we knew that there were some issues there; and we tried to resolve them for that year.
Q. Who set the 100% target for the RRR, the reserves replacement ratio?
A. Who set the target. I guess it was set by the collective ExCom, because that was sort of the target that we as an EP company had. I mean, you want to replace your reserves, because that way you don't shrink your company.
Q. Did you have an understanding that Mr. Watts was pushing for reserves additions to meet the 100% target?
MR. TUTTLE: Objection to form. Foundation.
THE WITNESS:

0022

A. Well, reserves like I said were in the scorecard. And it was clear that, as an oil company, we were trying to look for reserves.
BY MR. HABER:
Q. Did you feel under pressure to meet that target?
MR. TUTTLE: Objection. Asked and answered during his prior deposition testimony.
BY MR. HABER:
Q. You can answer.
A. No more than I think on any other target, except specifically of course the reserves were what I looked after.
And but I think, like I said before, I mean, reserves, they are either going to be bookable or they were not, and we would see what the outcome is.
Q. Did you feel under pressure to find reserves to book in Oman?
A. No.
Q. Would it surprise you if other people had told regulators that you had told them

0023

that you were under pressure to book reserves in Oman?
MR. TUTTLE: Objection to form. Foundation.

THE WITNESS: Can you repeat that question?
BY MR. HABER:
Q. Sure. Would it surprise you if other people had told regulators that, at the time, you were under pressure to book reserves in Oman?
A. I think you said something else. Would I be surprised if others had said?
Q. Right.
A. I don't know.
MR. TUTTLE: I renew my objection, even though he has re-asked the question again.
THE WITNESS:
A. It doesn't ring a bell.
BY MR. HABER:
Q. By booking the reserves in Oman, did that change whether PDO would meet its
0024
scorecard target?
A. I don't believe PDO had Proved Reserves on their scorecard.
Q. Well then what scorecard were you referring to?
A. There is a group scorecard. So that was the group, so that was the Hague centrally. And then each region owned their part of their scorecards -- of that scorecard, sorry. So I mean the EPM region, so the Middle East would have a scorecard in terms of meeting their targets.
(Whereupon, Aalbers Exhibit C was marked for identification.)
Q. I just handed the witness another series of E-mails. Like the other two Exhibits, this one was produced off a native drive and therefore there are no Bates numbers.
The last E-mail is from Mr. Aalbers to an Andrew Dueck -- I think that's the way it's pronounced -- with a CC to Anton Barendregt. It's dated January 25, 2001.
0025
The subject line reads, "Proved

Reserves increase - OUTSTANDING!"
Q. Mr. Aalbers, have you seen this E-mail before today?
A. Yes, I have.
Q. Who is Andrew Dueck?
A. Andrew Dueck was the finance advisor for EPM at the time.
Q. If you turn to the second page?
A. Yes.
Q. There is the E-mail from Mr. Dueck to Steven Kursey? (Sic)
A. Steve Kersley.
Q. Kersley. Thank you. I am sorry. Which is dated January 23, 2001.
The last paragraph of that E-mail says, "This" -- and in context it appears to be referring to the increase of reserves in Oman -- "is also having an effect on EPM scorecard overall, possibly moving us from 'below' to 'on target', subject to confirmation of remaining core measures."
0026
Do you recall having any discussions with Mr. Dueck concerning the effect of an increase of reserves on the EPM scorecard?
A. Well, I mean, there is this E-mail which states what the result is, and this was what I meant with the region scorecard. So the EPM scorecard obviously got changed.
Well, the result of the scorecard is all the individual measures, so the reserves have an impact on that. So --
MR. TUTTLE: I -- go ahead. I want you to finish.
THE WITNESS: So indeed, I mean having an additional booking of the Oman reserves changes their score on Proved Reserves addition, which is one of the measures of the scorecard. So it has an effect on the overall scorecard.
MR. TUTTLE: Mr. Haber, just a note for the record, we consented to an additional deposition. And I know that you disagree with this, but I want to make sure that it's on the

record.

0027

But in order to follow up on the specific questions regarding the existence of a potential agreement between Mr. Aalbers and Mr. Watts, I am happy to let you explore that and explore any possibility of any such agreement.

You have had two days with Mr. Aalbers already.

This E-mail by itself has no reference to Mr. Watts. The questions, in terms of scorecards and other issues, are points that have been covered in prior testimony.

I just want to give you I guess notice on this that I would very much like to not have to object and instruct the witness not to answer.

But I do feel like the scope of your questions are going far beyond what the magistrate permitted in terms of this deposition and what we consented to.

I will note that, you know, I have tried to give you as wide a latitude as possible to explore any aspect of this, and I am happy to

0028

do that consistent with the underlying scope of what I believe this deposition is for.

MR. HABER: Well, you are correct. We do disagree. We were not privy to any agreement or any consent, as you know, with regard to this re-deposition.

It was our understanding, based upon what the position we advised the magistrate of during our teleconference with the court was that we wanted to get into the underlying rationale for the booking, which also would include whether or not there was pressure or any other influences that drove the booking.

And it is our understanding that the magistrate did not so limit us. You certainly have the right if you want to cut this off.

The magistrate also gave all the parties the reservation of right to recall Mr.

Aalbers, which we would certainly exercise if we are cut off now on this very limited area of inquiry.
So for the record, we do object.
0029
We believe we have the right to inquire into this limited area. And you know, I am going to proceed and reserve my rights accordingly.
MR. TUTTLE: I appreciate that.
MR. MORSE: Can I make one point? What the Magistrate Judge said that every party has the right to seek to redepose Mr. Aalbers, not the right to do so.
MR. HABER: It's understood. But that's exactly what we would do.
MR. MORSE: Okay.
MR. TUTTLE: Can we go off the record for five minutes?
MR. HABER: Yes.
THE VIDEOGRAPHER: Going off the record at 10:06.
(Short recess taken)
THE VIDEOGRAPHER: Returning to the record at 12:12 from 10:06.
BY MR. HABER:
Q. Now, Mr. Aalbers, a moment ago we talked about the scorecard and the effect of the
0030
scorecard on EPM.
Do you recall if in fact the reserves addition increased EPM's scorecard target?
A. It certainly did.
Q. And do you recall if that target rating was on target or above on-target?
A. I don't recall. This E-mail said it was going to go from below to on target. But I can't remember what the ultimate outcome was, depending on all the other parameters they changed.
Q. During the picture teleconference with Mr. Watts, do you recall discussing the EPM scorecard?

A. No, I don't.

Q. And I just want, for the record, if you can just take a look at Exhibits A and B for a moment.

And just confirm that you in fact have seen these E-mails before today, that you wrote these E-mails, at least the last one, which

0031

is on the first page of each Exhibit?

A. Well, yes. That one says that it's from me to John Bell. (Indicating) And this one I have passed on to Hans van Poppel, and also the one before to all the reserve copy points.

Q. And when you received a document as a direct recipient or as a copied recipient, do you have a recollection of receiving these E-mails as well.

MR. TUTTLE: On B he sent them.

MR. HABER: I am sorry?

MR. TUTTLE: On B he sent them.

MR. HABER: Well, on B, he did. I am sorry. I was actually looking at A.

THE WITNESS: So which one are you pointing out?

BY MR. HABER:

Q. Let's look at A.

A. A, yes.

Q. When you were copied, for instance, from John Bell, if you look at the January 23rd E-mail?

0032

A. Well, I mean, I have obviously had the E-mail. I mean, I don't recall as such having received, but obviously had. And I know that we set up the meeting which happened.

So the answer would be yes.

Q. Do you recall having any discussions with Anton Barendregt concerning the booking of reserves in Oman?

A. Yes. I did have discussions with Anton on that. He was involved in the booking. One of the discussions with Oman was that they wanted Anton to be involved in whatever changes

were made, so that he was happy with them as well.
As he also had made remarks in his prior audit that there were some issues with Oman that he would like to see revolved.
Q. Do you recall what issues those were?
A. They actually had to do with end-of-license, that wasn't properly reflected. And I recall something about some of their proved being somewhat conservative.
0033
Q. Do you recall if anyone at PDO was pushing back on the amount of reserves that were being advocated by you and Mr. Barendregt?
MR. TUTTLE: Objection to form, foundation. Mischaracterization of prior testimony.
THE WITNESS:
A. Well, first of all, the reserves were actually being calculated by Oman. And we weren't actually advocating the reserves as such, laid down the work. But for the forecast, we worked out jointly a method of coming up with the proved forecasts, which Oman by itself didn't have.
(Whereupon, Aalbers Exhibit D was marked for identification)
BY MR. HABER:
Q. Just marked as Aalbers Exhibit D a series of E-mails, the last of which is from Thomas Meijssen. It's dated January 3, 2001, to Anton Barendregt with a CC to Mr. Aalbers, Said Abri, and Marcus Antonini. The subject reads:
0034
"Proved Reserves Visit - Group Resource Co-ordinator." The Bates number is RJW00151703 to RJW00151704.
And to save time, I am going to mark another Exhibit so Mr. Aalbers can also look at it, and I will ask a couple of questions.
(Whereupon, Aalbers Exhibit E was marked for identification)
For the record, we just marked as

Aalbers Exhibit E a series of E-mails, the last of which is from Mr. Barendregt.

It's dated January 4, 2001 to Thomas Meijssen with a CC to Mr. Aalbers, Said Abri, Marcus Antonini. And again, it says -- the subject line is "Proved Reserves Visit - Group Resource Co-ordinator."

The Bates number, and there is two ranges: The first is V00102056 through V00102059. And the other range is OM000205 to OM000208.

Okay. Mr. Aalbers, if you look at Exhibit D, which is the one with the charts in the first page, and if you see the chart, the second

0035

chart in the middle of that first page, there is a series of I guess -- I guess you would describe them as ways in which to externally report Proved Reserves.

And in the E-mail from Mr. Meijssen to Mr. Barendregt, in which you are copied, if you look at the bottom, the second to the last paragraph, Mr. Meijssen appears to be saying that what he is most comfortable with is -- and it's looking at the chart -- the proven developed reserves of 40%.

Are you with me so far?

A. Yes, I am.

Q. Now, if you look at Exhibit E number 5 at the very bottom, it says, "As for your proposed volumes to book is externally reported Proved Reserves (before they are cut off by license expiry) your line 'Proven'" Developed Reserves 40%, Undeveloped Reserves 60% (347 million cubic meters developed reserves and 254 undeveloped reserves) "seems the best one to aim for."

0036

During this time period --

A. Mm-Hmm.

Q. -- do you recall Mr. Meijssen or anyone at PDO pushing back against what is -- what I just read into the record from Exhibit E, and instead advocating what Mr. Meijssen says in that

paragraph on Exhibit D?
MR. TUTTLE: I am going to object to the characterization of the document and the form of the question.
You can answer.
THE WITNESS:
A. I can't remember. I mean, we had a discussion at the time on what the right way of reporting the Oman reserves were, and this is part of that communication.
I don't recall if there was anybody specifically pushing for something else.
Thomas suggested something here, Anton here comes up with a different recommendation, so we -- there is communication on the subject at the time. And eventually, we
0037
settled on a agreed method.
BY MR. HABER:
Q. And was that agreed method the one that Mr. Barendregt wrote in Exhibit E?
A. I believe it is. But I am not 100% sure, but I think that is what we ultimately used.
Q. Did anyone at this time from PDO advise you that there wasn't sufficient technical work to support the booking or what was being strived for as reflected in Exhibit E?
MR. TUTTLE: Objection to form. Foundation.
THE WITNESS:
A. No, I don't recall that. I mean, there was technical word done to look at the different fields and to, on a field-by-field basis, come up with an estimate on how to come up with a Proved Reserves within the limited manpower that Oman was allowed to spend on it.
BY MR. HABER:
Q. Now, did this technical work allow for a field-by-field analysis?
0038
A. They viewed all the individual fields. At the moment, I don't know in what detail every field was individually viewed, but

they certainly looked at all the fields.
Q. Do you recall, in connection with the analysis that is advocated in Exhibit E by Mr. Barendregt, if only the largest fields were analyzed?
MR. TUTTLE: Objection to form. Characterization of the document.
THE WITNESS:
A. Can you repeat that question once more?
BY MR. HABER:
Q. Sure. Let me ask it -- I will rephrase. Let me ask a different question.
Do you recall if PDO was able to analyze only the largest fields? And by "analyze," I mean do the technical review work?
MR. TUTTLE: Objection to form. Foundation.
THE WITNESS:
0039
A. They certainly would have looked more closely at the larger fields, those obviously being the most important ones. Whether or not all the smaller ones were all looked in the same detail, I don't recall.
BY MR. HABER:
Q. Do you recall how many fields there were in Oman at the time?
A. No, I don't. Quite a few.
Q. Would there be more than 1,000?
A. More than 1,000 fields? No, I don't think so.
Q. More than a hundred?
A. Well, I am not going to be guessing. I have no idea.
Q. Okay. One last document.
(Whereupon, Aalbers Exhibit F was marked for identification)
We have just marked and the witness is reviewing Aalbers Exhibit F.
It's a series of E-mails, the last of which is from Mr. Aalbers to Thomas Meijssen
0040

with CC to Said Abri. It's dated 01-02, January 2, 2001.

Again, this is a document that was produced on a native drive. And there is a summation identification number which is 101400005.

And I will note for the record that on the bottom of the document, there is a footer, which is a file path which is not part of the document that came from our printer. It's a default setting. And for the record, this is not again part of the document as it was produced.

(Pause)

Mr. Aalbers, my question is only going to be with regard to the E-mail that you sent to Mr. Meijssen on the first page.

A. Mm-Hmm.

Q. Do you recall this document before today?

A. I have obviously sent it, but not specifically.

Q. What I am interested in is the last

0041

sentence of that E-mail where you say, "Hope to see a significant increase in proved reserves for PDO for 2000".

Why did you write that?

A. Why did I write that?

MR. TUTTLE: Objection to form.

THE WITNESS:

A. Because we had been working very hard with Oman to correct sort of the understatement of Proved Reserves as we saw at the time. And you can see in the statement here they have had fields where they had negative reserves.

