									
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (mt)
18.5km	28km/h	326deg	1007.00bar	15.0C°	0.5m	326deg	0m/sec	1	10.70
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather Comments		2	8.98
0.3deg	0.3deg	0.60m	1.0m	270deg	0m/sec	Clear		3	6.80
Rig Dir.	Ris. Tension	VDL	Comments				4	7.39	
249.0deg	12.25mt	203.94mt					5	8.39	
								6	11.02
								7	10.48
								8	8.80

Boats	Arrived (date/time)	Departed (date/time)	Status	Bulks		
Far Grip			Ocean Patriot	Item	Unit	Quantity
				Fuel	M3	402
				Drill Water	M3	730
				Potable Water	M3	410
				Barite	MT	81
				Gel	MT	43
				Cement	MT	40
KCl Brine	MT	0				
Pacific Wrangler			Ocean Patriot	Item	Unit	Quantity
				Fuel	M3	516.6
				Drill Water	M3	287
				Potable Water	M3	228
				Barite	MT	37
				Gel	MT	42
				Cement	MT	121
KCl Brine	MT	950				

### Helicopter Movement

Flight #	Time	Destination	Comment	Pax
1	12:12	Essendon		8
1	12:25	Ocean Patriot		7

### Lessons Learned

Categories		Event Descr.	Post Event Descr.	Lesson
Short Descr.	Spade in poor boy de-gasser	Poor boy de-gasser unavailable during suspension due to spade installed for welltesting.	If required would have been necessary to remove spade.	Review requirement for spade in poor boy degasser.
Phase	Completion			
Category				
Resp. Party				
Closed/Open	Open			
Short Descr.	Expand Jetting ITC profile		Section 16.5.2 does not include detail on jetting the ITC profile.	Section 16.5.2 should be expanded to include Circ. plan/Boosting, jetting fluid, jetting duration, recipricating pipe speed, number of jetting runs etc.,
Phase	Completion			
Category				
Resp. Party				
Closed/Open	Open			
Short Descr.	Lubricating Water / Glycol mix on SSSV	Lubricating water / glycol mix onto SSSV with gas pressure below UBV proved very slow.		Lubricate water / glycol mix onto SSSV when there is 0psi above the SSSV. I.e prior of post retrieving TH wireline short protection sleeve.
Phase	Completion			
Category				
Resp. Party				
Closed/Open	Open			

**From : Ron King / Pat King**  
**OIM : Barry Scott**

**Well Data**

Country	Australia	M. Depth	2404.0m	Cur. Hole Size	216mm	AFE Cost	
Field	Casino	TVD	1786.0m	Casing OD	244mm	AFE No.	5746022
Drill Co.	DOGC	Progress	0m	Shoe TVD	1740.8m	Daily Cost	
Rig	Ocean Patriot	Days from spud	41.77	F.I.T. / L.O.T.	Osg / Osg	Cum Cost	
Wtr Dpth(LAT)	70.8m	Days on well	17.19			Planned TD	2642.0m
RT-ASL(LAT)	22.0m	Current Op @ 0600	Preparing to unlatch BOP.				
RT-ML	92.8m	Planned Op	POH with riser and BOP. Run XT debris cap. Perform ROV seabed survey. Commence pulling anchors.				

**Summary of Period 0000 to 2400 Hrs**

RIH with jetting tool and jetted ITC profile. POH. RIH ITC on THRT / SSTT and attempted to lock. No success. POH. RIH and jetted ITC profile to confirm clean. Changed out ITC, RIH on THRT / SSTT and locked in XT. Confirmed locked with 60 klb overpull. Pressure tested cavity down TCT line. OK. Commenced POH with THRT / SSTT.

**Operations For Period 0000 Hrs to 2400 Hrs on 12 Jun 2005**

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
CTB	P	XT	0000	0115	1.25	2404.0m	Laid down Tubing Hanger Running Tool (THRT) / Sub-Sea Test Tree (SSTT) on catwalk with umbilical attached.
CTB	P	XT	0115	0315	2.00	2404.0m	Picked up Internal Jetting Tool and RIH on 127 mm (5") DP. Tagged top of tubing hanger (TH) and forward circulated sea water to jet Internal Tree Cap (ITC) profile (01:50) while reciprocating jetting tool. Returns of rubber shavings observed at shakers. Boosted riser - max circulating rate at 3400 litres (900 gals) / min. Jetted until no solid returns observed at shakers (02:30). Flushed through TCT. POH internal jetting tool to surface. Less than 1 litre of pipe dope and rubber shavings noted in junk basket.
CTB	P	XT	0315	0700	3.75	2404.0m	Held JSA - Handling ITC on THRT / SSTT. Prepared and functioned the THRT / SSTT. Made up the THRT/SSTT to the ITC. Performed 5,000 psi separation test. RIH with the ITC on 244 mm (9-5/8") L80 New vam landing string, attaching umbilical at each connection.
CTB	TP (OTH)	XT	0700	0800	1.00	2404.0m	Tagged XT and landed out ITC. Boosted THRT latch line control pressure to 34,475 kPa (5,000 psi). Set down landing string weight. Closed lower annular and pressured up on ITC to 20,700 kPa (3,000 psi) in 3,450 kPa (500 psi) increments using cement unit (1.5 litre returns up TCT line). Pressured up TH lock to 20,700 kPa (3,000 psi) for 5 min. SSTT indicated locked. Bled off pressure and opened lower annular. Attempted to pull 27.2 MT (60,000 lb) overpull to confirm locked - string free at 15.9 MT (35,000 lb). ITC not locked.
CTB	TP (OTH)	XT	0800	0930	1.50	2404.0m	Picked up ITC and re-landed in XT. Set down landing string weight. Filled landing string with water. Closed lower annular and pressured up on ITC to 20,700 kPa (3,000 psi). Opened lower annular. Pressured up TH lock to 20,700 kPa (3,000 psi). No lock indication. Pressured up TH lock to 24,100 kPa (3,500 psi). No lock indication. Closed lower annular. Pressured up on ITC to 20,700 kPa (3,000 psi). No returns from Tree Cap Test (TCT) line. Pressured up on ITC to 27,580 kPa (4,000 psi). No returns from TCT line. Bled off pressure. Attempted to lock. No lock indication.
CTB	TP (OTH)	XT	0930	1030	1.00	2404.0m	Opened lower annular and rotated landing string 1/4 turn. Closed lower annular. Pressured up on ITC to 34,500 kPa (5,000 psi). No returns from TCT line. Bled off pressure. Attempted to lock. No lock indication.
CTB	TP (OTH)	XT	1030	1400	3.50	2404.0m	POH with ITC on THRT / SSTT and laid out same. No evidence of landout in XT.
CTB	TP (OTH)	XT	1400	1500	1.00	2404.0m	RIH with open ended 127 mm (5") drill pipe and jetted wellhead. Circulated with seawater. Pumped 9.5 m3 (60 bbl) hi-vis guar gum sweep. Circulated 2 times riser volume of seawater whilst boosting riser. Shakers clean.
CTB	TP (OTH)	XT	1500	1530	0.50	2404.0m	POH with jetting string.
CTB	TP (OTH)	XT	1530	1630	1.00	2404.0m	Picked up THRT / SSTT and ITC and function tested same. Checked riser and BOP angle: wellhead 3/4 deg stbd; BOP 1 deg stbd; LMRP 1 deg stbd. Made up ITC to THRT.
CTB	TP (RE)	XT	1630	1800	1.50	2404.0m	Well taking fluid, unable to fill riser. Checked sub-sea and surface equipment for leaks. Closed blind shear rams. Pressure tested against TH / blind shear rams to 13,800 kPa (2,000 psi). OK. Losses still present in riser. Pumped dye to establish leak path. Leaking riser booster pump check valve. Isolated same and repaired. Filled riser. TCT line found blocked - cleared with 15,168 kPa (2200 psi) applied to TCT line.
CTB	TP (OTH)	XT	1800	2000	2.00	2404.0m	RIH with ITC on THRT / SSTT.
CTB	TP (OTH)	XT	2000	2100	1.00	2404.0m	Tagged XT and landed out ITC. Set down landing string weight. Closed lower annular. Pressured up below annular to 6,890 kPa (1,000 psi). No returns through TCT line. Picked up string, stripping annular slick joint approx. 0.2 m (5") through annular. Pressured up below annular to 4,140 kPa (600 psi) with no returns through TCT line.

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
CTB	TP (OTH)	XT	2100	2200	1.00	2404.0m	Pumped through TCT line then shut-in, holding 4,140 kPa (600 psi). Blockage in TCT line.
CTB	TP (OTH)	XT	2200	2330	1.50	2404.0m	Opened annular. Opened AAV and AMV. No annulus pressure. Flushed through TCT line. Index line confirmed approx. 0.1 m (3") drop from initial land out mark. Closed lower annular and pressured up to 13,800 kPa (2,000 psi). Index line confirmed total 0.2 m (6") drop from initial land out mark. Locked ITC, bled off below annular, bled off lock pressure and re-pressurised lock function. Lock monitor pressure increase indicated positive lockdown. 27.2 MT (60,000 lb) overpull to confirm ITC locked.
CTB	TP (OTH)	XT	2330	2400	0.50	2404.0m	Flushed through TCT to confirm flow path. Closed AAV and AMV. ROV confirmed closed. Pressure tested cavity between ITC / 178 mm (7") wireline plug and the 170 mm (6.7") wireline plug to 34,475 kPa (5,000 psi) for 10 min via TCT line. Bled off pressure. Closed TCT with ROV. Pressure test against closed TCT to 5000 psi for 10 min. Set THRT / SSTT in neutral and unlatched from ITC.
CTB	TP (OTH)	XT	2330	2400	0.50	2404.0m	Commenced POH with THRT / SSTT on 244 mm (9-5/8") L80 New Vam landing string.

**Operations For Period 0000 Hrs to 0600 Hrs on 13 Jun 2005**

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
CTB	P	XT	0000	0130	1.50	2404.0m	Continued POH with THRT / SSTT on 244 mm (9-5/8") L80 New vam landing string.
CTB	P	XT	0130	0200	0.50	2404.0m	Laid out THRT / SSTT. Latch test cap to THRT.
CTB	P	XT	0200	0330	1.50	2404.0m	Rigged down 244 mm (9 5/8") casing handling equipment. Laid out umbilical sheave. [Offline ROV activities: Removed IWOCSS flying stabplate from XT and parked on deployment frame. Installed XT Bridging Plate on XOP.
CTB	P	BOP	0330	0430	1.00	2404.0m	Held JSA prior to pulling diverter, riser and BOP. Made up diverter running tool. Retrieved diverter and laid out same.
CTB	P	RR2	0430	0600	1.50	2404.0m	Picked up riser landing joint and RIH. Collapsed riser slip joint and commenced making up to pull riser and BOP.

Bulk Stocks							Personnel On Board		
Name	Unit	In	Used	Adjust	Balance	Company	Pax		
Fuel	m3	0	16.2	0	391.3	Santos	5		
Drill Water	m3	0	6	0	432.8	DOGC	53		
Potable Water	m3	27.2	26.3	0	239.6	ESS	8		
Gel	sx	0	0	0	1,685.0	Dowell	1		
Cement	sx	0	0	0	778.0	Geoservices	1		
Barite	sx	0	0	0	1,555.0	Fugro	6		
KCl Brine	bbl	0	0	0	0.0	Cameron	3		
						Expro	4		
						Weatherford	2		
						Fugro - Surveyor	3		
						MO47	3		
						Other	1		
						MI	1		
							Total	91	

HSE Summary			
Events	Date of Last	Days Since	Remarks
Abandon Drill	12 Jun 2005	0 Days	Abandon Drill
BOP Test	05 Jun 2005	7 Days	BOP Test
Environmental Incident	02 May 2005	41 Days	None reported since commencement of campaign.
Fire Drill	12 Jun 2005	0 Days	Fire Drill
First Aid	04 May 2005	39 Days	Person struck on nose with metal bar
Lost Time Incident	02 May 2005	41 Days	None reported since commencement of campaign.
Man Overboard Drill	02 May 2005	41 Days	None undertaken since commencement of campaign.
Near Miss	02 May 2005	41 Days	None reported since commencement of campaign.
Safety Meeting	12 Jun 2005	0 Days	Weekly Safety Meeting
Stop Cards	12 Jun 2005	0 Days	10 Stop Cards

Marine								Rig Support	
Weather check on 12 Jun 2005 at 2400									
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (mt)
27.8km	37km/h	000deg	1007.00bar	14.0C°	1.5m	010deg	0m/sec	1	10.61
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Clear			
0.3deg	0.5deg	0.60m	2.5m	270deg	0m/sec				
Rig Dir.	Ris. Tension	VDL	Comments				2	8.98	
249.0deg	12.25mt	216.45mt					3	7.12	
								4	7.62
								5	8.48
								6	11.02
								7	10.39
								8	8.39

Boats	Arrived (date/time)	Departed (date/time)	Status	Bulks		
Far Grip			Ocean Patriot	<b>Item</b>	<b>Unit</b>	<b>Quantity</b>
				Fuel	M3	384
				Drill Water	M3	730
				Potable Water	M3	402
				Barite	MT	81
				Gel	MT	43
				Cement	MT	40
				KCl Brine	MT	0
Pacific Wrangler			Ocean Patriot	<b>Item</b>	<b>Unit</b>	<b>Quantity</b>
				Fuel	M3	505.7
				Drill Water	M3	287
				Potable Water	M3	223
				Barite	MT	37
				Gel	MT	42
				Cement	MT	121
				KCl Brine	MT	950

Helicopter Movement				
Flight #	Time	Destination	Comment	Pax
1	10:07	Ocean Patriot		9
1	10:23	Essendon		12



**From : Ron King / Pat King**  
**OIM : Barry Scott**

**Well Data**

Country	Australia	M. Depth	2404.0m	Cur. Hole Size	216mm	AFE Cost	
Field	Casino	TVD	1786.0m	Casing OD	244mm	AFE No.	5746022
Drill Co.	DOGC	Progress	0m	Shoe TVD	1740.8m	Daily Cost	
Rig	Ocean Patriot	Days from spud	42.77	F.I.T. / L.O.T.	Osg / Osg	Cum Cost	
Wtr Dpth(LAT)	70.8m	Days on well	18.19			Planned TD	2404.0m
RT-ASL(LAT)	22.0m	Current Op @ 0600	Anchor handling operations.				
RT-ML	92.8m	Planned Op	Continue to recover anchors. Move to Casino-5 location.				

**Summary of Period 0000 to 2400 Hrs**

Laid out ITC / THRT. POH diverter. Unlatched BOP. Retrieved BOP and riser. Installed debris cap on XT. Pulled guidewires. Moved rig off location. Commenced laying out drill pipe whilst preparing to pull anchors.

**Operations For Period 0000 Hrs to 2400 Hrs on 13 Jun 2005**

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
CTB	P	XT	0000	0130	1.50	2404.0m	Continued POH with THRT / SSTT on 244 mm (9-5/8") L80 New vam landing string.
CTB	P	XT	0130	0230	1.00	2404.0m	Installed protector on THRT / SSTT and laid out same with umbilical sheave.
CTB	P	XT	0230	0300	0.50	2404.0m	Rigged down 244 mm (9 5/8") casing handling equipment.
CTB	P	BOP	0300	0430	1.50	2404.0m	Held JSA - Pulling BOPs and riser. Rigged up riser handling equipment. Picked up diverter running tool and made up into diverter. Retrieved diverter and laid out same.
CTB	P	RR2	0430	0630	2.00	2404.0m	Picked up riser landing joint and made up same. Collapsed slip joint and locked. Nipped down hoses from slip joint.
CTB	P	RR2	0630	0730	1.00	2404.0m	Unlatched BOP and pulled clear of guidebase to nipple down choke, kill and booster lines. (Moved off location using anchors)
CTB	P	RR2	0730	1000	2.50	2404.0m	Nipped down choke, kill and booster lines from slip joint.
CTB	P	RR2	1000	1130	1.50	2404.0m	Rigged down Cameron umbilical, sheave and control plate.
CTB	P	RR2	1130	1300	1.50	2404.0m	Rigged down storm saddles, goose necks and pod hose saddle.
CTB	P	RR2	1300	1500	2.00	2404.0m	Lifted BOP stack and latched tensioner ring, laying down landing joint.
CTB	P	RR2	1500	1530	0.50	2404.0m	Laid out riser slip joint.
CTB	P	RR2	1530	1600	0.50	2404.0m	Continued to pull BOP, laying out riser.
CTB	P	RR2	1600	1630	0.50	2404.0m	Pulled BOP through splash zone and landed out on carrier stump.
CTB	P	RR2	1630	1730	1.00	2404.0m	Removed guidewire pod line and hose clamps.
CTB	P	RR2	1730	1900	1.50	2404.0m	Laid down riser double and rigged down riser handling equipment.
CTB	P	RR2	1900	2030	1.50	2404.0m	Skidded rig back over location. Inspected top of XT and ITC with ROV.
CTB	P	XT	2030	2100	0.50	2404.0m	Made up debris cap to running tool. RIH with same on 127 mm (5") drill pipe and installed on XT.
CTB	P	XT	2100	2130	0.50	2404.0m	Unlatched running tool and POH, laying out drill pipe.
CTB	P	WH	2130	2300	1.50	2404.0m	Released and retrieved guidewires with moonpool tigger. [Offline operations: ROV conducted final seabed survey and XT "as-left" survey]
CTB	P	SKR	2300	2400	1.00	2404.0m	Skidded rig off location (10 m port). Dumped mud pits. Commenced laying down 127 mm (5") drill pipe whilst preparing to pull anchors.

**Operations For Period 0000 Hrs to 0600 Hrs on 14 Jun 2005**

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
CTB	P	AH	0000	0600	6.00	2404.0m	Commenced recovery of secondary anchors.  Pulled Anchor #2 with Pacific Wrangler 00:14 - PCC to Pacific Wrangler 00:41 - Anchor off bottom 00:56 - Anchor decked for inspection. Unserviceable. 02:53 - Anchor removal complete. PCC shackled to anchor chain. Commenced heaving in chain. 05:06 - Anchor back on rig.  Pulled Anchor #6 with Far Grip 00:35 - PCC to Far Grip 01:02 - Anchor off bottom 02:50 - PCC back to rig  Pulled Anchor #7 with Far Grip 03:01 - PCC to Far Grip 03:25 - Anchor off bottom 03:38 - Commenced heaving in chain 05:33 - PCC back to rig

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
							Commenced pulling Anchor #3 with Far Grip 05:58 - PCC to Far Grip  Pacific Wrangler commenced moving to tow bridle.  [Continued laying down 127 mm (5") drill pipe whilst handling anchors]

Bulk Stocks							Personnel On Board		
Name	Unit	In	Used	Adjust	Balance	Company	Pax		
Fuel	m3	0	7.6	0	383.7	Santos	4		
Drill Water	m3	0	6	0	426.8	DOGC	53		
Potable Water	m3	28.3	23.6	0	244.3	ESS	8		
Gel	sx	0	0	0	1,685.0	Dowell	2		
Cement	sx	0	0	0	778.0	Geoservices	2		
Barite	sx	0	0	0	1,555.0	Fugro	6		
KCl Brine	bbl	0	0	0	0.0	Cameron	2		
						Fugro - Surveyor	3		
						MO47	3		
						Other	1		
						MI	2		
							Total	86	

HSE Summary			
Events	Date of Last	Days Since	Remarks
Abandon Drill	12 Jun 2005	1 Day	Abandon Drill
BOP Test	05 Jun 2005	8 Days	BOP Test
Environmental Incident	02 May 2005	42 Days	None reported since commencement of campaign.
Fire Drill	12 Jun 2005	1 Day	Fire Drill
First Aid	04 May 2005	40 Days	Person struck on nose with metal bar
Lost Time Incident	02 May 2005	42 Days	None reported since commencement of campaign.
Man Overboard Drill	02 May 2005	42 Days	None undertaken since commencement of campaign.
Near Miss	02 May 2005	42 Days	None reported since commencement of campaign.
Safety Meeting	12 Jun 2005	1 Day	Weekly Safety Meeting
Stop Cards	13 Jun 2005	0 Days	6 Stop Cards

Marine									
Weather check on 13 Jun 2005 at 2400							Rig Support		
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (mt)
18.5km	37km/h	350deg	1008.00bar	15.0C°	1.0m	350deg	0m/sec	1	11.39
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather Comments			
0.3deg	0.5deg	0.60m	2.0m	270deg	0m/sec	Clear			
Rig Dir.	Ris. Tension	VDL	Comments				2	9.71	
249.0deg	0mt	223.12mt					3	7.48	
							4	7.39	
							5	8.30	
							6	10.21	
							7	9.89	
							8	8.39	

Boats	Arrived (date/time)	Departed (date/time)	Status	Bulks		
Far Grip			Ocean Patriot	Item	Unit	Quantity
				Fuel	M3	375
				Drill Water	M3	730
				Potable Water	M3	394
				Barite	MT	81
				Gel	MT	43
				Cement	MT	40
				KCl Brine	bbl	0
Pacific Wrangler			Ocean Patriot	Item	Unit	Quantity
				Fuel	M3	494.3
				Drill Water	M3	287
				Potable Water	M3	218
				Barite	MT	37
				Gel	MT	42
				Cement	MT	121
				KCl Brine	bbl	950



Helicopter Movement				
Flight #	Time	Destination	Comment	Pax
1	09:55	Ocean Patriot		3
1	10:04	Essendon		8

**From : Chris Wise / Pat King**  
**OIM : Barry Scott**

**Well Data**

Country	Australia	M. Depth	2404.0m	Cur. Hole Size	216mm	AFE Cost	
Field	Casino	TVD	1786.0m	Casing OD	244mm	AFE No.	5746022
Drill Co.	DOGC	Progress	0m	Shoe TVD	1740.8m	Daily Cost	
Rig	Ocean Patriot	Days from spud	43.60	F.I.T. / L.O.T.	0sg / 0sg	Cum Cost	
Wtr Dpth(LAT)	70.8m	Days on well	19.02			Planned TD	2642.0m
RT-ASL(LAT)	22.0m	Current Op @ 0600					
RT-ML	92.8m	Planned Op					

**Summary of Period 0000 to 2400 Hrs**

Recovered primary and secondary anchors. Released rig.

**Operations For Period 0000 Hrs to 2400 Hrs on 14 Jun 2005**

Phse	Cls (RC)	Op	From	To	Hrs	Depth	Activity Description
SUS	P	AH	0000	0915	9.25	2404.0m	<p>Recovered secondary anchors.</p> <p>Pulled Anchor #2 with Pacific Wrangler            00:14 - PCC to Pacific Wrangler            00:41 - Anchor off bottom            00:56 - Anchor decked for inspection. Unserviceable.            02:53 - Anchor removal complete. PCC shackled to anchor chain. Commenced heaving in chain.            05:06 - Anchor back on rig</p> <p>Pulled Anchor #6 with Far Grip            00:35 - PCC to Far Grip            01:02 - Anchor off bottom            02:50 - PCC back to rig</p> <p>Pulled Anchor #7 with Far Grip            03:01 - PCC to Far Grip            03:25 - Anchor off bottom            03:38 - Commenced heaving in chain            05:33 - PCC back to rig</p> <p>Commenced pulling Anchor #3 with Far Grip            05:58 - PCC to Far Grip            06:50 - Anchor off bottom            09:15 - PCC back to rig</p> <p>08:33 - Pacific Wrangler connected to tow bridle.</p>
SUS	P	AH	0915	2000	10.75	2404.0m	<p>[Continued laying down 127 mm (5") drill pipe whilst handling anchors]</p> <p>Recovered primary anchors. (All anchors inspected on vessel deck due to poor condition of Anchor #2).</p> <p>Pulled Anchor #1 with Far Grip            09:25 - PCC to Far Grip            10:09 - Anchor off bottom            10:21 - Anchor on deck for inspection (OK)            13:00 - PCC back to rig</p> <p>Pulled Anchor #5 with Far Grip            13:17 - PCC to Far Grip            13:45 - Anchor off bottom            13:56 - Anchor on deck for inspection (OK)            15:42 - PCC back to rig</p> <p>Pulled Anchor #8 with Far Grip            15:54 - PCC to Far Grip            16:24 - Anchor off bottom            16:32 - Anchor on deck for inspection (OK)            17:55 - PCC back to rig</p> <p>Pulled Anchor #4 with Far Grip            18:20 - PCC to Far Grip            20:00 - Anchor off bottom            20:15 - Anchor on deck for inspection (slight distortion - deemed suitable for use)            20:45 - Anchor on Far Grip Stern roller. Commenced move to Casino-5</p> <p>Rig Released from Casino-4DW2 at 20:00.</p>

Bulk Stocks						Personnel On Board	
Name	Unit	In	Used	Adjust	Balance	Company	Pax
Fuel	m3	0	8.6	0	375.1	Santos	3
Drill Water	m3	0	11.2	0	415.6	DOGC	51
Potable Water	m3	7.4	0	0	251.7	ESS	8
Gel	sx	0	0	0	1,685.0	Dowell	2
Cement	sx	0	0	0	778.0	Geoservices	2
Barite	sx	0	0	0	1,555.0	Fugro	6
KCl Brine	bbl	0	0	0	0.0	Cameron	1
						Fugro - Surveyor	3
						MO47	3
						Other	1
						MI	2
Total							82

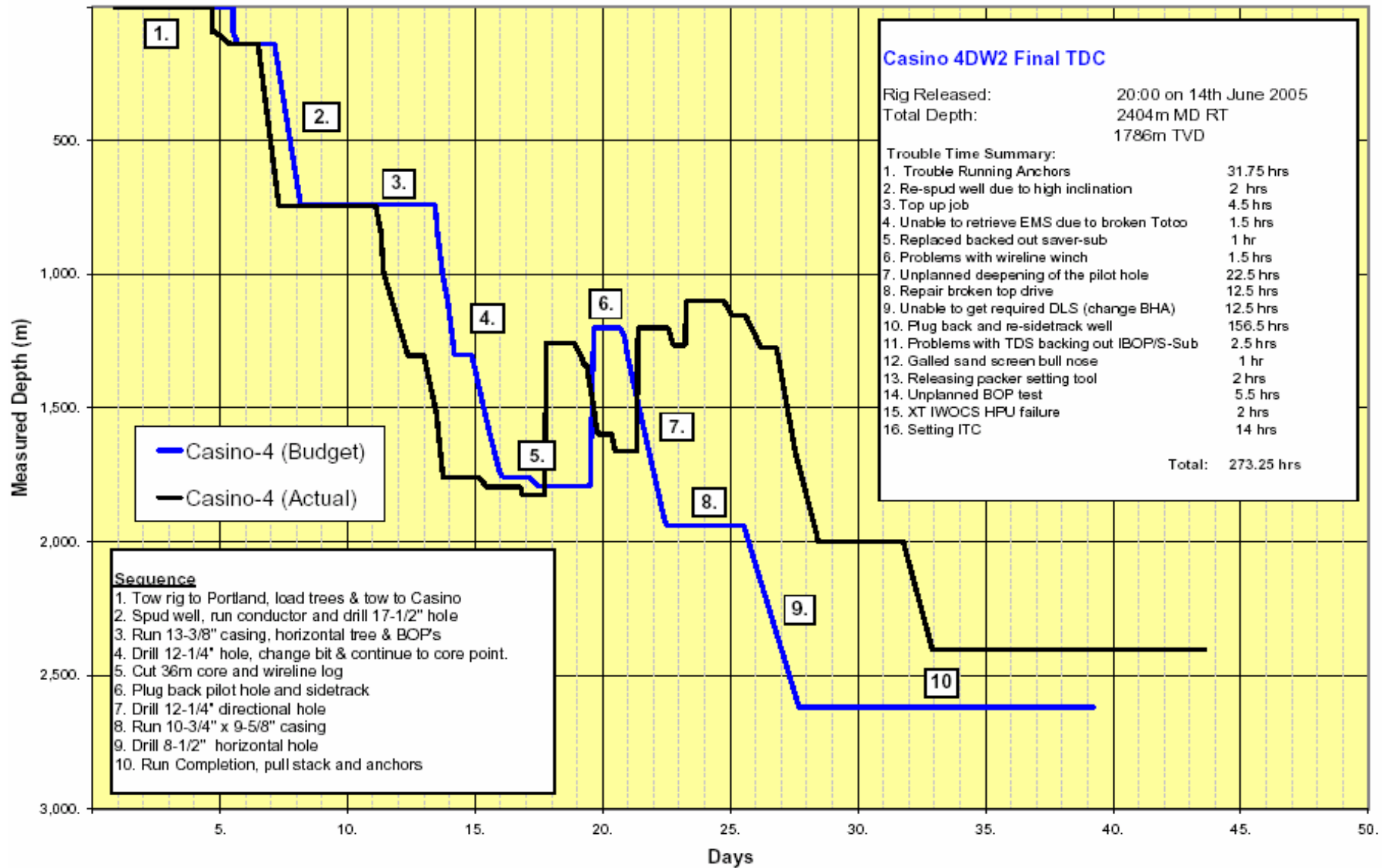
HSE Summary			
Events	Date of Last	Days Since	Remarks
Abandon Drill	12 Jun 2005	2 Days	Abandon Drill
BOP Test	05 Jun 2005	9 Days	BOP Test
Environmental Incident	02 May 2005	43 Days	None reported since commencement of campaign.
Fire Drill	12 Jun 2005	2 Days	Fire Drill
First Aid	04 May 2005	41 Days	Person struck on nose with metal bar
Lost Time Incident	02 May 2005	43 Days	None reported since commencement of campaign.
Man Overboard Drill	02 May 2005	43 Days	None undertaken since commencement of campaign.
Near Miss	02 May 2005	43 Days	None reported since commencement of campaign.
Safety Meeting	12 Jun 2005	2 Days	Weekly Safety Meeting
Stop Cards	13 Jun 2005	1 Day	6 Stop Cards

Marine									
Weather check on 14 Jun 2005 at 2000							Rig Support		
Visibility	Wind Speed	Wind Dir.	Pressure	Air Temp.	Wave Height	Wave Dir.	Wave Period	Anchors	Tension (mt)
18.5km	46km/h	290deg	1009.00bar	12.0C°	2.0m	290deg	0m/sec	1	0
Roll	Pitch	Heave	Swell Height	Swell Dir.	Swell Period	Weather Comments		2	0
0.6deg	0.6deg	0m	2.0m	270deg	2m/sec	Clear		3	0
Rig Dir.	Ris. Tension	VDL	Comments		4	0	5	0	
249.0deg	0mt	185.07mt			6	0	7	0	
					8	0			

Boats	Arrived (date/time)	Departed (date/time)	Status	Bulks		
				Item	Unit	Quantity
Far Grip			Ocean Patriot	Fuel	M3	354
				Drill Water	M3	730
				Potable Water	M3	388
				Barite	MT	81
				Gel	MT	43.2
				Cement	MT	40
				KCl Brine	bbl	0
Pacific Wrangler			Ocean Patriot	Fuel	M3	479.6
				Drill Water	M3	287
				Potable Water	M3	213
				Barite	MT	37
				Gel	MT	42
				Cement	MT	121
				KCl Brine	bbl	950

Helicopter Movement				
Flight #	Time	Destination	Comment	Pax
1	10:25	Ocean Patriot		11
1	10:38	Essendon		15

**SECTION 7: TIME / DEPTH CURVE**



## **SECTION 8: BHA SUMMARY**

Rig : Ocean Patriot

Spud : - /

Rig Release : - /

**BHA No.: 1**

Parameters		BHA Detail						
Date In/ Date Out	/	Equipment	Length (m)	Total Joints	OD (in)	ID (in)	Serial #	Comment
Depth In/ Depth Out (m)	92.7/137.4	Bit	0.64	0	0.00	0.00	MR3808	
Length (m)	256.8	Hole Opener	2.43	0	9.06	2.81	46450	
Weight (Dry/ Wet) (klb)	0.0 / 0.0	Bit Sub	1.02	0	9.50	0.00	1860028	
Weight Blw/Jar (Dry/Wet) (klb)	0.0 / 0.0	Anderdrift	3.25	0	9.50	2.94	ADB903	
String Weight (Avg) (klb)	0	9.5in Non Magnetic Drill Collar	9.04	0	9.50	3.00	6613	
Pick-Up Weight (Avg) (klb)	0	17.5in String Stabiliser	2.18	0	9.50	3.06	47618	
Slack-Off Weight (Avg) (klb)	0	9.5in DC	18.34	2	9.44	3.13	003-9,001-9	
Torque Max (Avg) (ft-lbs)	0	X/O	1.09	1	2.81	2.81		
Torque on Bottom (Avg) (ft-lbs)	0	8in DC	70.37	8	8.00	2.88		
Torque off Bottom (Avg) (ft-lbs)	0	X/O	1.09	1	8.00	2.81		
BHA Description: 914mm (36") hole rotary BHA		5in HWDP	147.39	1	5.00	3.00		
BHA Run Comment: Smith MSDS SHC								

**BHA No.: 2**

Parameters		BHA Detail						
Date In/ Date Out	08 May 2005 /	Equipment	Length (m)	Total Joints	OD (in)	ID (in)	Serial #	Comment
Depth In/ Depth Out (m)	137.4/0.0	Bit	0.41	1	0.00	0.00	X74 1B9	
Length (m)	275.2	17.5in Near Bit Stabiliser	1.65	1	9.00	2.81	3131	
Weight (Dry/ Wet) (klb)	0.0 / 0.0	9.5in Pony Drill Collar	3.01	0	9.50	0.00	SBD 23269	
Weight Blw/Jar (Dry/Wet) (klb)	30.0 / 24.0	17.5in String Stabiliser	2.10	0	9.56	3.06	A229	
String Weight (Avg) (klb)	185	9.5in Non Magnetic Drill Collar	9.04	0	9.50	3.00	6613	
Pick-Up Weight (Avg) (klb)	185	17.5in String Stabiliser	2.18	0	9.50	3.06	47618	
Slack-Off Weight (Avg) (klb)	185	9.5in DC	18.34	2	9.44	3.13	003-9,001-9	
Torque Max (Avg) (ft-lbs)	6	X/O	1.09	1	2.81	2.81		
Torque on Bottom (Avg) (ft-lbs)	4	8in DC	52.39	6	8.00	2.88		
Torque off Bottom (Avg) (ft-lbs)	0	8in Hydraulic Jars	9.67	1	8.13	3.00	DAH02767	
BHA Description: 445mm (17.5") rotary assembly.		8in DC	35.94	4	7.88	2.81		
BHA Run Comment: Hughes MX1		X/O	1.09	1	8.00	2.81		
		5in HWDP	138.42	15	5.00	3.00		

Rig : Ocean Patriot

Spud : - /

Rig Release : - /

### BHA No.: 3

Parameters		BHA Detail						
Date In/ Date Out	12 May 2005 / 14 May 2005	Equipment	Length (m)	Total Joints	OD (in)	ID (in)	Serial #	Comment
Depth In/ Depth Out (m)	742.0/1304.0	Bit	0.34	1	12.25	0.00	6029811	MX-03DX
Length (m)	291.5	Near Bit Stabiliser	2.13	1	12.25	0.00	47604	Ported Float
Weight (Dry/ Wet) (klb)	0.0 / 65.0	Pony Drill Collar	3.04	1	8.00	0.00	49059	
Weight Blw/Jar (Dry/Wet) (klb)	0.0 / 50.0	String Stabiliser	2.49	1	12.13	0.00	SBD2392	
String Weight (Avg) (klb)	0	FEWD Tools	15.63	3	8.00	0.00		FEWD - WRGV8 DM Sub - 10603354 Pulser - 10645027
Pick-Up Weight (Avg) (klb)	0	NM Pony Drill Collar	2.93	1	8.00	0.00	47637	
Slack-Off Weight (Avg) (klb)	0	8in DC	88.33	10	8.00	0.00		
Torque Max (Avg) (ft-lbs)	0	Jar	9.67	1	8.00	0.00	DAH02767	
Torque on Bottom (Avg) (ft-lbs)	0	X/O	1.09	1	8.00	0.00	SANTOS	
Torque off Bottom (Avg) (ft-lbs)	0	6.75in DC	27.81	3	6.75	0.00		
BHA Description: 311 mm (12 1/4") Bit, NB Stab c/w float, 203 mm (8") Pony DC, String Stab, Sperry FEWD/MWD, 203 mm (8") NM Pony DC, 10 x 203 mm (8") DC, 203 mm (8") Jars, 3 x 171 mm (6 3/4") DC, X/O, 15 x 127 mm (5") HWDP		5in HWDP	138.06	15	6.33	0.00		
BHA Run Comment:								

### BHA No.: 4

Parameters		BHA Detail						
Date In/ Date Out	14 May 2005 / 16 May 2005	Equipment	Length (m)	Total Joints	OD (in)	ID (in)	Serial #	Comment
Depth In/ Depth Out (m)	1304.0/1761.0	Bit	0.38	1	12.25	0.00	6029811	MA89PX
Length (m)	291.5	Near Bit Stabiliser	2.13	1	12.25	0.00	47604	Ported Float
Weight (Dry/ Wet) (klb)	0.0 / 65.0	Pony Drill Collar	3.04	1	8.00	0.00	49059	
Weight Blw/Jar (Dry/Wet) (klb)	0.0 / 50.0	String Stabiliser	2.49	1	12.13	0.00	SBD2392	
String Weight (Avg) (klb)	88	FEWD Tools	15.63	3	8.00	0.00		FEWD - WRGV8 DM Sub - 10603354 Pulser - 10645027
Pick-Up Weight (Avg) (klb)	90	NM Pony Drill Collar	2.93	1	8.00	0.00	47637	
Slack-Off Weight (Avg) (klb)	87	8in DC	88.33	10	8.00	0.00		
Torque Max (Avg) (ft-lbs)	0	Jar	9.67	1	8.00	0.00	DAH02767	
Torque on Bottom (Avg) (ft-lbs)	0	X/O	1.09	1	8.00	0.00	SANTOS	
Torque off Bottom (Avg) (ft-lbs)	0	6.75in DC	27.81	3	6.75	0.00		
BHA Description: 311 mm (12 1/4") Bit, NB Stab c/w float, 203 mm (8") Pony DC, String Stab, Sperry FEWD/MWD, 203 mm (8") NM Pony DC, 10 x 203 mm (8") DC, 203 mm (8") Jars, 3 x 171 mm (6 3/4") DC, X/O, 15 x 127 mm (5") HWDP		5in HWDP	138.06	15	6.33	0.00		
BHA Run Comment:								



Rig : Ocean Patriot

Spud : - /

Rig Release : - /

### BHA No.: 5

Parameters		BHA Detail						
Date In/ Date Out	16 May 2005 / 18 May 2005	Equipment	Length (m)	Total Joints	OD (in)	ID (in)	Serial #	Comment
Depth In/ Depth Out (m)	1761.0/1794.0	PDC Core Head	0.35	1	12.25	0.00	7970865	CD93 w/ 10 x 14/32 fixed ports
Length (m)	275.9	Stab	0.90	1	12.19	0.00		
Weight (Dry/ Wet) (klb)	0.0 / 55.0	Core Barrel	7.93	1	8.00	0.00	DBSA918H01	
Weight Blw/Jar (Dry/Wet) (klb)	0.0 / 40.0	Stab	1.22	1	12.19	0.00	991037902	
String Weight (Avg) (klb)	0	Core Barrel	7.93	1	8.00	0.00	DBSS8021	
Pick-Up Weight (Avg) (klb)	0	Stab	1.22	1	12.19	0.00	7090690	
Slack-Off Weight (Avg) (klb)	0	Core Barrel	7.93	1	8.00	0.00	948H0	
Torque Max (Avg) (ft-lbs)	0	Stab	1.22	1	12.19	0.00	800STB310	
Torque on Bottom (Avg) (ft-lbs)	0	Core Barrel	7.93	1	8.00	0.00	8006H0	
Torque off Bottom (Avg) (ft-lbs)	0	Stab	1.22	1	12.19	0.00	99331932	
BHA Description: 311 mm (12 1/4") Coring Bit, 310 mm (12 3/16") Stab, 203 mm (8") Core Barrel, 310 mm (12 3/16") Stab, 203 mm (8") Core Barrel, 310 mm (12 3/16") Stab, 203 mm (8") Core Barrel, 310 mm (12 3/16") Stab, 203 mm (8") Core Barrel, 310 mm (12 3/16") Stab, 10 x 203 mm (8") DC, 203 mm (8") Jars, X/O, 15 x 127 mm (5") HWDP		8in DC	88.33	10	7.88	2.88		
BHA Run Comment:		Jar	9.67	1	8.00	3.00	DAH03786	
		X/O	1.22	1	8.13	2.88	OM044	
		5in HWDP	138.06	15	6.33	3.06		

### BHA No.: 6

Parameters		BHA Detail						
Date In/ Date Out	18 May 2005 / 19 May 2005	Equipment	Length (m)	Total Joints	OD (in)	ID (in)	Serial #	Comment
Depth In/ Depth Out (m)	1794.0/1825.0	Bit	0.38	1	12.25	0.00	6029811	MA89PX Bit #4RR1
Length (m)	291.5	Near Bit Stabiliser	2.13	1	12.25	0.00	47604	Ported Float
Weight (Dry/ Wet) (klb)	0.0 / 65.0	Pony Drill Collar	3.04	1	8.00	0.00	49059	
Weight Blw/Jar (Dry/Wet) (klb)	0.0 / 50.0	String Stabiliser	2.49	1	12.13	0.00	SBD2392	
String Weight (Avg) (klb)	260	FEWD Tools	15.63	3	8.00	0.00		FEWD - WRGV8 DM Sub - 10603354 Pulser - 10645027
Pick-Up Weight (Avg) (klb)	270	NM Pony Drill Collar	2.93	1	8.00	0.00	47637	
Slack-Off Weight (Avg) (klb)	265	8in DC	88.33	10	8.00	0.00		
Torque Max (Avg) (ft-lbs)	0	Jar	9.67	1	8.00	0.00	DAH02767	
Torque on Bottom (Avg) (ft-lbs)	0	X/O	1.09	1	8.00	0.00	SANTOS	
Torque off Bottom (Avg) (ft-lbs)	0	6.75in DC	27.81	3	6.75	0.00		
BHA Description: 311 mm (12 1/4") Bit, NB Stab c/w float, 203 mm (8") Pony DC, String Stab, Sperry FEWD/MWD, 203 mm (8") NM Pony DC, 10 x 203 mm (8") DC, 203 mm (8") Jars, 3 x 171 mm (6 3/4") DC, X/O, 15 x 127 mm (5") HWDP		5in HWDP	138.06	15	6.33	0.00		
BHA Run Comment:								

Rig : Ocean Patriot

Spud : - /

Rig Release : - /

**BHA No.: 7**

Parameters		BHA Detail						
Date In/ Date Out	21 May 2005 / 22 May 2005	Equipment	Length (m)	Total Joints	OD (in)	ID (in)	Serial #	Comment
Depth In/ Depth Out (m)	1308.0/1662.0	Bit	0.64	1	12.25	0.00	10387397	SDBS FS2663 Bit #6
Length (m)	167.0	Geopilot Steerable Tool	6.62	1	9.63	0.00	GP1225 TLOG	
Weight (Dry/ Wet) (klb)	0.0 / 20.0	NM Flex Pony	2.80	1	8.00	0.00	CP773036	
Weight Blw/Jar (Dry/Wet) (klb)	0.0 / 34.0	FEWD Tools	14.25	3	8.00	0.00		FEWD - DM90072523XH1 WRG8 DM Sub - 128402 Pulser - 10645028
String Weight (Avg) (klb)	110	Float Sub	1.05	1	8.00	0.00	49079	Ported Float
Pick-Up Weight (Avg) (klb)	110	X/O	1.09	1	8.00	0.00	SANTOS	
Slack-Off Weight (Avg) (klb)	110	HWDP	83.17	9	6.38	0.00		
Torque Max (Avg) (ft-lbs)	0	X/O	1.13	1	8.00	0.00	186-010	
Torque on Bottom (Avg) (ft-lbs)	0	Jar	9.67	1	8.13	0.00	DAH03786	
Torque off Bottom (Avg) (ft-lbs)	2000	X/O	1.02	1	7.50	0.00	186-011	
BHA Description: 311 mm (12 1/4") Bit, 244 mm (9 5/8") Geopilot, 203 mm (8") NM Flex Pony, Sperry FEWD/MWD, 203 mm (8") Float Sub, X/O, 9 x 127 mm (5") HWDP, X/O, 203 mm (8") Jars, X/O, 9 x 127 mm (5") HWDP		5in HWDP	45.59	5	6.33	0.00		
BHA Run Comment:								

**BHA No.: 7**

Parameters		BHA Detail						
Date In/ Date Out	20 May 2005 / 21 May 2005	Equipment	Length (m)	Total Joints	OD (in)	ID (in)	Serial #	Comment
Depth In/ Depth Out (m)	1255.0/1308.0	Bit	0.64	1	12.25	0.00	10387397	SDBS FS2663 Bit #6
Length (m)	167.0	Geopilot Steerable Tool	6.62	1	9.63	0.00	GP1225 TLOG	
Weight (Dry/ Wet) (klb)	0.0 / 20.0	NM Flex Pony	2.80	1	8.00	0.00	CP773036	
Weight Blw/Jar (Dry/Wet) (klb)	0.0 / 34.0	FEWD Tools	14.25	3	8.00	0.00		FEWD - DM90072523XH1 WRG8 DM Sub - 128402 Pulser - 10645028
String Weight (Avg) (klb)	0	Float Sub	1.05	1	8.00	0.00	49079	Ported Float
Pick-Up Weight (Avg) (klb)	0	X/O	1.09	1	8.00	0.00	SANTOS	
Slack-Off Weight (Avg) (klb)	0	HWDP	83.17	9	6.38	0.00		
Torque Max (Avg) (ft-lbs)	0	X/O	1.13	1	8.00	0.00	186-010	
Torque on Bottom (Avg) (ft-lbs)	0	Jar	9.67	1	8.13	0.00	DAH03786	
Torque off Bottom (Avg) (ft-lbs)	0	X/O	1.02	1	7.50	0.00	186-011	
BHA Description: 311 mm (12 1/4") Bit, 244 mm (9 5/8") Geopilot, 203 mm (8") NM Flex Pony, Sperry FEWD/MWD, 203 mm (8") Float Sub, X/O, 9 x 127 mm (5") HWDP, X/O, 203 mm (8") Jars, X/O, 9 x 127 mm (5") HWDP		5in HWDP	45.59	5	6.33	0.00		
BHA Run Comment:								

Rig : Ocean Patriot

Spud : - /

Rig Release : - /

### BHA No.: 8

Parameters		BHA Detail						
Date In/ Date Out	23 May 2005 / 23 May 2005	Equipment	Length (m)	Total Joints	OD (in)	ID (in)	Serial #	Comment
Depth In/ Depth Out (m)	1662.0/1662.0	Bit	0.38	1	12.25	0.00	JT6901	Smith MA89PX Bit #7
Length (m)	168.4	9.625in Motor	8.56	1	9.63	0.00	963116	1.5 deg bend
Weight (Dry/ Wet) (klb)	0.0 / 20.0	NM X/O	1.05	1	8.00	0.00	A554	c/w Ported Float
Weight Blw/Jar (Dry/Wet) (klb)	0.0 / 34.0	String Stabiliser	1.90	1	9.50	0.00	7090449	
String Weight (Avg) (klb)	0	Contingency Sub	1.22	1	8.00	0.00	10659402	
Pick-Up Weight (Avg) (klb)	0	FEWD Tools	15.54	3	8.00	0.00		FEWD - WRG V8 DM Sub - 128402 Pulser - 10645028
Slack-Off Weight (Avg) (klb)	0	X/O	1.09	1	8.00	0.00	SANTOS	
Torque Max (Avg) (ft-lbs)	0	HWDP	83.17	9	6.38	0.00		
Torque on Bottom (Avg) (ft-lbs)	0	Jar	9.87	1	6.50	0.00	MAH00160	
Torque off Bottom (Avg) (ft-lbs)	0	5in HWDP	45.59	5	6.33	0.00		
BHA Description: 311 mm (12 1/4") Bit, 244 mm (9 5/8") Sperry Mud Motor, 203 mm (8") NM X/O, 292 mm (11 1/2") String Stab, 203 mm (8") Contingency Sub, Sperry FEWD/MWD, 203 mm, X/O, 9 x 127 mm (5") HWDP, 171 mm (6 3/4") Jars, 9 x 127 mm (5") HWDP								
BHA Run Comment:								

### BHA No.: 9

Parameters		BHA Detail						
Date In/ Date Out	24 May 2005 /	Equipment	Length (m)	Total Joints	OD (in)	ID (in)	Serial #	Comment
Depth In/ Depth Out (m)	1662.0/1662.0	Bit	0.34	1	12.25	0.00	5031197	Rock bit
Length (m)	165.3	Near Bit Stabiliser	0.46	1	12.25	3.00	10625807	Stabiliser sleeve
Weight (Dry/ Wet) (klb)	0.0 / 24.0	Geopilot Steerable Tool	6.62	1	9.63	0.00	GP1225 TLO62	
Weight Blw/Jar (Dry/Wet) (klb)	0.0 / 30.0	NM Flex Pony	2.80	1	8.00	0.00	CP773036	
String Weight (Avg) (klb)	0	FEWD Tools	14.32	3	8.00	0.00		FEWD - WRG8 DM Sub - 128402 Pulser - 10645028
Pick-Up Weight (Avg) (klb)	0	Float Sub	1.05	1	8.00	0.00	49079	Ported Float
Slack-Off Weight (Avg) (klb)	0	X/O	1.09	1	8.00	0.00	SANTOS	
Torque Max (Avg) (ft-lbs)	0	HWDP	82.69	9	6.38	0.00		
Torque on Bottom (Avg) (ft-lbs)	0	Jar	9.87	1	6.50	2.88	MAH 00160	
Torque off Bottom (Avg) (ft-lbs)	0	5in HWDP	46.07	5	6.33	0.00		
BHA Description: 311 mm (12 1/4") rock bit, stb sleeve, 244 mm (9 5/8") Geopilot, 203 mm (8") NM Flex Pony, Sperry FEWD/MWD, 203 mm (8") Float Sub, X/O, 9 x 127 mm (5") HWDP, 165 mm (6.5") Jars, 9 x 127 mm (5") HWDP								
BHA Run Comment:								

Rig : Ocean Patriot

Spud : - /

Rig Release : - /

**BHA No.: 10**

Parameters		BHA Detail						
Date In/ Date Out	27 May 2005 /	Equipment	Length (m)	Total Joints	OD (in)	ID (in)	Serial #	Comment
Depth In/ Depth Out (m)	1146.0/1157.0	Bit	0.17	1	12.25	0.00	5031197	DS43 PDC sidetrack bit
Length (m)	247.4	9.625in Motor	8.56	1	12.25	6.13	963116	Sperry 6/7 lobe mud motor
Weight (Dry/ Wet) (klb)	0.0 / 35.0	Float Sub	1.05	1	9.50	3.00	A544	
Weight Blw/Jar (Dry/Wet) (klb)	0.0 / 50.0	Contingency Sub	1.22	1	8.00	0.00	10659402	
String Weight (Avg) (klb)	0	FEWD Tools	14.32	3	8.00	0.00		FEWD - WRG8 DM Sub - 128402 Pulser - 10645028
Pick-Up Weight (Avg) (klb)	0	Drill Collar	26.59	3	8.00	0.00		
Slack-Off Weight (Avg) (klb)	0	X/O	1.09	1	8.00	0.00	SANTOS	
Torque Max (Avg) (ft-lbs)	0	HWDP	138.37	9	6.38	0.00		
Torque on Bottom (Avg) (ft-lbs)	0	Jar	9.87	1	6.50	2.88	MAH 00160	
Torque off Bottom (Avg) (ft-lbs)	0	5in HWDP	46.12	5	6.33	0.00		
BHA Description: 311 mm (12 1/4") PDC sidetrack bit, 244mm motor, 241 mm (9.5") Float sub, cont sub, Sperry FEWD/MWD, 203 mm (8") Float Sub, X/O, 9 x 127 mm (5") HWDP, 165 mm (6.5") Jars, 9 x 127 mm (5") HWDP								
BHA Run Comment:								

