



From: Beynet, Pierre A
Sent: Sun Apr 25 21:43:46 2010
To: Austin, Julian
Cc: Cook, Howard H; Petruska, David J; Tognarelli, Michael A
Subject: Erosion rate and Choke opening
Importance: Normal

Julian,

A few things to think about.

The rig turn over a few days ago so the choke(s) has been working for a few days.

What type of erosion per day would we expect in a choke that drop pressure 5000 psi.
What type of choke would not show any erosion? a long capillary? We do have these
on Houston air conditioning evaporators.

What other type?

If it is a capillary, what size and length combination are required assuming the flow all
liquid to flow 100 barrels, 1000 barrels. (on AC the throttling is done by the fact that the
liquid boil earlier in the capillary...)

Also what choke opening do we need to flow 100 barrels at 5000 psi pressure drop?

I know you have something else to do so if you do not answer "no problems".

Pierre

From: Austin, Julian
Sent: Sunday, April 25, 2010 3:02 PM
To: Pattillo, Phillip D; Owen, Les L; Petruska, David J; Tognarelli, Michael A; Tooms, Paul J; Evans, Geoff;
Nichols, Mark; Cook, Howard H; Beynet, Pierre A; Neilson, Ian
Cc: Birrell, Gordon Y
Subject: RE: Saturday, April 24 telecon notes

We are all on the previous number I think?

From: Pattillo, Phillip D
Sent: 25 April 2010 21:01
To: Owen, Les L; Petruska, David J; Tognarelli, Michael A; Tooms, Paul J; Evans, Geoff; Nichols, Mark;
Austin, Julian; Cook, Howard H; Beynet, Pierre A; Neilson, Ian
Cc: Birrell, Gordon Y

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BP-HZN-2179MDL05755650

TREX 009537.0001

TREX-009537.0001

Subject: RE: Saturday, April 24 telecon notes

Les,

Intercall does not seem to be accepting the conference code - I have tried twice. Any suggestions?

Thanks,

Phil

Tubular Problem? Try the Tubular Technology website

<https://epti.bpglobal.com/C10/C7/Tubular%20Technology/default.aspx>

BP America

501 Westlake Park Blvd., Houston, TX 77079

O: +1.281.366.2133

C: [REDACTED]

From: Owen, Les L

Sent: Sunday, April 25, 2010 2:11 PM

To: Owen, Les L; Petruska, David J; Tognarelli, Michael A; Tooms, Paul J; Evans, Geoff; Nichols, Mark; Austin, Julian; Cook, Howard H; Beynet, Pierre A; Pattillo, Phillip D; Neilson, Ian

Cc: Birrell, Gordon Y

Subject: RE: Saturday, April 24 telecon notes

Importance: High

All -

Just had another change -- we will now meet at 3 PM as originally scheduled. Please use the numbers below to call. Thanks for being flexible.

Les Owen

Segment Engineering Technical Authority, Pipelines

bp Exploration & Production Technology

Houston

Office: 281-366-1886

Mobile: [REDACTED]

owenl@bp.com

From: Owen, Les L

Sent: Sunday, April 25, 2010 1:51 PM

To: Petruska, David J; Tognarelli, Michael A; Tooms, Paul J; Evans, Geoff; Nichols, Mark; Austin, Julian; Cook, Howard H; Beynet, Pierre A; Pattillo, Phillip D; Neilson, Ian

Cc: Birrell, Gordon Y

Subject: RE: Saturday, April 24 telecon notes

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BP-HZN-2179MDL05755651

TREX 009537.0002

TREX-009537.0002

Importance: High

Gentlemen –

Gordon has requested we reschedule today's meeting to 4 PM Houston time (10 PM UK). Please use the following call-in number instead of the one used for previous meetings. Thanks.

Teleconference Info:

Conference code: 8063937995

Reservationless-Plus Toll Free Dial-In Number (US & Canada): (866) 685-4852

UK Toll Free: 08082347914

Les Owen

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owenl@bp.com

From: Birrell, Gordon Y

Sent: Sunday, April 25, 2010 12:19 PM

To: Birrell, Gordon Y; Petruska, David J; Tognarelli, Michael A; Tooms, Paul J; Evans, Geoff; Nichols, Mark; Austin, Julian; Cook, Howard H; Beynet, Pierre A; Pattillo, Phillip D; Owen, Les L; Neilson, Ian

Subject: RE: Saturday, April 24 telecon notes

Further diagram.