And they only sort of update the proof when they sort of run out of proof. So it hasn't had significant attention over the last couple of years, and we are trying to get that resolved and get to a better booking this year better reflecting what we at that time perceived to be the reserves for Oman.

MR. HABER: Okay. Well, that's all

I have for this. Again, subject to the court's ruling, nothing further.

0042

THE WITNESS: Okay. Thank you.

MR. TUTTLE: Thank you.

MR. HABER: Thank you very much, Mr. Aalbers.

MR. GOLDSTEIN: No further questions.

THE VIDEOGRAPHER: This ends the videotaped deposition of Remco Aalbers at 10:29 a.m. on February 19, 2007. This is the end of tape 1.

(Whereupon the deposition was concluded at 10:29 a.m.)

0043

ERRATA

CORRECTION PAGE

____________________ ____________

Signature Date

0044

I, Remco Aalbers, am a deponent in the foregoing video deposition. I have read the foregoing video deposition, and having made such changes and corrections as I desired, I certify that the transcript is a true and accurate record of my responses to the questions put to me on Monday, February 19, 2007.

Signed__________________________

REMCO AALBERS

0045

CERTIFICATE OF COURT REPORTER

I, Frederick Weiss, CSR, CM, do hereby certify that I took the stenotype notes of the foregoing deposition and that the transcript thereof is a true and accurate record transcribed to the best of my skill and ability.

I further certify that I am neither counsel for, related to, nor employed by any of the parties to the action in which this deposition was taken, and that I am not a relative or employee of any attorney or counsel employed by the parties hereto, nor financially or otherwise interested in the outcome of the action.

____
FREDERICK WEISS, CSR, CM

____
DATE

26.02.99

PAULL, N.

From: vanPoppel, Johannes J. / , SI
To: PAULL, N. / EPB-P, SEPIV, OPENMAIL
Subject: FW: Annual Report - Reserves Publication (text page 66)
Date: Friday 26 February 1999 19:05
Priority: High

Importance: High

NADIA,

AS WOUTER IS MNOVING OFFICE PLEASE HANDDELIVER>SOONEST
-----Original Message-----
From: van Poppel, Johannes SI-FCG
Sent: Friday, February 26, 1999 5:52 PM
To: van DORP, W.G. SEPIV-EPB-P
Cc: AALBERS, R.D. SEPIV-EPB-P; Dinning, Victoria SI-FCGB/1; Finckenhagen, Christian SI-FCGB/1; JESPERS, B.L. SEPIV-EPB-P; Kristel, Wim SI-FCGR; van NUES, J.W.F SIEP-EPS-FX; WATTS, N.L. SEPIV-EPB-P
Subject: RE: Annual Report - Reserves Publication (text page 66)

Wouter,

Let me assure you that I of course would favour wording that will not trigger any questions. In discussing with our Group Auditors this is the outcome of the "DRAFTING"
knowledge around the table , once again knowing full well that we did not change the methodology but at the same time also knowing that the a rather substantial part of the increase has been caused by the application of the reserves guideline principles more fully described in the relevant documents but described in summary as the deterministic method
We are of course most willing to accept and discuss any improvement on the text now drafted , unfortunately mention can not be dropped entirely.
I have sympathy for your views but I i see very little room to move here.

-----Original Message-----
From: van DORP, W.G. SEPIV-EPB-P
Sent: Friday, February 26, 1999 4:47 PM
To: van Poppel, Johannes SI-FCG
Cc: AALBERS, R.D. SEPIV-EPB-P; Dinning, Victoria SI-FCGB/1; Finckenhagen, Christian SI-FCGB/1; JESPERS, B.L. SEPIV-EPB-P; Kristel, Wim SI-FCGR; van NUES, J.W.F SIEP-EPS-FX; WATTS, N.L. SEPIV-EPB-P
Subject: RE: Annual Report - Reserves Publication (text page 66)

Hans,

I feel uncomfortable with the reasoning expressed in your reply. I am also somewhat surprised that this sentence has entered the draft text of the Annual Report without our advance consultation.

The statement " ....refined methods..." is likely to trigger questions to which we can not properly respond. Therefore, I can not agree to push the problem to the future.

I would strongly appreciate that the these words are taken out again and the text be reverted to the original agreed proposal.

Kind regards,
Wouter

| From: vanPoppel, Johannes J. / , SI
| To: AALBERS, R.D. / EPB-P, SEPIV, OPENMAIL
| Cc: Dinning, Victoria V. / , SI; Finckenhagen, Christian C. / , SI;
| JESPERS, B.L. / EPB-P, SEPIV, OPENMAIL; Kristel, Wim W. / ,
| SI; vanDORP, W.G. / EPB-P, SEPIV, OPENMAIL; vanNUES, J.W.F. /
| EPS-FX, SIEP, OPENMAIL; WATTS, N.L. / EPB-P, SEPIV, OPENMAIL

EXHIBIT
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AALBERS 1
11/6/06 CLS

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RJW01000895

Subject: RE: Annual Report - Reserves Publication (text page 66)
Date: 26 February 1999 15:10

Remco,

Following detailed discussions with our Group Auditors we came to this rather "fine" wording , which we believe reflects the actual circumstances rather well ,your concern about that this might trigger questions will have to be covered with good answers if and when asked.

-----Original Message-----
From: AALBERS, R.D. SEPIV-EPB-P
Sent: Friday, February 26, 1999 10:17 AM
To: van Poppel, Johannes SI-FCG
Cc: Dinning, Victoria SI-FCGB/1; Finckenhagen, Christian SI-FCGB/1; JESPERS, B.L. SEPIV-EPB-P; Kristel, Wim SI-FCGR; van DORP, W.G. SEPIV-EPB-P; van NUES, J.W.F SIEP-EPS-FX; WATTS, N.L. SEPIV-EPB-P
Subject: Annual Report - Reserves Publication (text page 66)

Hans,

We have had a look at the batch 6 of the Annual Report which is now available on the web to check the text and numbers the Group intents to publish on reserves and SM. We will revert separately on the actual numbers as there are still a number of typesetting mistakes.

As to the text on page 66 related to reserves I noticed an extra line (marked ++++) has been inserted which we have not seen before (and is added vs last year's text):

Quote:

Oil and gas reserves cannot be measured exactly since estimation of reserves involves subjective judgment and arbitrary determinations. Estimation methods have been refined during 1998. Estimates remain
++
subject to revisions.

Unquote

I would like to suggest we remove the statement on refinement as it invites a lot of queries and questions and possibly even questions vs restatement of historical numbers. The issue being revision of previous estimates or change in accounting method/principle. The change in reserves should be seen as a revision of previous estimates and not a change in method. A statement referring to a 'refinement of method' suggest (in my opinion) that the changes are possibly on the border, this is something we want/should avoid.

The impact of the refinement although reasonably significant in terms of the total 1998 changes (40% oil, 15% gas - 28% on total Boe) is small on the total resource base (6% oil, 2% gas - 4% on total Boe) and clearly below the accounting threshold of materiality normally set around 10%.

We have been fair when we presented the 1998 reserves increase in the Q4/98FY press release and indicated they mainly resulted from revisions in existing fields. This is also repeated in the AR on page 27 under the description of 'reserves' - which again highlights that the additions to proved reserves increase is manly related to revisions of previous estimates in existing fields for oil and alos for gas but for gas also include acquisition of additional interest in gas fields in five named countries.

Please let me know how you feel but I would like to strongly recommend that we remove the sentence as it is not required and could cause

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unwanted problems/issues.

Regards,

Remco

Note for Information to ExCom

Preliminary Summary of End 1998 Resources (ESOSC)

The objective of this note is to inform ExCom of the end 1998 ESOSC resources, especially proved and proved developed reserves, prior to the finalisation of these numbers by the 5th February 1999, ahead of the Q4 press release. The numbers are still being finalised, but adjustments are expected to be minor.

Shell Oil proved reserves are expected by the 29th January. Shell Canada preliminary proved reserves have been received by the 27th January, but are not yet included.

Changes during 1998

Proved Reserves

The ESOSC proved reserves as of 1.1.99 stand at 1246 mln m^3 oil/NGL and 1494 mrd sm^3 gas, showing an increase of 102 mln m^3 and 144 mrd sm^3 for oil/NGL and gas after taking account of 1998 production.

No new ventures have booked first time proved oil/NGL or gas reserves in 1998, with Peru (Camisea) not passing FID and final FID delayed in both Chad (Doba) and Namibia (Kudu).

The large increase in proved oil/NGL reserves (mln m^3) is mainly caused by additions in Nigeria SPDC (87) from studies and impact new Guidelines & SNEPCO (22), and UK (8). These increases are offset by reductions in Venezuela (-20) reduced reserves in Urdaneta West, Abu Dhabi (-10) reduced OPEC quota and Colombia (-8) which has been divested.

The significant increases in proved gas reserves (mrd sm^3) primarily result from Oman Gisco (48) due to increased entitlement at PSV14, Philippines (20) acquisition of Oxy share, Nigeria SPDC (18) & SNEPCO (7), and Argentina (6) acquisition; offset by reductions in the Netherlands (-9), Brunei (-4) and Norway (-2).

The ESOSC proved developed reserves as of 1.1.99 stand at 550 mln m^3 oil/NGL and 621 mrd sm^3 gas, showing an increase of 73 mln m^3 and 98 mrd sm^3 for oil/NGL and gas after taking account of 1998 production.

Expectation Reserves

Expectation reserves increased over 1998 from 2035 to 2051 mln m^3 for oil/NGL and from 2258 to 2424 mrd sm^3 for gas, and increase of 16 mln m^3 and 166 mrd sm^3 respectively.

The oil/NGL increase is mainly the result of increases in Nigeria SPDC (44) & SNEPCO (18) and Oman (6), offset by reductions in Venezuela (-37), UK (-15) and Colombia (-10). The gas reserves increase in Oman Gisco (41), Nigeria SPDC (37) & SNEPCO (9), Malaysia SSPC (34) & SSB (20), Philippines (25) and Argentina (18), offset by reductions in Netherlands (-15), Brunei (-10) and Denmark (-8).

Expectation reserves in licence increased less than total expectation as significant volumes are currently assumed to be only produced post-licence. The [redacted] oil/NGL reserves in licence now stand at 1679 mln m^3 (an increase of 9 mln m^3) and the expectation gas reserves in licence stand at 1805 mrd sm^3 (an increase of 103 mrd sm^3). The main gas volumes transferred to post licence being in Malaysia SSB (-6) & SSPC (-34) and Nigeria SPDC (-28).

Expectation developed reserves in licence decreased for oil/NGL from 652 to 599 mln m^3, a reduction of 53 mln m^3, a replacement ratio of 47%, well below 100%. Further clarification is being pursued to explain some of the reductions. For gas expectation developed reserves in licence increased from 626 to 683 mrd sm^3, an increase of 57 mrd sm^3.

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RJW00072247

Replacement ratios

Proved

The ESOSC oil/NGL production for 1998 of 99 mln m^3 was more than replaced by the proved reserves additions with a proved reserves replacement ratio of 203%; proved gas reserves additions were also significantly more than 1998 production of 54 mrd sm^3 with a proved replacement ratio of 364%. The overall ESOSC proved reserves replacement ratio for oil/NGL and gas on boe equivalent is 259%.

The ESOSC proved developed reserves replacement ratio for 1998 is 173% and 279% for oil/NGL and gas respectively, 210% on a combined boe basis.

For oil/NGL, the replacement ratio is the highest in the decade so far and the gas replacement ratio is only slightly below the 1996 high of 383%. For three consecutive years, both oil/NGL and gas replacement ratio's have been very good, resulting in a three year average replacement ratio of 177% for oil/NGL and 322% for gas; firmly recovered from the 1992-1995 low, as shown in attachment 2.

Expectation

Expectation and expectation in licence reserves replacement ratios for oil/NGL and gas are presented in attachments 3 and 4. Expectation reserves in licence replacement ratios for 1998 are 109% and 289% for oil/NGL and gas respectively. Expectation oil/NGL volume additions within licence (including the 'PSC effect' from PSV14) only just replaced production.

Financial Impact

There have been two major changes with respect to the end 1998 proved and proved developed reserves reporting which effected NIAT. The first change pertains to the revision of the Group Resource Guidelines following the recommendation of the Reserves VCT early 1998. In short, this allows booking of proved reserves in mature fields based on an expectation estimate rather than on a conservative P85 estimate. The new Guidelines also align the proved developed reserves with the No Further Activity (NFA) forecast.

Secondly, the oil price assumption used for evaluating resource commerciality has been revised from PSV18 (1.98) to PSV14 (1.99). As a result of this change reserves volumes might be reduced for volumes no longer being commercial, which is offset by an increased entitlement in PSC countries ("PSC effect").

OUs have been requested to indicate the effect of both these changes on NIAT for 1998 and 1999.

Due to these changes 106 mln US$ has been added to NIAT in 1998 (13 from PSV14 and 93 from the Guidelines) and 80 mln US$ will be added to NIAT in 1999 (26 from PSV14 and 54 from the Guidelines). Major contribution is from UK with 67 and 35 mln US$ for 1998 and 1999 respectively.

The effect of these two changes on the actual total proved reserves is an addition of 12 mln m^3 oil/NGL and 35 mrd sm^3 gas attributed to the new PSV14 and 81 mln m^3 oil/NGL and 15 mrd sm^3 gas the impact of the new Guidelines.

Discoveries 1998

unsuccessful?

One NVO and twelve OUs have reported a total of 32 successful exploration wells for 1998. Total Group share on equity basis of the discovered volume is 27 mln m^3 oil/NGL (173 mln bbl) and 127 mrd sm^3 gas (774 mln boe), a combined total of 947 mln boe.

There are four major gas finds one each in Peru (Pagoreni 230 mln boe), Malaysia Sabah (Kamansu East 199 mln boe), Australia SDA (Chuditch 171 mln boe) and Norway (Ormen Lange South 125 mln boe).

Total exploration expenditure for 1998 is currently estimated at US$ 1925 mln, which includes US$ 180 for the Argentina acquisition and US$ 136 mln due to the Peru Carmisea write-off. Based on 'net' exploration expenditure of US$ 1609 mln, the finding cost for 1998 are 1.70 US$/boe.

