
From: Mix, Kurt [Kurt.Mix@bp.com]
Sent: Sunday, May 02, 2010 6:10 PM
To: Kercho, Debbie A
Cc: Levitan, Michael M.; Mazzella, Mark; David Barnett; cleach@argonenergy.com; Reeves, T Brent (TRI-CITY SERVICES); McAughan, Kelly; Epps, David S; Bozeman, Walt
Subject: Re: Preliminary Compositional & Viscosity Data

Thanks for the explanation. Tommorrow is soon enough and coordinate through Brent Reeves as I will be out tommorrow.

Kurt

Sent from my iPhone

On May 2, 2010, at 6:04 PM, "Kercho, Debbie A" <Debbie.Kercho@bp.com> wrote:

Kurt,
How long do you want us to assume the well flows before it is shut-in or when do you want to shut-in for the decline curve & buildup? My understanding is that we should assume 50 mbopd for the first 2 days and 5 mbopd thereafter. There will be a range of uncertainty in the decline & the pressure because we don't know how big the reservoir is.

Under normal well conditions where we understand where the flow is coming from & the completion, it would be reasonable to assume an equivalent PI for injection if we're injecting a relatively small volume (ie a wellbore volume) of produced fluid. In the case of Macondo, we can't assume that. All the modeling we've done is for worst case scenarios, so we've assumed flow up the production casing and a skin of zero. I don't know whether the well is flowing at a lower rate than the worst case discharge because there's skin damage at the reservoir, collapsed formation, part of the zone is covered with cement, well is flowing up the annulus and/or some mechanical restriction(s) somewhere downhole or in the riser. We can model some what if scenarios, but it's highly likely that the injection PI will be a lot lower than the assumed production PI. Also, if you're overdisplacing the wellbore and switching to a heavier fluid (water or mud), the PI will most-likely drop.

Let me know if you need us to model this today. Michael Levitan is scheduled to help us at 9:00 tomorrow morning, but we can start on it now if you need it before then.

Debbie

From: Mix, Kurt
Sent: Sunday, May 02, 2010 3:41 PM
To: Kercho, Debbie A
Cc: Levitan, Michael M.; Mazzella, Mark; Barnett, David (UNKNOWN BUSINESS PARTNER); cleach@argonenergy.com; Reeves, T Brent (TRI-CITY SERVICES)

Subject: RE: Preliminary Compositional & Viscosity Data

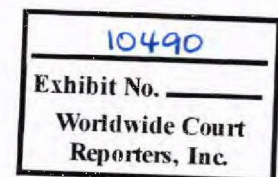
Debbie,

Please supply Mark Mazzella a decline curve and a buildup schedule. Another question came up: can we assume injection will be equivalent to PI? If not what can we assume to be a reasonable relationship between injection pressure and injection rate into the reservoir?

Regards,

Kurt

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WW-MDL-00022283

WWC016-000491

TREX 010490.0001

TREX-010490.0001

From: Kercho, Debbie A
Sent: Sunday, May 02, 2010 1:09 PM
To: Mix, Kurt
Subject: FW: Preliminary Compositional & Viscosity Data

Fyi - Levitan is the PTA guru in BP. See his comment below. We'll model it tomorrow, but we're not going to be able to provide enough cushion to help much.

From: Levitan, Michael M.
Sent: Sunday, May 02, 2010 12:45 PM
To: Kercho, Debbie A; Epps, David S; McAughan, Kelly
Cc: Bozeman, Walt
Subject: RE: Preliminary Compositional & Viscosity Data

Debbie,

You are correct. I would add that 90% of the drawdown will be recovered within 2 hours after the well is shut in.

Michael

From: Kercho, Debbie A
Sent: Sunday, May 02, 2010 12:37 PM
To: Epps, David S; McAughan, Kelly; Levitan, Michael M.
Cc: Bozeman, Walt
Subject: RE: Preliminary Compositional & Viscosity Data

I talked to Kurt and got more clarity on what he was looking for. They're evaluating putting another BOP on top of the current BOP. When they shut the second BOP, they're getting close to the burst pressure of the 16" casing. He wanted to know if the reservoir would provide any cushion due to depletion or buildup time. We talked through it and my opinion is that there are so many uncertainties that I don't think we can bank on much depletion yet and at 300 md, I think most of the buildup time would be < 1 day, not weeks. If the skin is high, it could be very quick.

Let me know if you have a different opinion. Based on the feedback I gave him, he said we could wait until Monday to look at this. The numbers he suggested using were 50 mbopd for the first 2 days and 5000 bopd since then.

Debbie
[REDACTED]

From: Mix, Kurt
Sent: Sunday, May 02, 2010 10:12 AM
To: Kercho, Debbie A
Cc: Epps, David S
Subject: RE: Preliminary Compositional & Viscosity Data

Debbie,

The well control guys have a question on the near wellbore drawdown due to current extended flow period. The amount it was drawn down will impact the initial shut in wellhead pressure. They also want to know how long it will take to build back up the original shut in pressure.

Regards,

Kurt Mix

From: Kercho, Debbie A
Sent: Tuesday, April 27, 2010 4:15 PM
To: Mix, Kurt
Cc: Epps, David S; Bozeman, Walt
Subject: Preliminary Compositional & Viscosity Data

WW-MDL-00022284

WWC016-000492

TREX 010490.0002

TREX-010490.0002

Kurt,

Per your request, here's the compositional and viscosity data that we have to date. This spreadsheet is a preliminary set of atmospheric flash compositions for the 3 downhole samples. Quoting Pencor's Jason LeBlanc, "...they should give us a good starting point for correlations." This data is the best we have now, but will change slightly with time as the rigorous analytical work proceeds. Sample 18086 appears to have slight mud contamination as evidenced by the elevated C16 & C18, so we'd suggest that you use either of the other samples.

<< File: 36126 Preliminary Wellstream.xls >>

Also attached is the preliminary viscosity data. The measured value of 0.168 cP is consistent with the 0.17 cP we used in yesterday's WCD modeling for the relief well. Again, this is preliminary data that hasn't been QC'd. The other piece of data that we've received verbally is the measured bubble point is ~6550 psig.

<< Message: RE: Viscosity Measurements >>

Please let us know if you have any questions.
Debbie

WW-MDL-00022285

WWC016-000493

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