

# HALLIBURTON

Cementing Gulf of Mexico, Broussard

LAB RESULTS - Primary

## Job Information

<b>Request/Slurry</b>	73909/2	<b>Rig Name</b>	TRANSOCEAN HORIZON	<b>Date</b>	April 12th 2010
<b>Submitted By</b>	Jesse Gagliano	<b>Job Type</b>	9 7/8" X 7" Prod Casing	<b>Bulk Plant</b>	Fourchon-C-Port I, La, USA
<b>Customer</b>	BP	<b>Location</b>	Mississippi Cny	<b>Well</b>	Mississippi Canyon 252 OCS-G-32306 Macondo #1

## Well Information

<b>Casing/Liner Size</b>	7"	<b>Depth MD</b>	18360 ft	<b>BHST</b>	210 F
<b>Hole Size</b>	9 7/8"	<b>Depth TVD</b>	18360 ft	<b>BHCT</b>	135 F

## Drilling Fluid Information

<b>Mud Company</b>	MI	<b>Type</b>	SOBM	<b>Density</b>	14.1 PPG	<b>PV/YP</b>
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## Cement Information - Primary Design

Conc	UOM	Cement/Additive	Sample Type	Sample Date	Lot No.	Cement Properties
100.00	% BWOC	Lafarge Class H	Rig	Apr 05, 2010	Tank # 8	Slurry Density 16.741 PPG
0.07	% BWOC	EZ-FLO	Rig	Apr 05, 2010		Slurry Yield 1.37 FT3
0.25	% BWOC	D-Air 3000	Rig	Apr 05, 2010		Water Requirement 4.93 GPS
1.88	lb/sk	KCl (Potassium Chloride) Salt	Rig	Apr 05, 2010		Total Mix Fluid 5.02 GPS
20.00	% BWOC	SSA-1 (Silica Flour) - PB	Rig	Apr 05, 2010		Foam Density 14.486 PPG
15.00	% BWOC	SSA-2 (100 Mesh) - PB	Rig	Apr 05, 2010		Foam Quality 12.98 %
0.20	% BWOC	SA-541	Rig	Apr 05, 2010		Water Source Fresh Water
0.11	gps	ZoneSealant 2000	Lab	Mar 15, 2009		Water Chloride N/A ppm
0.09	gps	SCR-100L	Lab	Oct 22, 2009	6264	
4.93	gps	Fresh Water	Lab	Apr 12, 2010	FRESH WATER	

Slurry not pumpable at this point

## Operation Test Results Request ID 73909/2

### Thickening Time, Request Test ID: 812338

Temp (°F)	Pressure (psi)	Reached in (min)	Start BC	30 Bc (hh:mm)	40 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)
135	14,458	83	14	07:25	07:34	07:36	07:37

### Mud Balance Density, Request Test ID: 811529

Density (ppg)

16.7

from part 1

### Mixability (0 - 5) - 0 is not mixable, Request Test ID: 811524

Mixability rating (0 - 5)

4

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Global Customer Report

Page: 1

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**UCA Comp. Strength, Request Test ID: 811522**

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)
210	14,458	08:12	08:40	2,301	2,966	3,099

Circulate before pouring C.S. for 3 Hrs

**Operation Test Results Request ID 73909/1****Crush Compressive Strength, Request Test ID: 806069**

Curing Temp (°F)	Time 1 (hrs)	Strength 1	Time 2 (hrs)	Strength 2	Time 3 (hrs)	Strength 3	Foam quality
180	12	0	24	0	48	1,590	0

Condition for 1.5 hrs

**FYSA Viscosity Profile & Gel Strength, Request Test ID: 806074**

Test Temp (°F)

