

Figure 1: Total BOE Proved Reserves 2001

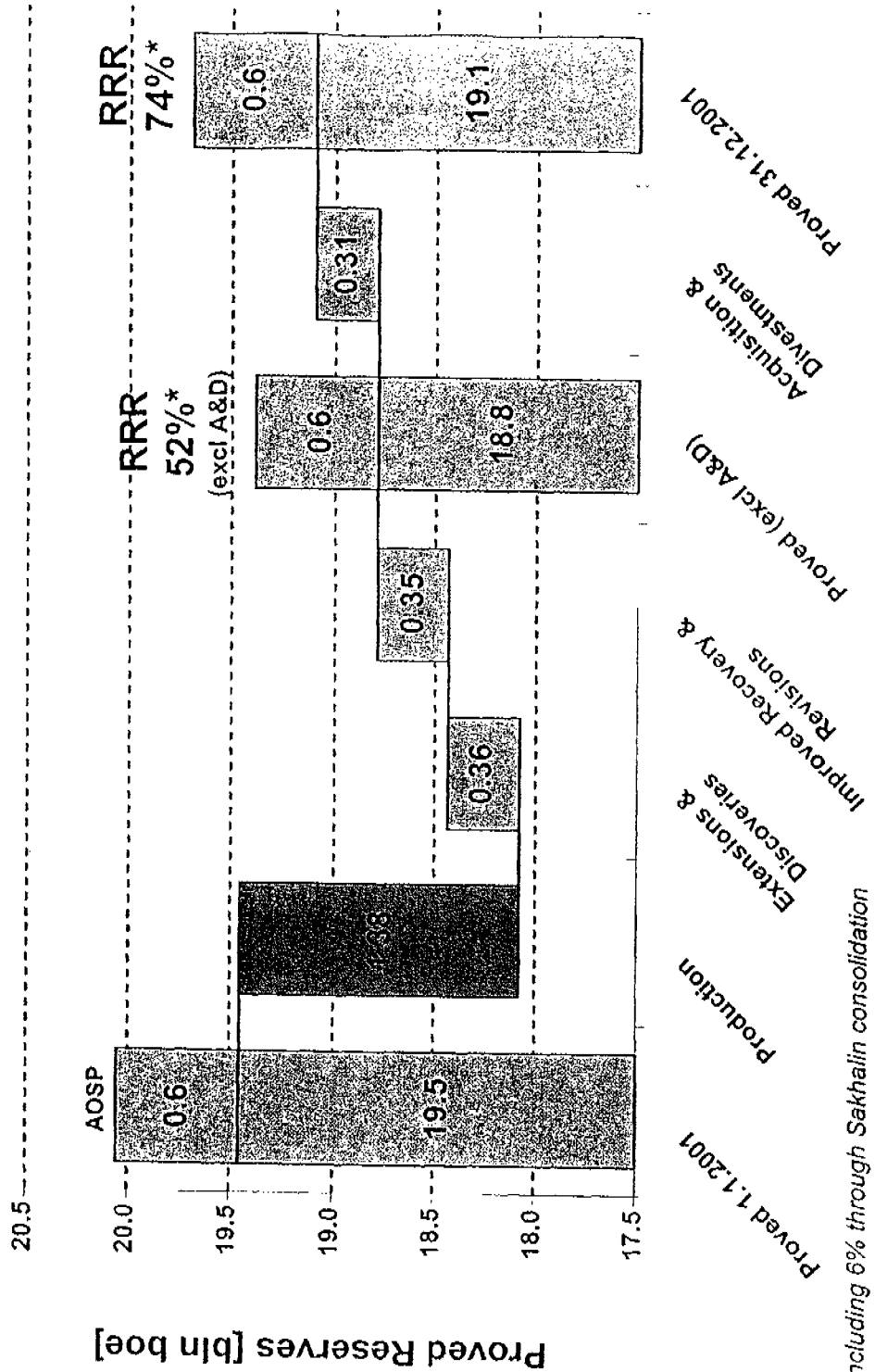
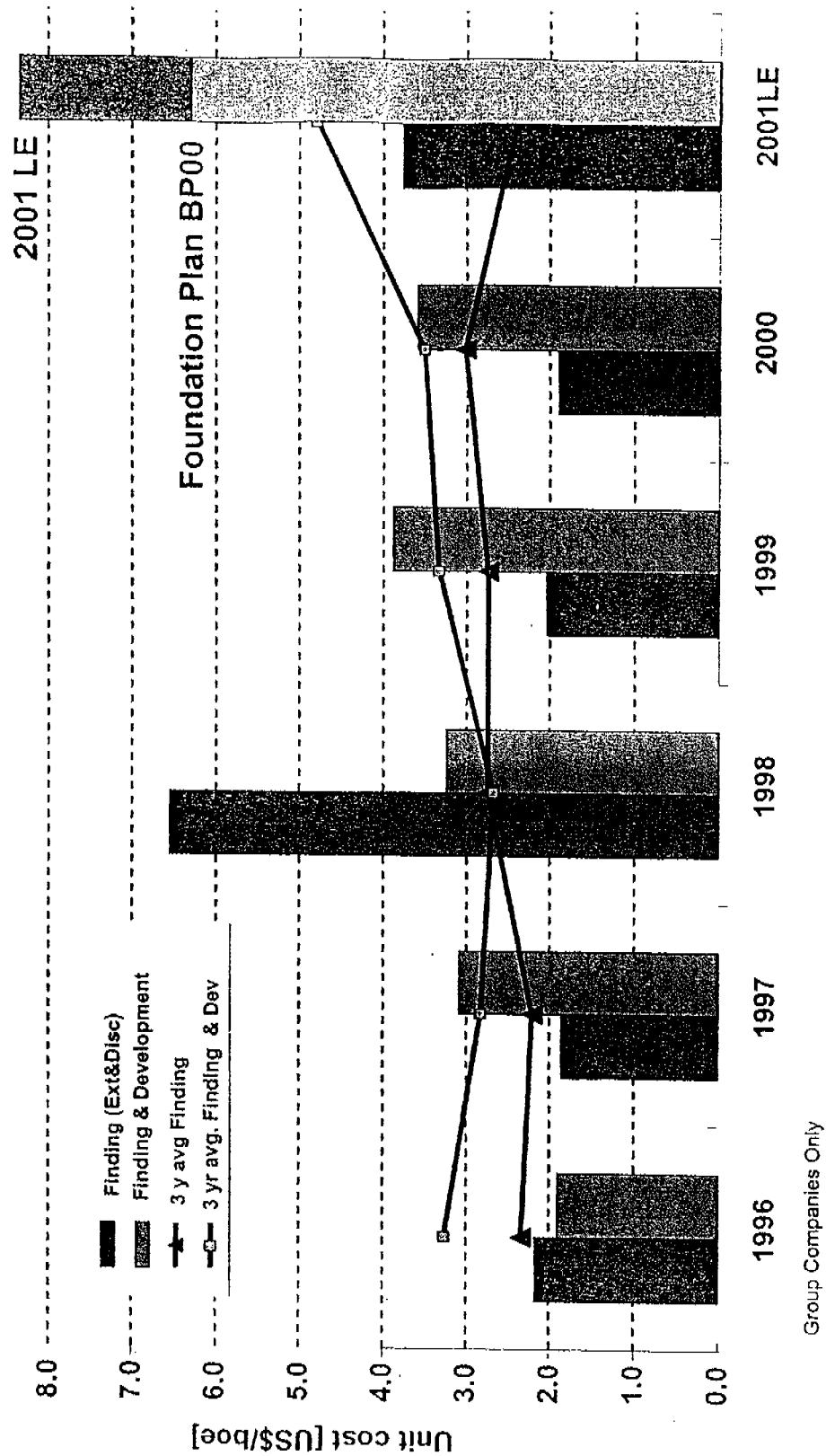


Figure 2 : Finding and Development Cost



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Figure 3 : 2001 Reserves Actual versus Target

