

## DAILY GEOLOGICAL REPORT

<b>Date:</b>	15 November 2008	<b>Rig:</b>	Ocean Patriot
<b>Report Number:</b>	17	<b>Bit Diameter:</b>	216 mm
<b>Report Period:</b>	06:00 - 06:00 Hours	<b>Last Casing:</b>	340 mm Casing @ 1532.1 mMDRT
<b>Spud Date:</b>	05-Nov-2008 03:30 Hours	<b>LOT:</b>	1.34 sg EMW @ 1532.1 mMDRT
<b>Days From Spud:</b>	10.1	<b>Mud Weight:</b>	1.15 sg
<b>Depth @ 0600 Hrs:</b>	3436.0 mMDRT	<b>ECD:</b>	1.21 sg
	-3413.3 mTVDAHD	<b>Mud Type:</b>	KCL / Polymer
<b>Lag Depth:</b>	3340.0 mMDRT	<b>Mud Chlorides:</b>	550000.00 mg/L
<b>Last Depth:</b>	2955.0 mMDRT	<b>Est. Pore Pressure:</b>	1.08 sg
<b>Progress:</b>	481.0 m	<b>Last Survey:</b>	2938.52 mMDRT
<b>Water Depth:</b>	517.3 m	<b>Deviation:</b>	Inc. 1.23°
<b>RT:</b>	21.5 m		Az. 64.27°

### OPERATIONS SUMMARY

**24 HOUR SUMMARY:** Ran in hole and conducted MAD logging pass from 2780.0 m to 2910.0 mMDRT. Ran in hole to bottom and drilled 216mm (8 1/2") hole from 2955.0 to 3436.0 mMDRT.

**NEXT 24 HOURS:** Drill ahead new 216mm (8 1/2") hole to TD. Pull out of hole.

**CURRENT OPERATION**

@ 06:00 HRS (15-Nov-2008): Drilling ahead 216 mm (8 1/2") open hole at 3436.0 mMDRT.

### GEOLOGICAL SUMMARY

**LITHOLOGY**

**INTERVAL:** 2952.0 to 3130.0 mMDRT (-2929.4 to -3107.3 mTVDAHD)  
**ROP (Range):** 5.0 to 142.0 m/h  
**Av. ROP:** 56.0 m/h

**Massive SANDSTONE with minor interbedded SILTSTONE, GLAUCONITIC SANDSTONE and CLAYSTONE**

SANDSTONE (50 to 90%): clear to translucent, frosted, dominantly coarse to very coarse, commonly fine to medium grains, poor to moderately well sorted, angular to sub-angular, sub-rounded where fine to medium grained, trace weak calcareous cement, nil visible matrix, generally clean disaggregated grains, very good inferred porosity.

SILTSTONE (10 to 15%): medium dark grey brown, olive black, slightly arenaceous, common fine to medium glauconite grains, common tan lithics, minor micromicaceous, trace to minor nodular and disseminated pyrite, moderately hard to hard, sub-blocky.

GLAUCONITIC SANDSTONE (3 to 15%): Medium grey, light olive grey, very fine to fine, dominantly fine, well sorted, round to sub-rounded, minor moderately strong calcareous cement, common argillaceous matrix and grading to ARGILLACEOUS SANDSTONE, common to locally abundant very fine to medium glauconite grains, trace mica flakes, occasional fine pyrite nodules, trace lithics, trace carbonaceous material, friable to moderately hard aggregates, hard in part, very poor visible porosity, no hydrocarbon fluorescence.

CLAYSTONE (5 to 20%): light bluish grey, light grey, light greenish grey, siliceous, minor calcareous material, common off white lithics, commonly micromicaceous, hard to very hard, sub-fissile to sub-blocky.

**INTERVAL:** 3130.0 to 3240.0 mMDRT (-3107.3 to -3217.3 mTVDAHD)  
**ROP (Range):** 14.0 to 95.0 m/h  
**Av. ROP:** 53.0 m/h

**Massive SANDSTONE with minor SILTSTONE interbeds and thin COAL stringers**

SANDSTONE (70 to 80%): clear to translucent, off white, dominantly medium, commonly very fine to fine and common coarse to very coarse fractured grains, angular to sub-rounded, dominantly sub-angular,

common strong siliceous cement and occasional fused grain boundaries, minor moderately strong pyritic cement, trace weak calcareous cement, common off white argillaceous matrix where very fine to fine tight aggregates, occasional carbonaceous specks, common nodular pyrite, rare glauconite nodules, common chert fragments, common friable to moderately hard fine grained aggregates, generally clean disaggregated coarse grains and fractured quartzite shards, poor to fair visible porosity in fine aggregates, generally fair to good inferred porosity, no hydrocarbon fluorescence.

SILTSTONE (18 to 30%): medium brown to tan, medium grey brown, generally argillaceous and locally grading to a SILTY CLAYSTONE, common carbonaceous laminations and specks and locally grading to VITREOUS COAL stringers, locally arenaceous, minor micromicaceous, trace lithics, moderately hard to hard, sub-fissile to sub-blocky.

COAL (Trace to 2%): black, olive black, vitreous to sub-vitreous, common silty laminations and commonly grading to a CARBONACEOUS SILTSTONE, hackly in part, hard to very hard, sub-conchoidal to sub-blocky.