80

600=14, 300=7, 200=5, 100=3, 60=1, 30=1, 6=1, 3=1.... 6D=1, 3D=1

**Non API Rheology, Request Test ID: 806075**

Test temp (°F)	600	300	200	100	60	30	20	10	6	3
80	180	84	56	28	26	8	6	4	2	2

**Non API Rheology, Request Test ID: 806076**

Test temp (°F)	600	300	200	100	60	30	20	10	6	3
135	130	56	40	20	12	0	6	4	4	2

**Foam Mix and Stability, Request Test ID: 813603**

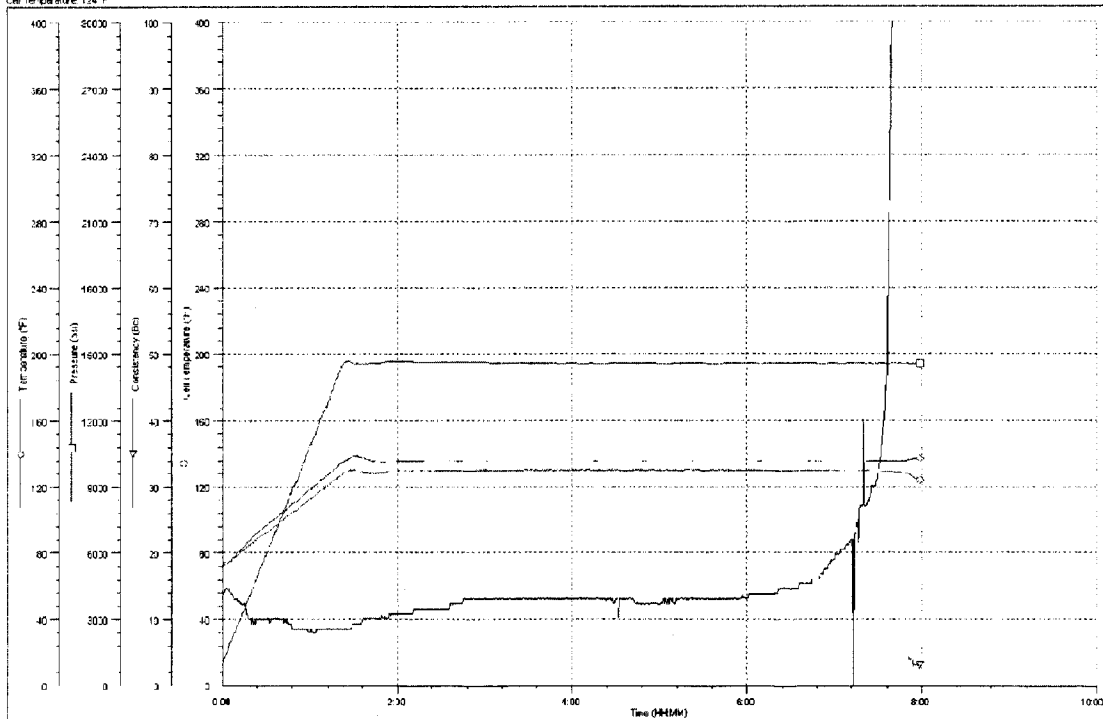
Time to Foam [Sec]	SG top	SG bot.	Conditioning time (hrs:min)
8	1.8	1.8	03:00

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Temperature: 137.7 F  
Core temperature: 134.7 F

Pressure: 14523 ps

Conductivity: 386

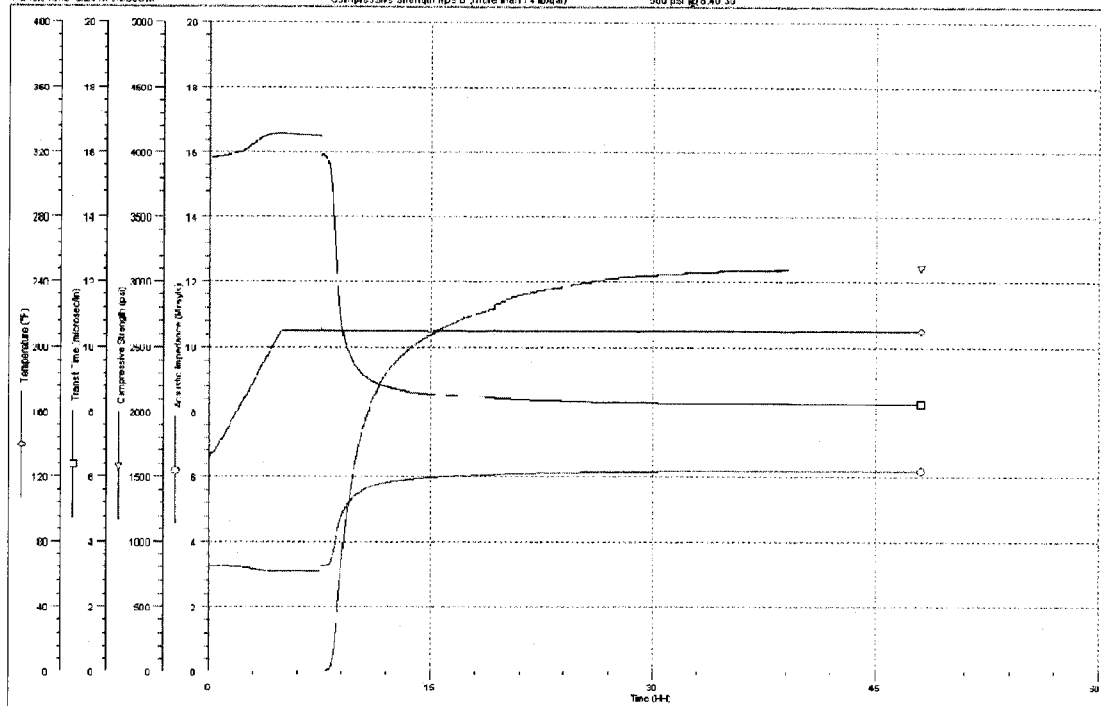


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Well ID:  
 Temperature 210 °F  
 Transit Time 8.24 m:sec

Customer:  
 Strength 3089 psi  
 Compressive strength kpsi B (more than 14 bleed)

50 psi @ 8:12:00  
 500 psi @ 8:40:30



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