Carry and/padin?

Of the discovered oil/NGL, 25 mln m^3 (160 mln bbl) is carried as commercial resources (i.e. excluding non-commercial SFR and Government Take in PSC countries). Of the discovered gas, 70 mrd sm^3 (425 mln boe) is booked as commercial resources. Total commercial resources booked are 585 mln boe with an associated commercial resources finding cost of 2.75 US$/boe.

The 1998 discoveries added 8 mln m^3 (52 mln bbl) and 12 mrd sm^3 (72 mln boe) of expectation reserves per 1.1.99 for oil/NGL and gas respectively, a total of 124 mln boe. Over time, more of the discovered commercial SFR volumes should be transferred to reserves.

Reserves PSV10

Currently there is no data available to estimate the ESOSC reserves position based on a PSV10 oil price screening rate. Such data would have to be requested from OUs.

EPB-P

Attachments

1. Reserves Summary
2. Proved Reserves Replacement Ratios
3. Oil/NGL Expectation Reserves Replacement Ratios
4. Gas Expectation Reserves Replacement Ratios

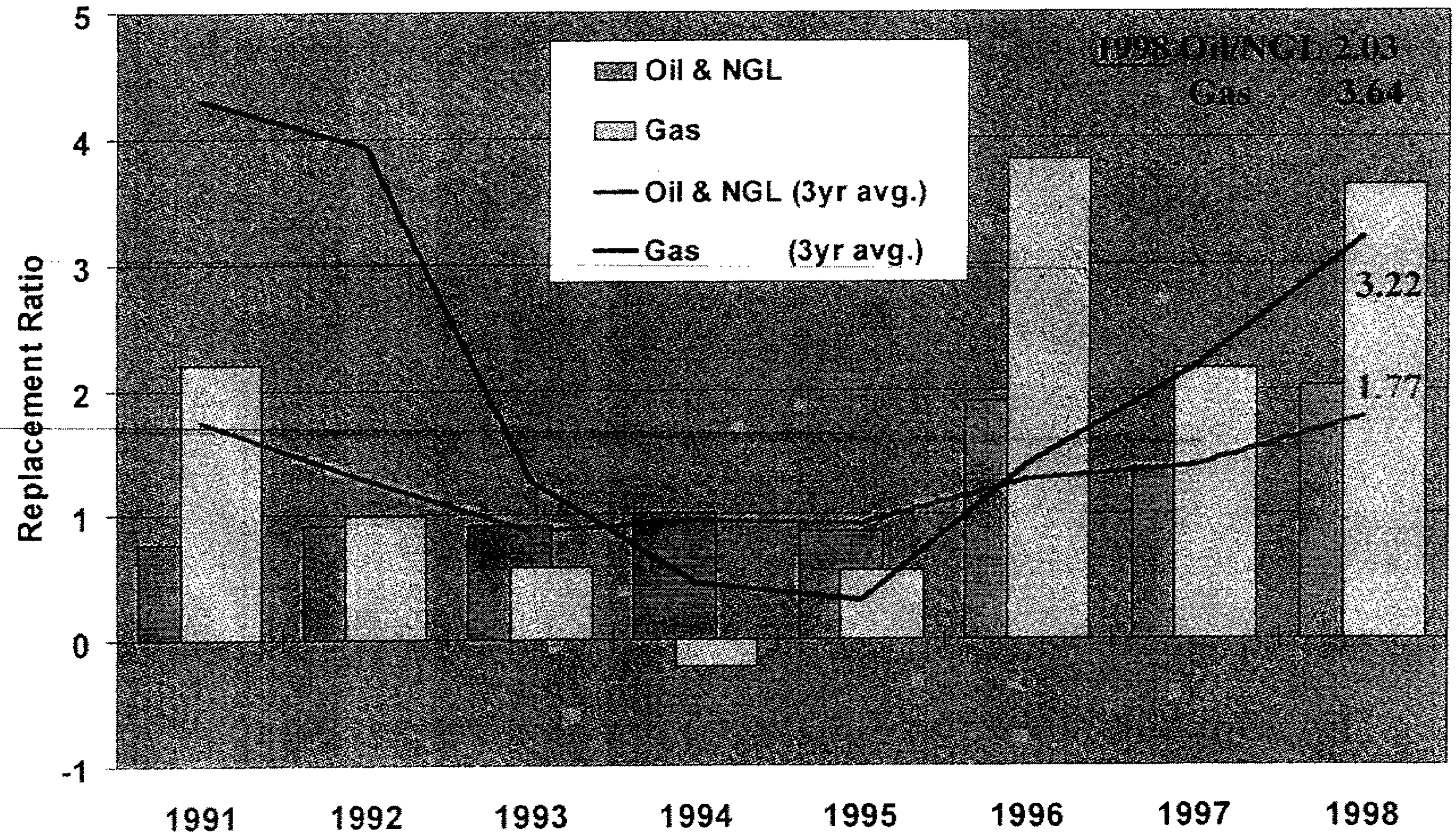
RESERVES SUMMARY - PRELIMINARY **Attachment 1**

ESOSC OIL/NGL	Oil/NGL million m^3		
	Proved	Exp in Licence	Expectation
Reserves 1 January 1998	1144	1670	2035
New Fields	18	19	19
Revisions / extensions	184	98	98
Purchases / sales	-1	-2	-2
Transfers beyond licence period		-7	
Total changes	**201**	**108**	**115**
Production 1998	**99**	**99**	**99**
Reserves 31 December 1998	1246	1679	2051
Replacement ratio	**203%**	**109%**	**116%**
Minority Interest (included)	**10**	**12**	**13**
Developed 1.1.98	**478**	**652**	
Developed 31.12.98	**550**	**599**	

ESOSC GAS	Gas mrd sm^3 (tel quel)		
	Proved	Exp in Licence	Expectation
Reserves 1 January 1998	1350	1702	2258
New Fields	10	44	44
Revisions / extensions	135	107	107
Purchases / sales	53	69	69
Transfers beyond licence period		-63	
Total changes	**198**	**157**	**220**
Production 1998	**54**	**54**	**54**
Reserves 31 December 1998	1494	1805	2424
Replacement ratio	**364%**	**289%**	**405%**
Minority Interest (included)	**11**	**13**	**13**
Developed 1.1.98	**524**	**626**	
Developed 31.12.98	**621**	**683**	

Attachment 2

Proved Replacement Ratio (ESOSC)



EPB-P - Embargo until 12/2/99

Preliminary Data (1/99)

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Treatment Requested

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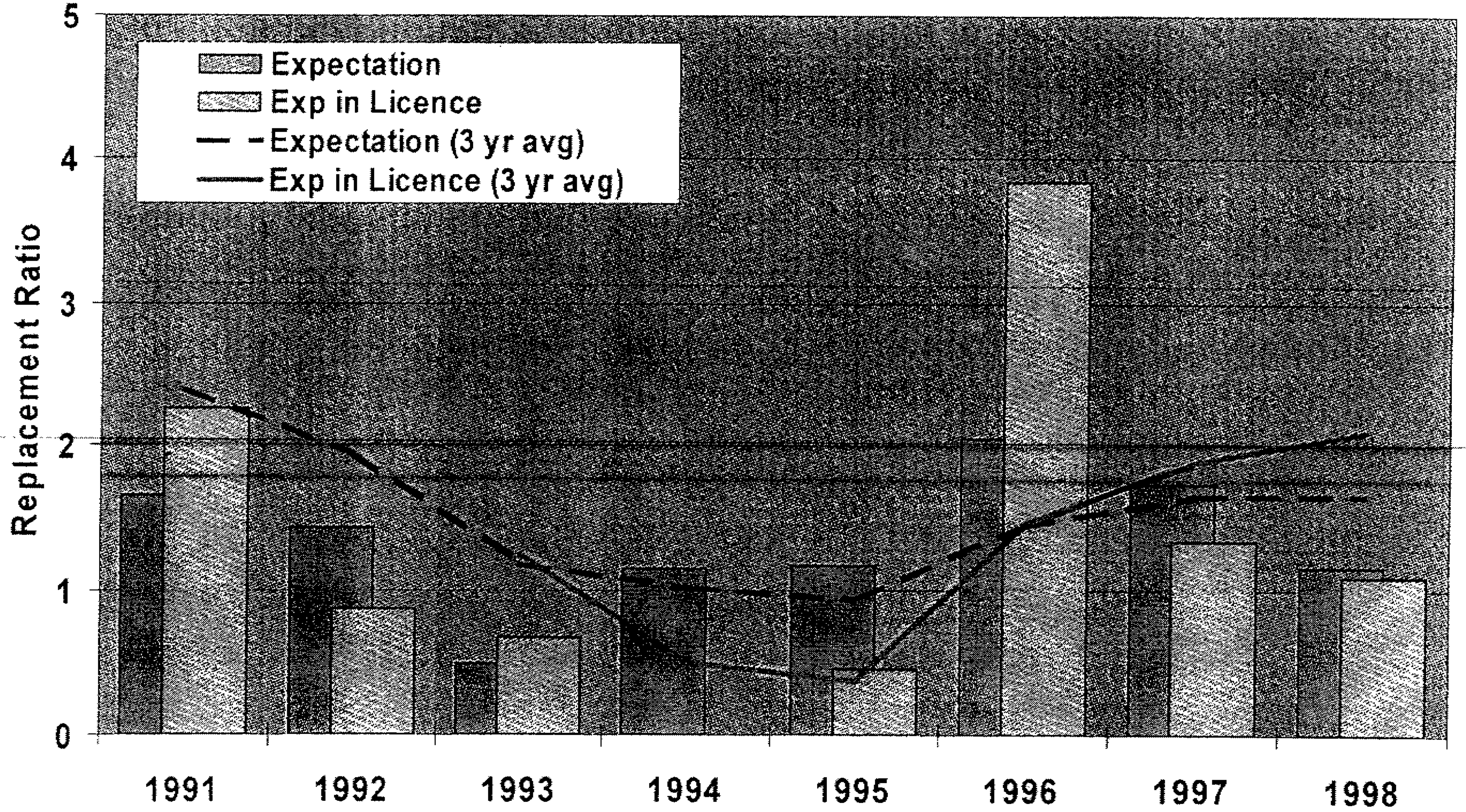
Attachment 3

ESOSC - Oil/NGL Reserves Replacement Ratio



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Preliminary Data (1/99)

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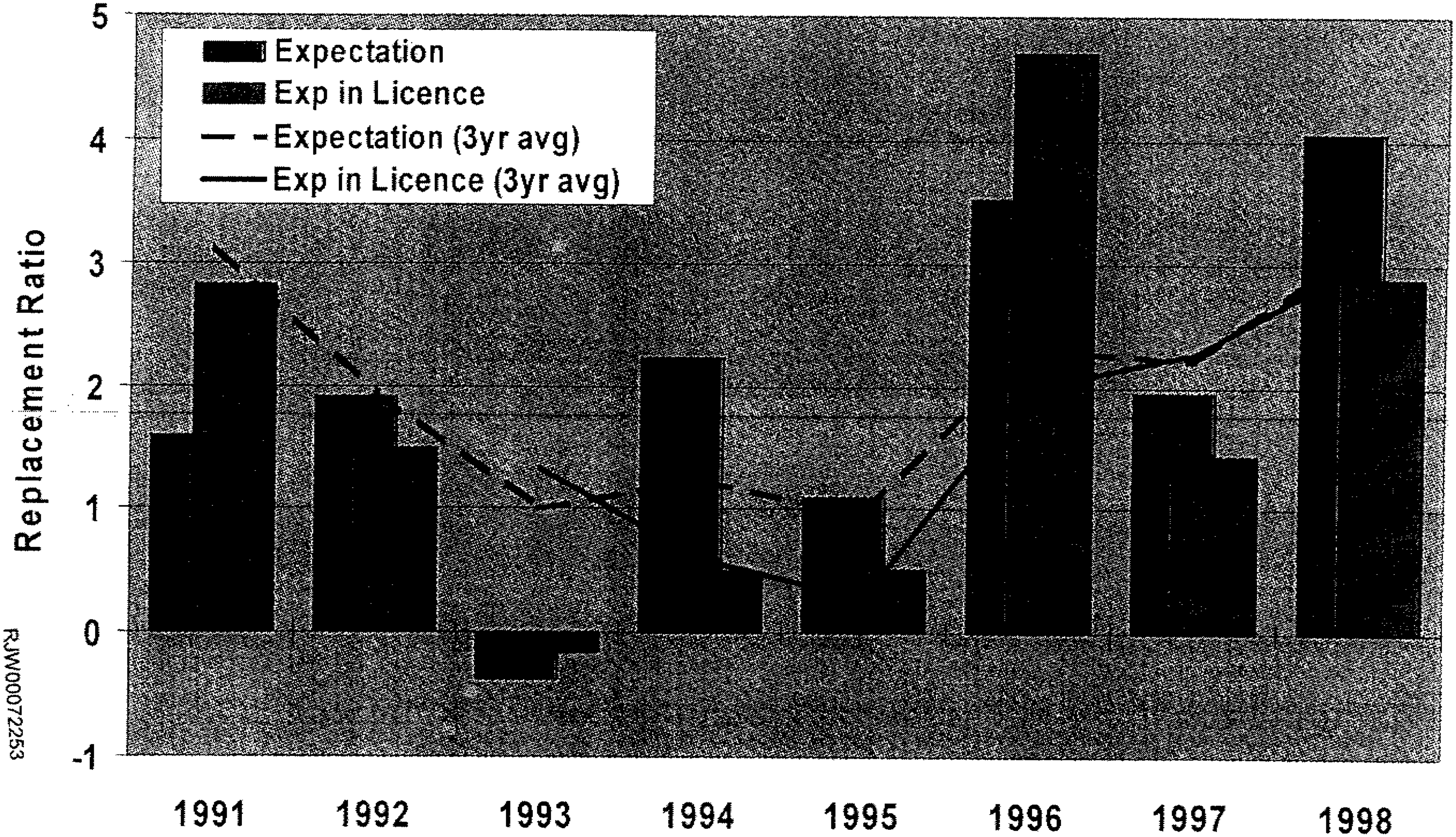
Attachment 4

ESOSC Gas Reserves Replacement Ratio



EPB-P - Embargo until 12/2/99

Preliminary Data (1/99)

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MESSAGE
Subject: ExCom - Preliminary Reserves ESOSC end 1998
Creator: AALBERS /EPB-P,OPENMAIL/SEPIV

Dated: 1/28/99 at 21:39
Contents: 4

Item 1

TO: DISTRIBUTION (Title: ExCom - Preliminary Reserves ESOSC end 1998)

Item 2

Lady and Gentlemen,

Please find attached Note for Information to the members of the Excom regarding the preliminary reserves position of end 1998 Resources for ESOSC. Please note that the data is preliminary as a number of clarifications are still being pursued.