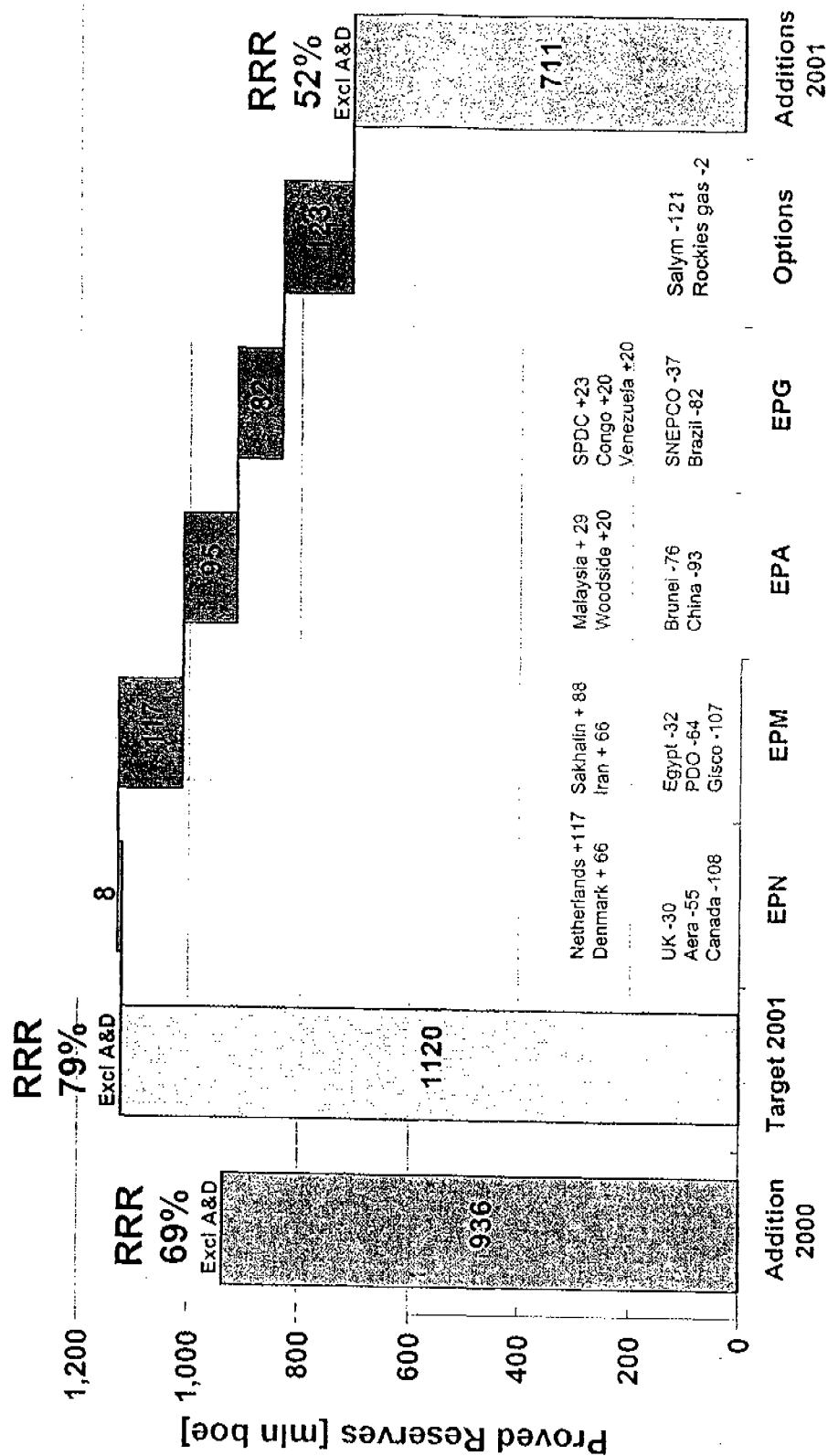
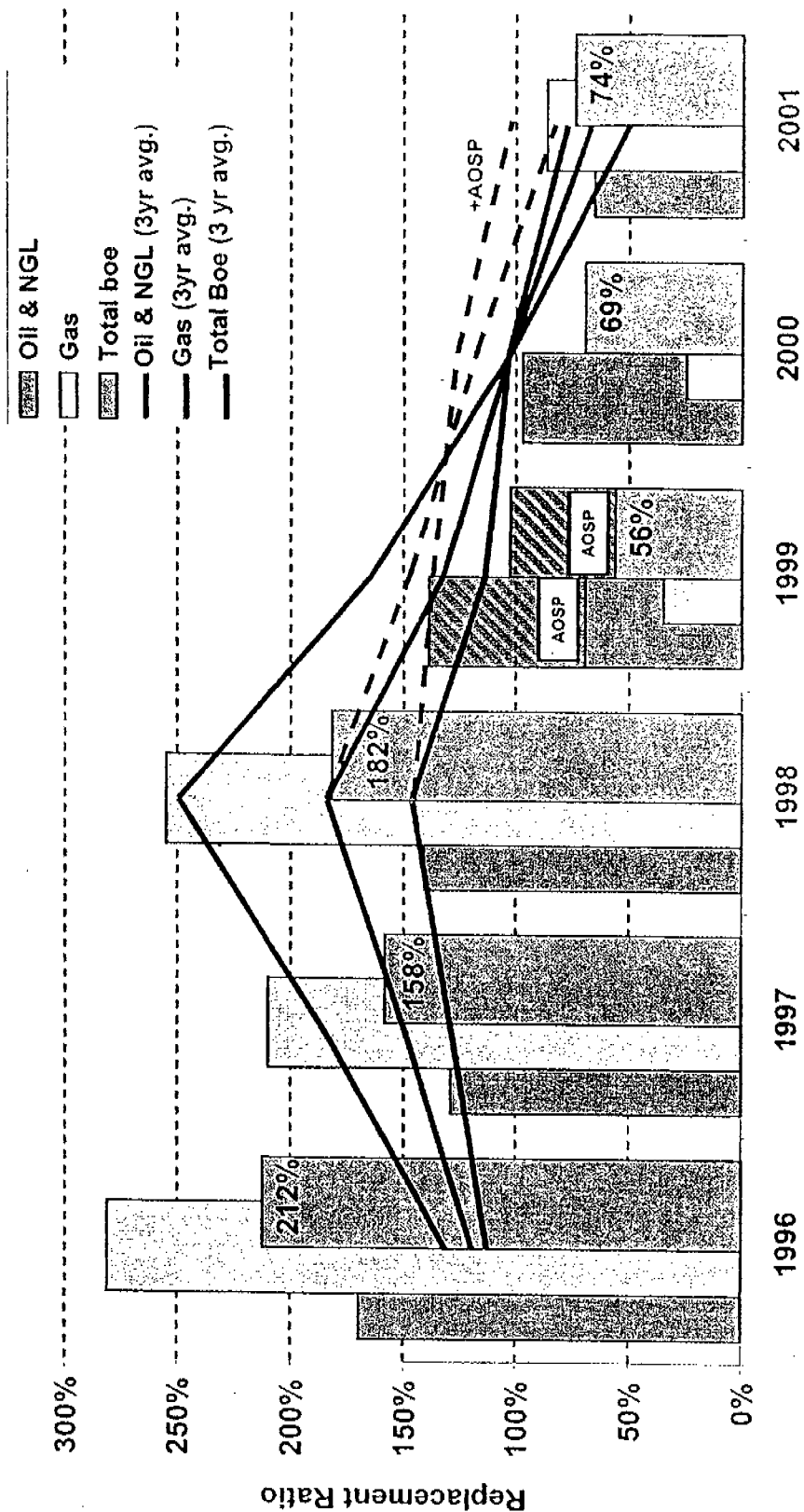
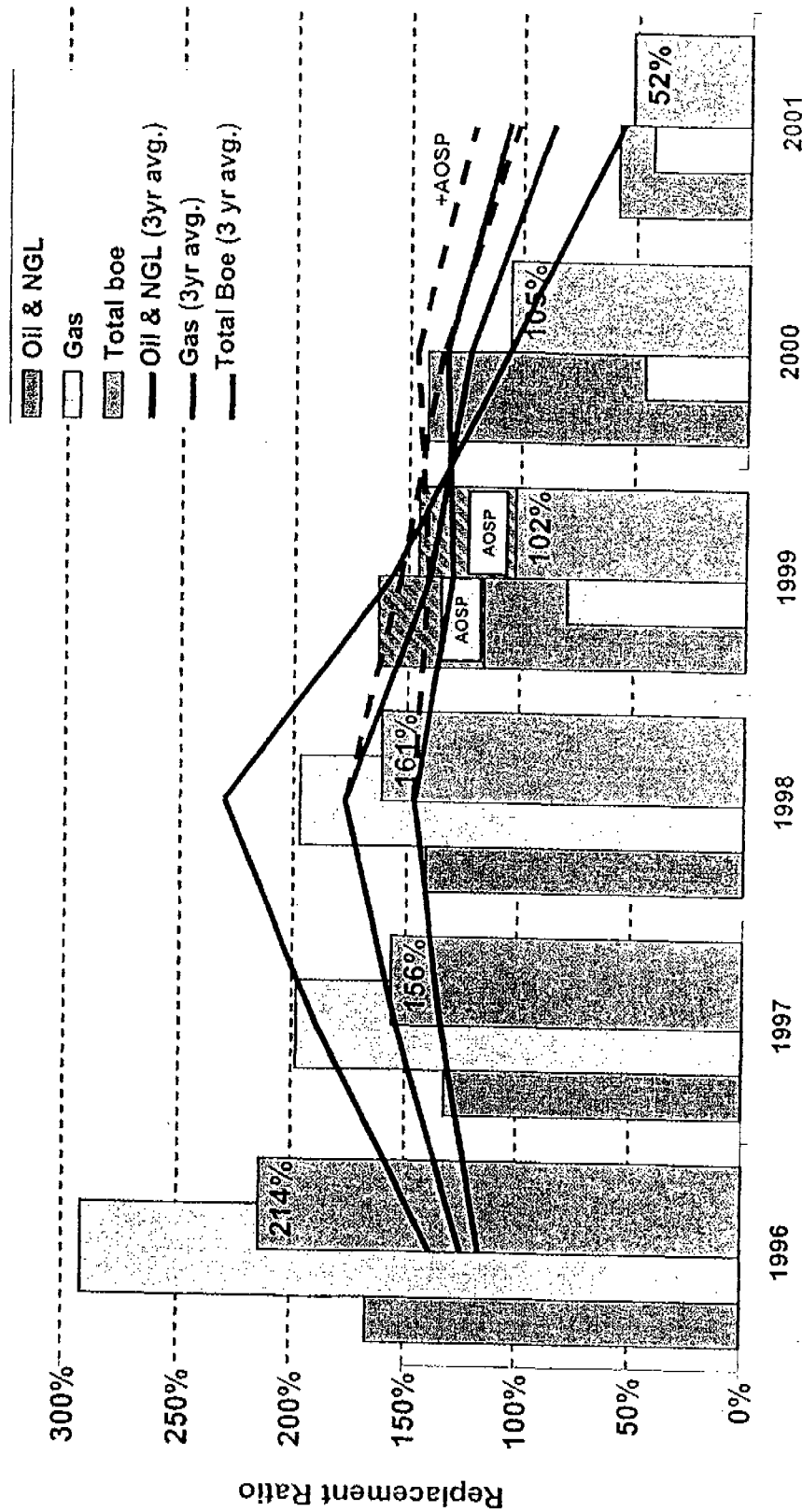


Figure 4 : Proved RRR (incl A&D)

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Figure 5 : Proved RRR (excl. A&D)



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Figure 6 : Majors Proved Reserves Replacement Ratio [boe]

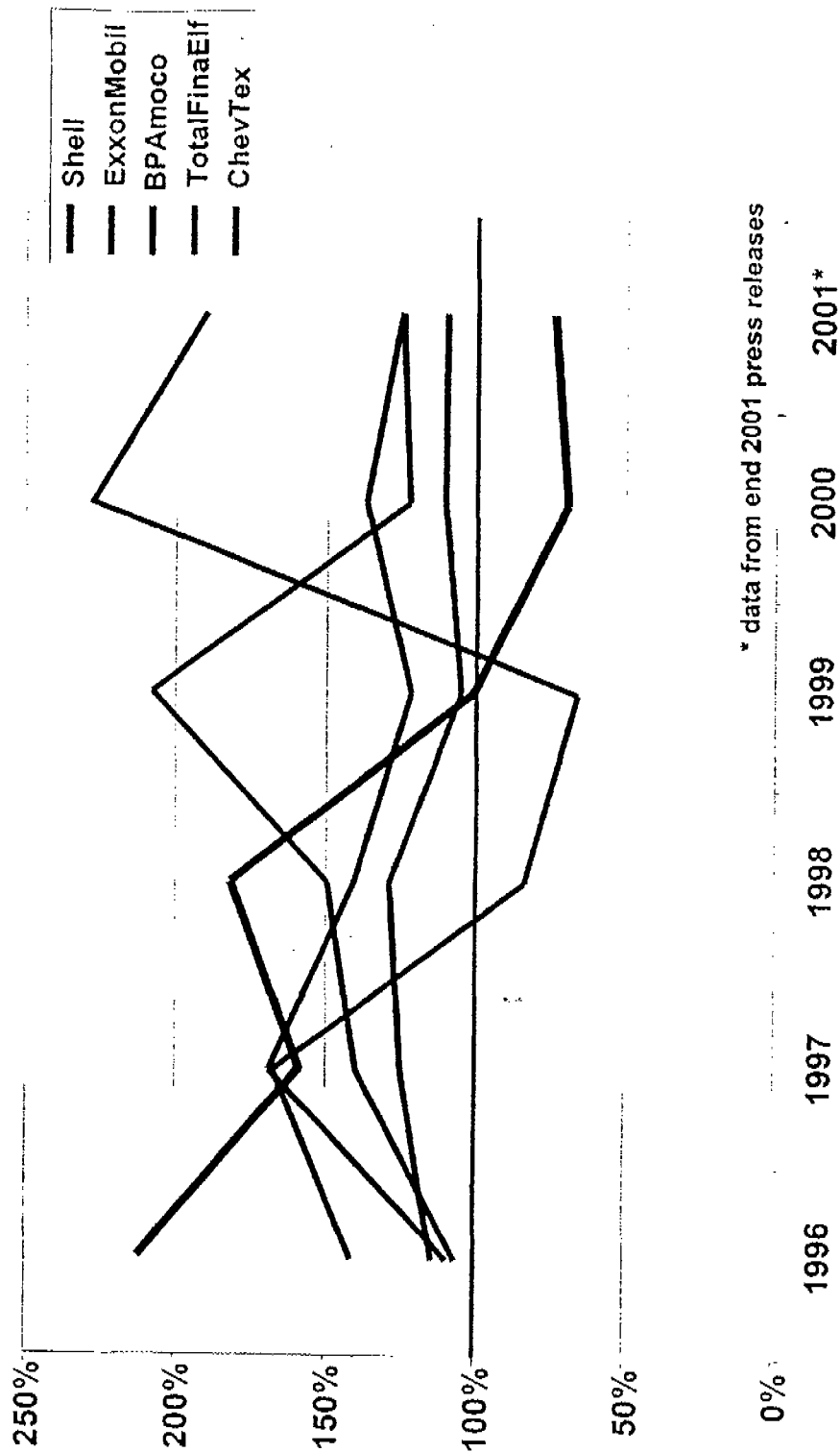
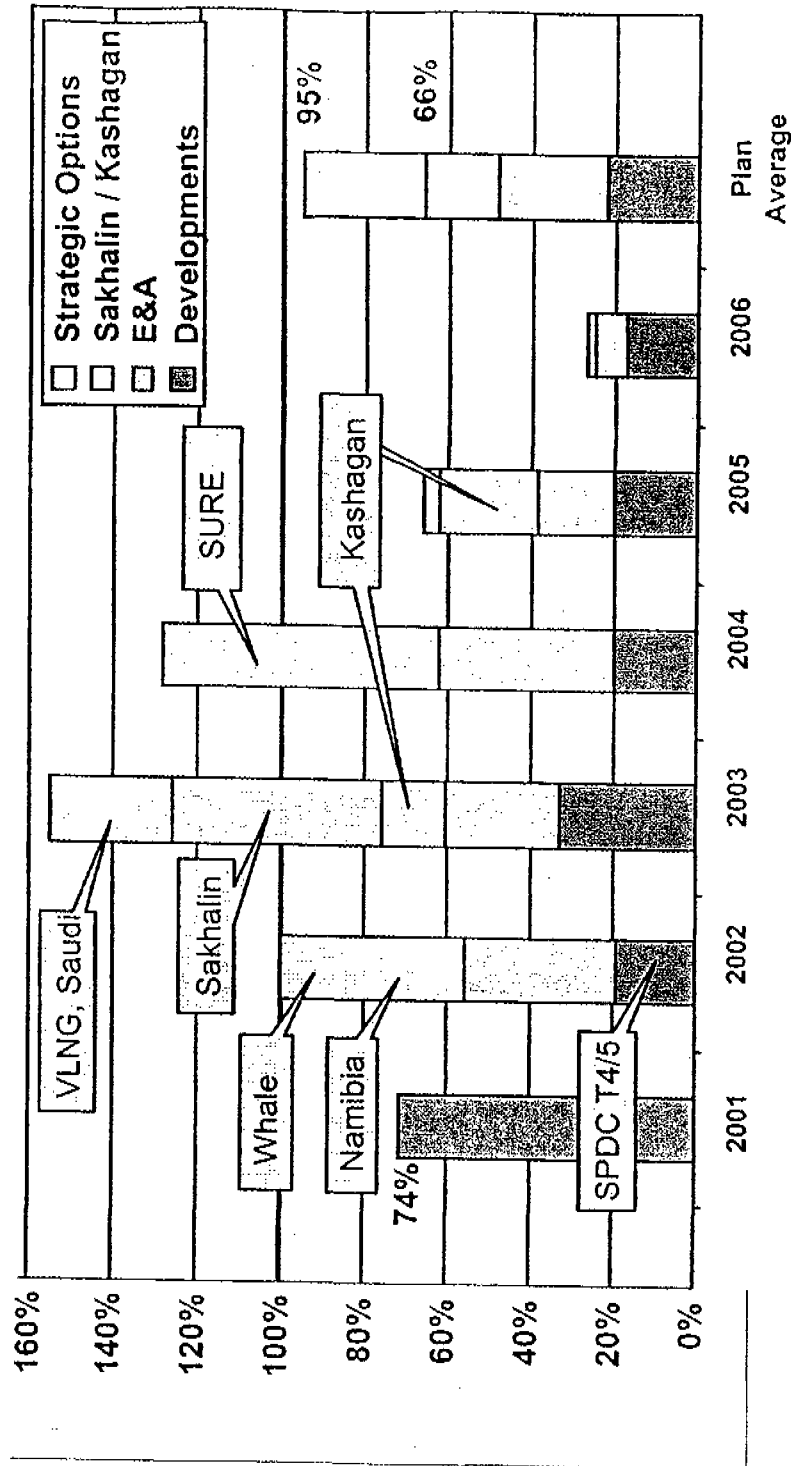


Figure 7 : BP'01 Planned Reserves Replacement



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Unknown

From: Darley, John J SIEP-EPT
Sent: 16 June 2003 07:24
To: McKay, Aldan A SEPCO
Subject: RE: 2003 Proved Reserves Additions- a reply

Aidan,

Thanks for the insights / perceptions ! I have some sympathy for your views, but I can't leave them all unchallenged, of course.

