# Cement Lab Weigh-Up Sheet, Feb 16, 2010 - Req/Slurry: US-65112/3

"00135836"

| | | | | | |
|---|---|---|---|---|---|
| Request Id | 65112 | Rig | TRANSOCEAN HORIZON | Engineer | Jesse Gagliano |
| Slurry No. | 3 | Customer | BP | Request Type | Operation |
| Job | Production Casing | Well | Mississippi Canyon 252 | Request Date | 10.02.2010 |
| Pipe Size | 9.625 | Location | Mississippi Cny | Required By | 12.02.2010 |
| Hole Size | 12.25 | Slurry Type | Lead | TradeMark | |
| Plant Name | Fourchon-C-Port I, La, | | | Slurry Name | |

## Test Conditions

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| BHST | 128 °C / 262 °F | Batch Mix | 0 min | MD | 5989 m / 19650 | Pressure | 1099 bar / 15945 psi |
| BHCT | 106 °C / 223 °F | Heating time | 89 min | TVD | 5989 m / 19650 | Mud Density | 1.75 SG / 14.6 PPG |

## Slurry Details

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Density | 2.006 S.G. | Water Req. | 42.94 L/100kg | Yield | 90.95 L/100kg | Total liquid | 44.72 L/100kg |
| | 16.741 PPG | | 4.84 gal/sack | | 1.37 ft³/sack | | 5.04 gal/sack |
| Pychnometer | 35.000 % | Chloride conc. | N/A | Blend Weight | 907.27 g | Sack Weight | 94.00 lbs |
| | | | | | | | |

## Materials

| Concentration | Lab | Material | Test Amount | Source | Lot No. | Date | Sample Id |
|---|---|---|---|---|---|---|---|
| 100.00 % BWOC | (US-LFT) | Lafarge Class H | 659.74 g | TRANSOCEAN | LOCATION | 29.12.09 | 59335 |
| 0.070 % BWOC | (US-LFT) | EZ-FLO | 0.46 g | TRANSOCEAN | BLENDED | 29.12.09 | 59335 |
| 0.250 % BWOC | (US-LFT) | D-Air 3000 | 1.65 g | TRANSOCEAN | BLENDED | 29.12.09 | 59335 |
| 1.880 lb/sk | (US-LFT) | KCl (Potassium Chloride) | 13.19 g | TRANSOCEAN | BLENDED | 29.12.09 | 59335 |
| 20.000 % BWOC | (US-LFT) | SSA-1 (Silica Flour) - PB | 131.95 g | TRANSOCEAN | BLENDED | 29.12.09 | 59335 |
| 15.000 % BWOC | (US-LFT) | SSA-2 (100 Mesh) - PB | 98.96 g | TRANSOCEAN | BLENDED | 29.12.09 | 59335 |
| 0.200 % BWOC | (US-LFT) | SA-541 | 1.32 g | TRANSOCEAN | BLENDED | 29.12.09 | 59335 |
| 0.110 gps | (US-LFT) | ZoneSealant 2000 | 6.87 g | Morgan City, La, | | 15.03.09 | 40395 |
| 0.200 gps | (US-LFT) | SCR-100L | 13.59 g | Morgan City, La, | 2117 | 23.12.08 | 36204 |
| 4.84 gps | (US-LFT) | Fresh Water | 282.74 g | | | 18.01.10 | 60731 |

## Foam Details

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Final Foam Density | 1.737 S.G. | Calc. Downstream Density | 1.996 S.G. | Blender volume | 1170 ml | Quality | 12.98 % |
| . | 14.496 PPG | . | 16.657 PPG | . | | . | |
| Base Slurry Weight | 2020.76 g | Base Slurry Total Weight | 2032.29 g | | | | |
| . | | . | | | | | |

## Foam Mixing

| Lab | Material | Unfoamed Slurry Prep. | Unfoamed Slurry |
|---|---|---|---|
| (US-LFT) | Lafarge Class H | 1218.41 g | |
| (US-LFT) | EZ-FLO | 0.85 g | |
| (US-LFT) | D-Air 3000 | 3.05 g | |
| (US-LFT) | KCl (Potassium Chloride) Salt | 24.37 g | |
| (US-LFT) | SSA-1 (Silica Flour) - PB | 243.68 g | |
| (US-LFT) | SSA-2 (100 Mesh) - PB | 182.76 g | |
| (US-LFT) | SA-541 | 2.44 g | |
| (US-LFT) | ZoneSealant 2000 | | 11.53 g |
| (US-LFT) | SCR-100L | 25.10 g | |
| (US-LFT) | Fresh Water | 522.18 g | |

## Test Results

| Mixability (0 - 5) - 0 is not mixable | Mud Balance Density | |
|---|---|---|
| Mixability rating (0 - 5) | Density (SG) | Density (ppg) |
| 5 | | 16.5 |

EXHIBIT # 809

WIT:

