

# Arnaud Bobillier Email: June 17, 2010

**From:** Hand, Steve (Houston)  
**Sent:** Thursday, June 17, 2010 3:06 PM  
**To:** McMahan, Larry (Houston)  
**Subject:** FW: Actions from MD Teleconference: Item 3 - 711 Kick response and subsequent NRS Actions

**Attachments:** Axis Well Test Audit (Galaxy II 11.06.10).doc; 2 711 WC incident.pdf; 2 a NRS-OPS-ADV-008\_Loss\_of\_Well\_Control\_During\_Upper\_Comp.pdf; 2 b HQS-OPS-ADV-09\_Well control integrity of mechanical barriers rev 1.pdf

Yes – Dave Cameron was involved in the incident review – the last attachment was the advisory sent out to make a change in the WCM to better control these operations.

Perhaps we need to open this topic up to cover plug and abandonment scenarios such as the DWH incident.

Steve Hand..

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“I see some similarities with what happened on the Horizon”,

Arnaud Bobillier

(retired June 30, 2012 as Transocean’s Executive Vice President of Operations Integrity)

**From:** Bobillier, Arnaud (Geneva)  
**To:** McMahan, Larry (Houston)  
**Cc:** Tranter, Paul (Geneva); Buisine, Jean Paul (Houston)  
**Sent:** Thu Jun 17 04:35:41 2010  
**Subject:** FW: Actions from MD Teleconference: Item 3 - 711 Kick response and subsequent NRS Actions

Larry,

I was not aware of the details of this kick incident that occurred last December on the S-711. Are you aware of its details and of the root causes identified by NSR? How have we shared these learnings with the fleet? (I see some similarities with what happened on the Horizon). Thanks to comment as you see fit,

Best Regards, Arnaud

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TRN-MDL-01160165

# Notable Similarities Between Sedco 711 and Macondo Well Control Events

“I see some similarities with what happened on the Horizon”,  
 Arnaud Bobillier (June 17, 2010)  
 (retired June 30, 2012 as Transocean’s Executive  
 Vice President of Operations Integrity)



|   | Sedco 711 | Macondo |
|---|-----------|---------|
| MI Swaco drafted the displacement procedure and led the pre-tour discussion.  | ✓         | ✓       |
| Well was circulated to seawater pursuant to MI Swaco’s displacement procedure.  | ✓         | ✓       |
| The displacement procedure utilized the sea chest, which made it difficult to properly monitor pit volumes and well status during displacement.                               | ✓         | ✓       |
| The displacement procedure did not indicate when the well was going underbalanced nor when there would be a change in return parameters.                                      | ✓         | ✓       |
| The well was <b>underbalanced</b> at the time the kick was taken.   | ✓         | ✓       |
| The well included a mechanical barrier downhole, above which displacement was conducted (formation isolation valve (FIV) on the Bardolino and float collar on the Macondo).   | ✓         | ✓       |
| The crew conducted an inflow test ( <b>negative test</b> ) and deemed it successful.  | ✓         | ✓       |
| One possible cause of debris interfering with operation of the downhole barrier and/or accurate pressure communication during the inflow test was <b>barite</b> dropping out. | ✓         | ✓       |
| Risk perception of barrier failure was blinkered by successful inflow test.   | ✓         | ✓       |
| The drill crew did not attempt to shut in the well until <b>after</b> observing fluid on the rig floor.   | ✓         | ✓       |

# Sedco 711 Well Control Event (Dec. 19-23, 2009)

Tested the packer assembly - good test. Closed FIV and spotted high viscosity base oil pill on top of FIV.

POOH and circulated 200bbl of oil-based mud to eliminate hydrostatic imbalance. Flow checked, well static.

RIH with clean-up assembly: MFCT, Well Commissioner, bull nose.

Set Well Commissioner and performed inflow test for 5 hours. Equalized pressure at Well Commissioner but were unable to unseat it.

Dec. 19

Dec. 20

Dec. 21

Dec. 22

Dec. 23

# Sedco 711 Well Control Event (Dec. 19-23, 2009)

**9:45 AM**

Set Well Commissioner and pressure tested lower annular - good test.

**2:15 PM**

MI-Swaco led meeting on rig floor regarding displacement. Well control discussion included these instructions: "Note that although FIV is tested, we will be about 4000 psi underbalanced, if we need to stop, we will."

**+/- 5:00 PM** Mudlogger noticed flow-rate increasing abnormally, so he called the driller. Derrickmen also noticed mud flowing over belly pan from Shaker 4 and notified driller.

**4:50-5:00 PM**

Mudlogger noticed increase in flow-out commensurate with increase in pumping seawater to 10-12 bpm.

**4:25 PM**

Well went underbalanced (based on hydrostatic calculations).

**5:15 PM**

Pumps were stopped after driller observed shaker room on the camera. Rumbling noise was heard and flow was observed from the well.

**5:24 PM**

Alarm sounded by control room.

**5:28 PM**

Rig floor monitored pressure.

**5:45 PM**

After observing mud on the rig floor, shut in well and monitor pressures.

2 PM

4 PM

5 PM

6 PM

Dec. 23, 2009

# Macondo Well Control Event (April 20, 2010)



**9:22 PM**  
Pressure on the kill line started gradually increasing.

**9:26-9:27 PM**  
Kill line pressure increased to 833 psi.

**9:29-9:30 PM**  
Drill crew shut down pumps to investigate. Revette and Anderson discussed pressure differential.

**9:32-9:34 PM**  
Drill pipe pressure increased 400-500 psi, then leveled again and became constant.

**9:36 PM**  
Transocean bled-off drill pipe pressure on standpipe manifold.

**9:38 PM**  
Hydrocarbons entered riser (according to BP's OLGA well flow modeling).

**9:39 PM**  
Drill pipe pressure declined as hydrocarbons flowed upward past the end of the drill pipe.

**9:41 PM**  
Drill crew directed flow to the trip tank.

**9:42 PM**  
Trip tank filled rapidly.

**9:43 PM**  
Hydrocarbons reached the rig floor (according to Transocean).  
  
After observing mud shooting up the derrick and onto the rotary table, the drill crew shut upper annular BOP element.

**9:47 PM**  
Drill crew closed variable bore rams.

**9:49 PM**  
First explosion occurred. End of transmission.

April 20