



## DAILY GEOLOGICAL REPORT

<b>Date:</b>	01 August 2009	<b>Rig:</b>	Ocean Patriot
<b>Report Number:</b>	9	<b>Bit Diameter:</b>	216 mm
<b>Report Period:</b>	00:00 - 24:00 Hours	<b>Last Casing:</b>	244 mm @ 2910.9 mMDRT
<b>Spud Date:</b>	22-Jul-2009 03:00 Hours	<b>Integrity Test:</b>	1.56 sg @ 2910.9 mMDRT
<b>Days From Spud:</b>	10.9	<b>Mud Weight:</b>	1.13 sg
<b>Depth @ 2400 Hrs:</b>	3380 mMDRT	<b>ECD:</b>	1.23 sg
	2850.3 mTVDRT	<b>Mud Type:</b>	KCl-KlaStop-Polymer
	2828.8 mTVDMSL	<b>Mud Chlorides:</b>	47,500 mg/L
<b>Lag Depth:</b>	3380 mMDRT	<b>Est. Pore Pressure:</b>	
<b>Last Depth:</b>	2918 mMDRT	<b>DXC:</b>	
<b>Progress:</b>	462 m	<b>Last Survey:</b>	3175.76 mMDRT
<b>Water Depth:</b>	154.2 m	<b>Deviation:</b>	Inc. 36.39°
<b>RT:</b>	21.5 m		Az. 157.79°

## OPERATIONS SUMMARY

**24 HOUR SUMMARY:** Drilled out cement and shoe plus 3 metres of new formation to 2921 mMDRT. Performed FIT to 1.56 sg EMW. Drilled 216 mm (8 1/2") hole from 2921 to 3380 mMDRT.

**NEXT 24 HOURS:** Drill 216 mm (8 1/2") hole to TD.

**CURRENT OPERATION @ 06:00 HRS (02-Aug-2009):** Drilling 216 mm (8 1/2") hole at 3449 mMDRT.

## GEOLOGICAL SUMMARY

### LITHOLOGY

**INTERVAL:** 2910 to 2980 mMDRT (-2447.1 to -2503.4 mTVDMSL)  
**ROP (Range):** 2 to 131 m/hr  
**Av. ROP:** 51 m/hr

**SANDSTONE (60 to 95%) :** translucent, transparent, white, light grey, loose, very fine to very coarse, dominantly medium to coarse, poor to moderately sorted, sub-angular to sub-rounded, slightly spherical to slightly elongated, trace pyrite cement, 5 to 10% white to light grey siliceous clay, trace to occasionally 5% pyrite, trace to rare glauconite, occasionally poor visible porosity, fair to good inferred porosity.

**SILTSTONE (5 to 40%) :** dark grey, dark green grey to dark brown grey, soft to moderately hard, amorphous to blocky, 10% siliceous clay, trace to 5% very fine quartz grains, trace pyrite, trace to 5% glauconite, trace to rare carbonaceous material.

**INTERVAL:** 2980 to 3048 mMDRT (-2503.4 to -2561.4 mTVDMSL)  
**ROP (Range):** 18 to 125 m/hr  
**Av. ROP:** 65 m/hr

**SANDSTONE (20 to 70%) :** translucent, transparent, light to medium light grey, dominantly loose, 20% soft to friable aggregates, very fine to very coarse, dominantly very fine to fine, occasionally dominantly coarse, moderately sorted, sub-angular to rounded, slightly spherical to slightly elongated, trace pyrite cement, 10 to 15% white to light grey siliceous clay, trace pyrite, poor visible porosity to occasionally fair inferred porosity.

**SILTSTONE (30 to 80%) :** dark grey, dark brown grey to brown black, firm to moderately hard, sub-blocky to blocky, occasional sub-fissile, 10 to 15% siliceous clay, trace very fine quartz grains, trace pyrite, 5% carbonaceous fragments and laminae.



