

# HALLIBURTON

## Cementing Gulf of Mexico, Broussard

## LAB RESULTS - Lead

### Job Information

Request/Slurry	65112/3	Rig Name	TRANSOCEAN HORIZON	Date	February 10th 2010
Submitted By	Jesse Gagliano	Job Type	Production Casing	Bulk Plant	Fourchon-C-Port I, La, USA
Customer	BP	Location	Mississippi Cny	Well	Mississippi Canyon 252 OCS-G-32306 Macondo #1

### Well Information

Casing/Liner Size	9 5/8"	Depth MD	19650 ft	BHST	262 F
Hole Size	12 1/4"	Depth TVD	19650 ft	BHCT	223 F

### Drilling Fluid Information

Mud Company	MI	Type	SOBM	Density	14.6 PPG	PV/YP
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### Cement Information - Lead Design

Conc	UOM	Cement/Additive	Sample Type	Sample Date	Lot No.	Cement Properties		
						Slurry Density	16.741	PPG
						Slurry Yield	1.37	FT3
100.00	% BWOC	Lafarge Class H	Bulk	Dec 29, 2009	LOCATI ON	Water Requirement	4.84	GPS
						Total Mix Fluid	5.04	GPS
0.07	% BWOC	EZ-FLO	Bulk	Dec 29, 2009	BLEND ED	Foam Density	14.496	PPG
						Foam Quality	12.98	%
0.25	% BWOC	D-Air 3000	Bulk	Dec 29, 2009	BLEND ED			
1.88	lb/sk	KCl (Potassium Chloride) Salt	Bulk	Dec 29, 2009	BLEND ED	Water Source	Fresh Water	
20.00	% BWOC	SSA-1 (Silica Flour) - PB	Bulk	Dec 29, 2009	BLEND ED	Water Chloride	N/A	ppm
15.00	% BWOC	SSA-2 (100 Mesh) - PB	Bulk	Dec 29, 2009	BLEND ED			
0.20	% BWOC	SA-541	Bulk	Dec 29, 2009	BLEND ED			
0.11	gps	ZoneSealant 2000	Lab	Mar 15, 2009				
0.20	gps	SCR-100L	Lab	Dec 23, 2008	2117			
4.84	gps	Fresh Water	Lab	Jan 18, 2010				

### Operation Test Results Request ID 65112/3

#### Thickening Time, Request Test ID:722097

Temp (°F)	Pressure (psi)	Batch Mix (min)	Reached in (min)	Start BC	30 Bc (hh:mm)	40 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)
223	15,945	0	89	7	04:57	04:58	04:59	05:00

#### Mud Balance Density, Request Test ID:722106

Density (ppg)

16.5

#### Mixability (0 - 5) - 0 is not mixable, Request Test ID:722100

Mixability rating (0 - 5)

5

#### Foam Mix and Stability, Request Test ID:727534

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SG top

1.91

SG bot.

1.91

Conditioning time (hrs:min)

00:00

**FYSA Viscosity Profile & Gel Strength, Request Test ID:722102**

Test Temp (°F)

80

foamed fysa rpms 22 8 5 3 2 2 2 1 3d= 0 6d = 0

**Non API Rheology, Request Test ID:722103**

Test temp (°F)	600	300	200	100	60	30	20	10	6	3
	80	120	58	36	16	8	4	2	2	2

**Non API Rheology, Request Test ID:722104**

Test temp (°F)	600	300	200	100	60	30	20	10	6	3
	130	56	28	18	8	4	2	2	2	2

**Non API Rheology, Request Test ID:722105**

Test temp (°F)	600	300	200	100	60	30	20	10	6	3
	190	192	108	66	34	20	10	6	2	2

**UCA Comp. Strength, Request Test ID:722098**

End Temp (°F)	Pressure (psi)	50 psi (hh:mm)	500 psi (hh:mm)	12 hr CS (psi)	24 hr CS (psi)	48 hr CS (psi)
262	15,945	02:28	02:42	1,829	1,872	1,946

**Crush Compressive Strength, Request Test ID:727535**

Time 1 (hrs)	Strength 1	Time 2 (hrs)	Strength 2	Time 3 (hrs)	Strength 3	Time 4 (hrs)	Strength 4	Foam quality
12	0	24	0	36	0	48	0	0