The 1998 reserves replacement ratio for ESOSC looks very good with an overall boe replacement ratio of 259%.

Preliminary Group replacement ratios should be available early next week if Shell Oil data is received by the 29th January as per the latest indications from Houston.

The Group proved reserves are planned to be finalised by the 5th February 1999 with the Group External Auditors (PWC and KPMG) and Group Control.

Group reserves replacement data for 1998 should therefore be ready in time for possible inclusion in the Q4 press release as planned.

Regards,

Remco D. Aalbers
Group Hydrocarbon Reosurce Coordinator

Item 3

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Item 4

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s TEXT

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From:	Aalbers, Remco RD NAM-ELG-D
Sent:	14 November 2002 21:03
To:	McKay, Aidan A SEPCO
Subject:	Reserves ...
Sensitivity:	Confidential

Aidan,

Some info you might find interesting - after the recent BP target restatements a SEC enforced reserves restatement would not be good news - but than it might be another major.

You see the debate on Nigeria reserves freeze is on again. I wonder why they suddenly come up with this national legislation - they never did before?

Remco

PS don't pass this on

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

From:	Pay, John JR SIEP-EPB-P
Sent:	donderdag 14 november 2002 21:53
To:	Aalbers, Remco RD NAM-ELG-D
Subject:	RE: SPDC

By "SEC audit" I meant Anton's routine audit. However, I am expecting the SEC to do a review of this year's filing, in line with the one they did in 1999. We have heard that this year two companies (one described as "a major") have been asked to restate their reserves by the SEC. We hope it is BP!

John Pay
Group Hydrocarbon Resource Coordinator
Shell International Exploration and Production B.V.
Carel van Bylandtlaan 30, Postbus 663, 2501 CR The Hague, The Netherlands

Tel: +31 (70) 377 7405 **Other Tel:** +31 (0)6 5252 1964
Email: john.pay@shell.com
Internet: http://www.shell.com/eandp-en

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

From:	Aalbers, Remco RD NAM-ELG-D
Sent:	14 November 2002 21:48
To:	Pay, John JR SIEP-EPB-P
Subject:	RE: SPDC

John,

thanks for the reply, interesting I don't know if we ever had a SEC reserves audit (is this a fall out from the recent USA scandals?). Do we have any idea what that will entail? It might be worth checking if any other company has had a SEC audit recently and find out what that meant.

I don't recall any reference to national legislation by SPDC when we had the discussion on the SPDC reserves freeze. I only remember that we could not find anything in the licence/contract itself. I used to have a copy of the nigeria ocntract in my files and I seem to remember it only had some vague statement on renewal and clearly quoted the expiry date of 2019. No reference to national legislation ...

If we could make a case for post 2019 that would be great, still leaves the question on share (ref. Brunei discussion) and wheather or not you would allow add bookings versus budget/opex quota etc.

Very interesting, let me know how it develops ...

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Remco

NB Once the Brunei contract has been renewed you should try to get hold of it to check firm legal rights to further extentions!

-----Original Message-----
From: Pay, John JR SIEP-EPB-P
Sent: donderdag 14 november 2002 19:25
To: Aalbers, Remco RD NAM-ELG-D
Subject: RE: SPDC

Hi Remco

SPDC - they refer to national legislation (there is nothing in the licence / concession itself). They have this in Lagos and they have sent me a transcript of the relevant section. The (Dutch) senior legal guy is totally adamant that the case is watertight and has said so in front of luminaries such as Brian Ward and Ron vd Berg - he says he cannot understand who would have claimed there was no legal right, nor why. We are taking second opinions from external legal counsel in Nigeria and from internal Group legal.

I have not got any documentation for Brunei - indeed it appears to be sensitive (maybe non-existent) - but negotiations are nearing completion on precise terms (Brunei government wanted a nominal increase in their equity, so that they could appear to be the senior partner, as it were). There may be a small change in the reserves bookable, or we may secure offsetting rights to subsequent licence extensions beyond 2033.

The pressure to debook in Nigeria is mounting but at this stage is not too strong. If 2019 is a hard boundary, we really will struggle to justify retaining the full reserves inventory beyond next year. Production growth is not happening as "planned", SPDC's quota has been cut from some 40% of the Nigeria total to 30% this year and the latest news is that we will get no extra quota share for EA, contrary to previous "promises". There will be an SEC reserves audit next year. If we have rights to post-2019, I want to be sure we get a watertight case in preparation for the audit so that we can protect ourselves against the recommendation to debook that otherwise, I am sure, would come from the audit. Allied to that, I will personally oversee the preparation of new reserves disclosure guidelines for SPDC that I intend to ensure will prevent new bookings until we have worked through the backlog of undeveloped proved reserves projects - likely not to occur before 2010 unless they are successful in raising (at least doubling) production. Hence, my focus is on protecting against de-booking and getting clarity on the circumsances under which new bookings can be made.

John Pay
Group Hydrocarbon Resource Coordinator
Shell International Exploration and Production B.V.
Carel van Bylandtlaan 30, Postbus 663, 2501 CR The Hague, The Netherlands

Tel: +31 (70) 377 7405 **Other Tel:** +31 (0)6 5252 1964
Email: john.pay@shell.com
Internet: http://www.shell.com/eandp-en

Note for Information

From: Frits Eulderink, EPG
Remco Aalbers, Group Reserves Co-ordinator
To: Heinz Rothermund EPG

27 January 2000

Subject: SPDC Onshore Oil Reserves

Introduction
This note raises the issue of how much additional proved oil+NGL reserves the Group should book in SPDC in view of the arguably already high 'proved' onshore production forecast underlying the booked proved reserves.

Definition Proved Reserves
According to Group definitions, proved reserves require *reasonable certainty* to be producable within *the existing licences period*; in probabilistic terms volumes need an *85% confidence level* (see appendix).

Shallow Offshore Proved Reserves
SPDC's Shallow Offshore licences (EA, K-H), expire at 30.11.2008 or, in the case of EA, at the moment a cumulative production of 350 mln bls from EA/EJA (100%) is reached, if that moment is later. Prior to any 1999 additions, SPDC have booked shallow offshore proved reserves of 9 mln m3. After EA FID and alternative funding, there is clear scope to book more shallow offshore proved reserves.

Onshore Proved Reserves
The SPDC onshore MOU licence expires in 30.6.2019. Prior to any 1999 additions, SPDC have currently booked proved onshore reserves of 410 mln m3. In order to produce these within licence, SPDC onshore production has to steadily increase from its current 700 kb/d level by about 100 kb/d for some 7 years (2002 to 2008) and thereafter be sustained at the 1400 kb/d level (see attached graph).

For comparison, SCIN's reference case, submitted in September 1999, resulted in a substantiated production growth of some 120 kb/d for the next five years and a 2000-2019 average of 1,500 kb/d. As a first step, the current integrated production system capacity of 1,235 kb/d is planned to increase to well over 1,500 kb/d by 2003 as part of T3IP.

This growth programme is premised on:
a) restoration of peace in the Delta with deferments by end of plan period to pre 1998 levels,
b) completion of the asset integrity programme,
c) continuation of funding of delta operations by NNPC as planned, and
d) most crucially growth in SCIN's oil production quota through either a general increase of Nigeria's OPEC quota or preferential allocation of quota to SCIN pursuant to the integrated nature of T3IP -NLNG requires rich AG in order to make it economically viable as per the signed supply contracts- and priority to PSC and alternatively funded projects.

Issue
The risk exists that above conditions are not met and SCIN's production targets will not be achieved and consequently, if the situation is not managed timely, some of the booked reserves, notably in the Delta, would have to be reversed (c.f. Abu Dhabi today). This exposure is to a certain extent offset by the upsides of new licences, condensate developments and licence extensions.

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Medium term issue:
SPDC has been, and was projected to be, an important source of Group proved reserves additions:

Proved Oil+NGL additions	1997 actual	1998 actual	1999 (SPDC proposal)	2000 plan	2001-2004 plan
SPDC Mln m3	20	101	80	31	155
Group Mln m3	174	187	117	57	699
SPDC as % of Group	12%	54%	68%	55%	22%

During 2000, as part of firming up the next step in its long-term strategy (T4IP, condensate and NAG strategy), SCIN will validate their premises and develop proposals for the policy of booking further reserves in 2000 and beyond. These will need to be integrated in Excom's global EP reserves replacement strategy.

Short term issue:
Pending this follow-up, in view of the Group Resources Report per 1.1.2000, an urgent decision is required on what to book of SPDC's 80 mln m3 potential new proved reserves over 1999.

Short Term Options
To create scope to cater for future shortfalls with respect to the current underlying proved production forecast, at least until more confidence is justified, five options exist which are in order of increasing impact:

1. **Book as per submission:** Ignore the issue until an in-depth analysis is completed.
2. **Freeze onshore (MOU):** Use any new proved onshore(MOU) reserves as an offset, but continue to book realistic shallow-offshore (extra EA) and SNEPCO Deepwater reserves.
3. **Freeze SPDC:** Use any new proved onshore(MOU) and shallow offshore (extra EA) proved reserves as an offset, but continue to book realistic SNEPCO Deepwater reserves (Ehra).
4. **Freeze Nigeria:** Use any new proved onshore (MOU), shallow offshore (extra EA) and SNEPCO Deepwater reserves (Ehra) as an offset (in 2000).
5. **Freeze Eastern Hemisphere excluding Europe:** Use any new proved reserves within the "Other Eastern Hemisphere" as an offset. "Other Eastern Hemisphere" is the most detailed the Group traditionally reports externally. This allows the quickest fix without having to publicly write-off proved reserves.

Option	Additional Proved oil+NGL reserves (mln m3) in 1999						Required onshore plateau kb/d (as of year)	Group repl. Ratio oil
	SPDC onshore (MOU)	SPDC offshore	SNEPCo	Nigeria	Eastern Hemi (excl. Europe)	Group		
Book as per submission	50	30	21	101	144	117	1700 (2011)	89%
Freeze onshore	0	30	21	51	94	67	1400 (2008)	51%
Freeze SPDC	-30	30	21	21	64	37	1300 (2007)	28%
Freeze Nigeria	-51	30	21	0	43	16	1200 (2006)	12%
Freeze Eastern Hemisphere excl. Europe	-94	30	21	-43	0	-26	1000 (2004)	-20%

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Short Term Considerations

SCIN are from portfolio perspective comfortable to book all the reserves (option 1). However, not booking the proved reserves for Group purposes will not lead to insurmountable difficulties.

For the Group there is some mitigation for a poor replacement ratio in 1999 from being able to mention the significant Atabasca reserves which formally don't qualify as reserves under the SEC rules, and have hence not been included above.

Any reserves added over 1999 cannot be used to mitigate a low replacement ratio in later years (c.f. the low in 2000 in the first table above).

Recommendation for Short Term Issue

In view of the above, it is recommended to ExCom to accept option 2: Freeze Nigeria MOU (don't book the suggested 50 mln m3 increase), but book increase in Shallow Offshore (EA/EAJ) and SNEPCo (Ehra).

Appendix:
Quotes from 'Petroleum Resource Volume Guidelines - Resource Classification and Value Realisation', SIEP 99-1100, of September 1999:

Externally reported resource volumes have two primary purposes – financial calculations and investor assessments. The reported figures are used to calculate the depreciation of EP sector capital investments. The amount of depreciation affects the company's book earnings that are also externally reported. Shareholders and the investment community use the reported volumes and earnings to assess the performance and value of the company. It is essential that externally reported proved reserves volumes are a true reflection of shareholder value. Externally reported proved reserves volumes should be equal to internally used proved reserves numbers.

Cumulative production, total proved reserves and proved developed reserves are externally reported annually for oil, gas and NGL sales quantities as of the 1st of January. The reported volumes must comply with SEC definitions, ... The Shell Group definitions contained in this section are in full compliance with these definitions. Where Group guidelines interpret SEC definitions, ..., these interpretations have been accepted by external auditors as fulfilling SEC requirements. A summary of the Group definitions for the external categories is .....

Proved reserves are the portion of reserves, as defined for internal reporting, that is reasonably certain to be produced and sold during the remaining period of existing production licences and agreements. Extension periods are only included if there is a legal right to extend, which may derive either from the initial concession agreement or from a subsequent letter of assurance. Any applicable government restrictions on oil export and contractual or practical market limitations to gas delivery rates should be taken into account. Only the Group share of proved reserves is reported.

If probabilistic methods are used, reserves are reasonably certain when there is an 85% probability that the quantities actually recovered will equal or exceed the estimate. This is the P85 value of the cumulative probability curve. If scenario deterministic methods are used, the term reasonable certainty is intended to express a high degree of confidence that the quantities will be recovered. This is the low side estimate."

