



DAILY GEOLOGICAL REPORT

Macondo Exploration Well 252#1 OCS-G-32306 Rig: Transocean Marianas				Mississippi Canyon API#: 60817411690000 Spud date: 10/6/2009			
Well No.	MC 252 #1	KB (ft):	89'	WD (ft):	4992'	Date:	10/26/2009
Current TD (ft MD)	8970	Int. drilled (ft)	920	Dev. (deg)	0.06	Azi. (deg)	86.6
Current TD (ft TVD)	8970	Avg. ROP (ft/hr):	75-85	@ MD (ft)	8776	@ TVD (ft)	8775.73
CSG Shoe	36" casing	5335'					
CSG Shoe	28" casing	6231'					
CSG Shoe	22" casing	7952'	LOT: 10.38 ppg. Hole @ 8000'; 8010' & 8059'				
CSG Shoe	Next 18" casing	Plan 9900'	Current hole w/ 18 1/8" x 22"				
CSG Shoe	16" casing						
LNR Shoe	13 3/8" liner						

Present Operation:

Flow check @ 8970'

Activity last 24 hrs (5am to 5am):

Test line & perform LOT

Drill controlling ROP max to 75 ft/h.

@ 8630' pump 100 bbl sweep 11.7 ppg continue drilling ahead.

Raise MW to 9.8 ppg. Drill ahead.

Sample Descriptions

8020' - 8130'	Shale: 100% Light grey, occasionally olive light grey, no calcareous, but some time slightly calcareous; slightly silty, rarely sandy grain, firm to hard, moderately compact to well compacted. Non-fissile, mostly blocky micro-blocky, rough to gritty structure. Some samples show traces of Silty Shale, light gray- light olive gray with no visible accessories, slightly calcareous in parts, well consolidated well indurated. No visible oil stain, no visible oil florescence on samples.
8130' - 8240'	Shale: 90% Still mostly light grey, occasionally olive light grey, no calcareous, in some time cuttings slightly calcareous; frequently silty, appear some sandy grain, firm to hard, moderately compact to well compacted. Non-fissile, mostly blocky micro-blocky, rough to gritty structure. Some samples show traces of Silty Sandy Shale, light gray- light olive gray, no visible accessories, slightly calcareous in parts, well consolidated well indurated. No oil stain, no visible oil florescence on samples. Siltstone: 10%-TR Lithic. Light very light gray, occasionally slightly calcareous, firm to well compacted, well sorted, sandy in parts, medium- well indurated, medium to well sorting, no visible inter-granular porosity, no oil stain, no fluorescence.
8230' - 8300'	Shale: 80% Traces of very light gray and occasionally more silty than before, but basically A/A Sandstone: 20% Lithic. Light very light gray, occasionally off white, medium to fine grain, frequently transition to siltstone, spherical- sub spherical, rounded to well rounded, slightly calcareous in part, poor cementation, well cemented in parts, poor