I don't see RRR as a new crisis, but I do see the opportunity to work globally on the EP technical programme as an opportunity to give focus to this issue. The role of the Technical Leadership Team will be to make the call on where can we best apply resources (eg the technical professional staff working in Houston/Rijswijk) to maximise the value of our business. Is it in support to existing ventures, support to exploration strategies or identification of new opportunities? - the answer is all of the above, but the relative prioritisation is important. A global assessment of opportunities for reserves growth in existing ventures (coupled with an appreciation of whether we have the resources to mature these) is an essential element of this prioritisation - and lies behind my message to TLT.

We (EP EXEC) fully accept the reality of the current portfolio and are working to move it to a new position - not easy given all the competing constraints, but essential to move the business to a new world.

Equally, we are not pinning our hopes on new technologies as silver bullets to solve all the problems, but I do see a portfolio of key technologies as complementary to the portfolio of assets. SepTAR have recently completed a strategy review with the objective to focus on a limited number of technology areas which have the potential to make a material impact on reserves over the next ten years.

Maintaining a balanced approach to tackling the raft of business challenges should underpin our performance (and avoid the perception of lurching from one issue to the next). Again, I see the global model as enabling a balanced approach with clear accountabilities for the component elements of our business (short, long, assets, technology etc). Getting it all right at the same time is where we strive to be - not easy, but certainly worth the effort !!

Monday am - Now for the EP Exec !

cheers
 John

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

From: McKay, Aldan A SEPCO
Sent: 16 June 2003 04:42
To: Darley, John J SIEP-EPT
Subject: 2003 Proved Reserves Additions- a reply

John,

I accept the need for focus on RRR, but would ask that you aim to encourage a decent context on the RRR issue rather than highlight it as a new "crisis" in which we turn from boasting development projects schedules and costs to boasting proven reserves (in timing and volumes).

Shell E&P is hurting today, because we lurch in an event driven way from one unidimensional focus to another in periods of 24 months. Production growth, to ROACE @ mid cycle, now to RRR and apparently E&P Exc Committee (McKinsey advised) behavioural change! The other challenge is we seem to "hope our way to the future". As an example, the degree to which we travel hopefully on SURE or HFR or

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EXHIBIT

Darley 19
11/17/06

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CBM, or the Ultra Deep in DW is simply not credible or technocratic, its Enronesque delusional salesmanship.

As you know better than me from the Bob Davies and Pink days, this is not a new problem, we've had major RRR problems since since 1987 (but we bought 10 % more SPDC in 1989 which bought time and a hangover down the road), then from 1991 to 1995 we were in a similar miserable period on RRR but production volumes grew rapidly (UK, Syria, Denmark, PDO) so nobody took any notice:

We got out of that last RRR hole briefly by sanctioning every old marginal thing in the cupboards 1994-1999, many were ultra complex projects which needed higher prices to given an acceptable return. Some of these prospects had been on the books for 14 years as possible developments needing technology breakthroughs (Schooner & Ketch in Carboniferous channels SNS, or Shearwater, the Carboniferous offshore NAM, Al Noor & Dhuliana in PDO, Malampaya et al, Argentina gas and here in USA things like Europa and Nakika fields which were up to 16 years since discovery at sanction and Brutus a 1989 discovery. Obviously we also punted the biggies in SPDC like Cawthorne Channel, EA etc and other such SPDC beasts too.

Today we cannot rely on all the old chestnut OUs to look in the cupboards, they were finite, even Penguin is (sort of) flying. I would submit that we challenge OUs to look in the cupboards, but be clear the risk is that the opportunities will become increasingly virtual like Al Huwaisah water injection project.

My point is that any discussion of Shell EP liquids or liquids RRR must surely mention that more than 50 % of liquids are in Nigeria and Abu Dhabi (low NIAT /boe) like they always have been. So in fact the RRR corrected for Nigeria & Abu Dhabi continues to be quite shocking and has been so since 1995. [The current "TSTMH" view of SPDC, simply passes on to the next EP Exc Com or who ever a even bigger headache as 2019 approaches and failure to grow production continues as it has since 1984. Hoping that Nigeria will improve is not a rational way forward. I have never seen a logical explanation why we are so keen on Nigeria outlook? So if we dont grow Nigeria in the next 5 or 10 years like we did not in the last 10 or 20 we will start down booking 10 % of our oil reserves, then there will be a real crisis.]

Fundamentally there is little real energy apparent around the basics of the E&P business in Shell EP, the opportunity set for investment, the failure of technology to give the same oomph it gave us (or others) in the late 1980s and early 1990s. We have had broadly empty development cupboards given the 4 mln boe/d and 10 % decline scale of our EP business. This is empty on both an absolute and comparative (vs Exxon & BP) sense, the project by project comparisons are transparent. This problem has intensified because our main OUs now need almost 30 % of the available capex funds for tranche and existing assets funds just to keep the base declining steadily. Exxon will be in an identical boat from 2010 afetr Angola DW goes into 30 % pa decline, its very very tough to live through even at \$25/bbl.

IMHO until there is widescale acceptance of this portfolio reality in Shell E&P (I never saw it during my spell in central office at Excom or CMD and the limited feedback from EPLF/Bus week was not a change), you (EP Ex Comm) will continue to get "boasted" numbers on Proven Reserves, "boasted" plans and "boasted" technology gains and "boasted" everything else, with the net effect being that the case for big bets or taking material risk to get us out of this situation is diminished and the successors in 5 years time get an even more intractable problem set.

- Shell will be out of business (vs BP & Exxon) if we have \$22/bbl for the next decade, the assets will be under new management. (Why will it not be \$22/bbl?)
- We are not accepting that in the 2000s despite some localised successes, many technologies from monodiameter expandables to 4D are not giving us the material gains we got from horizontals and 3D in the last decade. Ignoring this reality, compounds the problem for your successors, if they ever get there?

The next two decades for the super major E&Ps is not going to be decided by RRR volumes, (or technology breakthroughs) it will be decided as ever by exploration success, by who has the most OLD E&P assets (tax/royalty volumes), who is least exposed to the 2010+ equivalent of the nationalisations in 1970s (ie resetting the IOC terms once the Khizomba, Kashagan, SakhalinII ~\$10 Bln investments are made) and lastly who has accepted that the capital intensity of E&P problem is not likely to be beaten (without material big 5 Middle East opening up) and stopped trying to grow further beyond their scale

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today.

Back to the projects and day job!

Regards
Aidan McKay
Major Projects Manager Sepco
New Orleans

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

From: Bosschietter, Thora TMF SIEP-EPT On Behalf Of Darley, John J SIEP-EPT

Sent: 10 June 2003 15:02

To: Banister, Gaurdie GE SEPCO; Ching, Paul D SIEP-EPT-AA; Darley, John J SIEP-EPT; Erlings, Hans H SIEP-EPT-OE; Greer, David DJ SIEP-EPT-P; Henderson, Grahaeme G SIEP-EPT-IO-ST; Jacobsen, Donald E SEPCO; Kaars-Sijpesteijn, Casper SIEP-EPB-S; McFadyen, Kieron SEPI-EPE; Naylor, Michael M SEPI-EPX-T; Sears, Richard RA SIEP-EPT-DE; Stigter, Karel KJP NAM-DIR; Straub, Brian E BSP-TD; Van Leenen, Tom SEPI-EPG; Vaughan, Andrew B SENV-CH

Cc: Boersma, Frans F SIEP-EPT-HLB; Coutts, Steve D SUKEP-UEID/2; Gmelig Meyling, Robert RHJ NAM-ELG-DVC; Henderson, Lyle LE SIEP-EPT-AGH; Hoppe, John E SPDC-DPE-RES; Kemshell, David DMK PDO-UPR; Kennett, Chris C BSP-WPE; Kortekaas, Theo TFM SIEP-EP-HR; Lim, Min-Teong MT SIEP-EPT-OE-HL; Masson, Dave D SIEP-EP-HR; Schulte, Tom AM SIEP-EPT-AER; Sidle, Rod RE SEPCO; Sieler, Jeffery JJ SIEP-EPT-DEC; Tan, Teck-choon SARAWAK-EP-PRO; Bell, John J SIEP-EP-PS; Percival, Iain IDR SIEP-EPT-AG; Coopman, Frank F SIEP-EPF; Bakker, Hans JJA SIEP-EP-PS; Pay, John JR SIEP-EP-PS

Subject: 2003 Proved Reserves Additions

TLT Colleagues,

One of our key challenges as a Technical Leadership Team is to look to the long term sustainability of the EP Business. The efficient replacement of produced reserves is the bed-rock on which this long term growth is founded.

Following two years in which we have delivered an organic (i.e. excluding A&D) proved reserves replacement ratio (RRR) of 50%, it is essential that we return as quickly as possible to a level of performance that is consistent with our ambition to sustain and grow production, namely an RRR of at least 100%. The outlook for 2003 is more favourable than last year, and has improved significantly compared with the 2002 Business Plan, but the latest estimate for RRR is still below 100%. Furthermore, while we should comfortably replace production on the gas side of our business, liquids (oil and NGLs) additions are currently projected to replace only some 30% of production during the year - this would undoubtedly raise concerns about the sustainability of our production performance in the long term.

With production of 1.5 billion boe per year, it is clear that we must look to major new development projects and new business delivery for much of our reserves replacement. However, traditionally we have been extremely successful in making the most of the assets already in our portfolio. It is imperative that we maintain focus on the potential of our existing business to replenish production and that our proved reserves disclosures continue to reflect a balanced view of what is reasonably certain to be delivered through production in the coming years.

To this end, within your region, I would like to ask you to direct your attention to the following areas:

- In support of the current latest estimate, it is essential that we deliver on the proved reserves additions that were incorporated in the Business Plan and communicated to each OU through its 2002 Investment Letter.
- The RIL and V2V processes, together with the focus on Technical and Operational Excellence, are

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now firmly established in our business. Please ensure that all opportunities identified through these and other means are progressed as a matter of priority.

- The recently compiled Capital Allocation project data sets include estimates of proved reserves additions over time. Please examine these for cases in which, with additional effort and attention, reserves bookings that are currently planned for 2004 might be accelerated into 2003.
- As we progress towards the end-of-year reserves reporting exercise please ensure that we are vigilant with respect to proved reserves disclosures for our existing assets and that we do not miss opportunities to revise estimates of proved reserves upwards towards the expectation level, within the constraints of the SEC rules as incorporated into the Shell Petroleum Resource Volume Guidelines.

The priority is oil reserves opportunities, although any proven additions, whether oil or gas, will be welcome. In total, our target will be to identify an additional contribution of some 400-500 mln boe to be booked in 2003.

John Pay (EPS-P), our Hydrocarbon Resource Coordinator, will maintain contact with you, the senior development engineers in your region and the reserves coordinators in each OU (in the period of transition to the regional business organisations). He will collate information on progress and keep me and my EP Exec colleagues informed accordingly. We cannot afford to wait until the end of the year to learn of significant changes to our performance and in particular we must be made aware as early as possible of unavoidable negative revisions. Consequently please ensure that we keep information flowing freely to EP Exec via EPS-P and make sure that full and accurate use is made of the EPMIS Latest Estimate reporting system.

A previously planned meeting of the Reservoir Engineering Discipline Heads will take place in Muscat, Oman, from 28 June until 1 July. They will take advantage of their meeting to discuss the matters I have raised in this letter and in particular to address any manpower resource allocation issues, the resolution of which could help to assure delivery. Delegates should arrive prepared to discuss opportunities that have been identified in their region and I would ask that you contact your respective delegates to identify possible requirements to commit the necessary resources, to delivery against EP's global target.

They will also discuss plans for regional reserves challenge sessions, to be held later in the year with the objective of assuring compliance of our year-end proved reserves disclosures with the Shell Group Guidelines. This will include challenge from both perspectives, namely that all bookings are fully defensible and that reserves are neither over-stated nor under-stated.

Thank you for giving this issue your attention in the context of "keeping our eye on the ball" while managing the transition to the new EP Global model.

Best regards,

John Darley

John C. Darley
Director - Shell Technology E&P
Shell International Exploration and Production B.V.
Volmerlaan 8, Postbus 60, 2280 AB Rijswijk, The Netherlands

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Darley, John J SIEP-EPT

From: Van De Vijver, Walter SI-MGDWV
Sent: 08 December 2003 01:05
To: Pay, John JR SIEP-EPS-P
Cc: Coopman, Frank F SIEP-EPF; Darley, John J SIEP-EPT; Bell, John J SIEP-EPS
Subject: RE: Proved Reserves Part 1: DRAFT FOR COMMENT

John,

Many thanks.

My comments on the note:

- I would include the internal/external timeline in the summary. Wrt the table it should flag all large bookings and be checked (later in the text it talks about 660 MMboe for SPDCI). The summary should also clarify the large change in 96 which led to > 200 % RRR. This also applies to the chronological summary on page 9! I like to see impact to expectation reserves in summary also (earlier we stated that expectation reserves would be largely unaffected!)