**INTERVAL:** 3048 to 3095 mMDRT (-2561.4 to -2599.8 mTVDMSL)  
**ROP (Range):** 12 to 123 m/hr  
**Av. ROP:** 55 m/hr

SANDSTONE (90 to 98%) : translucent, transparent, loose, fine to very coarse, dominantly coarse to very coarse, moderately sorted, sub-angular to rounded, slightly spherical to slightly elongated, trace pyrite cement, trace carbonaceous specks, trace pyrite, fair to good inferred porosity.

SILTSTONE (2 to 10%) : dark grey, dark brown grey to brown black, firm to moderately hard, sub blocky to blocky, occasional sub fissile, 10 to 15% siliceous clay, trace very fine quartz grains, trace pyrite, 5% carbonaceous fragments and laminae.

**INTERVAL:** 3095 to 3155 mMDRT (-2599.8 to -2647.8 mTVDMSL)  
**ROP (Range):** 11 to 32 m/hr  
**Av. ROP:** 19 m/hr

SANDSTONE (70 to 90%) : translucent, transparent, light to medium light grey, dominantly loose, 20% soft to friable aggregates, very fine to occasional trace very coarse, dominantly very fine to fine, 5 to 10% coarse to very coarse, moderately sorted, sub-angular to rounded, slightly spherical to slightly elongated, 10 to 15% white to light grey dispersive siliceous clay, trace pyrite, poor visible to fair inferred porosity.

SILTSTONE (10 to 30%) : medium dark grey, dark brown grey, firm to moderately hard, sub blocky to blocky, 10 to 15% siliceous clay, trace to 10% very fine quartz grains, trace pyrite, trace to occasionally 5% carbonaceous fragments and laminae.

**INTERVAL:** 3155 to 3380 mMDRT (-2647.8 to -2828.8 mTVDMSL)  
**ROP (Range):** 9 to 207 m/hr  
**Av. ROP:** 34 m/hr

SANDSTONE: (30 to 90%) translucent, transparent, opaque in part, occasional light to medium light grey, trace pinkish grey, dominantly loose, 10% soft to friable aggregates, very fine to very coarse, dominantly fine to medium, dominantly poorly sorted, locally moderately sorted, rare bi-modal sorting? sub-angular to rounded, slightly spherical to slightly elongated, 10 to 15% white to light grey dispersive siliceous clay, rock flour becoming common, trace to common (2%) pyrite as nodules and cement, locally grades arenaceous Siltstone, poor visible to fair inferred porosity.

ARGILLACEOUS SILTSTONE: (10 to 70%) medium dark grey to very dark grey / black, dark brown grey to brown black, becoming light to medium grey, soft to moderately hard, crumbly, amorphous to blocky, 25 to 30% siliceous clay, trace to 25% very fine quartz grains, trace pyrite, trace to 5% carbonaceous fragments and laminae, dispersive, locally grading carbonaceous Claystone, very fine / fine argillaceous Sandstone and minor coal.

SILTY CLAYSTONE: (0 to 30%) brownish grey to brownish black, soft to moderately hard, amorphous, sub-blocky to blocky, 10-20% siliceous silt, trace pyrite, trace carbonaceous specks and laminae, very dispersive in part.

COAL: (0 to 20%) sub-bituminous, grey black to black, firm to moderately hard, occasional brittle, blocky to occasional sub-fissile, dull to sub-vitreous lustre, occasional sub-conchoidal fracture.