**BHA No.: 10**

Parameters		BHA Detail						
Date In/ Date Out	26 May 2005 /	Equipment	Length (m)	Total Joints	OD (in)	ID (in)	Serial #	Comment
Depth In/ Depth Out (m)	1078.6/0.0	Bit	0.17	1	12.25	0.00	5031197	DS43 PDC sidetrack bit
Length (m)	247.4	9.625in Motor	8.56	1	12.25	6.13	963116	Sperry 6/7 lobe mud motor
Weight (Dry/ Wet) (klb)	0.0 / 40.0	Float Sub	1.05	1	9.50	3.00	A544	
Weight Blw/Jar (Dry/Wet) (klb)	0.0 / 50.0	Contingency Sub	1.22	1	8.00	0.00	10659402	
String Weight (Avg) (klb)	0	FEWD Tools	14.32	3	8.00	0.00		FEWD - WRG8 DM Sub - 128402 Pulser - 10645028
Pick-Up Weight (Avg) (klb)	0	Drill Collar	26.59	3	8.00	0.00		
Slack-Off Weight (Avg) (klb)	0	X/O	1.09	1	8.00	0.00	SANTOS	
Torque Max (Avg) (ft-lbs)	0	HWDP	138.37	9	6.38	0.00		
Torque on Bottom (Avg) (ft-lbs)	0	Jar	9.87	1	6.50	2.88	MAH 00160	
Torque off Bottom (Avg) (ft-lbs)	0	5in HWDP	46.12	5	6.33	0.00		
BHA Description: 311 mm (12 1/4") PDC sidetrack bit, 244mm motor, Geopilot, 241 mm (9.5") Float sub, cont sub, Sperry FEWD/MWD, 203 mm (8") Float Sub, X/O, 9 x 127 mm (5") HWDP, 165 mm (6.5") Jars, 9 x 127 mm (5") HWDP								
BHA Run Comment:								

Rig : Ocean Patriot

Spud : - /

Rig Release : - /

### BHA No.: 11

Parameters		BHA Detail						
Date In/ Date Out	27 May 2005 / 28 May 2005	Equipment	Length (m)	Total Joints	OD (in)	ID (in)	Serial #	Comment
Depth In/ Depth Out (m)	1157.0/1274.0	Bit	0.34	1	12.25	3.00	5031197	FXL12D
Length (m)	249.4	9.625in Motor	8.56	1	12.25	6.13	963116	Sperry 6/7 lobe mud motor
Weight (Dry/ Wet) (klb)	0.0 / 35.0	Float Sub	1.05	1	9.50	3.00	A544	
Weight Blw/Jar (Dry/Wet) (klb)	0.0 / 50.0	String Stabiliser	1.90	1	8.00	3.00	7090449	
String Weight (Avg) (klb)	0	Contingency Sub	1.22	1	8.00	0.00	10659402	
Pick-Up Weight (Avg) (klb)	0	FEWD Tools	14.32	3	8.00	0.00		FEWD - WRG8 DM Sub - 128402 Pulser - 10645028
Slack-Off Weight (Avg) (klb)	0	Drill Collar	26.59	3	8.00	0.00		
Torque Max (Avg) (ft-lbs)	0	X/O	1.09	1	8.00	0.00	SANTOS	
Torque on Bottom (Avg) (ft-lbs)	0	HWDP	138.37	9	6.38	0.00		
Torque off Bottom (Avg) (ft-lbs)	0	Jar	9.87	1	6.50	2.88	MAH 00160	
BHA Description: 311 mm (12 1/4") TCI bit, 244mm motor, string stab, 241 mm (9.5") Float sub, cont sub, Sperry FEWD/MWD, 203 mm (8") Float Sub, X/O, 9 x 127 mm (5") HWDP, 165 mm (6.5") Jars, 9 x 127 mm (5") HWDP		5in HWDP	46.12	5	6.33	0.00		
BHA Run Comment:								

### BHA No.: 12

Parameters		BHA Detail						
Date In/ Date Out	28 May 2005 / 31 May 2005	Equipment	Length (m)	Total Joints	OD (in)	ID (in)	Serial #	Comment
Depth In/ Depth Out (m)	1274.0/1998.0	Bit	0.64	1	12.25	0.00	10387397	SDBS FS2663 Bit # 11 (RR#6)
Length (m)	220.7	Geopilot Steerable Tool	6.62	1	9.63	0.00	GP1225 TLOG	
Weight (Dry/ Wet) (klb)	0.0 / 30.0	NM Flex Pony	2.80	1	8.00	0.00	CP773036	
Weight Blw/Jar (Dry/Wet) (klb)	0.0 / 35.0	FEWD Tools	14.32	3	8.00	0.00		FEWD - DM90072522 DM Sub - 128402 Pulser - 10645028
String Weight (Avg) (klb)	110	Float Sub	1.05	1	8.00	0.00	49079	Ported Float
Pick-Up Weight (Avg) (klb)	120	X/O	1.09	1	8.00	0.00	SANTOS	
Slack-Off Weight (Avg) (klb)	100	HWDP	138.37	9	6.38	0.00		
Torque Max (Avg) (ft-lbs)	5	Jar	9.87	1	6.50	0.00	MAH00160	
Torque on Bottom (Avg) (ft-lbs)	4	5in HWDP	45.59	5	6.33	0.00		
Torque off Bottom (Avg) (ft-lbs)	3							
BHA Description: 311 mm (12 1/4") Bit, 244 mm (9 5/8") Geopilot, 203 mm (8") NM Flex Pony, Sperry FEWD/MWD, 203 mm (8") Float Sub, X/O, 15 x 127 mm (5") HWDP, 165 mm (6.5") Jars, X/O, 5 x 127 mm (5") HWDP								
BHA Run Comment:								

Rig : Ocean Patriot

Spud : - /

Rig Release : - /

### BHA No.: 13

Parameters		BHA Detail						
Date In/ Date Out	02 Jun 2005 / 04 Jun 2005	Equipment	Length (m)	Total Joints	OD (in)	ID (in)	Serial #	Comment
Depth In/ Depth Out (m)	1998.0/2404.0	Bit	0.42	1	8.50	0.00	10708926	FMF3553
Length (m)	140.5	Geopilot Steerable Tool	7.08	1	6.75	2.00	7600-084	
Weight (Dry/ Wet) (klb)	0.0 / 24.0	NM Pony Drill Collar	2.80	1	6.75	2.88	CD773684	
Weight Blw/Jar (Dry/Wet) (klb)	0.0 / 18.0	6.75in FEWD Tools	18.79	3	6.75	1.94		FEWD - 90073263 DM Sub - 90074558 Pulser - 10599301
String Weight (Avg) (klb)	203	Float Sub	0.79	1	6.75	2.88	A-263	Ported Float with Totco
Pick-Up Weight (Avg) (klb)	240	5in HWDP	55.28	6	5.00	3.00		1: 186-002 2: 186-017 3: 186-006 4: 186.014 5: 186-018 6: 506A-617
Slack-Off Weight (Avg) (klb)	180	Jar	9.24	1	6.50	2.75	DAH 01114	
Torque Max (Avg) (ft-lbs)	15	5in HWDP	46.12	5	5.00	3.00		1: 506A510 2: 186-025 3: 506A5980 4: 186-012 5: 186-022
Torque on Bottom (Avg) (ft-lbs)	13							
Torque off Bottom (Avg) (ft-lbs)	8							
BHA Description: 216 mm (8.5") Bit, 171 mm (6.75") Geopilot, 171 mm (6.75") NM Pony DC, Sperry FEWD, 171 mm (6.75") Float Sub, 6 x 127 mm (5") HWDP, 165 mm (6.5") Jars, 5 x 127 mm (5") HWDP								
BHA Run Comment:								

### BHA No.: 14

Parameters		BHA Detail						
Date In/ Date Out	05 Jun 2005 / 06 Jun 2005	Equipment	Length (m)	Total Joints	OD (in)	ID (in)	Serial #	Comment
Depth In/ Depth Out (m)	2404.0/2404.0	Bit	0.25	1	8.50	0.00		
Length (m)	140.5	Bit Sub	0.95	1	0.00	0.00		
Weight (Dry/ Wet) (klb)	0.0 / 0.0	5in HWDP	9.58	1	5.00	3.00		
Weight Blw/Jar (Dry/Wet) (klb)	0.0 / 0.0	9.625in Casing Scraper	2.17	1	8.75	1.94	SPS5445	Razor Back Casing Clean-Up Tool.
String Weight (Avg) (klb)	0							
Pick-Up Weight (Avg) (klb)	0							
Slack-Off Weight (Avg) (klb)	0							
Torque Max (Avg) (ft-lbs)	19							
Torque on Bottom (Avg) (ft-lbs)	17							
Torque off Bottom (Avg) (ft-lbs)	10							
BHA Description: 216 mm (8.5") Bit (Nozzles Removed), Bit Sub & XO to 114 mm (4.5") IF, 127 mm (5") DP, 244 mm (9-5/8") Scraper								
BHA Run Comment:								

## **SECTION 9: BIT RECORD & PERFORMANCE SUMMARY**

# BIT RUN DATA - Santos Casino Development 2005



Well	Bit	Size	MFR	Type	Jets	D.In	D. Out	Mtrs	Hrs	ROP	I	O	D	L	B	G	O	RP
Casino 4	2	17.5	HCC	MX-1	4x20	137.4	742	604.6	14.7	41.13	1	1	WT	A	E	I	NO	TD
Casino 4	3	12.25	HCC	MX-03DX	3x20	742	1304	562	20.7	27.15	1	4	BT	G	E	2	WT	PR
Casino 4	4	12.25	Smith	MA89PX	7x14	1304	1761	457	13.9	32.88	0	0	ER	N	X	I	NO	CP
Casino 4	5	12.25	SDBS	CD93	10x14	1761	1794	33	3.27	10.09	4	4	BT	A	X	I	WT	TD
Casino 4	4RR	12.25	Smith	MA89PX	7x14	1794	1825	31	1.5	20.67	1	1	ER	N	X	I	NO	CP
Casino 4DW1	6	12.25	SDBS	FS2663	9x16	1308	1662	354	19.04	18.59	1	2	WT	G	X	I	NO	BHA
Casino 4DW1	7	12.25	HCC	MX-CS03	??	1176	1368	192	11.7	16.41	Unable to get kicked off, only drilled cement.							
Casino 4DW2	8	12.25	RHYC	DS43ST	3x18; 1x20	1146	1157	11	6.9	1.59	3	4	CT	S	X	I	CT	PR
Casino 4DW2	9	12.25	SDBS	FXL12D	3x22	1157	1274	117	13.3	8.80	1	1	WT	A	E	I	NO	BHA
Casino 4DW2	6RR	12.25	SDBS	FS2663	9x16	1274	1998	724	29.1	24.88	1	1	WR	A	X	I	NO	TD
Casino 4DW2	10	8.5	SDBS	FSF3553	5x16	1998	2404	406	22.4	18.13	1	2	CT	G	X	I	NO	TD



## **SECTION 10: DRILLING FLUIDS REPORT**

# Fluids Recap

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**Santos Ltd**  
**Casino 4 / 4DW / DW2**  
**Vic P 44**  
**Gas Producer**  
**Otway Basin**



Prepared by: Steve Jones



**M-I L.L.C.**

**ONE-TRAX**

**DRILLING FLUID DATA MANAGEMENT SYSTEM**

<b>Operator:</b> Santos Ltd	<b>Spud Date:</b> 7/05/2005
<b>Well Name:</b> Casino 4/4DW/4DW2	<b>TD Date:</b> 19/05/2005
<b>Field/Area:</b> VIC P-44	<b>Location Code:</b> 7001
<b>Description:</b> Gas Producer	<b>Project Engineer:</b> Steve Jones
<b>Location:</b> Otway Basin	<b>Sales Engineer:</b> Gordon Howie/Jasdeep Singh
<b>Warehouse:</b> Portland	<b>Sales Engineer:</b> Glen Sharpe/Kelvin Leong
<b>Contractor:</b> Diamond Offshore	<b>M-I Well No.</b>

Comments:

Type	Size in	Depth m	TVD m	Hole in	Max MW sp.gr.	Fluid 1	Fluid2	Drilling Problem	Days	Cost \$
Casing	30	137	137	36	1.04	Spud Mud		None	2	11157.54
Casing	13.375	742	742	17.5	1.06	Spud Mud		None	4	18972.88
Open Hole		1825	1825	12.25	1.23	KCL/Idcap	Spud Mud	Directional	9	138103.14
Open Hole		1662	1627	12.25	1.26	KCL/Idcap		Directional	8	52326.40
Casing	9.625	1990	1741	12.25	1.30	KCL/Idcap		None	7	18297.18
Liner	6.625	2404	1787	8.5	1.28	FLO-PRO/Completion			4	152070.34

Total Depth: 2404 m	TVD: 1825 m	Water Depth: 71 m	Drilling Days: 34	Total Cost: 390,927.48
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**DRILLING FLUIDS RECAP FOR SANTOS  
CASINO 4 / 4DW / DW2**

**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**

**DRILLING FLUIDS RECAP FOR SANTOS  
CASINO 4 / 4DW / DW2**

**DISCUSSION  
BY  
INTERVAL**

## **DRILLING FLUIDS RECAP FOR SANTOS CASINO 4 / 4DW / DW2**

### **SUMMARY:**

Santos Ltd was the operator of horizontal gas producer well, Casino – 4/4DW, Vic/P44, Victoria, Australia using the Ocean Patriot semi submersible rig owned by Diamond Offshore. Casino – 4/4DW is located in the Casino gas field, approximately 25 km SW of Peterborough, Latitude 38.47'54 E and Longitude 142.47'12 S. The well was programmed for 31 days drilling operations and 7 days completion operations. A vertical pilot hole will be drilled to a depth of 1760m and a horizontal section to 2625m, in 70m water depth.

Santos contracted the rig 05.30 hrs on Monday 2nd May 2005 which was towed to Portland to pick up some heavy lifts and arrived on location on Wednesday, 4th May 2005.

The primary objective was gas in Waarre A Sandstone (1745m RT TVD).

Some difficulty was experienced anchoring the rig on location and this delayed operations.

Casino – 4 was spudded on the 6th May 2005 at 10:00 hrs. 9m was drilled and an anderdrift survey was completed. The hole was found to be out 2 degrees. The decision was made to pull out and shift the rig 5m and respud the well.

The 36" hole was drilled to 137m using sea water and Gel sweeps. The 30 x 20 inch conductor casing was run and cemented in place at 137m. When tagging the cement it was found that the initial cement job had not gone as planned and a top up was required.

The 17½" hole was drilled to 742m with sea water and PHG sweeps and the 13¾" casing was lowered with no troubles and cemented as per the program.

The Sub Sea Xmas tree was rigged up and lowered into place and the rig was then moved 15m to commence rigging up and running of the Riser and BOP.

12¼" hole was successfully drilled to 1055m with sea water/Gel sweeps and then the hole was displaced to KCl/Idcap/PAC mud. A bit trip was made at 1304m due to poor rate of penetration.

Further drilling to coring point of 1761m was done using a PDC bit.

33m of core was cut and well was logged. When the wireline calliper indicated under-gauge hole from 1740m to 1782m and fill from 1782 it was decided to wipe the

## **DRILLING FLUIDS RECAP FOR SANTOS CASINO 4 / 4DW / DW2**

hole and log over the Warre sand and drill a further 30m to 1825m. One wireline logging run was made and Casino 4 was plugged back. First cement plug was placed from 1825m to 1684m and the second kick off cement plug was set at 1405m to 1255m.

Cement plug was dressed to 1308m and Casino 4 DW was kicked off. The directional hole was drilled to 1662m to an inclination of 34 degrees. At this stage it was projected to miss the target. The drilled hole was plugged back from 1350m to 1200m.

After WOC, the cement was drilled to 1265m without being able to kick off using GeoPilot assembly. Another kick off plug was set from 1265m to 1100m. TOC was tagged at 1082m. Dressed of cement plug to 1145m. The new hole was kicked off from 1146 m, slide drilling to maximise kick-off angle. At 1157m POOH to download MWD and change to a Security tri-cone bit. The hole was drilled to 1998 meters (1743 Meters TVD) The hole was tight pulling out and was back reamed to 965 meters. At this point BU was circulated while boosting the riser to assist with good hole cleaning. A wiper trip was made back to bottom. Started taking weight at 1670 meters, so washed and reamed to 1998 meters. Again circulated bottoms up until shakers were clear of cuttings. Did a flow check for 15 minutes. Hole static then POH to prepare to run casing. The casing was run, washing down from 1700 meters to 1989.8 meters due to drag. It was cemented with the shoe at 1989.8 meters (TVD 1743m).

A FloPro Drill in mud system was mixed to drill the 8½" interval. An 8½" BHA with PDC bit and GeoPilot was run in the hole to drill out cement and the casing shoe. Then a heavy viscous spacer with a Fluoresceine dye was pumped ahead of the FloPro system when displacing the hole. Then continued drilling 8½" hole in accordance with the Directional drillers instructions, orientating with the GeoPilot and surveying with MWD, with the mud weight at 10.6 – 10.7 ppg. Shaker screens were changed up to 230 mesh on two shakers and 200 mesh on two shakers for the complete section. The desander and desilter were run to assist in controlling mud density and LGS build-up in the system.

At 2404m, a flow check was done, (hole static), then circulated bottoms up. Hole was backreamed from 2404m to the casing shoe at 1990m. A further flow check was done, then RIH to 2404m, circulated bottoms up again and POH. Lay down directional tools and GeoPilot. Then rig up to run production screens for well completion and production testing

1000bbls of CaCl<sub>2</sub> brine at 1.22 sg (10 1+ ppg) was shipped from Portland on the boat Far Grip. We received on the rig 1023 bbls of brine weighing 1.18 sg (9.9 ppg).

## **DRILLING FLUIDS RECAP FOR SANTOS CASINO 4 / 4DW / DW2**

Suspected water in the boats tanks. 198 x 25 kg sacks of CaCl<sub>2</sub> (74-77%) and 10 x 1.2 MT Bulk bags of Flossy Salt were used to weight up the brine to the programmed mud weight. Dirt Magnet was used to assist in cleaning the brine. The Header boxes and flow lines were flushed and cleaned prior to the displacement to ensure the cleanest possible system.

A 50 bbl Hi Vis spacer was built and pumped prior to the CaCl<sub>2</sub> brine and fleuroscene die was added to aid in detection of the spacer upon its return to the shakers. All returns were dumped to this point. The header box was again flushed and the system was then shut in. A further 100 bbls of the CaCl<sub>2</sub> brine was then circulated. The completion program was then conducted.

The total mud chemical cost for the well was: \$390 927.48.



**DRILLING FLUIDS RECAP FOR SANTOS  
CASINO 4 / 4DW / DW2****FORMATION TOPS:**

<b>Formation Tops RKB Casino - 4 (Meters)</b>	<b>Formation Tops RKB Casino - 4DW2 (Meters TVD)</b>	<b>Formation</b>	<b>Lithology</b>
768	763	Mepunga Fm	Claystone
843	841	Wangerrip Groups	Sandstone/Calcarinite
995	1000	Pebble Point Fm	Sandstone/Calcarinite
1106	1102	Massacre Shale	Siltstone
1113	1111	Timboon Sst	Sandstone
1303	1304	Paaratte Fm	Sandstone
1526	1526	Paaratte Gas Sand	Siltstone
1573	1562	Silk Creek Mudstone	Sandstone/Siltstone
1742	1742	Upper Waarre A	Sandstone/Siltstone
1825	1759	Lower Waarre A	Sandstone/Siltstone

**DRILLING FLUIDS RECAP FOR SANTOS  
CASINO 4 / 4DW / DW2**

<b>Interval I</b>	<b>92- 137 meters</b>	<b>36 x 26 Hole</b>	<b>30 x 20" casing</b>
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MUDTYPE : Seawater / PHG

MUD RELATED  
HOLE PROBLEMS : None

**MUD PROPERTIES:**

Mud Weight: 8.7-8.8 ppg  
YP: 22-33 lb/100ft<sup>2</sup>  
API FL: 15 cc/30 min  
Funnel Vis: > 100 se/qt  
Hardness: 40 mg/l  
MBT: 30 ppb

**OPERATIONS:**

Casino-4 was spudded on 6th May 2005. The 36" hole with 36" hole opener was drilled to 137m. The 30" casing was run and cemented in place with permanent guide base.

**MUD**

920 bbl of 30 ppb Gel was mixed with no time to prehydrate, in preparation for spudding. 330 bbls of 11 ppg kill mud was prepared and held in reserve until required. The hole was swept with 50 bbl mud every 10m of drilling. At TD a 100 bbl sweep was pumped and hole displaced with 350 bbl of unflocculated PHG mud. A total of 748 bbl of gel was used for this section and 1433 bbl left over was carried over for the next section.

**SOLIDS CONTROL:**

None used as returns were directed to seabed.

**OBSERVATIONS AND RECOMMENDATIONS:**

No changes are proposed.

**DRILLING FLUIDS RECAP FOR SANTOS  
CASINO 4 / 4DW / DW2**

<b>Interval II</b>	<b>137 – 742</b>	<b>17½" Hole section</b>	<b>13⅜" casing</b>
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MUDTYPE : Seawater / PHG

MUD RELATED  
HOLE PROBLEMS : None

**MUD PROPERTIES:**

Mud Weight: 8.7-8.8 ppg  
YP: 22-33 lb/100ft<sup>2</sup>  
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 800 gpm. A 50 bbl PHG sweep was pumped after drilling cement and further drilling was progressed using sea water. A sweep regime of 40 bbl PHG mid stand and 60 bbl PHG on connections was followed. This was later increased to 75 bbl PHG mid stand and 75 bbl PHG on connections while the flow rate was 1100 gpm. A 200 bbl PHG sweep was pumped followed by 200 bbls of seawater at TD of 742m. The hole was then displaced with 1000 bbl PHG and the string tripped out for running casing. The 13⅜" casing was run and cemented in place as per program with no troubles.

**MUD:**

1433 bbl of PHG mud from the previous section was carried over to this section including 230 bbls 11ppg Kill Mud and an additional volume of 848 bbls of 30 ppb PHG was mixed as required as drilling progressed. 1722 bbls of PHG was left over from this section which was used in the next section including 230 bbls 11ppg Kill Mud.

**SOLIDS CONTROL:**

No solids control was used as returns were to seabed.

**DRILLING FLUIDS RECAP FOR SANTOS  
CASINO 4 / 4DW / DW2****OBSERVATIONS AND RECOMMENDATIONS:**

No changes are recommended as the PHG sweep system is the most cost effective way to drill this interval.

## DRILLING FLUIDS RECAP FOR SANTOS CASINO 4 / 4DW / DW2

Interval III	742 - 1825 meters	12 ¼ Section	<b>Plug Back</b> 1825-1684 m 1405-1255m
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MUD TYPE : KCl/Idcap

MUD RELATED  
HOLE PROBLEMS : None.

**MUD PROPERTIES:**

Mud Weight:	10 – 10.9 ppg
YP:	25-35
PV	18-22
API FL:	3-4 cc
KCl:	5-6 %
IDCAP:	2.5-3.0 ppb
Funnel Vis:	45 – 65 sec/qt
Hardness:	640 mg/l
LGS:	3-6 %
Drill Solids:	3-6 %
PH:	8.0 - 9.0
6 RPM:	8 - 12

**OPERATIONS:**

The 13<sup>3</sup>/<sub>8</sub>" casing shoe track and rat hole were drilled out with a 12<sup>1</sup>/<sub>4</sub>" bit and drilling continued using sea water and Gel sweeps to 1055m. This was done to overcome severe loss of mud at the shakers due to sand blinding. A huge amount of coarse sand was observed on the shakers and this did indeed cause screen blinding thus justifying the use of sweeps.

The hole was displaced with KCl/Idcap mud at 1055m and further drilled to 1304m. Due to poor rate of penetration the bit trip was made and a PDC bit was run in hole. The hole was observed to be slightly sticky from 1265 to 1135m on pulling out and required pumping out. This may be attributed to KCl depletion from 6% to 5% and also under-gauge bit.

A PDC bit was run in hole to bottom with no problems and hole drilled to 1761m as core point. The hole was cored to 1794m and a wireline log attempt was made when tools were held up 1670m. A bit trip was made with LWD tools and hole extended

## **DRILLING FLUIDS RECAP FOR SANTOS CASINO 4 / 4DW / DW2**

to 1825m. One wireline logging run was made and well plugged back with first cement plug set at 1825-1684m and second plug 1405-1255m. Cement plug was dressed to 1308m and Casino 4 DW was kicked off. The directional hole was drilled to 1662m to an inclination of 34 degrees. At this stage it was projected to miss the target. The drilled hole was plugged back from 1350m to 1200m.

After WOC, the cement was drilled to 1265m without being able to kick off using GeoPilot assembly. Another kick off plug was set from 1265m to 1100m. TOC was tagged at 1082m. Dressed of cement plug to 1145m.

### **MUD:**

1055 bbl of 6% KCl/Idcap mud was mixed as pit space was made available from PHG and Brine taken on board from boats. A 100 bbl of Gel spacer was pumped ahead of new polymer mud and contaminated returns were dumped at shakers. The rheology of the system was improved from 6 rpm reading of 5 to 11 in stages using Duovis additions. Meantime the system was weighted to 10 ppg using Barite as the initial mix was not weighted due to time constraints. The mud weight was 10 ppg at 1200m which increased to 10.3 ppg by 1300m due to solids accumulation. The screens were also upgraded gradually from 84 mesh to 165 mesh depending upon the 1000 gpm flow handling at shakers. Some mud losses were observed at shakers while boosting the riser and sand bling at the shakers.

The mud weight increased from 10.3 ppg to 10.4+ ppg as drilling progressed from 1304m to 1400m. This was controlled by adding unweighted premix and cut back to 10.3 ppg. The KCl content was enhanced from 5% to 6.5% by addition of 4 bags of KCl.

The mud weight continued to rise from 1400m to core point at 1761m as chemicals required for the premix were not available. The mud weight was 10.8 ppg at core point. There was a further increase in the mud weight as the mud sat in the pits to 11 ppg. Once the bit was run in to core point and chemicals were available, the mud weight was slowly reduced by dumping and diluting the active system with the addition of premix and running the desilter.

Due to the fact that the centrifuge was not available and a leaking valve on the desilter line the only solids control equipment was the shale shakers. The desilter was run after repairing two valves and gave a cut of 1 ppg to 2 ppg.

The mud weight at TD of 1794m was 10.8 ppg (1.3 sg) and this was approved by the company rep due to gas observed in the well during coring.

## **DRILLING FLUIDS RECAP FOR SANTOS CASINO 4 / 4DW / DW2**

### **SOLIDS CONTROL:**

The shakers were dressed initially with 84 mesh screens with 10 mesh scalping screens. The screens were gradually changed to 120-145-165 mesh by 1400m. Some sand blinding occurred on the shakers due to heavy amounts of cuttings and this was controlled by scraping off cuttings from the shakers.

### **DOWNHOLE LOSSES:**

None observed

### **OBSERVATIONS AND RECOMMENDATIONS:**

The use of sweeps to start the section saved significant amounts of expensive WBM being lost at the shakers due to screen blinding caused by loose sands.

The Idcap D proved effective in providing shale inhibition and allowed maximum pump rates and minimum screen sizes to be used whereas the use of normal PHPA would have restricted these choices. The cost saving is intangible without the benefit of an exact copy offset well however it can be said that at no time were operational parameters restricted by the mixing of PHPA.

Consideration should be given to the rental of a Centrifuge for future wells to control fines build up. The cost of doing so however needs to be balanced against the cost of the extra dumping and diluting required without a centrifuge.

## DRILLING FLUIDS RECAP FOR SANTOS CASINO 4 / 4DW / DW2

Interval IV	1308 – 1662 meters	12 ¼" Directional Section	
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MUD TYPE : KCl/Idcap

MUD RELATED  
HOLE PROBLEMS : None.

**MUD PROPERTIES:**

Mud Weight:	10.5 – 10.9 ppg
YP:	25-35
PV	18-22
API FL:	3-4 cc
KCl:	5-6 %
IDCAP:	2.5-3.0 ppb
Funnel Vis:	45 – 65 sec/qt
Hardness:	640 mg/l
LGS:	3-6 %
Drill Solids:	3-6 %
PH:	8.0 - 9.0
6 RPM:	8 - 12

**OPERATIONS:**

After setting the cement plugs, during WOC of 16 hrs the BHA was made up and racked back. The cement plug was dressed to 1308m and hole kicked off using GeoPilot. The angle was built to 33 degrees at 1599m. The string was pulled to casing shoe to repair top drive. The hole was observed tight over the drilled section due to dog leg severity of over 4 deg/30m. Further drilling took place to 1662m when the string was POOH to change BHA as building rate dropped off. As the projection on the trajectory indicated that the target was falling short by 60 m, it was decided to plug back and re-drill.

The directional hole drilled was plugged back from 1350m to 1200m. After WOC and BOP testing the Geopilot assembly was run in hole with a tricone bit. Soft cement was tagged at 1176m after 27 hours and hard cement was reported at 1199m. Attempt to side track was made and consequently the cement column was drilled to 1265m with out obtaining the required sidetrack. This was reported to be due to soft cement plug.

The hole was plugged back from 1265m to 1100m and string reversed out at 1040m.



## **DRILLING FLUIDS RECAP FOR SANTOS CASINO 4 / 4DW / DW2**

### **MUD:**

During WOC the riser volume and surface volume was treated using dumping and diluting technique to cut the mud weight from 10.9 ppg to 10.5 ppg. A total of 200 bbl of active mud was dumped from Sandtraps and shakers dressed with 200 mesh screens. The system was also pretreated with Citric acid and Sodium Bicarbonate in preparation of drilling out of kick plug.

As soft cement was drilled from 1265m to 1308 m, the returns of contaminated were partially dumped to minimise effect on the polymers. The System was further treated with Bicarb and Citric to offset the effect of calcium. Once the total hardness dropped from 1100 ppm to 500 ppm the system was treated with Duovis to increase the low end rheology. The 6 rpm reading was enhanced from 9 to 15 cP. Also system was treated with 10 sacks of Idcap for maintenance when due to problems with top drive, the string was pulled out to shoe. Once back on bottom and after bottoms up time the mud started to overflow at the shakers due to higher concentration of Idcap. A total of 120 bbl was lost on shakers while downsizing the front screens from 200 mesh to 165 mesh. The flow was stabilized within 15 minutes as mud warmed up and sheared.

The KCl content was maintained at 8% once inside Skull Creek mudstone. The mud weight was also increased with Barite additions from 10.5 ppg to 10.7-10.8 ppg as per the program at 1500m.

The cement drilling from 1199m to 1265m while attempting to kick off caused severe contamination in the mud. The system was treated with all of the available Citric Acid and Sodium Bicarbonate to control mud properties. But due to excessive cement drilling which was beyond anticipation, the mud showed signs of severe contamination. Due to the limitation of chemicals on board the system was dumped cautiously.

During plugging back for the second time, the returns were dumped while reversing out.

## **DRILLING FLUIDS RECAP FOR SANTOS CASINO 4 / 4DW / DW2**

### **SOLIDS CONTROL:**

The shakers were dressed initially with 200 mesh screens with 10 mesh scalping screens. Comparatively higher usage of screens were noticed on the well with some screens developing upper layer of wire cloth ware with in two hours of operation. Once the 200 mesh stock was finished then 180 mesh screens were used.

Dumping and diluting regime was employed to control mud weight control and solids build up. Centrifuge was not made available.

### **DOWNHOLE LOSSES:**

None observed

### **OBSERVATIONS AND RECOMMENDATIONS:**

See comments from the previous section.

## DRILLING FLUIDS RECAP FOR SANTOS CASINO 4 / 4DW / DW2

Interval V	1146 - 1998 meters	12 <sup>1</sup> / <sub>4</sub> " Section	Casing Set at 1990 meters
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MUD TYPE : KCl/Idcap

MUD RELATED  
HOLE PROBLEMS : None.

**MUD PROPERTIES:**

Mud Weight:	10.4 – 10.8 ppg
YP:	30-45
PV	16-20
API FL:	3.8-4.8 cc
KCl:	7.5-8 %
IDCAP:	2.5-3.0 ppb
Funnel Vis:	52 – 62 sec/qt
Hardness:	840 - 1280 mg/l
LGS:	5-8 %
Drill Solids:	3-7 %
PH:	8.5 - 10.2
6 RPM:	14 - 17

**OPERATIONS:**

The new hole was kicked off from 1146 m, slide drilling to maximise kick-off angle. This was the start of new well Casino - 4DW2. At 1157m POOH to download MWD and change to a Security tri-cone bit.

Drilling continued without hole problems to 1998 meters (1743 Meters TVD) The hole was tight pulling out and was back reamed to 965 meters. Here bottoms up was circulated while boosting the riser to assist with good hole cleaning. A wiper trip was made back to bottom. The drill string started taking weight at 1670 meters, so washed and reamed to 1998 meters. Again circulated bottoms up until shakers were clear of cuttings. Did a flow check for 15 minutes. Hole static then POH to prepare to run casing. The casing was run, washing down from 1700 meters to 1989.8 meters due to drag. It was cemented with the shoe at 1989.8 meters (TVD 1743m).

## **DRILLING FLUIDS RECAP FOR SANTOS CASINO 4 / 4DW / DW2**

### **MUD:**

By the third kick off for the start of Casino – 4DW2 the cement contamination from drilling on plugs had been treated out and program specifications were able to be reached by the additions of concentrated premixes. By this time the weather had deteriorated to such an extent, supply vessels were unable to offload any cargo. The amount of barite and drillwater on the rig were at a minimum. All barite left on the rig was sufficient only to enable the system to be weighted to 1 ppg above the system weight as required in case of a kick.

The Santos company representative gave instructions to reduce shaker screen mesh sizes to 165 mesh, to allow the system to increase in density from 10.4 ppg by incorporating drill solids. The system soon increased in weight to 10.8 ppg, and it became necessary to screen up to 180 mesh then to 200 mesh to control weight increases which were not desired at the time. Weather conditions improved which allowed drillwater and barite to be taken on the rig. The mud remained in good condition, with additions of Duovis and Idcap D being added to maintain programmed specifications. Concentrations of KCl and IDCAP D were maintained within program requirements. The amount of fine LGS increased to higher than the program limits while using the larger mesh screens, but did not cause any detrimental effects or reach problem proportions. The desander and desilter were run to assist with control of the solids in the system immediately barite and drillwater were available.

### **SOLIDS CONTROL:**

Drilling the third sidetrack, Casino – 4DW2, the shakers were dressed with 165 mesh screens with 10 mesh scalping screens on instructions from the Santos Co Man to allow the weight to increase because there was no barite or drillwater available on the rig due to bad weather conditions. The system soon increased in weight to 10.8 ppg, and it became necessary to screen up to 180 mesh then to 200 mesh to control weight increases which were not desired at the time.

As soon as the weather improved allowing barite and drillwater to be taken on, the screens were changed out to 200 mesh which worked very well in removing cuttings and fine solids. The desilter and desander were used at the time, as before the mud losses were too great when there was no drill water to build more volume.

**DRILLING FLUIDS RECAP FOR SANTOS  
CASINO 4 / 4DW / DW2****DOWNHOLE LOSSES:**

None observed

**OBSERVATIONS AND RECOMMENDATIONS:**

Shipping brine to the rig rather than mixing salt on the rig itself proved to be effective from the point of view of continuity of supply and minimisation of bulk bag handling offshore. These benefits need to be offset however against the cost of the brine mixing operation in town and the product wasted due to ullage. Due to the mixing of brine in town there was no time during which the mixing of brine offshore interrupted the critical timeline which would have resulted in a major cost impact.

**DRILLING FLUIDS RECAP FOR SANTOS  
CASINO 4 / 4DW / DW2**

Interval VI	1998 - 2404 meters	8½" Section	TD at 2404 meters
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MUD TYPE : FloPro Drill in Fluid

MUD RELATED  
HOLE PROBLEMS : None

**MUD PROPERTIES:**

Mud Weight: 10.5 – 10.8 ppg  
YP: 25-40  
PV 12-17  
API FL: 3.8-4.8 cc  
KCl: 6 %  
LSRV0.3rpm 52 – 57 k  
Funnel Vis: 52 – 59 sec/qt  
Hardness: 280 - 1160 mg/l  
LGS: 5-9 %  
Drill Solids: 4-8 %  
PH: 9.7 - 11  
6 RPM: 10 - 18

**OPERATIONS:**

Drilling 8½" hole progressed steadily at ROPs mostly below 20 meters per hour. TD at 2404 meters was reached without any hole problems. Here a trip back to the shoe was made, then the string was run to bottom, bottoms up circulated, flow check was done which showed the hole was static. The string was pulled to run the production screens.

The screens were run to bottom without any problems and the completion operations were begun.

After pumping a viscous pill using Safe Vis E for viscosity and incorporating 5% Safe Surf WN for the removal of any water based mud residue, the hole was displaced to a CaCl<sub>2</sub> brine weighing 10.2 ppg. The brine had been treated with Dirt Magnet to flocculate out any impurities, and Safe-Cide and Safe-Cor were added prior to the displacement. Production tubing was then run for well testing to be done.

## **DRILLING FLUIDS RECAP FOR SANTOS CASINO 4 / 4DW / DW2**

### **MUD:**

Initially mixed only 1060 bbls of FloPro due to pit restrictions on the rig. FloVis Plus was added at 1 ppb to ensure the mud would go through the shaker screens on the displacement. As pit space became available all of the 2000 bbls of KCl/NaCl brine mixed in Portland were taken off the boat. With the new brine more volume of FloPro was mixed at program specifications, and after the displacement the concentration of all products was immediately increased also to program specifications.

The cement and 9<sup>5</sup>/<sub>8</sub>" casing shoe were drilled with mud from the previous interval. A viscous pill incorporating a Fluoresceine dye was pumped ahead of the new mud. All the old mud was dumped at the shakers as soon as the displacement began. The header box and sand traps were dumped and cleaned during the displacement procedure. As soon as returns were FloPro, all mud was directed back to the active pit.

No mud was lost at the shakers, and additions of Flo Vis Plus were started immediately. The LSRV 0.3 rpm reading increased to above 50,000, the fluid loss was less than the programmed 5 ml, and all other properties were well within specifications. The mud remained stable and in top condition for the complete short drilling interval.

### **DOWNHOLE LOSSES:**

None observed

### **OBSERVATIONS AND RECOMMENDATIONS:**

The FloPro Drill In Fluid proved once again it is an excellent non-damaging fluid for drilling through the production zones. It remains stable and exhibits good hole cleaning abilities if properties are maintained within programs specifications.

Whilst very labour intensive and time consuming the mixing of the large quantities of CaCO<sub>3</sub> required was all done off the critical timeline. Consideration should be given in future to shipping CaCO<sub>3</sub> to the rig in bulk form.

The shipping of premixed brine formulated to be the basis of the mud system undoubtedly saved considerable time preparing the fluid on the rig.

**DRILLING FLUIDS RECAP FOR SANTOS  
CASINO 4 / 4DW / DW2**

<b>Interval VII</b>	<b>2404 meters</b>	<b>8½" Section</b>	<b>TD at 2404 meters</b>
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MUD TYPE : CaCl<sub>2</sub> Brine

**MUD PROPERTIES:**

Mud Weight: 10.1 – 10.2 ppg  
PH: 9  
Cl: 226 000 mg/l

**OPERATIONS:**

1023 bbls of brine weighing 1.18 sg (9.9 ppg) was received from the Portland mixing plant. It was suspected that there was water in the boats tanks prior to loading and this reduced the Brine density. 198 x 25 kg sacks of CaCl<sub>2</sub> (74-77%) and 10 x 1.2 MT Bulk bags of Flossy Salt were used to weight up the brine to the programmed mud weight of 1.22 sg (10.1 – 10.2). Dirt Magnet was used to clean the brine. Safe-Cor corrosion inhibitor and Safe-Cide biocide were then added to the brine to meet the programmed properties.

A scraper run was completed to clean the 9½" casing. The Header boxes and flow lines were flushed and cleaned prior to the displacement to ensure the cleanest possible system.

A 50 bbl Hi Vis spacer was built and pumped prior to the CaCl<sub>2</sub> brine and fluoroscene die was added to aid in detection of the spacer upon its return to the shakers. All returns were dumped until the tail of the spacer was identified at the shakers. The header box was again flushed and the system was then shut in. A further 100 bbls of the CaCl<sub>2</sub> brine was then circulated.

A 70 bbl Hi Vis pill was mixed using seawater and 5.5 ppb Guar Gum. The pill was jettted to show that the riser was unobstructed as the tree cap could not be landed out.



**DRILLING FLUIDS RECAP FOR SANTOS  
CASINO 4 / 4DW / DW2**

**DAILY DISCUSSION  
REPORT**




**Operator :** Santos Ltd  
**Well Name :** Casino 4  
**Contractor :** Diamond Offshore

**Field/Area :** VIC P-44  
**Description :** Gas Producer  
**Location :** Otway Basin

**Daily Discussion**  
M-I Well :

Date	TD =	Day	Discussion
6/05/2005	0 m	Day 0	Spudded well to 9m, Anderdrift survey out 2 degrees. Move rig to respud well Mixed up 920 bbls of PHG spud mud. Pumped 200 bbls to jet in the bit then 50 barrel sweeps every single. Continued to mix PHG.  Set last of the anchors. Ballasted down and mixed spud mud. Spudded well to 9m Anderdrift survey out 2degrees. Move rig.
7/05/2005	137 m	Day 1	Respudded well. Drilled to TD 137m. POOH, ran 30" csg, 20" swaged shoe set at 137 m and cemented as per program. Respudded well and drilled to TD. Mixed 940 bbls PHG and 320 bbls 11 ppg kill mud. Pumped 100 bbl PHG sweep at TD then pulled back and filled hole with 350 bbls PHG. POOH to run csg.  Respudded well. Drilled to section TD at 137m. POOH, ran 30" csg and cemented as per program.
8/05/2005	363 m	Day 2	Wait on cement job. RIH to tag cement, require further cement. POOH, make up 17.5" BHA and RIH tag cement at 135 m and drill shoe at 137 m. Continue drilling to 363 m. Mixed 1200 bbls PHG. Pumped 60 bbls PHG sweeps on connections and 40 bbl PHG sweeps mid stand. Company man requested 75 bbl on connections and 75 bbl mid stand sweep regime while flow rate at 1100 gpm. Continued to mix PHG as required.  Wait on cement. RIH to tag cement. Further cement job required. RIH, drilled csg shoe at 135m. Drill ahead to 363m.
9/05/2005	742 m	Day 3	Drilled to section TD 742 m. Cleaned hole with 200 bbl PHG sweep then pulled out and filled hole with 1000 bbls PHG. Racked back 17 1/2" BHA. Rig up and ran 13 3/8" csg Built 3100 bbls. Continued with 75 bbl PHG mid stand and 75 bbl PHG prior to connection sweep regime. At TD pumped 200 bbls PHG then 200 bbls seawater. Filled hole with 1000 bbls PHG.  Drilled to section TD 742m. Pumped 200bbl PHG sweep then filled hole with 1000bbls PHG. POH to run csg. Ran 13 3/8" csg.
10/05/2005	742 m	Day 4	Continued to run 13 3/8" csg and landed shoe at xxm. Circulated with seawater then cemented as per program. POH with running tool and layed out 17 1/2" BHA. Rig up and ran Sub Sea Xmas tree and tested. Moved rig 15 m RU and PU BOP Mixed 220 bbls PHG in pit 1 and dunned same as pit was required for cement job. Made 12 MT adjustment to correct bulk barite figure.  Completed running 13 3/8" csg and cemented as per program. POH with running tool and lay out 17 1/2" BHA. Ran Xmas Tree.
11/05/2005	742 m	Day 5	Continue running BOPs and rigging up for 12 1/4" section. Pick up Drill pipe. No treatment required. No mud built.  Continue running BOP, nipple up choke, kill and booster lines. RIH and land wear bushing assembly. POOH lay down string

	<b>Operator :</b> Santos Ltd	<b>Field/Area :</b> VIC P-44	<b>Daily Discussion</b> M-I Well :
	<b>Well Name :</b> Casino 4	<b>Description :</b> Gas Producer	
	<b>Contractor :</b> Diamond Offshore	<b>Location :</b> Otway Basin	

12/05/2005	TD = 742 m	Day 6
<p>Made up 12 1/4" BHA and started picking up drill pipe while running in the hole to tag the top of the cement. Dressed shakers with 10 mesh on top and 84 mesh on the bottom.</p> <p>Continued to rig up for 12 1/4" section. Tested Bops and commenced running in hole and picking up BHA and drill pipe..</p>		

13/05/2005	TD = 1117 m	Day 7
<p>Tagged cement drilled through shoe at 730 m and 3 m of new hole and perform LOT. EMW 17.9 ppg. Drilled 12.25" hole with SW/Gel sweeps to 1055 m. Observed reduced flow at shakers at 930 m. Heavy sand loading at shakers observed.</p> <p>Displaced hole to KCl-Polymer mud @ 20:00 hrs. Minimal losses experienced at this time. Drilled to 1117 m. Continued to see sand at the shakers.</p> <p>Mixed unweighted KCl-Polymer Mud. Displaced hole with new mud @ 1055 m. Mud properties shown are for initial mix. Started weighting up system with Barite. Building up mud properties to spec gradually.</p>		

14/05/2005	TD = 1304 m	Day 8
<p>Drilled ahead to 1250 m. Upgraded shaker screens. Used new screens 12 x 165, 4 x 120, and 8 x 145. Some losses at shakers due to list of rig. Drilled to 1304 m. Circulated hole clean. POOH. Bit Undergage. Changed BHA and started RIH.</p> <p>Weighted active system to 10 ppg and treated system to meet program specs. Treated system with Duovis to increase low end rheology. Added Idcap to system to substitute for depletion. Cuttings integrity at shakers good.</p>		

15/05/2005	TD = 1761 m	Day 9
<p>RIH to bottom. Drilled to TD 1761 m. Used new 12 x 165XR screens. Could not run Desilter due to leaking valves. Fixed valves and started back @ 23:30 hrs to control mud weight. Carbide run indicates 14% overgage hole.</p> <p>Added 4 bags of KCl to system to maintain K conc. Made up 285 bbls unweighted premix in pit 2. Transfer 100 bbls to active to reduce mud weight from 10.4 + ppg to 10.3 ppg from 1350 m to 1400 m. Took 400 bbl of 16% KCl brine from FarGrip into Pit 5.</p>		

16/05/2005	TD = 1761 m	Day 10
<p>Drilled to core point 1761 m. Circulated B/U. Condcuted short trip to 1300 m. Back reamed tight hole from 1761m to 1567 m. Pipe stuck @1567m. Work pipe free Continue to backream from 1553m to 1293 m.R/I to bottom tagged 6 m of fill. Circulated hole clean. Replaced damage screens with used new 4 x 165 mesh screens. POOH pumped slug at 1500m. Back ream from 1280m to 1095 m. Pump out of hole from 1095m to shoe 727m. Circ B/Up then pumped 2nd slug. POOH. Made up core barrel assy.</p> <p>Added Glute to active prior to pulling out of hole after wiper trip. Increased mud wt due to solids during reaming. Observed small cavings on shakers during reaming. Took remaining 600 bbl of 16% KCl brine from FarGrip. Wrangler has 1000 bbl of NaCl brine.</p>		

17/05/2005	TD = 1794 m	Day 11
<p>RIH to bottom. Circulated B/U and commenced coring. Core down from 1761 to 1794.52 m. Circulated hole and gas. POOH to recover 33 m core.</p> <p>Transferred new premix from pit 4 to active to dilute to control mud weight. Started desilter at 7.00 am output 11.4 ppg. Treated mud with KOH and Defoam A. Centrifuge not available.</p>		




**Operator :** Santos Ltd  
**Well Name :** Casino 4  
**Contractor :** Diamond Offshore

**Field/Area :** VIC P-44  
**Description :** Gas Producer  
**Location :** Otway Basin

**Daily Discussion**  
M-I Well :

18/05/2005	TD = 1795 m	Day 12	Continued to lay out core barrels. R/U for logging. Tools held up at 1670 m. Lay down Logging tools. R/I with bit & LWD tools to drill 30 m and log core section. Worked string through tight spot 1670m to 1700 m. Drilled to 1795 m Made premix in Pit 2.
19/05/2005	TD = 1825 m	Day 13	Drilled ahead to 1825 m. Circulated 2 x B/U. POOH reaming tight spot at 1777 m. Run one wireline log run. RIH with OEDP for plug back. Circulated hole clean. Prepare for first cement plug. Mixed 60 bbl of HiVis 12 ppg pill for kick off plug.
20/05/2005	TD = 1825 m	Day 14	POOH to 1505 m pumped 53 bbl hi Vis pill. POOH to 1405 m and pumped kick off plug to 1255 m. POOH to 1250 m and reverse circulated the string contents. POOH and waited on cement. RIH. Pumped 55 bbl of weighted HiVis pill before Top Plug.

	Operator : Santos Ltd	Field/Area : Vic P 44	<b>Daily Discussion</b> M-I Well :
	Well Name : Casino 4 DW	Description : Gas Producer	
	Contractor : Diamond Offshore	Location : Otway Basin	

19/05/2005	TD = 1255 m	Day 0

20/05/2005	TD = 1255 m	Day 1
WOC. Made up BHA. Circulated riser to cut mud weight. RIH. Dumped sand traps and header box and cleaned out solids. Dressed shakers with new 16 x 200 mesh screens. Reduced riser + surface volume mud weight from 10.9 ppg to 10.5 ppg using premix. Treated system with Citric & Bicarb.		

21/05/2005	TD = 1570 m	Day 2
Wash down 1170 to 1273 m. Attempt to kick off from hard cement top @ 1273 m and started new hole from 1308 m. Drilled to 1570 m building g angle to 22 degrees @ 23:30 hrs. Treated cement contamination with Bicarb/Citric. Pump 50 bbl SW in an attempt to mitigate Bit Balling as per DSV. Treated system with Duovis to improve rheology. Used 13 x 200XR new screens. Received 870 bbl of 16% KCl brine from Fargrip. Added barite to system to increase mud weight to 10.7 ppg @1500 m.		

22/05/2005	TD = 1662 m	Day 3
Drilled to 1559 m. P/O to casing shoe. Repair Top drive. Run back in. Drilled to 1662 m. Circulated hole. POOH to change BHA. Treated system with Duovis/Idcap for maintenance. Lost 120 bbl at shakers after trip due to high Idcap conc. Downgraded few screens to handle flow. Used new 3 x 200 & 4 x 180 mesh screens.		

23/05/2005	TD = 1662 m	Day 4
Unable to run in bent motor assembly. RIH OEDP to 1450 m and circulated hole clean. Placed HiVis pill. P/O to 1350 m. Placed Kick Off Plug#2 from 1350 m to 1200 m. P/O to 1145 m. Reversed out. WOC. Pumped 60 bbl of HiVis pill weighted to 12 ppg below cement plug. Dumped contaminated returns (42 bbl) during reverse out. Treated surface volume with Citric acid. Gelled up leaking dump valve in Pit 2. Some sea water entered into active system due to not isolating sandtraps while cleaning out header box.		

24/05/2005	TD = 1662 m	Day 5
Waiting on cement. Pressure tested BOP. Made up 12.25" side track BHA. RIH. Soft cmt observed at 1176 m and hard cmt at 1199 m. Drilled ahead to kick off to 1260 m. Unable to kick off. Dumped Sandtrap. Treated system with available Citric and Bicarb for cement contamination. Took out 155 bbl active mud into Pit 2 and diluted system with premix to cut mud weight from 10.8 to 10.6 ppg. Mud severely contaminated with cement. Dumping and diluting to control viscosity.		