Use halt core scale to condition Then foams and pour Cubes & Foam Stability

| Foam Mix and Stability at 180 deg F | | | | | | |
|---|---|---|---|---|---|---|
| Sink [mm] | Time to Foam | Average Mix | Foam Density [SG] | SG top | SG bot. | Conditioning time |
| | | | | 2.02 | 2.11 | 00:00 |

Foam Mix and Stability (Foamed to 14.5 ppg Condition for 2 hours before pouring) at 180 deg F 4:00a 2/17/10 RC

| Sink [mm] | Time to Foam | Average Mix | Foam Density [SG] | SG top | SG bot. | Conditioning time |
|---|---|---|---|---|---|---|
| | | | | 1.91 | 1.91 | |

Thickening Time (Need 5 - 6 Hrs., SCR-100L Lot #2117) at 223 deg F

| Temp (°F) | Pressure | Batch Mix | Reached | Start BC | 30 Bc | 40 Bc | 50 Bc | 70 Bc | 100 Bc | Terminatio | Terminatio |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 223 | 15945 | 0 | 89 | 7 | 04:57 | 04:58 | 04:59 | 05:00 | | | |

UCA Comp. Strength (UCA for 12, 24, & 48 Hrs, Circulate before pouring C.S. for 3 Hrs) at 262 deg F

| End Temp | Pressure | 50 psi | 500 psi | 8 hr CS | 12 hr CS | 16 hr CS | 24 hr CS | 48 hr CS | End CS | End Time | Crush CS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | |

Crush Compressive Strength (12, 24, & 48 Hrs Crush, Foamed to 14.5 ppg) at 262 deg F

| Conditioni | Curing | Curing | Time 1 | Strength 1 | Time 2 | Strength 2 | Time 3 | Strength 3 | Time 4 | Strength 4 | Foam |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 180 | | 12 | 0 | 24 | 0.0 | | | | | 0 |

Crush Compressive Strength (Foamed to 14.5 ppg Condition for 2 hours before pouring) at 180 deg F 4:00a 2/17/10 RC

| Conditioni | Curing | Curing | Time 1 | Strength 1 | Time 2 | Strength 2 | Time 3 | Strength 3 | Time 4 | Strength 4 | Foam |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 12 | 0 | 24 | 0 | 36 | 0 | 48 | Firm | 60 Hard on Bott 50ft on top |

Non API Rheology at 190 deg F 96hr CLS = 1145 84 Hard on bottom from on top

| Test temp | 600 | 300 | 200 | 100 | 60 | 30 | 20 | 10 | 6 | 3 | Condition |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 190 | 192 | 108 | 66 | 34 | 20 | 10 | 6 | 2 | 2 | 2 | |

Non API Rheology at 80 deg F

| Test temp | 600 | 300 | 200 | 100 | 60 | 30 | 20 | 10 | 6 | 3 | Condition |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 80 | 120 | 58 | 36 | 16 | 8 | 4 | 2 | 2 | 2 | 2 | |

Non API Rheology at 130 deg F

| Test temp | 600 | 300 | 200 | 100 | 60 | 30 | 20 | 10 | 6 | 3 | Condition |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 130 | 56 | 28 | 18 | 8 | 4 | 2 | 2 | 2 | 2 | 2 | |

FYSA Viscosity Profile & Gel Strength at 80 deg F

| Test | 600 | 300 | 200 | 100 | 60 | 30 | 6 | 3 | 3D - 3 | 6D - 6 | Conditi | Gel 10 | Gel 30 | K1 | K2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 80 | | | | | | | | | | | | | | | |

**Request/Project Comments**

Use location Blend and Rig water in lab
Use SCR-100L LOT#:2117

**Required Tests**

| Test Id | Test Type | Test Temp (F) | Conditions / Req. Properties |
|---|---|---|---|
| 722097 | Thickening Time | 223 | Need 5 - 6 Hrs., SCR-100L Lot #2117 |
| 722098 | UCA Comp. Strength | 262 | UCA for 12, 24, & 48 Hrs, Circulate before pouring C.S. for 3 Hrs |
| 722099 | Crush Compressive Strength | 262 | 12, 24, & 48 Hrs Crush, Foamed to 14.5 ppg |
| 727535 | Crush Compressive Strength | 180 | Foamed to 14.5 ppg Condition for 2 hours before pouring |
| 722100 | Mixability (0 - 5) - 0 is not mixable | | |
| 722101 | Foam Mix and Stability | 180 | |
| 727534 | Foam Mix and Stability | 180 | Foamed to 14.5 ppg Condition for 2 hours before pouring |
| 722102 | FYSA Viscosity Profile & Gel Strength | 80 | |
| 722103 | Non API Rheology | 80 | |
| 722104 | Non API Rheology | 130 | |
| 722105 | Non API Rheology | 190 | |
| 722106 | Mud Balance Density | | |

**Slurry Specific Comments**



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