

Exhibit 102

From: ROTHERMUND, H.C.
To: PARRY, G.; Inglis, Robert R.B. /SIEP /SDAN-AM; HASAN, MAHDI S.M. /SIEP /EPT-DD /777124
CC: LOVELOCK, S.; MINDERHOUD, M.; BICHSEL, MATTHIAS M. /SIEP /EPT-D /777264
BCC:
Sent Date: 2000-09-18 03:06:48.000
Received Date: 2000-09-18 03:06:50.000
Subject: Cluster development Angola
Attachments:

Gentlemen,

Against the background of Martijn Minderhoud's e-mail, with which I fully agree, let me make a few supporting comments:

- One of the important elements in the EP scorecard is reserves replacement. It is essential that we should come up with imaginative ways of booking those reserves we have. Martijn's approach is such an imaginative approach. Let's now use it, and use it for what it is meant to be: Not a final scheme for (sub-optimal) field development, but a scheme for the early booking of value!

- I am getting quite disenchanted to notice that each time a new idea for reserves booking is coming up we spend determined time to shoot it down rather than to see how to progress it.

- It is a great shame that we did not manage to drill appraisal wells first, in Block 18. I would not be surprised that one of the reasons for this is that "ideal" field development was seen as more important than early booking of value.

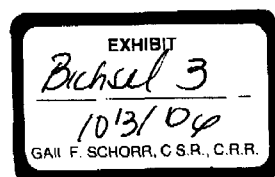
Please be guided accordingly.

Regards
Heinz

—Original Message—

From: MINDERHOUD, M.
Sent: 13 September 2000 15:07
To: PARRY, G. /SIEP /EPG
Cc: ROTHERMUND, H.C. /SEPI /EPG; LOVELOCK, S. /SEPI /EPG
Subject: FW: Cluster development Angola

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Gordon,

sorry to keep on harping on this one. But the way I see it, is (i) to get reserves booked in 2000 one way or another and (ii) to then start drilling appraisal wells as Capex thereafter. I fully understand now that the full, most optimal development of Block 18 requires more than a 'simple Min DVA' concept. But I also quote from below note :

"The min-DVA concept may be of interest for selective sweet spot development of individual reservoir structures (e.g. for Plutonio) if this system proves cost effective for the predicted recoverable volumes."

If I understand it well, for reserves booking it is required that there exists a doable, economic development scheme ; I quote from your note sent separately:

"Proved reserves can be booked if it can be demonstrated that the development project of a discovered field is technically and commercially mature (and a market is expected to be available). Commercial maturity should be demonstrated over a sufficiently large range of possible scenario's (including all surface and subsurface uncertainties). A project is deemed commercial if the $NPV7\% @ PSV14 > 0$."

However NOBODY SAID THAT YOU ACTUALLY HAVE TO EXECUTE THAT SCHEME !! As you state, you do not require to take FID. You can happily continue drilling to prove up a better scheme. The existence of such smaller, "dummy" scheme would probably not allow you to book more than the reserves you can actually produce with it, but it would be a start.

I think it would be worthwhile to pursue this idea – if I am completely crazy, tell me where I got it wrong

Or maybe your other plans have sufficiently progressed - then shred this

cheers

martijn

—Original Message—

From: Inglis, Robert R.B.

Sent: 24 August 2000 09:04

To: MINDERHOUD, M.

Cc: PARRY, G. /SIEP /EPG; Osborne, Peter L. /SDANG /GM; LOHR, FRAN F.A. /SIEP /EPB /157182; HASAN, MAHDI S.M. /SIEP /EPT-DD /777124; KNIGHT, BARRY B.P. /SIEP /EPT-DE /777890; Hines, Ian I. /SIEP /EPT-DE /777319; SMITH, PATRICK P.L. /SIEP /EPT-DD /535313; Simon, Grigore G. /SIEP

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/SDAN-AM

Subject: RE: Cluster development Angola

Martijn,

See attached SDS info on applicability of Min-DVA concept for Block 18.

We are looking at these concepts in the work being done in SDS, but as I indicated earlier, they are not likely to offer a step change in economics for this development. BP are also working on minimum dry tree options, drawing on the joint industry work done as part of WADO (West Africa Deepwater Operators), where these type of concepts were worked extensively with a number of contractor groups about 5 years ago.

We will continue to ensure that all development options are explored, but the real enabler for B18 is to be able to place high productivity, high ultimate wells.

Regards,

Rob

-----Original Message-----

From: Hines, Ian I. /777319 On Behalf Of Hines, Ian I. /777319

Sent: Thursday, August 24, 2000 1:29 AM

To: Inglis, Robert R.B.; Smith, Patrick P.L. /535313

Subject: RE: Cluster development Angola

Rob,

As discussed, some discussion on the DVA concepts. The real issue here now is managing the potentially unrealistic expectations which may have been created by generalizing the existing min-DVA experience. Its on our radar screen but a second order effect compared to the subsurface uncertainty which we are facing right now.

Development of the Block 18 reserves combines the challenges of two other ongoing deepwater developments projects: i.e. Erha (with a series of complex stacked amalgamated channel turbidite reservoirs) and Nakika (with its multiple reservoir aerially distributed reserves). This combination presents a very significant and unique development challenge.

DVA systems are one of a number of development options being considered for Block 18, they are also being evaluated for Erha and Holstein.