25/05/2005	TD = 1662 m	Day 6
Circulated bottoms up and POH. RIH. Pumped hi vis pill and cement plug at 1265-1100m. Pulled out to 1040 m and reverse circulated. WOC. Meanwhile made up BHA etc. Dumped 105bbl cement contaminated mud from active and topped up with 220bbl premix from pits 1 & 5 to reduce cement contamination. Dumped returns during reverse out. Cleaned out Header Box.		



**Operator :** Santos Ltd  
**Well Name :** Casino 4 DW  
**Contractor :** Diamond Offshore

**Field/Area :** Vic P 44  
**Description :** Gas Producer  
**Location :** Otway Basin

**Daily Discussion**  
M-I Well :

26/05/2005

TD = 1662 m

Day 7

WOC. RIH with motor and circulated. Tagged soft cement@ 1082 m/hard cement @ 1145 m. Drilled cement to 1146 m and kicked off. Added citric acid and sodium bicarbonate to condition active mud while circulating riser volume. Further added Citric/Bicarb while drilling cement. Used 4 x 180 mesh screens.



**Operator :** Santos Ltd  
**Well Name :** Casino 4 DW2  
**Contractor :** Diamond Offshore

**Field/Area :** Vic P44  
**Description :** Gas Producer  
**Location :** Otway Basin

**Daily Discussion**  
M-I Well :

Date	TD =	Day	Discussion
27/05/2005	1182 m	Day 1	30 bbl DW was pumped to clear up the bit. This was dumped on return to the surface. Slide drilled to maximise kickoff angle. POH. Picked up BHA. RIH. Slip and cut line. RIH to 1157m and continued sliding to 1182m. NOTE: Cumulative Well cost restarts for this well. Previous well costs are not carried forward on daily report. Dumped 100bbl mud from active pit along with 30 bbl DW sweep to reduce cement affected mud. Treated mud with citric acid, sodium bicarbonate, DUOVIS and IDCAP to address cement, viscosity and emulsification.
28/05/2005	1274 m	Day 2	Slide drilled ahead to 1274m. POH. P/U BHA with GeoPilot. Now RIH. Waiting on improvement in weather to receive barite, drill water from supply vessels standing by rig. Treated mud with Sodium Bicarbonate and Duovis to address the residual cement effects and rheology. Ran desilter for 1 hour. Dumped mud from shaker header box. Used 2 new 180 shaker screens.
29/05/2005	1763 m	Day 3	Washed down the last two stands and drilled ahead at 35m/hr to 1763m. Dumped 195 bbls unpumpable from pits to prepare for receiving KCl/NaCl brine. Received 1050 bbl KCl/NaCl brine from Pacific Wrangler Treated mud with DUOVIS and IDCAP to maintain properties. Screened up shakers to maintain mud weight at 10.8ppg. Used 7 new 180 mesh screens. Received 1050 bbl KCl/NaCl brine from Pacific Wrangler
30/05/2005	1998 m	Day 4	Lower IBOP valve on top drive backed out during connection. Reconnected and drilled ahead to TD of 1998m. TVD 1743m. Circulate hole clean. Pump hi vis weighted sweep, 65 bbls @ 12 ppg to assist with hole cleaning. POH as per Santos instructions. Back reaming required to get out of hole. Started to mix Flo-Pro mud for next section. Will charge for chemicals at start of 8.5" hole section Treated active system with DUOVIS and IDCAP to maintain properties. Also added GLUTE to treat the system before POH. Continued to bleed in premix to replace volume used in open hole. Bleed in premixes to maintain active volume and to level out weight after heavy sweep pumped.
31/05/2005	1998 m	Day 5	Back reaming out of hole to 965m. RIH for wiper trip. Circulate bottoms up at 1998m. Flow check and POH. Maintained hole cleaning properties by adding DUOVIS. Slow transfer of premix from pit 1 into active to maintain surface volume, control weight increase and keep good programmed properties.
1/06/2005	1991 m	Day 6	RIH with 9.625" casing. Washed down from 1700m to land casing. Cemented with shoe at 1991 meters. Pressure tested to 4000psi. Transferred mud from Pit #3 to Pit #1. Using Pit #1 as active. Dump remainder of pit #3 and clean to take brine. Mixed 1060 bbls FloPro. Flo Vis mixed @ 1 ppb. Will increase to program specs after well is displaced to avoid losses over shaker screens.



**Operator :** Santos Ltd  
**Well Name :** Casino 4 DW2  
**Contractor :** Diamond Offshore

**Field/Area :** Vic P44  
**Description :** Gas Producer  
**Location :** Otway Basin

**Daily Discussion**  
M-I Well :

Date	TD =	Day	Discussion
2/06/2005	1991 m	Day 7	Pulled out with cementing assembly. Made up 8-1/2" BHA. RIH. Tagged cement at 1960 m. Drilled cement and rethole to 1998 m. Pumped 30 bbl hi-vis spacer. Mixed Hi-vis pill with Fluoresceine dye in slug pit for spacer for displacement. Mixed up another 650 bbl FloPro mud. Changed down to coarse shaker screens.
3/06/2005	2352 m	Day 8	Pumped 30 bbl spacer. Displaced to FloPro mud. Drilled ahead to 2352 m. Maintain program properties with additions from premix pits Dumped 926 bbl KCl/Polymer mud while displacing to FloPro. After allowing FloPro mud to shear FloVis and DualFlo were added to maintain programmed mud properties. Screened up shaker 3 to 180 mesh and shaker 2 & 4 to 230 mesh screens & 200 mesh on #1.
4/06/2005	2404 m	Day 9	Drilled ahead to TD of 2404 m. Back reamed to shoe. Trip in to 2404m. Circulated hole clean. POH to run screens. Received 1023 bbls CaCl2 brine off Far Grip at 9.9ppg. Appears water in boat tanks from excess volume and reduced weight. Can weight up with CaCl2 sacks on board. Made up 200 bbl hi vis FloPro premix in pit 2. Screened up shakers and ran desilter and desander to assist in controlling mud density
5/06/2005	2404 m	Day 10	Daily cost adjustment made for 1023 bbls CaCl brine of \$27621.00. Continued to rig up to displace to brine. Used Omyacarb 8 to weight up slug to POOH. Added Dirt magnet (2%) to brine and weighting up with all available CaCl2 sacks. Using additional Flossy salt to increase brine density to 10.2 ppg.
6/06/2005	2404 m	Day 11	Completed scrapper run and then displaced to CaCl brine. Cleaned and flushed flow line and header boxes prior to brine returns. Increased brine density to 1.22 SG. Built 70 bbl high vis spacer in slug pit (FV 560 s/qt). Added Safe-cide and Safe-cor to brine ready for displacement. Dumped 716 bbls Flo Pro during displacement.
7/06/2005	2404 m	Day 12	Back loaded 7 bulk bags of KCl on the 5/6/05. 9 sacks of CaCl2 unusable dumped. Mud engineers left rig 6/6/05 due to lack of bed space.
8/06/2005	2404 m	Day 13	Back loaded 4 x 1.2 MT Flossy Salt.





**Operator :** Santos Ltd  
**Well Name :** Casino 4 DW2  
**Contractor :** Diamond Offshore

**Field/Area :** Vic P44  
**Description :** Gas Producer  
**Location :** Otway Basin

**Daily Discussion**  
M-I Well :

Date	TD =	Day	Discussion
9/06/2005	2404 m	14	
10/06/2005	2404 m	15	
11/06/2005	2404 m	16	Back loaded 2 x 1.2 MT Flossy Salt.
12/06/2005	2404 m	17	Mud engineer returned to rig. Mixed 70 bbl Hi Vis pill with 5.5 ppb Guar Gum.
13/06/2005	2404 m	18	P/O BOP Stack. Placed debris cap on sub sea well head. Pulling Anchors. Adjusted Citric Acid Inventory by 6 sacks and PipeLax W by 4 Drums. Also presumably 11 BB of KCl back loaded to Portland. 4 BB of CaCl2 lying on Wrangler. 1000 bbl of 16% Brine available on Wrangler.
14/06/2005	2404 m	19	

**DRILLING FLUIDS RECAP FOR SANTOS  
CASINO 4 / 4DW / DW2**

**COST  
BY  
INTERVAL**



**PRODUCT SUMMARY**

**Operator :** Santos Ltd  
**Well Name :** Casino 4  
**Contractor :** Diamond Offshore

**Field/Area :** VIC P-44  
**Description :** Gas Producer  
**Location :** Otway Basin

**SUMMARY OF PRODUCT USAGE FOR 36" INTERVAL**

**6/05/2005 - 7/05/2005, 92 - 137 m**

WATER-BASED MUD	SIZE	AMOUNT	UNIT COST	PROD COST
			(\$)	(\$)
1 - CALCIUM CHLORIDE 74-77%	25 KG BG	38	0.00	0.00
2 - CAUSTIC SODA	25 KG DM	8	20.46	163.68
3 - MI BAR (Bulk)	1 MT BG	16	231.20	3699.20
4 - MI Gel (Bulk)	1 MT BG	29	251.54	7294.66
SUB TOTAL:				11157.54
TAX:				0.00
WATER-BASED MUD TOTAL COST:				11157.54
TOTAL MUD COST FOR INTERVAL:				11157.54



**PRODUCT SUMMARY**

**Operator :** Santos Ltd  
**Well Name :** Casino 4  
**Contractor :** Diamond Offshore

**Field/Area :** VIC P-44  
**Description :** Gas Producer  
**Location :** Otway Basin

**SUMMARY OF PRODUCT USAGE FOR 17.5" INTERVAL                      8/05/2005 - 11/05/2005,    137 - 742 m**

WATER-BASED MUD	SIZE	AMOUNT	UNIT COST	PROD COST
			(\$)	(\$)
1 - CAUSTIC SODA	25 KG DM	18	20.46	368.28
2 - SODA ASH	25 KG BG	18	13.04	234.72
3 - MI BAR (Bulk)	1 MT BG	12	231.20	2774.40
4 - MI Gel (Bulk)	1 MT BG	62	251.54	15595.48
SUB TOTAL:				18972.88
TAX:				0.00
WATER-BASED MUD TOTAL COST:				18972.88
TOTAL MUD COST FOR INTERVAL:				18972.88



## PRODUCT SUMMARY

**Operator :** Santos Ltd  
**Well Name :** Casino 4  
**Contractor :** Diamond Offshore

**Field/Area :** VIC P-44  
**Description :** Gas Producer  
**Location :** Otway Basin

### SUMMARY OF PRODUCT USAGE FOR 12.25" INTERVAL 12/05/2005 - 20/05/2005, 742 - 1825 m

WATER-BASED MUD	SIZE	AMOUNT	UNIT COST	PROD COST
			(\$)	(\$)
1 - CAUSTIC SODA	25 KG DM	1	20.46	20.46
2 - DEFOAM A	5 GA CN	2	73.39	146.78
3 - DUO-VIS	25 KG BG	121	227.00	27467.00
4 - GLUTE 25	25 LT CN	7	93.68	655.76
5 - OS-1	25 KG BG	23	33.54	771.42
6 - POLYPAC UL	25 KG BG	137	96.30	13193.10
7 - IDCAP D SHALE INHIBITOR	25 KG BG	188	240.73	45257.24
8 - POTASSIUM HYDROXIDE	25 KG CN	23	31.28	719.44
9 - KCl (99%)Big Bag	1 MT BG	4	430.06	1720.24
10 - MI BAR (Bulk)	1 MT BG	85	231.20	19658.94
11 - MI Gel (Bulk)	1 MT BG	10	251.54	2492.76
12 - KCL BRINE 16%	1 BL	2000	13.00	26000.00
SUB TOTAL:				138103.14
TAX:				0.00
WATER-BASED MUD TOTAL COST:				138103.14
TOTAL MUD COST FOR INTERVAL:				138103.14



## PRODUCT SUMMARY

**Operator :** Santos Ltd  
**Well Name :** Casino 4 DW  
**Contractor :** Diamond Offshore

**Field/Area :** Vic P 44  
**Description :** Gas Producer  
**Location :** Otway Basin

### SUMMARY OF PRODUCT USAGE FOR 12.25" INTERVAL 19/05/2005 - 26/05/2005, 1255 - 1662 m

WATER-BASED MUD	SIZE	AMOUNT	UNIT COST	PROD COST
			(\$)	(\$)
1 - CITRIC ACID	25 KG BG	66	36.79	2428.14
2 - DUO-VIS	25 KG BG	62	227.00	14074.00
3 - OS-1	25 KG BG	21	33.54	704.34
4 - POLYPAC UL	25 KG BG	34	96.30	3274.20
5 - SODIUM Bicarbonate	25 KG BG	77	10.64	819.28
6 - IDCAP D SHALE INHIBITOR	25 KG BG	52	240.73	12517.96
7 - POTASSIUM HYDROXIDE	25 KG CN	1	31.28	31.28
8 - MI BAR (Bulk)	1 MT BG	31	231.20	7167.20
9 - KCL BRINE 16%	1 BL	870	13.00	11310.00
SUB TOTAL:				52326.40
TAX:				0.00
WATER-BASED MUD TOTAL COST:				52326.4
TOTAL MUD COST FOR INTERVAL:				52326.4



## PRODUCT SUMMARY

**Operator :** Santos Ltd  
**Well Name :** Casino 4 DW2  
**Contractor :** Diamond Offshore

**Field/Area :** Vic P44  
**Description :** Gas Producer  
**Location :** Otway Basin

### SUMMARY OF PRODUCT USAGE FOR 12.25" INTERVAL 27/05/2005 - 2/06/2005, 1146 - 1998 m

WATER-BASED MUD	SIZE	AMOUNT	UNIT COST	PROD COST
			(\$)	(\$)
1 - CAUSTIC SODA	25 KG DM	3	20.46	61.38
2 - CITRIC ACID	25 KG BG	4	36.79	147.16
3 - DEFOAM A	5 GA CN	2	73.39	146.78
4 - DUO-VIS	25 KG BG	29	227.00	6583.00
5 - POLYPAC UL	25 KG BG	15	96.30	1444.50
6 - SODIUM BICARBONATE	25 KG BG	7	10.64	74.48
7 - IDCAP D	25 KG BG	28	240.73	6740.44
8 - POTASSIUM HYDROXIDE	25 KG CN	3	31.28	93.84
9 - MI BAR (Bulk)	1 MT BG	13	231.20	3005.60
SUB TOTAL:				18297.18
TAX:				0.00
WATER-BASED MUD TOTAL COST:				18297.18
TOTAL MUD COST FOR INTERVAL:				18297.18



## PRODUCT SUMMARY

**Operator :** Santos Ltd  
**Well Name :** Casino 4 DW2  
**Contractor :** Diamond Offshore

**Field/Area :** Vic P44  
**Description :** Gas Producer  
**Location :** Otway Basin

### SUMMARY OF PRODUCT USAGE FOR 8.5" INTERVAL 3/06/2005 - 14/06/2005, 1998 - 2404 m

WATER-BASED MUD	SIZE	AMOUNT	UNIT COST	PROD COST
			(\$)	(\$)
1 - CALCIUM CHLORIDE Sacks	25 KG BG	207	11.54	2388.78
2 - CITRIC ACID	25 KG BG	6	36.79	220.74
3 - DEFOAM A	5 GA CN	2	73.39	146.78
4 - GLUTE 25	25 LT CN	12	93.68	1124.16
5 - GUAR GUM	25 KG BG	7	60.00	420.00
6 - FLO-VIS PLUS	25 KG BG	67	407.58	27307.86
7 - POTASSIUM HYDROXIDE	25 KG CN	8	31.28	250.24
8 - DUAL-FLO HT	50 LB BG	148	103.08	15255.84
9 - OMYA CARB 8	25 KG BG	1776	11.70	20779.20
10 - BRINE NaCl 18%+KCl 5%	1 BL BK	1700	14.00	23800.00
11 - SALT - FINE	1.2 MT BG	10	248.41	2484.10
12 - DIRT MAGNET	55 GA DM	16	1449.55	23192.80
13 - SAFE-CIDE	25 KG CN	5	91.77	458.85
14 - SAFE-COR	55 GA DM	11	316.31	3479.41
15 - SAFE-VIS E	5 GA CN	14	195.00	2730.00
16 - SAFE-SURF WN	200 KG DM	3	898.50	2695.50
17 - BRINE CALCIUM CHLORIDE	1 BL BL	1023	27.00	27621.00
SUB TOTAL:				154355.26
TAX:				0.00
WATER-BASED MUD TOTAL COST:				154355.26
TOTAL MUD COST FOR INTERVAL:				154355.26



**DRILLING FLUIDS RECAP FOR SANTOS  
CASINO 4 / 4DW / DW2**

**DAILY VOLUME  
SUMMARY SHEET**

**Santos Ltd**  
**Casino-4 Volume Summaries**

**36" Interval Seawater/Gel Sweeps**

Date	Mud Volume (bbl)					Volume Built bbl							Volume Lost bbl									
	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	
6-May	0	0	0	720	720				920			920	920							200	200	200
7-May	137	0	0	1433	1433				1261			1261	2181							548	548	748

**17.5" Interval Seawater/Gel Sweeps**

Date	Mud Volume (bbl)					Volume Built bbl							Volume Lost bbl									
	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	
8-May	363	0	0	1542	1542		1433		1194			2627	2627							1085	1085	1085
9-May	742	0	0	1722	1722				3098			3098	5725							2918	2918	4003
10-May	742	0	0	1722	1722				200			200	5925				200				200	4203
11-May	742	0	0	1722	1722							0	5925								0	4203
12-May	742	0	0	1722	1722							0	5925								0	4203

**12.25" Interval Seawater / Hi Vis Sweeps**

Date	Mud Volume (bbl)					Volume Built bbl							Volume Lost bbl									
	Depth	Hole	Surf	Res. &	Total	Water	Mud	Synthetic	Mud	Chemical	Barite	Daily	Cum	Shakers	Centri-	Desander	Dump	Hole	Sweeps	Daily	Cummul	
			Active	Premix	Vol		Received	Added	Built			Total	Built		fuge					Total	Lost	
13-May	1117	0	0	60	60	300	1722			17		2039	2039							1979	1979	1979

**12.25" Interval KCl-Polymer**

Date	Mud Volume (bbl)					Volume Built bbl							Volume Lost bbl								
	Depth	Hole	Surf	Res. &	Total	Water	Mud	Brine	Mud	Chemical	Barite	Daily	Cum	Shakers	Centri-	Desilter	Dump	Hole	Left in	Daily	Cummul
			Active	Premix	Vol		Received	Added	Built			Total	Built		fuge				Hole	Total	Lost
13-May	1100	558	372	212	1142	546	60	540		27		1173	1173	31						31	31
14-May	1304	658	386	830	1874	396		460		113		969	2142	237						237	237
15-May	1761	920	445	905	2270	126		400		18		544	2686	148						148	385
16-May	1761	984	408	1140	2532			520		5		525	3211	53			210			263	648
17-May	1794	1002	512	906	2420					20		20	3231	48		84				132	780
18-May	1795	938	490	1162	2590	246				10		256	3487	36			50			86	866
19-May	1825	980	388	1150	2518					7		7	3494	39		40				79	945
20-May	1825	894	402	1129	2425							0	3494						93	93	1038

**Santos Ltd**  
**Casino-4 Volume Summaries**

**12.25" Casino 4 DW - KCl-Idcap - Polymer**

Date	Mud Volume (bbl)					Volume Built bbl								Volume Lost bbl							
	Depth	Hole	Surf Active	Res. & Premix	Total Vol	Water	Mud Received	Brine Added	Mud Built	Chemical	Barite	Daily Total	Cum Built	Shakers	Centri- fuge	Desilter	Dump	Hole	Other	Daily Total	Cummul Lost
20-May	1255	674	539	1129	2342		2393					2393	2393				51			51	51
20-May	1255	674	548	955	2177					2		2	2395				167			167	167
21-May	1570	783	415	1378	2576			870		3	12	885	3280	151			335			486	653
22-May	1662	869	493	913	2275					6	12	18	3298	61		132	126			319	972
23-May	1662	777	580	1072	2429	182				4	10	196	3494				42			42	1014
24-May	1662	741	414	934	2089					3		3	3497	18			325			343	1357
25-May	1662	779	539	885	2203	200				6	13	219	3716				105			105	1462
26-May	1662	735	560	885	2180							0	3716	23						23	1485

**12.25" Casino 4 DW2 - KCl-Idcap - Polymer**

Date	Mud Volume (bbl)					Volume Built bbl								Volume Lost bbl							
	Depth	Hole	Surf Active	Res. & Premix	Total Vol	Water	Mud Received	Brine Added	Mud Built	Chemical	Barite	Daily Total	Cum Built	Shakers	Centri- fuge	Desilter	Dump	Hole	Other	Daily Total	Cummul Lost
27-May	1182	599.4	480.6	920	2000	52	2036			4	8	2100	2100				100			100	100
28-May	1274	647	756	525	1928					1	5	6	6	21		42	15			78	78
29-May	1763	869	517	140	1526	2				2	4	4	4	206			195		5	406	406
30-May	1998	976	562	100	1638	242				2	4	248	248	136						136	136
31-May	1998	1029	535	88	1652	101				1	2	104	104	90						90	90
1-Jun	1991	565	226	175	966							0	0				223	463		686	686
2-Jun	1998	463	462	0	925							0	0				41			41	41
3-Jun	1998	0	0	0	0							0	0				925			925	925

**8.5" Casino 4 DW2 - Flo Pro**

Date	Mud Volume (bbl)					Volume Built bbl								Volume Lost bbl							
	Depth	Hole	Surf Active	Res. & Premix	Total Vol	Water	Mud Received	Brine Added	Mud Built	Chemical	Barite	Daily Total	Cum Built	Shakers	Centri- fuge	Desilter	Dump	Hole	Other	Daily Total	Cummul Lost
3-Jun	2352	527	485	580	1592			1700		123		1823	1823	195					36	231	231
4-Jun	2404	661	431	1251	2343			1024		6		1030	1030				279			279	279
5-Jun	2404	661	435	1251	2347					4		4	4							0	0
6-Jun	2404	570	154	995	1719					88		88	88				716			716	716

**8.5" Casino 4 DW2 - CaCl2 Brine**

Date	Mud Volume (bbl)					Volume Built bbl								Volume Lost bbl							
	Depth	Hole	Surf Active	Res. & Premix	Total Vol	Water	Mud Received	Brine Added	Mud Built	Chemical	Barite	Daily Total	Cum Built	Shakers	Centri- fuge	Desilter	Dump	Hole	Other	Daily Total	Cummul Lost
7-Jun	2404	570	154	995	1719		1719					1719	1719							0	0
8-Jun	2404	570	154	995	1719							0	0							0	0
9-Jun	2404	570	154	995	1719							0	0							0	0
10-Jun	2404	570	154	995	1719							0	0							0	0
11-Jun	2404	570	154	995	1719							0	0							0	0
12-Jun	2404	370	424	995	1789	69				1		70	70							0	0
13-Jun	2404	370	424	995	1789							0	0							0	0
14-Jun	2404	370			370							0	0				1419			1419	1419

**DRILLING FLUIDS RECAP FOR SANTOS  
CASINO 4 / 4DW / DW2**

**TOTAL  
MATERIAL  
COST**



## PRODUCT SUMMARY

**Operator :** Santos Ltd  
**Well Name :** Casino 4  
**Contractor :** Diamond Offshore

**Field/Area :** VIC P-44  
**Description :** Gas Producer  
**Location :** Otway Basin

### SUMMARY OF PRODUCT USAGE FOR WELL

6/05/2005 - 20/05/2005, 92 - 1825 m

WATER-BASED MUD	SIZE	AMOUNT	UNIT COST	PROD COST
			(\$)	(\$)
1 - CALCIUM CHLORIDE 74-77%	25 KG BG	38	0.00	0.00
2 - CAUSTIC SODA	25 KG DM	27	20.46	552.42
3 - DEFOAM A	5 GA CN	2	73.39	146.78
4 - DUO-VIS	25 KG BG	121	227.00	27467.00
5 - GLUTE 25	25 LT CN	7	93.68	655.76
6 - OS-1	25 KG BG	23	33.54	771.42
7 - POLYPAC UL	25 KG BG	137	96.30	13193.10
8 - SODA ASH	25 KG BG	18	13.04	234.72
9 - IDCAP D SHALE INHIBITOR	25 KG BG	188	240.73	45257.24
10 - POTASSIUM HYDROXIDE	25 KG CN	23	31.28	719.44
11 - KCl (99%)Big Bag	1 MT BG	4	430.06	1720.24
12 - MI BAR (Bulk)	1 MT BG	113	231.20	26132.54
13 - MI Gel (Bulk)	1 MT BG	101	251.54	25382.90
14 - KCL BRINE 16%	1 BL	2000	13.00	26000.00
SUB TOTAL:				168233.56
TAX:				0.00
WATER-BASED MUD TOTAL COST:				168233.56
TOTAL MUD COST FOR INTERVAL:				168233.56



## PRODUCT SUMMARY

**Operator :** Santos Ltd  
**Well Name :** Casino 4 DW  
**Contractor :** Diamond Offshore

**Field/Area :** Vic P 44  
**Description :** Gas Producer  
**Location :** Otway Basin

### SUMMARY OF PRODUCT USAGE FOR WELL

19/05/2005 - 26/05/2005, 1255 - 1662 m

WATER-BASED MUD	SIZE	AMOUNT	UNIT COST	PROD COST
			(\$)	(\$)
1 - CITRIC ACID	25 KG BG	66	36.79	2428.14
2 - DUO-VIS	25 KG BG	62	227.00	14074.00
3 - OS-1	25 KG BG	21	33.54	704.34
4 - POLYPAC UL	25 KG BG	34	96.30	3274.20
5 - SODIUM Bicarbonate	25 KG BG	77	10.64	819.28
6 - IDCAP D SHALE INHIBITOR	25 KG BG	52	240.73	12517.96
7 - POTASSIUM HYDROXIDE	25 KG CN	1	31.28	31.28
8 - MI BAR (Bulk)	1 MT BG	31	231.20	7167.20
9 - KCL BRINE 16%	1 BL	870	13.00	11310.00
SUB TOTAL:				52326.40
TAX:				0.00
WATER-BASED MUD TOTAL COST:				52326.4
TOTAL MUD COST FOR INTERVAL:				52326.4



## PRODUCT SUMMARY

**Operator :** Santos Ltd  
**Well Name :** Casino 4 DW2  
**Contractor :** Diamond Offshore

**Field/Area :** Vic P44  
**Description :** Gas Producer  
**Location :** Otway Basin

### SUMMARY OF PRODUCT USAGE FOR WELL

27/05/2005 - 14/06/2005, 1146 - 2404 m

WATER-BASED MUD	SIZE	AMOUNT	UNIT COST	PROD COST
			(\$)	(\$)
1 - CALCIUM CHLORIDE Sacks	25 KG BG	207	11.54	2388.78
2 - CAUSTIC SODA	25 KG DM	3	20.46	61.38
3 - CITRIC ACID	25 KG BG	10	36.79	367.90
4 - DEFOAM A	5 GA CN	4	73.39	293.56
5 - DUO-VIS	25 KG BG	29	227.00	6583.00
6 - GLUTE 25	25 LT CN	12	93.68	1124.16
7 - GUAR GUM	25 KG BG	7	60.00	420.00
8 - POLYPAC UL	25 KG BG	15	96.30	1444.50
9 - SODIUM BICARBONATE	25 KG BG	7	10.64	74.48
10 - FLO-VIS PLUS	25 KG BG	67	407.58	27307.86
11 - IDCAP D	25 KG BG	28	240.73	6740.44
12 - POTASSIUM HYDROXIDE	25 KG CN	11	31.28	344.08
13 - MI BAR (Bulk)	1 MT BG	13	231.20	3005.60
14 - DUAL-FLO HT	50 LB BG	148	103.08	15255.84
15 - OMYA CARB 8	25 KG BG	1776	11.70	20779.20
16 - BRINE NaCl 18%+KCl 5%	1 BL BK	1700	14.00	23800.00
17 - SALT - FINE	1.2 MT BG	10	248.41	2484.10
18 - DIRT MAGNET	55 GA DM	16	1449.55	23192.80
19 - SAFE-CIDE	25 KG CN	5	91.77	458.85
20 - SAFE-COR	55 GA DM	11	316.31	3479.41
21 - SAFE-VIS E	5 GA CN	14	195.00	2730.00
22 - SAFE-SURF WN	200 KG DM	3	898.50	2695.50
23 - BRINE CALCIUM CHLORIDE	1 BL BL	1023	27.00	27621.00

SUB TOTAL:

172652.44



**PRODUCT SUMMARY**

**Operator :** Santos Ltd  
**Well Name :** Casino 4 DW2  
**Contractor :** Diamond Offshore

**Field/Area :** Vic P44  
**Description :** Gas Producer  
**Location :** Otway Basin

<b>SUMMARY OF PRODUCT USAGE FOR INTERVAL</b>	<b>27/05/2005 - 14/06/2005,</b>	<b>1182 - 2404 r</b>
TAX:		0.00
WATER-BASED MUD TOTAL COST:		172652.44
TOTAL MUD COST FOR INTERVAL:		172652.44



**DRILLING FLUIDS RECAP FOR SANTOS  
CASINO 4 / 4DW / DW2**

**HYDRAULICS  
REPORT**



## HYDRAULICS SUMMARY

**Operator :** Santos Ltd

**Field/Area :** VIC P-44

**Well Name :** Casino 4

**Description :** Gas Producer

**Contractor :** Diamond Offshore

**Location :** Otway Basin

Date		6/05/2005	7/05/2005	8/05/2005	9/05/2005	10/05/2005	11/05/2005	12/05/2005	13/05/2005
Depth	m		137	363	742	742	742	742	1055
Days Since Spud			1	2	3	4	5	6	7
<b>*RHEOLOGICAL PROPERTIES</b>									
Mud Wt	sp.gr.	1.04	1.06	1.06	1.06	1.06	1.06	1.06	1.07
Plastic Visc	cP								12
Yield Point	lb/100ft <sup>2</sup>								14
3-rpm Rdg	Fann deg								4
np Value		.3949	.3949	.3949	.3949	.3949	.3949	.3949	.5475
Kp Value	lb*s <sup>n</sup> /100ft <sup>2</sup>	4.9103	4.9103	4.9103	4.9103	4.9103	4.9103	4.9103	.9127
na Value		.2885	.2885	.2885	.2885	.2885	.2885	.2885	.3769
Ka Value	lb*s <sup>n</sup> /100ft <sup>2</sup>	7.9979	7.9979	7.9979	7.9979	7.9979	7.9979	7.9979	2.3078
<b>*FLOW DATA</b>									
Flow Rate	gal/min	0	1023	1093	772	0	0	0	1003
Pump Pressure	psi	0	1000	2200	2900	0	0	0	3200
Pump	hhp	*	*	1403	*	*	*	*	1873
<b>*PRESSURE LOSSES</b>									
Drill String	psi	*	*		*	*	*	*	1283
Bit	psi	*	*		*	*	*	*	977
Annulus	psi	*	*		*	*	*	*	28
Total System	psi	*	*		*	*	*	*	2288
<b>*BIT HYDRAULICS</b>									
Nozzles	1/32"	4x22	4x22	3x20	3x20	3x20	3x20	3x20	3x20
Nozzles	1/32"			20	20	20	20		
Bit Pressure	%	*	*		*	*	*	*	31
Bit	hhp	*	*		*	*	*	*	571
Bit HSI	(index)	*	*		*	*	*	*	4.85
Jet Velocity	ft/s	*	*	87	*	*	*	*	107
Impact Force	Newton	*	*		*	*	*	*	1620
<b>DRILL COLLARS ANNULUS</b>									
Velocity	m/s	*	*	1	*	*	*	*	1
Critical Vel	m/s	*	*		*	*	*	*	1
Reynolds Number		*	*		*	*	*	*	2587
Crit Re (Lam - Tran)		*	*	2929	*	*	*	*	2720
<b>*DRILL PIPE ANNULUS</b>									
Velocity	m/s	*	*		*	*	*	*	1
Critical Vel	m/s	*	*		*	*	*	*	1
Reynolds Number		*	*		*	*	*	*	1725
Crit Re (Lam - Tran)		*	*	2929	*	*	*	*	2720
<b>*HOLE CLEANING</b>									
Slip Velocity	m/s	*	*		*	*	*	*	
Rising Velocity	m/s	*	*		*	*	*	*	1
Lifting Capacity	%	*	*	88	*	*	*	*	88
Cutting Conc	%	*	*	1.78	*	*	*	*	0.57
Penetration Rate	m/h	0	3	25	28	0	0	0	15
<b>CASING SHOE PRESSURES</b>									
ECD	sp.gr.	*	*	1.45	*	*	*	*	1.08
ECD+Cuttings	sp.gr.	*	*	1.47	*	*	*	*	1.09
<b>TOTAL DEPTH PRESSURES</b>									
ECD	sp.gr.	*	*	1.45	*	*	*	*	1.09
ECD+Cuttings	sp.gr.	*	*	1.47	*	*	*	*	1.1



## HYDRAULICS SUMMARY

**Operator :** Santos Ltd

**Field/Area :** VIC P-44

**Well Name :** Casino 4

**Description :** Gas Producer

**Contractor :** Diamond Offshore

**Location :** Otway Basin

Date		14/05/2005	15/05/2005	16/05/2005	17/05/2005	18/05/2005	19/05/2005	20/05/2005
Depth	m	1304	1638	1761	1794	1794	1824	1255
Days Since Spud		8	9	10	11	12	13	14
<b>*RHEOLOGICAL PROPERTIES</b>								
Mud Wt	sp.gr.	1.23	1.24	1.29	1.3	1.3	1.3	1.26
Plastic Visc	cP	17	21	19	20	23	24	18
Yield Point	lb/100ft <sup>2</sup>	31	37	31	32	36	33	26
3-rpm Rdg	Fann deg	9	10	9	8	9	9	7
np Value		.4374	.4458	.4647	.4695	.4749	.507	.4948
Kp Value	lb*s <sup>n</sup> /100ft <sup>2</sup>	3.3476	3.8387	2.9418	2.969	3.2566	2.5762	2.1458
na Value		.3433	.3573	.3527	.3863	.3873	.3873	.3742
Ka Value	lb*s <sup>n</sup> /100ft <sup>2</sup>	5.4849	5.9576	5.4019	4.5457	5.1054	5.1054	4.0566
<b>*FLOW DATA</b>								
Flow Rate	gal/min	973	873	883	326	848	848	848
Pump Pressure	psi	3750	3700	3850	850	3570	3570	3570
Pump	hhp	2129	1885	*	*	1766	1766	*
<b>*PRESSURE LOSSES</b>								
Drill String	psi	947	1573	*	*	1656	52	*
Bit	psi	1056	656	*	*	649		*
Annulus	psi	39	85	*	*	82	1	*
Total System	psi	2043	2314	*	*	2386	54	*
<b>*BIT HYDRAULICS</b>								
Nozzles	1/32"	3x20	7x14	7x14		7x14		
Nozzles	1/32"							
Bit Pressure	%	28	18	*	*	18		*
Bit	hhp	600	334	*	*	321		*
Bit HSI	(index)	5.09	2.83	*	*	2.72		*
Jet Velocity	ft/s	103	81	*	*	79		*
Impact Force	Newton	1753	1244	*	*	1231		*
<b>DRILL COLLARS ANNULUS</b>								
Velocity	m/s	1	1	*	*	1		*
Critical Vel	m/s	2	2	*	*	2	2	*
Reynolds Number		1313	757	*	*	777	175	*
Crit Re (Lam - Tran)		2871	2859	*	*	2819	2775	*
<b>*DRILL PIPE ANNULUS</b>								
Velocity	m/s		1	*	*	1		*
Critical Vel	m/s	2	2	*	*	2	2	*
Reynolds Number		1725	536	*	*	563	563	*
Crit Re (Lam - Tran)		2871	2859	*	*	2819	2775	*
<b>*HOLE CLEANING</b>								
Slip Velocity	m/s			*	*			*
Rising Velocity	m/s		1	*	*	1		*
Lifting Capacity	%	80	91	*	*	91	79	*
Cutting Conc	%	2.14	0.8	*	*	0.0	0.0	*
Penetration Rate	m/h	13	19	0	10	0	0	0
<b>CASING SHOE PRESSURES</b>								
ECD	sp.gr.	1.27	1.27	*	*	1.33	1.33	*
ECD+Cuttings	sp.gr.	1.29	1.28	*	*	1.33	1.33	*
<b>TOTAL DEPTH PRESSURES</b>								
ECD	sp.gr.	1.27	1.27	*	*	1.33	1.31	*
ECD+Cuttings	sp.gr.	1.29	1.28	*	*	1.33	1.31	*



## HYDRAULICS SUMMARY

**Operator :** Santos Ltd

**Field/Area :** Vic P 44

**Well Name :** Casino 4 DW

**Description :** Gas Producer

**Contractor :** Diamond Offshore

**Location :** Otway Basin

Date		20/05/2005	21/05/2005	22/05/2005	23/05/2005	24/05/2005	25/05/2005	26/05/2005	
Depth	m	1255	1478	1662	1662	1207	1662	1133	
Days Since Spud		1	2	3	4	5	6	7	
<b>*RHEOLOGICAL PROPERTIES</b>									
Mud Wt	sp.gr.	1.26	1.26	1.29	1.29	1.27	1.27	1.27	
Plastic Visc	cP	18	19	22	19	16	17	18	
Yield Point	lb/100ft <sup>2</sup>	26	39	38	37	35	36	42	
3-rpm Rdg	Fann deg	7	12	12	11	9	11	14	
np Value		.4948	.4088	.4507	.4215	.3937	.4014	.3785	
Kp Value	lb*s <sup>n</sup> /100ft <sup>2</sup>	2.1458	4.8348	3.8524	4.3137	4.6723	4.6279	6.0415	
na Value		.3742	.3211	.3573	.3301	.3618	.3218	.2922	
Ka Value	lb*s <sup>n</sup> /100ft <sup>2</sup>	4.0566	7.5833	7.1491	6.8505	5.3227	6.9435	9.275	
<b>*FLOW DATA</b>									
Flow Rate	gal/min	0	1003	1003	1003	903	903	903	
Pump Pressure	psi	0	3300	3300	3300	2300	2300	2300	
Pump	hhp	*	1931	*	*	1212	*	1212	
<b>*PRESSURE LOSSES</b>									
Drill String	psi	*	1338	*	*	932	*	1044	
Bit	psi	*	986	*	*	34509	*	34509	
Annulus	psi	*	93	*	*	59	*	73	
Total System	psi	*	2417	*	*	35501	*	35626	
<b>*BIT HYDRAULICS</b>									
Nozzles	1/32"	16x9	16x9	16x9	16x9	22x3	22x3	22x3	
Nozzles	1/32"								
Bit Pressure	%	*	30	*	*	1500	*	1500	
Bit	hhp	*	577	*	*	18181	*	18181	
Bit HSI	(index)	*	4.9	*	*	154.26	*	154.26	
Jet Velocity	ft/s	*	99	*	*	581	*	581	
Impact Force	Newton	*	1767	*	*	9447	*	9447	
<b>DRILL COLLARS ANNULUS</b>									
Velocity	m/s	*	1	*	*	1	*	1	
Critical Vel	m/s	*	2	*	*	2	*	2	
Reynolds Number		*	1217	*	*	1206	*	968	
Crit Re (Lam - Tran)		*	2910	*	*	2931	*	2951	
<b>*DRILL PIPE ANNULUS</b>									
Velocity	m/s	*	1	*	*	1	*	1	
Critical Vel	m/s	*	2	*	*	2	*	2	
Reynolds Number		*	771	*	*	793	*	598	
Crit Re (Lam - Tran)		*	2910	*	*	2931	*	2951	
<b>*HOLE CLEANING</b>									
Slip Velocity	m/s	*		*	*		*		
Rising Velocity	m/s	*	1	*	*	1	*	1	
Lifting Capacity	%	*	94	*	*	93	*	94	
Cutting Conc	%	*	1.07	*	*	6.01	*	5.93	
Penetration Rate	m/h	0	30	30	30	150	150	150	
<b>CASING SHOE PRESSURES</b>									
ECD	sp.gr.	*	1.3	*	*	1.3	*	1.31	
ECD+Cuttings	sp.gr.	*	1.31	*	*	1.37	*	1.38	
<b>TOTAL DEPTH PRESSURES</b>									
ECD	sp.gr.	*	1.3	*	*	1.3	*	1.32	
ECD+Cuttings	sp.gr.	*	1.31	*	*	1.38	*	1.39	



## HYDRAULICS SUMMARY

**Operator :** Santos Ltd

**Field/Area :** Vic P44

**Well Name :** Casino 4 DW2

**Description :** Gas Producer

**Contractor :** Diamond Offshore

**Location :** Otway Basin

Date		27/05/2005	28/05/2005	29/05/2005	30/05/2005	31/05/2005	1/06/2005	2/06/2005	3/06/2005
Depth	m	1167	1274	1735	1998	1998	1998	1969	2318
Days Since Spud		1	2	3	4	5	6	7	8
<b>*RHEOLOGICAL PROPERTIES</b>									
Mud Wt	sp.gr.	1.27	1.28	1.29	1.29	1.3	1.30	1.28	1.27
Plastic Visc	cP	16	15	18	20	18	17	20	17
Yield Point	lb/100ft <sup>2</sup>	37	37	38	34	35	30	34	41
3-rpm Rdg	Fann deg	10	11	11	11	11	9	11	14
np Value		.3806	.3656	.4021	.4546	.4218	.4454	.4546	.3708
Kp Value	lb*s <sup>n</sup> /100ft <sup>2</sup>	5.2675	5.6733	4.8674	3.3838	4.0734	3.1182	3.3838	6.1264
na Value		.3653	.3301	.3459	.3301	.3133	.3433	.3301	.2994
Ka Value	lb*s <sup>n</sup> /100ft <sup>2</sup>	5.88	6.8505	6.6756	6.8505	7.0406	5.4849	6.8505	9.1664
<b>*FLOW DATA</b>									
Flow Rate	gal/min	808	0	916	938	0	0	624	743
Pump Pressure	psi	2460	0	3100	3508	0	0	2730	3290
Pump	hhp	1160	*	1657	1920	*	*	994	1426
<b>*PRESSURE LOSSES</b>									
Drill String	psi	873	*	1291	1588	*	*	2808	3787
Bit	psi	514	*	266	279	*	*	397	559
Annulus	psi	61	*	99	109	*	*	317	462
Total System	psi	1448	*	1656	1977	*	*	3522	4807
<b>*BIT HYDRAULICS</b>									
Nozzles	1/32"	3x22	9x16	9x16	9x16	9x16		5x16	5x16
Nozzles	1/32"								
Bit Pressure	%	21	*	9	8	*	*	15	17
Bit	hhp	242	*	142	153	*	*	145	242
Bit HSI	(index)	2.06	*	1.21	1.3	*	*	2.55	4.27
Jet Velocity	ft/s	71	*	51	52	*	*	62	74
Impact Force	Newton	1031	*	849	890	*	*	703	989
<b>DRILL COLLARS ANNULUS</b>									
Velocity	m/s	1	*	1	1	*	*	3	3
Critical Vel	m/s	2	*	2	2	*	*	3	3
Reynolds Number		895	*	1078	1180	*	*	2685	3810
Crit Re (Lam - Tran)		2949	*	2919	2847	*	*	2847	2962
<b>*DRILL PIPE ANNULUS</b>									
Velocity	m/s	1	*	1	1	*	*		2
Critical Vel	m/s	2	*	2	2	*	*	2	2
Reynolds Number		591	*	699	754	*	*	754	1775
Crit Re (Lam - Tran)		2949	*	2919	2847	*	*	2847	2962
<b>*HOLE CLEANING</b>									
Slip Velocity	m/s		*			*	*		
Rising Velocity	m/s	1	*	1	1	*	*		2
Lifting Capacity	%	92	*	93	94	*	*	73	97
Cutting Conc	%	0.07	*	1.17	1.14	*	*	2.05	0.42
Penetration Rate	m/h	1.5	0	30	30	0	0	5	19
<b>CASING SHOE PRESSURES</b>									
ECD	sp.gr.	1.3	*	1.33	1.33	*	*	1.41	1.45
ECD+Cuttings	sp.gr.	1.3	*	1.34	1.34	*	*	1.43	1.45
<b>TOTAL DEPTH PRESSURES</b>									
ECD	sp.gr.	1.31	*	1.33	1.33	*	*	1.41	1.45
ECD+Cuttings	sp.gr.	1.31	*	1.35	1.35	*	*	1.43	1.46



## HYDRAULICS SUMMARY

**Operator :** Santos Ltd

**Field/Area :** Vic P44

**Well Name :** Casino 4 DW2

**Description :** Gas Producer

**Contractor :** Diamond Offshore

**Location :** Otway Basin

Date		4/06/2005	5/06/2005	6/06/2005	7/06/2005	12/06/2005			
Depth	m	2404	2404	2404					
Days Since Spud		9	10	11	12	17			
<b>*RHEOLOGICAL PROPERTIES</b>									
Mud Wt	sp.gr.	1.28	1.28	1.28	1.2	1.21			
Plastic Visc	cP	17	17	17					
Yield Point	lb/100ft <sup>2</sup>	39	37	37					
3-rpm Rdg	Fann deg	13	12	12					
np Value		.3825	.3949	.3949	.3949	.3949			
Kp Value	lb*s <sup>n</sup> /100ft <sup>2</sup>	5.5013	4.9103	4.9103	4.9103	4.9103			
na Value		.3133	.2885	.2885	.2885	.2885			
Ka Value	lb*s <sup>n</sup> /100ft <sup>2</sup>	8.3207	7.9979	7.9979	7.9979	7.9979			
<b>*FLOW DATA</b>									
Flow Rate	gal/min	0	0	0	0	0			
Pump Pressure	psi	0	0	0	0	0			
Pump	hhp	*	*	*	*	*			
<b>*PRESSURE LOSSES</b>									
Drill String	psi	*	*	*	*	*			
Bit	psi	*	*	*	*	*			
Annulus	psi	*	*	*	*	*			
Total System	psi	*	*	*	*	*			
<b>*BIT HYDRAULICS</b>									
Nozzles	1/32"								
Nozzles	1/32"								
Bit Pressure	%	*	*	*	*	*			
Bit	hhp	*	*	*	*	*			
Bit HSI	(index)	*	*	*	*	*			
Jet Velocity	ft/s	*	*	*	*	*			
Impact Force	Newton	*	*	*	*	*			
<b>DRILL COLLARS ANNULUS</b>									
Velocity	m/s	*	*	*	*	*			
Critical Vel	m/s	*	*	*	*	*			
Reynolds Number		*	*	*	*	*			
Crit Re (Lam - Tran)		*	*	*	*	*			
<b>*DRILL PIPE ANNULUS</b>									
Velocity	m/s	*	*	*	*	*			
Critical Vel	m/s	*	*	*	*	*			
Reynolds Number		*	*	*	*	*			
Crit Re (Lam - Tran)		*	*	*	*	*			
<b>*HOLE CLEANING</b>									
Slip Velocity	m/s	*	*	*	*	*			
Rising Velocity	m/s	*	*	*	*	*			
Lifting Capacity	%	*	*	*	*	*			
Cutting Conc	%	*	*	*	*	*			
Penetration Rate	m/h	0	0	0	0	0			
<b>CASING SHOE PRESSURES</b>									
ECD	sp.gr.	*	*	*	*	*			
ECD+Cuttings	sp.gr.	*	*	*	*	*			
<b>TOTAL DEPTH PRESSURES</b>									
ECD	sp.gr.	*	*	*	*	*			
ECD+Cuttings	sp.gr.	*	*	*	*	*			

**DRILLING FLUIDS RECAP FOR SANTOS  
CASINO 4 / 4DW / DW2**

**DRILLING  
FLUIDS  
SUMMARY**



# DRILLING FLUIDS SUMMARY

**Operator :** Santos Ltd

**Field/Area :** VIC P-44

**Well Name :** Casino 4

**Description :** Gas Producer

**Contractor :** Diamond Offshore

**Location :** Otway Basin

Date	6/05/2005	7/05/2005	8/05/2005	9/05/2005	10/05/2005	11/05/2005
Depth/TVD	m	/	137/137	363/363	742/742	742/742
Activity	Spudding Well	Waiting on cemer	Drilling Ahead	Running Casing	Running BOP	Picking up pipe
Mud Type	Hi Vis Swee	Hi Vis Swee	Hi Vis Swee	Hi Vis Swee	Hi Vis Swee	Hi Vis Swee
Hole Size	in	36	36	17.5	17.5	17.5
Circ Volume	bbl					
Flow Rate	gal/min	0	1023	1093	772	0
Circ Pressure	psi	0	1000	2200	2900	0
Avg ROP	m/hr	0	3	25	28	0
Sample From	Pit	Pit	Pit	Pit	Pit	Pit
Flow Line Temp	°C					
Mud Weight	sp.gr.	1.04@ °C	1.06@ °C	1.06@ °C	1.06@ °C	1.06@ °C
Funnel Viscosity	s/qt	100+	100+	100+	100+	100+
PV	cP					
YP	lb/100ft <sup>2</sup>					
R600/R300/R200		//	//	//	//	//
R100/R6/R3		//	//	//	//	//
10s/10m/30m Gel	lb/100ft <sup>2</sup>	//	//	//	//	//
API Fluid Loss	cc/30 min					
HTHP Fluid Loss	cc/30 min					
Cake API/HT	1/32"	/	/	/	/	/
Solids	%Vol					
Oil/Water	%Vol	/	/	/	/	/
Sand	%Vol					
MBT	lb/bbl					
pH						
Alkal Mud (Pm)						
Pf/Mf		/	/	/	/	/
Chlorides	mg/l					
Hardness Ca						
KCl	% by Wt					
Idcap	ppb					
Sulphite Excess	ppm					
Daily Mud Cost	\$	3100.32	8057.22	3953.64	10927.56	4091.68
Cuml Mud Cost	\$	3100.32	11157.54	15111.18	26038.74	30130.42
Sales Engineer		Gordon /Glen Sh	Gordon /Glen Sh	Gordon /Glen Sh	Gordon /Glen Sh	Gordon /Glen Sh
Products Used		BulkGel / 12	BulkGel / 17	BulkGel / 15	BulkGel / 42	BulkGel / 5
		CaCl <sub>2</sub> / 38	NaOH / 4	NaOH / 5	NaOH / 12	NaOH / 1
		NaOH / 4	BulkBar / 16	Soda / 6	Soda / 9	Soda / 3
						BulkBar / 12

**REMARKS**

6/05/2005: Set last of the anchors. Ballasted down and mixed spud mud. Spudded well to 9m Anderdrift survey out 2degrees. Move rig.  
 7/05/2005: Respudded well. Drilled to section TD at 137m. POOH, ran 30" csg and cemented as per program.  
 8/05/2005: Wait on cement. RIH to tag cement. Further cement job required. RIH, drilled csg shoe at 135m. Drill ahead to 363m.  
 9/05/2005: Drilled to section TD 742m. Pumped 200bbl PHG sweep then filled hole with 1000bbls PHG. POH to run csg. Ran 13 3/8" csg.  
 10/05/2005: Completed running 13 3/8" csg and cemented as per program. POH with running tool and lay out 17 1/2" BHA. Ran Xmas Tree.  
 11/05/2005: Continue running BOP, nipple up choke, kill and booster lines. RIH and land wear bushing assembly. POOH lay down string





# DRILLING FLUIDS SUMMARY

Operator : Santos Ltd

Field/Area : VIC P-44

Well Name : Casino 4

Description : Gas Producer

Contractor : Diamond Offshore

Location : Otway Basin

Date	12/05/2005	13/05/2005	14/05/2005	14/05/2005	15/05/2005	15/05/2005
Depth/TVD	m	742/742	1055/1055	1304/1304	1170/1170	1638/1638
Activity	Picking up BHA	Drilling 12.25"	Tripping	Tripping	Drilling	Drilling
Mud Type	Sweeps / KC	KCl/Idcap D	KCl/Idcap D	KCl/Idcap D	KCl/Idcap D	KCl/Idcap D
Hole Size	in	12.25	12.25	12.25	12.25	12.25
Circ Volume	bbbl		930	1044	1044	1365
Flow Rate	gal/min	0	1003	973	973	873
Circ Pressure	psi	0	3200	3750	3750	3700
Avg ROP	m/hr	0	15	13	13	19
Sample From	Pit	Pits	FL	Pit	Suction	Flow Line
Flow Line Temp	°C			50	42	50
Mud Weight	sp.gr.	1.06@ °C	1.07 @20 °C	1.23@48 °C	1.2@ 40 °C	1.24@48 °C
Funnel Viscosity	s/qt	100+	60	57	65	54
PV	cP		12	17	16	21
YP	lb/100ft <sup>2</sup>		14	31	19	37
R600/R300/R200	//	38/26/21	65/48/40	51/35/29	79/58/48	68/50/42
R100/R6/R3	//	15/5/4	30/11/9	20/8/5	35/12/10	31/11/9
10s/10m/30m Gel	lb/100ft <sup>2</sup>	//	6/7/7	11/20/22	4/5/6	12/28/38
API Fluid Loss	cc/30 min		6	4.2	4.5	4
HTHP Fluid Loss	cc/30 min					
Cake API/HT	1/32"	/	1/	1/	1/	1/
Solids	%Vol		1	10	9	11.6
Oil/Water	%Vol	/	/99	/90	/91	/88.4
Sand	%Vol			1	.4	0
MBT	lb/bsl		1	7.5	3	11
pH			8.7	8.2	8.5	9
Alkal Mud (Pm)			0	0	0.1	0
Pf/Mf	/		0.1/1	0/1.35	0.05/1.3	0.08/1.45
Chlorides	mg/l		30000	27000	28000	38500
Hardness Ca			300	680	680	620
KCl	% by Wt		6	5	5.5	6.5
Idcap	ppb		1.14	2.75	3	2.8
Sulphite Excess	ppm		40	40	40	10
Daily Mud Cost	\$	0.00	28344.27	50875.35		19369.06
Cuml Mud Cost	\$	30130.42	58474.69	109350.04		128719.10
Sales Engineer	Gordon /Glen Sh	Glen Sh/Jasdeep	Glen Sh/Jasdeep	Glen Sh/Jasdeep	Glen Sh/Jasdeep	Glen Sh/Jasdeep
Products Used		Idcap / 25	Idcap / 71		Idcap / 16	
		KOH / 3	KOH / 7		KOH / 4	
		16%brin / 540	16%brin / 460		16%brin / 400	
		BulkGel / 7.91	BulkGel / 2		KCl / 4	
		NaOH / 1	DuoVis / 43		DuoVis / 25	
		DuoVis / 25	Glut / 3		OS-1 / 3	
		OS-1 / 10	OS-1 / 6		PacUL / 28	
		PacUL / 53	PacUL / 26			
		BulkBar / 9.03	BulkBar / 62			

**REMARKS**

12/05/2005: Continued to rig up for 12 1/4" section. Tested Bops and commenced running in hole and picking up BHA and drill pipe..

