Here's the synopsis of the meeting today with Kurt Mix and Reservoir/Geology Group:

Kurt has used the DrillBench Kick module and has looked into blowout flow modeling – in particular for Kasikda riser scenarios. They have looked into several applications and were using something from Sandia National Labs. Since Kurt was familiar with SPT Group and had looked at the OLGA-ABC model as an option, BP bought a license today from SPT Group and Lei Zhou, one of their technicians, came to BP to install on Kurt's laptop. Once in BP, he had Lei help him build the initial model and run the model. We stepped through the inputs and found several mistakes. Once corrected, we tweaked the data once supplied by R/G and the below are the initial results reported.

Nearest data offset is Nakika

- No PVT data as of yet from Maconodo; Penncore Labs has been told to expedite simple analysis. Once back, model will be tweaked with better estimations of the component mixture.
- Formation Evaluation logs just received last week by R/G group. No significant analysis has been done. We looked at the triple combo log across TD and the raw MDT data.
- No reservoir flow model has been built but Nakika sand model is assumed to be close; reservoir put together some rough numbers for PI.

Deepwater Enterprise is assumed to be assigned for the relief well (10 days mob) and Mrs. (?) Kathleen is the drilling engineer assigned. Fred goes back several jobs with her.

Here's what's known at the moment (from a R/G group perspective):

- 2 main sand packages at TD – "a dual lobe model" from 18,066-18,090 ft and 18,120-18,190 ft
- Roughly speaking there's an 11 ft difference between MD and TVD (subtract -11 ft for TVD value.)
- Water depth is 4,992 ft (2,232 psi hydrostatic equivalent) and 75 ft air gap
- Pore pressure measured at 18,086 ft (wireline depth) was 11,841 psi (12.85 ppg EMW) and 18,180 ft (wireline depth) was 11,862 psi. Believed to be in pressure communication and following the same gradient.
- Several small sands identified by TC log from csg shoe to TD:
  - 17,700-17,708: 3 GeoTap pressures taken with pore pressures of 14.15 ppg, 14.16 ppg, and 14.15 ppg
  - 17,802-17,808: MDT pore pressure was 12,308 psi (13.01 ppg EMW)
  - Indicates a pressure regression from csg shoe to TD.
- PI = 50 bbl/d/psi and possibly 55 bbl/d/psi (but the first number is the one there is more faith in and what is used for modeling purposes.)
- GOR = 3000 scf/stb; 3 MDT sample tests showed 3017, 2920, and 2845 scf/stb.
- API crude is reported as 35 deg which seems low for such high GORs.
- TC log shows extremely high resistivity at the sand packages – in fact off scale (>2000 ohm-m) at the bottom sand lobe.
- ***18,186-18,190 ft MASSIVE LOSSES WERE REPORTED WHILE DRILLING THE BASE OF THE SAND***. It is believed to be some brittle base rock and obviously they pumped the Hell out of LCM to heal it up; MDT choked on several of the pressure tests as the mud cake was so full of LCM. Neutron/Density curves are offscale indicating gigantic gaping hole fracture.
- 18,232-18,248 ft – sand package on bottom – considered minor and not analyzed being so close to TD at 18,360 ft.

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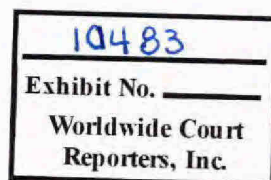
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Modeling results to date are the following:

- Reservoir Engineering slapped together a quick number this morning to give to management of 162,000 bpd and then this afternoon revised those numbers to 92,500 bpd. The revised numbers are based on the modeling aspects of a similar sand package as Nakika and *assumes a 10,000 psi frictional pressure loss from surface to TD*. Remember, reservoir engineers are only concerned with the flowing sandface pressure and not the tubing performance curves. They pulled this frictional pressure loss number out of their collective butts.
- If the well is flowing from inside the casing and exiting the riser, OLGA-ABC shows 138,000 bpd to the surface.
- If the well is flowing from inside the casing and around the DP still stung inside the DP and exiting the riser, OLGA-ABC shows 110,00 bpd to the surface.
- If the well is flowing from inside the casing and the DP has been dropped and hung up in the top of the 7" casing and exiting the riser, OLGA-ABC shows 93,000 bpd to the surface.
- If the well is flowing behind the 7"x9-7/8" casing thru the 16" liner top and over the exposed 22" into and out of the riser, OLGA-ABC shows 64,000 bpd to the surface.

Goals for tomorrow at BP with Kurt Mix and R/G group (SPT was released today and thanked for their service):
*Update PP/FG curves with Marty Albert
*WWCI to confirm OLGA-ABC runs independent of Kurt Mix
*Continue to build PPT slides outlining modeling work assumptions and results
*Run additional OLGA-ABC runs as necessary as identified by R/G and confirm by WWCI for independent analysis
*Build dynamic kill rate cases for most likely selected cases
*Develop relief well options for hole size, intercept depth, mud weight, etc. as it relates to the dynamic kill model and hydraulic horsepower requirements

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