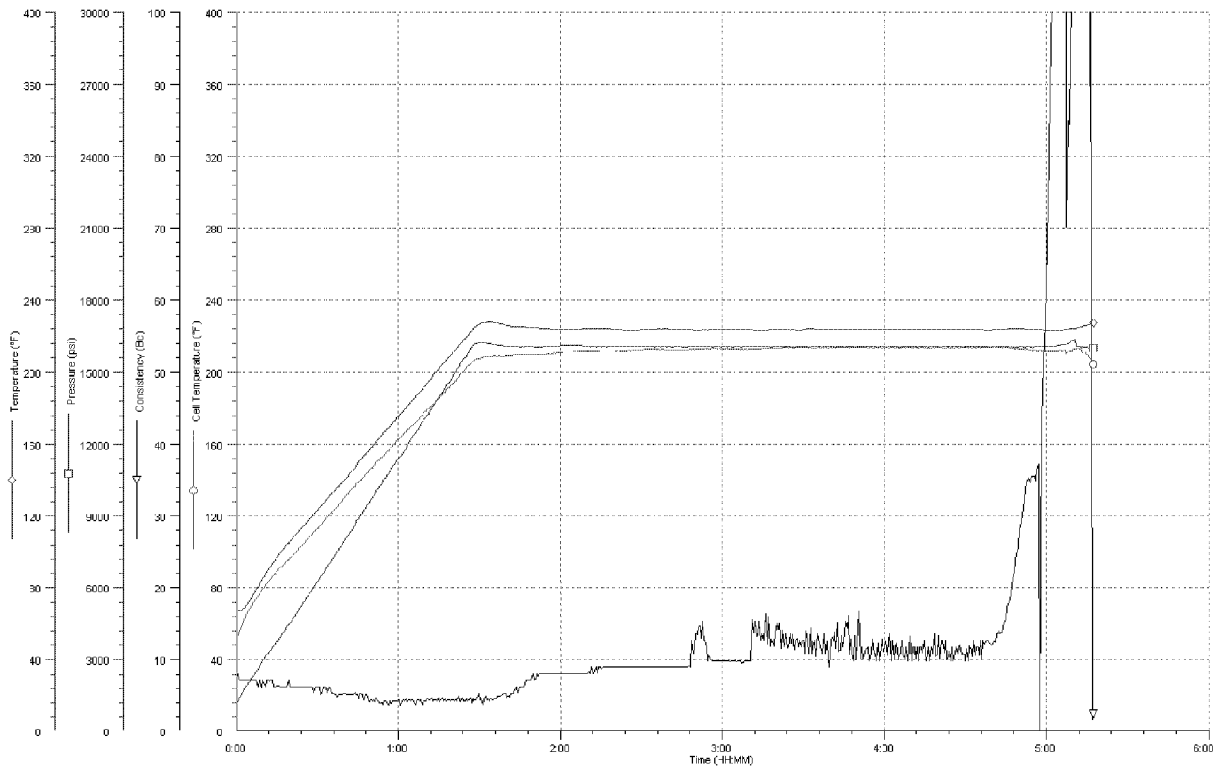
60 hr c/s = 0 72 hr c/s = 0 84 hr c/s = 0 96 hr c/s = 1145

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Temperature: 227 °F  
Cell Temperature: 204 °F

Pressure: 19932 psi

Consistency: 2 Bc

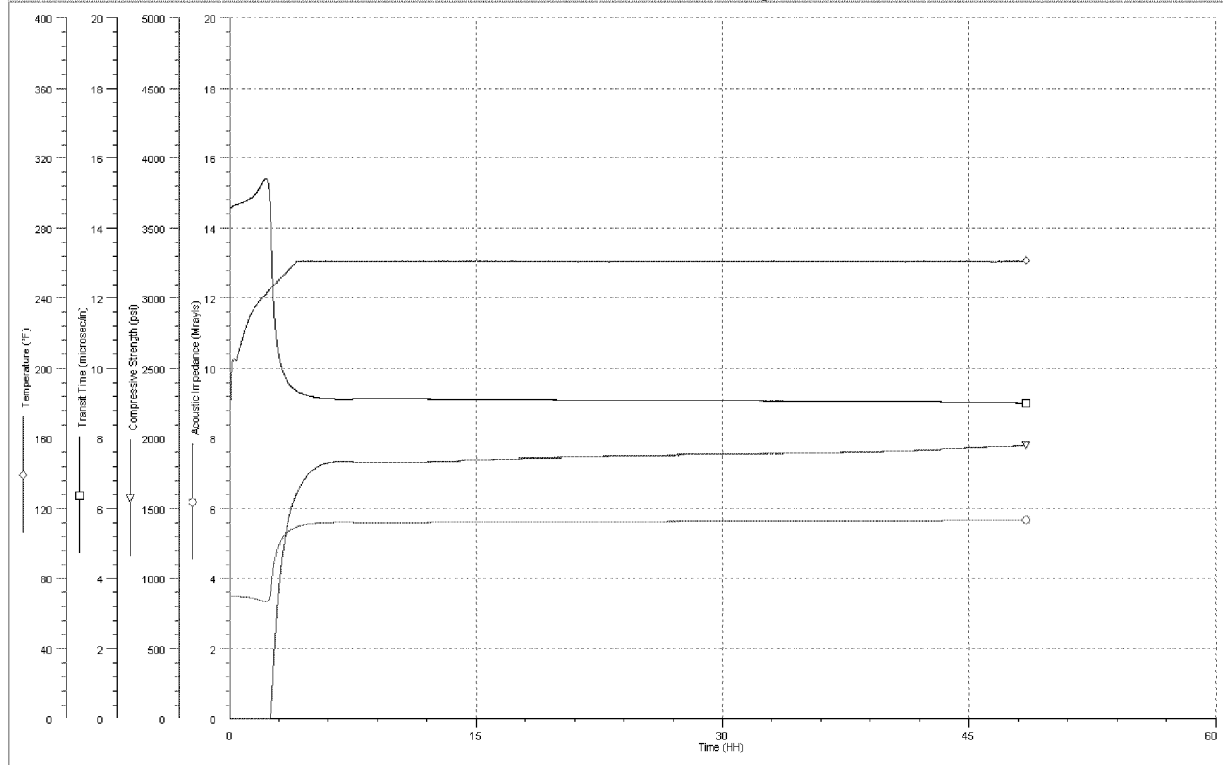


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Well ID:  
Temperature: 261 °F  
Transit Time: 0.99 microsec/in

Customer:  
Strength 1946 psi  
Compressive strength type D (more than 14 lb/gal)

50 psi @ 2:28:30  
500 psi @ 2:42:00



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