13/05/2005:

14/05/2005:

15/05/2005:



## DRILLING FLUIDS SUMMARY

**Operator :** Santos Ltd

**Field/Area :** VIC P-44

**Well Name :** Casino 4

**Description :** Gas Producer

**Contractor :** Diamond Offshore

**Location :** Otway Basin

Date	16/05/2005	16/05/2005	17/05/2005	17/05/2005	18/05/2005	18/05/2005
Depth/TVD	m	1761/1761	1761/1761	1794/1794	1761/1761	1794/1794
Activity		R/I core barrel	R/I core barrel	Recover Core	Recover Core	Drilling
Mud Type		KCl/Idcap D	KCl/Idcap D	KCl/Idcap D	KCl/Idcap D	KCl/Idcap D
Hole Size	in	12.25	12.25	12.25	12.25	12.25
Circ Volume	bbbl	1392	1392	1514	1514	1428
Flow Rate	gal/min	883	883	326	326	848
Circ Pressure	psi	3850	3850	850	850	3570
Avg ROP	m/hr	0	0	10	10	0
Sample From		Pit 3	Flow Line	Suction	Flow Line	Suction
Flow Line Temp	°C		50	37	35	
Mud Weight	sp.gr.	1.29@32 °C	1.25@ 44 °C	1.3@36 °C	1.3@34 °C	1.3@30 °C
Funnel Viscosity	s/qt	55	55	60	58	70
PV	cP	19	23	20	27	23
YP	lb/100ft²	31	36	32	33	36
R600/R300/R200		69/50/43	82/59/48	72/52/43	87/60/50	82/59/50
R100/R6/R3		31/11/9	35/12/9	31/11/8	36/12/9	35/12/9
10s/10m/30m Gel	lb/100ft²	10/24/31	11/24/33	10/20/27	10/23/29	11/23/30
API Fluid Loss	cc/30 min	3.6	4.1	3.6	3.8	3.6
HTHP Fluid Loss	cc/30 min					
Cake API/HT	1/32"	1/	1/	1/	1/	1/
Solids	%Vol	14	13	13	13	13
Oil/Water	%Vol	/86	/87	/87	/87	/87
Sand	%Vol	0.5	0.7	0.5	0.5	0.4
MBT	lb/bbl	14	12	14	13.75	14
pH		8	9	9	9	9
Alkal Mud (Pm)		0				
Pf/Mf		0.02/1.5	0.05/1.3	0.05/1.5	0.03/1.6	0.02/1.5
Chlorides	mg/l	38000	37000	40000	34000	40000
Hardness Ca		640	600	640	640	680
KCl	% by Wt	6	6	6	6	6
Idcap	ppb	2.5	2.5	3	3	3
Sulphite Excess	ppm	0	20	10	40	0
Daily Mud Cost	\$	14540.44		6967.63		15423.94
Cuml Mud Cost	\$	143259.54		150227.17		165651.11
Sales Engineer		Glen Sh/Jasdeep	Glen Sh/Jasdeep	Glen Sh/Jasdeep	Glen Sh/Jasdeep	Glen Sh/Jasdeep
Products Used		Idcap / 28		Idcap / 9		Idcap / 34
		16%brin / 600		KOH / 6		KOH / 3
				DFOAM / 2		Duovis / 21
				Duovis / 5		OS-1 / 2
				Glut / 4		PacUL / 24
				OS-1 / 2		
				PacUL / 6		
				BulkBar / 10		

### REMARKS

16/05/2005:

17/05/2005:

18/05/2005:



# DRILLING FLUIDS SUMMARY

**Operator :** Santos Ltd

**Field/Area :** VIC P-44

**Well Name :** Casino 4

**Description :** Gas Producer

**Contractor :** Diamond Offshore

**Location :** Otway Basin

Date		19/05/2005	19/05/2005	20/05/2005	20/05/2005		
Depth/TVD	m	1824/1824	1824/1824	1255/1255	1825/1825		
Activity		Cementing	Cementing	RIH	RIH		
Mud Type		KCl/Idcap D	KCl/Idcap D	KCl/Idcap D	KCl/Idcap D		
Hole Size	in	12.25	12.25	12.25	12.25		
Circ Volume	bbl	1368	1368	1275	1275		
Flow Rate	gal/min	848	848	848	848		
Circ Pressure	psi	3570	3570	3570	3570		
Avg ROP	m/hr	0	0	0	0		
Sample From		Suction	Pit	Pit 3	Pit 3		
Flow Line Temp	°C	40	48				
Mud Weight	sp.gr.	1.3@37 °C	1.3@ 42 °C	1.26@ °C	1.3@ °C		
Funnel Viscosity	s/qt	58	52	58	67		
PV	cP	24	24	18	23		
YP	lb/100ft <sup>2</sup>	33	31	26	34		
R600/R300/R200		81/57/50	79/55/45	62/44/36	80/57/47		
R100/R6/R3		35/12/9	32/11/9	26/9/7	35/13/10		
10s/10m/30m Gel	lb/100ft <sup>2</sup>	10/21/28	10/20/28	8/14/17	11/29/31		
API Fluid Loss	cc/30 min	3.6	3.4	3.6	4		
HTHP Fluid Loss	cc/30 min						
Cake API/HT	1/32"	1/	1/	1/	1/		
Solids	%Vol	13	13	10.5	13		
Oil/Water	%Vol	/87	/87	/89.5	/87		
Sand	%Vol	0.25	0.4	TR	0.5		
MBT	lb/bbl	14	12.5	9	12.5		
pH		9	9	9	11.5		
Alkal Mud (Pm)				0	1.45		
Pf/Mf		0.03/1.5	0.02/1.4	0.2/3.5	0.2/1.85		
Chlorides	mg/l	40000	40000	46000	40000		
Hardness Ca		620	600	1100	600		
KCl	% by Wt	6	6	8	6		
Idcap	ppb	3	3	3	3		
Sulphite Excess	ppm	0	10				
Daily Mud Cost	\$	2582.45		0.00			
Cuml Mud Cost	\$	168233.56		168233.56			
Sales Engineer		Glen Sh/Jasdeep	Glen Sh/Jasdeep	Kelvin /Jasdeep	Kelvin /Jasdeep		
Products Used		Idcap / 5					
		Duovis / 2					
		BulkBar / 4					

**REMARKS**

19/05/2005:  
  
20/05/2005:



**DRILLING FLUIDS SUMMARY**

Operator : Santos Ltd

Field/Area : Vic P 44

Well Name : Casino 4 DW

Description : Gas Producer

Contractor : Diamond Offshore

Location : Otway Basin

Date	19/05/2005	20/05/2005	21/05/2005	21/05/2005	22/05/2005	22/05/2005
Depth/TVD	m 1255/1255	1255/1255	1478/1473	1260/1260	1662/1627	1599/1580
Activity		RIH	Drilling	Drilling	Tripping	Tripping
Mud Type	KCl/Polymer	KCl/Polymer	KCl/Polymer	KCl/Polymer	KCl/Polymer	KCl/Polymer
Hole Size	in 12.25	12.25	12.25	12.25	12.25	12.25
Circ Volume	bbl	1222	1198	1198	1362	1362
Flow Rate	gal/min 0	0	1003	1003	1003	1003
Circ Pressure	psi 0	0	3300	3300	3300	3300
Avg ROP	m/hr 0	0	30	30	30	30
Sample From		Pit 3	Pit 3	Pit 3	Suction	Pit 3
Flow Line Temp	°C		49	36	50	54
Mud Weight	sp.gr. @ °C	1.26@21 °C	1.26@43 °C	1.26@32 °C	1.29@40 °C	1.28@40 °C
Funnel Viscosity	s/qt	58	58	55	58	67
PV	cP	18	19	17	22	24
YP	lb/100ft²	26	39	28	38	47
R600/R300/R200	//	62/44/36	77/58/49	62/45/37	82/60/55	95/71/60
R100/R6/R3	//	26/9/7	37/15/12	27/9/7	42/16/12	45/17/14
10s/10m/30m Gel	lb/100ft² //	8/14/17	14/27/36	7/14/17	12/26/36	15/35/42
API Fluid Loss	cc/30 min	3.6	4	4.2	3.8	4.4
HTHP Fluid Loss	cc/30 min					
Cake API/HT	1/32"	/	1/	1/	1/	1/
Solids	%Vol	10.5	11	10	13	12
Oil/Water	%Vol /	/89.5	/89	/90	/87	0/88
Sand	%Vol	TR	0.2	0.25	TR	tr
MBT	lb/bbl	9	11	10	12	12
pH		9	10	10.9	9.2	8.4
Alkal Mud (Pm)		0	0.5	1	0.25	0.1
Pf/Mf	/	0.2/3.5	0.1/2	0.2/2.2	0.1/1.5	0.1/1.1
Chlorides	mg/l	46000	45000	44000	47000	46000
Hardness Ca		1100	560	920	560	600
KCl	% Wt	8	8	8	8	8
IDCAP	ppb	3	3	3	3	3

Daily Mud Cost	\$	0.00	400.72	18037.05		11206.28
Cuml Mud Cost	\$	0.00	400.72	18437.77		29644.05
Sales Engineer		Kelvin /Jasdeep	Kelvin /Jasdeep	Kelvin /Jasdeep	Kelvin /Jasdeep	Kelvin /Jasdeep
Products Used			Citric / 8	Citric / 5	Duovis / 15	
			Bicarb / 10	Duovis / 19	OS-1 / 10	
				OS-1 / 5	PacUL / 8	
				Bicarb / 20	Idcap / 20	
				BulkBar / 8	KOH / 1	
				16%brin / 870	BulkBar / 8	

**REMARKS**

19/05/2005:  
20/05/2005:  
21/05/2005:  
  
22/05/2005:



## DRILLING FLUIDS SUMMARY

**Operator :** Santos Ltd

**Field/Area :** Vic P 44

**Well Name :** Casino 4 DW

**Description :** Gas Producer

**Contractor :** Diamond Offshore

**Location :** Otway Basin

Date	23/05/2005	23/05/2005	24/05/2005	24/05/2005	25/05/2005	25/05/2005
Depth/TVD	m	1662/1627	1662/ 1627	1207/1207	1662/ 1627	1662/1627
Activity		WOC	WOC	Drilling	Drilling	WOC
Mud Type		KCl/Polymer	KCl/Polymer	KCl/Polymer	KCl/Polymer	KCl/Polymer
Hole Size	in	12.25	12.25	12.25	12.25	12.25
Circ Volume	bbl	1357	1357	1155	1155	1318
Flow Rate	gal/min	1003	1003	903	903	903
Circ Pressure	psi	3300	3300	2300	2300	2300
Avg ROP	m/hr	30	30	150	150	150
Sample From		Pit 3	Pit 3	Pit 3	Pit 3	Pit 3
Flow Line Temp	°C			35		
Mud Weight	sp.gr.	1.29@35 °C	1.29@ 45 °C	1.27@30 °C	1.28@ 40 °C	1.27@ 30 °C
Funnel Viscosity	s/qt	65	65	60	65	90
PV	cP	19	20	16	20	17
YP	lb/100ft²	37	35	35	35	36
R600/R300/R200		75/56/48	75/55/46	67/51/43	75/55/46	70/53/45
R100/R6/R3		35/14/11	35/14/11	32/12/9	35/13/11	34/12/11
10s/10m/30m Gel	lb/100ft²	13/24/31	11/20/26	11/23/26	11/20/24	18/50/51
API Fluid Loss	cc/30 min	3.2	3.6	3.4	3.4	4
HTHP Fluid Loss	cc/30 min					
Cake API/HT	1/32"	1/	1/	1/	1/	1/
Solids	%Vol	13	11	12	13	12
Oil/Water	%Vol	/87	/89	/88	/87	/88
Sand	%Vol	TR	TR	TR	tr	TR
MBT	lb/bbl	13	12.5	12	15	12
pH		9	8.5	10.5	8.4	11.5
Alkal Mud (Pm)		0.2	0.1	0.5	0.0	3
Pf/Mf		0.05/3	0.1/1.5	0.25/5	0.05/3.8	0.6/2
Chlorides	mg/l	48000	46000	47000	46000	47000
Hardness Ca		1200	800	1600	1200	640
KCl	% Wt	8	8	8	8	8
IDCAP	ppb	3	3	3	3	3
Daily Mud Cost	\$	7692.91		853.74		11361.44
Cuml Mud Cost	\$	37336.96		38190.70		49552.14
Sales Engineer		Kelvin /Jasdeep	Kelvin /Jasdeep	Kelvin /Jasdeep	Kelvin /Jasdeep	Kelvin /Jasdeep
Products Used		Citric / 5		Citric / 18		Duovis / 12
		Duovis / 10		Bicarb / 18		OS-1 / 6
		PacUL / 10				PacUL / 16
		Idcap / 12				Idcap / 20
		BulkBar / 6				BulkBar / 9

**REMARKS**

23/05/2005:

24/05/2005:

25/05/2005:



# DRILLING FLUIDS SUMMARY

**Operator :** Santos Ltd  
**Well Name :** Casino 4 DW  
**Contractor :** Diamond Offshore

**Field/Area :** Vic P 44  
**Description :** Gas Producer  
**Location :** Otway Basin

Date		26/05/2005	26/05/2005			
Depth/TVD	m	1133/1133	1662/1627			
Activity		Drilling	Drilling			
Mud Type		KCl/Polymer	KCl/Polymer			
Hole Size	in	12.25	12.25			
Circ Volume	bbbl	1300	1300			
Flow Rate	gal/min	903	903			
Circ Pressure	psi	2300	2300			
Avg ROP	m/hr	150	150			
Sample From		Pit 3	Pit 3			
Flow Line Temp	°C	35				
Mud Weight	sp.gr.	1.27@35 °C	1.27@30 °C			
Funnel Viscosity	s/qt	68	62			
PV	cP	18	19			
YP	lb/100ft <sup>2</sup>	42	34			
R600/R300/R200		78/60/52	72/53/45			
R100/R6/R3		39/16/14	34/12/10			
10s/10m/30m Gel	lb/100ft <sup>2</sup>	15/32/33	10/16/18			
API Fluid Loss	cc/30 min	4.4	3.6			
HTHP Fluid Loss	cc/30 min					
Cake API/HT	1/32"	1/	1/			
Solids	%Vol	12	12			
Oil/Water	%Vol	/88	/88			
Sand	%Vol		tr			
MBT	lb/bbl	12	10			
pH		11	10.1			
Alkal Mud (Pm)		2.9	1.7			
Pf/Mf		0.45/3.15	0.3/2.9			
Chlorides	mg/l	46000	45000			
Hardness Ca		800	800			
KCl	% Wt	8	8			
IDCAP	ppb	3	3			
Daily Mud Cost	\$	2774.26				
Cuml Mud Cost	\$	52326.40				
Sales Engineer		Kelvin /Jasdeep	Kelvin /Jasdeep			
Products Used		Citric / 30				
		Duovis / 6				
		Bicarb / 29				

## REMARKS

26/05/2005:



# DRILLING FLUIDS SUMMARY

**Operator :** Santos Ltd  
**Well Name :** Casino 4 DW2  
**Contractor :** Diamond Offshore

**Field/Area :** Vic P44  
**Description :** Gas Producer  
**Location :** Otway Basin

Date	27/05/2005	27/05/2005	28/05/2005	28/05/2005	29/05/2005	29/05/2005	
Depth/TVD	m	1167/1167	1160/1156	1274/1274	1220/1219	1735/1650	1589/1560
Activity		Drilling	Drilling	RIH	RIH	Drilling	Drilling
Mud Type		KCl/Polymer	KCl/Polymer	KCl/Polymer	KCl/Polymer	KCl/Polymer	KCl/Polymer
Hole Size	in	12.25	12.25	12.25	12.25	12.25	12.25
Circ Volume	bbl	1079	1079	1403	1403	1386	1386
Flow Rate	gal/min	808	808	0	0	916	916
Circ Pressure	psi	2460	2460	0	0	3100	3100
Avg ROP	m/hr	1.5	1.5	0	0	30	30
Sample From		Flowline	Pit 3	Active	FL	Flowline	Flowline
Flow Line Temp	°C	34	47		46	53	52
Mud Weight	sp.gr.	1.27@32 °C	1.26@40 °C	1.28@34 °C	1.27@38 °C	1.29@50 °C	1.29@48 °C
Funnel Viscosity	s/qt	60	54	53	55	54	57
PV	cP	16	17	15	18	18	18
YP	lb/100ft <sup>2</sup>	37	42	37	45	38	40
R600/R300/R200		69/53/46	76/59/50	67/52/45	81/63/53	74/56/47	76/58/51
R100/R6/R3		36/14/10	39/15/12	35/14/11	42/16/13	37/15/11	39/16/12
10s/10m/30m Gel	lb/100ft <sup>2</sup>	12/20/21	13/19/21	12/18/21	15/22/27	13/20/25	13/21/26
API Fluid Loss	cc/30 min	4.2	4.2	3.8	4.0	4.2	4.2
HTHP Fluid Loss	cc/30 min						
Cake API/HT	1/32"	1/	1/	1/	1/	1/	1/
Solids	%Vol	13	11	12	12	14	14
Oil/Water	%Vol	/87	/89	/88	/88	/86	/86
Sand	%Vol	tr	tr	tr	tr	0.25	tr
MBT	lb/bbl	10	10	10	10	12.5	12.5
pH		10.8	10.8	10.0	10.2	8.9	9.0
Alkal Mud (Pm)		1.8	1.4	0.8	0.8	0.5	0.5
Pf/Mf		0.3/3.2	0.3/3.5	0.2/3.6	0.2/3.7	0.1/3.3	0.1/3.3
Chlorides	mg/l	46000	45000	47000	47000	47000	47000
Hardness Ca		920	920	960	1000	1200	1280
KCl	%	7.9	7.5	8	8	8	8
IDCAP	ppb	3.0	2.94	3	3	3	3
LSRV 0.3rpm							
Daily Mud Cost	\$	7027.13		952.52		2569.85	
Cuml Mud Cost	\$	7027.13		7979.65		10549.50	
Sales Engineer		Kelvin /Gordon	Kelvin /Gordon	Kelvin /Gordon	Kelvin /Gordon	Kelvin /Gordon	Kelvin /Gordon
Products Used		Citric / 4		Duovis / 1		Duovis / 5	
		Duovis / 7		Bicarb / 3		Idcap / 5	
		Bicarb / 4		BulkBar / 3		BulkBar / 1	
		Idcap / 17					
		BulkBar / 5					

**REMARKS**

27/05/2005:  
 28/05/2005:  
 29/05/2005:



## DRILLING FLUIDS SUMMARY

**Operator :** Santos Ltd

**Field/Area :** Vic P44

**Well Name :** Casino 4 DW2

**Description :** Gas Producer

**Contractor :** Diamond Offshore

**Location :** Otway Basin

Date	29/05/2005	30/05/2005	30/05/2005	31/05/2005	31/05/2005	1/06/2005
Depth/TVD	m 1345/1341	1998/1743	1810/1679	1998/1743	1998/1743	1998/1743
Activity	Drilling	ickream out of hc	ickream out of hc	POH to Run Csg.	POH to Run Csg	Test Casing
Mud Type	KCl/Polymer	KCl/Polymer	KCl/Polymer	KCl/Polymer	KCl/Polymer	Mixing FloP
Hole Size	in 12.25	12.25	12.25	12.25	12.25	12.25
Circ Volume	bbl 1386	1539	1539	1565	1565	792
Flow Rate	gal/min 916	938	938	0	0	0
Circ Pressure	psi 3100	3508	3508	0	0	0
Avg ROP	m/hr 30	30	30	0	0	0
Sample From	Pit 3	Pit 3	Pit 3	Flowline	Pit 3	Pit 3
Flow Line Temp	°C 51	55	50	48	53	
Mud Weight	sp.gr. 1.29@38 °C	1.29@48 °C	1.28@38 °C	1.3@40 °C	1.29@30 °C	1.30@30 °C
Funnel Viscosity	s/qt 61	54	69	53	52	52
PV	cP 19	20	20	18	17	17
YP	lb/100ft² 47	34	43	35	30	30
R600/R300/R200	85/66/57	74/54/46	83/63/52	71/53/44	64/47/39	64/47/39
R100/R6/R3	45/17/14	35/14/11	39/16/13	33/14/11	30/13/10	30/12/9
10s/10m/30m Gel	lb/100ft² 15/23/28	14/27/29	13/26/33	13/25/35	10/27/36	10/24/33
API Fluid Loss	cc/30 min 4.2	4.6	4.6	4.8	4.8	4.7
HTHP Fluid Loss	cc/30 min					
Cake API/HT	1/32"	1/	1/	1/	1/	1/
Solids	%Vol 13	14	14	14	13	13
Oil/Water	%Vol /87	/86	/86	/86	/87	/87
Sand	%Vol tr	tr	tr	tr	tr	tr
MBT	lb/bbl 10	12.5	12.5	15	15	15
pH	9.5	8.6	8.5	8.5	8.6	8.5
Alkal Mud (Pm)	0.3	0.15	0.15	0.1	0.1	0.1
Pf/Mf	0.1/3.4	0.05/2.5	0.05/2.6	0.05/2.5	0.05/2.5	0.05/2.4
Chlorides	mg/l 47000	46000	46000	44000	44000	43000
Hardness Ca	1280	1160	1160	840	1000	880
KCl	% 8	8	8	8	8	7.8
IDCAP	ppb 3	3	3	3	3	3
LSRV 0.3rpm						
Daily Mud Cost	\$	5341.31		1952.37		0.00
Cuml Mud Cost	\$	15890.81		17843.18		17843.18
Sales Engineer	Kelvin /Gordon	Kelvin /Gordon	Kelvin /Gordon	Kelvin /Gordon	Kelvin /Gordon	Kelvin /Gordon
Products Used		NaOH / 3		DFOAM / 1		
		DFOAM / 1		Duovis / 5		
		Duovis / 9		PacUL / 5		
		PacUL / 10		KOH / 1		
		Idcap / 6		BulkBar / 1		
		KOH / 2				
		BulkBar / 3				

**REMARKS**

30/05/2005:  
  
31/05/2005:  
  
1/06/2005:





## DRILLING FLUIDS SUMMARY

**Operator :** Santos Ltd

**Field/Area :** Vic P44

**Well Name :** Casino 4 DW2

**Description :** Gas Producer

**Contractor :** Diamond Offshore

**Location :** Otway Basin

Date	1/06/2005	2/06/2005	2/06/2005	3/06/2005	3/06/2005	3/06/2005	
Depth/TVD	m	1998/	1969/	/	2318/1773	2255/1769	2064/1758
Activity		Test Casing	Drilling Cement	Drilling Cement	Drilling	Drilling	Drilling
Mud Type		Mixing FloP	KCl / Polym	KCl / Polym	Flo Pro	Flo Pro	Flo Pro
Hole Size	in	12.25	8.5	8.5	8.5	8.5	8.5
Circ Volume	bbl	792	926	926	1012	1012	1012
Flow Rate	gal/min	0	624	624	743	743	743
Circ Pressure	psi	0	2730	2730	3290	3290	3290
Avg ROP	m/hr	0	5	5	19	19	19
Sample From		FloPro	Active	FloPro	Acitve	Active	Active
Flow Line Temp	°C				63	60	51
Mud Weight	sp.gr.	1.26@ °C	1.28 @ °C	1.26@30 °C	1.27@45 °C	1.27@45 °C	1.26@30 °C
Funnel Viscosity	s/qt	56	55	56	57	54	59
PV	cP	12	20	12	17	16	13
YP	lb/100ft²	25	34	23	41	35	31
R600/R300/R200		49/37/31	74/54/45	47/35/29	75/58/51	67/51/44	57/44/37
R100/R6/R3		23/10/8	35/14/11	22/9/7	40/18/14	35/15/12	29/14/12
10s/10m/30m Gel	lb/100ft²	8/11/	14/26/31	8/10/12	16/22/	13/17/22	12/22/27
API Fluid Loss	cc/30 min	4.8	4.8	4.9	3.8	3.8	4.8
HTHP Fluid Loss	cc/30 min						
Cake API/HT	1/32"	1/	1/	>1/	1/	<1/	<1/
Solids	%Vol	13	14	14	15	15	14
Oil/Water	%Vol	/87	/86	/86	/85	/85	/86
Sand	%Vol		tr	tr	0.25	0.25	tr
MBT	lb/bbl		15	>5	<5	<5	<5
pH		8.9	9.2	8.9	9.7	10.3	11
Alkal Mud (Pm)				1.1	1.4	1.4	1.0
Pf/Mf		0.1/0.2	/	0.05/0.4	0.1/0.4	0.1/0.4	0.15/0.45
Chlorides	mg/l		44000	127000	120000	120000	120000
Hardness Ca				1400	280	280	320
KCl	%	5	8	6.5	6	6	6
IDCAP	ppb						
LSRV 0.3rpm				15000	57588	52992	56000
Daily Mud Cost	\$		454.00		84159.40		
Cuml Mud Cost	\$		18297.18		102456.58		
Sales Engineer		Kelvin /Gordon	Kelvin /Gordon	Kelvin /Gordon	Kelvin /Gordon	Kelvin /Gordon	Kelvin /Gordon
Products Used			Duovis / 2		DFOAM / 2		
					Glut / 12		
					Flo-Vis / 61		
					KOH / 8		
					DualHT / 148		
					omya8 / 1600		
					K/NaCl / 1700		

### REMARKS

2/06/2005:

3/06/2005:



## DRILLING FLUIDS SUMMARY

**Operator :** Santos Ltd

**Field/Area :** Vic P44

**Well Name :** Casino 4 DW2

**Description :** Gas Producer

**Contractor :** Diamond Offshore

**Location :** Otway Basin

Date	4/06/2005	5/06/2005	6/06/2005	6/06/2005	7/06/2005	8/06/2005
Depth/TVD	m	2404/1787	2404/1741	2404/1741	2404/1741	/
Activity	Run Prod. Screen	Testing BOP	Run Prod Tube	Run Prod Tube	Completions	Completions
Mud Type	Flo Pro	FloPro	CaCl Brine	CaCl Brine	CaCl Brine	CaCl Brine
Hole Size	in	8.5	8.5	0	0	0
Circ Volume	bbbl	1092	1272	724	724	724
Flow Rate	gal/min	0	0	0	0	0
Circ Pressure	psi	0	0	0	0	0
Avg ROP	m/hr	0	0	0	0	0
Sample From	Pit #3	Pit 3	Pit 3	Pit 4 Brin	Pit 4	
Flow Line Temp	°C					
Mud Weight	sp.gr.	1.28 @35 °C	1.28@30 °C	1.28@30 °C	1.21@ °C	1.2@ °C
Funnel Viscosity	s/qt	54	54	54		39
PV	cP	17	17	17		
YP	lb/100ft²	39	37	37		
R600/R300/R200		73/56/49	71/54/42	71/54/42	//	//
R100/R6/R3		39/16/13	33/15/12	33/15/12	//	//
10s/10m/30m Gel	lb/100ft²	13/17/	13/17/	13/17/	//	//
API Fluid Loss	cc/30 min	3.8	3.8	3.8		
HTHP Fluid Loss	cc/30 min					
Cake API/HT	1/32"	1/	1/	1/	/	/
Solids	%Vol	15	15	15		
Oil/Water	%Vol	/85	/85	/85	/	/
Sand	%Vol	0.25	.25	.25		
MBT	lb/bbl	<5	<5	<5		
pH		9.7	9.7	9.7	9	
Alkal Mud (Pm)		1.4	1.4	1.4		
Pf/Mf		0.1/0.4	0.1/0.4	0.1/0.4	/	/
Chlorides	mg/l	120000	120000	120000	192000	226 000
Hardness Ca		280	280	280		
KCl	%	6	6	6		
IDCAP	ppb					
LSRV 0.3rpm		54323	52560	52560		
Daily Mud Cost	\$	31283.28	842.40	35040.66		103.86
Cuml Mud Cost	\$	133739.86	134582.26	169622.92		169726.78
Sales Engineer		Kelvin /Gordon	Glen Sh/Gordon	Glen Sh/Gordon	Glen Sh/Gordon	Glen Sh/Gordon
Products Used		Flo-Vis / 6	omya8 / 72	CaCl2 / 198	Glen Sh/Gordon	CaCl2 / 9
		omya8 / 104		Salt F / 10		
		CaCl2Br / 1023		DirtM / 16		
				S-Cide / 5		
				S-COR / 11		
				S-Vis E / 14		
				S-SURF / 3		

### REMARKS

4/06/2005:

5/06/2005:

6/06/2005:

7/06/2005:

8/06/2005:



## DRILLING FLUIDS SUMMARY

**Operator :** Santos Ltd

**Field/Area :** Vic P44

**Well Name :** Casino 4 DW2

**Description :** Gas Producer

**Contractor :** Diamond Offshore

**Location :** Otway Basin

Date	9/06/2005	10/06/2005	11/06/2005	12/06/2005	13/06/2005	14/06/2005
Depth/TVD	m	/	/	/	/	/
Activity	Completions	Completions	Completions	Completions	Pull Anchors	
Mud Type	CaCl Brine	CaCl Brine	CaCl Brine	CaCl Brine	CaCl2 Brine	CaCl2 Brine
Hole Size	in	0	0	8.5	8.5	8.5
Circ Volume	bbl	724	724	794	794	794
Flow Rate	gal/min	0	0	0	0	0
Circ Pressure	psi	0	0	0	0	0
Avg ROP	m/hr	0	0	0	0	0
Sample From				Pit 4		
Flow Line Temp	°C					
Mud Weight	sp.gr.	@ °C	@ °C	@ °C	@ °C	@ °C
Funnel Viscosity	s/qt					
PV	cP					
YP	lb/100ft <sup>2</sup>					
R600/R300/R200		//	//	//	//	//
R100/R6/R3		//	//	//	//	//
10s/10m/30m Gel	lb/100ft <sup>2</sup>	//	//	//	//	//
API Fluid Loss	cc/30 min					
HTHP Fluid Loss	cc/30 min					
Cake API/HT	1/32"	/	/	/	/	/
Solids	%Vol					
Oil/Water	%Vol	/	/	/	/	/
Sand	%Vol					
MBT	lb/bbl					
pH				9		
Alkal Mud (Pm)						
Pf/Mf		/	/	/	/	/
Chlorides	mg/l			228000		
Hardness Ca						
KCl	%					
IDCAP	ppb					
LSRV 0.3rpm						
Daily Mud Cost	\$	0.00	0.00	420.00	220.74	0.00
Cuml Mud Cost	\$	169726.78	169726.78	170146.78	170367.52	170367.52
Sales Engineer		Glen Sharpe	Glen Sharpe	Glen Sharpe	Glen Sh/Jasdeep	Glen Sh/Jasdeep
Products Used				Guar / 7	Citric / 6	

### REMARKS

9/06/2005:  
10/06/2005:  
11/06/2005:  
12/06/2005:  
13/06/2005:  
14/06/2005:

**DRILLING FLUIDS RECAP FOR SANTOS  
CASINO 4 / 4DW / DW2**

**PRODUCT  
CONSUMPTION**



# Product Consumption

**Operator :** Santos Ltd  
**Well Name :** Casino 4  
**Location :** Otway Basin  
**Field/Area:** VIC P-44  
**Contractor:** Diamond Offshore  
**M-I Engineer:** Gordon Howie  
**Rig Name:** Ocean Patriot  
**Stock Point:** Portland

Product Name	DATES											
	Product Price	May 6, 2005		May 7, 2005		May 8, 2005		May 9, 2005		May 10, 2005		Page
		Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Totals
CALCIUM CHLORIDE 74-77%	0.00	38	0.00									0.00
CAUSTIC SODA	20.46	4	81.84	4	81.84	5	102.30	12	245.52	1	20.46	531.96
CITRIC ACID	36.79		0.00		0.00		0.00		0.00		0.00	0.00
DEFOAM A	73.39		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
GLUTE 25	93.68		0.00		0.00		0.00		0.00		0.00	0.00
GUAR GUM	60.00		0.00		0.00		0.00		0.00		0.00	0.00
KWIK SEAL FINE	28.00		0.00		0.00		0.00		0.00		0.00	0.00
KWIK SEAL COARSE	28.00		0.00		0.00		0.00		0.00		0.00	0.00
LIME	7.44		0.00		0.00		0.00		0.00		0.00	0.00
OS-1	33.54		0.00		0.00		0.00		0.00		0.00	0.00
PIPE-LAX W	379.80		0.00		0.00		0.00		0.00		0.00	0.00
POLYPAC UL	96.30		0.00		0.00		0.00		0.00		0.00	0.00
SODA ASH	13.04		0.00		0.00	6	78.24	9	117.36	3	39.12	234.72
SODIUM Bicarbonate	10.64		0.00		0.00		0.00		0.00		0.00	0.00
KWIKSEAL MEDIUM	28.00		0.00		0.00		0.00		0.00		0.00	0.00
CONQOR 303A CONCENTRATE	380.36											0.00
CONQOR 404	1034.93											0.00
FLO-VIS PLUS	407.58		0.00		0.00		0.00		0.00		0.00	0.00
IDCAP D SHALE INHIBITOR	240.73		0.00		0.00		0.00		0.00		0.00	0.00
MIX II COARSE	25.61											0.00
MIX II FINE	25.68		0.00		0.00		0.00		0.00		0.00	0.00
MIX II MEDIUM	26.72		0.00		0.00		0.00		0.00		0.00	0.00
POTASSIUM HYDROXIDE	31.28		0.00		0.00		0.00		0.00		0.00	0.00
SALT - FINE	207.01											0.00
CALCIUM CARBONATE	11.70											0.00
CALCIUM CARBONATE	8.27											0.00
KCl (99%)Big Bag	430.06		0.00		0.00		0.00		0.00		0.00	0.00
MI BAR (Bulk)	231.20		0.00	16	3699.20		0.00		0.00	12	2774.40	6473.60
MI Gel (Bulk)	251.54	12	3018.48	17	4276.18	15	3773.10	42	10564.68	5	1257.70	22890.14
KCL BRINE 16%	13.00		0.00		0.00		0.00		0.00		0.00	0.00
DUAL-FLO HT	103.08		0.00		0.00		0.00		0.00		0.00	0.00
<b>Cumulative Engineering</b>			0.00		0.00		0.00		0.00		0.00	0.00
<b>Daily Product</b>			3100.32		8057.22		3953.64		10927.56		4091.68	30130.42
<b>Daily Sales Tax</b>			0		0		0		0		0	0.00
<b>Cumulative Product</b>			3100.32		11157.54		15111.18		26038.74		30130.42	30130.42
<b>Cumulative Cost</b>			3100.32		11157.54		15111.18		26038.74		30130.42	30130.42



# Product Consumption

**Operator :** Santos Ltd  
**Well Name :** Casino 4  
**Location :** Otway Basin  
**Field/Area:** VIC P-44

**Contractor:** Diamond Offshore  
**M-I Engineer:** Gordon Howie  
**Rig Name:** Ocean Patriot  
**Stock Point:** Portland

Product Name	DATES											
	Previous	May 11, 2005		May 12, 2005		May 13, 2005		May 14, 2005		May 15, 2005		Page
	Page	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Totals
CALCIUM CHLORIDE 74-77%	0.00		0.00		0.00		0.00		0.00		0.00	0.00
CAUSTIC SODA	531.96		0.00		0.00	1	20.46		0.00		0.00	552.42
CITRIC ACID	0.00		0.00		0.00		0.00		0.00		0.00	0.00
DEFOAM A	0.00		0.00		0.00		0.00		0.00		0.00	0.00
DUO-VIS	0.00		0.00		0.00	25	5675.00	43	9761.00	25	5675.00	21111.00
GLUTE 25	0.00		0.00		0.00		0.00	3	281.04		0.00	281.04
GUAR GUM	0.00		0.00		0.00		0.00		0.00		0.00	0.00
KWIK SEAL FINE	0.00		0.00		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
LIME	0.00		0.00		0.00		0.00		0.00		0.00	0.00
OS-1	0.00		0.00		0.00	10	335.40	6	201.24	3	100.62	637.26
PIPE-LAX W	0.00		0.00		0.00		0.00		0.00		0.00	0.00
POLYPAC UL	0.00		0.00		0.00	53	5103.90	26	2503.80	28	2696.40	10304.10
SODA ASH	234.72		0.00		0.00		0.00		0.00		0.00	234.72
SODIUM Bicarbonate	0.00		0.00		0.00		0.00		0.00		0.00	0.00
KWIKSEAL MEDIUM	0.00		0.00		0.00		0.00		0.00		0.00	0.00
CONQOR 303A CONCENTRATE	0.00		0.00		0.00		0.00		0.00		0.00	0.00
CONQOR 404	0.00		0.00		0.00		0.00		0.00		0.00	0.00
FLO-VIS PLUS	0.00		0.00		0.00		0.00		0.00		0.00	0.00
IDCAP D SHALE INHIBITOR	0.00		0.00		0.00	25	6018.25	71	17091.83	16	3851.68	26961.76
MIX II COARSE	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
MIX II MEDIUM	0.00		0.00		0.00		0.00		0.00		0.00	0.00
POTASSIUM HYDROXIDE	0.00		0.00		0.00	3	93.84	7	218.96	4	125.12	437.92
SALT - FINE	0.00		0.00		0.00		0.00		0.00		0.00	0.00
CALCIUM CARBONATE	0.00		0.00		0.00		0.00		0.00		0.00	0.00
CALCIUM CARBONATE	0.00		0.00		0.00		0.00		0.00		0.00	0.00
KCl (99%)Big Bag	0.00		0.00		0.00		0.00		0.00	4	1720.24	1720.24
MI BAR (Bulk)	6473.60		0.00		0.00	9	2087.74	62	14334.40		0.00	22895.74
MI Gel (Bulk)	22890.1		0.00		0.00	8	1989.68	2	503.08		0.00	25382.90
KCL BRINE 16%	0.00		0.00		0.00	540	7020.00	460	5980.00	400	5200.00	18200.00
DUAL-FLO HT	0.00		0.00		0.00		0.00		0.00		0.00	0.00
<b>Cumulative Engineering</b>			0.00		0.00		0.00		0.00		0.00	0.00
<b>Daily Product</b>			0.00		0.00		28344.27		50875.35		19369.06	128719.10
<b>Daily Sales Tax</b>			0		0		0		0		0	0.00
<b>Cumulative Product</b>			30130.42		30130.42		58474.69		109350.04		128719.10	128719.10
<b>Cumulative Cost</b>			30130.42		30130.42		58474.69		109350.04		128719.10	128719.10



# Product Consumption

**Operator :** Santos Ltd  
**Well Name :** Casino 4  
**Location :** Otway Basin  
**Field/Area :** VIC P-44

**Contractor:** Diamond Offshore  
**M-I Engineer:** Gordon Howie  
**Rig Name:** Ocean Patriot  
**Stock Point:** Portland

## DATES

Product Name	Previous	May 16, 2005		May 17, 2005		May 18, 2005		May 19, 2005		May 20, 2005		Page
	Page	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Totals
CALCIUM CHLORIDE 74-77%	0.00		0.00		0.00		0.00		0.00		0.00	0.00
CAUSTIC SODA	552.42		0.00		0.00		0.00		0.00		0.00	552.42
CITRIC ACID	0.00		0.00		0.00		0.00		0.00		0.00	0.00
DEFOAM A	0.00		0.00	2	146.78		0.00		0.00		0.00	146.78
DUO-VIS	21111.0		0.00	5	1135.00	21	4767.00	2	454.00		0.00	27467.00
GLUTE 25	281.04		0.00	4	374.72		0.00		0.00		0.00	655.76
GUAR GUM	0.00		0.00		0.00		0.00		0.00		0.00	0.00
KWIK SEAL FINE	0.00		0.00		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
LIME	0.00		0.00		0.00		0.00		0.00		0.00	0.00
OS-1	637.26		0.00	2	67.08	2	67.08		0.00		0.00	771.42
PIPE-LAX W	0.00		0.00		0.00		0.00		0.00		0.00	0.00
POLYPAC UL	10304.1		0.00	6	577.80	24	2311.20		0.00		0.00	13193.10
SODA ASH	234.72		0.00		0.00		0.00		0.00		0.00	234.72
SODIUM Bicarbonate	0.00		0.00		0.00		0.00		0.00		0.00	0.00
KWIKSEAL MEDIUM	0.00		0.00		0.00		0.00		0.00		0.00	0.00
CONQOR 303A CONCENTRATE	0.00		0.00		0.00		0.00		0.00		0.00	0.00
CONQOR 404	0.00		0.00		0.00		0.00		0.00		0.00	0.00
FLO-VIS PLUS	0.00		0.00		0.00		0.00		0.00		0.00	0.00
IDCAP D SHALE INHIBITOR	26961.7	28	6740.44	9	2166.57	34	8184.82	5	1203.65		0.00	45257.24
MIX II COARSE	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
MIX II MEDIUM	0.00		0.00		0.00		0.00		0.00		0.00	0.00
POTASSIUM HYDROXIDE	437.92		0.00	6	187.68	3	93.84		0.00		0.00	719.44
SALT - FINE	0.00		0.00		0.00		0.00		0.00		0.00	0.00
CALCIUM CARBONATE	0.00		0.00		0.00		0.00		0.00		0.00	0.00
CALCIUM CARBONATE	0.00		0.00		0.00		0.00		0.00		0.00	0.00
KCl (99%) Big Bag	1720.24		0.00		0.00		0.00		0.00		0.00	1720.24
MI BAR (Bulk)	22895.7		0.00	10	2312.00		0.00	4	924.80		0.00	26132.54
MI Gel (Bulk)	25382.9		0.00		0.00		0.00		0.00		0.00	25382.90
KCL BRINE 16%	18200.0	600	7800.00		0.00		0.00		0.00		0.00	26000.00
DUAL-FLO HT	0.00		0.00		0.00		0.00		0.00		0.00	0.00
<b>Cumulative Engineering</b>			0.00		0.00		0.00		0.00		0.00	0.00
<b>Daily Product</b>			14540.44		6967.63		15423.94		2582.45		0.00	168233.56
<b>Daily Sales Tax</b>			0		0		0		0		0	0.00
<b>Cumulative Product</b>			143259.54		150227.17		165651.11		168233.56		168233.56	168233.56
<b>Cumulative Cost</b>			143259.54		150227.17		165651.11		168233.56		168233.56	168233.56



# Product Consumption

**Operator :** Santos Ltd  
**Well Name :** Casino 4 DW  
**Location :** Otway Basin  
**Field/Area:** Vic P 44

**Contractor:** Diamond Offshore  
**M-I Engineer:** Jasdeep Singh  
**Rig Name:** Ocean Patriot  
**Stock Point:** Portland

Product Name	DATES											Page Totals
	Product Price	May 19, 2005		May 20, 2005		May 21, 2005		May 22, 2005		May 23, 2005		
	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost		
CALCIUM CHLORIDE 74-77%	0.00	0.00		0.00		0.00		0.00		0.00		0.00
CAUSTIC SODA	20.46	0.00		0.00		0.00		0.00		0.00		0.00
CITRIC ACID	36.79	0.00	8	294.32	5	183.95		0.00		5	183.95	662.22
DEFOAM A	73.39	0.00		0.00		0.00		0.00		0.00		0.00
DUO-VIS	227.00	0.00		0.00	19	4313.00	15	3405.00	10	2270.00		9988.00
GLUTE 25	93.68	0.00		0.00		0.00		0.00		0.00		0.00
GUAR GUM	60.00	0.00		0.00		0.00		0.00		0.00		0.00
KWIK SEAL FINE	28.00	0.00		0.00		0.00		0.00		0.00		0.00
KWIK SEAL COARSE	28.00	0.00		0.00		0.00		0.00		0.00		0.00
LIME	7.44	0.00		0.00		0.00		0.00		0.00		0.00
OS-1	33.54	0.00		0.00	5	167.70	10	335.40		0.00		503.10
PIPE-LAX W	379.80	0.00		0.00		0.00		0.00		0.00		0.00
POLYPAC UL	96.30	0.00		0.00		0.00	8	770.40	10	963.00		1733.40
SODA ASH	13.04	0.00		0.00		0.00		0.00		0.00		0.00
SODIUM Bicarbonate	10.64	0.00	10	106.40	20	212.80		0.00		0.00		319.20
KWIKSEAL MEDIUM	28.00	0.00		0.00		0.00		0.00		0.00		0.00
CONQOR 303A CONCENTRATE	380.36	0.00		0.00		0.00		0.00		0.00		0.00
CONQOR 404	1034.93	0.00		0.00		0.00		0.00		0.00		0.00
FLO-VIS PLUS	407.58	0.00		0.00		0.00		0.00		0.00		0.00
IDCAP D SHALE INHIBITOR	240.73	0.00		0.00		0.00	20	4814.60	12	2888.76		7703.36
MIX II COARSE	25.61	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
MIX II MEDIUM	26.72	0.00		0.00		0.00		0.00		0.00		0.00
POTASSIUM HYDROXIDE	31.28	0.00		0.00		0.00	1	31.28		0.00		31.28
SALT - FINE	207.01	0.00		0.00		0.00		0.00		0.00		0.00
CALCIUM CARBONATE	11.70	0.00		0.00		0.00		0.00		0.00		0.00
CALCIUM CARBONATE	8.27	0.00		0.00		0.00		0.00		0.00		0.00
KCl (99%)Big Bag	430.06	0.00		0.00		0.00		0.00		0.00		0.00
MI BAR (Bulk)	231.20	0.00		0.00	8	1849.60	8	1849.60	6	1387.20		5086.40
MI Gel (Bulk)	251.54	0.00		0.00		0.00		0.00		0.00		0.00
KCL BRINE 16%	13.00	0.00		0.00	870	11310.00		0.00		0.00		11310.00
DUAL-FLO HT	103.08	0.00		0.00		0.00		0.00		0.00		0.00
OMYA CARB 8	11.70	0.00		0.00		0.00		0.00		0.00		0.00
<b>Cumulative Engineering</b>		0.00		0.00		0.00		0.00		0.00		0.00
<b>Daily Product</b>		0.00		400.72		18037.05		11206.28		7692.91		37336.96
<b>Daily Sales Tax</b>		0		0		0		0		0		0.00
<b>Cumulative Product</b>		0.00		400.72		18437.77		29644.05		37336.96		37336.96
<b>Cumulative Cost</b>		0.00		400.72		18437.77		29644.05		37336.96		37336.96





# Product Consumption

**Operator :** Santos Ltd  
**Well Name :** Casino 4 DW  
**Location :** Otway Basin  
**Field/Area :** Vic P 44

**Contractor:** Diamond Offshore  
**M-I Engineer:** Jasdeep Singh  
**Rig Name:** Ocean Patriot  
**Stock Point:** Portland

## DATES

Product Name	Previous	May 24, 2005		May 25, 2005		May 26, 2005				Page
	Page	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Totals
CALCIUM CHLORIDE 74-77%	0.00		0.00		0.00		0.00			0.00
CAUSTIC SODA	0.00		0.00		0.00		0.00			0.00
CITRIC ACID	662.22	18	662.22		0.00	30	1103.70			2428.14
DEFOAM A	0.00		0.00		0.00		0.00			0.00
DUO-VIS	9988.00		0.00	12	2724.00	6	1362.00			14074.00
GLUTE 25	0.00		0.00		0.00		0.00			0.00
GUAR GUM	0.00		0.00		0.00		0.00			0.00
KWIK SEAL FINE	0.00		0.00		0.00		0.00			0.00
KWIK SEAL COARSE	0.00		0.00		0.00		0.00			0.00
LIME	0.00		0.00		0.00		0.00			0.00
OS-1	503.10		0.00	6	201.24		0.00			704.34
PIPE-LAX W	0.00		0.00		0.00		0.00			0.00
POLYPAC UL	1733.40		0.00	16	1540.80		0.00			3274.20
SODA ASH	0.00		0.00		0.00		0.00			0.00
SODIUM Bicarbonate	319.20	18	191.52		0.00	29	308.56			819.28
KWIKSEAL MEDIUM	0.00		0.00		0.00		0.00			0.00
CONQOR 303A CONCENTRATE	0.00		0.00		0.00		0.00			0.00
CONQOR 404	0.00		0.00		0.00		0.00			0.00
FLO-VIS PLUS	0.00		0.00		0.00		0.00			0.00
IDCAP D SHALE INHIBITOR	7703.36		0.00	20	4814.60		0.00			12517.96
MIX II COARSE	0.00		0.00		0.00		0.00			0.00
MIX II FINE	0.00		0.00		0.00		0.00			0.00
MIX II MEDIUM	0.00		0.00		0.00		0.00			0.00
POTASSIUM HYDROXIDE	31.28		0.00		0.00		0.00			31.28
SALT - FINE	0.00		0.00		0.00		0.00			0.00
CALCIUM CARBONATE	0.00		0.00		0.00		0.00			0.00
CALCIUM CARBONATE	0.00		0.00		0.00		0.00			0.00
KCl (99%)Big Bag	0.00		0.00		0.00		0.00			0.00
MI BAR (Bulk)	5086.40		0.00	9	2080.80		0.00			7167.20
MI Gel (Bulk)	0.00		0.00		0.00		0.00			0.00
KCL BRINE 16%	11310.0		0.00		0.00		0.00			11310.00
DUAL-FLO HT	0.00		0.00		0.00		0.00			0.00
OMYA CARB 8	0.00		0.00		0.00		0.00			0.00
<b>Cumulative Engineering</b>			0.00		0.00		0.00			0.00
<b>Daily Product</b>			853.74		11361.44		2774.26			52326.40
<b>Daily Sales Tax</b>			0		0		0			0.00
<b>Cumulative Product</b>			38190.70		49552.14		52326.40			52326.40
<b>Cumulative Cost</b>			38190.70		49552.14		52326.40			52326.40