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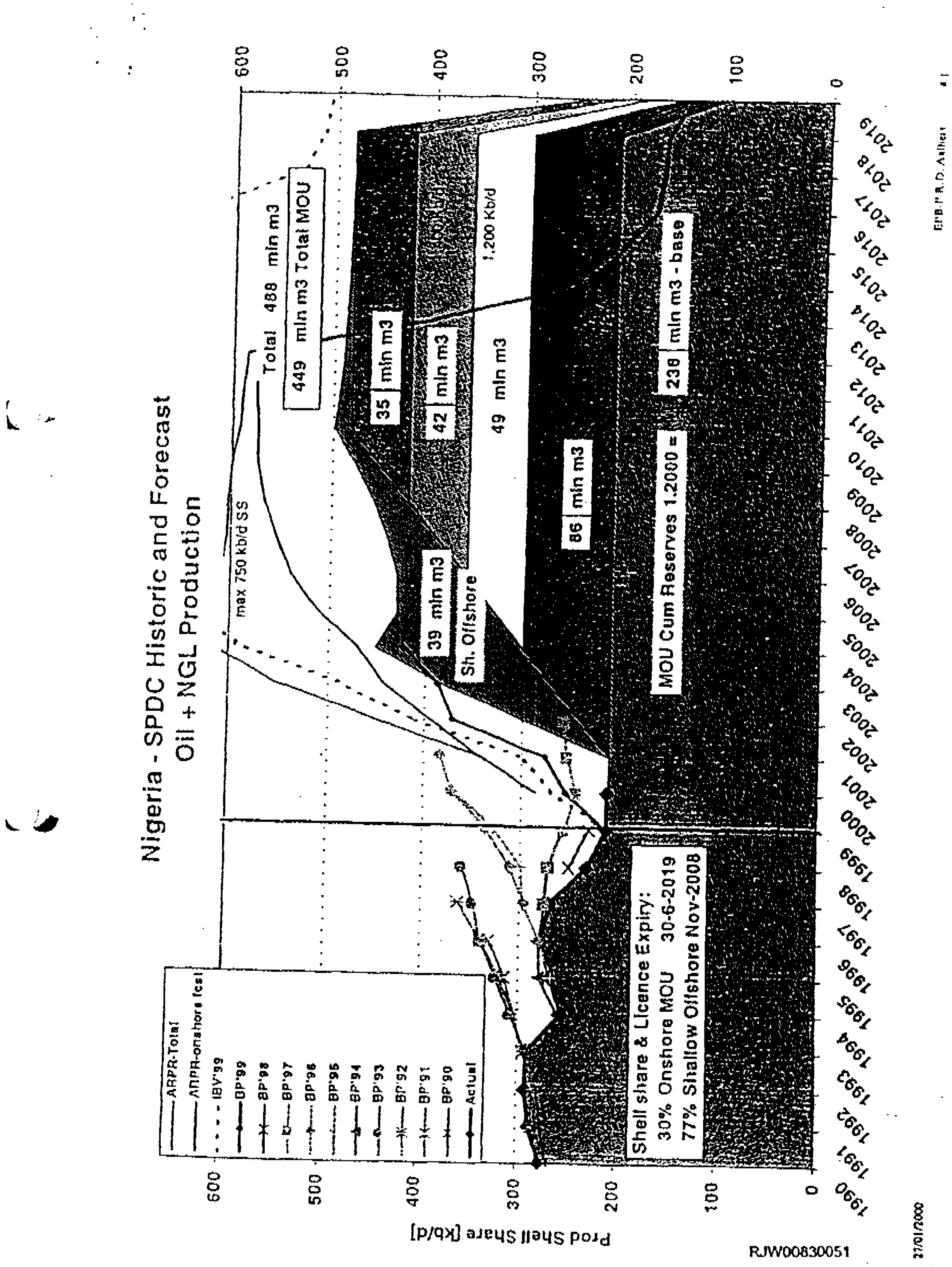

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NOTE – 31 Aug, 1999 **CONFIDENTIAL**

From:	Anton Barendregt	Group Reserves Auditor, SEPIV
To:	Linda Cook	Director, SEPIV
	Ron van den Berg	MD, SPDC, Lagos
Copy:	Egbert Imomoh	DMD, SPDC, Lagos
	Erik Vollebregt	Finance Director, SPDC, Lagos
	Joshua Udofia	Production Director, SPDC, Pt Harcourt
	John Barry	Development Director, SPDC, Pt Harcourt
	C.O.P. Nwachukwu	Petroleum Engineering Manager, SPDC, Pt Harcourt
	Bram Sieders	Chief Reservoir Engineer, SPDC, Pt Harcourt
	(circulation)	SIEP EPS-FX: Gardy, Renard
	(circulation)	SEPIV EPB-P: Platenkamp, van Dorp, Aalbers
	Kieron McFadyen	Business Advisor, SIEP (EPG)
	Egbert Eeftink	Director, KPMG Accountants NV
	Stephen L. Johnson	PriceWaterhouseCoopers

SEC PROVED RESERVES AUDIT - SHELL PETROLEUM DEVELOPMENT CO (SPDC, Nigeria), 18-26 Aug 1999

I have audited the proved reserves statements of SPDC for the year 1998 and the processes that were followed in their preparation. These statements present the externally reported Proved and Proved Developed Reserves as at 31 December 1998 together with a summary of the changes in Proved Reserves during 1998.

The audit followed the procedures laid down in the "Petroleum Resource Volume Guidelines, EP 98-1100/1101" (based, inter alia, on FASB Statement 69). It included a verification of the technical and commercial maturity of the reported reserves, a verification that margins of uncertainty were appropriate, that Group share and net sales volumes had been calculated correctly and that reported reserves changes were classified correctly. The audit took the form of detailed discussions about the reserves reporting process with SPDC staff and technical discussions with some SPDC engineers regarding some major 1998 reserves increases in the SPDC portfolio.

A previous SEC reserves audit had been held in April 1997. This audit found weaknesses in the SPDC reserves definition and audit trail process and recommended a repeat of the audit in 1999.

Most significant comments from this present audit are as follows:

- The new SPDC corporate Petroleum Engineering Group in Port Harcourt should be tasked with the production of a comprehensive and consistent annual audit trail note to avoid unanswered questions about the basis of SPDC's reserves submission. Seeking answers to these questions took up an unnecessary length of time during the audit.
- The considerable scope for increasing SEC proved reserves in the fields is overshadowed by the assumption of a doubling of Nigerian production levels in the coming decade. Any deviation from this scenario could have a significant effect on proved Shell equity reserves, which can only be avoided by the granting of a production licence extension option.
- Reported gas volumes in normalised m3 (Nm3) should be based on the correct gas calorific values.
- Correct end-of-licence cut-off dates should be applied to production forecasts to establish equity reserves.

The audit conclusion is that the SPDC statements fairly represent the Group entitlements to Proved Reserves at the end of 1998. The overall opinion from the audit regarding the state of SPDC's 1998 Proved Reserves submission is therefore satisfactory.

A summary of the findings and observations is included in the Attachments.

A.A. Barendregt

Attachments 1, 2, 3

DB 10055

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Attachment 1

SEC PROVED RESERVES AUDIT - SPDC, 18-26 Aug 1999

MAIN OBSERVATIONS

1. As part of the drive to implement the 1998 SIEP guidelines, a concerted effort has been made by SPDC during 1998 to identify 'proven fault blocks', based on criteria of known fluid contacts, sufficient number of well penetrations, and cumulative production in excess of 40% of UR. This has led to a significant increase (926 MMstb) in proved oil reserves during 1998. Further extension of the 'proven blocks' set to blocks with production greater than 25% of UR is planned. This is commended.

2. Experience has shown that older volumetric estimates based on 2D seismic tend to be conservative. This is being addressed by the (almost complete) 3D seismic coverage, of which the results are incorporated into the programme of field studies.

3. Present oil recovery factors are in the range of 30-60%. There is ample evidence that more favourable recoveries (in excess of 60%) are possible in many good quality reservoirs, where light oil is displaced at low rates by active aquifers. Evidence for this is the large amount of negative reserves (production exceeding booked recoveries), which had to be corrected in 1998. This is gradually being addressed through the field studies programme. However, even reserves based on relatively recent field studies show signs of being overtaken by production, e.g. Forcados-Yokri.

4. New wells and projects have to pass economic screening, in accordance with standard Group practice. The portfolio of long term life cycle projects is gradually being subjected to economic screening and adjusted if necessary. It is noted that development and infill drilling costs are low to moderate, resulting in UTCs of 1-2 $/boe.

5. On average, proved remaining reserves per field tended to be some 60-70% of expectation. This was a wider range than would be expected from a mature area as that operated by SPDC. This has been addressed by SPDC's application of the 1998 SIEP guidelines, bringing the average proved oil recovery to some 72% of expectation, with further additions planned.

6. Proved developed oil reserves are based on best estimate extrapolations of existing drainage points. It is noted that expectation developed oil reserves do also include effects of the short term remedial (rig-less) activities plan (stimulations, new perforations etc.). There seems to be no reason why these effects should not also be included in the proved forecast.

7. Reservoir blocks within fields are added arithmetically. It is recommended that probabilistic addition, assuming appropriate (in-)dependencies, be considered, in line with SIEP guidelines. This will mitigate the conservative effect of the SEC-required arithmetic addition of many individual fields' proven reserves in SPDC's acreage.

8. Forecasts have been made for all hydrocarbon streams and these have in principle been cut off at the end of the licence periods (30/11/2008 for offshore and 30/6/2019 for onshore). Minor errors have occurred in some instances in the precise date of the cut-off, by taking e.g. end 2019 and not mid-2019 as the date of cut-off (see also Att. 2.1).

9. The proved corporate total oil forecast used for the reserves submission has been based on the 5-year activity forecast, but beyond that it is notional and aimed at (just) producing all technical reserves by 2019. A proper life-cycle projects based forecast would have been preferable and this is intended for next year's submission.

10. There is no legal right to an extension in the present production licences and hence, no reserves can be booked that are produced beyond that period. The considered legal opinion within SPDC is that an extension is likely to be granted, at least for the fields still in production.

11. Present gas sales contracts are in volumes only. Energy accounting of gas sales is not done, although this will change for NLNG. Current sales contracts generally stipulate a minimum GHV of 8920 kcal/Nm3 (950 BTU/scf). Although gas streams are regularly sampled and analysed, no authoritative data base of GHV data seemed to be available. The average SPDC gas GHV was said to be around 9700 kcal/Nm3, a historically maintained figure, for which the basis is not clear. The 1998 submission implies a GHV of 10230 kcal/Nm3, apparently in error. The quarterly Ceres submissions, possibly based on the same conversion calculation, should also be checked.

12. The onset of NLNG sales and SPDC's ambitious plans to stop flaring of all associated gas by 2008 will require a stronger emphasis on close integration of gas supply and gas demand forecasts and on gas/NGL reserves in the reserves submissions and audit trail.

DB 10056

13. Proved developed reserves are used for asset depreciation in the end-year Group accounting submission. Up-to-date end-1998 reserves were advised to Capital Assets in January 1999. For audit purposes, it would have been preferable if a written record was kept of this advice.

14. Both East and West divisions have produced audit trail notes summarising the individual field changes for oil, but sparsely for NGL or gas changes. This is seen as an improvement over previous years. The usefulness of these notes could be further enhanced by a more rigorous consistency in format, such that the two notes report fully identical sets of data. SPDC also produce a four-volume annual Ultimate Recovery Changes Report (URCR), where full details of field changes, together with RISRES reports, are recorded. The RISRES reports have yet to include the updated proved (= expectation) reserves in proved blocks.

15. Although individual field changes are documented, there are still unexplained differences between the divisions' audit trail notes/spreadsheets and the corporate submission, see Atts.2.2-2.4. Due to lack of time, a corporate audit trail note, tying together the divisions' contributions into the corporate submission, has not been produced, in spite of an earlier audit's recommendation. Auditor's advice is that a rigorous reconciliation, e.g. in the format of Atts 2.1-2.4, will be a powerful tool in managing the annual reserves and their changes.

16. SEC rules require externally reported reserves to be technically and economically robust, producible within licence and (for gas reserves) committed, or likely to be committed, to sales contracts. Combined SPDC proved ultimate oil recoveries are likely to be understated due to the conservative nature of field estimates and due to the arithmetical addition of low reserves estimates for SPDC's large number of fields. This can be mitigated by probabilistic addition within fields. Gas reserves could be significantly boosted by the identification of further firm gas utilisation projects. However, any scope for increasing reserves is overshadowed by the assumption of a doubling of Nigerian production levels in the coming decade. Any deviation from this scenario could have a significant effect on proved equity reserves, which can only be avoided by the granting of a production licence extension.

17. Bearing in mind the above uncertainties, the reported SPDC proved and proved developed reserves can be considered to give a reasonably accurate reflection of shareholder value.

Recommendations:

1. Consider implementation of probabilistic addition of reservoir blocks within fields to bring field proved reserves to a more realistic level.
2. Apply correct cut-off dates (30/11/09 and 30/6/19) to offshore and onshore licence forecasts.
3. Strengthen ownership of gas and NGL forecasts and reserves, preferably within the Petroleum Engineering organisation. Those responsible should maintain close links with Gas Coordination.
4. Review and inventorise gas stream GHVs and apply correct gas GHVs to the reserves (and Finance/Ceres) submissions.
5. Keep a written record that up-to-date field reserves are used in the end-year asset depreciation calculations for Group Accounts.
6. Produce a comprehensive and consistent audit trail note for the corporate reserves submission, to be issued (and copied to SIEP/SEPIV) concurrently with the end-year reserves submission. It should be remembered that tables (cf. Atts 2.1-2.4) are more rigorous audit trails than text. It is noted that the new intended SPDC organisation, with a corporate Petroleum Engineering group in Port Harcourt, will help to ensure consistency.
7. Early agreement on extensions to existing production licences would help to boost Shell equity reserves, particularly if production levels in the coming years were to remain below those currently aspired.

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Exhibit 1

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Presentation ExCom 31st January 2000

Preliminary Summary of End 1999 Proved Reserves

The objective of this note and presentation is to inform ExCom of the end 1999 Group Resources, especially proved and proved developed reserves, prior to the finalisation and External Audit clearance of these numbers by the 4th February 2000, ahead of the Q4 press release. The numbers are still being finalised, but adjustments are expected to be minor.

Summary

- The 1999 proved reserves replacement ratio is 46% for oil/NGL (141% in 1998) and 23% for gas (255% in 1999). Total oil/NGL/Gas replacement ratio for 1999 is 37% (182% in 1998).
- Three year average proved reserves replacement ratio for 1999 is 106% for oil (146% in 1998) and 161% for gas (249% for gas), total replacement on boe basis is 126% (184% in 1998) (ref attachment 1). It should be noted that the implementation of the new Petroleum Resource Guidelines during 1998 accounted for roughly 50% of the 1998 proved reserves increase.
- Including the AOSP "mining reserves" the overall proved replacement ratio increases from 37% to 82% and further inclusion of the Iran "pseudo reserves" increases the replacement ratio to 94%.
- Regional proved reserves replacement indicates a trend of limited reserves replacement in the mature areas of EPN and EPA from production and divestment and reserves additions in the other two areas EPG and EPM.