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	indurate, poor inter-granular porosity, no oil stain, mineral fluorescence, no cut. Siltstone: 10%-TR Lithic. Light very light gray, occasionally slightly calcareous, firm to well compacted, well sorted, shaly in parts, medium- well indurated, no visible inter-granular porosity, no oil stain, no fluorescence.
8300' – 8370'	Shale: 90 % Light grey, occasionally olive light grey, no calcareous, slightly calcareous in parts; also silty, rarely sandy grain, firm to hard, moderately compact to well compacted. Non-fissile, mostly blocky micro-blocky, rough to gritty structure. No visible oil stain, no visible oil fluorescence on samples. Sandstone: 10% A/A Sandstone: TR A/A but show more loses grain and poor indurate, like dusty silt.
8370' - 8440'	Shale: 80-90% Light gray to med gray, slightly calcareous in part, firm to moderated compact, non-fissile, blocky- micro blocky, tracers of waxi structure but more frequently rough to gritty. Sandstone: 10-20% Lithic, Light very light gray, occasionally off white, medium to fine grain, frequently transition to siltstone, spherical- sub spherical, rounded to well rounded, slightly calcareous in part, poor cementation, well cemented in gray cuttings, poor indurate, poor inter-granular porosity, no oil stain, mineral fluorescence, no cut. From 8410' to 8430' samples becomes with more Shale with intercalation of Silty-Sandstone.
8440' – 8480'	Shale: 90-100 % A/A Sandstone: 10% TR Light gray, very light grey, occasionally light greenish gray, slightly calcareous in pars, fine grain to siltstone, very silty in the end of the interval. No visible intra-granular porosity, no oil stain, poor mineral fluorescence, no cut.
8480' – 8670'	Shale: 100 % A/A Sandstone: TR% Light gray, very light grey, occasionally light greenish gray, slightly calcareous in pars, fine grain to siltstone, very silty in the end of the interval. No visible intra-granular porosity, no oil stain, mineral fluorescence, no cut.
8670' – 8810'	Shale: 90-95 % A/A Sandstone: 5-10% Light gray, very light gray, occasionally off white, slightly calcareous, medium fine grain, angular- sub-angular, mostly spherical, moderated sorting, poor cementation, occasionally unconsolidated, poorly indurated, poor inter-granular porosity, no oil stain, no oil fluorescence, no cut.
8810' - 8870'	Shale: 100% Light gray to med gray, slightly calcareous in part, firm to moderated compact, non-fissile, blocky- micro blocky, traces of splinty, tracers of waxi structure, frequently rough to gritty.
8870' – 8890'	Shale: 10-20% A/A more silty sandy. Sandstone: 60-80% Sublithic. Very light gray, off white, predominant medium grain, frequently medium to fine, sub-spherical to spherical, sub-angular, moderated sorting, traces light chert, siliceous- slightly calcareous cement, poor cementation, occasionally unconsolidated, poorly indurated, poor to fair inter-granular porosity, no oil stain, no oil fluorescence, no cut. Siltstone: 10% Lithic to Sublithic. Light very light gray, off white, occasionally slightly calcareous, firm to well compacted, well sorted, sandy in parts, medium- well indurate, medium to well sorting, no visible inter-granular porosity, no oil stain, no fluorescence. Claystone: TR
8890' - 8910' (Lag)	Sandstone: 70% Sublithic. Very light gray, off white, predominant medium grain, frequently medium to fine, sub-spherical to spherical, sub-angular, moderated sorting, traces light chert, siliceous- slightly calcareous cement, poor cementation, occasionally unconsolidated, poorly indurated, poor to fair inter-granular porosity, no oil stain, no oil fluorescence, no cut. Claystone: 20% (Mudstone-Wackestone)**Light greenish gray, occasionally off white, minor light cream – very light gray, calcareous to very calcareous, soft, plastic, occasionally very plastic with water, poor compacted, mostly micro-blocky, rough to gritty in part. Some time observed a fine grain of sand or/ ad silt as an intra clast. Siltstone: 10% Lithic to Sublithic. Light very light gray, off white, occasionally slightly calcareous, firm to well compacted, well sorted, sandy in parts, medium- well indurated, medium to well sorting, no visible inter-granular porosity, no oil stain, no fluorescence. Shale: TR A/A

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Base of 2 nd Sand prone is not drilled yet. **Dunham								
Gas								
Gas Type	Total Gas (U)	Depth (MD)	C1 (ppm)	C2 (ppm)	C3 (ppm)	TC4 (ppm)	TC5 (ppm)	Notes:
Max gas	161	8646'	35167	12.8	0	0	0	Sweep @ 8630'
Bkgd gas	3-8	8083						
Bkgd gas	8-15	8177						
Bkgd gas	10-29	8272						1er Sand Prone
Bkgd gas	22-30	8367						1er Sand Prone
Bkgd gas	18-38	8461						
Bkgd gas	15-40	8557						
Bkgd gas	35-80	8651						
Bkgd gas	118-80	8745						
Bkgd gas	51-70	8842	8910					Before 2er Sand Prone
PU gas								
Conn gas								
Trip gas								