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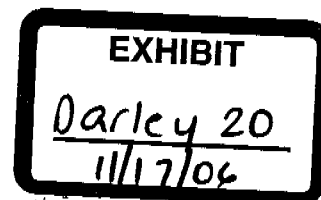
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Suggest that we discuss this early in the morning as I do want to get this issued by noon latest today!

Thanks,

Walter



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Sent: 07 December 2003 22:15
To: Van De Vijver, Walter SI-MGDWV; Boynton, Judith G SI-MGDJB; Morrison, Tim TDR SI-FC
Cc: Coopman, Frank F SIEP-EPF; Darley, John J SIEP-EPT; Bell, John J SIEP-EPS
Subject: RE: Proved Reserves Part 1: DRAFT FOR COMMENT

... and "Jim" Morrison - feeling bad, no need to say any more

<< File: Proved Reserves Dec 2003 Part 1 v06.doc (Compressed) >>

John Pay

Group Hydrocarbon Resource Coordinator
Shell International Exploration and Production B.V.
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Kessler Park 1, 2288 GS,
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The Netherlands

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Email: john.pay@shell.com

Internet: <http://www.shell.com/eandp-en>

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Sent: 07 December 2003 20:46
To: Pay, John JR SIEP-EPS-P; Van De Vijver, Walter SI-MGDWV; Boynton, Judith G SI-MGDJB; Morrison, Jim R SITI-ITDPET
Cc: Coopman, Frank F SIEP-EPF; Darley, John J SIEP-EPT; Bell, John J SIEP-EPS
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0652521964

From: Van De Vijver, Walter SI-MGDWV
Sent: 07 December 2003 14:44
To: Darley, John J SIEP-EPT
Cc: Coopman, Frank F SIEP-EPF; Bell, John J SIEP-EPS; Pay, John JR SIEP-EPS-P
Subject: RE: Reserves Note

John,

I understand this is very much still a draft and hence realize that comments from my side can either be premature, are already planned to be addressed or perhaps helpful.

This is very sensitive information and the year-to-year audit-trail /logic is very important:

- need to have to parallel timelines of what externally happened (SEC rules tightening, SM since '96, external audit reports and KPMG conclusion and SO coming in) and what happened internally year by year on our internal interpretation and processes to get where we are today. JB + F.
- need to bring it all the way back to total resources to show in-place volumes changes if any in order to show where all the volumes are JP.

The current summary lacks various steps and may leave totally the wrong impression. PDO, IPDC over years JCB.

98 Nigeria, 2000. PDO.

We also need to address any footnote that we have when referring to industry practice and SEC regulations.

Why has it taken us until now to address the various issues that we have? (lack of data, ongoing study efforts, denial, ..., hoping for license extensions...)

Assume that we still have some remaining uncertainty around the actual Oman and Nigeria numbers, both proved and expectation plus SFR?

Is there anything else material out there (eg Waddenzee)? ✓

How can we claim Bonga IFO being no longer exposed? - debooked ✓

Referring to technical maturity of plans in PDO and SPDC has eroded over recent years implies last 10 years or so? ✓

On Kashagan we only booked 380 MMboe to date, the other 120 MMboe is BG sale pre-emption? ✓

Where is the PD problem (Nigeria or Oman?) ?

It needs more direct comments on the magic 97-2000 period, with a strong top-down push to book reserves ✓

Need clarity whether the negative revisions now will allow us project related bookings in the coming years for which we have been unable to claim anything given the various legacies? ✓

Based on our tightening of guidelines since 2000, have we de-booked volumes and how much? ✓

Need honest perspective on reserves bonus impact on Oman and Nigeria and when did we stop bookings in both these countries?

The R/P trend in Nigeria is obscene!

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

1991-2000

FOIA Confidential
Treatment Requested

07/12/2003

RJW00131066

Darley, John J SIEP-EPT

From: Coopman, Frank F SIEP-EPF
Sent: 04 December 2003 14:03
To: Darley, John J SIEP-EPT; Ward, Brian BJ SEPI-EPG
Subject: FW: reserves notes

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

From: Dahlin, Nicola C SIEP-EP5-D
Sent: 04 December 2003 11:48
To: Coopman, Frank F SIEP-EPF
Cc: Pay, John JR SIEP-EP5-P; Bell, John J SIEP-EP5
Subject: reserves notes

Frank,

a summary of Walter's comments (I have also included mine in the attached document if helpful)

1. He is happy with the 2 note approach
2. Yes he would like both notes to be ready for CMD next week (he knows the drafts will not be ready until Saturday)
3. In section 2 also include how the Shell guidelines have changed since the early 1990's (i.e. extend historical lookback) and why.
4. Be specific about changes e.g. VAR3 change, FID change etc.. and the effect each of these had (plus be very specific on timeline).
5. Provide a history of what happened in PDO and SPDC from the early 1990's until now. When did we start to realise there was a problem, what actions did we take. Talk about booking expectation only and the bonus systems. (he realises that John Pay will not have this background but wants to involve John's predecessors, Stuart Evans etc.. to get details - you could also try Neil O' Neill (my suggestion not Walter's))
6. Show problems historically - which volumes should be disappear (be reclassified) and when were they booked
7. Whenever you quote numbers please quote proved and expectation and scope numbers (i.e. be clear on all categories)
8. Show movement of volumes from PD to PUO to Exp to SFR (not sure I have correct abbreviation for first 2)
9. Cover PDO license extension issue (and production forecast) and the fact we never looked at proved reserves
10. There have been a number of CMD notes on reserves and potential debookings (one in July ?). Please dig out, quote from if relevant, and reference them.
11. We need to state if we beleive technical competency had a part to play
12. We need to state if aggressive management / messages from top level management had a part to play
13. Give the status of the PDO and SPDC reports, when will they be final / approved
14. What is the way forward on debooking and link these to the study plans in SPDC/PDO
15. Give a timeline of the technical work to be done before numbers can be firmed up
15. Talk ranges rather than specific numbers in the meantime
16. List debookings made to date - 2001, 2002, LE 2003
17. List outstanding work:
 - Oman report finalisation
 - PDO recommendation on proved and Shell response /approval
 - PDO programme
 - SPDC report and Shell review
 - SPDC programme
18. Please do not give firm recommendations in either paper, present all of the options and compare
19. In Part 2, need to address payback of bonusses issue
20. And finally - do you have the resources to complete these notes ? Please let Walter know if you need anything / anyone.

I am in London, you can get me on my mobile (see below). I have a meeting with Walter at 12:30 your time, so if you want to speak to him you can call then (otherwise Marian knows his schedule),

best regards,

Nicola

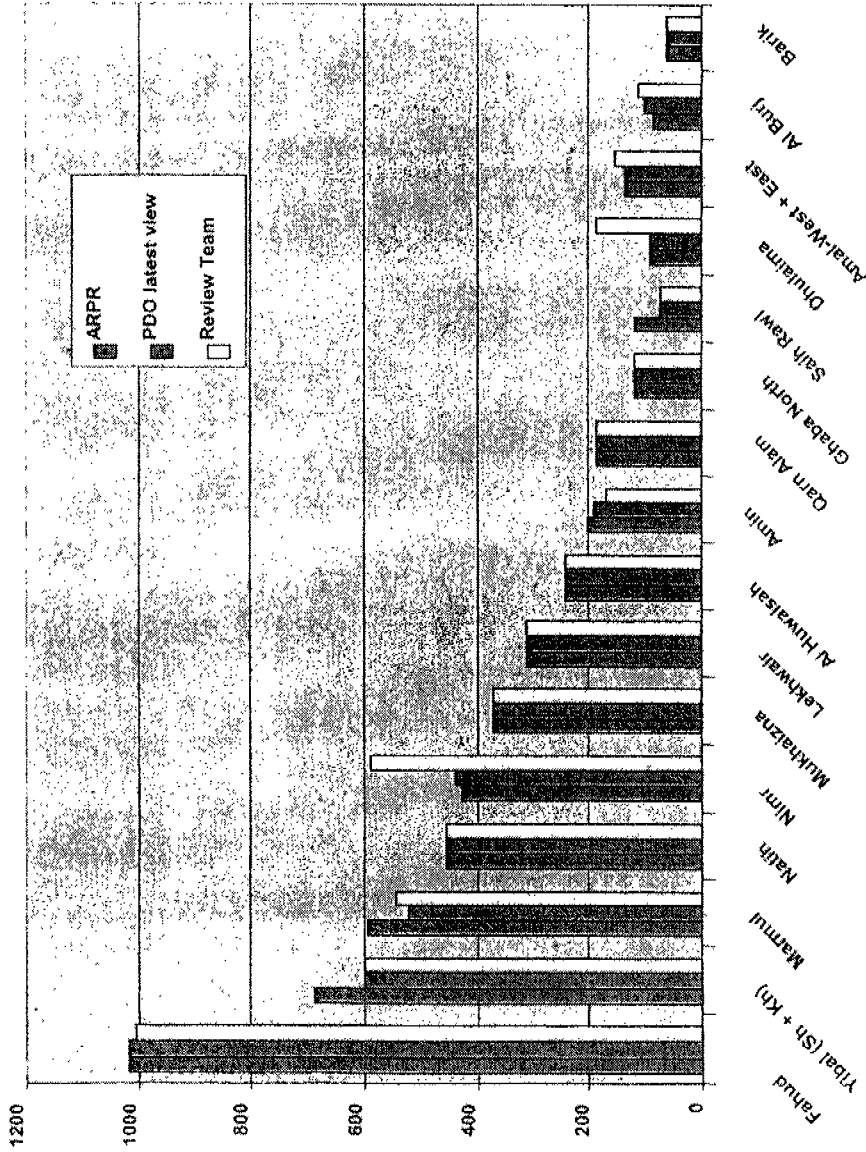


Proved Reserves
 Dec 2003 Part ...

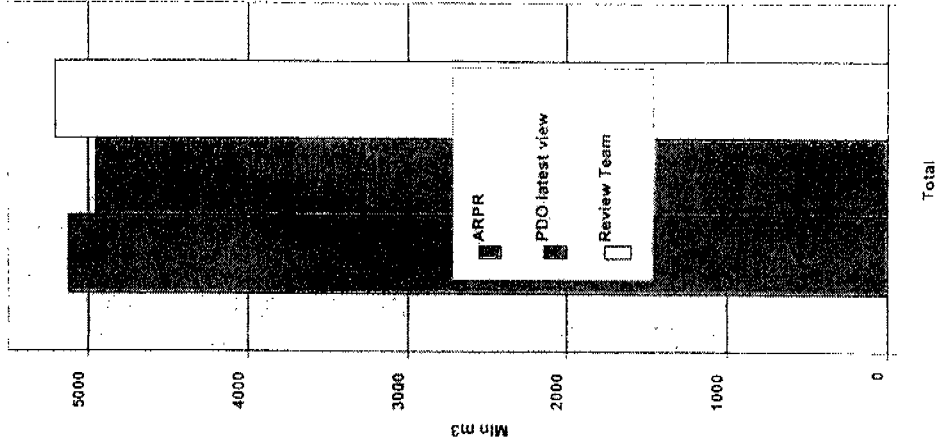
Nicola Dahlin
Business Advisor to EP CEO
SIEP The Hague, C16/511
PO Box 663, 2501 CR The Hague, The Netherlands
desk phone +31 (0)70 377 3641
mobile +31 (0)6 46 120 490