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However, unlike these other developments the aerially distributed nature of the reserves and the variable reserves density within the separate structures in Block 18 require much larger numbers of wells and are such that a single DVA structure is not a viable development option for the entire Block. The min-DVA concept may be of interest for selective sweet spot development of individual reservoir structures (e.g. for Plutonio) if this system proves cost effective for the predicted recoverable volumes.

Development of the wider reserves base will require a large number of wells (current estimates range from 40 - 80wells), infield storage (e.g. an FPSO or an FSU) and either several DVA systems, significant numbers of subsea wells, or most probably a combination of these options given the aerial extent of the reserves in individual structures. The choice between subsea wells and dry trees (and hence the cost effectiveness of DVA systems) will depend upon the subsurface, flow assurance, well engineering and development system assessments which are part of ongoing concept screening exercises being conducted by both BP and Shell. The focus of current effort is to develop a good understanding of the range of subsurface uncertainties/key drivers in the complex multiple reservoir setting within Block 18. The number of separate structures results in a large number of potential development scenarios. However, the surface engineering screening work is not sufficiently mature to make a choice between the dry tree and wet tree options. It is expected that the DVA concept and the dry tree versus wet tree decision will almost certainly be carried forward into the concept selection stage (post VAR2) as was the case for Bonga/Nakika and is currently anticipated for Erha.

In summary, the cost benefit assessment of using DVA systems at Block 18 is more complex and less clear cut than for some other ongoing developments. However the ongoing evaluation is benefiting from the development work carried out in SDS in recent years in terms of capturing representative lower bound costs for potential minimum systems.

—Original Message—

From: MINDERHOUD, M.

Sent: 17 August 2000 16:33

To: Inglis, Robert R.B.

Cc: PARRY, G. /SIEP /EPG; Osborne, Peter L. /SDANG /GM; LOHR, FRAN F.A.

/SIEP /EPB /157182; HASAN, MAHDI S.M. /SIEP /EPT-DD /777124

Subject: RE: Cluster development Angola

Rob,

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what is the latest on this? with our new discovery, the light at the end of the tunnel is very near. Can we make a competitive proposal to BPA?

(By the way, this is the latest e-mail I could find on this, maybe there is later correspondence).

Martijn

-----Original Message-----

From: Inglis, Robert R.B.
Sent: 29 April 2000 11:49
To: MINDERHOUD, M.
Cc: PARRY, G. /SIEP /EPG
Subject: RE: Cluster development Angola

Martijn,

Sorry I have not responded to this request - all the focus on B34 has diverted attention.

I have had some material from SDS, but none of this indicates that Min DVA will do much for Block 18. I'll discuss further during my visit to Houston next week.

So do not hold your breath - Min DVA is a niche application which does not fit easily in Angola.

Regards,

Rob

-----Original Message-----

From: MINDERHOUD, M.
Sent: Monday, April 17, 2000 6:11 PM
To: Inglis, Robert R.B. /SIEP /SDA-AM
Cc: PARRY, G. /SIEP /EPG
Subject: FW: Cluster development Angola

Rob,

I have some months ago extended this challenge to SDS, to see whether their miniDVA concept could be the winner in Angola (at least Block 18). I am very curious to hear from you what the status of this is, as I was very intrigued by the idea.

Greetings

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Martijn

-----Original Message-----

From: MINDERHOUD, M.
Sent: 15 February 2000 08:46
To: Hasan, Mahdi S.M. /777124
Cc: PARRY, G.
Subject: RE: Cluster development Angola

Mahdi,

Indeed you sold me that very idea, and this is why I contacted you.

I think that your exciting ideas on this mini development are or could be the competitive edge bringing us back great in Angola. I would love to prove that we Shell think that Block 18 is already economic, whilst BP-Amoco still think they need the fourth well. Having said that, I cannot judge whether the high level screening look is sufficient to start taking steps or whether more in-depth work is required. And what the budgetary consequences are. I think Gordon could comment here.

I look forward to hearing more on this topic

Martijn

-----Original Message-----

From: Hasan, Mahdi S.M. /777124
Sent: 15 February 2000 00:43
To: MINDERHOUD, M.
Cc: PARRY, G.
Subject: RE: Cluster development Angola

Martijn,

Sorry for the late reply - but your comment about us "actively looking..." caught me off guard. Rob Inglis has been asked to give a view on the BP cost estimates and he was planning to use some broad brushed comparisons to possible alternatives we might use and what they would cost. That is a long way from having work done on it even to establish whether the concept would be technically feasible for this application.

Having said that, this capability certainly exists in SDS - actually is the heart of what we provide. However, I caution that a high level, screening type look, should be mis-read as actively studying it to find

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a solution. However, if that is what you/Angola wish us to do, we shall be delighted to provide you a service - a service that you will not find anywhere in quality and reliability.

Mahdi

From: Minderhoud, Martijn M SEPI-EPG
Sent: Thursday, February 10, 2000 5:57 AM
To: Hasan, Mahdi SM SIEP-EPT-DD
Cc: Parry, Gordon G SIEP-EPG
Subject: Cluster development Angola

Mahdi,

I understand from Gordon, that you guys are actively looking at applying your miniDVA satellite development approach to see whether Angola Block 18 could be made commercial already with the three developments there are (approx 600 mmbbls). Can you tell me what the current views on this are, and are you in a position to say anything concrete, in the context of portfolio management?
Thanks

Martijn

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