# Product Consumption

**Operator :** Santos Ltd  
**Well Name :** Casino 4 DW2  
**Location :** Otway Basin  
**Field/Area:** Vic P44

**Contractor:** Diamond Offshore  
**M-I Engineer:** Glen Sharpe  
**Rig Name:** Ocean Patriot  
**Stock Point:** Portland

Product Name	DATES											
	Product Price	May 27, 2005		May 28, 2005		May 29, 2005		May 30, 2005		May 31, 2005		Page
		Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Totals
CALCIUM CHLORIDE Sacks	11.54		0.00		0.00		0.00		0.00		0.00	0.00
CAUSTIC SODA	20.46		0.00		0.00		0.00	3	61.38		0.00	61.38
CITRIC ACID	36.79	4	147.16		0.00		0.00		0.00		0.00	147.16
DEFOAM A	73.39		0.00		0.00		0.00	1	73.39	1	73.39	146.78
DUO-VIS	227.00	7	1589.00	1	227.00	5	1135.00	9	2043.00	5	1135.00	6129.00
GLUTE 25	93.68		0.00		0.00		0.00		0.00		0.00	0.00
GUAR GUM	60.00		0.00		0.00		0.00		0.00		0.00	0.00
KWIK SEAL FINE	28.00		0.00		0.00		0.00		0.00		0.00	0.00
LIME	7.44		0.00		0.00		0.00		0.00		0.00	0.00
OS-1	33.54		0.00		0.00		0.00		0.00		0.00	0.00
PIPE-LAX W	379.80		0.00		0.00		0.00		0.00		0.00	0.00
POLYPAC UL	96.30		0.00		0.00		0.00	10	963.00	5	481.50	1444.50
SODA ASH	13.04		0.00		0.00		0.00		0.00		0.00	0.00
SODIUM BICARBONATE	10.64	4	42.56	3	31.92		0.00		0.00		0.00	74.48
KWIKSEAL MEDIUM	28.00		0.00		0.00		0.00		0.00		0.00	0.00
FLO-VIS PLUS	407.58		0.00		0.00		0.00		0.00		0.00	0.00
IDCAP D	240.73	17	4092.41		0.00	5	1203.65	6	1444.38		0.00	6740.44
MIX II FINE	25.68		0.00		0.00		0.00		0.00		0.00	0.00
MIX II MEDIUM	26.72		0.00		0.00		0.00		0.00		0.00	0.00
POTASSIUM HYDROXIDE	31.28		0.00		0.00		0.00	2	62.56	1	31.28	93.84
OMYACARB 20	11.70		0.00		0.00		0.00		0.00		0.00	0.00
KCl BB	430.06		0.00		0.00		0.00		0.00		0.00	0.00
MI BAR (Bulk)	231.20	5	1156.00	3	693.60	1	231.20	3	693.60	1	231.20	3005.60
MI Gel (Bulk)	251.54		0.00		0.00		0.00		0.00		0.00	0.00
BRINE KCl 16%	13.00		0.00		0.00		0.00		0.00		0.00	0.00
DUAL-FLO HT	103.08		0.00		0.00		0.00		0.00		0.00	0.00
OMYA CARB 8	11.70		0.00		0.00		0.00		0.00		0.00	0.00
BRINE NaCl 18%+KCl 5%	14.00		0.00		0.00		0.00		0.00		0.00	0.00
SALT - FINE	248.41		0.00		0.00		0.00		0.00		0.00	0.00
DIRT MAGNET	1449.55		0.00		0.00		0.00		0.00		0.00	0.00
SAFE-CIDE	91.77		0.00		0.00		0.00		0.00		0.00	0.00
SAFE-COR	316.31		0.00		0.00		0.00		0.00		0.00	0.00
SAFE-VIS E	195.00		0.00		0.00		0.00		0.00		0.00	0.00
SAFE-SURF WN	898.50		0.00		0.00		0.00		0.00		0.00	0.00
BRINE CALCIUM CHLORIDE	27.00		0.00		0.00		0.00		0.00		0.00	0.00
CALCIUM CHLORIDE (BB)	210.00											0.00
<b>Cumulative Engineering</b>			0.00		0.00		0.00		0.00		0.00	0.00
<b>Daily Product</b>			7027.13		952.52		2569.85		5341.31		1952.37	17843.18
<b>Daily Sales Tax</b>			0		0		0		0		0	0.00
<b>Cumulative Product</b>			7027.13		7979.65		10549.50		15890.81		17843.18	17843.18
<b>Cumulative Cost</b>			7027.13		7979.65		10549.50		15890.81		17843.18	17843.18



# Product Consumption

**Operator :** Santos Ltd  
**Well Name :** Casino 4 DW2  
**Location :** Otway Basin  
**Field/Area :** Vic P44

**Contractor:** Diamond Offshore  
**M-I Engineer:** Glen Sharpe  
**Rig Name:** Ocean Patriot  
**Stock Point:** Portland

## DATES

Product Name	Previous	Jun 1, 2005		Jun 2, 2005		Jun 3, 2005		Jun 4, 2005		Jun 5, 2005		Page
	Page	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Totals
CALCIUM CHLORIDE Sacks	0.00		0.00		0.00		0.00		0.00		0.00	0.00
CAUSTIC SODA	61.38		0.00		0.00		0.00		0.00		0.00	61.38
CITRIC ACID	147.16		0.00		0.00		0.00		0.00		0.00	147.16
DEFOAM A	146.78		0.00		0.00	2	146.78		0.00		0.00	293.56
DUO-VIS	6129.00		0.00	2	454.00		0.00		0.00		0.00	6583.00
GLUTE 25	0.00		0.00		0.00	12	1124.16		0.00		0.00	1124.16
GUAR GUM	0.00		0.00		0.00		0.00		0.00		0.00	0.00
KWIK SEAL FINE	0.00		0.00		0.00		0.00		0.00		0.00	0.00
LIME	0.00		0.00		0.00		0.00		0.00		0.00	0.00
OS-1	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
POLYPAC UL	1444.50		0.00		0.00		0.00		0.00		0.00	1444.50
SODA ASH	0.00		0.00		0.00		0.00		0.00		0.00	0.00
SODIUM BICARBONATE	74.48		0.00		0.00		0.00		0.00		0.00	74.48
KWIKSEAL MEDIUM	0.00		0.00		0.00		0.00		0.00		0.00	0.00
FLO-VIS PLUS	0.00		0.00		0.00	61	24862.38	6	2445.48		0.00	27307.86
IDCAP D	6740.44		0.00		0.00		0.00		0.00		0.00	6740.44
MIX II FINE	0.00		0.00		0.00		0.00		0.00		0.00	0.00
MIX II MEDIUM	0.00		0.00		0.00		0.00		0.00		0.00	0.00
POTASSIUM HYDROXIDE	93.84		0.00		0.00	8	250.24		0.00		0.00	344.08
OMYACARB 20	0.00		0.00		0.00		0.00		0.00		0.00	0.00
KCl BB	0.00		0.00		0.00		0.00		0.00		0.00	0.00
MI BAR (Bulk)	3005.60		0.00		0.00		0.00		0.00		0.00	3005.60
MI Gel (Bulk)	0.00		0.00		0.00		0.00		0.00		0.00	0.00
BRINE KCl 16%	0.00		0.00		0.00		0.00		0.00		0.00	0.00
DUAL-FLO HT	0.00		0.00		0.00	148	15255.84		0.00		0.00	15255.84
OMYA CARB 8	0.00		0.00		0.00	1600	18720.00	104	1216.80	72	842.40	20779.20
BRINE NaCl 18%+KCl 5%	0.00		0.00		0.00	1700	23800.00		0.00		0.00	23800.00
SALT - FINE	0.00		0.00		0.00		0.00		0.00		0.00	0.00
DIRT MAGNET	0.00		0.00		0.00		0.00		0.00		0.00	0.00
SAFE-CIDE	0.00		0.00		0.00		0.00		0.00		0.00	0.00
SAFE-COR	0.00		0.00		0.00		0.00		0.00		0.00	0.00
SAFE-VIS E	0.00		0.00		0.00		0.00		0.00		0.00	0.00
SAFE-SURF WN	0.00		0.00		0.00		0.00		0.00		0.00	0.00
BRINE CALCIUM CHLORIDE	0.00		0.00		0.00		0.00	1023	27621.00		0.00	27621.00
CALCIUM CHLORIDE (BB)	0.00											0.00
<b>Cumulative Engineering</b>			0.00		0.00		0.00		0.00		0.00	0.00
<b>Daily Product</b>			0.00		454.00		84159.40		31283.28		842.40	134582.26
<b>Daily Sales Tax</b>			0		0		0		0		0	0.00
<b>Cumulative Product</b>			17843.18		18297.18		102456.58		133739.86		134582.26	134582.26
<b>Cumulative Cost</b>			17843.18		18297.18		102456.58		133739.86		134582.26	134582.26



# Product Consumption

**Operator :** Santos Ltd  
**Well Name :** Casino 4 DW2  
**Location :** Otway Basin  
**Field/Area:** Vic P44

**Contractor:** Diamond Offshore  
**M-I Engineer:** Glen Sharpe  
**Rig Name:** Ocean Patriot  
**Stock Point:** Portland

## DATES

Product Name	Previous		Jun 6, 2005		Jun 7, 2005		Jun 8, 2005		Jun 9, 2005		Jun 10, 2005		Page
	Page	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Totals	
CALCIUM CHLORIDE Sacks	0.00	198	2284.92	9	103.86		0.00		0.00		0.00	2388.78	
CAUSTIC SODA	61.38		0.00		0.00		0.00		0.00		0.00	61.38	
CITRIC ACID	147.16		0.00		0.00		0.00		0.00		0.00	147.16	
DEFOAM A	293.56		0.00		0.00		0.00		0.00		0.00	293.56	
DUO-VIS	6583.00		0.00		0.00		0.00		0.00		0.00	6583.00	
GLUTE 25	1124.16		0.00		0.00		0.00		0.00		0.00	1124.16	
GUAR GUM	0.00		0.00		0.00		0.00		0.00		0.00	0.00	
KWIK SEAL FINE	0.00		0.00		0.00		0.00		0.00		0.00	0.00	
LIME	0.00		0.00		0.00		0.00		0.00		0.00	0.00	
OS-1	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	
POLYPAC UL	1444.50		0.00		0.00		0.00		0.00		0.00	1444.50	
SODA ASH	0.00		0.00		0.00		0.00		0.00		0.00	0.00	
SODIUM BICARBONATE	74.48		0.00		0.00		0.00		0.00		0.00	74.48	
KWIKSEAL MEDIUM	0.00		0.00		0.00		0.00		0.00		0.00	0.00	
FLO-VIS PLUS	27307.8		0.00		0.00		0.00		0.00		0.00	27307.86	
IDCAP D	6740.44		0.00		0.00		0.00		0.00		0.00	6740.44	
MIX II FINE	0.00		0.00		0.00		0.00		0.00		0.00	0.00	
MIX II MEDIUM	0.00		0.00		0.00		0.00		0.00		0.00	0.00	
POTASSIUM HYDROXIDE	344.08		0.00		0.00		0.00		0.00		0.00	344.08	
OMYACARB 20	0.00		0.00		0.00		0.00		0.00		0.00	0.00	
KCl BB	0.00		0.00		0.00		0.00		0.00		0.00	0.00	
MI BAR (Bulk)	3005.60		0.00		0.00		0.00		0.00		0.00	3005.60	
MI Gel (Bulk)	0.00		0.00		0.00		0.00		0.00		0.00	0.00	
BRINE KCl 16%	0.00		0.00		0.00		0.00		0.00		0.00	0.00	
DUAL-FLO HT	15255.8		0.00		0.00		0.00		0.00		0.00	15255.84	
OMYA CARB 8	20779.2		0.00		0.00		0.00		0.00		0.00	20779.20	
BRINE NaCl 18%+KCl 5%	23800.0		0.00		0.00		0.00		0.00		0.00	23800.00	
SALT - FINE	0.00	10	2484.10		0.00		0.00		0.00		0.00	2484.10	
DIRT MAGNET	0.00	16	23192.80		0.00		0.00		0.00		0.00	23192.80	
SAFE-CIDE	0.00	5	458.85		0.00		0.00		0.00		0.00	458.85	
SAFE-COR	0.00	11	3479.41		0.00		0.00		0.00		0.00	3479.41	
SAFE-VIS E	0.00	14	2730.00		0.00		0.00		0.00		0.00	2730.00	
SAFE-SURF WN	0.00	3	2695.50		0.00		0.00		0.00		0.00	2695.50	
BRINE CALCIUM CHLORIDE	27621.0		0.00		0.00		0.00		0.00		0.00	27621.00	
CALCIUM CHLORIDE (BB)	0.00											0.00	
<b>Cumulative Engineering</b>			0.00		0.00		0.00		0.00		0.00	0.00	
<b>Daily Product</b>			37325.58		103.86		0.00		0.00		0.00	172011.70	
<b>Daily Sales Tax</b>			0		0		0		0		0	0.00	
<b>Cumulative Product</b>			171907.84		172011.70		172011.70		172011.70		172011.70	172011.70	
<b>Cumulative Cost</b>			171907.84		172011.70		172011.70		172011.70		172011.70	172011.70	



**DRILLING FLUIDS RECAP FOR SANTOS  
CASINO 4 / 4DW / DW2**

**DAILY  
MUD  
REPORTS**



# WATER-BASED MUD REPORT No. 1

Date	6/05/2005	Depth/TVD	m / m
Spud Date	7/05/2005	Mud Type	Hi Vis Sweeps
Water Depth	71	Activity	Spudding Well

**Operator :** Santos Ltd

**Report For :** Ron King / Jeff Thomson

**Well Name :** Casino 4

**Contractor :** Diamond Offshore

**Report For :** Barry Scott / Paul Baker

**Field/Area :** VIC P-44

**Description :** Gas Producer

**Location :** Otway Basin

**M-I Well No. :**

DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA		
Bit Size	36 in XTI	Surface	Hole	Pump Make	NATIONAL 12P-16	OILWELL 1700PT
Nozzles	4x22 / 1/32"			Pump Size	6.5 X 12.in	6.5 X 12.in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	gal/stk	gal/stk
5 in	m			Pump stk/min		
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate		gal/min
5 in	m			Bottoms Up		
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time		
9.5 in	m		720	Circulating Pressure		

MUD PROPERTIES		
Sample From		Pit@22:00
Flow Line Temp	°C	
Depth/TVD	m	
Mud Weight	sp.gr.	1.04
Funnel Viscosity	s/qt	100+
Rheology Temp	°C	
R600/R300		
R200/R100		
R6/R3		
PV	cP	
YP	lb/100ft²	
10s/10m/30m Gel	lb/100ft²	
API Fluid Loss	cc/30 min	
HTHP FL Temp	cc/30 min	
Cake API/HTHP	1/32"	
Solids	%Vol	
Oil/Water	%Vol	
Sand	%Vol	
MBT	lb/bbl	
pH		
Alkal Mud (Pm)		
Pf/Mf		
Chlorides	mg/l	
Hardness Ca	mg/l	
KCl	% by Wt	
Idcap	ppb	
Sulphite Excess	ppm	

PRODUCTS USED LAST 24 HRS		
Products	Size	Amt
CALCIUM CHLORIDE 74-77%	25 KG BG	38
CAUSTIC SODA	25 KG DM	4
MI Gel (Bulk)	1 MT BG	12
SOLIDS EQUIP		
	Size	Hr
VSM Shaker 1		0
VSM Shaker 2		0
VSM Shaker 3		0
VSM Shaker 4		0
Centrifuge		0
D-Silter		0
MUD PROPERTY SPECIFICATIONS		
Weight		1.04
Viscosity		100+
Filtrate		n/a

REMARKS AND TREATMENT	REMARKS
Mixed up 920 bbls of PHG spud mud. Pumped 200 bbls to jet in the bit then 50 barrel sweeps every single. Continued to mix PHG.	Spudded well to 9m, Anderdrift survey out 2 degrees. Move rig to respudd well

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG (bbl)	SOLIDS ANALYSIS (%/lb/bbl)	MUD RHEOLOGY & HYDRAULICS
Rig Up/Service	22.5	Oil Added	0	np/na Values
Drilling	1.5	Water Added	891	kp/ka (lb*s^n/100ft²)
Tripping		Mud Received	0	Bit Loss (psi / %)
Non-Productive Tim		Dumped	0	Bit HHP (hhp/ HSI)
		Shakers	0	Bit Jet Vel (m/s)
		Evaporation	0	Ann. Vel DP (m/s)
		Centrifuge	0	Ann. Vel DC (m/s)
		Formation	0	Crit Vel DP (m/s)
		Left in Hole	0	Crit Vel DC (m/s)
		Sweeps	200	

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Glen Sharpe Gordon Howie 93023790			\$ 3,100.32	\$ 3,100.32



# WATER-BASED MUD REPORT No. 2

<b>Date</b>	7/05/2005	<b>Depth/TVD</b>	137 m / 137 m
<b>Spud Date</b>	7/05/2005	<b>Mud Type</b>	Hi Vis Sweeps
<b>Water Depth</b>	71	<b>Activity</b>	Waiting on cement

<b>Operator :</b> Santos Ltd <b>Report For :</b> Ron King / Jeff Thomson <b>Well Name :</b> Casino 4 <b>Contractor :</b> Diamond Offshore <b>Report For :</b> Barry Scott / Paul Baker	<b>Field/Area :</b> VIC P-44 <b>Description :</b> Gas Producer <b>Location :</b> Otway Basin <b>M-I Well No. :</b>
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DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA		
Bit Size	36 in XTI	Surface	Hole	Pump Make	NATIONAL 12P-16	OILWELL 1700PT
Nozzles	4x22 / 1/32"		113.9	Pump Size	6.5 X 12.in	6.5 X 12.in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	5.016 gal/stk	5.016 gal/stk
5 in	m		.1	Pump stk/min	102@97%	102@97%
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	1023 gal/min	
5 in	m		.1	Bottoms Up	min 0 stk	
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time	min 1 stk	
9.5 in	m		1433	Circulating Pressure	1000 psi	

MUD PROPERTIES				PRODUCTS USED LAST 24 HRS			
Sample From		Pit@22:30		Products	Size	Amt	
Flow Line Temp	°C			CAUSTIC SODA	25 KG DM	4	
Depth/TVD	m	137/137		MI BAR (Bulk)	1 MT BG	16	
Mud Weight	sp.gr.	1.06		MI Gel (Bulk)	1 MT BG	17	
Funnel Viscosity	s/qt	100+					
Rheology Temp	°C						
R600/R300							
R200/R100							
R6/R3							
PV	cP						
YP	lb/100ft²						
10s/10m/30m Gel	lb/100ft²						
API Fluid Loss	cc/30 min						
HTHP FL Temp	cc/30 min						
Cake API/HTHP	1/32"						
Solids	%Vol						
Oil/Water	%Vol						
Sand	%Vol						
MBT	lb/bbl						
pH							
Alkal Mud (Pm)							
Pf/Mf							
Chlorides	mg/l						
Hardness Ca	mg/l						
KCl	% by Wt						
Idcap	ppb						
Sulphite Excess	ppm						

SOLIDS EQUIP	Size	Hr
VSM Shaker 1		0
VSM Shaker 2		0
VSM Shaker 3		0
VSM Shaker 4		0
Centrifuge		0
D-Silter		0

MUD PROPERTY SPECIFICATIONS		
Weight		1.04
Viscosity		100+
Filtrate		n/a

REMARKS AND TREATMENT	REMARKS
Respudded well and drilled to TD. Mixed 940 bbls PHG and 320 bbls 11 ppg kill mud. Pumped 100 bbl PHG sweep at TD then pulled back and filled hole with 350 bbls PHG. POOH to run csg.	Respudded well. Drilled to TD 137m. POOH, ran 30" csg, 20" swaged shoe set at 137 m and cemented as per program.

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG (bbl)	SOLIDS ANALYSIS (%/lb/bbl)	MUD RHEOLOGY & HYDRAULICS
Rig Up/Service	2.5	Oil Added	0	np/na Values
Drilling	14	Water Added	1196	kp/ka (lb*s^n/100ft²)
Tripping	2	Mud Received	0	Bit Loss (psi / %)
Non-Productive Tim		Dumped	0	Bit HHP (hhp / HSI)
Cementing	1.5	Shakers	0	Bit Jet Vel (m/s)
Running Casing	4	Evaporation	0	Ann. Vel DP (m/s)
		Centrifuge	0	Ann. Vel DC (m/s)
		Formation	0	Crit Vel DP (m/s)
		Left in Hole	0	Crit Vel DC (m/s)
		Sweeps	548	

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Glen Sharpe Gordon Howie			\$ 8,057.22	\$ 11,157.54
93023790				





# WATER-BASED MUD REPORT No. 3

Date	8/05/2005	Depth/TVD	363 m / 363 m
Spud Date	7/05/2005	Mud Type	Hi Vis Sweeps
Water Depth	71	Activity	Drilling Ahead

**Operator :** Santos Ltd  
**Report For :** Ron King / Jeff Thomson  
**Well Name :** Casino 4  
**Contractor :** Diamond Offshore  
**Report For :** Barry Scott / Paul Baker

**Field/Area :** VIC P-44  
**Description :** Gas Producer  
**Location :** Otway Basin  
**M-I Well No. :**

DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA	
Bit Size	17.5 in 74B9 MX-1	Surface	Hole	Pump Make	NATIONAL 12P-16 / OILWELL 1700PT
Nozzles	3x20 /20 / 1/32"	30in @137m (137TVD)	298	Pump Size	6.5 X 12.in / 6.5 X 12.in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	5.016 gal/stk / 5.016 gal/stk
5 in	88 m	13.375in @742m (742TVD)		Pump stk/min	109@97% / 109@97%
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	
5 in	139 m		298	1093 gal/min	
Drill Collar Size	Length	Production or Liner	In Storage	Bottoms Up	
9.5 in	136 m		1542	11 min / 2388 stk	
				Total Circ Time	
				11.5 min / 2496 stk	
				Circulating Pressure	
				2200 psi	

MUD PROPERTIES			PRODUCTS USED LAST 24 HRS		
Sample From		Pit@22:00	Products	Size	Amt
Flow Line Temp	°C		CAUSTIC SODA	25 KG DM	5
Depth/TVD	m	363/363	SODA ASH	25 KG BG	6
Mud Weight	sp.gr.	1.06	MI Gel (Bulk)	1 MT BG	15
Funnel Viscosity	s/qt	100+			
Rheology Temp	°C				
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				
MBT	lb/bbl				
pH					
Alkal Mud (Pm)					
Pf/Mf					
Chlorides	mg/l				
Hardness Ca	mg/l				
KCl	% by Wt				
Idcap	ppb				
Sulphite Excess	ppm				

SOLIDS EQUIP	Size	Hr
VSM Shaker 1		0
VSM Shaker 2		0
VSM Shaker 3		0
VSM Shaker 4		0
Centrifuge		0
D-Silter		0

### MUD PROPERTY SPECIFICATIONS

Weight	alap
Viscosity	100+
Filtrate	n/a

### REMARKS AND TREATMENT

Mixed 1200 bbls PHG. Pumped 60 bbls PHG sweeps on connections and 40 bbl PHG sweeps mid stand. Company man requested 75 bbl on connections and 75 bbl mid stand sweep regime while flow rate at 1100 gpm. Continued to mix PHG as required.

### REMARKS

Wait on cement job. RIH to tag cement, require further cement. POOH, make up 17.5" BHA and RIH tag cement at 135 m and drill shoe at 137 m. Continue drilling to 363 m.

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG (bbl)	SOLIDS ANALYSIS (%/lb/bbl)	MUD RHEOLOGY & HYDRAULICS
Rig Up/Service	13.5	Oil Added	0	np/na Values
Drilling	7.5	Water Added	1157	kp/ka (lb*s^n/100ft <sup>2</sup> )
Tripping		Mud Received	0	Bit Loss (psi / %)
Non-Productive Tim		Dumped	0	Bit HHP (hhp / HSI)
Wait on Cement	3	Shakers	0	Bit Jet Vel (m/s)
Running Casing		Evaporation	0	Ann. Vel DP (m/s)
		Centrifuge	0	Ann. Vel DC (m/s)
		Formation	0	Crit Vel DP (m/s)
		Left in Hole	0	Crit Vel DC (m/s)
		Sweeps	1085	ECD @ 1670 (sp.gr.)
				1.33

<b>M-I ENGR / PHONE</b>	<b>RIG PHONE</b>	<b>WAREHOUSE PHONE</b>	<b>DAILY COST</b>	<b>CUMULATIVE COST</b>
Glen Sharpe Gordon Howie 93023790			\$ 3,953.64	\$ 15,111.18



# WATER-BASED MUD REPORT No. 4

<b>Date</b>	9/05/2005	<b>Depth/TVD</b>	742 m / 742 m
<b>Spud Date</b>	7/05/2005	<b>Mud Type</b>	Hi Vis Sweeps
<b>Water Depth</b>	71	<b>Activity</b>	Running Casing

<b>Operator :</b> Santos Ltd <b>Report For :</b> Ron King / Jeff Thomson <b>Well Name :</b> Casino 4 <b>Contractor :</b> Diamond Offshore <b>Report For :</b> Barry Scott / Paul Baker	<b>Field/Area :</b> VIC P-44 <b>Description :</b> Gas Producer <b>Location :</b> Otway Basin <b>M-I Well No. :</b>
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DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA	
Bit Size	17.5 in 74B9 MX-1	Surface	Hole	Pump Make	NATIONAL 12P-16 / OILWELL 1700PT
Nozzles	3x20 /20 / 1/32"	30in @137m (137TVD)	705	Pump Size	6.5 X 12.in / 6.5 X 12.in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	5.016 gal/stk / 5.016 gal/stk
5 in	m	13.375in @742m (742TVD)		Pump stk/min	77@97% / 77@97%
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	772 gal/min
5 in	m			Bottoms Up	min 0 stk
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time	min 0 stk
9.5 in	m		1722	Circulating Pressure	2900 psi

### MUD PROPERTIES

Sample From		Pit@22:00
Flow Line Temp	°C	
Depth/TVD	m	742/742
Mud Weight	sp.gr.	1.06
Funnel Viscosity	s/qt	100+
Rheology Temp	°C	
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	
MBT	lb/bbl	
pH		
Alkal Mud (Pm)		
Pf/Mf		
Chlorides	mg/l	
Hardness Ca	mg/l	
KCl	% by Wt	
Idcap	ppb	
Sulphite Excess	ppm	

### PRODUCTS USED LAST 24 HRS

Products	Size	Amt
CAUSTIC SODA	25 KG DM	12
SODA ASH	25 KG BG	9
MI Gel (Bulk)	1 MT BG	42

### SOLIDS EQUIP

	Size	Hr
VSM Shaker 1		0
VSM Shaker 2		0
VSM Shaker 3		0
VSM Shaker 4		0
Centrifuge		0
D-Silter		0

### MUD PROPERTY SPECIFICATIONS

Weight	alap
Viscosity	100+
Filtrate	n/a

### REMARKS AND TREATMENT

Built 3100 bbls. Continued with 75 bbl PHG mid stand and 75 bbl PHG prior to connection sweep regime. At TD pumped 200 bbls PHG then 200 bbls seawater. Filled hole with 1000 bbls PHG.

### REMARKS

Drilled to section TD 742 m. Cleaned hole with 200 bbl PHG sweep then pulled out and filled hole with 1000 bbls PHG. Racked back 17 1/2" BHA. Rig up and ran 13 3/8" csg

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG (bbl)	SOLIDS ANALYSIS (%/lb/bbl)	MUD RHEOLOGY & HYDRAULICS
Rig Up/Service	7.5	Oil Added	0	np/na Values
Drilling	13.5	Water Added	2995	kp/ka (lb*s^n/100ft <sup>2</sup> )
Tripping		Mud Received	0	Bit Loss (psi / %)
Non-Productive Tim		Dumped	0	Bit HHP (hhp / HSI)
Wait on Cement		Shakers	0	Bit Jet Vel (m/s)
Running Casing	3	Evaporation	0	Ann. Vel DP (m/s)
		Centrifuge	0	Ann. Vel DC (m/s)
		Formation	0	Crit Vel DP (m/s)
		Left in Hole	0	Crit Vel DC (m/s)
		Sweeps	2918	
			Carb/BiCarb (m mole/L)	

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Glen Sharpe Gordon Howie	93023790		\$ 10,927.56	\$ 26,038.74



# WATER-BASED MUD REPORT No. 5

Date	10/05/2005	Depth/TVD	742 m / 742 m
Spud Date	7/05/2005	Mud Type	Hi Vis Sweeps
Water Depth	71	Activity	Running BOP

**Operator :** Santos Ltd  
**Report For :** Ron King / Pat King  
**Well Name :** Casino 4  
**Contractor :** Diamond Offshore  
**Report For :** Barry Scott / Paul Baker

**Field/Area :** VIC P-44  
**Description :** Gas Producer  
**Location :** Otway Basin  
**M-I Well No. :**

DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA	
Bit Size	17.5 in 74B9 MX-1	Surface	Hole	Pump Make	NATIONAL 12P-16 / OILWELL 1700PT
Nozzles	3x20 /20 / 1/32"	30in @137m (137TVD)	319	Pump Size	6.5 X 12.in / 6.5 X 12.in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	gal/stk / gal/stk
5 in	m	13.375in @742m (742TVD)		Pump stk/min	
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	gal/min
5 in	m			Bottoms Up	
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time	
9.5 in	m		1722	Circulating Pressure	

MUD PROPERTIES		
Sample From		Pit@22:30
Flow Line Temp	°C	
Depth/TVD	m	742/742
Mud Weight	sp.gr.	1.06
Funnel Viscosity	s/qt	100+
Rheology Temp	°C	
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	
MBT	lb/bbl	
pH		
Alkal Mud (Pm)		
Pf/Mf		
Chlorides	mg/l	
Hardness Ca	mg/l	
KCl	% by Wt	
Idcap	ppb	
Sulphite Excess	ppm	

PRODUCTS USED LAST 24 HRS		
Products	Size	Amt
CAUSTIC SODA	25 KG DM	1
SODA ASH	25 KG BG	3
MI BAR (Bulk)	1 MT BG	12
MI Gel (Bulk)	1 MT BG	5
SOLIDS EQUIP	Size	Hr
VSM Shaker 1		0
VSM Shaker 2		0
VSM Shaker 3		0
VSM Shaker 4		0
Centrifuge		0
D-Silter		0
MUD PROPERTY SPECIFICATIONS		
Weight	alap	
Viscosity	100+	
Filtrate	n/a	

**REMARKS AND TREATMENT**  
Mixed 220 bbls PHG in pit 1 and dumped same as pit was required for cement job. Made 12 MT adjustment to correct bulk barite figure.

**REMARKS**  
Continued to run 13 3/8" csg and landed shoe at xxm. Circulated with seawater then cemented as per program. POH with running tool and layed out 17 1/2" BHA. Rig up and ran Sub Sea Xmas tree and tested. Moved rig 15 m RU and PU BOP

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG (bbl)	SOLIDS ANALYSIS (%/lb/bbl)	MUD RHEOLOGY & HYDRAULICS
Rig Up/Service	15	Oil Added	0	np/na Values
Drilling		Water Added	170	kp/ka (lb*s^n/100ft <sup>2</sup> )
Tripping	2.5	Mud Received	0	Bit Loss (psi / %)
Non-Productive Tim		Dumped	200	Bit HHP (hhp / HSI)
Cementing	3.5	Shakers	0	Bit Jet Vel (m/s)
Running Casing	1	Evaporation	0	Ann. Vel DP (m/s)
Testing	2	Centrifuge	0	Ann. Vel DC (m/s)
		Formation	0	Crit Vel DP (m/s)
		Left in Hole	0	Crit Vel DC (m/s)
		Sweeps	0	Average SG
			Carb/BiCarb (m mole/L)	

<b>M-I ENGR / PHONE</b> Glen Sharpe Gordon Howie	<b>RIG PHONE</b> 93023790	<b>WAREHOUSE PHONE</b>	<b>DAILY COST</b> \$ 4,091.68	<b>CUMULATIVE COST</b> \$ 30,130.42
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# WATER-BASED MUD REPORT No. 8

Date	13/05/2005	Depth/TVD	1117 m / 1117 m
Spud Date	7/05/2005	Mud Type	KCl/Idcap D
Water Depth	71	Activity	Drilling 12.25"

Operator : Santos Ltd  
 Report For : Ron King / Pat King  
 Well Name : Casino 4  
 Contractor : Diamond Offshore  
 Report For : Sean D Freitas / Paul Baker

Field/Area : VIC P-44  
 Description : Gas Producer  
 Location : Otway Basin  
 M-I Well No. :

DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA	
Bit Size 12.25 in MX-O3DX		Surface	Hole	Pump Make	NATIONAL 12P-16 / OILWELL 1700PT
Nozzles 3x20 / 1/32"		30in @137m (137TVD)	558	Pump Size	6.5 X 12.in / 6.5 X 12.in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	5.016 gal/stk / 5.016 gal/stk
5 in	826 m	13.375in @742m (742TVD)	372	Pump stk/min	100@97% / 100@97%
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate 1003 gal/min	
5 in	138 m	in @m (TVD)	930	Bottoms Up	21 min / 4204 stk
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time	38.9 min / 7789 stk
8 in	125 m		212	Circulating Pressure	3200 psi

MUD PROPERTIES		
Sample From		Pits@20:30
Flow Line Temp	°C	
Depth/TVD	m	1055/1055
Mud Weight	sp.gr.	1.07@20°C
Funnel Viscosity	s/qt	60
Rheology Temp	°C	49
R600/R300		38/26
R200/R100		21/15
R6/R3		5/4
PV	cP	12
YP	lb/100ft²	14
10s/10m/30m Gel	lb/100ft²	6/7/7
API Fluid Loss	cc/30 min	6
HTHP FL Temp	cc/30 min	
Cake API/HTHP	1/32"	1/
Solids	%Vol	1
Oil/Water	%Vol	/99
Sand	%Vol	
MBT	lb/bbl	1
pH		8.7
Alkal Mud (Pm)		0
Pf/Mf		0.1/1.0
Chlorides	mg/l	30000
Hardness Ca	mg/l	300
KCl	% by Wt	6
Idcap	ppb	1.14
Sulphite Excess	ppm	40

PRODUCTS USED LAST 24 HRS		
Products	Size	Amt
CAUSTIC SODA	25 KG DM	1
DUO-VIS	25 KG BG	25
OS-1	25 KG BG	10
POLYPAC UL	25 KG BG	53
IDCAP D SHALE INHIBITOR	25 KG BG	25
POTASSIUM HYDROXIDE	25 KG CN	3
MI BAR (Bulk)	1 MT BG	9
MI Gel (Bulk)	1 MT BG	8
KCL BRINE 16%	1 BL	540

SOLIDS EQUIP		
	Size	Hr
VSM Shaker 1	4 x 84	21
VSM Shaker 2	4 x 84	21
VSM Shaker 3	4 x 84	21
VSM Shaker 4	2 x 105, 2 x 84	21
Centrifuge		0
D-Silter		0

**REMARKS AND TREATMENT**  
 Mixed unweighted KCl-Polymer Mud. Displaced hole with new mud @ 1055 m. Mud properties shown are for initial mix. Started weighting up system with Barite. Building up mud properties to spec gradually.

**REMARKS**  
 Tagged cement drilled through shoe at 730 m and 3 m of new hole and perform LOT. EMW 17.9 ppg. Drilled 12.25" hole with SW/Gel sweeps to 1055 m. Observed reduced flow at shakers at 930 m. Heavy sand loading at shakers observed. Displaced hole to KCl-Polymer mud @ 20:00 hrs. Minimal losses experienced at this time. Drilled to 1117 m. Continued to see sand at the shakers.

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG (bbl)	SOLIDS ANALYSIS (%/lb/bbl)	MUD RHEOLOGY & HYDRAULICS
Rig Up/Service	7.5	Oil Added	0	np/na Values
Drilling	16.5	Water Added	846	kp/ka (lb*s^n/100ft²)
Tripping		Mud Received	0	Bit Loss (psi / %)
Non-Productive Tim		Dumped	0	Bit HHP (hhp / HSI)
		Shakers	31	Bit Jet Vel (m/s)
		Evaporation	0	Ann. Vel DP (m/s)
		Centrifuge	0	Ann. Vel DC (m/s)
		Formation	0	Crit Vel DP (m/s)
		Left in Hole	0	Crit Vel DC (m/s)
		Sweeps	1979	ECD @ 1117 (sp.gr.)
			2.6	
			2. / 19.9	

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Jasdeep Singh Glen Sharpe 08-93023790			\$ 28,344.27	\$ 58,474.69





# WATER-BASED MUD REPORT No. 9

<b>Date</b>	<b>14/05/2005</b>	<b>Depth/TVD</b>	<b>1304 m / 1304 m</b>
<b>Spud Date</b>	<b>7/05/2005</b>	<b>Mud Type</b>	<b>KCl/Idcap D</b>
<b>Water Depth</b>	<b>71</b>	<b>Activity</b>	<b>Tripping</b>

**Operator :** Santos Ltd  
**Report For :** Ron King / Pat King  
**Well Name :** Casino 4  
**Contractor :** Diamond Offshore  
**Report For :** Sean D Freitas / Paul Baker

**Field/Area :** VIC P-44  
**Description :** Gas Producer  
**Location :** Otway Basin  
**M-I Well No. :**

DRILLING ASSEMBLY		CASING		MUD VOLUME (bbl)		CIRCULATION DATA			
Bit Size 12.25 in MX-O3DX		Surface		Hole		Pump Make	NATIONAL 12P-16	OILWELL 1700PT	
Nozzles 3x20 / 1/32"		30in @137m (137TVD)		658.1(Tot)/389.3(Bit)		Pump Size	6.5 X 12.in	6.5 X 12.in	
Drill Pipe Size	Length	Intermediate		Active Pits		Pump Cap	5.016 gal/stk	5.016 gal/stk	
5 in	542 m	13.375in @742m (742TVD)		385.9		Pump stk/min	97@97%	97@97%	
Drill Pipe Size	Length	Intermediate		Total Circulating Vol		Flow Rate		973 gal/min	
5 in	46 m	in @m (TVD)		775.2		Bottoms Up		15.2 min 2952 stk	
Drill Collar Size	Length	Production or Liner		In Storage		Total Circ Time		33.5 min 6492 stk	
8 in	125 m			830		Circulating Pressure		3750 psi	

MUD PROPERTIES			
Sample From		FL@14:30	Pit@7:30
Flow Line Temp	°C	50	42
Depth/TVD	m	1304/1304	1170/1170
Mud Weight	sp.gr.	1.23@48°C	1.2@40°C
Funnel Viscosity	s/qt	57	65
Rheology Temp	°C	49	120
R600/R300		65/48	51/35
R200/R100		40/30	29/20
R6/R3		11/9	8/5
PV	cP	17	16
YP	lb/100ft <sup>2</sup>	31	19
10s/10m/30m Gel	lb/100ft <sup>2</sup>	11/20/22	4/5/6
API Fluid Loss	cc/30 min	4.2	4.5
HTHP FL Temp	cc/30 min		
Cake API/HTHP	1/32"	1/	1/
Solids	%Vol	10	9
Oil/Water	%Vol	/90	/91
Sand	%Vol	1	.4
MBT	lb/bbl	7.5	3
pH		8.2	8.5
Alkal Mud (Pm)		0	0.1
Pf/Mf		0/1.35	0.05/1.3
Chlorides	mg/l	27000	28000
Hardness Ca	mg/l	680	680
KCl	% by Wt	5	5.5
Idcap	ppb	2.75	3
Sulphite Excess	ppm	40	40

PRODUCTS USED LAST 24 HRS		
<b>Products</b>	<b>Size</b>	<b>Amt</b>
DUO-VIS	25 KG BG	43
GLUTE 25	25 LT CN	3
OS-1	25 KG BG	6
POLYPAC UL	25 KG BG	26
IDCAP D SHALE INHIBITOR	25 KG BG	71
POTASSIUM HYDROXIDE	25 KG CN	7
MI BAR (Bulk)	1 MT BG	62
MI Gel (Bulk)	1 MT BG	2
KCL BRINE 16%	1 BL	460

SOLIDS EQUIP		
<b>Size</b>	<b>Hr</b>	
VSM Shaker 1	4 x 165	18
VSM Shaker 2	4 x 165	14
VSM Shaker 3	4 x 120	18
VSM Shaker 4	4 x 165	18
Centrifuge		0
D-Filter		0

MUD PROPERTY SPECIFICATIONS		
<b>Weight</b>	1.2-1.23	
<b>Viscosity</b>	50-60	
<b>Filtrate</b>	< 5	

**REMARKS AND TREATMENT**  
Weighted active system to 10 ppg and treated system to meet program specs. Treated system with Duovis to increase low end rheology. Added Idcap to system to substitute for depletion. Cuttings integrity at shakers good.

**REMARKS**  
Drilled ahead to 1250 m. Upgraded shaker screens. Used new screens 12 x 165, 4 x 120, and 8 x 145. Some losses at shakers due to list of rig. Drilled to 1304 m. Circulated hole clean. POOH. Bit Undergauge. Changed BHA and started RIH.

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG (bbl)	SOLIDS ANALYSIS (%/lb/bbl)	MUD RHEOLOGY & HYDRAULICS			
Rig Up/Service	2	Oil Added	0	np/na Values	0.437/0.343		
Drilling	14.5	Water Added	396	KCl	1.8/ 16.5	kp/ka (lb*s^n/100ft <sup>2</sup> )	3.348/5.485
Tripping	5	Mud Received	0	Low Gravity	3.7/ 33.5	Bit Loss (psi / %)	1056 / 28.2
Non-Productive Tim		Evaporation	0	Bentonite	.5/ 4.9	Bit HHP (hhp / HSI)	600 / 5.1
Reaming	1	Centrifuge	0	Drill Solids	2.6/ 23.7	Bit Jet Vel (m/s)	103
Testing	1.5	Formation	0	Weight Material	4.4/ 64.9	Ann. Vel DP (m/s)	.94
		Left in Hole	0	Chemical Conc	- / 5.	Ann. Vel DC (m/s)	1.34
		Sweeps	0	Inert/React	2.8031	Crit Vel DP (m/s)	2
		Dumped	0	Average SG	3.47	Crit Vel DC (m/s)	2
		Shakers	238	Carb/BiCarb (m mole/L)	./ -1	ECD @ 742 (sp.gr.)	1.27

<b>M-I ENGR / PHONE</b>	<b>RIG PHONE</b>	<b>WAREHOUSE PHONE</b>	<b>DAILY COST</b>	<b>CUMULATIVE COST</b>
Jasdeep Singh Glen Sharpe	08-93023790		\$ 50,875.35	\$ 109,350.04



# WATER-BASED MUD REPORT No. 10

<b>Date</b>	<b>15/05/2005</b>	<b>Depth/TVD</b>	<b>1761 m / 1761 m</b>
<b>Spud Date</b>	<b>7/05/2005</b>	<b>Mud Type</b>	<b>KCl/Idcap D</b>
<b>Water Depth</b>	<b>71</b>	<b>Activity</b>	<b>Drilling</b>

<b>Operator :</b> Santos Ltd <b>Report For :</b> Ron King / Pat King <b>Well Name :</b> Casino 4 <b>Contractor :</b> Diamond Offshore <b>Report For :</b> Sean D Freitas / Paul Baker	<b>Field/Area :</b> VIC P-44 <b>Description :</b> Gas Producer <b>Location :</b> Otway Basin <b>M-I Well No. :</b>
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DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA	
Bit Size	12.25 in MA89PX	Surface	Hole	Pump Make	NATIONAL 12P-16 / OILWELL 1700PT
Nozzles	7x14 / 1/32"	30in @137m (137TVD)	920.4	Pump Size	6.5 X 12.in / 6.5 X 12.in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	5.016 gal/stk / 5.016 gal/stk
5 in	1469 m	13.375in @742m (742TVD)	444.6	Pump stk/min	87@97% / 87@97%
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	873 gal/min
5 in	138 m	in @m (TVD)	1365	Bottoms Up	39.8 min / 6922 stk
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time	65.7 min / 11427 stk
8 in	125 m		905	Circulating Pressure	3700 psi

MUD PROPERTIES			
Sample From		Suction@20:00	low Line@14:
Flow Line Temp	°C	50	50
Depth/TVD	m	1638/1638	1425/1425
Mud Weight	sp.gr.	1.24@48°C	1.23@48°C
Funnel Viscosity	s/qt	54	48
Rheology Temp	°C	49	49
R600/R300		79/58	68/50
R200/R100		48/35	42/31
R6/R3		12/10	11/9
PV	cP	21	18
YP	lb/100ft²	37	32
10s/10m/30m Gel	lb/100ft²	12/28/38	10/21/30
API Fluid Loss	cc/30 min	4	4
HTHP FL Temp	cc/30 min		
Cake API/HTHP	1/32"	1/	1/
Solids	%Vol	11.6	11.5
Oil/Water	%Vol	/88.4	/88.5
Sand	%Vol	0	0.5
MBT	lb/bbl	11	8.5
pH		9	9
Alkal Mud (Pm)		0	0
Pf/Mf		0.08/1.45	0.08/1.4
Chlorides	mg/l	38500	38000
Hardness Ca	mg/l	620	640
KCl	% by Wt	6.5	6.5
Idcap	ppb	2.8	2.7
Sulphite Excess	ppm	10	10

PRODUCTS USED LAST 24 HRS		
Products	Size	Amt
DUO-VIS	25 KG BG	25
OS-1	25 KG BG	3
POLYPAC UL	25 KG BG	28
IDCAP D SHALE INHIBITOR	25 KG BG	16
POTASSIUM HYDROXIDE	25 KG CN	4
KCl (99%)Big Bag	1 MT BG	4
KCL BRINE 16%	1 BL	400

SOLIDS EQUIP	Size	Hr
VSM Shaker 1	4 x 165	0
VSM Shaker 2	4 x 165	0
VSM Shaker 3	4 x 165	0
VSM Shaker 4	4 x 165	0
Centrifuge		0
D-Silter		2

MUD PROPERTY SPECIFICATIONS	
Weight	1.2-1.23
Viscosity	50-60
Filtrate	< 5

**REMARKS AND TREATMENT**  
 Added 4 bags of KCl to system to maintain K conc. Made up 285 bbls unweighted premix in pit 2. Transfer 100 bbls to active to reduce mud weight from 10.4 + ppg to 10.3 ppg from 1350 m to 1400 m. Took 400 bbl of 16% KCl brine from FarGrip into Pit 5.

**REMARKS**  
 RIH to bottom. Drilled to TD 1761 m. Used new 12 x 165XR screens. Could not run Desilter due to leaking valves. Fixed valves and started back @ 23:30 hrs to control mud weight. Carbide run indicates 14% overage hole.

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG (bbl)	SOLIDS ANALYSIS (%/lb/bbl)	MUD RHEOLOGY & HYDRAULICS
Rig Up/Service	3	Oil Added	0	np/na Values
Drilling	18.5	Water Added	126	kp/ka (lb*s^n/100ft²)
Tripping	1.5	Mud Received	0	Bit Loss (psi / %)
Non-Productive Tim		Evaporation	0	Bit HHP (hhp / HSI)
Reaming	1	Centrifuge	0	Bit Jet Vel (m/s)
Testing		Formation	0	Ann. Vel DP (m/s)
		Left in Hole	0	Ann. Vel DC (m/s)
		Sweeps	0	Crit Vel DP (m/s)
		Dumped	0	Crit Vel DC (m/s)
		Shakers	148	ECD @ 1761 (sp.gr.)

<b>M-I ENGR / PHONE</b>	<b>RIG PHONE</b>	<b>WAREHOUSE PHONE</b>	<b>DAILY COST</b>	<b>CUMULATIVE COST</b>
Jasdeep Singh Glen Sharpe			\$ 19,369.06	\$ 128,719.10





# WATER-BASED MUD REPORT No. 11

<b>Date</b>	16/05/2005	<b>Depth/TVD</b>	1761 m / 1761 m
<b>Spud Date</b>	7/05/2005	<b>Mud Type</b>	KCl/Idcap D
<b>Water Depth</b>	71	<b>Activity</b>	R/I core barrel

**Operator :** Santos Ltd  
**Report For :** Ron King / Pat King  
**Well Name :** Casino 4  
**Contractor :** Diamond Offshore  
**Report For :** Sean D Freitas / Paul Baker

**Field/Area :** VIC P-44  
**Description :** Gas Producer  
**Location :** Otway Basin  
**M-I Well No. :**

DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA	
Bit Size	12.25 in MA89PX	Surface	Hole	Pump Make	NATIONAL 12P-16 / OILWELL 1700PT
Nozzles	7x14 / 1/32"	30in @137m (137TVD)	984.4	Pump Size	6.5 X 12.in / 6.5 X 12.in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	5.016 gal/stk / 5.016 gal/stk
5 in	m	13.375in @742m (742TVD)	407.6	Pump stk/min	88@97% / 88@97%
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	883 gal/min
5 in	138 m	in @m (TVD)	407.6	Bottoms Up	min 0 stk
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time	19.4 min / 3412 stk
8 in	125 m		1140	Circulating Pressure	3850 psi

MUD PROPERTIES			
Sample From		Pit 3@21:00	low Line@1:0
Flow Line Temp	°C		50
Depth/TVD	m	1761/1761	1761/1761
Mud Weight	sp.gr.	1.29@32°C	1.25@44°C
Funnel Viscosity	s/qt	55	55
Rheology Temp	°C	49	49
R600/R300		69/50	82/59
R200/R100		43/31	48/35
R6/R3		11/9	12/9
PV	cP	19	23
YP	lb/100ft²	31	36
10s/10m/30m Gel	lb/100ft²	10/24/31	11/24/33
API Fluid Loss	cc/30 min	3.6	4.1
HTHP FL Temp	cc/30 min		
Cake API/HTHP	1/32"	1/	1/
Solids	%Vol	14	13
Oil/Water	%Vol	/86	/87
Sand	%Vol	0.5	0.7
MBT	lb/bbl	14	12
pH		8	9
Alkal Mud (Pm)		0	
Pf/Mf		0.02/1.5	0.05/1.3
Chlorides	mg/l	38000	37000
Hardness Ca	mg/l	640	600
KCl	% by Wt	6	6
Idcap	ppb	2.5	2.5
Sulphite Excess	ppm	0	20

PRODUCTS USED LAST 24 HRS		
Products	Size	Amt
IDCAP D SHALE INHIBITOR	25 KG BG	28
KCL BRINE 16%	1 BL	600

SOLIDS EQUIP	Size	Hr
VSM Shaker 1	4 x 165	18
VSM Shaker 2	4 x 165	18
VSM Shaker 3	4 x 165	18
VSM Shaker 4	4 x 165	18
Centrifuge		0
D-Silter		0

MUD PROPERTY SPECIFICATIONS	
Weight	1.2-1.23
Viscosity	50-60
Filtrate	< 5

**REMARKS AND TREATMENT**  
 Added Glute to active prior to pulling out of hole after wiper trip. Increased mud wt due to solids during reaming. Observed small cavings on shakers during reaming. Took remaining 600 bbl of 16% KCl brine from FarGrip. Wrangler has 1000 bbl of NaCl brine.

