

B. In the weeks following the blowout BP's computer models suggested higher well flow rates than those BP reported to the government, the press and the public.

1. BP Engineers Had Sufficient Tools and Information to Model Flow Rates from the Macondo Well

BP engineers and their contractors doing the modeling appear to have had access to almost unlimited resources, except for the urgency of time. They employed conventional petroleum reservoir and well modeling software packages, each with its unique assumptions, capabilities, data needs, and outputs, and with which they were largely well acquainted. The well packages had names like PipeSim, PROSPER, OLGA, and WELLCAT. OLGA was the most sophisticated

Nevertheless BP engineers and their contractors were challenged by some uncertainty, mostly created by the accident. During abandonment procedures, and just before the accident, there was an attempt to cement the well to seal it from the reservoir. Without knowing more about the accident, the degree to which this seal was disrupted was unknown. Consequently the strength of the connection between the well and the reservoir became a focus of the modeling. While the wellbore architecture was documented, the accident could have damaged that architecture. Depending on that damage there were several possible fluid flow paths up the well from the reservoir, but which path the fluids were taking was unclear. The blowout itself demonstrated that the BOP had failed to close, but the nature of the failure and the resulting obstruction to flow (or "choke") in the BOP was also unclear. Finally, fluids entering the riser from the LMRP were discharging at several points along the riser, including near the kink located just above the LMRP; engineers also believed the kink itself was likely to be a choke.

BP engineers and its contractors were organized into informal, ad hoc workgroups, with ties to established BP organization charts. But within BP, the workgroups had shifting membership and there was a lack of communication between workgroups.¹⁵ While horizontal lines of communication were limited, communications of their findings upward to management were exhaustive, although often informal (e.g., meetings, email, and PowerPoint presentations).¹⁶

¹⁵ Deposition of Michael Mason, January 25, 2013, 367:22-368:1, 369:4-16, 369:18-25.

¹⁶ For example, reservoir engineers from the Gulf of Mexico Exploration group sent their results via email to Vice President of Exploration David Rainey. (Email from Walt Bozeman to David (footnote continued)