PDO STOIP and Reserves Review

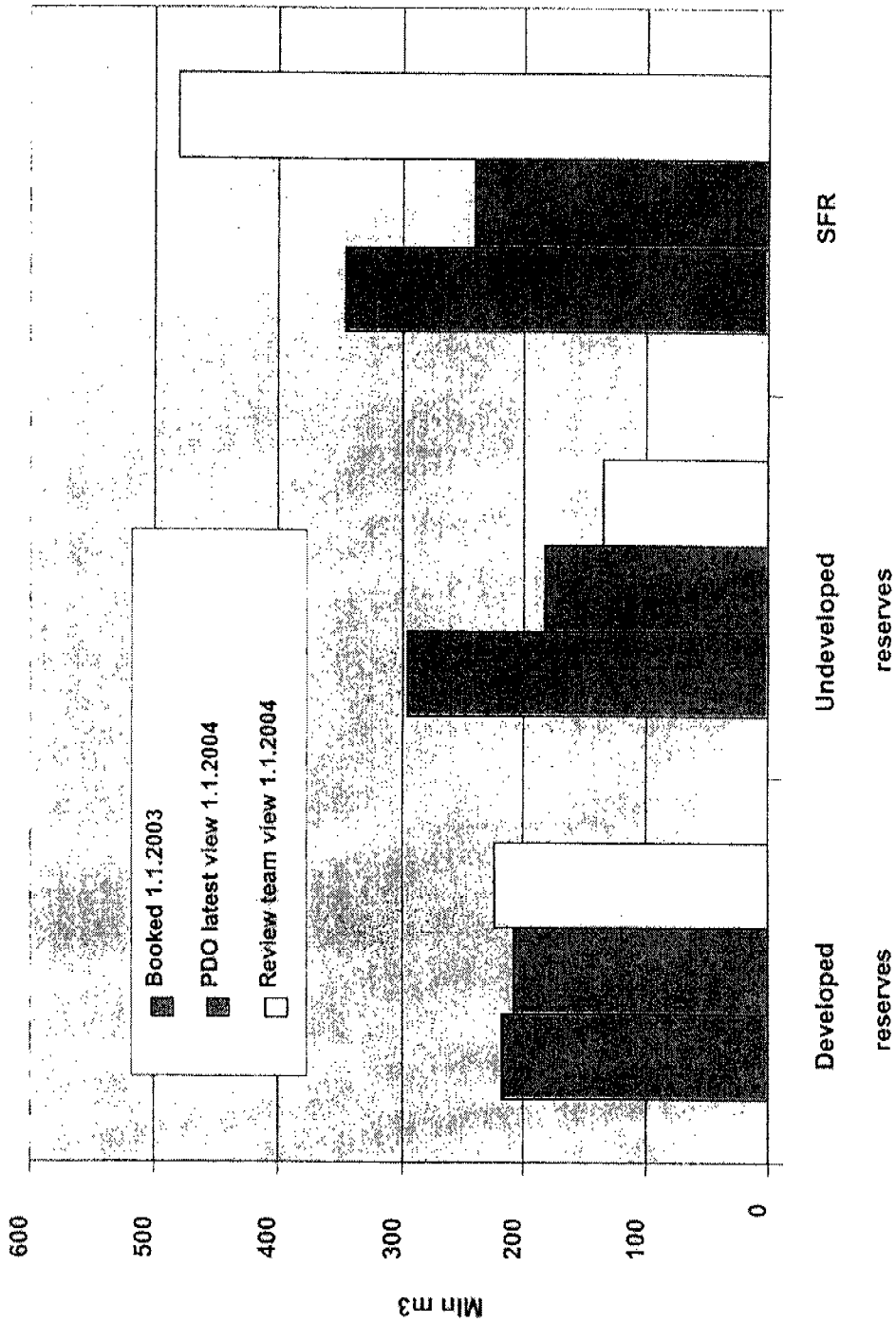
STOIP findings



STOIP findings (fields reviewed)



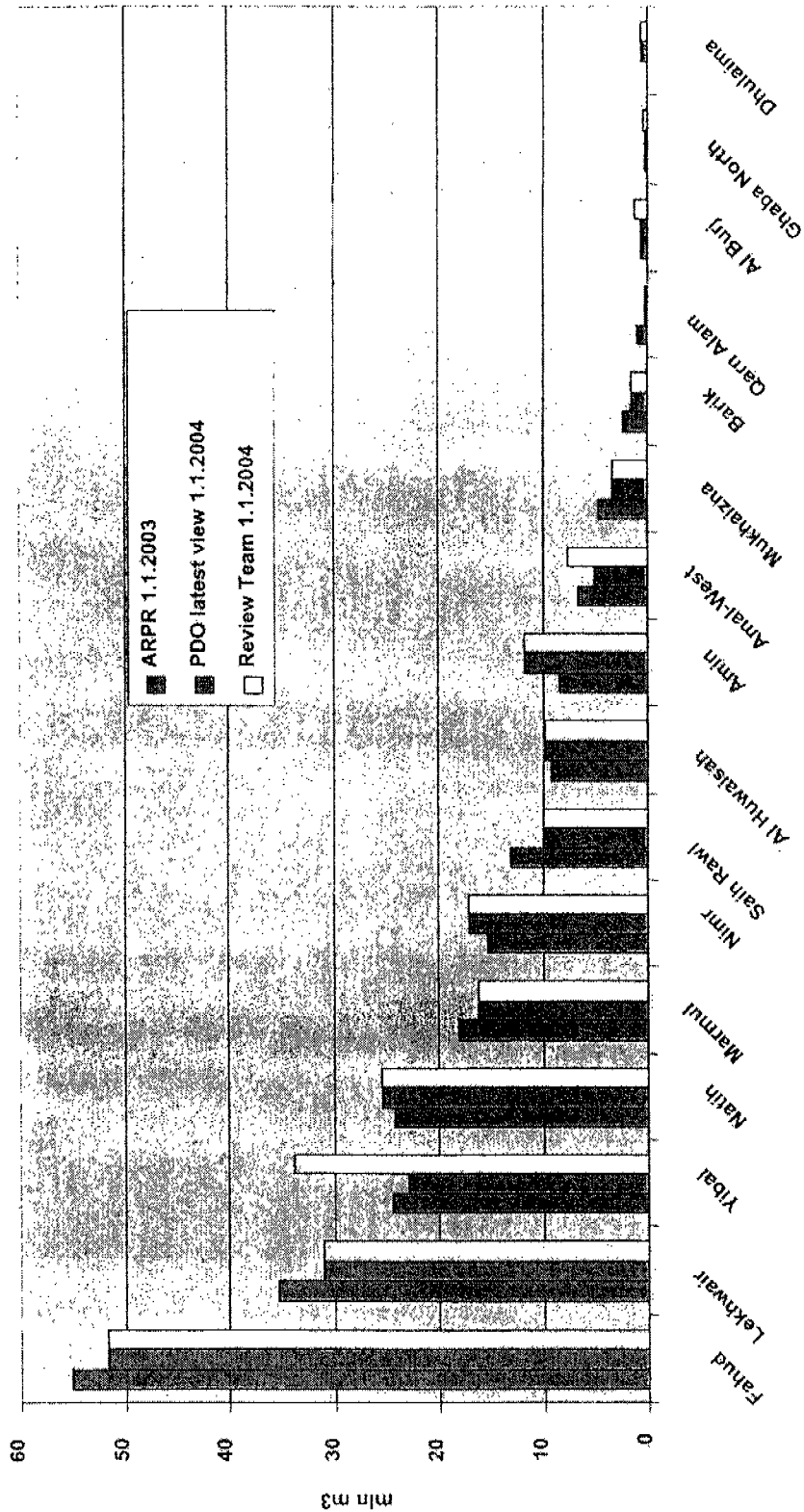
Reserves and scope overview (fields reviewed)



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Treatment Requested

RJW00131070

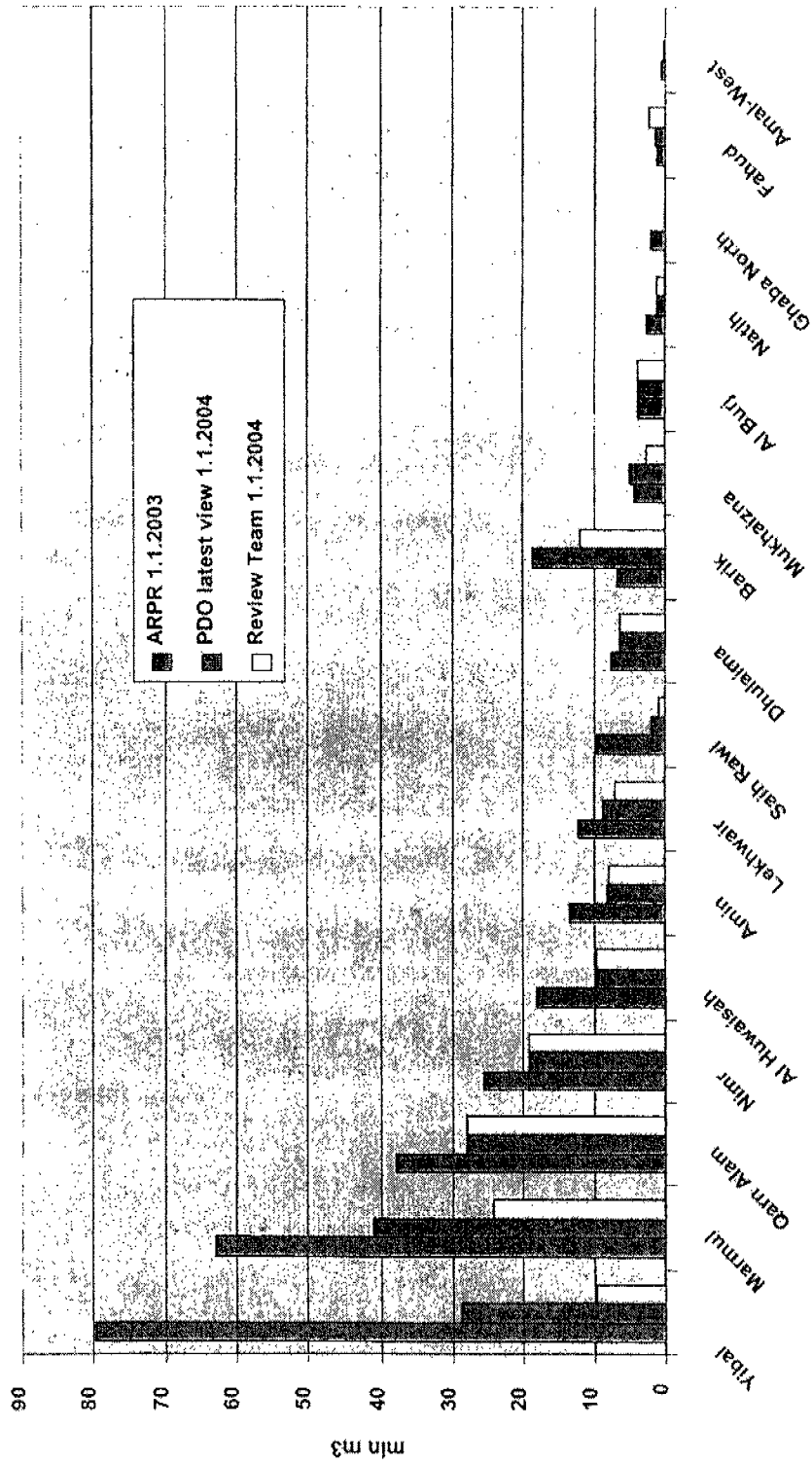
Developed Reserves



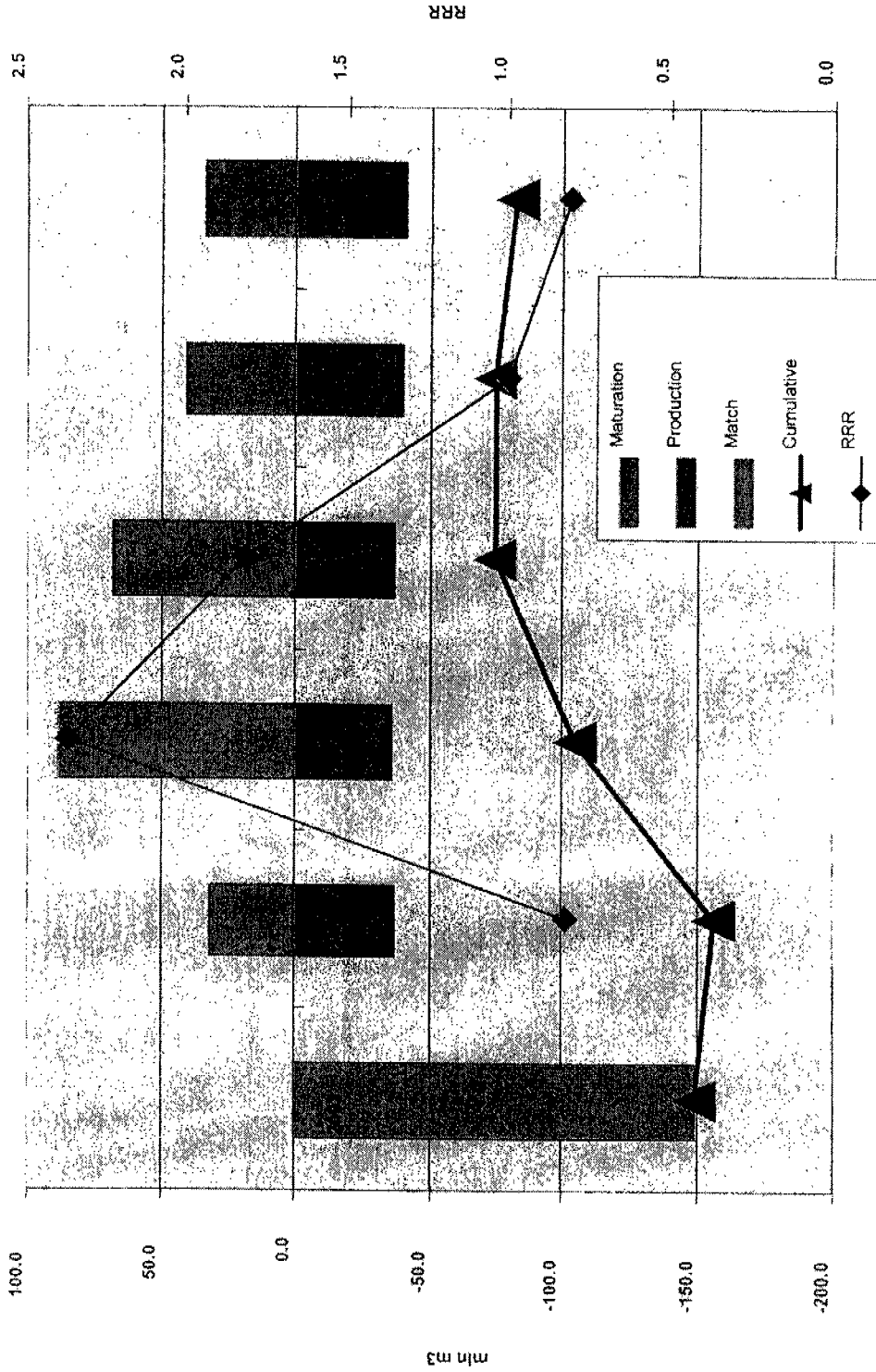
RJW00131071

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Undeveloped Reserves



PDO Reserves Maturation & Reserves Replacement Ratio



Unknown

From: Barendregt, Anton AA SIEP-EPF-DIR
Sent: 08 December 2003 16:12
To: Coopman, Frank F SIEP-EPF; Darley, John J SIEP-EPT
Cc: Bell, John J SIEP-EPF; Pay, John JR SIEP-EPF-P
Subject: RE: Oman reserves: controls failure?