Mud Properties					
Depth (tvd)	ESD / ECD (ppg)	Mud Type	Surface MW (ppg)	Pore Press. (ppg) (est)	Comments
8877	9.91/10.15	SYN.OBM	9.8	9.5-9.6	
8969	10./10.11	SYN.OBM	9.8	10.02	For detail, see report PPFG
Pressure Indicators:					
Any indicator of hole instability					
Targets:	<u>Prognosis (TVD)</u>	<u>Actual (TVD)</u>	<u>+ / - (ft)</u>	<u>Comments</u>	
	8283' – 8448'	8240'-8435'	-43/-13	pp: ~ 9.4 ppg	
Sand-prone	8842' – 9039'	8870'-to drill	+28/	Rigel 252@8900' pipe stuck. Pp:9.8	
	9453' – 9699'			pp: ~10.2 ppg	

BHA:
PDC Bit: 18 1/8" Nozzles: 2 x 16, 5 x 15, TFA: 1.26 Reamer: 22" 3 x 8 TFA: 147
Sensor Distance: PD Gamma = 8.55'; PD D&L = 11.16'; PWD = 27.57', Resistivity = 29.90'
Gamma: 29.17'; D&L = 57.13'
Stabilizer mid points: PD Bias = 2.83'; RSS = 18.98' Telescope Stab. = 43.54'
22" Reamer = 91.28'; 19 1/2" Reamer = 136.20'
DP Size (OD- ID- grade): 6 5/8" – 4 5/8" S135 & 5 1/2" S135

Comments:			
No gas was associated to the connection lagged.			
Cutting size are very small and also contaminate with the cutting reamed ~90' above the bit.			
24 Hour Prognosis:			
Finish drill to casing point @ 9900'. Circulate and condition hole. Short trip 2000'. POOH			
Geologist	JORGE VIERA	Time:	5:30 AM

Macondo Drilling Ops Note – 18x22" Hole Section
Oct 26, 2009

Status:

Kick at 8970 MD. Ops note to TD hole section for 18" casing.
All Ops below based on monitoring well on trip tank at all times.

Objective:

Drill sufficient rathole to place 18" shoe at 8975 MD without penetrating any additional sands.

Procedure:

- 1- Well, Choke line, Kill line circ'd to 9.9 ppg SMW. Check SIDP/Csg pressures.
- 2- Perform flow check while waiting up riser to 9.9 ppg SMW
- 3- Displace riser to 9.9 ppg SMW (moving DP)
- 4- Sweep stack
- 5- Open up annular and confirm no flow
- 6- Start pumping, staging up pumps while monitoring ECDs up to 1250 gpm.
 - a. Maintain ECD less than 10.30 ppg DHEMW.
 - b. PU and work stand up/down.
- 7- Wash bit back to bottom once ECD stable
- 8- Drill ahead monitoring downhole MWD Torque, WOB, PD GR to closely monitor downhole conditions for sand development.
 - a. Stop drilling and TD interval with any indication of drilling into another sand
 - b. If conditions allow drill to max 9010 MD bit depth, 8995 MD reamer depth, 8975 MD casing shoe depth.
- 9- Pump BU monitoring ECD. Keep ECD below 10.30 ppg, keep ESD above 10.20 ppg as hole cleans up by increasing SMW as necessary
- 10- Pump out of hole (20 spm) to previous shoe, pulling at 1.5 mins/std to minimize swab.
- 11- Do flow check at previous shoe
- 12- Pump out of hole to top of BHA at BOP
 - a. Perform flow check before pulling BHA through BOP
- 13- POOH at 1 mins/std in riser.
 - a. Close blind shear rams after bit above stack to prevent swab/surge on bottom
- 14- PU rathole clean out BHA per SLB
- 15- RIH in riser at unrestricted
 - a. Blind shear rams closed. Stop 1 stand above stack and open rams.
- 16- RIH to previous shoe at 1.5 mins/std
- 17- RIH at 1.5 mins/std to 8850 ft MD (after confirming surge, actual running speed based on trip tank monitoring)
- 18- Wash last 2 stands to bottom at approx 5 mins/std monitoring for losses
- 19- Ream from previous 22" rathole at ~8920 down to TD at 9010 MD.
- 20- POOH same as last BHA to RIH with casing (steps 10-13)

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