GYB

From: Birrell, Gordon Y

Sent: Saturday, April 24, 2010 9:42 PM

To: Petruska, David J; Tognarelli, Michael A; Tooms, Paul J; Evans, Geoff; Nichols, Mark; Austin, Julian; Cook, Howard H; Beynet, Pierre A; Pattillo, Phillip D; Owen, Les L; Neilson, Ian

Subject: RE: Saturday, April 24 telecon notes

Team,

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BP-HZN-2179MDL05755652

TREX 009537.0003

TREX-009537.0003

Today the response was intensely focused on preparing to close the Variable Bore Rams on the BOP. We didn't get much else done.

We didn't actually close the VBRs for reasons that I will update you on when we talk Sunday.

Rgds

Gordon

From: Petruska, David J

Sent: Saturday, April 24, 2010 3:45 PM

To: Birrell, Gordon Y; Tognarelli, Michael A; Tooms, Paul J; Evans, Geoff; Nichols, Mark; Austin, Julian; Cook, Howard H; Beynet, Pierre A; Pattillo, Phillip D; Owen, Les L; Neilson, Ian

Subject: Saturday, April 24 telecon notes

All,

Notes and action items from meeting today:

Gordon provided a status update. The ROV followed the riser out and found it suspended to about 1500' above the seafloor and then came back down. It was then followed on the seafloor until they found the end which is lying in a crater and found flow. Also have flow from drill pipe but still not sure on the connection of that back to the riser. The rig was also found not to far from the end of the riser. This team is to focus on 1) analyzing the riser at the bend and evaluating erosion at the bend and 2) what can be done to restrict/stop flow through the riser lying on the seafloor. Some other ideas were discussed although this team would not be the best to work them.

Concern around erosion of the drilling riser in particular around the bending crimp where the riser bent over just above the flexjoint to rest on the seafloor. It was agreed that we need to generate some erosion data and do some analysis. Julian Austin to be SPA but pull in John Martins as erosion expert. Pierre noted problem should be bound as some of the variable we will not be able to get good data on (flow rate, pressures, etc.). This way we can understand where we may have erosion problems and where we are ok looking at 3-6 month time frame.

Based on data Pierre obtained from the drillers, the sea floor shut in pressure of the well is 7800 psi with a crude gradient and 10346 psi with a gas gradient. The bubble point is 10,000 psi and the GOR at 14 psi is 3000. Hydrostatic head is about 2250 psi.

Crimping the pipe to reduce/stop flow - Julian to continue working with Frazer Nash on FEA modeling to look at burst pressure of pipe in the condition it is in. Gordon to get with Harold Reeves to get a copy of the ROV inspection that Phil developed so we get measurements around the main tube kink and send around.

In particular, Julian to see if he would need more data for his FEA work. David noted that per API RP 1111, X70 pipe with 21" OD and 7/8" wt has burst pressure of about 6000 psi so noted we need to understand the pipe burst capacity before we attempt crimping or other means to stop flow via the riser (note, someone stated the wt was 1" so expected burst pressure to 1111 would be 6950 psi). It was also discussed that we may want to do multiple bending kinks as a single kink is not expected to stop the flow.

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Howard noted we should get the ROV to survey the riser and note location of joint numbers as found and compare with riser tally from when it was ran.

Need to get pipeline folks involved to look at plugging type solutions or options they may have in their tool kit. Mark Nichols to get with Les Owens who is returning to Houston on Sunday.

It was raised if the flexjoint or wellhead could be a weak link. Howard Cook noted that the flexjoint is bent over resting on the stops so should be ok and group agreed with that. Mike Tognerelli to get data on the H4 wellhead. (note, wellhead is not usually a weak link as you do not want that failing so you can not get back on the well).

If Gordon needs help, for example if the request for collecting data gets to be too much, he will get Houston based employees of the team to come in and help.

REDACTED

A shared site is being set up so everyone can work from the same known data (Gordon to provide details).

Next telecon Sunday, April 25 at 8:00 CST, 2:00 London time.

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