Frank,

Please allow me to react to this.

The essential pillar on which a proper assessment of proved reserves should be based is a set of proved reserves production forecasts by individual fields (or, even better, projects). These can then be summed and the composite forecast can be cut off at the end of licence to yield the proper composite proved reserves for the company in question.

PDO did not have this set of proved forecasts, because they were not in a habit of paying serious attention to proved volumes. Expectation forecasts were of course available. Composite proved reserves had historically been calculated in a variety of ways, none of them really very realistic. This was highlighted in the 1995 and 1999 audit reports. At the request of PDO, the 1999 audit report did give a specific recommendation on how to prepare a realistic set of proved reserves and proved forecasts and how to combine these into a composite proved forecast (Att.3 in said report). By end 2000 not much progress had been made by PDO and Remco Aalbers went to visit them somewhere in October 2000 (I think). By end 2000, there was again not a lot of progress and PDO proposed only a small increase in proved reserves at a time when most other OUs had reported significant increases as a result of the 1998 change in guidelines (stating that proved reserves needed to approach expectation reserves in mature fields). The shortcut that Remco then proposed (with my backing) was to assume a composite PDO proved forecast consisting of a continued plateau of 850,000 b/d for 8 years, followed by a relatively steep decline. This led to a significant increase in PDO Group share proved reserves (350 MMbl). The PDO expectation forecast at the time was an even longer plateau at the same level. This shortcut was proposed as an interim measure, under the clear understanding that PDO would bring their proved forecast house in order asap, following the guidance given in the 1999 audit report and the end 2000 visit.

Both forecasts turned out to be grossly optimistic when a serious production decline set in during 2001. This production decline required all available attention by the Petroleum Engineering staff and the proved field / project forecasts were again not addressed. The assumption of the flat plateau proved production forecast was maintained unchanged by PDO during the 2001 and 2002 submissions. Effectively, only production volumes were subtracted in those two years, which implied that an unrealistic upturn in production would be required to produce the stated reserves before end of licence. This is the situation as it was found during the 2003 audit.

In addition there has of course been the issue that Group reserves guidelines had been tightened over the period 2000-2003 (following updated SEC guidance). This aggravated the situation regarding PDO's proved reserves, but did not affect the root cause of the problem, which was that PDO had no proper set of proved field/project reserves.

Thus, it can be accepted that the end-2000 advice from SIEP was far too optimistic. However, it is the lack of challenge of the proved forecast assumptions by PDO during 2001 and 2002 that is of concern. The issue was raised by me in my end-2001 report (apparently without any action, either by SIEP or PDO) and again, more prominently, at end-2002. Only during 2003 was serious action taken by PDO.

Whether all this constitutes a lack of controls is not for me to judge. At the very least, there was a lack of attention by PDO to proper housekeeping regarding proved reserves, in spite of audit recommendations. Admittedly, PDO had their share of problems in those years, but that can, in the end, not be an excuse. A lack of effective challenge by SIEP at end 2001 did not help either.

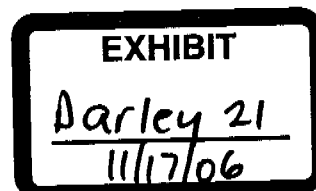
Hope this clarifies.

Anton

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

From: Coopman, Frank F SIEP-EPF
Sent: zondag 7 december 2003 13:25
To: Darley, John J SIEP-EPT
Cc: Barendregt, Anton AA SIEP-EPF-DIR; Bell, John J SIEP-EPF; Pay, John JR SIEP-EPF-P

1
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 Treatment Requested



DARLEY 0540

V00320540

Subject: FW: Oman reserves: controls failure?

All,

Re the attached in the context of (inevitable) the question - did we have a breakdown of controls?
I think the answer is no in the case of PDO. It reads like following instructions from the Centre.

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

From: Wetselaar, Maarten SEPI-EPM-F
Sent: 07 December 2003 12:49
To: Coopman, Frank F SIEP-EPF
Cc: Kharusi, Fatma FM PDO-FD
Subject: Oman reserves: controls failure?

Frank,

Here is a synopsis of the background of the recent audit findings on overstated (Shell share) proved reserves in PDO.

In 1999 PDO received a "GOOD" rating on a reserves review. At the time, PDO used the probabilistic method of determining reserves. The review indicated that PDO reserves accounting was conservative and made a number of recommendations. The implementation of these recommendations in 1999 led to a credit booking of 137 million bbls.

After the review, a visit from Remco Alders (former Group Reserves co-ordinator?) took place in 2000. As a conclusion of that visit, the (Shell share) PDO reserves were further credited with 355 million barrels. The logic applied was to simply base proved reserves on all future expected production until mid 2012 (end of license). At the time, the expected production was a plateau of 850,000 bbls per day until 2009, declining afterwards (current 2004 forecast is 650,000 bbls/day).

After this, in 2001 and 2002, the reserves were adjusted downwards by yearly production but not revised further, although production forecasts did come down materially.

PDO is now switching to deterministic reserves accounting and will have the results of this switch in terms of proved reserves by the end of 2004.

I therefore suggest that the cause of overstated (Shell share) reserves lies in the events as described in 2000 rather than in a controls failure. PDO (and Shell) had identified problems with reserves accounting in PDO in general earlier this year and corrective action is well underway.

We will follow up to establish an audit trail on the findings and conclusions of the 2000 visit by Remco, in order to properly document what is stated in this e-mail.

Regards,

Maarten Wetselaar
Regional Finance Director
Middle East, Russia & CIS

Shell Exploration and Production International Ltd.
P.O. Box 11677, Dubai
United Arab Emirates

Tel: +971 4 4054 410
Mob: +971 50 454 2538
Fax: +971 4 331 4849
Email: maarten.wetselaar@shell.com

DARLEY 0541

Unknown

From: Coopman, Frank F SIEP-EPF
Sent: 16 December 2003 13:37
To: Van De Vijver, Walter SI-MGDWV
Cc: Frasier, Curtis R SI-LSEP; Bell, John J SIEP-EPS; Darley, John J SIEP-EPT; Pay, John JR SIEP-EPS-P
Subject: Rockford - who knew what at 31/12/02

Gents,

Please find attached the fruits of an afternoon reading of all the official documents which were produced in or related to 2002 before the 20F was published.

In order not to make it too bulky I have only summarized the key statements or issues.
I did not read the 2002 EP Exec minutes, or - obviously - any CMD minutes.

In summary, the tension between legacy bookings (in particular Gorgon) and changing internal guidelines was clearly flagged. So were the shortcomings in SPDC and Oman. The official year end review from the "independent" reserves auditor was the most explicit. Unknown were the exact size of the problem in Oman and SPDC (reserve studies starting up in first quarter 2003) and the LKH issue.

Any comments welcome.

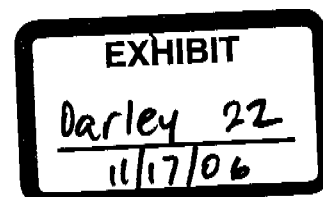


reserveswhat was
known.ZIP

Frank Coopman
Chief Financial Officer for EP
Shell International Exploration and Production B.V.
PO Box 60, 2280 AB Rijswijk ZH, The Netherlands

Tel: +31 70 447 4303 Fax: +31 70 447 5959
Email: Frank.Coopman@shell.com
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Version: 6.0.567 / Virus Database: 358 - Release Date: 24/01/2004





## **EP RESERVES APPROVAL 31/12/2002**

### **WHAT WAS KNOWN:**

#### **July 2002 CMD NFI – Reserves Outlook**

- Challenge to achieve 100% RRR in the next few years and maintain 3% production growth.
- "With the benefit on hindsight, some of the organic revisions made in recent years now appear somewhat aggressive: primarily Australia (Gorgon, struggling to reach maturity) and SPDC ....."
- Attachment 1g: "Hydrocarbon Resource Challenges by OU":
  - SPDC: "Increase production or extend license"
  - Australia: "Gorgon Stranded Gas, possible barriers to commercialisation"
  - PDO: "Challenge to yield Target production rates and hence delivery of reserves"
- And many others.....
- Attachment 3b: "Legacy / Premature Bookings":
  - SPDC (bookings with no subsequent growth in production rate)
  - Australia (Gorgon)

#### **03/10/2002 NFD to ExCom**

- Proposal to improve processes around Proved Reserves including a "Potential Reserves Exposure Catalogue". All Proved Reserves that could be under threat of de-booking in the event of "Failure to execute projects".
- "Scorecards" is seen to affect the objectivity of staff in some OU's when proposing Reserve Additions.
- Reserves Opportunities Catalogue
- Potential Reserves Exposure Catalogue
  - "Gorgon": Reason not to debook: "It is inevitable that a resource of this magnitude will be developed eventually".
- In addition reserves in some OU's would be at risk if planned production rate increase do not materialise. The OU's affected are SPDC Nigeria and Abu Dhabi. In addition OMAN PDO must sustain current production rates.....

**31/01/2003 : SPDC Hydrocarbon Reserves 2002 Submission**

- Standardized Measure (NPV Reserves): Signed by DPE- RES (P.G. Egele) and Finance Director. GFIM and SEC identical, no qualification.
- Oil and Gas Proved Reserves signed by DPE. RES (P.G. Egele), alone which is standard practice; no qualification.

**31/01/2003 : Review of Group End 2002 Proved Oil and Gas Reserves Summary Preparation**

From Group Reserves Auditor to Coopman / Brass  
Cc: ExCom, PWC, KPMG

- "Significant efforts made during 2002 towards further alignments of Group Proved Reserves with SEC and Group Reserves Guidelines".
- In spite of this a number of small items, not supported by present SEC or Group Guidelines: Russia, Italy, NAM, Oman, Kazakhstan: Total 197 mmboe plus PSC price effects (\$16/bbl)
- "The overall finding from the audit visits and from the end year review in SIEP is that there is a possibility of an overstatement of Group Proved Reserves Guidelines" in cases where booked reserves are not fully in accordance with SEC or Group guidelines.
- Gorgon ... "No Clear "Show Stoppers", there seems to be insufficient reasons to de-book Reserves already carried".
- "Ensure that OU's... in particular PDO and SPDC prepare proper composite field production forecasts.....".

**03/02/2003 : "Comfort" letters and attachment with qualifications including PSC's from Coopman/Brass to PWC / KPMG (copies to?).**  
5 areas, total 197 Mmboe + PSC's. Fully aligned with the Group Reserves Auditors' "Review of Group End 2002 Proved Reserves Summary Preparation".

**14/02/2003 : EP Business Assurance letter 2002 : EP CEO to MGDW.**  
Nigeria as an area of concern qualified in all policy and standard areas.  
No Reference to Oil and Gas Proved Reserves. At present there is no requirement to provide assurance on reserves other than via the sign-off of the reserves submission.

F. Coopman  
18/02/2004

---

**From:** Pay, John JR SIEP-EPS-P  
**To:** Darley, John J SIEP-EPT  
**CC:**  
**BCC:**  
**Sent Date:** 2003-12-18 20:06:49.000  
**Received Date:** 2003-12-18 20:06:15.000  
**Subject:** RE: Rockford: Bucket headings  
**Attachments:**

Difficult only in terms of coming up with a plausible explanation for non-compliance. I am still of a mind that honesty is the best policy - if our obligations for control and validation were not fully appreciated until the advent of Sarbanes Oxley (without which I don't think we would be having these discussions), we should say so and not try to invent reasons that we can easily be shot down on.

John Pay  
Group Hydrocarbon Resource Coordinator  
Shell International Exploration and Production B.V.  
Shell Exploration & Production International Centre  
Kessler Park 1, 2288 GS,  
PO Box 60, 2280 AB,  
RIJSWIJK-ZH,  
The Netherlands

Tel: +31 (70) 447 2547 Other Tel: +31 (0)6 5252 1964  
Email: john.pay@shell.com  
Internet: <http://www.shell.com/eandp-en>

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

From: Darley, John J SIEP-EPT  
Sent: 18 December 2003 21:01  
To: Pay, John JR SIEP-EPS-P  
Subject: FW: Rockford: Bucket headings  
Importance: High  
Sensitivity: Private

John,

I guess that we could make a start at some of these data for the big ticket items (Gorgon, Kazakhstan etc) , but may be more problematic for the Oman and Nigeria data.

John

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

From: Morrison, Tim TDR SI-FC  
Sent: 18 December 2003 19:33  
To: Darley, John J SIEP-EPT  
Cc: Coopman, Frank F SIEP-EPF; Deere, Bob SI-FCG; Hess, Beat W SI-LG  
Subject: Rockford: Bucket headings

EXHIBIT

Darley 23  
11/17/06

John,

We agreed to share bucket column headings & the attached table includes what I think we need (to add to your own!). The headings describe the data we would like to know about each item for decision making and for deciding how to handle constituencies.

Please note that it is not suggested that all fields are filled in and speculative reasons must be avoided.