There are a number of issues regarding proved reserves booking for 1999 which require endorsement by ExCom. The issues and recommendations are presented in this Note under "Issues".

Changes during 1999

Summary of Proved Reserves

The ESOSC proved reserves as of 1.1.2000 (assuming recommendations presented are endorsed) stand at 1523 mln m^3 oil/NGL (9581 mln bbl) and 1647 mrd sm^3 gas (10,037 mln boe), showing a decrease of 71 mln m^3 (449 mln bbl) and 64 mrd sm^3 (388 mln boe) for oil/NGL and gas respectively after taking account of 1999 production being 132 mln m^3 (831 mln bbl) oil/NGL and 82.6 mrd sm^3 (503 mln boe). Total proved reserves replacement ratio is 37% with a replacement ratio of 46% for oil and 23% for gas.

	Unit	Proved Reserves 1.1.1999	Proved Reserves 1.1.2000	Change	Proved Reserves Repl. Ratio
Oil/NGL	mln m3	1594.8	1523.4	-71.4	46%
Gas	mrd sm3	1711.1	1647.4	-63.7	23%
Total	~~m~~bln boe	20.5	19.5	-1.0	37%

One new venture has booked first time proved reserves in 1999, Kazakhstan (*Saigak* +2 mln m3 oil) and one venture no longer books proved reserves Chad (-0.4 mln m3) as the Group has pulled out of the Doba-project end 1999.

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Summary of Reserves by Region

The changes in proved reserves split by Region shows that only EPG has a significant replacement ratio for 1999 both oil/NGL and gas. As a result of production and divestments in the mature areas in EPN and EPA replacement ratio is very low with increases just offsetting the divested reserves. EPM replacement ratio is also low. (Gas replacement ratio's in EPM and EPG are 'distorted' due too low production).

	OIL/NGL [mln m3]					Gas [mrd sm3]					
	Proved 1.1999	Proved 1.2000	Prod 1999	Delta	Repl. Ratio	Proved 1.1999	Proved 1.2000	Prod 1999	Delta	Repl. Ratio	R.R. boe
EPN	578	480	70	-97	-39%	915	896	61	-19	69%	11%
EPM	316	308	27	-8	71%	109	94	3	-15	-391%	24%
EPA	157	159	14	2	115%	577	544	17	-33	-93%	4%
EPG	544	576	22	31	244%	110	113	1	3	321%	248%
Total	1595	1523	132	-71	46%	1711	1647	83	-64	23%	37%

Breakdown of Changes by Category

The decrease in both oil/NGL and gas reserves is the result of Production and Divestments (Sales in Place) from Portfolio Management recommendations, the reductions are only partly offset by increases from Discoveries & Extensions, Improved Recovery, Revisions & Reclassifications and Acquisitions (Purchases in Place).

	Oil/NGL [mln m3]	Gas [mrd sm3]
Proved Reserves 1.1.1999	**1594.8**	**1711.1**
Revisions & Reclassifications	39.2	15.2
Improved Recovery	18.7	2.2
Extensions & Discoveries	53.7	38.6
Purchases in Place	11.9	.2
Sales In Place	-62.8	-37.3
Production 1999	-132.1	-82.6
Proved Reserves 31.12.1999	**1523.4**	**1647.4**

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Major Changes by Category and Country

Breakdown of the major changes is as follows :

	Oil/NGL [mln m3]
Sales in Place (Divestments)	-63
USA (Enterprise&Apache)	-47
Philippines (Texaco)	-4
Canada (Plains)	-10
Purchases in Place (Acquisition)	11
Nigeria SPDC (EA/EJA)	11
Extensions & Discoveries	54
Nigeria SNEPCO (Ehra)	24
USA (Hickory, Spirit, Auger e.a.)	10
Norway (Ormen Lange)	1
Denmark (Halfdan)	6
Nigeria SPDC	5
Others (New Zealand, Oman e.a.)	8
Improved Recovery	19
Oman PDO	9
Others (Sakhalin, Alura, Brunei)	10
Revisions & Reclassifications	39
Nigeria SPDC (Shallow Offshore)	+18
Oman PDO	+12
Gabon	+5
Canada	+6
Others NET	-2

	Gas [mrd sm3]
Sales in Place (Divestments)	-37
USA (Enterprise&Apache)	-15
Philippines (Texaco)	-19
Canada (Plains)	-3
Purchases in Place (Acquisition)	0
Extensions & Discoveries	39
Nigeria SNEPCO (Ehra)	0
USA (Hickory, Spirit, Auger e.a.)	9
Norway (Ormen Lange)	12
Denmark (Halfdan)	2
Nigeria SPDC	7
Others (Egypt, Malaysia, Brunei, e.a.)	9
Improved Recovery	2
Malaysia (Lower Pressure)	2
Others	0
Revisions & Reclassifications	15
Canada (Royalties in Cash +14)	19
USA (Own Use)	-7
Norway (Troll gas contract e.a.)	13
Oman Gisco (Entitlement)	-12
Others NET	2

Impact AOSP and Iran

The proved oil/NGL and gas reserves exclude the Canadian OilSands *AOSP* – 95 mln m3 proved (600 mln bbl) as these under SEC rules are classified as "minning reserves" (volumes are incl. minority interest). Also exclude are the Iranian "Pseudo Reserves" *Soroosh/Nowrooz* – 24 mln m3 (150 mln bbl Shell share) as proved reserves booking is currently still very sensitive in Iran. Note the 100% project reserves volumes in Iran are 950 mln bbl (151 mln m3).

Although the externally reported proved oil/NGL and gas reserves will not include AOSP "Mining Reserves" nor the Iran "Pseudo Reserves" the overall hydrocarbon resource replacement performance is better represented if these volumes are included resulting in a replacement ratio of 94%.

	Initial Submission excl adj.	Repl. Ratio Proved Reserves	Repl Ratio Excl. A&D	Repl. Ratio Incl. AOSP	Repl. Ratio Incl. AOSP & Iran
Oil/NGL	71%	46%	84%	118%	136%
Gas	31%	23%	68%	23%	23%
Total	56%	37%	78%	82%	94%

The initially submitted reserves prior to the proposed adjustment gave a replacement ratio of 56%: after adjustments but excluding Acquisitions and Divestments the replacement ratio is 78%.

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Proved Developed Reserves

The proved developed reserves as of 1.1.2000 stand at 795 mln m^3 oil/NGL and 775 mrd sm^3 gas, showing an increase of 15 mln m^3 and 2 mrd sm^3 for oil/NGL and gas after taking account of 1999 production. Proved developed replacement ratios are 111% for oil/ngl and 103% for Gas (108% total boe).

The proved developed reserves replacement ratio for 1999 indicated that production as well as divested developed reserves were replaced. Large contributions were made by from transfer of undeveloped reserves to developed reserves in Canada (Sable project start-up), Oman, Gisco (production start-up), Malaysia (Compression Installation F23), USA and UK.

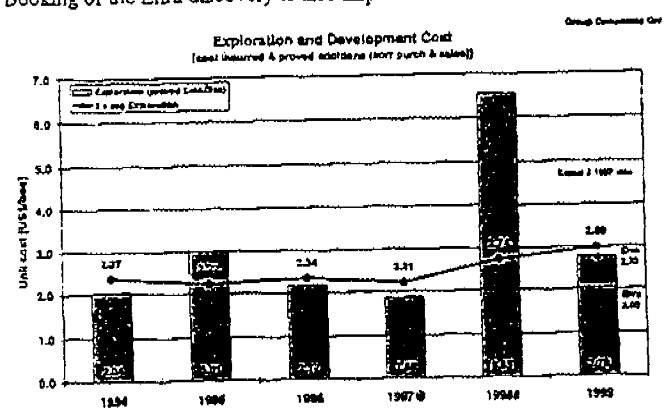
Issues

The following issues need endorsement from the ExCom before finalising the 1999 proved reserves:

Nigeria ~~SPDC~~ SNEPCO – Ehra Discovery

In their initial submission SNEPCO have booked the 1999 Ehra discovery (made by Exxon) as commercial SFR and not as reserves. Up to the November 1999 monthly reporting (MISCOM) by SNEPCO indicated booking of Ehra volumes as proved reserves for 1.1.2000. Ehra volumes, however, were excluded from the 1.1.2000 proved reserves as Exxon indicated mid December 1999 that they would not include the volumes in their proved reserves and did not present SNEPCO with a preliminary development plan. Subsequent challenge has indicated that volumes are sufficiently large and sufficient technical work has been done in Houston to support proved reserves booking for 1.1.2000. It is therefor recommended to advise SNEPCO to book Ehra proved reserves for 1.1.2000 of 24.0 mln m3 oil Shell PSC entitlement.

Booking of the Ehra discovery is also important in view of the external Unit Finding Cost (UFC) which is based on proved reserves additions and exploration expenditure disclosed. Preliminary figures indicate an 1999 exploration expenditure of 1087 mln US$ for Group companies. Based on the Group company proved additions form "discoveries & extensions" the UFC'99 would be 2.78 $/b excluding and 2.0 $/b including the Ehra discovery.



Nigeria SPDC

Nigeria SPDC has submitted an increase in proved reserves of 80 mln m3 proved reserves – this is believed to be too optimistic in view of the current licence expiry of 30th June 2019 for the Onshore (MOU) and Shallow Offshore Licences by 30th November 2008.

Under the alternative funding arrangement for EA/EJA Shell share of reserves increase for these fields from 30% to 77.14% and the licence has been extended to 350 million barrels cumulative production. Net result of these changes is an increase in proved reserves in the Shallow Offshore of 30 mln m3 (189 mln bbl). It is recommended to book these incremental volumes.

The Onshore Licence expires mid ~2019 and it is recommended to freeze the onshore proved reserves at the 1.1.1999 level to prevent potential large proved reserves reduction in future, if the planned growth does not or only partly materialises. This means not book the 50 mln m3 oil proved reserves addition for

1.1.2000 as submitted by SPDC. As a consequence proved onshore oil reserves in SPDC will decline with cumulative production in future years until such time that significant growth in oil production volumes has been established or a licence extension has been secured.

Abu Dhabi

Abu Dhabi proved oil reserves have historically been booked on an expected growth scenario which still has not materialised under OPEC constraints. As a result of the Abu Dhabi licence expiry early 2014 reserves have to be de-booked with deferral of the expected production increase. It is recommended to differentiate between an expected (50/50) forecast and a proved (90/10) forecast when estimating proved reserves. An initial gap of two years delay in growth for 1.1.2000 requires a de-booking of 6.5 mln m3.

Canada

The Group Resource Guidelines prescribe in line with SEC rules that 'Royalties in Kind' should be excluded from the reserves but that 'Royalties in Cash' should be included in the reserves. Historically Canada proved reserves have been included net of all royalties, directly from the Shell Canada Annual Report data. Early 1999 it became clear that only oil royalties in Canada are due in Kind and that Gas royalties are due in Cash. For 1.1.2000 reserves gas royalties have been included in the SC reserves - addition of 13.8 ~~mln~~ mrd sm3. With the divestment of the Plains properties all oil fields have been divested and Royalties in Kind are no longer applicable.

Australia

Australia SDA have indicated that WAPET have re-evaluated the Gorgon reserves which has lead to a 20% increase in recoverable volumes. In view of the limited market availability and already large uncommitted proved gas reserves carried by SDA based on future market expectations it has been proposed and agreed with SDA and EPA not to include the additional 20 mrd sm3 for 1.1.2000. Booking of the additional volume in future is subject to further market development and capture.

Proved Gas volumes in Australia have been a point of challenge by the external Auditors (KPMG/PWC) for the last two years already and incremental booking at present would be hard to support.

USA

Shell Oil up to 1998 reported its financial performance externally separately from the Group, which included proved reserves based on Shell Oil's internal reserves Guidelines. The Shell Oil definition of proved reserves includes 'own use' gas in the proved gas reserves.

Following the Globalisation in 1999 and de-registration of Shell Oil from the SEC Shell Oil no longer individually publishes its results and reserves. The Group's definition of proved reserves explicitly excludes 'own use' gas form the reserves. To align reporting across the Group it is proposed that Shell Oil reserves for 1.1.2000 are reported excluding 'own use' gas in line with the Group Guidelines. This results in a reduction of 6.5 mrd sm3 versus the number submitted by Shell Oil (-1.9% for Shell Oil, -75% for Area and ~7% for Altura).

The issue has been discussed with the Group Reserves Auditor and Group External Auditors who confirm that both interpretations are defendable under SEC rules but also acknowledge that reporting consistency across the Group is a strong consideration.

Excluding own Use gas from the USA reserves also aligns with the new gas definition proposed for 2000 "Gas Production Available for Sales (from own Reserves)" which also excludes own use and flared gas volumes.

It should be noted Shell Oil prefer not to adjust reserves and have submitted 1.1.2000 proved gas reserves including 'own use' gas.

