

| BP Supporting Evidence – Scenario #1 | |
|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Supporting evidence consistent with Defining Observations 1 & 4 |
| 2 | Need 78 bpm to flow up combination of drill pipe and ram bypass. Pressure drop indicates max flow up drill pipe ca. 25 bpm, therefore, ca. 50 bpm bypass at rams |
| 3 | Inconsistencies: Not consistent with Defining Observations 2 & 3 (at high rates); Massive flow past rams would expect significant erosion |

Table 2: BP Supporting Evidence - Scenario #1

Scenario #1 Assessment

Looking at the data and BP's interpretation, Scenario #1 reflects a realistic case that accounts for all the evidence, although it requires "[m]assive flow past [the] rams" to the sea without effectively killing the well. This reveals that BP acknowledged that the low Top Kill pressures *could* be due to few restrictions in the BOP stack, and that the Top Kill mud *could have been* just circulating out through the BOP without doing much to kill the well. If BP and the Unified Command had been able to confirm this case with certainty, the Production Casing Hanger was still in place and sealing, preventing flow from the well to the collapse disks, and this may have enabled the Unified Command to shut-in the well earlier.

Scenario #2 (Combined Casing and Annular Flow)

In Scenario #2, the Top Kill mud flow is circulating down the Production Casing string and up the workstring, stopping the inner Casing Flow (Figure 11)⁶⁶ as with Scenario #1. In addition, though, the Production Casing Hanger (labeled as "seal assembly" in Figure 11) is no longer anchored and is allowing hydrocarbon to flow up the annulus when there is no pumping. When pumping starts, the Production Casing Hanger sets back down due to the pressure from above, and little mud is able to get into the Production Casing Annulus. As soon as pumping stops, and the BOP pressure drops, the Production Casing Hanger lifts back off the seat, both Casing Flow and Annular Flow resume, and hydrocarbons are seen exiting the riser. The collapse disks are assumed not to be open in this scenario. This scenario is consistent with the "Defining Observations" as described in Table 3⁶⁷ depending on how the Production Casing Hanger was sealing and how much fluid was being lost through the BOP. These two aspects could not be determined based on the data available during the Response.

⁶⁶ *Id.* at 7449.

⁶⁷ *Id.* at 7450.