For each set of reserves potentially requiring de booking

Basic data

Country [Name]

Reserves mmboe [nn.n]

Value characteristics (fixed margin, NPV etc) [Comment]

Non compliant [state whether with SEC regs, SEC guidance, Shell guidelines]

Reason for change of view [explanation]

Trigger for change [physical or economic facts, SEC guidance change, Shell guidelines change, audit]

Compliant when booked [Y/N]

Year became non compliant [DDDD]

Reason for not debooking in/since that year [explanation]

Date issue became known centrally (EP) [DDDD]

Means by which issue became known centrally (EP) [Explanation]

Is non compliance with SEC strict guidelines unique to Shell? [If no, state company]

Internal control issue [Does the need to debook indicate an internal control issue. If so, describe]

Disclosure control issue [Is there a disclosure control issue related to the change?]

Issue notified to external auditors [Date, means, also date & means of quantification if later]

Issue notified to CMD [Date, means, also date & means of quantification if later]

Issue notified to GAC [Date, means, also date & means of quantification if later]

Offsets (if there is a corresponding item which would reasonably offset the amount)

Offset [describe]

Nature [describe]

Amount mmboe [nn.n]

Rebookings

Potential imminent rebooking? [Y/N]

Reason for rebooking [explanation]

Same barrels? [Y/N]

Amount mmboe [nn.n]

Timing [DDDD]

Probability of success [Comment or POS%]

Tim Morrison

Group Controller

Shell International Ltd

Shell Centre, London SE1 7NA

Tel: +44(0)20 7934 5456

Email: tim.morrison@shell.com

Page 1 of 1

**Unknown**

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**From:** Darley, John J SIEP-EPT  
**Sent:** 03 January 2004 13:49  
**To:** Van De Vijver, Walter SI-MGDWV  
**Cc:** Coopman, Frank F SIEP-EPF; Bell, John J SIEP-EPS; Dahlin, Nicola C SIEP-EPS-D  
**Subject:** GAC - Presentation Material

Walter

attached file pulls together relevant material, some of which could be used to present the technical story at GAC if necessary.

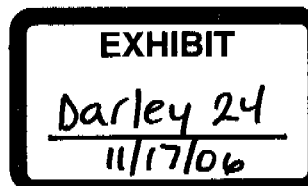
give me a call when you are ready to discuss.

John

John C. Darley  
Director - Shell Technology E&P  
Shell International Exploration and Production B.V.  
Volmerlaan 8, Postbus 60, 2280 AB Rijswijk, The Netherlands

**Tel:** +31704472580 2580 **Other Tel:** +31 655 125 466 (mob)  
**Email:** John.Darley@shell.com  
**Internet:** <http://www.shell.com/eandp-en>

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Incoming mail is certified Virus Free.  
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Version: 6.0.567 / Virus Database: 358 - Release Date: 24/01/2004



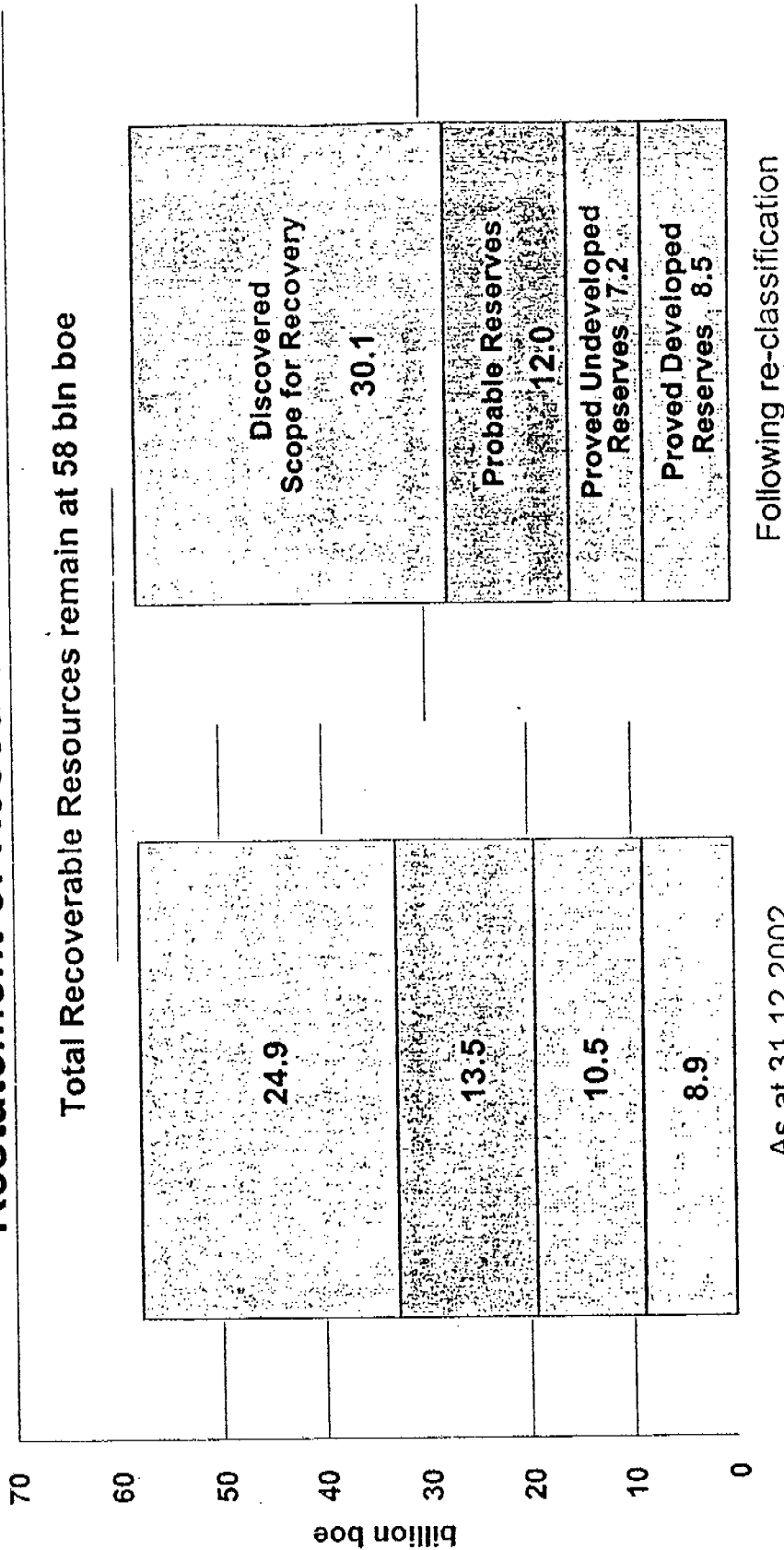
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19/02/2004

DB 03140

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# Shell Group Resource Base Restatement of Resources at 31.12.2002



DB 03141

V00022379

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Treatment Requested

EPS



# Summary, current status

| Country/Area         | Proved Resvs<br>1.1.2003 | Exposure Severity |            |            |             | Total D-F Total C-F | Debooking   |             | Revise<br>2003 |
|----------------------|--------------------------|-------------------|------------|------------|-------------|---------------------|-------------|-------------|----------------|
|                      |                          | A                 | B          | C          | D           | F                   | Restate     | Year        |                |
| SPDC (oil only)      | 2524                     | 974               | 274        | 535        | 60          | 681                 | 1276        | pre-2000    |                |
| PDO (pre-1012)       | 907                      | 442               | 72         | 75         | 69          | 249                 | 393         | 2000        |                |
| Gorgon               | 557                      |                   |            |            |             | 557                 | 557         | 1997        |                |
| PSCs                 | 296                      |                   |            |            | 296         |                     | 296         | 1998 - 2002 | 300            |
| LKH                  | 300                      |                   |            |            | 300         |                     | 300         |             | 75             |
| Kashagan             | 380                      |                   |            | 75         | 305         |                     | 305         | 2002        |                |
| NAM Waddenzee        | 25                       |                   |            |            | 25          |                     | 25          | 1999        |                |
| Italy - Tempa Rossa  | 25                       |                   |            |            | 25          |                     | 25          | 2002        |                |
| Ireland - Corrib     | 47                       |                   |            |            | 47          |                     | 47          |             | 47             |
| Ormen Lange          | 109                      |                   |            |            | 109         |                     | 109         | 1999        |                |
| SPDC Domestic Gas    | 115                      |                   |            |            |             | 115                 | 115         | pre-2000    |                |
| Brunei               | 315                      |                   |            | 62         | 253         |                     | 315         | 1998-2002   |                |
| Venezuela            | 109                      |                   |            |            | 109         |                     | 109         | 2000        |                |
| SNEPCO               | 46                       |                   |            |            | 46          |                     | 46          | 1997-1999   |                |
| Pohokura             | 36                       |                   |            |            |             | 36                  | 36          | 2000 - 2001 |                |
| Gjoa                 | 31                       |                   |            |            |             | 31                  | 31          | pre-1999    |                |
| Balance of portfolio | 13526                    |                   |            |            |             |                     |             |             |                |
| <b>Total</b>         | <b>19348</b>             | <b>1416</b>       | <b>346</b> | <b>747</b> | <b>1644</b> | <b>1669</b>         | <b>3313</b> | <b>4060</b> | <b>422</b>     |

## Compensating effect on 2003 relative to Nov LE

|                                                                       |             |
|-----------------------------------------------------------------------|-------------|
| Ormen Lange                                                           | -109        |
| Tax/Royalties                                                         | -100        |
| Tax-Paid PSCs                                                         | -100        |
| <b>Total</b>                                                          | <b>-309</b> |
| <b>Net (positive number indicates a negative revision to 2003 LE)</b> | <b>113</b>  |

DB 03142

EPS

V00022380

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Treatment Requested

# Reconciliation: potential non-compliance

|                                         | October   | Now       |
|-----------------------------------------|-----------|-----------|
| Of concern in October:                  |           |           |
| Gorgon                                  | 557       | 557       |
| Ormen Lange                             | 109       | 109       |
| Italy - Tempa Rossa                     | 25        | 25        |
| NAM Waddensee                           | 25        | 25        |
| Brunei legacy (to be further clarified) | 20        | 20 (1277) |
| LKH                                     | 300       | 300       |
| Sub-total                               | 1036      | 1036      |
| Of potential concern in October:        |           |           |
| PDO (pre-2012)                          | up to 450 | 393       |
| Abu Dhabi                               | 117       |           |
| SPDC (oil only)                         | ca 220    | 1276      |
| PSCs                                    | 296       | 296       |
| Sub-total                               | 1083      | 1965      |
| Added since October:                    |           |           |
| Kashagan                                |           | 380       |
| Brunei other (to be further clarified)  |           | 295       |
| Corrib                                  |           | 47        |
| Rest of portfolio                       |           | 337       |
| Total                                   | 2119      | 4060      |

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**Following slides show storyline on the  
historical perspective**

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## Historical Perspective

- Since 1973 the Group has applied its own internal guidelines for 'proven' (and expectation) reserves estimation
  - Based initially on probabilistic procedures for all fields
  - Different from petroleum industry which used 'deterministic' methods
  - In 1998 amended to deterministic estimation for mature fields
- In 1979 (SEC's ASR-257) the Group declared that its internal 'proven' estimates were equivalent to SEC 'proved' reserves
  - SEC/FASB 'proved' reserves definitions were sufficiently flexible to make this proposition largely valid
  - Exceptions (e.g. 'proved area', PSCs) recognised but not seen as material
  - Nature of Group's guidelines was known in industry (via SPE)
  - Group 'proved' reserves were never challenged by SEC until 2002/3

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## Historical Perspective (2)

- In 1998 the Group revised their Reserves Guidelines for mature fields
  - Proved developed reserves should be close or equal to expectation
  - Proved undeveloped reserves should be based on deterministic (not probabilistic) evaluations
  - Net result is a significant increase in Group proved developed reserves (+900 MMboe over 1998-99)
  - Proved undeveloped reserves remained largely unchanged
- Guidelines Changes were part of a significant drive towards increasing proved reserves during 1997-2000
  - Proved reserves targets in score cards resulted in e.g. aggressive attempts at booking additional reserves (e.g. Gisco, Angola, SNEPCO)
  - Pressure on staff to obtain a proved reserves replacement ratio (RRR) of 100% (particularly in 2000)

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## Historical Perspective (3)

- **SPDC:**
  - Additional proved reserves booked by SPDC (+1000 MMBbl in 1998-99) relied on aggressive assumption of doubling of production (to 2 MMB/d) before licence expiry in 2019
  - Proved liquids reserves were 'frozen', not de-booked, when aspired production increases did not materialise
  - This 'freezing' detached the SPDC corporate proved reserves from individual field proved reserves, thereby removing the audit trail
- **PDO:**
  - Aggressive additional reserves booking in 2000, reflecting the then prevailing view of a continued plateau production at 850 Mb/d (in hindsight too optimistic)
  - Proved liquids reserves were 'frozen', not de-booked, when severe production decline set in during 2001
  - As in SPDC, this 'freezing' detached the PDO corporate proved reserves from individual field proved reserves, thereby removing the audit trail.
- **Loss of proved reserves discipline and audit trails in SPDC (1998-2003) and PDO (2000-2003) now require major de-bookings**

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## Historical perspective (4)

- SOC applies SEC rules consistently. WOUSA more relaxed.
- SPDC and PDO Oman hunting for Reserve Addition Bonuses in the Nineties.
- Focus on Expectation rather than Proved reserves.
- Lack of quality technical work.
- Optimistic production forecasts.
- Top down pressure to book reserves.

