

From: Tooms, Paul J  
Sent: Fri Jun 11 00:04:01 2010  
To: Wells, Kent; Birrell, Gordon Y; Clarkson, David; O'Bryan, Patrick L; Dupree, James H; Lynch, Richard; Inglis, Andy G (UPSTREAM)  
Cc: Roberts, Jamie Y; Caldwell, Jason; Thierens, Harry H; Maguire, Niall J; Verchere, Christina C; Looney, Bernard; Mazzella, Mark; Grounds, Cheryl A.; Bond, Stan L; Hill, Trevor; Wood, Douglas G; Sprague, Jonathan D  
Subject: Historical BOP Pressure  
Importance: Normal  
Attachments: BOP Pressure History rev3.xls

Attached is a chart showing BOP pressure over time, from when the acoustic transmitter has been operating. The pressures from the transmitter below the BOP test rams have been calibrated against the gauges we installed for the Top Kill and have a correction factor of 966 psi already applied. A number of points can be taken from the graphs, including:

1. Pressures below and across the BOP (with the test rams closed) are broadly the same now as they were prior to the Top Kill. This suggests that overall flow rates have not changed much, unless there is some unexplained mechanism in the well.
2. The pressure drop across the BOP has been relatively consistent, and it can be inferred that drillpipe is present and that flow through it has remained relatively unchanged

3. The test rams would appear to be holding back pressure when they are closed, which suggests that there is at least some flow past the pipe rams. This graph will be included in a more complete report on pressures and flow indications which will be issued shortly. However, I thought it useful to share this now as it can dispel certain myths that have taken root amongst the teams. Note that it might be tempting to try and interpret trends for individual parts of the graph – this is not advisable since there is quite a lot of noise in the readings and they are taken infrequently.

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Paul

Paul Tooms

VP Engineering

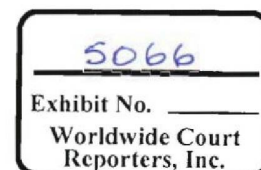
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Company Details: BP Exploration Operating Company Ltd

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BP-HZN-2179MDL00412974

BPD122-004636

TREX 005066.0001

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Timing	Acoustic Transponder Activated	Pre Kill Diagnostics	Post Kill #1	Post Kill #2	Post Kill #3	Post Test Ram Closure	Pre 1st Riser Cut	Post 1st Riser Cut	Post 2nd Riser Cut	24 Hours After 2nd Riser Cut	7-Jun	10-Jun
Test Ram Status	Closed	Closed	Open	Open	Open	Closed	Closed	Closed	Closed	Closed	Closed	Closed
Date /Time	20/05 00:00	25/05 21:00	27/05 09:00	28/05 11:00	28/05 22:00	30/05 12:00	01/06 10:00	03/06 09:00	06/06 00:00	07/06 14:50	10/06 06:30	
Egress Location	End Riser	End Riser	End Riser	End Riser	End Riser	End Riser	End Riser	Top BOP	Top BOP	Top Hat	Top Hat	
Egress Pressure	2270	2270	2270	2270	2270	2270	2270	2270	2270	2270	2270	2270
Top of BOP Pressure	2600	2560	2500	2479	2500	2500	2500	2270	2270	2270	2270	2270
Mud Boost Line Pressure												
Lower and Upper Annular												
Vent Line Pressure		2560	2500	2479								
Blind/Shear Rams												
Upper Kill Line Pressure		2620	2620	2587	2743							
Casing Shear Rams												
Upper VBRs												
Upper Choke Line Pressure		3240	3130	3381	3153							
Lower Pipe Rams												
Lower Kill/Choke Line Pressure		3670	3280	3665	3395							
Test Rams												
Below BOP Pressure	4440	4400	3320	3697	3496	4354	4372	4290	4266	4088	4220	4280
Pressure Difference Across BOP	1840	1840	820	1218	996	1854	1872	1996	1818	1950	2010	

# Historical Records Of BOP Pressures