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The total of the above recommendations in terms of changes to the originally submitted proved reserves by the Group Ventures is as follows:

OIL	Proved Reserves
♦ Inclusion of Nigeria-SNEPCO 1999 Ehra discovery ('Exxon' block)	+ 24.0 mln m³
♦ Increase Nigeria-SPDC Shallow Offshore Reserves (EA/EAJ) resulting from alternative funding agreement (77% share) and Licence extension ~~pos~~ Nov-2008 (max of 350 MMb)	+ 30.0 mln m³
♦ Limit Nigeria-SPDC Onshore (MOU) to currently booked proved reserves minus 1999 production reflecting doubling of production to 1,400 b/d by 2010 only with licence expiry in Jun-2019; Reduction form SPDC submission of	- 50.0 mln m³
♦ Reduce Abu Dhabi proved reserves based on two year delay production increase and licence expiry in Jan-2014	- 6.5 mln m³
	Total: - 2.5 mln m³

GAS	
♦ Exclude USA 'own use' gas in line with Group Reserves Guidelines	-6.5 mrd sm³
♦ Australia SDA, increase in Gorgon volumes are not included as proved reserves due to gas market limitations (19.7 mrd sm³ increase from 86.1 to 105.8 mrd sm³)	0.0 mrd sm³
♦ Include Canada gas royalty in cash in line with Group Reserves Guidelines	+ 13.8 mrd sm³
	Total + 7.3 mrd sm³

Discoveries 1999

Two NVOs and sixteen OUs have reported a total of 59 successful exploration wells for 1998 versus 60 dry wells (note Shell Oil and Shell Canada statistics are not yet complete). Total Group share on equity basis (i.e. including carried Government take in PSC countries) of the discovered hydrocarbon resource volume is 136 mln m³ oil/NGL (857 mln bbl) and 67 mrd sm³ gas (411 mln boe), a combined total of 1,268 mln boe.

There are seven large oil finds one each in Nigeria-SNEPCO (Ehra 746 mln boe), Denmark (Halfdan 491 mln boe) and Oman (Ghafeer 85 mln bbl), plus two each in Australia-Woodside (Vincent 61 mln bbl and Enfield 72 mln bbl) and Angola (Platina 117 mln boe and Plutonia 283 mln boe).

A further seven gas fields were discovered one in Egypt (Obaiyed-South 74 mln boe), two in Malaysia (Kamansu East Upthrown 62, F23-SW 23 mln boe), Australia SDA (Geryon and Orthrus) and Norway (Ormen Lange South 125 mln boe). The large deepwater gas discovery in Nigeria SNEPCO (Doro) under current contractual terms does not give Shell any entitlement.

Total exploration expenditure for 1999 is currently estimated at US$ 1290 mln resulting in an internal unit resource finding cost of 1.02 $/b for the discovered expectation resource volume of 1268 mln boe.

If discovered resources form exploration in 1999 are limited to shell share expectation reserves booked for 1.1.2000 of 60 mln m3 oil/ngl (377 mln bbl) and 19.4 mrd sm3 (118 mln boe) a total of 495 mln boe this results in a unit reserves finding cost of 2.60 $/b.

Attachment 1

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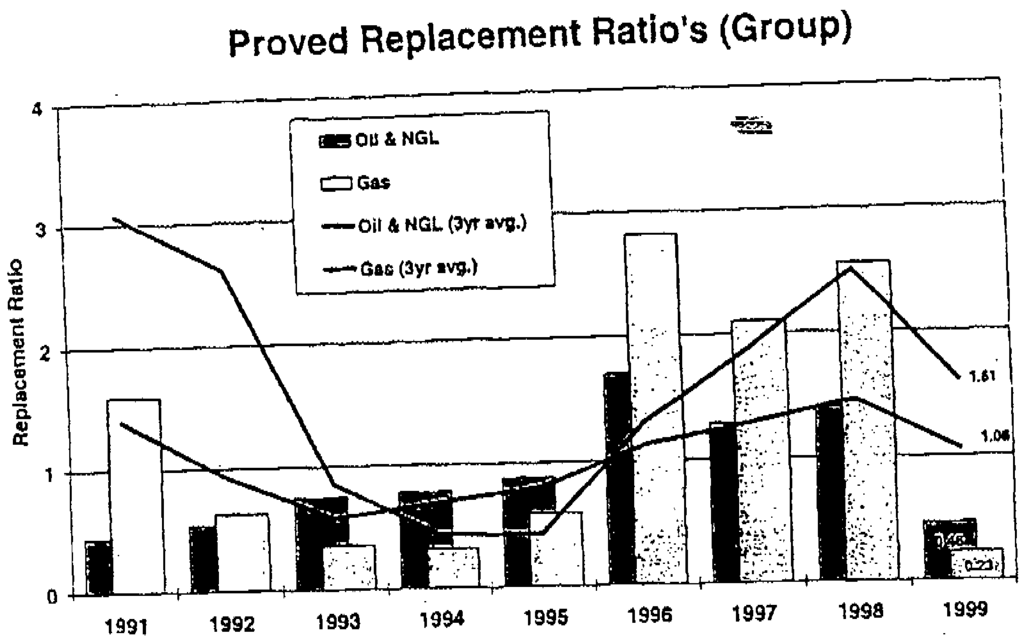
Historic Replacement Ratio's



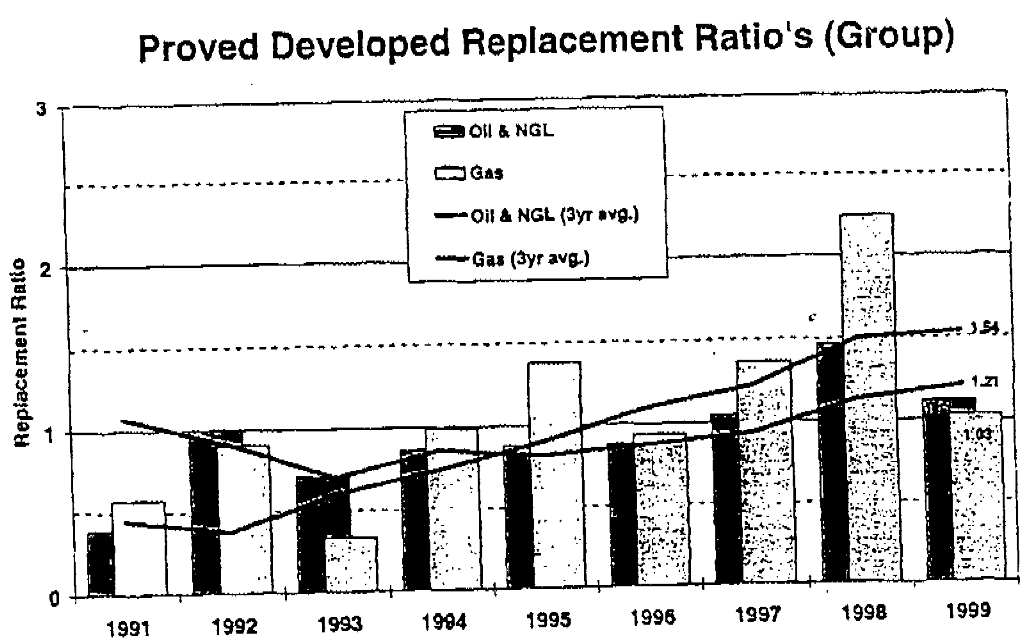


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Exhibit 2

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EXCOM 1999 Proved Reserves
31st January 2000

Key Proved Reserves Messages

- **'99 Proved Oil/NGL and Gas Replacement Ratio 37%**
  - Low after three years high
  - Challenge to communicate externally
    - upside AOSP and Iran & excluding divestments
- **Unblocking Nigeria is Key**
  - Production Performance and Proved Reserves additions
- **2000 Scorecard**
  - SPDC Impact on proved reserves target equates to a 20% loss (LE 62%)
- **BP'99 2000-2004 Proved Reserves**
  - 25% additions promised by SPDC are unlikely to materialise
- **Need to resolve reporting of Innovative Contracts**
  - Booking Pseudo Reserves "Buy-backs"

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EXCOM 1999 Proved Reserves
31st January 2000

2000 EP Scorecard
(Including D/S Gas)

Business Result	Plan	Below	Mid-Point	Outstanding	Weight %	Actual (or LE)	Normalized Score	Weighted Score
ROACE (%)	15.6%	7.7%	15.6%	23.4%	100%	15.6%	1.00	1.00
Indicative oil price for ROACE		$10/b	$14/b	$18/b			A =	1.00

Business Performance	Plan	Below	Mid-Point	Outstanding	Weight %	Actual (or LE)	Normalized Score	Weighted Score
Core Measures								
Opex & Depreciation ($ mln)	6830	7170	6830	6490	20%	6830	1.00	0.20
Production Oil / NGL (kb/d)	2326	2246	2310	2374	10%	2310	1.00	0.10
Gas Sales (mrd Nm^3/y)	89.8	86.1	89.3	92.3	10%	89.3	1.00	0.10
Proved Reserves Replacement (Excluding divestments)	80%	50%	80%	110%	10%	80%	1.00	0.10
Performance vs. Competitors (Self appraisal)		0.0	1.0	2.0	10%	1.00	1.00	0.10
Additional Measures HSE, HR and SFR (Self-appraisal)		0.0	1.0	2.0	20%	1.00	1.00	0.20
Milestones		0.0	1.0	2.0	20%	1.00	1.00	0.20
Total Performance		0.0	1.0	2.0			B =	1.00

EP Score	Business Performance Factor (BPF) But, if A or B equal zero, Total EP Score will also be zero	0.5*A + 0.5*B = 1.00

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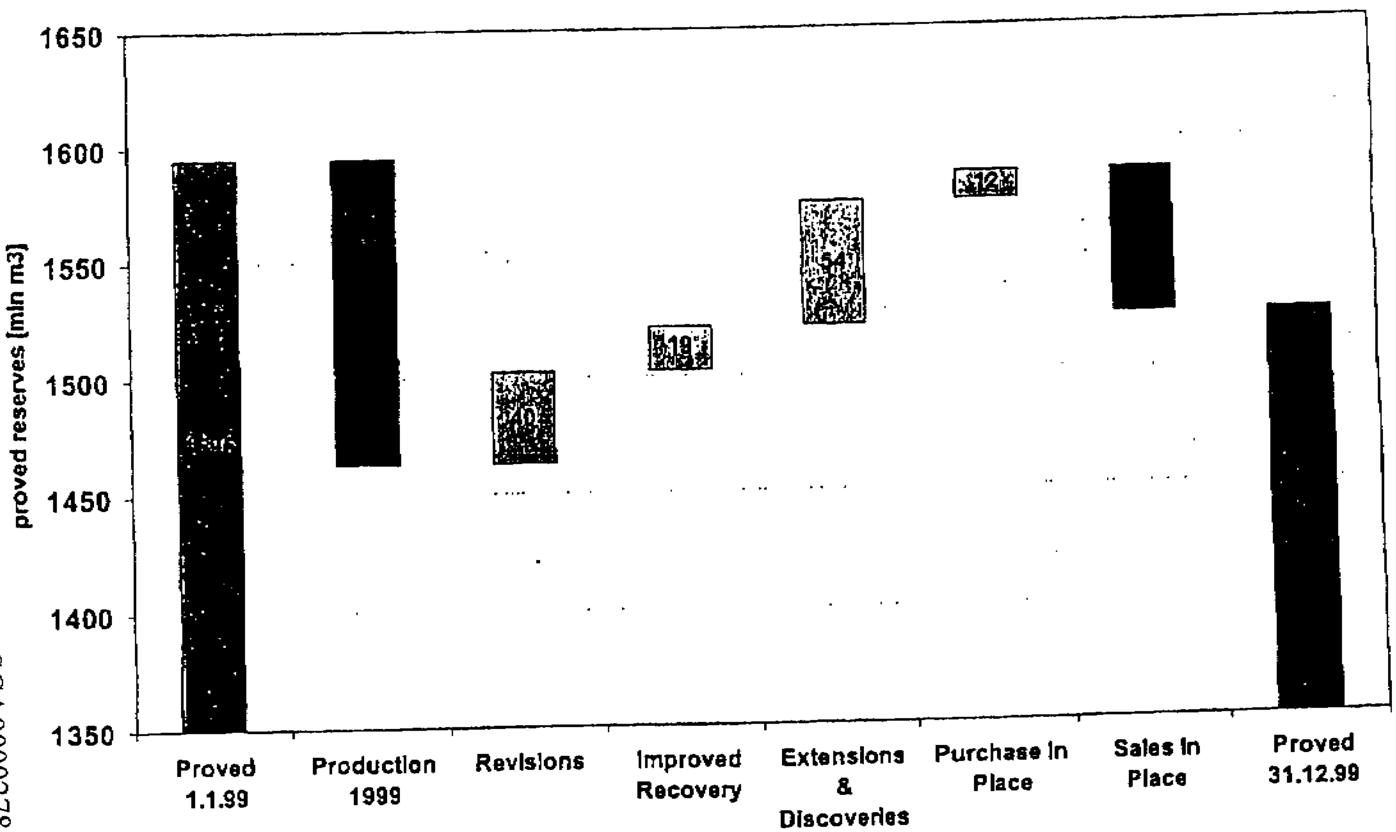
EXCOM 1999 Proved Reserves
31st January 2000