**REMARKS**  
 Drilled to core point 1761 m. Circulated B/U. Conduced short trip to 1300 m. Back reamed tight hole from 1761m to 1567 m. Pipe stuck @1567m. Work pipe free Continue to backream from 1553m to 1293 m.R/I to bottom tagged 6 m of fill. Circulated hole clean. Replaced damage screens with used new 4 x 165 mesh screens. POOH pumped slug at 1500m. Back ream from 1280m to 1095 m. Pump out of hole from 1095m to shoe 727m. Circ B/Up then pumped 2nd slug. POOH. Made up core barrel assy.

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG (bbl)	SOLIDS ANALYSIS (%/lb/bbl)	MUD RHEOLOGY & HYDRAULICS
Rig Up/Service	3	Oil Added	NaCl	np/na Values
Drilling		Water Added	KCl	kp/ka (lb*s^n/100ft²)
Tripping	8	Mud Received	Low Gravity	Bit Loss (psi / %)
Non-Productive Tim	1.5	Evaporation	Bentonite	Bit HHP (hhp / HSI)
Circulating	4	Centrifuge	Drill Solids	Bit Jet Vel (m/s)
Reaming	7.5	Formation	Weight Material	Ann. Vel DP (m/s)
		Left in Hole	Chemical Conc	Ann. Vel DC (m/s)
		Sweeps	Inert/React	Crit Vel DP (m/s)
		Dumped	Average SG	Crit Vel DC (m/s)
		Shakers	Carb/BiCarb (m mole/L)	

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Jasdeep Singh Glen Sharpe			\$ 14,540.44	\$ 143,259.54
08-93023790				



# WATER-BASED MUD REPORT No. 12

<b>Date</b>	17/05/2005	<b>Depth/TVD</b>	1794 m / 1794 m
<b>Spud Date</b>	7/05/2005	<b>Mud Type</b>	KCl/Idcap D
<b>Water Depth</b>	71	<b>Activity</b>	Recover Core

**Operator :** Santos Ltd  
**Report For :** Chris Wise / Pat King  
**Well Name :** Casino 4  
**Contractor :** Diamond Offshore  
**Report For :** Sean D Fretias / Paul Baker

**Field/Area :** VIC P-44  
**Description :** Gas Producer  
**Location :** Otway Basin  
**M-I Well No. :**

DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA	
Bit Size	12.25 in CD93 Core Head	Surface	Hole	Pump Make	NATIONAL 12P-16 / OILWELL 1700PT
Nozzles	1/32"	30in @137m (137TVD)	1002.4	Pump Size	6.5 X 12.in / 6.5 X 12.in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	5.016 gal/stk / 5.016 gal/stk
5 in	m	13.375in @742m (742TVD)	511.6	Pump stk/min	65@97%
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	326 gal/min
5 in	m	in @m (TVD)	511.6	Bottoms Up	min 0 stk
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time	65.9 min 4284 stk
8 in	m		906	Circulating Pressure	850 psi

### MUD PROPERTIES

Sample From	Suction@15:30	low Line@9:30
Flow Line Temp	°C	37 / 35
Depth/TVD	m	1794/1794 / 1761/1761
Mud Weight	sp.gr.	1.3@36°C / 1.3@34°C
Funnel Viscosity	s/qt	60 / 58
Rheology Temp	°C	49 / 49
R600/R300		72/52 / 87/60
R200/R100		43/31 / 50/36
R6/R3		11/8 / 12/9
PV	cP	20 / 27
YP	lb/100ft <sup>2</sup>	32 / 33
10s/10m/30m Gel	lb/100ft <sup>2</sup>	10/20/27 / 10/23/29
API Fluid Loss	cc/30 min	3.6 / 3.8
HTHP FL Temp	cc/30 min	
Cake API/HTHP	1/32"	1/ / 1/
Solids	%Vol	13 / 13
Oil/Water	%Vol	/87 / /87
Sand	%Vol	0.5 / 0.5
MBT	lb/bbl	14 / 13.75
pH		9 / 9
Alkal Mud (Pm)		
Pf/Mf		0.05/1.5 / 0.03/1.6
Chlorides	mg/l	40000 / 34000
Hardness Ca	mg/l	640 / 640
KCl	% by Wt	6 / 6
Idcap	ppb	3 / 3
Sulphite Excess	ppm	10 / 40

### PRODUCTS USED LAST 24 HRS

Products	Size	Amt
DEFOAM A	5 GA CN	2
DUO-VIS	25 KG BG	5
GLUTE 25	25 LT CN	4
OS-1	25 KG BG	2
POLYPAC UL	25 KG BG	6
IDCAP D SHALE INHIBITOR	25 KG BG	9
POTASSIUM HYDROXIDE	25 KG CN	6
MI BAR (Bulk)	1 MT BG	10

### SOLIDS EQUIP

Solids Equip	Size	Hr
VSM Shaker 1	4 x 165	12
VSM Shaker 2	3 x 165, 1 x 20	12
VSM Shaker 3	4 x 165	12
VSM Shaker 4	3 x 165, 1 x 20	12
Centrifuge		0
D-Silter		12

### MUD PROPERTY SPECIFICATIONS

Weight	1.2-1.23
Viscosity	50-60
Filtrate	< 5

### REMARKS AND TREATMENT

Transferred new premix from pit 4 to active to dilute to control mud weight. Started desilter at 7.00 am output 11.4 ppg. Treated mud with KOH and Defoam A. Centrifuge not available.

### REMARKS

RIH to bottom. Circulated B/U and commenced coring. Core down from 1761 to 1794.52 m. Circulated hole and gas. POOH to recover 33 m core.

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG (bbl)	SOLIDS ANALYSIS (%/lb/bbl)	MUD RHEOLOGY & HYDRAULICS
Rig Up/Service		Oil Added	NaCl	np/na Values
Drilling		Water Added	KCl	kp/ka (lb*s^n/100ft <sup>2</sup> )
Tripping	14	Mud Received	Low Gravity	Bit Loss (psi / %)
Non-Productive Tim		Centrifuge	Bentonite	Bit HHP (hhp / HSI)
Circulating	4.5	Formation	Drill Solids	Bit Jet Vel (m/s)
Reaming	2	Left in Hole	Weight Material	Ann. Vel DP (m/s)
Coring	3.5	Dumped	Chemical Conc	Ann. Vel DC (m/s)
		Shakers	Inert/React	Crit Vel DP (m/s)
		Desilter	Average SG	Crit Vel DC (m/s)
			Carb/BiCarb (m mole/L)	

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Jasdeep Singh Glen Sharpe 08-93023790			\$ 6,967.63	\$ 150,227.17



# WATER-BASED MUD REPORT No. 13

Date	18/05/2005	Depth/TVD	1795 m / 1795 m
Spud Date	7/05/2005	Mud Type	KCl/Idcap D
Water Depth	71	Activity	Drilling

**Operator :** Santos Ltd  
**Report For :** Chris Wise / Pat King  
**Well Name :** Casino 4  
**Contractor :** Diamond Offshore  
**Report For :** Sean D Fretias / Paul Baker

**Field/Area :** VIC P-44  
**Description :** Gas Producer  
**Location :** Otway Basin  
**M-I Well No. :**

DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA	
Bit Size	12.25 in MA89PX	Surface	Hole	Pump Make	NATIONAL 12P-16 / OILWELL 1700PT
Nozzles	7x14 / 1/32"	30in @137m (137TVD)	938.2	Pump Size	6.5 X 12.in / 6.5 X 12.in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	5.016 gal/stk / 5.016 gal/stk
5 in	1503 m	13.375in @742m (742TVD)	489.8	Pump stk/min	83@97% / 86@97%
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	848 gal/min
5 in	138 m	in @m (TVD)	1428	Bottoms Up	41.7 min / 7054 stk
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time	70.7 min / 11953 stk
8 in	125 m		1162	Circulating Pressure	3570 psi

MUD PROPERTIES			
Sample From		Suction@23:00	Pit@4:45
Flow Line Temp	°C		
Depth/TVD	m	1794/1794	1794/1794
Mud Weight	sp.gr.	1.3@30°C	1.3
Funnel Viscosity	s/qt	70	64
Rheology Temp	°C	49	49
R600/R300		82/59	79/55
R200/R100		50/35	45/32
R6/R3		12/9	10/8
PV	cP	23	24
YP	lb/100ft²	36	31
10s/10m/30m Gel	lb/100ft²	11/23/30	9/18/26
API Fluid Loss	cc/30 min	3.6	3.4
HTHP FL Temp	cc/30 min		
Cake API/HTHP	1/32"	1/	1/
Solids	%Vol	13	13
Oil/Water	%Vol	/87	/87
Sand	%Vol	0.4	0.5
MBT	lb/bbl	14	12.5
pH		9	9
Alkal Mud (Pm)			
Pf/Mf		0.02/1.5	0.03/1.6
Chlorides	mg/l	40000	40000
Hardness Ca	mg/l	640	680
KCl	% by Wt	6	6
Idcap	ppb	3	3
Sulphite Excess	ppm	0	0

PRODUCTS USED LAST 24 HRS		
Products	Size	Amt
DUO-VIS	25 KG BG	21
OS-1	25 KG BG	2
POLYPAC UL	25 KG BG	24
IDCAP D SHALE INHIBITOR	25 KG BG	34
POTASSIUM HYDROXIDE	25 KG CN	3

SOLIDS EQUIP	Size	Hr
VSM Shaker 1	4 x 165	0
VSM Shaker 2	3 x 165, 1 x 20	0
VSM Shaker 3	4 x 165	0
VSM Shaker 4	3 x 165, 1 x 20	0
Centrifuge		0
D-Silter		0

MUD PROPERTY SPECIFICATIONS	
Weight	1.2-1.23
Viscosity	50-60
Filtrate	< 5

**REMARKS AND TREATMENT**  
Made premix in Pit 2.

**REMARKS**  
Continued to lay out core barrels. R/U for logging. Tools held up at 1670 m. Lay down Logging tools. R/I with bit & LWD tools to drill 30 m and log core section. Worked string through tight spot 1670m to 1700 m. Drilled to 1795 m

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG (bbl)	SOLIDS ANALYSIS (%/lb/bbl)	MUD RHEOLOGY & HYDRAULICS
Rig Up/Service	12.5	Oil Added	0	np/na Values
Drilling		Water Added	246	kp/ka (lb*s^n/100ft²)
Tripping	4.5	Mud Received	0	Bit Loss (psi / %)
Non-Productive Tim		Centrifuge	0	Bit HHP (hhp / HSI)
Wireline Logs	5	Formation	0	Bit Jet Vel (m/s)
Reaming	2	Left in Hole	0	Ann. Vel DP (m/s)
Coring		Dumped	50	Ann. Vel DC (m/s)
		Shakers	36	Crit Vel DP (m/s)
		Desilter	0	Crit Vel DC (m/s)
				ECD @ 1795 (sp.gr.)
				1.33

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Jasdeep Singh Glen Sharpe 08-93023790			\$ 15,423.94	\$ 165,651.11



## WATER-BASED MUD REPORT No. 14

<b>Date</b>	19/05/2005	<b>Depth/TVD</b>	1825 m / 1825 m
<b>Spud Date</b>	7/05/2005	<b>Mud Type</b>	KCl/Idcap D
<b>Water Depth</b>	71	<b>Activity</b>	Cementing

**Operator :** Santos Ltd  
**Report For :** Chris Wise / Pat King  
**Well Name :** Casino 4  
**Contractor :** Diamond Offshore  
**Report For :** Sean D Fretias / Paul Baker

**Field/Area :** VIC P-44  
**Description :** Gas Producer  
**Location :** Otway Basin  
**M-I Well No. :**

DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA	
Bit Size	12.25 in	Surface	Hole	Pump Make	NATIONAL 12P-16 / OILWELL 1700PT
Nozzles	1/32"	30in @137m (137TVD)	1017.3(Tot)/107.8(Bit)	Pump Size	6.5 X 12.in / 6.5 X 12.in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	5.016 gal/stk / 5.016 gal/stk
5 in	93 m	13.375in @742m (742TVD)	350.7	Pump stk/min	83@97% / 86@97%
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	848 gal/min
in	m	in @m (TVD)	458.5	Bottoms Up	5.1 min / 857 stk
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time	22.7 min / 3838 stk
in	m		1150	Circulating Pressure	3570 psi

### MUD PROPERTIES

### PRODUCTS USED LAST 24 HRS

Sample From	Suction@22:30	Pit@5:00
Flow Line Temp	°C	40
Depth/TVD	m	1824/1824
Mud Weight	sp.gr.	1.3@37°C
Funnel Viscosity	s/qt	58
Rheology Temp	°C	49
R600/R300		81/57
R200/R100		50/35
R6/R3		12/9
PV	cP	24
YP	lb/100ft²	33
10s/10m/30m Gel	lb/100ft²	10/21/28
API Fluid Loss	cc/30 min	3.6
HTHP FL Temp	cc/30 min	
Cake API/HTHP	1/32"	1/
Solids	%Vol	13
Oil/Water	%Vol	/87
Sand	%Vol	0.25
MBT	lb/bbl	14
pH		9
Alkal Mud (Pm)		
Pf/Mf		0.03/1.5
Chlorides	mg/l	40000
Hardness Ca	mg/l	620
KCl	% by Wt	6
Idcap	ppb	3
Sulphite Excess	ppm	0

Products	Size	Amt
DUO-VIS	25 KG BG	2
IDCAP D SHALE INHIBITOR	25 KG BG	5
MI BAR (Bulk)	1 MT BG	4

SOLIDS EQUIP	Size	Hr
VSM Shaker 1	4 x 165	6
VSM Shaker 2	3 x 165, 1 x 20	6
VSM Shaker 3	4 x 165	6
VSM Shaker 4	3 x 165, 1 x 20	6
Centrifuge		0
D-Silter		3

### MUD PROPERTY SPECIFICATIONS

Weight	1.2-1.23
Viscosity	50-60
Filtrate	< 5

### REMARKS AND TREATMENT

Mixed 60 bbl of HiVis 12 ppg pill for kick off plug.

### REMARKS

Drilled ahead to 1825 m. Circulated 2 x B/U. POOH reaming tight spot at 1777 m. Run one wireline log run. RIH with OEDP for plug back. Circulated hole clean. Prepare for first cement plug.

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG (bbl)	SOLIDS ANALYSIS (%/lb/bbl)	MUD RHEOLOGY & HYDRAULICS
Rig Up/Service	7.5	Oil Added	0	np/na Values
Drilling	2	Water Added	0	kp/ka (lb*s^n/100ft²)
Tripping	8	Mud Received	0	Bit Loss (psi / %)
Non-Productive Tim		Centrifuge	0	Bit HHP (hhp / HSI)
Wireline Logs	4	Formation	0	Bit Jet Vel (m/s)
Reaming		Left in Hole	0	Ann. Vel DP (m/s)
Coring		Dumped	0	Ann. Vel DC (m/s)
Circulating	2.5	Shakers	39	Crit Vel DP (m/s)
		Desilter	40	Crit Vel DC (m/s)
				ECD @ 93 (sp.gr.)
				1.31

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Jasdeep Singh Glen Sharpe 08-93023790			\$ 2,582.45	\$ 168,233.56



# WATER-BASED MUD REPORT No. 15

<b>Date</b>	<b>20/05/2005</b>	<b>Depth/TVD</b>	<b>1825 m / 1825 m</b>
<b>Spud Date</b>	<b>7/05/2005</b>	<b>Mud Type</b>	<b>KCl/Idcap D</b>
<b>Water Depth</b>	<b>71</b>	<b>Activity</b>	<b>RIH</b>

<b>Operator :</b> Santos Ltd <b>Report For :</b> Chris Wise / Pat King <b>Well Name :</b> Casino 4 <b>Contractor :</b> Diamond Offshore <b>Report For :</b> Sean D Freitas / Paul Baker	<b>Field/Area :</b> VIC P-44 <b>Description :</b> Gas Producer <b>Location :</b> Otway Basin <b>M-I Well No. :</b>
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DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA		
Bit Size 12.25 in		Surface	Hole	Pump Make	NATIONAL 12P-16	OILWELL 1700PT
Nozzles 1/32"		30in @137m (137TVD)	1019.3	Pump Size	6.5 X 12.in	6.5 X 12.in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	5.016 gal/stk	5.016 gal/stk
5 in	m	13.375in @742m (742TVD)	568.7	Pump stk/min	83@97%	86@97%
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate 848 gal/min		
in	m	in @m (TVD)	568.7	Bottoms Up min 0 stk		
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time 28.2 min 4760 stk		
in	m		1150	Circulating Pressure 3570 psi		

MUD PROPERTIES			
Sample From		Pit 3@19:00	Pit 3@5:15
Flow Line Temp	°C		
Depth/TVD	m	1255/1255	1825/1825
Mud Weight	sp.gr.	1.26	1.3
Funnel Viscosity	s/qt	58	67
Rheology Temp	°C	49	49
R600/R300		62/44	80/57
R200/R100		36/26	47/35
R6/R3		9/7	13/10
PV	cP	18	23
YP	lb/100ft²	26	34
10s/10m/30m Gel	lb/100ft²	8/14/17	11/29/31
API Fluid Loss	cc/30 min	3.6	4
HTHP FL Temp	cc/30 min		
Cake API/HTHP	1/32"	1/	1/
Solids	%Vol	10.5	13
Oil/Water	%Vol	/89.5	/87
Sand	%Vol	TR	0.5
MBT	lb/bbl	9	12.5
pH		9	11.5
Alkal Mud (Pm)		0	1.45
Pf/Mf		0.2/3.5	0.2/1.85
Chlorides	mg/l	46000	40000
Hardness Ca	mg/l	1100	600
KCl	% by Wt	8	6
Idcap	ppb	3	3
Sulphite Excess	ppm		

PRODUCTS USED LAST 24 HRS		
Products	Size	Amt

SOLIDS EQUIP	Size	Hr
VSM Shaker 1	4 x 165	0
VSM Shaker 2	3 x 165, 1 x 20	0
VSM Shaker 3	4 x 165	0
VSM Shaker 4	3 x 165, 1 x 20	0
Centrifuge		0
D-Silter		0

**REMARKS AND TREATMENT**  
Pumped 55 bbl of weighted HiVis pill before Top Plug.

**REMARKS**  
POOH to 1505 m pumped 53 bbl hi Vis pill. POOH to 1405 m and pumped kick off plug to 1255 m. POOH to 1250 m and reverse circulated the string contents. POOH and waited on cement. RIH.

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG (bbl)	SOLIDS ANALYSIS (%/lb/bbl)	MUD RHEOLOGY & HYDRAULICS
Rig Up/Service		Oil Added 0	NaCl 2.2/ 24.3	np/na Values
Drilling		Water Added 0	KCl .	kp/ka (lb*s^n/100ft²)
Tripping	7.5	Mud Received 0	Low Gravity 3.2/ 29.4	Bit Loss (psi / %)
Non-Productive Tim		Centrifuge 0	Bentonite .8/ 7.1	Bit HHP (hhp/ HSI)
Cementing	2.5	Formation 0	Drill Solids 1.9/ 17.3	Bit Jet Vel (m/s)
Wait on Cement	14	Left in Hole 93	Weight Material 5.1/ 74.8	Ann. Vel DP (m/s)
		Dumped 0	Chemical Conc - / 5.	Ann. Vel DC (m/s)
		Shakers 0	Inert/React 1.7086	Crit Vel DP (m/s)
		Desilter 0	Average SG 3.58	Crit Vel DC (m/s)
			Carb/BiCarb (m mole/L) 4./ 20.	

<b>M-I ENGR / PHONE</b> Jasdeep Singh Kelvin Leong 08-93023790	<b>RIG PHONE</b>	<b>WAREHOUSE PHONE</b>	<b>DAILY COST</b> \$ 0.00	<b>CUMULATIVE COST</b> \$ 168,233.56
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# WATER-BASED MUD REPORT No.

Date	19/05/2005	Depth/TVD	1255 m / 1255 m
Spud Date	20/05/2005	Mud Type	KCl/Polymer
Water Depth	71	Activity	

**Operator :** Santos Ltd      **Field/Area :** Vic P 44  
**Report For :** Chris Wise/ Pat King      **Description :** Gas Producer  
**Well Name :** Casino 4 DW      **Location :** Otway Basin  
**Contractor :** Diamond Offshore      **M-I Well No. :**  
**Report For :** Paul Baker/Mike Praznik

DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA	
Bit Size 12.25 in		Surface	Hole	Pump Make	OILWELL 1700PT NATIONAL 12P-16C
Nozzles 1/32"		30in @137m (137TVD)	674	Pump Size	6.5 X 12.in 6.5 X 12.in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	gal/stk gal/stk
in	m	13.375in @742m (742TVD)	-674	Pump stk/min	
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	gal/min
in	m	in @1255m (1255TVD)	-674	Bottoms Up	
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time	
in	m	in @m (TVD)		Circulating Pressure	

MUD PROPERTIES		PRODUCTS USED LAST 24 HRS	
Sample From		Products	Size Amt
Flow Line Temp °C			
Depth/TVD m	1255/1255		
Mud Weight sp.gr.			
Funnel Viscosity s/qt			
Rheology Temp °C			
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			
MBT lb/bbl			
pH			
Alkal Mud (Pm)			
Pf/Mf			
Chlorides mg/l			
Hardness Ca mg/l			
KCl % Wt			
IDCAP ppb			

MUD PROPERTY SPECIFICATIONS	
Weight	
Viscosity	
Filtrate	

**REMARKS AND TREATMENT**

**REMARKS**

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG (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 <sup>2</sup> )
Tripping		Mud Received 0	Low Gravity /	Bit Loss (psi / %)
Non-Productive Tim		Dumped 0	Bentonite /	Bit HHP (hhp / HSI)
		Shakers 0	Drill Solids /	Bit Jet Vel (m/s)
		Evaporation 0	Weight Material /	Ann. Vel DP (m/s)
		Centrifuge 0	Chemical Conc - /	Ann. Vel DC (m/s)
		Formation 0	Inert/React	Crit Vel DP (m/s)
		Left in Hole 0	Average SG	Crit Vel DC (m/s)
		Other 0	Carb/BiCarb (m mole/L) /	

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Jasdeep Singh Kelvin Leong      08-9302 3790			\$ 0.00	\$ 0.00





**WATER-BASED MUD REPORT No.**

Date	20/05/2005	Depth/TVD	1255 m / 1255 m
Spud Date	20/05/2005	Mud Type	KCl/Polymer
Water Depth	71	Activity	RIH

**Operator :** Santos Ltd  
**Report For :** Chris Wise/ Pat King  
**Well Name :** Casino 4 DW  
**Contractor :** Diamond Offshore  
**Report For :** Paul Baker/Mike Praznik

**Field/Area :** Vic P 44  
**Description :** Gas Producer  
**Location :** Otway Basin  
**M-I Well No. :**

DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA	
Bit Size	12.25 in FS2663	Surface	Hole	Pump Make	OILWELL 1700PT NATIONAL 12P-16C
Nozzles	16x9 / 1/32"	30in @137m (137TVD)	674	Pump Size	6.5 X 12.in 6.5 X 12.in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	gal/stk gal/stk
5 in	m	13.375in @742m (742TVD)	548	Pump stk/min	
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	gal/min
5 in	135 m	in @1255m (1255TVD)	548	Bottoms Up	
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time	
8 in	25 m	in @m (TVD)	955	Circulating Pressure	

**MUD PROPERTIES**

Sample From	Pit 3@19:00
Flow Line Temp	°C
Depth/TVD	m 1255/1255
Mud Weight	sp.gr. 1.26@21°C
Funnel Viscosity	s/qt 58
Rheology Temp	°C 49
R600/R300	62/44
R200/R100	36/26
R6/R3	9/7
PV	cP 18
YP	lb/100ft² 26
10s/10m/30m Gel	lb/100ft² 8/14/17
API Fluid Loss	cc/30 min 3.6
HTHP FL Temp	cc/30 min
Cake API/HTHP	1/32" 1/
Solids	%Vol 10.5
Oil/Water	%Vol /89.5
Sand	%Vol TR
MBT	lb/bbl 9
pH	9
Alkal Mud (Pm)	0
Pf/Mf	0.2/3.5
Chlorides	mg/l 46000
Hardness Ca	mg/l 1100
KCl	% Wt 8
IDCAP	ppb 3

**PRODUCTS USED LAST 24 HRS**

Products	Size	Amt
CITRIC ACID	25 KG BG	8
SODIUM Bicarbonate	25 KG BG	10

**SOLIDS EQUIP**

SOLIDS EQUIP	Size	Hr
VSM Shaker 1	4 x 200	3
VSM Shaker 2	4 x 200	3
VSM Shaker 3	4 x 200	3
VSM Shaker 4	4 x 200	3
Centrifuge		0
D-Silter		0

**MUD PROPERTY SPECIFICATIONS**

Weight	1.26
Viscosity	50-70
Filtrate	< 5

**REMARKS AND TREATMENT**

Dumped sand traps and header box and cleaned out solids. Dressed shakers with new 16 x 200 mesh screens. Reduced riser + surface volume mud weight from 10.9 ppg to 10.5 ppg using premix. Treated system with Citric & Bicarb.

**REMARKS**

WOC. Made up BHA. Circulated riser to cut mud weight. RIH.

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG (bbl)	SOLIDS ANALYSIS (%/lb/bbl)	MUD RHEOLOGY & HYDRAULICS
Rig Up/Service		Oil Added	0	np/na Values
Drilling		Water Added	0	kp/ka (lb*s^n/100ft²)
Tripping	4	Mud Received	2393	Bit Loss (psi / %)
Non-Productive Tim		Dumped	218	Bit HHP (hhp / HSI)
Cementing	4	Shakers	0	Bit Jet Vel (m/s)
Wait on Cement	16	Evaporation	0	Ann. Vel DP (m/s)
		Centrifuge	0	Ann. Vel DC (m/s)
		Formation	0	Crit Vel DP (m/s)
		Left in Hole	0	Crit Vel DC (m/s)
		Other	0	
			Average SG	
			Carb/BiCarb (m mole/L)	

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Jasdeep Singh Kelvin Leong 08-9302 3790			\$ 400.72	\$ 400.72



# WATER-BASED MUD REPORT No. 1

<b>Date</b>	21/05/2005	<b>Depth/TVD</b>	1570 m / 1565 m
<b>Spud Date</b>	20/05/2005	<b>Mud Type</b>	KCl/Polymer
<b>Water Depth</b>	71	<b>Activity</b>	Drilling

<b>Operator :</b> Santos Ltd <b>Report For :</b> Chris Wise/ Pat King <b>Well Name :</b> Casino 4 DW <b>Contractor :</b> Diamond Offshore <b>Report For :</b> Paul Baker/Mike Praznik	<b>Field/Area :</b> Vic P 44 <b>Description :</b> Gas Producer <b>Location :</b> Otway Basin <b>M-I Well No. :</b>
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DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA	
Bit Size 12.25 in FS2663		Surface	Hole	Pump Make	OILWELL 1700PT NATIONAL 12P-16C
Nozzles 16x9 / 1/32"		30in @137m (137TVD)	783.1	Pump Size	6.5 X 12.in 6.5 X 12.in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	5.016 gal/stk 5.016 gal/stk
5 in	1409 m	13.375in @742m (742TVD)	414.9	Pump stk/min	100@97% 100@97%
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	1003 gal/min
5 in	135 m	in @1255m (1255TVD)	1198	Bottoms Up	29.2 min 5832 stk
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time	50.2 min 10033 stk
8 in	25 m	in @m (TVD)	1378	Circulating Pressure	3300 psi

MUD PROPERTIES			
Sample From	Pit 3@20:10	Pit 3@08:40	
Flow Line Temp	°C	49	36
Depth/TVD	m	1478/1473	1260/1260
Mud Weight	sp.gr.	1.26@43°C	1.26@32°C
Funnel Viscosity	s/qt	58	55
Rheology Temp	°C	49	49
R600/R300		77/58	62/45
R200/R100		49/37	37/27
R6/R3		15/12	9/7
PV	cP	19	17
YP	lb/100ft²	39	28
10s/10m/30m Gel	lb/100ft²	14/27/36	7/14/17
API Fluid Loss	cc/30 min	4	4.2
HTHP FL Temp	cc/30 min		
Cake API/HTHP	1/32"	1/	1/
Solids	%Vol	11	10
Oil/Water	%Vol	/89	/90
Sand	%Vol	0.2	0.25
MBT	lb/bbl	11	10
pH		10	10.9
Alkal Mud (Pm)		0.5	1
Pf/Mf		0.1/2	0.2/2.2
Chlorides	mg/l	45000	44000
Hardness Ca	mg/l	560	920
KCl	% Wt	8	8
IDCAP	ppb	3	3

PRODUCTS USED LAST 24 HRS		
Products	Size	Amt
CITRIC ACID	25 KG BG	5
DUO-VIS	25 KG BG	19
OS-I	25 KG BG	5
SODIUM Bicarbonate	25 KG BG	20
MI BAR (Bulk)	1 MT BG	8
KCL BRINE 16%	1 BL	870

SOLIDS EQUIP	Size	Hr
VSM Shaker 1	4 x 200	24
VSM Shaker 2	4 x 200	24
VSM Shaker 3	4 x 200	24
VSM Shaker 4	4 x 200	24
Centrifuge		0
D-Silter		5

MUD PROPERTY SPECIFICATIONS	
Weight	1.26
Viscosity	50-70
Filtrate	< 5

<b>REMARKS AND TREATMENT</b> Treated cement contamination with Bicarb/Citric. Pump 50 bbl SW in an attempt to mitigate Bit Balling as per DSV. Treated system with Duovis to improve rheology. Used 13 x 200XR new screens. Received 870 bbl of 16% KCl brine from Fargrip. Added barite to system to increase mud weight to 10.7 ppg @1500 m.	<b>REMARKS</b> Wash down 1170 to 1273 m. Attempt to kick off from hard cement top @ 1273 m and started new hole ffrom 1308 m. Drilled to 1570 m buildin g angle to 22 degrees @ 23:30 hrs.
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TIME DISTR	Last 24 Hrs	MUD VOL ACCTG (bbl)	SOLIDS ANALYSIS (%/lb/bbl)	MUD RHEOLOGY & HYDRAULICS
Rig Up/Service		Oil Added	0	np/na Values
Drilling	21.5	Water Added	0	kp/ka (lb*s^n/100ft²)
Tripping	2	Mud Received	0	Bit Loss (psi / %)
Non-Productive Tim		Dumped	335	Bit HHP (hhp / HSI)
Test Well	0.5	Shakers	151	Bit Jet Vel (m/s)
Wait on Cement		Evaporation	0	Ann. Vel DP (m/s)
		Centrifuge	0	Ann. Vel DC (m/s)
		Formation	0	Crit Vel DP (m/s)
		Left in Hole	0	Crit Vel DC (m/s)
		Other	0	ECD @ 1570 (sp.gr.)
			Carb/BiCarb (m mole/L)	

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Jasdeep Singh Kelvin Leong	08-9302 3790		\$ 18,037.05	\$ 18,437.77





# WATER-BASED MUD REPORT No. 2

Date	22/05/2005	Depth/TVD	1662 m / 1627 m
Spud Date	20/05/2005	Mud Type	KCl/Polymer
Water Depth	71	Activity	Tripping

**Operator :** Santos Ltd      **Field/Area :** Vic P 44  
**Report For :** Chris Wise/ Pat King      **Description :** Gas Producer  
**Well Name :** Casino 4 DW      **Location :** Otway Basin  
**Contractor :** Diamond Offshore      **M-I Well No. :**  
**Report For :** Paul Baker/Mike Praznik

DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA	
Bit Size 12.25 in FS2663		Surface	Hole	Pump Make	OILWELL 1700PT NATIONAL 12P-16C
Nozzles 16x9 / 1/32"		30in @137m (137TVD)	868.7	Pump Size	6.5 X 12.in 6.5 X 12.in
Drill Pipe Size 5 in	Length m	Intermediate	Active Pits	Pump Cap	5.016 gal/stk 5.016 gal/stk
5 in		13.375in @742m (742TVD)	493.3	Pump stk/min	100@97% 100@97%
Drill Pipe Size 5 in	Length 135 m	Intermediate	Total Circulating Vol	Flow Rate	1003 gal/min
5 in		in @1255m (1255TVD)	493.3	Bottoms Up	min 0 stk
Drill Collar Size 8 in	Length 25 m	Production or Liner	In Storage	Total Circ Time	20.7 min 4132 stk
8 in		in @m (TVD)	913	Circulating Pressure	3300 psi

### MUD PROPERTIES

Sample From		Suction@19:00	Pit 3@03:00
Flow Line Temp	°C	50	54
Depth/TVD	m	1662/1627	1599/1580
Mud Weight	sp.gr.	1.29@40°C	1.28@40°C
Funnel Viscosity	s/qt	58	67
Rheology Temp	°C	49	49
R600/R300		82/60	95/71
R200/R100		55/42	60/45
R6/R3		16/12	17/14
PV	cP	22	24
YP	lb/100ft <sup>2</sup>	38	47
10s/10m/30m Gel	lb/100ft <sup>2</sup>	12/26/36	15/35/42
API Fluid Loss	cc/30 min	3.8	4.4
HTHP FL Temp	cc/30 min		
Cake API/HTHP	1/32"	1/	1/
Solids	%Vol	13	12
Oil/Water	%Vol	/87	0/88
Sand	%Vol	TR	tr
MBT	lb/bbl	12	12
pH		9.2	8.4
Alkal Mud (Pm)		0.25	0.1
Pf/Mf		0.1/1.5	0.1/1.1
Chlorides	mg/l	47000	46000
Hardness Ca	mg/l	560	600
KCl	% Wt	8	8
IDCAP	ppb	3	3

### PRODUCTS USED LAST 24 HRS

Products	Size	Amt
DUO-VIS	25 KG BG	15
OS-1	25 KG BG	10
POLYPAC UL	25 KG BG	8
IDCAP D SHALE INHIBITOR	25 KG BG	20
POTASSIUM HYDROXIDE	25 KG CN	1
MI BAR (Bulk)	1 MT BG	8

### SOLIDS EQUIP

	Size	Hr
VSM Shaker 1	2 x200, 2 x180	10
VSM Shaker 2	2 x200, 2 x165	10
VSM Shaker 3	2 x200, 2 x165	10
VSM Shaker 4	4 x200	10
Centrifuge		0
D-Silter		10

### MUD PROPERTY SPECIFICATIONS

Weight	1.28
Viscosity	50-70
Filtrate	< 5

### REMARKS AND TREATMENT

Treated system with Duovis/Idcap for maintenance. Lost 120 bbl at shakers after trip due to high Idcap conc. Downgraded few screens to handle flow. Used new 3 x 200 & 4 x 180 mesh screens.

### REMARKS

Drilled to 1559 m. P/O to casing shoe. Repair Top drive. Run back in. Drilled to 1662 m. Circulated hole. POOH to change BHA.

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG (bbl)	SOLIDS ANALYSIS (%/lb/bbl)	MUD RHEOLOGY & HYDRAULICS
Rig Up/Service	2	Oil Added	0	np/na Values
Drilling	4.5	Water Added	0	kp/ka (lb*s^n/100ft <sup>2</sup> )
Tripping	12.5	Mud Received	0	Bit Loss (psi / %)
Non-Productive Tim		Dumped	126	Bit HHP (hhp / HSI)
Condition Hole	5	Shakers	61	Bit Jet Vel (m/s)
Wait on Cement		Formation	0	Ann. Vel DP (m/s)
		Other	0	Ann. Vel DC (m/s)
		Desilter	132	Crit Vel DP (m/s)
			Inert/React	Crit Vel DC (m/s)
			Average SG	
			Carb/BiCarb (m mole/L)	

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Jasdeep Singh Kelvin Leong	08-9302 3790		\$ 11,206.28	\$ 29,644.05



# WATER-BASED MUD REPORT No. 3

Date	23/05/2005	Depth/TVD	1662 m / 1627 m
Spud Date	20/05/2005	Mud Type	KCl/Polymer
Water Depth	71	Activity	WOC

**Operator :** Santos Ltd  
**Report For :** Chris Wise/ Pat King  
**Well Name :** Casino 4 DW  
**Contractor :** Diamond Offshore  
**Report For :** Paul Baker/Mike Praznik

**Field/Area :** Vic P 44  
**Description :** Gas Producer  
**Location :** Otway Basin  
**M-I Well No. :**

DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA	
Bit Size 12.25 in FS2663		Surface	Hole	Pump Make	OILWELL 1700PT NATIONAL 12P-16C
Nozzles 16x9 / 1/32"		30in @137m (137TVD)	868.7	Pump Size	6.5 X 12.in 6.5 X 12.in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	5.016 gal/stk 5.016 gal/stk
5 in	m	13.375in @742m (742TVD)	580.3	Pump stk/min	100@97% 100@97%
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	1003 gal/min
in	m	in @1255m (1255TVD)	580.3	Bottoms Up	min 0 stk
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time	24.3 min 4860 stk
in	m	in @m (TVD)	1072	Circulating Pressure	3300 psi

### MUD PROPERTIES

	Pit 3@20:00	Pit 3@08:30
Sample From		
Flow Line Temp °C		
Depth/TVD m	1662/1627	1662/1627
Mud Weight sp.gr.	1.29@35°C	1.29@45°C
Funnel Viscosity s/qt	65	65
Rheology Temp °C	49	49
R600/R300	75/56	75/55
R200/R100	48/35	46/35
R6/R3	14/11	14/11
PV cP	19	20
YP lb/100ft²	37	35
10s/10m/30m Gel lb/100ft²	13/24/31	11/20/26
API Fluid Loss cc/30 min	3.2	3.6
HTHP FL Temp cc/30 min		
Cake API/HTHP 1/32"	1/	1/
Solids %Vol	13	11
Oil/Water %Vol	/87	/89
Sand %Vol	TR	TR
MBT lb/bbl	13	12.5
pH	9	8.5
Alkal Mud (Pm)	0.2	0.1
Pf/Mf	0.05/3	0.1/1.5
Chlorides mg/l	48000	46000
Hardness Ca mg/l	1200	800
KCl % Wt	8	8
IDCAP ppb	3	3

### PRODUCTS USED LAST 24 HRS

Products	Size	Amt
CITRIC ACID	25 KG BG	5
DUO-VIS	25 KG BG	10
POLYPAC UL	25 KG BG	10
IDCAP D SHALE INHIBITOR	25 KG BG	12
MI BAR (Bulk)	1 MT BG	6

### SOLIDS EQUIP

	Size	Hr
VSM Shaker 1	2 x200, 2 x180	6
VSM Shaker 2	2 x200, 2 x165	6
VSM Shaker 3	2 x200, 2 x165	6
VSM Shaker 4	4 x200	6
Centrifuge		0
D-Silter		0

### MUD PROPERTY SPECIFICATIONS

Weight	1.28
Viscosity	50-70
Filtrate	< 5

### REMARKS AND TREATMENT

Pumped 60 bbl of HiVis pill weighted to 12 ppg below cement plug. Dumped contaminated returns (42 bbl) during reverse out. Treated surface volume with Citric acid. Gelled up leaking dump valve in Pit 2. Some sea water entered into active system due to not isolating sandtraps while cleaning out header box.

### REMARKS

Unable to run in bent motor assembly. RIH OEDP to 1450 m and circulated hole clean. Placed HiVis pill. P/O to 1350 m. Placed Kick Off Plug#2 from 1350 m to 1200 m. P/O to 1145 m. Reversed out. WOC.

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG (bbl)	SOLIDS ANALYSIS (%/lb/bbl)	MUD RHEOLOGY & HYDRAULICS
Rig Up/Service	1.5	Oil Added	0	np/na Values
Drilling		Water Added	182	kp/ka (lb*s^n/100ft²)
Tripping	13	Mud Received	0	Bit Loss (psi / %)
Non-Productive Tim		Dumped	42	Bit HHP (hhp / HSI)
Condition Hole	2	Shakers	0	Bit Jet Vel (m/s)
Wait on Cement	7.5	Formation	0	Ann. Vel DP (m/s)
		Other	0	Ann. Vel DC (m/s)
		Desilter	0	Crit Vel DP (m/s)
			Inert/React	Crit Vel DC (m/s)
			Average SG	
			Carb/BiCarb (m mole/L)	

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Jasdeep Singh Kelvin Leong	08-9302 3790		\$ 7,692.91	\$ 37,336.96

**WATER-BASED MUD REPORT No. 4**

Date	24/05/2005	Depth/TVD	1662 m / 1627 m
Spud Date	20/05/2005	Mud Type	KCl/Polymer
Water Depth	71	Activity	Drilling

**Operator :** Santos Ltd  
**Report For :** Chris Wise/ Jeff Thomson  
**Well Name :** Casino 4 DW  
**Contractor :** Diamond Offshore  
**Report For :** Paul Baker/Mike Praznik

**Field/Area :** Vic P 44  
**Description :** Gas Producer  
**Location :** Otway Basin  
**M-I Well No. :**

DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA		
Bit Size	12.25 in Hughes Tricone	Surface	Hole	Pump Make	OILWELL 1700PT	NATIONAL 12P-16C
Nozzles	22x3 / 1/32"	30in @137m (137TVD)	832.8(Tot)/640.6(Bit)	Pump Size	6.5 X 12.in	6.5 X 12.in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	5.016 gal/stk	5.016 gal/stk
5 in	1095 m	13.375in @742m (742TVD)	414.2	Pump stk/min	90@97%	90@97%
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	903 gal/min	
5 in	129 m	in @1255m (1255TVD)	1054.7	Bottoms Up	26.6 min	4790 stk
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time	49.1 min	8830 stk
8 in	27 m	in @m (TVD)	934	Circulating Pressure	2300 psi	

**MUD PROPERTIES**

Sample From	Pit 3@21:00	Pit 3@08:00
Flow Line Temp	°C	35
Depth/TVD	m	1207/1207
Mud Weight	sp.gr.	1.27@30°C
Funnel Viscosity	s/qt	60
Rheology Temp	°C	49
R600/R300		67/51
R200/R100		43/32
R6/R3		12/9
PV	cP	16
YP	lb/100ft <sup>2</sup>	35
10s/10m/30m Gel	lb/100ft <sup>2</sup>	11/23/26
API Fluid Loss	cc/30 min	3.4
HTHP FL Temp	cc/30 min	
Cake API/HTHP	1/32"	1/
Solids	%Vol	12
Oil/Water	%Vol	/88
Sand	%Vol	TR
MBT	lb/bbl	12
pH		10.5
Alkal Mud (Pm)		0.5
Pf/Mf		0.25/5
Chlorides	mg/l	47000
Hardness Ca	mg/l	1600
KCl	% Wt	8
IDCAP	ppb	3

**PRODUCTS USED LAST 24 HRS**

Products	Size	Amt
CITRIC ACID	25 KG BG	18
SODIUM Bicarbonate	25 KG BG	18
<b>SOLIDS EQUIP</b>		
Size	Hr	
VSM Shaker 1	2 x200, 2 x180	5
VSM Shaker 2	2 x200, 2 x165	5
VSM Shaker 3	2 x200, 2 x165	5
VSM Shaker 4	4 x200	5
Centrifuge		0
D-Silter		0

**MUD PROPERTY SPECIFICATIONS**

Weight	1.28
Viscosity	50-70
Filtrate	< 5

**REMARKS AND TREATMENT**

Dumped Sandtrap. Trated system with available Citric and Bicarb for cement contamination. Took out 155 bbl active mud into Pit 2 and diluted system with premix to cut mud weight from 10.8 to 10.6 ppg. Mud severely contaminated with cement. Dumping and diluting to control viscosity.

**REMARKS**

Waiting on cement. Pressure tested BOP. Made up 12.25" side track BHA. RIH. Soft cmt observed at 1176 m and hard cmt at 1199 m. Drilled ahead to kick off to 1260 m. Unable to kick off.

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG	(bbl)	SOLIDS ANALYSIS (%/lb/bbl)		MUD RHEOLOGY & HYDRAULICS	
Rig Up/Service	3.5	Oil Added	0	NaCl	.3/ 3.6	np/na Values	0.394/0.362
Drilling	5.5	Water Added	0	KCl	2.9/ 26.7	kp/ka (lb*s^n/100ft <sup>2</sup> )	4.672/5.323
Tripping	6.5	Mud Received	0	Low Gravity	4.7/ 36.5	Bit Loss (psi / %)	34509 / 1500.4
Non-Productive Tim		Dumped	325	Bentonite	1.1/ 9.6	Bit HHP (hhp / HSI)	18181 / 154.3
Condition Hole		Shakers	18	Drill Solids	2.4/ 22.	Bit Jet Vel (m/s)	581
Wait on Cement	8.5	Formation	0	Weight Material	4.7/ 69.6	Ann. Vel DP (m/s)	.9
		Other	0	Chemical Conc	- / 5.	Ann. Vel DC (m/s)	1.31
		Desilter	0	Inert/React	1.6266	Crit Vel DP (m/s)	2
				Average SG	3.47	Crit Vel DC (m/s)	2
				Carb/BiCarb (m mole/L)	4.7/ .7	ECD @ 1260 (sp.gr.)	1.3
<b>M-I ENGR / PHONE</b>		<b>RIG PHONE</b>		<b>WAREHOUSE PHONE</b>		<b>DAILY COST</b>	<b>CUMULATIVE COST</b>
Jasdeep Singh Kelvin Leong		08-9302 3790				\$ 853.74	\$ 38,190.70



## WATER-BASED MUD REPORT No. 5

<b>Date</b>	<b>25/05/2005</b>	<b>Depth/TVD</b>	<b>1662 m / 1627 m</b>
<b>Spud Date</b>	<b>20/05/2005</b>	<b>Mud Type</b>	<b>KCl/Polymer</b>
<b>Water Depth</b>	<b>71</b>	<b>Activity</b>	<b>WOC</b>

<b>Operator :</b> Santos Ltd <b>Report For :</b> Chris Wise/ Jeff Thomson <b>Well Name :</b> Casino 4 DW <b>Contractor :</b> Diamond Offshore <b>Report For :</b> Paul Baker/Mike Praznik	<b>Field/Area :</b> Vic P 44 <b>Description :</b> Gas Producer <b>Location :</b> Otway Basin <b>M-I Well No. :</b>
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DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA	
Bit Size 12.25 in Hughes Tricone		Surface	Hole	Pump Make OILWELL 1700PT NATIONAL 12P-16C	
Nozzles 22x3 / 1/32"		30in @137m (137TVD)	868.7	Pump Size	6.5 X 12.in 6.5 X 12.in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	5.016 gal/stk 5.016 gal/stk
5 in	m	13.375in @742m (742TVD)	539.3	Pump stk/min	90@97% 90@97%
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate 903 gal/min	
5 in	129 m	in @1255m (1255TVD)	539.3	Bottoms Up	min 0 stk
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time	25.1 min 4515 stk
8 in	27 m	in @m (TVD)	885	Circulating Pressure	2300 psi

### MUD PROPERTIES

	Pit 3@15:00	Pit 3@04:30
Sample From		
Flow Line Temp °C		
Depth/TVD m	1662/1627	1662/1627
Mud Weight sp.gr.	1.27@30°C	1.27@30°C
Funnel Viscosity s/qt	90	84
Rheology Temp °C	49	49
R600/R300	70/53	70/52
R200/R100	45/34	43/33
R6/R3	12/11	12/10
PV cP	17	18
YP lb/100ft²	36	34
10s/10m/30m Gel lb/100ft²	18/50/51	11/36/38
API Fluid Loss cc/30 min	4	3.8
HTHP FL Temp cc/30 min		
Cake API/HTHP 1/32"	1/	1/
Solids %Vol	12	11
Oil/Water %Vol	/88	/89
Sand %Vol	TR	tr
MBT lb/bbl	12	12.5
pH	11.5	11.8
Alkal Mud (Pm)	3	1.2
Pf/Mf	0.6/2	0.45/3.8
Chlorides mg/l	47000	46000
Hardness Ca mg/l	640	1000
KCl % Wt	8	8
IDCAP ppb	3	3

### PRODUCTS USED LAST 24 HRS

Products	Size	Amt
DUO-VIS	25 KG BG	12
OS-1	25 KG BG	6
POLYPAC UL	25 KG BG	16
IDCAP D SHALE INHIBITOR	25 KG BG	20
MI BAR (Bulk)	1 MT BG	9

SOLIDS EQUIP	Size	Hr
VSM Shaker 1	2 x200, 2 x180	3
VSM Shaker 2	2 x200, 2 x165	3
VSM Shaker 3	2 x200, 2 x165	3
VSM Shaker 4	4 x200	3
Centrifuge		0
D-Filter		0

### MUD PROPERTY SPECIFICATIONS

Weight	1.26-1.28
Viscosity	50-70
Filtrate	< 5

### REMARKS AND TREATMENT

Dumped 105bbl cement contaminated mud from active and topped up with 220bbl premix from pits 1 & 5 to reduce cement contamination. Dumped returns during reverse out. Cleaned out Header Box.

### REMARKS

Circulated bottoms up and POH. RIH. Pumped hi vis pill and cement plug at 1265-1100m. Pulled out to 1040 m and reverse circulated. WOC. Meanwhile made up BHA etc.