## GAS SUMMARY

Background Gas							
INTERVAL (mMDRT)	Total Gas (%)	C1 (ppm)	C2 (ppm)	C3 (ppm)	iC4 (ppm)	nC4 (ppm)	C5 (ppm)
2910 - 2980	0.01	55	9	5	1	1	0
2980 - 3048	0.02	104	21	12	1	2	0
3048 - 3095	0.01	30	5	3	0	1	0
3095 - 3155	0.01	32	4	3	0	1	0
3155 - 3380	0.03	142	12	8	1	2	0

**SAMPLE QUALITY**

Good sample quality and quantity

**MUDLOGGING EQUIPMENT / PERSONNEL**

2 Data Engineers, 2 Mudloggers, 2 Sample Catchers on board

2 Flair Engineers on board.

**MWD**

2 Directional Drillers, 3 LWD Engineers on board.

Sensor distances behind the bit:

Gamma Ray 9.17 m

Resistivity 9.70 m

Direction 15.67 m

**PROVISIONAL FORMATION TOPS**

Formation Name	Prognosed Depths			Actual Depths			Diff. TVT (m)	Picks Based On
	MD (m)	TVDRT (m)	TVDMSL (m)	MD (m)	TVDRT (m)	TVDMSL (m)		
Gippsland Limestone	176.5	176.5	(155)	175.7	175.7	(154.2)	0.8 H	
Lakes Entrance Fm	2094.8	1816.4	(1794.9)	2100	1824.4	(1802.9)	8 L	Subtle change in lithology
Top Latrobe Group	2501.2	2142.3	(2120.8)	2495	2137.4	(2115.9)	4.9 H	Increase in GR & RES
K2 Sandstone Marker	2946.1	2502.5	(2481)	3054	2588	(2566.5)	85.5 L	GR & RES drop
Zone 0	3545.4	2985.4	(2963.9)				-	
Zone 2	3658.1	3076.3	(3054.8)				-	
Zone 6	3835.3	3219.1	(3197.6)				-	
Top Volcanics	3901	3272	(3250.5)				-	
Total Depth	3951	3312.3	(3290.8)				-	

**SURVEY DATA**

MD (m)	Inc (°)	Azi (°)	TVD (m)	TVDSS (m)	V.Sec (m)	Dogleg (°/30m)	E/W (m)	N/S (m)
2945.4	37.01	148.10	2496.9	2475.4	1411.85	0.36	701.76	-1225.20
2974	35.23	148.79	2520	2498.5	1428.70	1.91	710.59	-1239.57
3002.4	31.62	147.66	2543.7	2522.2	1444.32	3.87	718.81	-1252.87
3031.9	29.63	151.64	2569.1	2547.6	1459.32	2.89	726.41	-1265.80
3060.4	33.83	159.35	2593.3	2571.8	1474.24	6.13	732.56	-1279.45
3090.2	37.81	160.82	2617.4	2595.9	1491.40	4.11	738.48	-1295.81
3119	37.20	158.37	2640.3	2618.8	1508.74	1.68	744.59	-1312.25
3147	36.08	156.55	2662.8	2641.3	1525.34	1.67	750.99	-1327.69
3175.8	36.39	157.79	2686	2664.5	1542.25	0.83	757.59	-1343.37
3204.3	36.69	156.93	2708.9	2687.4	1559.15	0.62	764.14	-1359.06
3233.4	36.98	151.11	2732.2	2710.7	1576.54	3.61	771.78	-1374.72
3262.4	36.02	152.71	2755.5	2734	1593.76	1.40	779.89	-1389.92
3291.2	36.12	160.16	2778.8	2757.3	1610.62	4.57	786.66	-1405.44
3320.4	36.24	159.29	2802.3	2780.8	1627.63	0.54	792.62	-1421.59
3333.6	36.47	158.93	2813	2791.5	1635.42	0.71	795.43	-1428.94



3349.4	36.25	157.70	2825.7	2804.2	1644.66	1.45	798.87	-1437.61
3379.2	36.82	155.23	2849.7	2828.2	1662.34	1.59	805.97	-1453.89
3407.1	36.55	156.71	2872	2850.5	1678.93	0.99	812.75	-1469.10

**REMARKS**

FLAIR unit experienced an electrical fault at 04:15 2nd August 2009 and was shut-down for approximately 1 hour - no data recorded at this time, but gas levels remained low (background).

Carbide at 3251 mMDRT. Average hole diameter 8.9".

**WELLSITE GEOLOGISTS**

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