

From: Tooms, Paul J  
Sent: Sun May 16 23:07:31 2010  
To: 'tohunte@sandia.gov'  
Cc: 'Marcia K McNutt'; Dupree, James H; Brookes, David; Looney, Bernard; Baker, Kate H; Caldwell, Jason; arun.majumdar@hq.doe.gov  
Subject: Drawings as requested on the call today  
Importance: Normal  
Attachments: Macondo Well Drawing - 2-PD-32294-04CP.ZIP; Macondo wBOP.ZIP; Macondo 252 Possible Flow paths.ppt

I attach various material as discussed on the call:

- 1) An as drilled well diagram that includes the BOP stack,
- 2) A diagram of the wellhead and casing hanger arrangements,
- 3) A sketch of possible flowpaths in the wellbore.

For the wellhead and casing hanger diagram, I should explain that the BOP stack attaches to the 18 3/4" wellhead housing and that the LDS Running tool (with attachments) and Lead Impression Tool shown on the diagram are not in place at present. If the flow path is up the annulus, then it would be coming past the seal assembly which is mounted on top of the 9 7/8" Casing Hanger. As can be seen this presents quite a tortuous path for any solid objects, but could present a significant and relatively unrestricted flow area for fluids if the seals are no longer present. The 16" Casing hanger and seal assembly is somewhat further (about 150') down the hole, as shown on the drawings.

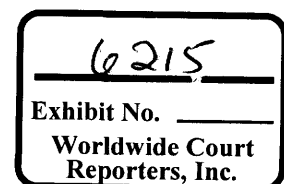
So far as the flow paths are concerned, we do not know which are in play, nor whether the drillpipe is still held and sealed in the BOP stack; so we have modeled and provided for each scenario. For the well kill and shut in cases, the most difficult scenario to deal with is the one in which flow is behind the 9 5/8" casing as it exposes the rupture discs in the 16" casing and that is where we focused today.

I would be grateful if you could forward this information to the other parties on the call.

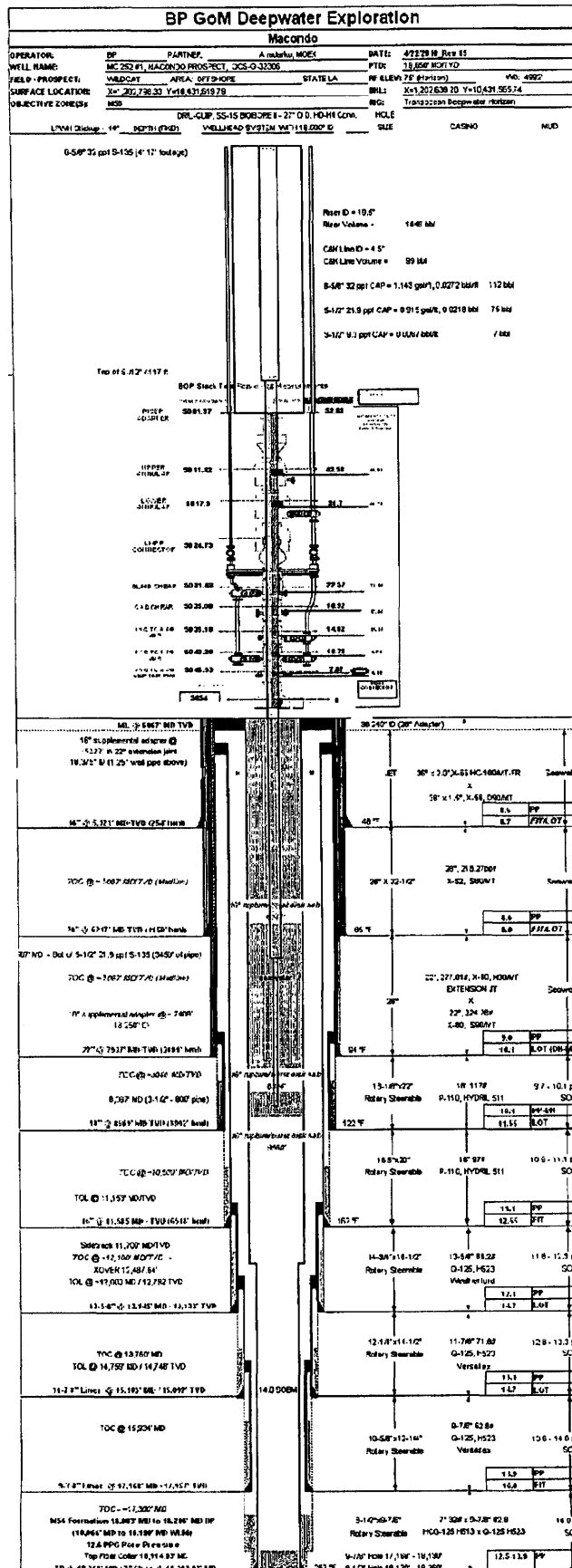
Regards

Paul Tooms  
VP Engineering  
Mobile phone number: +44 (0) 778 597 3421

Address: BP Exploration Operating Company Ltd Building H Chertsey Road Sunbury-on-Thames Middlesex TW16 7LN  
Company Details: BP Exploration Operating Company Ltd  
Registered Office: Chertsey Road Sunbury-on-Thames Middlesex TW16 7BP  
Registered in England and Wales Number 305943







# Macondo 252 Possible Flow paths in Wellbore