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG (bbl)	SOLIDS ANALYSIS (%/lb/bbl)	MUD RHEOLOGY & HYDRAULICS
Rig Up/Service	5	Oil Added	0	np/na Values
Drilling		Water Added	200	kp/ka (lb·s <sup>2</sup> /n/100ft <sup>2</sup> )
Tripping	6	Mud Received	0	Bit Loss (psi / %)
Non-Productive Tim		Dumped	105	Bit HHP (hhp / HSI)
Condition Hole	1	Shakers	0	Bit Jet Vel (m/s)
Wait on Cement	9	Formation	0	Ann. Vel DP (m/s)
Cementing	3	Other	0	Ann. Vel DC (m/s)
		Desilter	0	Crit Vel DP (m/s)
				Crit Vel DC (m/s)
				Average SG
				3.47
				Carb/BiCarb (m mole/L)
				8.8/.1

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Jasdeep Singh Kelvin Leong	08-9302 3790		\$ 11,361.44	\$ 49,552.14

**WATER-BASED MUD REPORT No. 6**

<b>Date</b>	<b>26/05/2005</b>	<b>Depth/TVD</b>	<b>1662 m / 1627 m</b>
<b>Spud Date</b>	<b>20/05/2005</b>	<b>Mud Type</b>	<b>KCl/Polymer</b>
<b>Water Depth</b>	<b>71</b>	<b>Activity</b>	<b>Drilling</b>

**Operator :** Santos Ltd  
**Report For :** Chris Wise/ Jeff Thomson  
**Well Name :** Casino 4 DW  
**Contractor :** Diamond Offshore  
**Report For :** Ray Breaud/Mike Praznik

**Field/Area :** Vic P 44  
**Description :** Gas Producer  
**Location :** Otway Basin  
**M-I Well No. :**

DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA	
Bit Size	12.25 in Hughes Tricone	Surface	Hole	Pump Make	OILWELL 1700PT NATIONAL 12P-16C
Nozzles	22x3 / 1/32"	30in @137m (137TVD)	830.1(Tot)/583.3(Bit)	Pump Size	6.5 X 12.in 6.5 X 12.in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	5.016 gal/stk 5.016 gal/stk
5 in	899 m	13.375in @742m (742TVD)	559.9	Pump stk/min	90@97% 90@97%
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	903 gal/min
5 in	194 m	in @1255m (1255TVD)	1143.2	Bottoms Up	24.4 min 4387 stk
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time	53.2 min 9571 stk
8 in	53 m	in @m (TVD)	885	Circulating Pressure	2300 psi

**MUD PROPERTIES**

	Pit 3@21:30	Pit 3@07:30
Sample From		
Flow Line Temp	°C	35
Depth/TVD	m	1133/1133 1662/1627
Mud Weight	sp.gr.	1.27@35°C 1.27@30°C
Funnel Viscosity	s/qt	68 62
Rheology Temp	°C	49 49
R600/R300		78/60 72/53
R200/R100		52/39 45/34
R6/R3		16/14 12/10
PV	cP	18 19
YP	lb/100ft²	42 34
10s/10m/30m Gel	lb/100ft²	15/32/33 10/16/18
API Fluid Loss	cc/30 min	4.4 3.6
HTHP FL Temp	cc/30 min	
Cake API/HTHP	1/32"	1/ 1/
Solids	%Vol	12 12
Oil/Water	%Vol	/88 /88
Sand	%Vol	tr
MBT	lb/bbl	12 10
pH		11 10.1
Alkal Mud (Pm)		2.9 1.7
Pf/Mf		0.45/3.15 0.3/2.9
Chlorides	mg/l	46000 45000
Hardness Ca	mg/l	800 800
KCl	% Wt	8 8
IDCAP	ppb	3 3

**PRODUCTS USED LAST 24 HRS**

Products	Size	Amt
CITRIC ACID	25 KG BG	30
DUO-VIS	25 KG BG	6
SODIUM Bicarbonate	25 KG BG	29

**SOLIDS EQUIP**

SOLIDS EQUIP	Size	Hr
VSM Shaker 1	1x200, 3 x180	10
VSM Shaker 2	2 x200, 2 x165	10
VSM Shaker 3	2 x200, 2 x165	10
VSM Shaker 4	2 x200, 2x180	10
Centrifuge		0
D-Silter		0

**MUD PROPERTY SPECIFICATIONS**

Weight	1.26-1.28
Viscosity	50-70
Filtrate	< 5

**REMARKS AND TREATMENT**

Added citric acid and sodium bicarbonate to condition active mud while circulating riser volume. Further added Citric/Bicarb while drilling cement. Used 4 x 180 mesh screens.

**REMARKS**

WOC. RIH with motor and circulated. Tagged soft cement @ 1082 m/hard cement @ 1145 m. Drilled cement to 1146 m and kicked off.

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG (bbl)	SOLIDS ANALYSIS (%/lb/bbl)	MUD RHEOLOGY & HYDRAULICS
Rig Up/Service	5.5	Oil Added	0	np/na Values
Drilling	5	Water Added	0	kp/ka (lb*s^n/100ft²)
Tripping	12	Mud Received	0	Bit Loss (psi / %)
Non-Productive Tim		Dumped	0	Bit HHP (hbp / HSI)
Condition Hole	1.5	Shakers	23	Bit Jet Vel (m/s)
Wait on Cement		Formation	0	Ann. Vel DP (m/s)
Cementing		Other	0	Ann. Vel DC (m/s)
		Desilter	0	Crit Vel DP (m/s)
				Crit Vel DC (m/s)
				ECD @ 1146 (sp.gr.)

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Jasdeep Singh Kelvin Leong	08-9302 3790		\$ 2,774.26	\$ 52,326.40



# WATER-BASED MUD REPORT No. 1

<b>Date</b>	<b>27/05/2005</b>	<b>Depth/TVD</b>	<b>1182 m / 1182 m</b>
<b>Spud Date</b>	<b>27/05/2005</b>	<b>Mud Type</b>	<b>KCl/Polymer</b>
<b>Water Depth</b>	<b>71</b>	<b>Activity</b>	<b>Drilling</b>

<p><b>Operator :</b> Santos Ltd  <b>Report For :</b> Chris Wise/Jeff Thomson  <b>Well Name :</b> Casino 4 DW2  <b>Contractor :</b> Diamond Offshore  <b>Report For :</b> Ray Breaud/Mike Praznik</p>	<p><b>Field/Area :</b> Vic P44  <b>Description :</b> Gas Producer  <b>Location :</b> Otway Basin  <b>M-I Well No. :</b></p>
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DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA	
Bit Size	12.25 in Security XL 120	Surface	Hole	Pump Make	OILWELL 1700PT NATIONAL 12P-16C
Nozzles	3x22 / 1/32"		599.4	Pump Size	6 X 12.in 6.5 X 12.in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	4.274 gal/stk 5.016 gal/stk
5 in	933 m		479.6	Pump stk/min	81@97% 92@97%
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	
5 in	194 m		1079	808 gal/min	
Drill Collar Size	Length	Production or Liner	In Storage	Bottoms Up	28 min 4839 stk
8 in	55 m		920	Total Circ Time	56.1 min 9703 stk
				Circulating Pressure	2460 psi

### MUD PROPERTIES

Sample From	lowline@22.0	Pit 3@08:30	
Flow Line Temp	°C	34	47
Depth/TVD	m	1167/1167	1160/1156
Mud Weight	sp.gr.	1.27@32°C	1.26@40°C
Funnel Viscosity	s/qt	60	54
Rheology Temp	°C	49	49
R600/R300		69/53	76/59
R200/R100		46/36	50/39
R6/R3		14/10	15/12
PV	cP	16	17
YP	lb/100ft <sup>2</sup>	37	42
10s/10m/30m Gel	lb/100ft <sup>2</sup>	12/20/21	13/19/21
API Fluid Loss	cc/30 min	4.2	4.2
HTHP FL Temp	cc/30 min		
Cake API/HTHP	1/32"	1/	1/
Solids	%Vol	13	11
Oil/Water	%Vol	/87	/89
Sand	%Vol	tr	tr
MBT	lb/bbl	10	10
pH		10.8	10.8
Alkal Mud (Pm)		1.8	1.4
Pf/Mf		0.3/3.2	0.3/3.5
Chlorides	mg/l	46000	45000
Hardness Ca	mg/l	920	920
KCl	%	7.9	7.5
IDCAP	ppb	3.0	2.94
LSRV 0.3rpm			

### PRODUCTS USED LAST 24 HRS

Products	Size	Amt
CITRIC ACID	25 KG BG	4
DUO-VIS	25 KG BG	7
SODIUM BICARBONATE	25 KG BG	4
IDCAP D	25 KG BG	17
MI BAR (Bulk)	1 MT BG	5

### SOLIDS EQUIP

Size	Hr
VSM Shaker 1	0
VSM Shaker 2	0
VSM Shaker 3	0
VSM Shaker 4	0
Centrifuge	0
D-Silter	0

### MUD PROPERTY SPECIFICATIONS

Weight	10.5
Viscosity	6rpm > 16
Filtrate	<5

### REMARKS AND TREATMENT

Dumped 100bbl mud from active pit along with 30 bbl DW sweep to reduce cement affected mud. Treated mud with citric acid, sodium bicarbonate, DUOVIS and IDCAP to address cement, viscosity and emulsification.

### REMARKS

30 bbl DW was pumped to clear up the bit. This was dumped on return to the surface. Slide drilled to maximise kickoff angle. POH. Picked up BHA. RIH. Slip and cut line. RIH to 1157m and continued sliding to 1182m.  
 NOTE: Cumulative Well cost restarts for this well. Previous well costs are not carried forward on daily report.

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG (bbl)	SOLIDS ANALYSIS (%/lb/bbl)	MUD RHEOLOGY & HYDRAULICS
Rig Up/Service	3	Oil Added	0	np/na Values
Drilling	11.5	Water Added	52	kp/ka (lb*s^n/100ft <sup>2</sup> )
Tripping	9.5	Mud Received	2036	Bit Loss (psi / %)
Non-Productive Tim		Dumped	100	Bit HHP (hhp / HSI)
		Shakers	0	Bit Jet Vel (m/s)
		Evaporation	0	Ann. Vel DP (m/s)
		Centrifuge	0	Ann. Vel DC (m/s)
		Formation	0	Crit Vel DP (m/s)
		Left in Hole	0	Crit Vel DC (m/s)
		Other	0	ECD @ 1182 (sp.gr.)

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Gordon Howie Kelvin Leong (08) 9302 3790			\$ 7,027.13	\$ 7,027.13







# WATER-BASED MUD REPORT No. 3

Date	29/05/2005	Depth/TVD	1763 m / 1662 m
Spud Date	27/05/2005	Mud Type	KCl/Polymer
Water Depth	71	Activity	Drilling

**Operator :** Santos Ltd  
**Report For :** Chris Wise/Jeff Thomson  
**Well Name :** Casino 4 DW2  
**Contractor :** Diamond Offshore  
**Report For :** Ray Breaud/Mike Praznik

**Field/Area :** Vic P44  
**Description :** Gas Producer  
**Location :** Otway Basin  
**M-I Well No. :**

DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA		
Bit Size	12.25 in Security FS2663	Surface	Hole	Pump Make	OILWELL 1700PT	NATIONAL 12P-16C
Nozzles	9x16 / 1/32"		869.2	Pump Size	6 X 12.in	6.5 X 12.in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	4.274 gal/stk	5.016 gal/stk
5 in	1542 m		516.8	Pump stk/min	104@97%	
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	916 gal/min	
5 in	194 m		1386	Bottoms Up	35.4 min	7019 stk
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time	63.6 min	12583 stk
in	m		140	Circulating Pressure	3100 psi	

MUD PROPERTIES			
Sample From		lowline@22.0	lowline@15:0
Flow Line Temp	°C	53	52
Depth/TVD	m	1735/1650	1589/1560
Mud Weight	sp.gr.	1.29@50°C	1.29@48°C
Funnel Viscosity	s/qt	54	57
Rheology Temp	°C	49	49
R600/R300		74/56	76/58
R200/R100		47/37	51/39
R6/R3		15/11	16/12
PV	cP	18	18
YP	lb/100ft²	38	40
10s/10m/30m Gel	lb/100ft²	13/20/25	13/21/26
API Fluid Loss	cc/30 min	4.2	4.2
HTHP FL Temp	cc/30 min		
Cake API/HTHP	1/32"	1/	1/
Solids	%Vol	14	14
Oil/Water	%Vol	/86	/86
Sand	%Vol	0.25	tr
MBT	lb/bbl	12.5	12.5
pH		8.9	9.0
Alkal Mud (Pm)		0.5	0.5
Pf/Mf		0.1/3.3	0.1/3.3
Chlorides	mg/l	47000	47000
Hardness Ca	mg/l	1200	1280
KCl	%	8	8
IDCAP	ppb	3	3
LSRV 0.3rpm			

PRODUCTS USED LAST 24 HRS		
Products	Size	Amt
DUO-VIS	25 KG BG	5
IDCAP D	25 KG BG	5
MI BAR (Bulk)	1 MT BG	1

SOLIDS EQUIP	Size	Hr
VSM Shaker 1	4x200	24
VSM Shaker 2	4x200	24
VSM Shaker 3	4x200	24
VSM Shaker 4	2x200, 2x180	24
Centrifuge		0
D-Silter		0

MUD PROPERTY SPECIFICATIONS		
Weight	10.5	
Viscosity	6rpm > 16	
Filtrate	<5	

**REMARKS AND TREATMENT**  
Treated mud with DUOVIS and IDCAP to maintain properties. Screened up shakers to maintain mud weight at 10.8ppg.  
Used 7 new 180 mesh screens.  
Received 1050 bbl KCl/NaCl brine from Pacific Wrangler

**REMARKS**  
Washed down the last two stands and drilled ahead at 35m/hr to 1763m.  
Dumped 195 bbls unpumpable from pits to prepare for receiving KCl/NaCl brine.  
Received 1050 bbl KCl/NaCl brine from Pacific Wrangler

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG (bbl)	SOLIDS ANALYSIS (%/lb/bbl)	MUD RHEOLOGY & HYDRAULICS
Rig Up/Service		Oil Added	NaCl	np/na Values
Drilling	23	Water Added	KCl	kp/ka (lb*s^n/100ft²)
Tripping		Mud Received	Low Gravity	Bit Loss (psi / %)
Non-Productive Tim		Dumped	Bentonite	Bit HHP (hhp / HSI)
Condition Hole		Shakers	Drill Solids	Bit Jet Vel (m/s)
Reaming	1	Evaporation	Weight Material	Ann. Vel DP (m/s)
		Centrifuge	Chemical Conc	Ann. Vel DC (m/s)
		Formation	Inert/React	Crit Vel DP (m/s)
		Left in Hole	Average SG	Crit Vel DC (m/s)
		Other	Carb/BiCarb (m mole/L)	ECD @ 1763 (sp.gr.)

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Gordon Howie Kelvin Leong (08) 9302 3790			\$ 2,569.85	\$ 10,549.50





# WATER-BASED MUD REPORT No. 4

<b>Date</b>	<b>30/05/2005</b>	<b>Depth/TVD</b>	<b>1998 m / 1743 m</b>
<b>Spud Date</b>	<b>27/05/2005</b>	<b>Mud Type</b>	<b>KCl/Polymer</b>
<b>Water Depth</b>	<b>71</b>	<b>Activity</b>	<b>Backream out of hole</b>

<b>Operator :</b> Santos Ltd <b>Report For :</b> Chris Wise/Jeff Thomson <b>Well Name :</b> Casino 4 DW2 <b>Contractor :</b> Diamond Offshore <b>Report For :</b> Ray Breaud/Mike Praznik	<b>Field/Area :</b> Vic P44 <b>Description :</b> Gas Producer <b>Location :</b> Otway Basin <b>M-I Well No. :</b>
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DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA	
Bit Size 12.25 in Security FS2663		Surface	Hole	Pump Make OILWELL 1700PT	NATIONAL 12P-16C
Nozzles 9x16 / 1/32"		30in @137m (137TVD)	976.6	Pump Size 6 X 12.in	6.5 X 12.in
Drill Pipe Size Length	Intermediate	Active Pits	562.4	Pump Cap 4.274 gal/stk	5.016 gal/stk
5 in 1777 m	13.375in @742m (742TVD)			Pump stk/min 102@97%	
Drill Pipe Size Length	Intermediate	Total Circulating Vol		Flow Rate	938 gal/min
5 in 194 m		1539		Bottoms Up	38.8 min 7840 stk
Drill Collar Size Length	Production or Liner	In Storage		Total Circ Time	68.9 min 13920 stk
in m		101		Circulating Pressure	3508 psi

### MUD PROPERTIES

	Pit 3@21.00	Pit 3@05:00
Sample From		
Flow Line Temp °C	55	50
Depth/TVD m	1998/1743	1810/1679
Mud Weight sp.gr.	1.29@48°C	1.28@38°C
Funnel Viscosity s/qt	54	69
Rheology Temp °C	49	49
R600/R300	74/54	83/63
R200/R100	46/35	52/39
R6/R3	14/11	16/13
PV cP	20	20
YP lb/100ft²	34	43
10s/10m/30m Gel lb/100ft²	14/27/29	13/26/33
API Fluid Loss cc/30 min	4.6	4.6
HTHP FL Temp cc/30 min		
Cake API/HTHP 1/32"	1/	1/
Solids %Vol	14	14
Oil/Water %Vol	/86	/86
Sand %Vol	tr	tr
MBT lb/bbl	12.5	12.5
pH	8.6	8.5
Alkal Mud (Pm)	0.15	0.15
Pf/Mf	0.05/2.5	0.05/2.6
Chlorides mg/l	46000	46000
Hardness Ca mg/l	1160	1160
KCl %	8	8
IDCAP ppb	3	3
LSRV 0.3rpm		

### PRODUCTS USED LAST 24 HRS

Products	Size	Amt
CAUSTIC SODA	25 KG DM	3
DEFOAM A	5 GA CN	1
DUO-VIS	25 KG BG	9
POLYPAC UL	25 KG BG	10
IDCAP D	25 KG BG	6
POTASSIUM HYDROXIDE	25 KG CN	2
MI BAR (Bulk)	1 MT BG	3

SOLIDS EQUIP	Size	Hr
VSM Shaker 1	4x200	24
VSM Shaker 2	4x200	18
VSM Shaker 3	4x200	24
VSM Shaker 4	4x200	24
Centrifuge		0
D-Silter		0

### MUD PROPERTY SPECIFICATIONS

Weight	1.23-1.28
Viscosity	6rpm>16
Filtrate	<5

### REMARKS AND TREATMENT

Treated active system with DUOVIS and IDCAP to maintain properties. Also added GLUTE to treat the system before POH. Continued to bleed in premix to replace volume used in open hole. Bleed in premixes to maintain active volume and to level out weight after heavy sweep pumped.

### REMARKS

Lower IBOP valve on top drive backed out during connection. Reconnected and drilled ahead to TD of 1998m. TVD 1743m. Circulate hole clean. Pump hi vis weighted sweep, 65 bbls @ 12 ppg to assist with hole cleaning. POH as per Santos instructions. Back reaming required to get out of hole. Started to mix Flo-Pro mud for next section. Will charge for chemicals at start of 8.5" hole section

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG (bbl)	SOLIDS ANALYSIS (%/lb/bbl)	MUD RHEOLOGY & HYDRAULICS
Rig Up/Service	2.5	Oil Added 0	NaCl 2.1/ 23.4	np/na Values 0.455/0.330
Drilling	13	Water Added 242	KCl .	kp/ka (lb*s^n/100ft²) 3.384/6.850
Tripping		Mud Received 0	Low Gravity 8.5/ 77.	Bit Loss (psi / %) 279 / 1
Non-Productive Tim		Dumped 0	Bentonite .6/ 5.1	Bit HHP (hhp / HSI) 153 / 1
Condition Hole	3	Shakers 136	Drill Solids 7.4/ 66.9	Bit Jet Vel (m/s) 52
Reaming	5.5	Evaporation 0	Weight Material 3.5/ 51.	Ann. Vel DP (m/s) .93
		Centrifuge 0	Chemical Conc - / 5.	Ann. Vel DC (m/s) 1.36
		Formation 0	Inert/React 4.7576	Crit Vel DP (m/s) 2
		Left in Hole 0	Average SG 3.07	Crit Vel DC (m/s) 2
		Other 0	Carb/BiCarb (m mole/L) 1./ 12.5	ECD @ 1998 (sp.gr.) 1.33

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Gordon Howie Kelvin Leong (08) 9302 3790			\$ 5,341.31	\$ 15,890.81



# WATER-BASED MUD REPORT No. 5

<b>Date</b>	31/05/2005	<b>Depth/TVD</b>	1998 m / 1743 m
<b>Spud Date</b>	27/05/2005	<b>Mud Type</b>	KCl/Polymer
<b>Water Depth</b>	71	<b>Activity</b>	POH to Run Csg.

**Operator :** Santos Ltd  
**Report For :** Ron King/Jeff Thomson  
**Well Name :** Casino 4 DW2  
**Contractor :** Diamond Offshore  
**Report For :** Ray Breaud/Mike Praznik

**Field/Area :** Vic P44  
**Description :** Gas Producer  
**Location :** Otway Basin  
**M-I Well No. :**

DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA	
Bit Size	12.25 in Security FS2663	Surface	Hole	Pump Make	OILWELL 1700PT NATIONAL 12P-16C
Nozzles	9x16 / 1/32"	30in @137m (137TVD)	1029.4	Pump Size	6 X 12.in 6.5 X 12.in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	gal/stk gal/stk
5 in	m	13.375in @742m (742TVD)	535.6	Pump stk/min	
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	gal/min
5 in	194 m		535.6	Bottoms Up	
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time	
in	m		89	Circulating Pressure	

MUD PROPERTIES				PRODUCTS USED LAST 24 HRS		
Sample From		lowline@13.3	Pit 3@04:30	Products	Size	Amt
Flow Line Temp	°C	48	53	DEFOAM A	5 GA CN	1
Depth/TVD	m	1998/1743	1998/1743	DUO-VIS	25 KG BG	5
Mud Weight	sp.gr.	1.3@40°C	1.29@30°C	POLYPAC UL	25 KG BG	5
Funnel Viscosity	s/qt	53	52	POTASSIUM HYDROXIDE	25 KG CN	1
Rheology Temp	°C	49	49	MI BAR (Bulk)	1 MT BG	1
R600/R300		71/53	64/47			
R200/R100		44/33	39/30			
R6/R3		14/11	13/10			
PV	cP	18	17			
YP	lb/100ft <sup>2</sup>	35	30			
10s/10m/30m Gel	lb/100ft <sup>2</sup>	13/25/35	10/27/36			
API Fluid Loss	cc/30 min	4.8	4.8			
HTHP FL Temp	cc/30 min					
Cake API/HTHP	1/32"	1/	1/			
Solids	%Vol	14	13			
Oil/Water	%Vol	/86	/87			
Sand	%Vol	tr	tr			
MBT	lb/bbl	15	15			
pH		8.5	8.6			
Alkal Mud (Pm)		0.1	0.1			
Pf/Mf		0.05/2.5	0.05/2.5			
Chlorides	mg/l	44000	44000			
Hardness Ca	mg/l	840	1000			
KCl	%	8	8			
IDCAP	ppb	3	3			
LSRV 0.3rpm						

SOLIDS EQUIP	Size	Hr
VSM Shaker 1	4x200	24
VSM Shaker 2	4x200	6
VSM Shaker 3	4x200	24
VSM Shaker 4	4x200	24
Centrifuge		0
D-Silter		0

MUD PROPERTY SPECIFICATIONS		
Weight	1.23-1.28	
Viscosity	6rpm>16	
Filtrate	<5	

REMARKS AND TREATMENT	REMARKS
Maintained hole cleaning properties by adding DUOVIS. Slow transfer of premix from pit 1 into active to maintain surface volume, control weight increase and keep good programmed properties.	Back reaming out of hole to 965m. RIH for wiper trip. Circulate bottoms up at 1998m. Flow check and POH.

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG (bbl)	SOLIDS ANALYSIS (%/lb/bbl)	MUD RHEOLOGY & HYDRAULICS
Rig Up/Service		Oil Added	0	np/na Values
Drilling		Water Added	101	kp/ka (lb*s^n/100ft <sup>2</sup> )
Tripping	9	Mud Received	0	Bit Loss (psi / %)
Non-Productive Tim		Dumped	0	Bit HHP (hhp / HSI)
Condition Hole	2.5	Shakers	90	Bit Jet Vel (m/s)
Reaming	12.5	Evaporation	0	Ann. Vel DP (m/s)
		Centrifuge	0	Ann. Vel DC (m/s)
		Formation	0	Crit Vel DP (m/s)
		Left in Hole	0	Crit Vel DC (m/s)
		Other	0	
			Average SG	
			Carb/BiCarb (m mole/L)	

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Gordon Howie Kelvin Leong (08) 9302 3790			\$ 1,952.37	\$ 17,843.18





**WATER-BASED MUD REPORT No. 7**

<b>Date</b>	<b>2/06/2005</b>	<b>Depth/TVD</b>	<b>1991 m / 1743 m</b>
<b>Spud Date</b>	<b>27/05/2005</b>	<b>Mud Type</b>	<b>KCl / Polymer</b>
<b>Water Depth</b>	<b>71</b>	<b>Activity</b>	<b>Drilling Cement</b>

**Operator :** Santos Ltd  
**Report For :** Ron King/Jeff Thomson  
**Well Name :** Casino 4 DW2  
**Contractor :** Diamond Offshore  
**Report For :** Ray Breaud/Mike Praznik

**Field/Area :** Vic P44  
**Description :** Gas Producer  
**Location :** Otway Basin  
**M-I Well No. :**

DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA	
Bit Size	8.5 in DBS-FMF 3553	Surface	Hole	Pump Make	OILWELL 1700PT NATIONAL 12P-16C
Nozzles	5x16 / 1/32"	30in @137m (137TVD)	463.3(Tot)/458(Bit)	Pump Size	6 X 12.in 6.5 X 12.in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	4.274 gal/stk 5.016 gal/stk
5 in	1829 m	13.375in @742m (742TVD)	462.7	Pump stk/min	71@97% 64@97%
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	624 gal/min
5 in	111 m	9.625in @1990m (1741TVD)	920.7	Bottoms Up	27 min 3649 stk
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time	62 min 8366 stk
6.75 in	29 m		1	Circulating Pressure	2730 psi

MUD PROPERTIES			
Sample From	Active@22.00	FloPro@08:00	
Flow Line Temp	°C		
Depth/TVD	m	1969/	
Mud Weight	sp.gr.	1.28	1.26@30°C
Funnel Viscosity	s/qt	55	56
Rheology Temp	°C	49	49
R600/R300		74/54	47/35
R200/R100		45/35	29/22
R6/R3		14/11	9/7
PV	cP	20	12
YP	lb/100ft²	34	23
10s/10m/30m Gel	lb/100ft²	14/26/31	8/10/12
API Fluid Loss	cc/30 min	4.8	4.9
HTHP FL Temp	cc/30 min		
Cake API/HTHP	1/32"	1/	>1/
Solids	%Vol	14	14
Oil/Water	%Vol	/86	/86
Sand	%Vol	tr	tr
MBT	lb/bbl	15	>5
pH		9.2	8.9
Alkal Mud (Pm)			1.1
Pf/Mf			0.05/0.4
Chlorides	mg/l	44000	127000
Hardness Ca	mg/l		1400
KCl	%	8	6.5
IDCAP	ppb		
LSRV 0.3rpm			15000

PRODUCTS USED LAST 24 HRS		
Products	Size	Amt
DUO-VIS	25 KG BG	2

SOLIDS EQUIP	Size	Hr
VSM Shaker 1	105,140,2x165	0
VSM Shaker 2	2x110, 2x105	0
VSM Shaker 3	4 x 84	0
VSM Shaker 4	4 x 120	0
Centrifuge		0
D-Silter		0

MUD PROPERTY SPECIFICATIONS	
Weight	1.26
Viscosity	LSR 50-70K
Filtrate	<5

**REMARKS AND TREATMENT**  
Mixed Hi-vis pill with Fluorsceine dye in slug pit for spacer for displacement.  
Mixed up another 650 bbl FloPro mud.  
Changed down to coarse shaker screens.

**REMARKS**  
Pulled out with cementing assembly. Made up 8-1/2" BHA. RIH. Tagged cement at 1960 m. Drilled cement and rethole to 1998 m. Pumped 30 bbl hi-vis spacer.

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG (bbl)	SOLIDS ANALYSIS (%/lb/bbl)	MUD RHEOLOGY & HYDRAULICS
Rig Up/Service	5.5	Oil Added	0	np/na Values
Drilling	6	Water Added	0	kp/ka (lb*s^n/100ft²)
Tripping	12	Mud Received	0	Bit Loss (psi / %)
Non-Productive Tim		Dumped	41	Bit HHP (hbp / HSI)
Condition Hole	0.5	Shakers	0	Bit Jet Vel (m/s)
Running Casing		Evaporation	0	Ann. Vel DP (m/s)
Testing		Centrifuge	0	Ann. Vel DC (m/s)
		Formation	0	Crit Vel DP (m/s)
		Left in Hole	0	Crit Vel DC (m/s)
		Other	0	ECD @ 1969 (sp.gr.)
			0	
			0	
			0	
			0	
			0	
			0	
			0	

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Gordon Howie			\$ 454.00	\$ 18,297.18
Kelvin Leong	(08) 9302 3790			





## WATER-BASED MUD REPORT No. 9

<b>Date</b>	<b>4/06/2005</b>	<b>Depth/TVD</b>	<b>2404 m / 1787 m</b>
<b>Spud Date</b>	<b>27/05/2005</b>	<b>Mud Type</b>	<b>Flo Pro</b>
<b>Water Depth</b>	<b>71</b>	<b>Activity</b>	<b>Run Prod. Screen</b>

<b>Operator :</b> Santos Ltd <b>Report For :</b> Ron King/Jeff Thomson <b>Well Name :</b> Casino 4 DW2 <b>Contractor :</b> Diamond Offshore <b>Report For :</b> Ray Breaud/Mike Praznik	<b>Field/Area :</b> Vic P44 <b>Description :</b> Gas Producer <b>Location :</b> Otway Basin <b>M-I Well No. :</b>
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DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA	
Bit Size	8.5 in	Surface	Hole	Pump Make	OILWELL 1700PT NATIONAL 12P-16C
Nozzles	1/32"	30in @137m (137TVD)	660.8	Pump Size	6 X 12.in 6.5 X 12.in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	gal/stk gal/stk
5 in	m	13.375in @742m (742TVD)	431.2	Pump stk/min	
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate gal/min	
5 in	m	9.625in @1990m (1741TVD)	431.2	Bottoms Up	
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time	
6.75 in	m		1252	Circulating Pressure	

MUD PROPERTIES			PRODUCTS USED LAST 24 HRS		
Sample From	Pit #3@20.00		Products	Size	Amt
Flow Line Temp	°C		FLO-VIS PLUS	25 KG BG	6
Depth/TVD	m	2404/1787	OMYA CARB 8	25 KG BG	104
Mud Weight	sp.gr.	1.28@35°C	BRINE CALCIUM CHLORIDE	1 BL BL	1023
Funnel Viscosity	s/qt	54			
Rheology Temp	°C	49			
R600/R300		73/56			
R200/R100		49/39			
R6/R3		16/13			
PV	cP	17			
YP	lb/100ft²	39			
10s/10m/30m Gel	lb/100ft²	13/17/			
API Fluid Loss	cc/30 min	3.8			
HTHP FL Temp	cc/30 min				
Cake API/HTHP	1/32"	1/			
Solids	%Vol	15			
Oil/Water	%Vol	/85			
Sand	%Vol	0.25			
MBT	lb/bbl	<5			
pH		9.7			
Alkal Mud (Pm)		1.4			
Pf/Mf		0.1/0.4			
Chlorides	mg/l	120000			
Hardness Ca	mg/l	280			
KCl	%	6			
IDCAP	ppb				
LSRV 0.3rpm		54323			

SOLIDS EQUIP	Size	Hr
VSM Shaker 1	4 x 200	8
VSM Shaker 2	4 x 230	8
VSM Shaker 3	4 x 200	8
VSM Shaker 4	4 x 200	8
Centrifuge		0
D-Silter		6

### MUD PROPERTY SPECIFICATIONS

Weight	1.26
Viscosity	LSR 50-70K
Filtrate	<5

### REMARKS AND TREATMENT

Made up 200 bbl hi vis FloPro premix in pit 2.  
Screened up shakers and ran desilter and desander to assist in controlling mud density

### REMARKS

Drilled ahead to TD of 2404 m. Back reamed to shoe. Trip in to 2404m. Circulated hole clean. POH to run screens.  
Received 1023 bbls CaCl2 brine off Far Grip at 9.9ppg. Appears water in boat tanks from excess volume and reduced weight. Can weight up with CaCl2 sacks on board.

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG (bbl)	SOLIDS ANALYSIS (%/lb/bbl)	MUD RHEOLOGY & HYDRAULICS
Rig Up/Service	6	Oil Added	0	np/na Values
Drilling	3.5	Water Added	0	kp/ka (lb*s^n/100ft²)
Tripping	12.5	Mud Received	0	Bit Loss (psi / %)
Non-Productive Tim		Dumped	279	Bit HHP (hhp / HSI)
Condition Hole	2	Shakers	0	Bit Jet Vel (m/s)
Running Casing		Evaporation	0	Ann. Vel DP (m/s)
Testing		Centrifuge	0	Ann. Vel DC (m/s)
		Formation	0	Crit Vel DP (m/s)
		Left in Hole	0	Crit Vel DC (m/s)
		Other	0	
			Average SG	2.84
			Carb/BiCarb (m mole/L)	1.9/ 1.9

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Gordon Howie Kelvin Leong	(08) 9302 3790		\$ 31,283.28	\$ 133,739.86





## WATER-BASED MUD REPORT No. 10

Date	5/06/2005	Depth/TVD	2404 m / 1787 m
Spud Date	27/05/2005	Mud Type	FloPro
Water Depth	71	Activity	Testing BOP

**Operator :** Santos Ltd  
**Report For :** Ron King/Jeff Thomson  
**Well Name :** Casino 4 DW2  
**Contractor :** Diamond Offshore  
**Report For :** Ray Breaud/Mike Praznik

**Field/Area :** Vic P44  
**Description :** Gas Producer  
**Location :** Otway Basin  
**M-I Well No. :**

DRILLING ASSEMBLY		CASING	MUD VOLUME (bbl)	CIRCULATION DATA	
Bit Size	8.5 in	Surface	Hole	Pump Make	OILWELL 1700PT NATIONAL 12P-160
Nozzles	1/32"	30in @137m (137TVD)	660.8	Pump Size	6 X 12.in 6.5 X 12.in
Drill Pipe Size	Length	Intermediate	Active Pits	Pump Cap	gal/stk gal/stk
5 in	m	13.375in @742m (742TVD)	611.2	Pump stk/min	
Drill Pipe Size	Length	Intermediate	Total Circulating Vol	Flow Rate	gal/min
5 in	m	9.625in @1990m (1741TVD)	611.2	Bottoms Up	
Drill Collar Size	Length	Production or Liner	In Storage	Total Circ Time	
6.75 in	m		1076	Circulating Pressure	

MUD PROPERTIES		
Sample From		Pit 3@21.00
Flow Line Temp	°C	
Depth/TVD	m	2404/1741
Mud Weight	sp.gr.	1.28@30°C
Funnel Viscosity	s/qt	54
Rheology Temp	°C	49
R600/R300		71/54
R200/R100		42/33
R6/R3		15/12
PV	cP	17
YP	lb/100ft <sup>2</sup>	37
10s/10m/30m Gel	lb/100ft <sup>2</sup>	13/17/
API Fluid Loss	cc/30 min	3.8
HTHP FL Temp	cc/30 min	
Cake API/HTHP	1/32"	1/
Solids	%Vol	15
Oil/Water	%Vol	.85
Sand	%Vol	.25
MBT	lb/bbl	<5
pH		9.7
Alkal Mud (Pm)		1.4
Pf/Mf		.1/4
Chlorides	mg/l	120000
Hardness Ca	mg/l	280
KCl	%	6
IDCAP	ppb	
LSRV 0.3rpm		52560

PRODUCTS USED LAST 24 HRS		
Products	Size	Amt
OMYA CARB 8	25 KG BG	72

SOLIDS EQUIP	Size	Hr
VSM Shaker 1	4 x 200	0
VSM Shaker 2	4 x 230	0
VSM Shaker 3	4 x 200	0
VSM Shaker 4	4 x 200	0
Centrifuge		0
D-Silter		0

MUD PROPERTY SPECIFICATIONS	
Weight	1.26
Viscosity	LSR 50-70K
Filtrate	<5

**REMARKS AND TREATMENT**  
 Used Omyacarb 8 to weight up slug to POOH.  
 Added Dirt magnet (2%) to brine and weighting up with all available CaCl2 sacks. Using additional Flossy salt to increase brine density to 10.2 ppg.

**REMARKS**  
 Daily cost adjustment made for 1023 bbls CaCl brine of \$27621.00. Continued to rig up to displace to brine.

TIME DISTR	Last 24 Hrs	MUD VOL ACCTG (bbl)	SOLIDS ANALYSIS (%/lb/bbl)	MUD RHEOLOGY & HYDRAULICS
Rig Up/Service	1	Oil Added 0	NaCl 6.2/ 63.1	np/na Values
Drilling		Water Added 0	KCl /	kp/ka (lb*s^n/100ft <sup>2</sup> )
Tripping	8.5	Mud Received 0	Low Gravity 7.5/ 68.3	Bit Loss (psi / %)
Non-Productive Tim	2.5	Dumped 0	Bentonite /	Bit HHP (hhp / HSI)
Condition Hole		Shakers 0	Drill Solids 7.8/ 71.2	Bit Jet Vel (m/s)
Running Casing		Evaporation 0	Weight Material 1.4/ 19.9	Ann. Vel DP (m/s)
Testing	12	Centrifuge 0	Chemical Conc - / 5.	Ann. Vel DC (m/s)
		Formation 0	Inert/React -	Crit Vel DP (m/s)
		Left in Hole 0	Average SG 2.84	Crit Vel DC (m/s)
		Other 0	Carb/BiCarb (m mole/L) 1.9/ 1.9	

M-I ENGR / PHONE	RIG PHONE	WAREHOUSE PHONE	DAILY COST	CUMULATIVE COST
Gordon Howie Glen Sharpe			\$ 842.40	\$ 134,582.26

























## **SECTION 11: CASING & CEMENTING SUMMARY**

Well Name: **Casino-4**

Casing Type: <b>Surface Casing</b>	Originated By: <b>Pat King</b>	Checked By: <b>Ron King</b>	Date: <b>10 May 2005</b>
Hole Size: <b>17.50in</b>	Total Depth: <b>742.0m</b>	GL-RT: <b>0m</b>	Contractor: <b>Dowell Schlumberger</b>
PRE-FLUSH <b>0bbl @ 0ppg</b>	SPACER <b>20.0bbl @ 8.50ppg</b>		
Additives:	Additives:		
<b>CEMENT</b>	<b>ADDITIVES</b>	<b>%</b>	<b>Amount</b> <b>Units</b>
LEAD SLURRY: <b>846sx</b>			
Brand / Class: <b>ABC / G</b>	<b>D047 Antifoam</b>	<b>5</b>	<b>gal</b>
Slurry Yield: <b>2.23ft³/sx</b>	<b>D075 Extender</b>	<b>411</b>	<b>gal</b>
Mixwater Req't: <b>12.72gal/sx</b>			
Actual Slurry Pumped: <b>336.0bbl</b>			
Density: <b>12.50ppg</b>			
Cement Top (MD): <b>92.8m</b>			
TAIL SLURRY: <b>471sx</b>			
Brand / Class: <b>ABC / G</b>	<b>D047 Antifoam</b>	<b>2</b>	<b>gal</b>
Slurry Yield: <b>1.18ft³/sx</b>			
Mixwater Req't: <b>5.33gal/sx</b>			
Actual Slurry Pumped: <b>99.0bbl</b>			
Density: <b>15.80ppg</b>			
Cement Top (MD): <b>577.0m</b>			
<b>DISPLACEMENT</b>	<b>Fluid: Seawater @ 8.50ppg</b>		
Theoretical Displ.: <b>305.0bbl</b>	Bumped Plug with:	<b>3000psi</b>	
Actual Displ.: <b>299.0bbl @ 0gpm</b>	Pressure Tested To:	<b>3000psi</b>	
Displaced via: <b>Rig Pumps</b>	Bleed Back:	<b>0bbl</b>	
<b>ACTIVITY</b>	<b>Time/Date</b>	<b>Returns to Surface: 0bbl mud, 0bbl cmt</b>	
Start Running csg.	<b>19:30 9/5/05</b>	<b>Casing Action During Preflush : No Action Taken Cement : No Action Taken Displacement : No Action Taken</b>	
Casing On Bottom	<b>07:00 10/5/05</b>	<b>Top Up Job run: No 0sx of class</b>	
Start Circulation	<b>08:45</b>	<b>Wiper Plug Top: Yes</b>	
Start Pressure Test	<b>08:52</b>	<b>Wiper Plug Bottom: Yes</b>	
Pump Preflush		<b>Plug Set: Manufacturer: Dowell Schlumberger Type: Deep Sea Express</b>	
Start Mixing	<b>09:06</b>	<b>Centralizer Type: Centralizer Placement Depth: 721m, 708m, 697m</b>	
Finish Mixing	<b>10:20</b>		
Start Displacing	<b>10:20</b>		
Stop Displ./Bump	<b>10:44</b>		
Pressure Test			
<b>CASING AND EQUIPMENT DETAILS</b>			
<b>Stick Up</b>			
<b>89.58m</b>			
<b>No. Joints</b>	<b>OD</b>	<b>Wt</b>	<b>Grade</b>
<b>Comment</b>	<b>Thread</b>	<b>Length</b>	<b>From</b>
<b>To</b>			
<b>1</b>	<b>18.75in</b>	<b>0lbs/ft</b>	<b>18.75" Wellhead Housing</b>
<b>1</b>	<b>20.00in</b>	<b>0lbs/ft</b>	<b>20" x 13.375 Swage</b>
<b>51</b>	<b>13.38in</b>	<b>72lbs/ft</b>	<b>L80 Surface Casing</b>
<b>1</b>	<b>13.38in</b>	<b>72lbs/ft</b>	<b>L80 Float Collar Joint</b>
<b>1</b>	<b>13.38in</b>	<b>72lbs/ft</b>	<b>L80 Float Shoe Joint</b>
<b>Theoretical Bouyed wt. of casing:</b>	<b>0klb</b>	<b>Bradenhead Height above GL: 0m</b>	
<b>Casing wt. prior to landing csg:</b>	<b>0klb</b>	<b>Bradenhead Description / Length: / 0m</b>	
<b>Actual wt. of casing (last joint run-block wt):</b>	<b>0klb</b>	<b>Tubing Spool Size:</b>	
<b>Landing wt. (after cementing and pressure bleed off):</b>	<b>0klb</b>	<b>Setting Slips: 0klb</b>	
<b>Cementing Job Remarks:</b>			

**Well Name: Casino-4DW2**

Casing Type: <b>Intermediate Casing</b>	Originated By:	Checked By:	Date: <b>01 Jun 2005</b>					
Hole Size: <b>12.25in</b>	Total Depth: <b>1998.0m</b>	GL-RT: <b>0m</b>	Contractor: <b>Dowell</b>					
PRE-FLUSH <b>10.0bbl @ 8.34ppg</b>	SPACER <b>10.0bbl @ 8.34ppg</b>							
Additives: <b>(drill water)</b>	Additives: <b>(drill water)</b>							
<b>CEMENT</b>		<b>ADDITIVES</b>	% Amount Units					
LEAD SLURRY: <b>202sx</b>								
Brand / Class: <b>/ G</b>	<b>D047</b>	<b>2.5</b>	<b>Gallons</b>					
Slurry Yield: <b>2.23ft³/sx</b>	<b>D110</b>	<b>35.5</b>	<b>Gallons</b>					
Mixwater Req't: <b>12.58gal/sx</b>	<b>D075</b>	<b>86</b>	<b>Gallons</b>					
Actual Slurry Pumped: <b>80.0bbl</b>	<b>Gallons</b>							
Density: <b>12.50ppg</b>								
Cement Top (MD): <b>1491.0m</b>								
TAIL SLURRY: <b>218sx</b>								
Brand / Class: <b>/ G</b>	<b>D047</b>	<b>2.5</b>	<b>Gallons</b>					
Slurry Yield: <b>1.16ft³/sx</b>	<b>D110</b>	<b>7.5</b>	<b>Gallons</b>					
Mixwater Req't: <b>4.84gal/sx</b>	<b>D193 FLAC</b>	<b>74</b>	<b>Gallons</b>					
Actual Slurry Pumped: <b>43.0bbl</b>								
Density: <b>15.80ppg</b>								
Cement Top (MD): <b>1841.0m</b>								
<b>DISPLACEMENT</b>		Fluid: <b>Drilling Fluid @ 10.50ppg</b>						
Theoretical Displ.: <b>452.0bbl</b>	Bumped Plug with:	<b>500psi</b>						
Actual Displ.: <b>448.0bbl @ 0gpm</b>	Pressure Tested To:	<b>4000psi</b>						
Displaced via: <b>Drilling Fluid</b>	Bleed Back:	<b>0bbl</b>						
<b>ACTIVITY</b>	Time/Date	Returns to Surface: <b>0bbl mud, 0bbl cmt</b>						
Start Running csg.	<b>02:30</b>	Casing Action During Preflush : <b>No Action Taken</b> Cement : <b>No Action Taken</b> Displacement : <b>No Action Taken</b>						
Casing On Bottom	<b>17:30</b>	Top Up Job run: <b>No</b> <b>0sx</b> of class						
Start Circulation	<b>19:20</b>	Wiper Plug Top: <b>Yes</b>						
Start Pressure Test	<b>19:22</b>	Wiper Plug Bottom: <b>Yes</b>						
Pump Preflush	<b>19:29</b>	Plug Set: Manufacturer: <b>Dowell</b> Type: <b>Deep Sea Express</b>						
Start Mixing	<b>20:05</b>	Centralizer Type: Centralizer Placement Depth:						
Finish Mixing	<b>20:35</b>							
Start Displacing	<b>21:00</b>							
Stop Displ./Bump	<b>21:35</b>							
Pressure Test	<b>21:45-21:53</b>							
<b>CASING AND EQUIPMENT DETAILS</b>								
Stick Up							<b>79.21m</b>	
No. Joints	OD	Wt	Grade	Comment	Thread	Length	From	To
1	10.75in	55.5lbs/ft	L80	13" Csg hgr and pup	VamTop	13.34m	79.21m	92.55m
7	10.75in	55.5lbs/ft	L80		VamTop	83.20m	92.55m	175.75m
1	9.63in	47lbs/ft	L80	X-over 10.75" VamTop x 9.625" VamTop	VamTop	12.76m	175.75m	188.51m
114	9.63in	47lbs/ft	L80		VamTop	1353.94m	188.51m	1542.45m
1	9.63in	47lbs/ft	L80	X-over L-80 VamTop b x 13Cr KSB p	V/Top(B)xKSB(P)	11.81m	1542.45m	1554.26m
11	9.63in	47lbs/ft	13Cr 80		KSB	131.65m	1554.26m	1685.91m
1	9.63in	47lbs/ft	13Cr 80	X-over 13Cr KSB b x L-80 VamTop p	KSB(B) x V/Top(P)	11.95m	1685.91m	1697.86m
22	9.63in	47lbs/ft	L80		VamTop	255.61m	1697.86m	1953.47m
1	9.63in	47lbs/ft	L80	Float Collar X-O. Thread Lock	BTC x Vam-Top	12.28m	1953.47m	1965.75m
1	9.63in	47lbs/ft	L80	Intermediate Jt. Thread Lock	BTC	11.91m	1965.75m	1977.66m
1	9.63in	47lbs/ft	L80	Float Shoe Jt. Thread Lock.	BTC	12.42m	1977.66m	1990.08m
Theoretical Bouyed wt. of casing:				<b>141.0klb</b>	Bradenhead Height above GL: <b>0m</b>			
Casing wt. prior to landing csg:				<b>200.0klb</b>	Bradenhead Description / Length: <b>/ 0m</b>			
Actual wt. of casing (last joint run-block wt):				<b>100.0klb</b>	Tubing Spool Size:			
Landing wt. (after cementing and pressure bleed off):				<b>0klb</b>	Setting Slips: <b>0klb</b>			
Cementing Job Remarks:								

## **SECTION 12: MUDLOGGING WELL REPORT**

# Santos

*A.B.N 80. 007 550 923*

## Casino 4DW1 & Casino 4DW2

### FINAL WELL REPORT

Prepared by



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1	10-Jun-05	Geoservices Unit 170	Base Mudlogging Coordinator	

## 1.0 WELL DATA SUMMARY

(All depths are measured depths from rotary table (MDRT) unless otherwise specified.)

Well Name	: Casino-4DW1 & Casino-4DW2
Basin	: Otway
Permit	: VIC P-44
Operator	: Santos Limited
Drilling Rig	: Ocean Patriot
Well Classification	: Horizontal Gas Producer
Surface Location	
Latitude	: 38° 47' 13.03" S
Longitude	: 142° 41' 54.49" E
Easting	: 647 518 m E
Northing	: 5 705 495 m N
Depth Reference	: L.A.T. (lowest astronomical tide)
Water Depth	: 70.8 m
Rotary Table	: 22.0 m
Rotary Table to Seabed	: 92.8 m
Casing Data	: (1) 762/508 mm (30"/20") casing shoe at 137.4 m : (2) 340 mm (13.375") casing shoe at 727.9 m Both of these casing strings were set on Casino 4 : (3) 244 mm (9.625") casing shoe at 1990.06 m on Casino 4DW2
Hole Size	: (1) 660 mm (26") + 914 mm (36") hole opener from 92.8 m to 137.4 m : (2) 444 mm (17½") hole from 137.4 m to 742 m : (3A) 311 mm (12¼") hole from 742 m to 1662 m (Casino-4DW1 – plugged back to 1082m) : (3B) 311 mm (12¼") hole from 1146 m to 1998 m (Casino-4DW2) : (4) 216 mm (8½") hole from 1998 m to 2404 m
Mud Type	: (1) Seawater / Pre-Hydrated Gel Sweeps : (2) Seawater / Pre-Hydrated Gel Sweeps : (3) Seawater & KCL / Polymer : (4) FloPro
Offset Wells	: Casino 1 (220m)
Proposed Total Depth	: 2625 mRT MD (1755 m TVD RT)
Actual Total Depth	: 2404 mRT MD (1786 m TVD RT)
Subsea Vertical Depth	: 1764 m TVDSS
Date arrived on Location	: 4 <sup>th</sup> May 2005
Date Well Finished	: 14 <sup>th</sup> June 2005
Date Kicked off (DW1)	: 09:30 hours, 21 <sup>st</sup> May 2005
Date TD Reached (DW2)	: 03:30 hours, 4 <sup>th</sup> June 2005
Well Status	: Cased & Suspended

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## 2.0 GENERAL INFORMATION

### 2.1 **Executive Summary**

Casino-4DW was drilled as a sub horizontal gas producer, targeting the Waarre-A sands. This field is located in the Otway Basin, licence VIC P-44. The closest well to Casino-4DW1 and Casino-4DW2 is Casino 1 (220 m). The Diamond Offshore semi-submersible rig 'Ocean Patriot' was used to drill this well.

Casino-4DW1 was drilled as a sidetrack of the previously plugged and abandoned Casino 4 well. The Kick-off plug was set from 1405m to 1255m. Ran in hole with the kick-off BHA. Tagged hard cement at 1273m and attempted to kick-off from 1277m and finally kicked off from 1308m at 09:30 hrs on the 21<sup>st</sup> of May 2005.

Casino-4DW1 was drilled as a deviated well down to 1662m, when it was decided to pull out of hole due to an insufficient build rate to reach the target.

A new BHA with downhole motor and bent sub was made up. Attempts to run in hole were unsuccessful due to excessive friction inside the 13.375" casing at around 100m.

A decision was made to set another Kick-off plug from 1200m-1350m and attempt to kick off to Casino-4DW2. The first attempt to kick off was unsuccessful and another cement plug was set from 1100m –1265m.

A specialized 12.25" kick-off bit (#9) and directional drilling BHA was run in hole and Casino-4DW2 was successfully kicked off after tagging hard cement at 1082m. This BHA drilled until the deviated well was certain at 1157m, before being pulled out of hole and replaced with a tricone bit (#10). This was then used to extend the deviated well to 1274m before being pulled due to poor rate of penetration. A PDC bit (#11RR) was then used with a steerable Geopilot directional assembly and this drilled quickly until the top of the Waarre A target formation was encountered, and this determined the section TD of 1998m. The 9.625" casing was then run in hole and cemented with the shoe set at 1990m.

An 8.5" bit (#12) and steerable BHA was then made up and used to drill out the shoe track before the well was displaced with the new Flo-Pro mud system. The well was then drilled at a near horizontal angle through the Waarre A Sandstone until the base of this formation was encountered and the well terminated at 2404 mMD.

The well was then wiped clean without problem and the lower completion assembly was run into the hole and set with the shoe at 2400.75 mMD. The upper casing was then scraped clean and the well was displaced with brine. The upper completion assembly was then landed in place, and the well was displaced to diesel prior to well testing. The riser and BOPs were then removed, the well was capped, and anchors were pulled prior to moving off location.

No electric logs were run at the end of this well.

Geoservices provided a full mudlogging service from spud to TD during this well. This service included 'Reserval' gas monitoring and real-time online data transmission.