1999 Changes to Proved Oil/NGL Reserves



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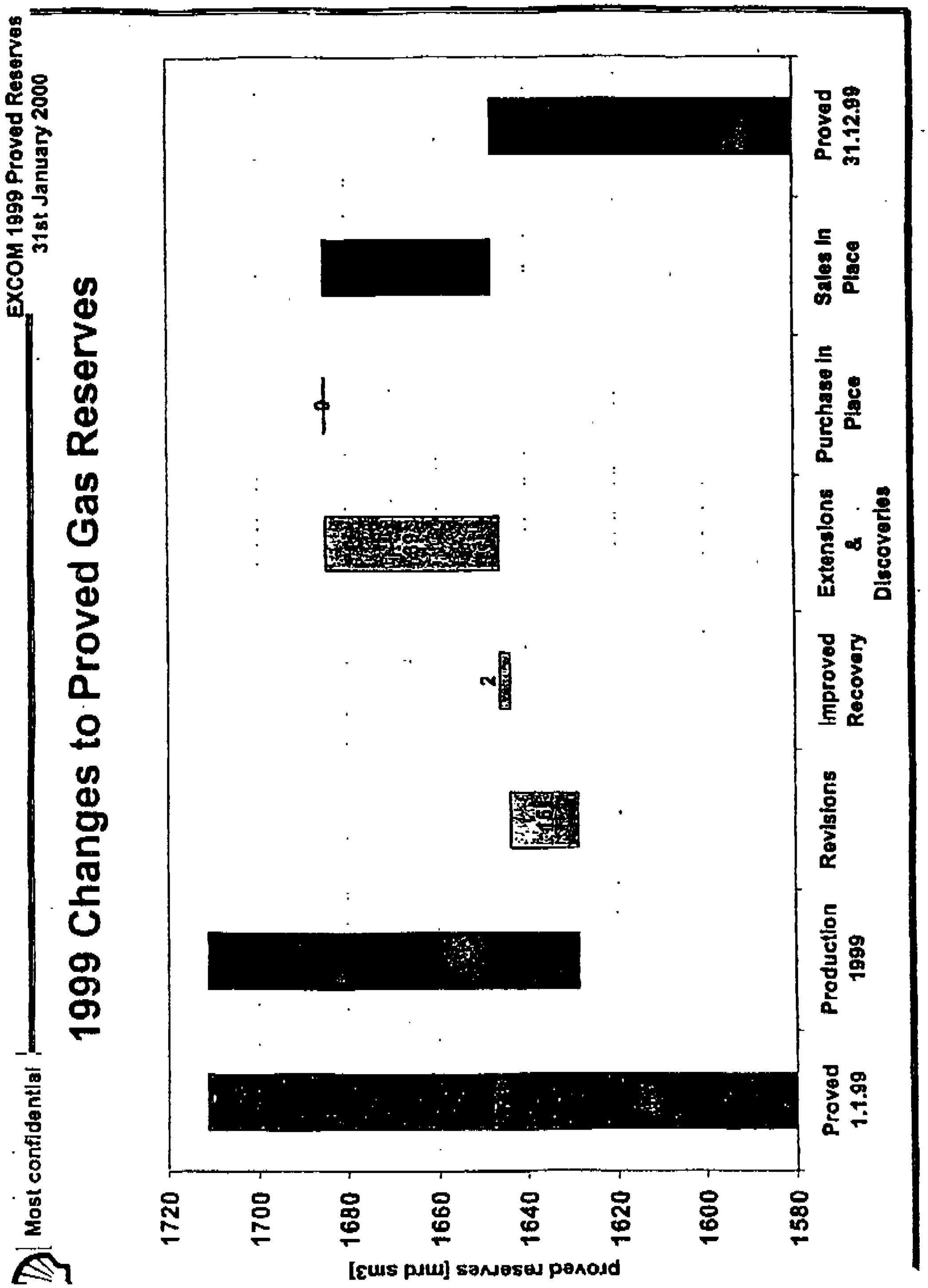

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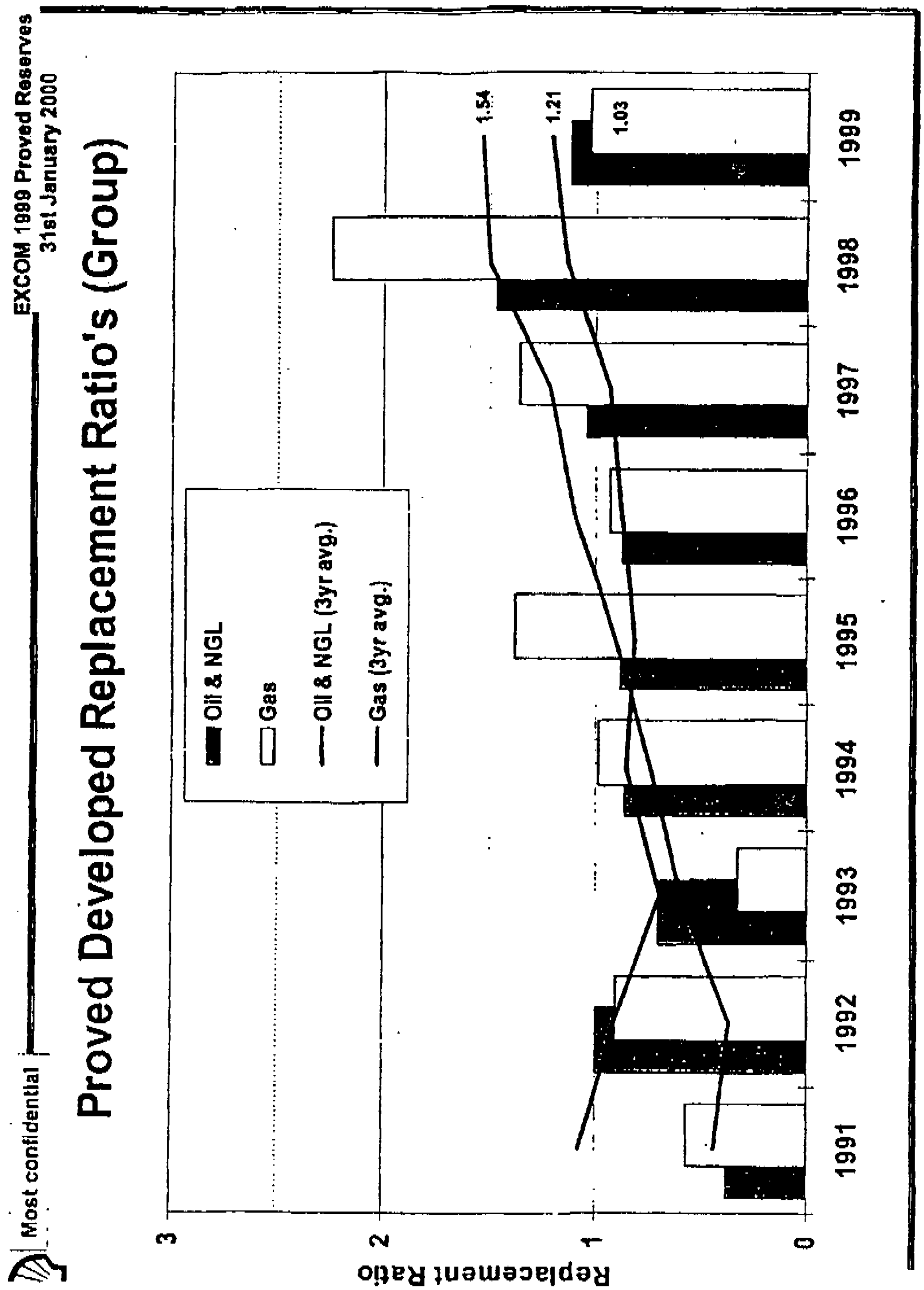

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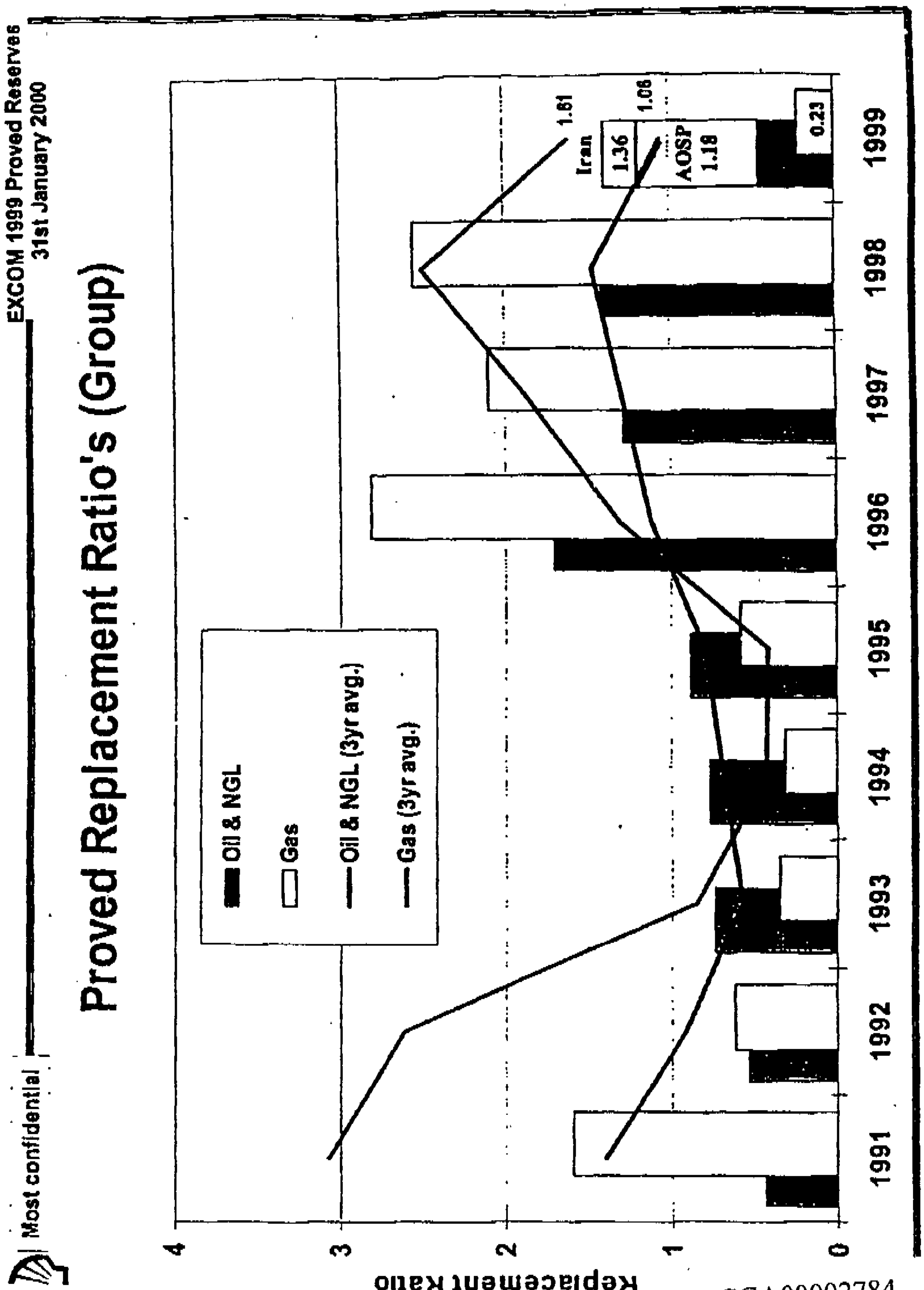

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EXCOM 1999 Proved Reserves
31st January 2000

1999 Proved Reserves Replacement Ratio

	Initial Data	Proposed Data	Excl. A&D	Incl. AOSP	Incl. AOSP & Iran	+AOSP +Iran Ex A&D
Oil/NGL	71%	46%	84%	118%	136%	175%
GAS	31%	23%	68%	23%	23%	68%
Total [boe]	56%	37%	78%	82%	94%	135%

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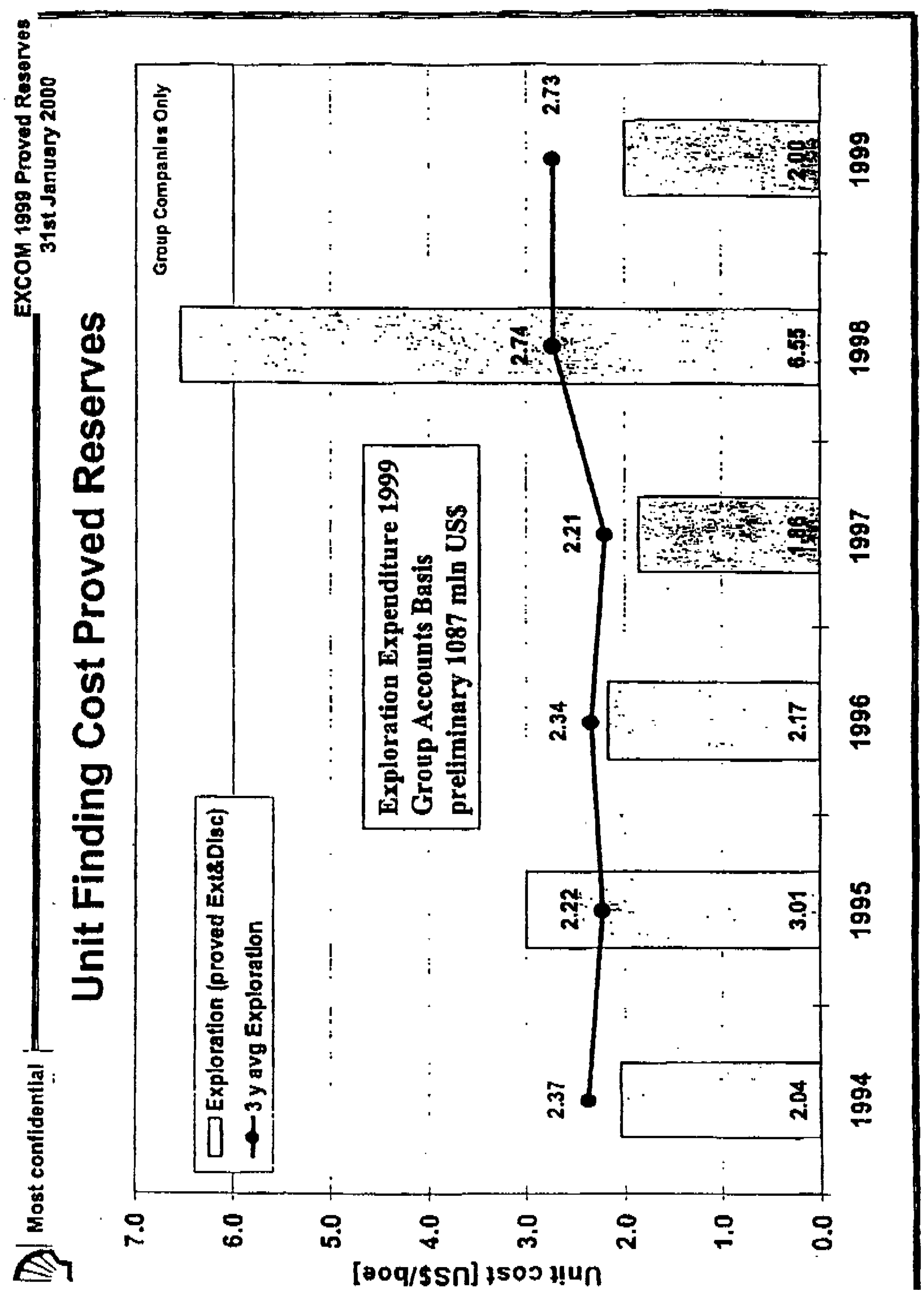

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