**INTERVAL:** 3240.0 to 3340.0 mMDRT (-3217.3 to -3317.3 mTVDAHD)  
**ROP (Range):** 11.0 to 130.0 m/h  
**Av. ROP:** 61.0 m/h

#### SANDSTONE with minor SILTSTONE stringers

SANDSTONE (65 to 75%): clear to translucent, frosted, off white to pale grey in part, fine to very coarse, dominantly fine to medium, common coarse angular grains, poor sorted, dominantly sub-angular to sub-rounded, common angular, common strong siliceous cement and fused grain boundaries where medium to coarse grained, minor strong pyritic cement, trace weak calcareous cement, common off white to pale grey brown argillaceous matrix where very fine to fine tight aggregates, occasional pale brown silty matrix and locally grading to ARENACEOUS SILTSTONE, common silty and carbonaceous laminations, common nodular pyrite, common friable to very hard fine to medium grained aggregates, generally clean disaggregated grains, poor to fair visible porosity in fine aggregates, poor to generally fair inferred porosity.

SILTSTONE (25 to 35%): medium brown to tan, medium grey brown, generally argillaceous and locally grading to a SILTY CLAYSTONE, common carbonaceous laminations and specks and locally grading to VITREOUS COAL stringers, locally arenaceous, minor micromicaceous, trace lithics, moderately hard to hard, sub-fissile to sub-blocky.

#### HYDROCARBON FLUORESCENCE

2952.0 to 3130.0 mMDRT (0 - 0.1%) Moderately bright pale blue to off white spotted residual fluorescence associated with coarse sandstone grains, slow diffusing cut and minor slow bleeding cut, thin off white to pale green film residue.

3240.0 to 3320.0 mMDRT (0.1 - 5%) Bright pale blue to off white spotted residual fluorescence associated with coarse sandstone grains, slow diffusing cut and weak slow bleeding cut, thick off white to pale green ring residue.

#### GAS SUMMARY

Background Gas							
INTERVAL (mMDRT)	Total Gas (%)	C1 (ppm)	C2 (ppm)	C3 (ppm)	iC4 (ppm)	nC4 (ppm)	C5 (ppm)
2952.0 - 3130.0	0.03	179	37	19	2	4	2
3130.0 - 3240.0	0.09	559	98	49	6	11	4
3240.0 - 3340.0	0.07	213	56	29	4	10	6

Gas Peak							
INTERVAL (mMDRT)	Total Gas (%)	C1 (ppm)	C2 (ppm)	C3 (ppm)	iC4 (ppm)	nC4 (ppm)	C5 (ppm)
3081.5	0.29	1950	299	143	18	33	15
3140.0	0.52	3108	530	263	32	62	28
3198.0	0.33	1652	369	245	41	81	47
3235.0	0.28	1414	248	157	27	56	38
3266.0	0.32	749	282	155	6	18	4

**SAMPLE QUALITY**

Collected 10.0 m sample intervals from 2952.0 to 3220.0 mMDRT.  
Collected 20.0 m sample intervals from 3220.0 to 3340.0 mMDRT.

**MUDLOGGING EQUIPMENT / PERSONNEL**

All systems operational.  
Chromatograph gas windows constantly drifting out of sync. Problem needs to be rectified. System was checked and looked at during trip, but still not resolved.

**MWD**

Run #5, Bit Run #4: 216 mm LWD Tool offsets to bit:

Tool	Serial #	Distance to bit (m)
Direction and Inclination	PCDC MWD	6.82
Azimuthal Focused Res	AFR LWD	10.70
Gamma Ray	DGR LWD	13.43
Resistivity	EWR LWD	15.79
Pressure w/- Drilling	PWD LWD	20.69
Neutron Density	ALD LWD	25.64
Neutron Porosity	CNP LWD	28.25
BAT Sonic	BAT LWD	39.58
Acoustic Caliper	ACAL LWD	43.35

MWD/LWD tools failed while washing to bottom. Pulse detected at surface but no useable signal from tool string decoded. Cycled pumps (2-2-2 cycle) and attempted to mode switch HCIM - unsuccessful. The suspected problem is most likely a short in the toolstring, leading to high current arbitration of the lower bus, eventually shutting down all the sensors. Drilled ahead without LWD.

In terms of recorded data acquisition, the following is the most likely scenario:

BAT Sonic, ACAL, and ALD (Density) tools have their own batteries and memory boards, and will be unaffected by this problem. It is expected that recorded data will be retrieved from these tools.

It is unlikely that data from EWR-R4 resistivity tool will be retrieved, and there will be no recorded data available for the DGR (Gamma Ray), Neutron Porosity (CNP) and AFR (Azimuthal Resistivity) from 16:10 hours onwards. Survey data from the PCD-C will not be available, as the tool will not be able to determine pump status through the HCIM.

**WIRELINE**

Wireline logging crew on site. Wireline Currently rigging up and testing tools. Waiting on backup RSWC and PSC tools to arrive.

**REMARKS**

Ran in hole to 2780.0 mMDRT and conducted MAD logging pass at 50 m/hr from 2780.0 m to 2910.0 mMDRT (LWD sensor depth). Washed and reamed from 2910.0 mMDRT down to 2955.0 mMDRT - hole condition good. Drilled new 216mm (8 1/2") hole from 2955.0m to 3436.0 mMDRT.

**WELLSITE GEOLOGISTS**

Greg Fawns / Adam Cruickshank