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**2.2 Geoservices Personnel**

ALS Engineers : Adderley, David  
: Long, Steve  
: Dunn, Alan

Mudloggers : Misquitta, Patrick  
: Prosser, Scott  
: Elliott, Noel

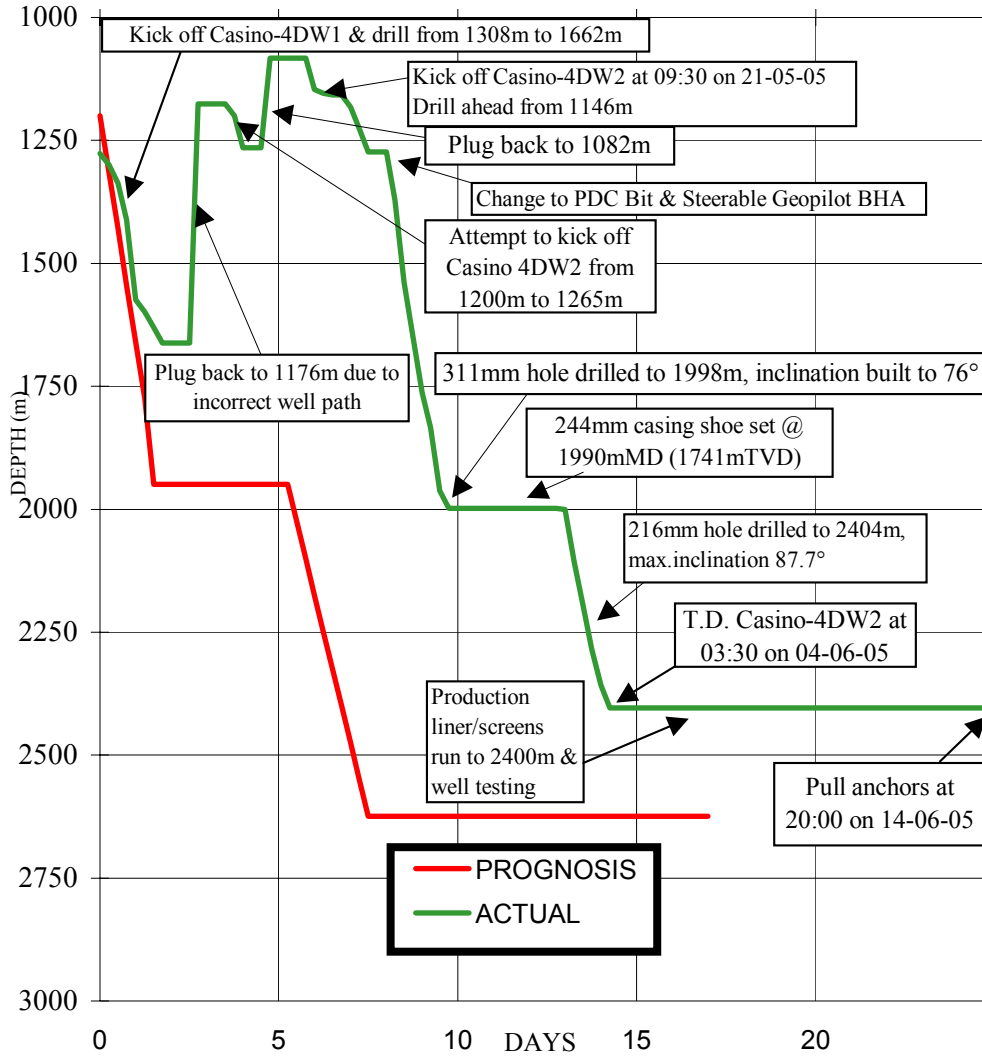
Sample Catchers : Dower, Leigh  
: Foreman, Brent

**2.3 Contractor Information**

Drilling : Diamond Offshore  
Rig name : Ocean Patriot  
Rig type : Semi-Submersible  
Mudlogging : Geoservices Overseas S.A.  
Mud engineering : M.I. Swaco  
MWD : Sperry Sun  
Wireline logging : Baker Atlas  
Cementing : Dowel Schlumberger  
Well head completion : Cameron  
ROV : Fugro  
Casing : Weatherford  
Work boats : Far Grip, Wrangler  
Helicopters : Bristows  
Catering : E.S.S.

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## 2.4 Days versus Depth Progress Chart



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## 2.5 Sample Collection Summary

Six sets of washed and dried samples and three sets of samplex trays were collected during Casino-4DW1, from 1273 m to TD at 1662 m. The sampling interval for this well was 6 m.

Six sets of washed and dried samples and three sets of samplex trays were collected during Casino-4DW2, from 1110 m to TD at 2404 m.

From 1110m to 1842m, the Sampling interval was 6m and  
From 1842m to the TD at 2404m, the sampling interval was 3m

### Sample distribution was as follows:

Recipient	Washed and Dried		Samplex Trays
	100 g	200 g	
Santos	2		1
Geoscience Australia		1	
D.N.R.E.		1	
A.W.E.	1		1
Mitsui	1		1

One mud Sample was also collected from 2143m from Casino 4DW2

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3.0 GEOLOGICAL INFORMATION

3.1 **Lithology and Show Summary**

(Casino-4DW1 was kicked off from Casino-4 from 1308m.)

1308-1578 m					Drilling Parameters: WOB: 10-21 klbs MF : 700-1015 gpm RPM: 105-184 SPP: 1810-3420 psi TRQ: 3-7 klb*ft							
Lithology	Lithology description	ROP m/hr			Depth m	Total Gas U	C1 ppm	C2 ppm	C3 ppm	iC4 ppm	nC4 ppm	C5 ppm
		ave.	max.	min.								
SANDSTONE	Clear to translucent, occasionally light brown, fine to coarse, predominately medium, moderately well sorted, subrounded to subangular, moderately siliceous cement, trace white to very light brown argillaceous matrix, trace glauconite, predominately loose, minor friable to moderately hard aggregates, poor to fair inferred porosity, no fluorescence.. Greyish brown to olive grey, arenaceous & commonly grading to very fine SANDSTONE, minor glauconite specks, trace carbonaceous specks, trace disseminated pyrite, soft to firm, subblocky, minor amorphous.	15.80	71.22	1.08	1308-1578	0.2-67.3	47-10331	1-221	1-44	0-34	0-14	0-9
SILTSTONE												

1578-1662 m (TD)					Drilling Parameters: WOB: 9-43 klbs MF: 880-980 gpm RPM: 115-155 SPP: 2840-3575 psi TRQ: 4.8-8.2 klb*ft							
Lithology	Lithology description	ROP m/hr			Depth m	Total Gas U	C1 ppm	C2 ppm	C3 ppm	iC4 ppm	nC4 ppm	C5 ppm
		ave.	max.	min.								
SILTSTONE	Olive grey to brownish grey, greyish black, arenaceous to argillaceous, rare nodular and disseminated pyrite, trace glauconite specks, trace to minor carbonaceous specks and laminations, firm to moderately hard, subblocky to blocky.	26.33	43.7	15.4	1578-1662	11.7-42.9	1969-8823	17-84	8-24	9-37	2-9	1-10

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(Casino-4DW2 was kicked off from Casino-4 from 1146m.)

1146-1306 m					Drilling Parameters: WOB: 2-34 klbs MF : 720-1000 gpm RPM: 110-210 SPP: 1930-3580 psi TRQ: 0.1-7 klb*ft							
Lithology	Lithology description	ROP m/hr			Depth m	Total Gas U	C1 ppm	C2 ppm	C3 ppm	iC4 ppm	nC4 ppm	C5 ppm
		ave.	max.	min.								
SANDSTONE	Clear to translucent, fine to medium grained, trace coarse grains, subrounded to well rounded becoming sub-angular to angular, poorly sorted, predominately loose & clean with common very fine to fine aggregates with siliceous cement, trace to common pyrite nodules, poor to fair visual and inferred porosity, no fluorescence. .	0.5	68.6	27.8	1146-1306	0.7-8.2	79-1565	1-9	0-2	0-2	0	0
SILTSTONE	Medium to dark grey, predominantly arenaceous and grading to very fine Sandstone, occasionally argillaceous in parts, trace carbonaceous, trace disseminated pyrite, subblocky.											

Drilling Parameters:				
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1306-1592 m					WOB: 9-36 klbs		MF : 880-985 gpm					
					RPM: 115-155		SPP: 2840-3580 psi					
					TRQ: 4.2-7.5 klb*ft							
Lithology	Lithology description	ROP m/hr			Depth m	Total Gas U	C1 ppm	C2 ppm	C3 ppm	iC4 ppm	nC4 ppm	C5 ppm
		ave.	max.	min.								
SILTSTONE	Medium olive brown to medium grey brown occasionally pale grey, trace glauconite specks, rare to trace carbonaceous specks, soft to firm, predominately subblocky, minor amorphous.	7.1	71.6	30.2	1306-1592	5.2-61.5	649-12994	4-202	2-58	2-23	2-9	0-9
SANDSTONE	Light to medium grey, white to very light grey in part, fine to coarse grained, predominantly fine to medium grained, moderately to poorly sorted, subangular to subrounded, predominantly loose, trace weak siliceous cement, minor pale brown to white silty matrix, friable to moderately hard aggregates, common glauconite, minor pyrite, poor to occasionally fair visual and inferred porosity, no fluorescence.											

1592-1992 m					Drilling Parameters:		MF: 880-980 gpm					
					WOB: 9-43 klbs		SPP: 2840-3575 psi					
					RPM: 115-155							
					TRQ: 4.8-8.2 klb*ft							
Lithology	Lithology description	ROP m/hr			Depth m	Total Gas U	C1 ppm	C2 ppm	C3 ppm	iC4 ppm	nC4 ppm	C5 ppm
		ave.	max.	min.								
SILTSTONE	brownish grey to olive black, predominantly argillaceous, trace arenaceous, common carbonaceous specks, trace glauconite, trace nodular pyrite firm to moderately hard, subblocky.	7.1	50.3	26.6	1592-1992	27.2-77.2	5029-13836	53-370	25-80	16-19	9-11	8-13

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1992-2404 m (T.D.)					Drilling Parameters:							
Lithology	Lithology description	ROP m/hr			Depth m	Total Gas U	C1 ppm	C2 ppm	C3 ppm	iC4 ppm	nC4 ppm	C5 ppm
		ave.	max.	min.								
SANDSTONE	Clear-translucent, trace yellow to orange, fine to medium grained, subangular to subrounded, well sorted, predominantly loose, trace aggregates with weak to firm siliceous cement, white to light grey argillaceous matrix, common black lithic grains, trace carbonaceous fragments, fair visual porosity, fair to good inferred porosity, no fluorescence.	18.02	54.10	5.08	1992-2404	8.7-956.4	1633-159945	35-3572	15-1376	7-269	8-212	9-57
SILTSTONE	Medium to dark grey to olive brown, arenaceous grading to very fine sandstone in part, abundant carbonaceous inclusions, firm to hard, sub-blocky to sub-fissile.											

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### 3.2 Gas Ratio Interpretation – Introduction

Gas composition and total gas in mud were measured using the Geoservices Reserval (A combined total gas detector and chromatograph coupled with a GZG degasser). As a backup gas detection system a Geoservices FID Chromatograph Panel (FCP) and FID Gas Panel (FGP) were in place. Both use the FID technique of measuring ions released when hydrocarbons are burnt in a pure hydrogen flame.

Gas is extracted from the mud at the shale shakers by a degasser that is essentially an agitator inside a chamber through which the mud continually passes. The GZG degasser is specially designed to degas a constant volume of mud regardless of pump rates and has the advantage of being placed as close to the flowline as possible. The gas is then drawn back to the unit through tubing to the gas analysis equipment. Independent sensors in the unit also measure H<sub>2</sub>S and CO<sub>2</sub>.

The composition of the gas in mud from the formation is significant in determining the geochemical origin and value of a show. There are several methods that can be used to determine whether the hydrocarbon gas in mud comes from a potential gas or oil zone. Amongst these methods are the Triangle Diagram (also known as the gas composition diagram), Pixler Diagram (also known as the gas ratios method) and the gas Wetness/Balance/Character plots.

### 3.3 Explanation of Gas Composition Diagrams

The Triangle or Gas Composition Diagram is used to graphically represent the hydrocarbon distribution in the gas and to determine whether it corresponds to a gas or oil reservoir. The triangular diagram is obtained by tracing lines on three scales at 120° to each other, corresponding respectively to the ratios of ethane, propane and normal butane to the total gas. The scales are arranged in such a way that if the apex of the triangle is upward, the diagram represents the analysis of gas from a gas zone, while if the apex points downwards, the diagram represents the analysis of gas from an oil zone. A large triangle diagram represents dry gas or low GOR oil, while small triangles represent wet gases or high GOR oils. The centre of the triangle should fall inside the area delineated by the dotted line, which encircles compositions that are regarded as 'normal'. If the triangle area is outside this area the gas indicates that the reservoir is not exploitable and that the heavier hydrocarbon composition is 'abnormal' i.e. hydrocarbons that are chemically altered or gases with special compositions which are not associated with oil.

The Gas Ratio Analysis Diagram is a plot of the ratio of C<sub>1</sub> to the other gas elements. The magnitude of the methane to ethane ratio determines if the reservoir contains gas or oil or if it is non-productive. The following conclusions are possible:

Ratio C <sub>1</sub> /C <sub>2</sub> :	< 2	non-productive zone
	2 - 15	oil present
	15 - 65	gas present
	> 65	non-productive zone

The slope of the line of the ratio plot of C<sub>1</sub>/C<sub>2</sub>, C<sub>1</sub>/C<sub>3</sub>, C<sub>1</sub>/C<sub>4</sub> and C<sub>1</sub>/C<sub>5</sub> indicates whether the reservoir will produce hydrocarbons or hydrocarbons and water. Positive line slopes indicate production; negative line slopes indicate water-bearing formations. When using the Gas Ratio Diagram, the following points should be borne in mind:

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1. Productive dry gas zones may show only C1, but abnormally high shows of C1 are usually indicative of saltwater zones.
2. If the ratio C1/C2 is low in the oil section and the ratio C1/C4 is high in the gas section, the zone is probably non-productive.
3. If any ratio (C1/C5 excepted in an oil based mud) is lower than the preceding ratio then the zone is probably non-productive.
4. The ratios may not be definitive for zones of low permeability.
5. Steep gas ratio plots may be indicative of tight zones.

### 3.4 Explanation of Wetness/Balance/Character Curves

Another method for evaluating gas zones plots against depth three ratios: hydrocarbon Wetness ( $W_h$ ), hydrocarbon Balance ( $B_h$ ) and hydrocarbon Character ( $C_h$ ), where:

$$W_h = \frac{(C2 + C3 + C4 + C5)}{(C1+C2+C3+C4+C5)} \times 100 (\%)$$

$$B_h = \frac{(C1 + C2)}{(C3 + C4 + C5)}$$

$$C_h = \frac{(C4 + C5)}{C3}$$

Wetness ( $W_h$ ) is the primary zone indicator and provides a measure of the relative proportion of heavier gases in the overall gas show as follows:

$W_h < 0.5$	Light non-associated gas with low productivity potential or only geo-pressured methane.
$0.5 < W_h < 17.5$	Potentially productive gas with gas density increasing with $W_h$ .
$17.5 < W_h < 40.0$	Potentially productive oil with gravity decreasing as $W_h$ increases.
$W_h > 40.0$	Heavy or residual oil with low productivity potential.

As reservoir hydrocarbons become denser in the transition from gas to oil, Balance ( $B_h$ ) and Wetness ( $W_h$ ) values move closer together and eventually intersect. The zone guidelines for  $B_h$  combine with those for  $W_h$  to improve reliability of show evaluation as follows:

$W_h < 0.5$ and $B_h > 100$	Very light, dry gas that is almost certainly non-productive.
$0.5 < W_h < 17.5$ and $W_h < B_h < 100$	Productive gas with gas increasing in wetness and density as the two curves converge.
$0.5 < W_h < 17.5$ and $B_h < W_h$	Productive gas condensate or a high gravity gas/oil ratio.
$17.5 < W_h < 40$ and $B_h < W_h$	Productive oil with oil gravity decreasing - density increasing as the curves diverge.
$17.5 < W_h < 40$ and $B_h > W_h$	Non-productive residual oil.

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Character ( $C_h$ ) values serve to resolve ambiguities between oil or gas indications by defining the following:

$0.5 < W_h < 17.5$       Productive wet gas or condensate.  
and  $B_h < W_h$   
and  $C_h < 0.5$

$0.5 < W_h < 17.5$       Productive high gravity and/or high GOR oil.  
and  $B_h < W_h$   
and  $C_h > 0.5$

It is important to note that in the conclusion to each of the interpretive tools, the terms 'productive' and 'non-productive' are used in a geochemical sense. Ultimate production of a zone is dependent upon reservoir thickness and extent as well as other physical and economic factors that are not taken into account when analysing gas compositions. The methods discussed here are intended to assist the interpretive skills of the geologist or log analyst. Please refer to the Gas Ratio Log enclosure.

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### 3.5 Gas Composition Discussion

#### Casino-DW1

From the time Casino-4DW1 was kicked from 1308m, gas monitoring commenced using the Geoservices Reserval Gas Panel.

Drilling from 1308m (1285m TVDSS) to 1578m (1539.5m TVDSS), with a mud weight of 1.26 SG, the background gas levels increased steadily from 0.2 units at the top to 67.3 units at the bottom of this interval. This steady increase appeared to be the result of a faster ROP in the Sands encountered. The gas recorded was very dry with a relative ratio of 99/1/Tr/Tr.

Drilling from 1578m (1539.5m TVDSS) to the TD of this hole at 1662m (1603.9m TVDSS) and drilling with a mud weight of 1.28 SG, the background gas ranged between 25-30 units. This gas was also very dry, comprising predominantly of C1 with minor C2 and C3, with minor traces of C4 and C5. The Relative gas ratio was 98/1/1/Tr/Tr.

#### Casino-DW2

From the time Casino-4DW2 was kicked from 1146m, gas monitoring commenced using the Geoservices Reserval Gas Panel.

Drilling at 1306m (1282m TVDSS), with a Mud Weight of 1.27 SG, the background gas levels ranged from around 2.5 units to 6 units, with interbedded sands and silts encountered. This gas was extremely dry, consisting predominantly of C1 with minor C2 and Traces of C3, with relative ratios of 99/1/Tr. There was no real gas peak of note in this interval, with a maximum of 8.2 units recorded from a Sand bed at 1300m.

Drilling from 1306m (1282m TVDSS) to 1592m (1540m TVDSS), with a mud weight of 1.3 SG, the background gas levels increased steadily from 5.5 units at the top to 55 units at the bottom of this interval. This steady increase would have to be attributed to a steady increase in the penetration rate. The composition of the gas however was the same as that in the overlying sediments with a relative ratio of 98/1/1/Tr.

Drilling from 1592m (1540m TVDSS) to 1992m (1720m TVDSS), and drilling with a mud weight of 1.27 SG, the background gas ranged between 30 and 45 units. This gas was also very dry, comprising predominantly of C1 with minor increasing C2 and traces of C3 to C5. The Relative gas ratio was 96/3/1/Tr/Tr.

On entering the Upper Waarre formation, with the mud weight maintained at 1.27 SG, the gas levels increased appreciably from 50 units to around 450 units as expected in the Sands. The composition of the gas though did not change, and consisted of 97% C1 with minor to traces of the heavier hydrocarbon gas components. The Maximum gas recorded was 524 units, at 2067m (1735.14m TVDSS).

Drilling from 2082m (1737m TVDSS) to around 2355m (1756.24m TVDSS), the gas levels in the sand ranged from 300 to 600 units with a Peak of 956.4 units at 2099m (1738.9m TVDSS), which was the maximum gas recorded for this well. This gas was also extremely dry, comprising predominantly of C1 with traces of the heavier hydrocarbon gas components. The relative ratio of the gas was 97/2/1/Tr/Tr.

On encountering a Siltstone at 2355m (1756.24m TVDSS), the gas levels dropped off steadily from around 300 units to 18 units at TD, with the composition though staying the same.

From the above discussion and the Gas Analysis Triangular diagrams on the following page, it can be concluded that the gas encountered in this well was of an extremely dry composition.

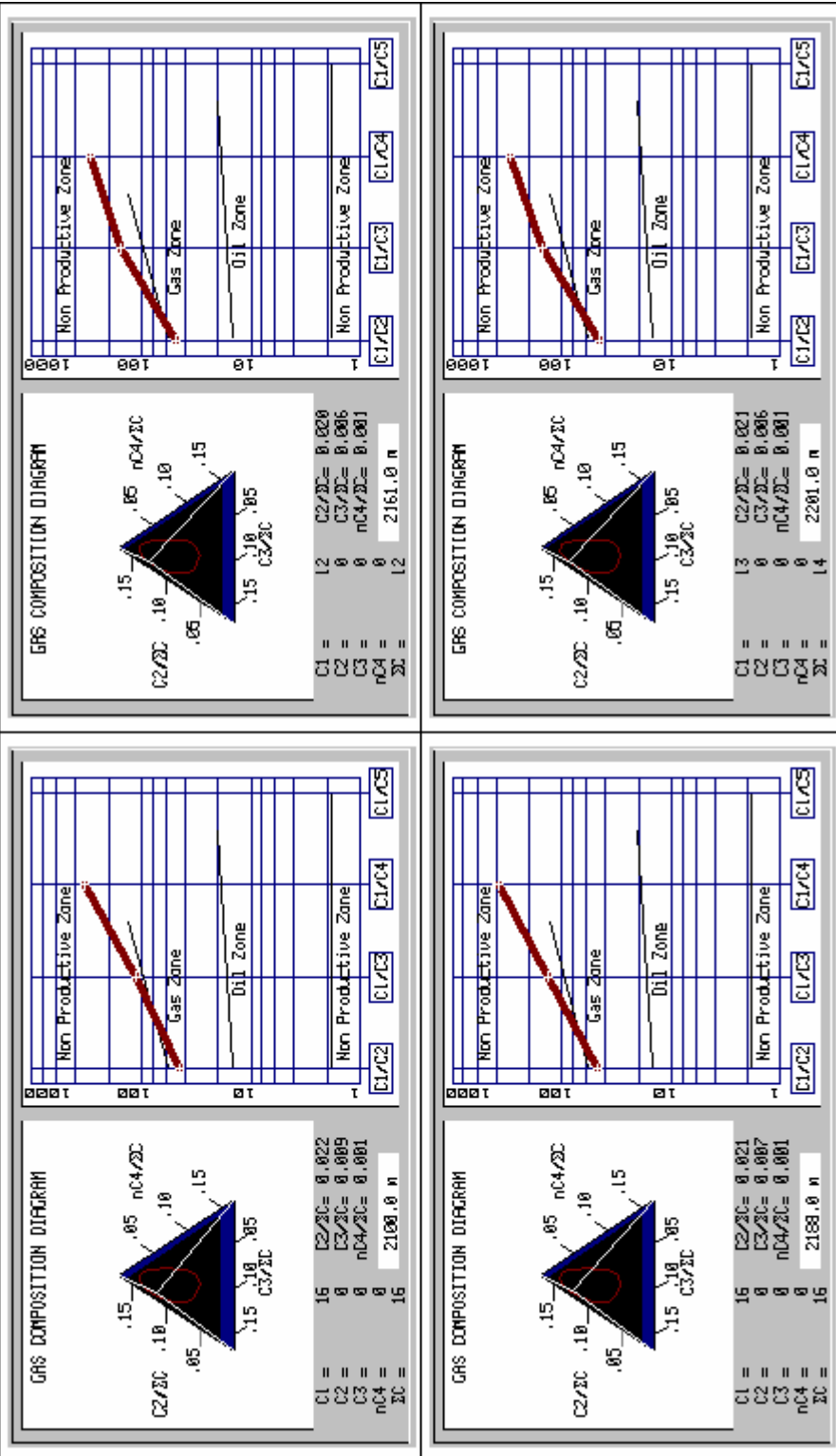
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No connection or trip gases were recorded in this well. Neither was any H2S or CO2 recorded.

### 3.6 Gas Ratio Diagrams

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GAS COMPOSITION DIAGRAM



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#### 4.0 PRESSURE ANALYSIS

##### 4.1 Pressure Summary

Formation pressures were monitored throughout this well by recording a range of indicators, which vary from direct observations of background gas and cuttings, to drilling characteristics such as torque, drag when coming off bottom, incorrect hole fill when tripping, as well as mud properties like flowline temperature. The Geoservices D'Exponent package is also used as a tool in the determination of abnormal formation pressures.

**D'Exponent:** The D'exponent trend was set in the Parratte and Skull Creek formations and the D'exponent values appeared to follow this trend right down to TD, with the shifts to the left being due to the Sands encountered. A notable shift to the right is seen from 1734m (1650m TVDSS) to the top of the Reservoir sands, indicating increasing compaction, characteristic of a cap rock. The D'exponent does not indicate any undercompacted/Overpressured Claystones in this well.

The coefficients used in this well were:

$$a = 0.0002172, b = -0.4020107, \text{ Sand Line } b \text{ offset} = -0.0190000$$

**Gas:** This well was drilled with an overbalanced mud system (1.27 SG), as a result of which no connection or trip gases were recorded. The increasing background gas, in the Siltstone, were ROP related and had nothing to do with overpressure. The other significant increase in gas was due to the pay sands. One can conclude from the gas data, that the background gas was liberated gas and in no way produced gas (which would be the result of negative differential pressure).

**Torque & Drag:** No unusually high Torque was noticed while drilling and neither was any abnormal drag noticed while pulling up prior to connections. It should be noted that this being a deviated well, the normal drag associated with the deviated hole was observed.

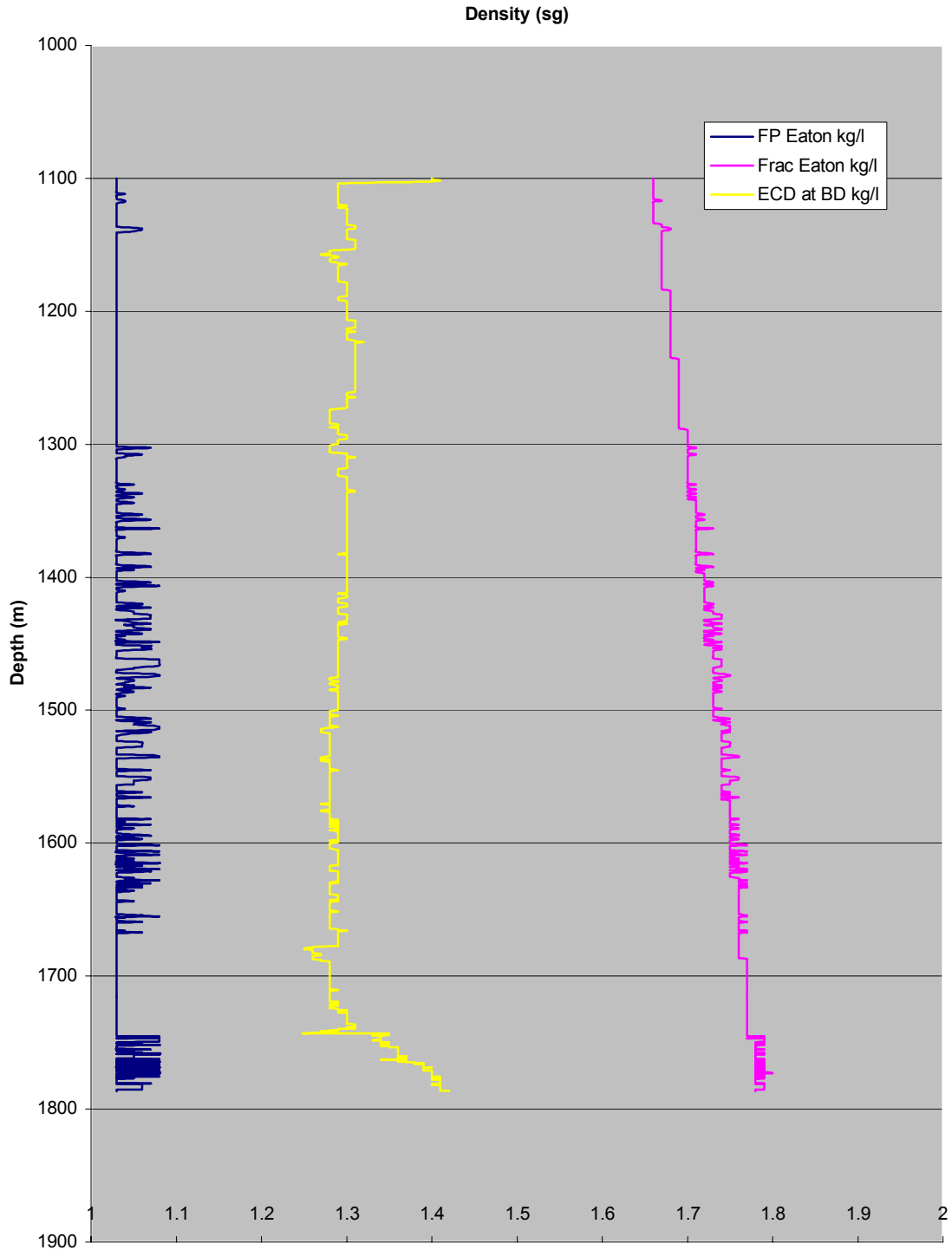
**Flowline Temperature:** The flowline temperature showed a steady increase from 45°C at 1119m to 61°C at TD. Considering the presence of a riser the flowline temperature has its shortcomings. However, there were no sudden increases in the flowline temperature to indicate an undercompacted claystone.

**Cuttings:** There were no abnormally large or unusually sharp splintery cavings or large cuttings with concave cross section observed at the shakers that may have indicated an abnormally pressured zone in this well.

The majority of indicators pointed to a normally pressured environment from surface to TD while drilling Casino 4DW1 and Casino 4DW2.

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#### 4.2 Formation Pressure Plot



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## 5.0 DRILLING INFORMATION

### 5.1 Mud Record Casino-4DW1

The 12¼” Section was drilled with KCl / Polymer mud with weight from 1.26 sg to 1.29 sg. Properties of this mud are listed below:

Depth m	MW sg	FV sec/qt	PV cps	YP lb/100'	Gels lb/100'	WL cm/ 30"	Solids %	Sand %	Chlorides mg/L	Cake /32"
1478	1.26	58	19	39	14/27/36	4	11	0.2	45000	1
1599	1.28	67	24	47	15/35/42	4.4	12	Tr	46000	1
1662	1.29	58	22	38	12/26/36	3.8	13	Tr	47000	1

### Mud Record – Casino-4DW2

The 12¼” Section was drilled with KCl / Polymer mud with weight from 1.26 sg to 1.30 sg. Properties of this mud are listed below:

Depth m	MW sg	FV sec/qt	PV cps	YP lb/100'	Gels lb/100'	WL Ce</ 30"	Solids %	Sand %	Chlorides mg/L	Cake /32"
1133	1.27	68	18	42	15/32/33	4.4	12	Tr	46k	1
1160	1.26	54	17	42	13/19/21	4.2	11	Tr	45k	1
1167	1.27	60	16	37	12/20/21	4.2	13	Tr	46k	1
1220	1.3	55	18	45	15/22/27	4.0	12	Tr	47k	1
1274	1.3	53	15	37	12/18/21	3.8	12	Tr	47k	1
1345	1.3	61	19	47	15/23/28	4.2	13	Tr	47k	1
1589	1.3	57	18	40	13/21/26	4.2	14	Tr	47k	1
1735	1.3	54	18	38	13/20/25	4.2	14	0.25	47k	1
1810	1.28	69	20	43	13/26/33	4.6	14	Tr	46k	1
1998	1.29	54	20	34	14/27/29	4.6	14	Tr	46k	1
2064	1.26	59	13	31	12/22/27	4.8	14	Tr	120k	<1
2255	1.27	54	16	35	13/17/22	3.8	15	0.25	120k	<1
2318	1.27	57	17	41	16/22/	3.8	15	0.25	120k	1
2404	1.28	54	17	39	13/17/	3.8	15	0.25	120k	1

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**5.2 Bit Record – Casino-4DW1**

Bit #	Size (in)	Make	Type	Jets	TFA In <sup>2</sup>	In (m)	Out (m)	Run (m)	Hrs	WOB klbs	RPM	TORQ kft*lbs	SPP psi	Flow gpm	Grading
6	12.25"	Security	FS2263	9x16	1.767	1308	1662	354	20.32	10-32	100-180	3.4-6.8	1810-3420	680-1020	1/2/WT/G/X/I/ER/BHA
7	12.25"	Smith	MA89PX	7x20	2.148	1662	1662	0	0	0	0	0	0	0	NOT RUN
8	12.25"	Hughes	MXCS03	Open	Open	1176	1176	0	0	0	0	0	0	0	NOT RUN

**Bit Record – Casino-4DW2**

Bit #	Size (in)	Make	Type	Jets	TFA In <sup>2</sup>	In (m)	Out (m)	Run (m)	Hrs	WOB klbs	RPM	TORQ kft*lbs	SPP psi	Flow gpm	Grading
9	12.25"	Hycalog	DS43	3x18, 1x20	1.052	1146	1157	11	6.9	10-30	110-120	0.01-0.08	2750-2900	850-865	3/4/CT/X/I/WT/PR
10	12.25"	Security	FXL12D	3x22	1.114	1157	1274	117	13.3	15-25	110-165	2.8-4.5	2000-2800	790-860	1/1/WT/A/E/I/NO/BHA
11RR	12.25"	Security	FS2263	9x16	1.767	1274	1998	724	29.1	5-20	110-130	3.2-4.4	2700-3200	940-980	1/1/WT/A/X/I/NO/TD
12	8.5"	Security	FMF3553	5x16	0.982	1998	2404	406	22.4	8-26	70-140	6-13	2660-3540	710-753	1-2-CT-G-X-I-NO-TD

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### 5.3 Hydraulic Listing

#### Casino-4DW1 & Casino-4DW2

Depth (m)	Mud Weight (s.g)	ECD (s.g.)	Flow Rate (gpm)	Total Pressure Loss (psi)	Pressure Loss Across Bit (psi)	Mud Velocity Through bit (m/sec)	Bit Hydraulic Power (hp)	Mud Impact at Bit (lbf)	Total Hydraulic Power (hp)	Ratio (Bit Pwr/Total Pwr) (%)
1574 (DW1)	1.26	1.28	1022	2832	543	73	328	1336	1710	19.2
1662 (DW1)	1.29	1.33	1022	2543	228	47	137	876	1535	8.9
1146 (DW2)	1.27	1.30	852	2558	648	79	326	1222	1287	25.3
1182 (DW2)	1.27	1.30	812	2219	526	71	252	1050	1064	23.7
1275 (DW2)	1.30	1.33	958	2438	491	68	278	1210	1379	20.2
1763 (DW2)	1.30	1.33	916	2542	450	65	243	1107	1375	17.7
2001 (DW2)	1.28	1.38	705	2424	514	70	214	903	1009	21.2
2358 (DW2)	1.27	1.41	740	2767	562	74	245	988	1209	20.3

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## 5.4 Drilling Phase Summary

### 5.4.1 12¼ (311 mm) Hole Section – Casino-4DW1

Dates	: 21 <sup>st</sup> to 26 <sup>th</sup> May 2005
Measured depth	: 1308 - 1662 m
TVDSS LAT	: 1285.1 – 1603.9 m
Number of bits used	: 3
Mud type	: KCl/Polymer

Casino-4DW1 was kicked off from the previously plugged and abandoned Casino 4 well bore. A 12¼” Security FS2263 bit with 9x16 jets was made up with a directional BHA incorporating a Geopilot and MWD tools and run in hole. The cement plug was tagged at 1273 m in 12¼” (311mm) open hole in Casino 4. Casino 4DW1 was officially kicked off at 09:30 hours on the 21<sup>st</sup> of May 2005 and deviation began from 1308 m. At 1599 m, a trip back to the 13<sup>3/8</sup>” shoe was made in order to repair the top drive system. Ran in back to bottom and drilled ahead to 1662 m. Drilling was terminated here as the required build rate wasn’t achieved to get to the target. The BHA was then pulled out of hole. This bit drilled 354m in 20.32 on bottom hours and was graded as 1/2/WT/G/X/I/ER/BHA

A new Smith MA89PX bit with 7x20 jets was made up with a new BHA with a downhole motor and bent sub. This BHA however was unable to pass through the 13.375” casing at about 100m and was subsequently pulled out of hole. A decision was then made to set a cement plug from 1200m-1350m and attempt to kick off to Casino 4DW2.

BOP pressure tests were performed before a new Hughes MXCS03 bit was made up with a BHA incorporating the Geopilot steering assembly and MWD tool. Ran in hole and tagged the top of soft cement at 1176m and hard cement at 1200m. Attempted to kick-off from 1200m to 1265m, without success, at which time it was decided to pull out and set another cement plug. The second Kick-off plug was set from 1265m to 1100m.

Picked up 12¼” (311mm) sidetrack PDC bit DS43 and ran in hole with Sperry 6/7 lobe motor assembly, set motor bend to 1.15°. Ran in with 8” collars to confirm access to casing, but was unable to progress past 116 mMD, so pulled out and laid out PDC bit. Made up same BHA with TCI bit Hughes MXCS03, ran in hole and encountered same problem. Pulled out of hole and laid down 11.5” string stabiliser, then ran in hole again only to encounter string hanging up at 138m. Attempted to circulate and work string to no avail, so pulled out of hole. Adjusted BHA, then ran in hole with same TCI bit (#8) and ran in hole successfully to 163m without problems. Pulled out of hole, and broke out bit. Made up PDC bit DS43 (#9) and ran in hole with 12¼” (311mm) motor assembly. Washed/reamed down to tag top of soft cement at 1078m and hard cement at 1082m. Drilled cement with surface rotation to 1145m, then slide drilled from 1145m to 1146m.

Well sidetracked to Casino-4DW2 at 00:00 hours on 27<sup>th</sup> May 2005 at 1146 mMD.

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**12¼ (311 mm) Hole Section – Casino 4-DW2**

Dates	: 27 <sup>th</sup> to 30 <sup>th</sup> May 2005
Measured depth	: 1146 - 1998 m
TVDSS LAT	: 1123.6 – 1720.9 m
Number of bits used	: 3
Mud type	: KCl/Polymer

Casino-4DW2 was kicked off by slide drilling with 12¼” (311mm) PDC bit DS43 and motor assembly from 1146m to 1157 mMD when the penetration slowed as it encountered hard pyrite stringers in the Timboon Sandstone formation. The bit was pulled to surface and swapped with a TCI bit FXL12D. An 11.5” string stabiliser was added to the BHA and this assembly was run in hole. Directional drilling continued with periodic surveys from 1157m to 1274m until sufficient offset was built between this deviated hole and the old hole. This BHA was then pulled to surface and changed for a rotary steerable Geopilot assembly.

This was then run in hole with 12¼” (311mm) bit (#11RR) FS2263 and washed/reamed to bottom. Directional drilling continued from 1274m to 1945m with rapid penetration, and then drilling penetration rate was limited to a maximum of 25 m/hr from 1945m to 1998 mMD when the top of the Waarre A formation was encountered. Significant gas was circulated out and the mud conditioned prior to pulling out of hole. Tight sections were encountered from 1855-1850m and from 1585m to 1550m, near the top of the Skull Creek formation, and these were extensively backreamed and reamed during the wiper trip prior to running the 9-5/8” (244mm) casing. This was run and cemented without problem, with the shoe set at 1990 mMD (1741 mTVD).

**5.4.2 8½” (216 mm) Hole Section**

Dates	: 2 <sup>nd</sup> to 4 <sup>th</sup> Jun 2005
Measured depth	: 1998 - 2404 m
TVDSS LAT	: 1743 – 1786 m
Number of bits used	: 1
Mud type	: Flo-Pro

The new 8½” (216mm) PDC bit (#12) FMF3553 was made up with the Geopilot/FEWD steerable drilling assembly was run in hole and tagged the top of cement at 1960m. The cement and shoe track were drilled out to 1998m. A high visual sweep was pumped and the well was displaced to new Flo-Pro drilling fluid. Directional drilling of the 8½” (216mm) hole then proceeded with periodic surveys from 1998m to 2404m. Significant gas levels were encountered while drilling the Upper and Lower Waarre A Sandstone formation with background gas levels consistently above 100 units, reaching a maximum peak of 956 units, however no drilling problems were encountered while drilling overbalanced.

As the bit angle was dropped towards the base of the Lower Waarre A Sandstone, the gas levels tapered off and final TD of Casino-4DW2 was called at 2404 mMD (1786 mTVD) on 4<sup>th</sup> June 2005 at 03:30 hours.

No electric logging was run at TD. The well was prepared for production by running 6-5/8” (168mm) production sandscreens/liner to 2400 mMD and well testing took place on 9<sup>th</sup> to 10<sup>th</sup> June. The rig was officially released from Casino-4DW2 on 14<sup>th</sup> June 2005.

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## **SECTION 13: RIG POSITIONING REPORT**

# RIG POSITION FIELD REPORT



## Casino-4

Client : Santos Ltd Job Number : P0267  
 Rig : MODU Ocean Patriot Date: 8-May-05  
 Project : Rig move to Casino-4 location  
 Attention : Ron King Company Representative

The surface location of the drill stem on the Ocean Patriot was derived from 60 minutes of observations of the Primary Differential GPS data, between 00:35 hrs and 01:35 hrs on completion of all anchor pre-tensioning and cementing of the 30 inch casing.

The results of the observations are as follows:

Geographical Coordinates		Grid Coordinates	
Latitude	38 ° 47 ' 13.03 " South	Easting	647518.19
Longitude	142 ° 41 ' 54.49 " East	Northing	5705495.28

The drill stem position is **2.84 m** at a bearing of **196.54 °** Grid from the design location.

The Client supplied design location for Casino-4:

Geographical Coordinates		Grid Coordinates	
Latitude	38 ° 47 ' 12.94 " South	Easting	647519.00
Longitude	142 ° 41 ' 54.52 " East	Northing	5705498.00

The Ocean Patriot's rig heading, derived from the mean of 60 minutes observation of the gyro heading is:

**250.18 ° True**      **251.24 ° Grid**

All coordinates in this field report are quoted in the following coordinate system:			
Datum :	GDA 94	Projection :	MGA
Spheroid :	GRS80	Zone (Central Meridian)	54      141 ° East

The approximate positions of the rig anchors corrected for catenary are as follows:

Anchor	Easting	Northing	Azimuth(°)
1	646206	5705766	280.2 °
2	648506	5706380	310.8
3	647785	5706800	10.3 °
4	648258	5706391	39.2 °
5	648876	5705232	99.2 °
6	648470	5704692	129.2 °
7	647241	5704162	189.9 °
8	646812	5704660	219.5 °

Party Chief/Surveyor: Michael Yorath

Company Representative: Ron King

## **SECTION 14: DEVIATION SUMMARY**

Surveys and schematics are presented overleaf.

## Directional Survey Data

Measured Depth (metres)	Inclination (degrees)	Direction (degrees)	Vertical Depth (metres)	Latitude (metres)	Departure (metres)	Vertical Section (metres)	Dogleg (deg/30m)
1146.00	4.50	204.71	1145.63	2.70 S	1.75 E	-2.56	TIE-IN
1166.38	5.08	197.94	1165.94	4.28 S	1.14 E	-2.53	1.19
1196.52	6.90	204.40	1195.91	7.20 S	0.02 W	-2.43	1.93
1225.28	9.13	213.00	1224.39	10.69 S	1.98 W	-1.78	2.63
1250.01	10.24	216.17	1248.77	14.11 S	4.34 W	-0.72	1.49
1257.46	10.16	218.79	1256.10	15.16 S	5.15 W	-0.32	1.90
1287.27	10.53	234.54	1285.43	18.79 S	9.01 W	2.08	2.86
1314.96	11.47	254.15	1312.62	21.01 S	13.72 W	5.75	4.16
1342.92	12.82	274.39	1339.97	21.53 S	19.49 W	11.00	4.76
1371.81	14.63	289.92	1368.04	20.04 S	26.12 W	17.74	4.25
1403.35	16.96	298.16	1398.39	16.51 S	33.93 W	26.28	3.07
1430.21	19.64	303.85	1423.89	12.15 S	41.13 W	34.54	3.59
1460.58	23.39	309.06	1452.15	5.50 S	50.05 W	45.19	4.15
1487.44	26.26	311.42	1476.52	1.79 N	58.65 W	55.76	3.39
1515.92	30.69	310.65	1501.55	10.70 N	68.90 W	68.42	4.68
1544.45	35.01	308.80	1525.51	20.57 N	80.80 W	82.98	4.66
1574.02	39.48	307.90	1549.05	31.67 N	94.84 W	99.95	4.57
1601.66	43.46	306.39	1569.75	42.71 N	109.43 W	117.43	4.45
1630.50	47.12	305.12	1590.04	54.68 N	126.06 W	137.15	3.92
1659.47	51.07	302.67	1609.01	66.87 N	144.24 W	158.39	4.52
1688.15	54.91	300.23	1626.27	78.81 N	163.78 W	180.82	4.50
1716.83	59.06	298.06	1641.90	90.51 N	184.78 W	204.55	4.74
1745.43	62.89	296.17	1655.77	101.90 N	207.04 W	229.36	4.38
1775.14	65.13	291.82	1668.79	112.74 N	231.43 W	255.99	4.55
1803.18	66.82	288.55	1680.21	121.57 N	255.46 W	281.59	3.67
1832.10	67.00	288.55	1691.55	130.04 N	280.69 W	308.19	0.19
1861.05	70.00	287.81	1702.16	138.44 N	306.27 W	335.11	3.19
1889.71	70.27	288.54	1711.90	146.85 N	331.88 W	362.05	0.77
1918.35	71.02	288.14	1721.39	155.35 N	357.53 W	389.06	0.88
1946.76	73.24	288.85	1730.11	163.93 N	383.17 W	416.09	2.45
1975.04	76.28	287.89	1737.54	172.52 N	409.07 W	443.36	3.37
2020.94	76.66	287.87	1748.28	186.22 N	451.54 W	487.96	0.25
2049.61	78.96	288.67	1754.34	195.01 N	478.14 W	515.97	2.54
2078.36	82.52	288.53	1758.96	204.06 N	505.03 W	544.33	3.72
2107.04	86.73	289.13	1761.65	213.27 N	532.05 W	572.88	4.45
2135.83	87.47	289.13	1763.10	222.70 N	559.22 W	601.63	0.77
2164.51	87.78	290.18	1764.29	232.33 N	586.20 W	630.28	1.14
2193.21	87.78	290.62	1765.40	242.33 N	613.08 W	658.96	0.46
2221.71	87.29	289.70	1766.63	252.14 N	639.81 W	687.43	1.10
2250.28	85.93	289.24	1768.32	261.65 N	666.70 W	715.95	1.51



## Directional Survey Data

Measured Depth (metres)	Inclination (degrees)	Direction (degrees)	Vertical Depth (metres)	Latitude (metres)	Departure (metres)	Vertical Section (metres)	Dogleg (deg/30m)
2279.03	86.30	289.25	1770.27	271.10 N	693.78 W	744.63	0.39
2307.85	85.37	288.38	1772.36	280.37 N	720.99 W	773.37	1.32
2336.65	82.20	287.82	1775.48	289.27 N	748.20 W	801.98	3.35
2365.23	80.01	287.52	1779.90	297.84 N	775.10 W	830.20	2.32
2394.21	79.83	287.71	1784.97	306.47 N	802.30 W	858.71	0.27
2404.00	79.83	287.71	1786.70	309.40 N	811.48 W	868.34	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 A DIRECTION OF 289.90 DEGREES (GRID)

A TOTAL CORRECTION OF 12.01 DEG FROM MAGNETIC NORTH TO GRID NORTH HAS BEEN APPLIED

HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD.

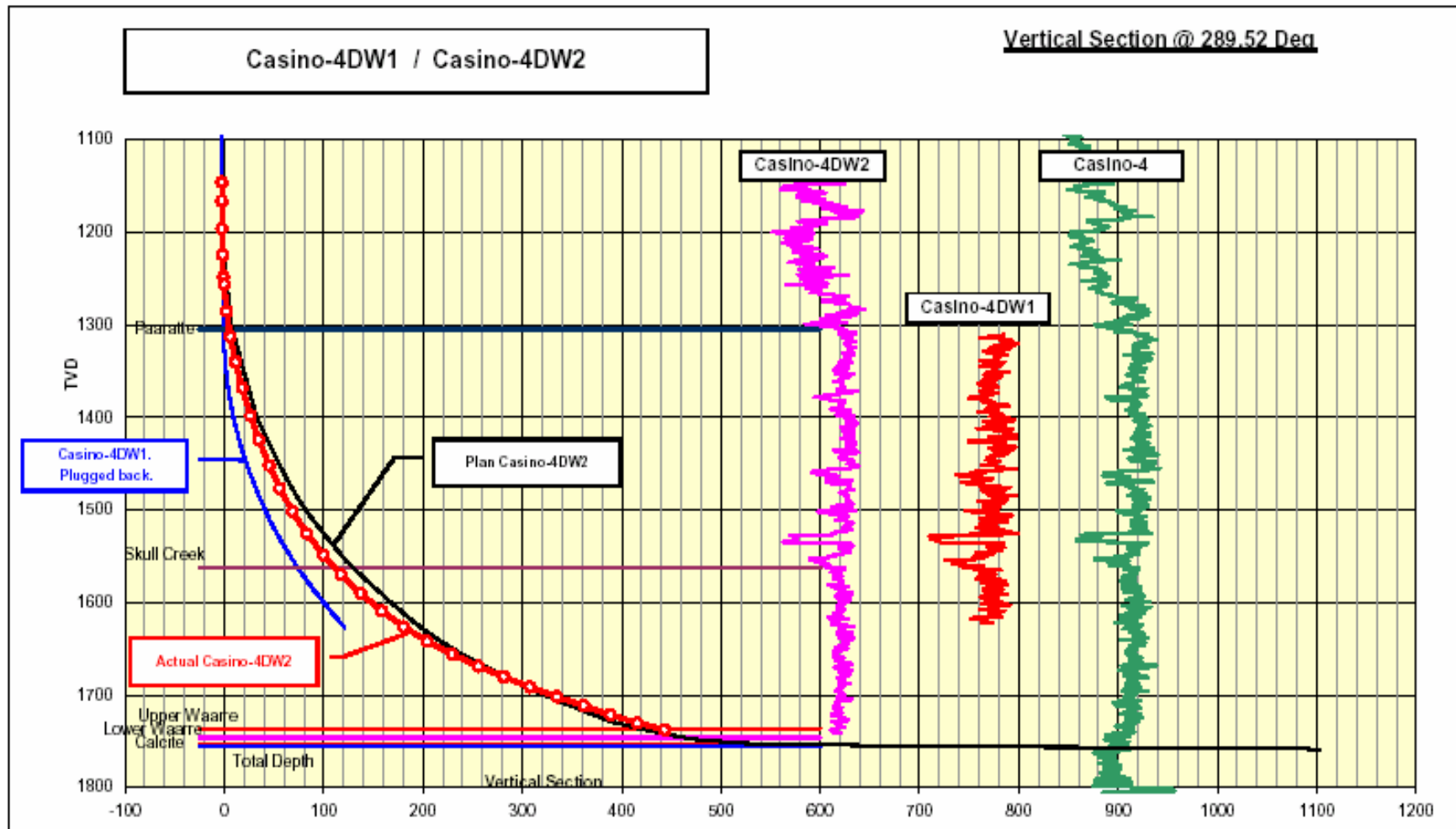
HORIZONTAL DISPLACEMENT(CLOSURE) AT 2404.00 METRES

IS 868.46 METRES ALONG 290.87 DEGREES (GRID)

RT to LAT = 22.0 m.

Surveys are corrected for BHA sag.

Final Survey Projected to TD.



## **SECTION 15: PALYNOLOGY REPORT**

No Palynology work was carried out on Casino 4DW1/DW2 samples.