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## Historical Perspective (5)

- SEC issued 'Guidance' in 2001, clarifying their (re-)interpretation of existing SEC/FASB rules
  - No recognition of significant technology progress since 1979 (e.g. wireline testing, seismic, simulation)
  - Significantly stricter interpretation of rules in several areas:
    - Wireline formation tests not seen as sufficient proof of producibility
    - Requires absolute proof of producibility in large sparsely appraised fields ('proven area', 'continuity of production')
    - Requires project 'commitment' (DOC, AFE, FID, etc) before proved undeveloped reserves can be booked
- This Guidance was followed by correspondence between SEC and Shell during 2002-2003 expressing even stricter views:
  - 'No proved reserves below LKH under any circumstances' (arguably not in agreement with 2001 Guidance)

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## Historical Perspective (6)

- Group reserves guidelines were updated only gradually after 2001
  - Severe discontinuity of staff in Reserves Coordination during 2001-2002, making 2001 a 'lost' year
  - Tighter guidelines issued in early 2003
  - "Project commitment" now interpreted as FDP/VAR3/FID for small/medium/large project
- Full magnitude of exposure of Group proved reserves to stricter SEC interpretations did not become apparent until November 2003
  - Some exposures identified earlier and flagged in 'Exposure Register' (Excom informed)
  - De-booking held pending (also to avoid reducing RRR!)
  - Reserves audits and follow-up work in SPDC, PDO in late 2003 showed significant exposure vav maturity of future development projects (lack of progress towards FDP/VAR3/FID)
  - Yearend 2002 position in line with SEC rules based on the information available at that time.
  - Total of exposed Group proved reserves volumes now seen as untenable

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Following slides show overview of  
resources and history of reserve additions,  
with specific examples for SPDC and PDO.

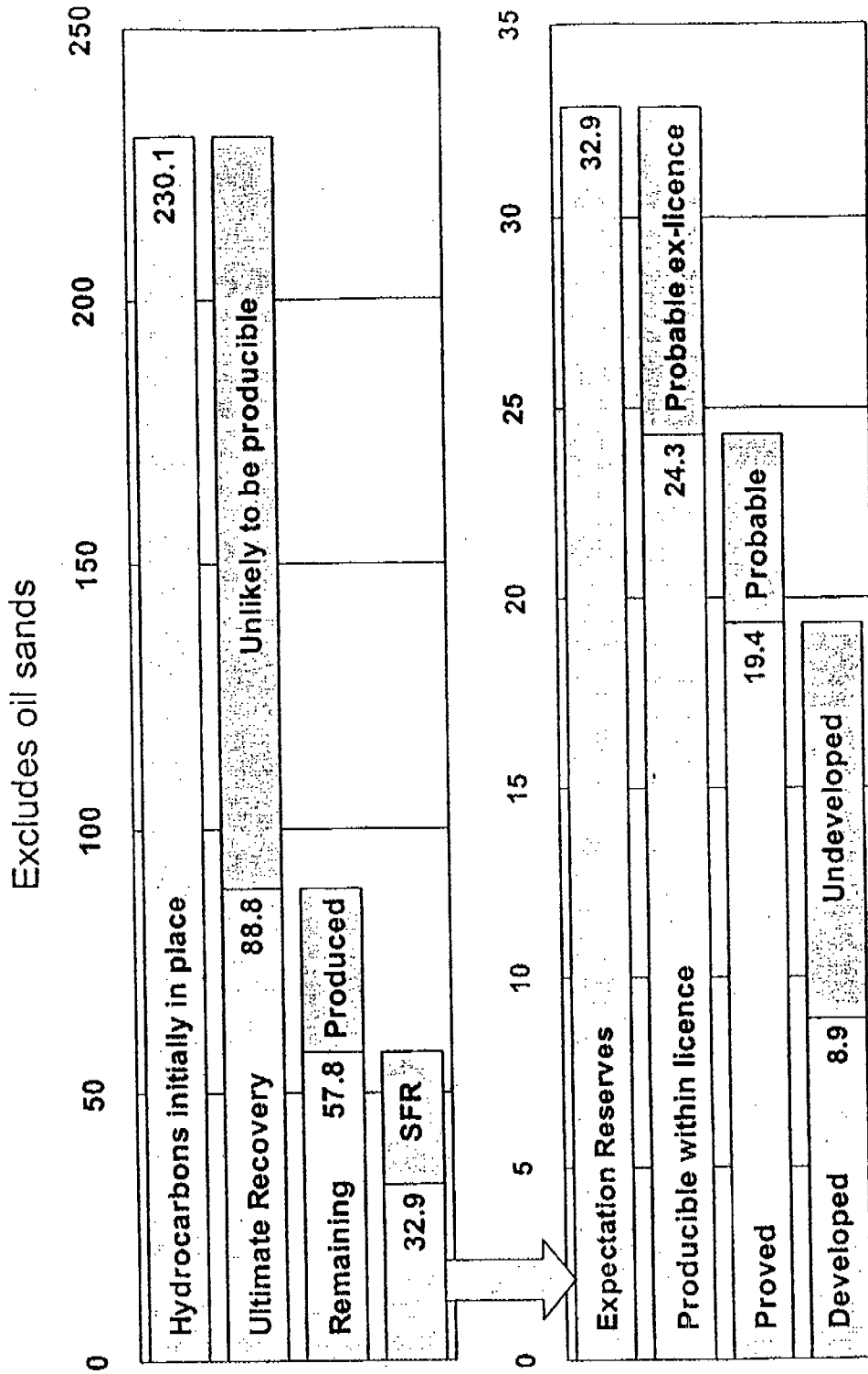
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# Group Resource Overview (bln boe)



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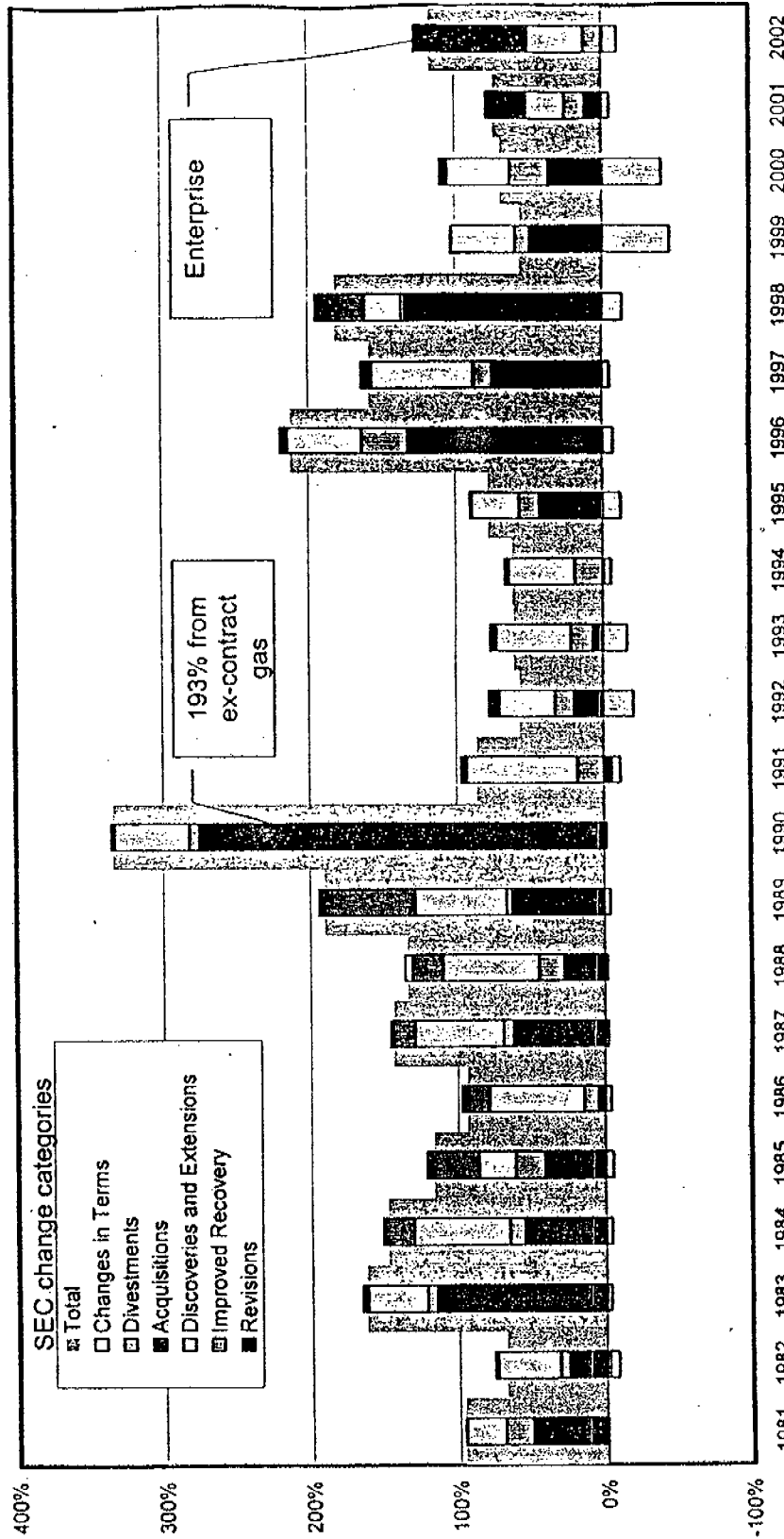
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# Reserves Replacement

Proved Reserves Replacement Ratio



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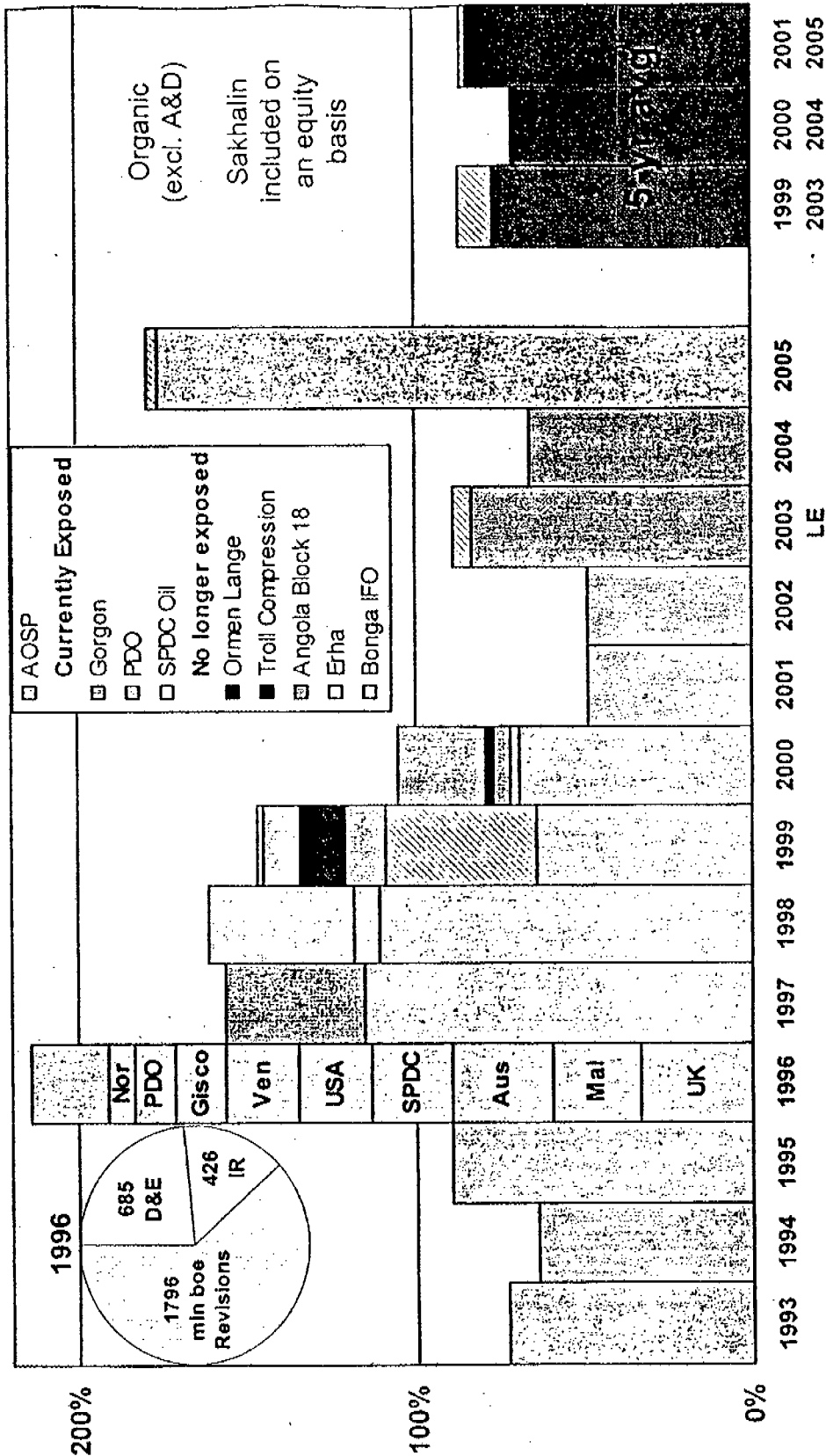
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# Recent Reserves History and Near Term Forecast

Current potential exposures and earlier (now addressed) exposures are highlighted



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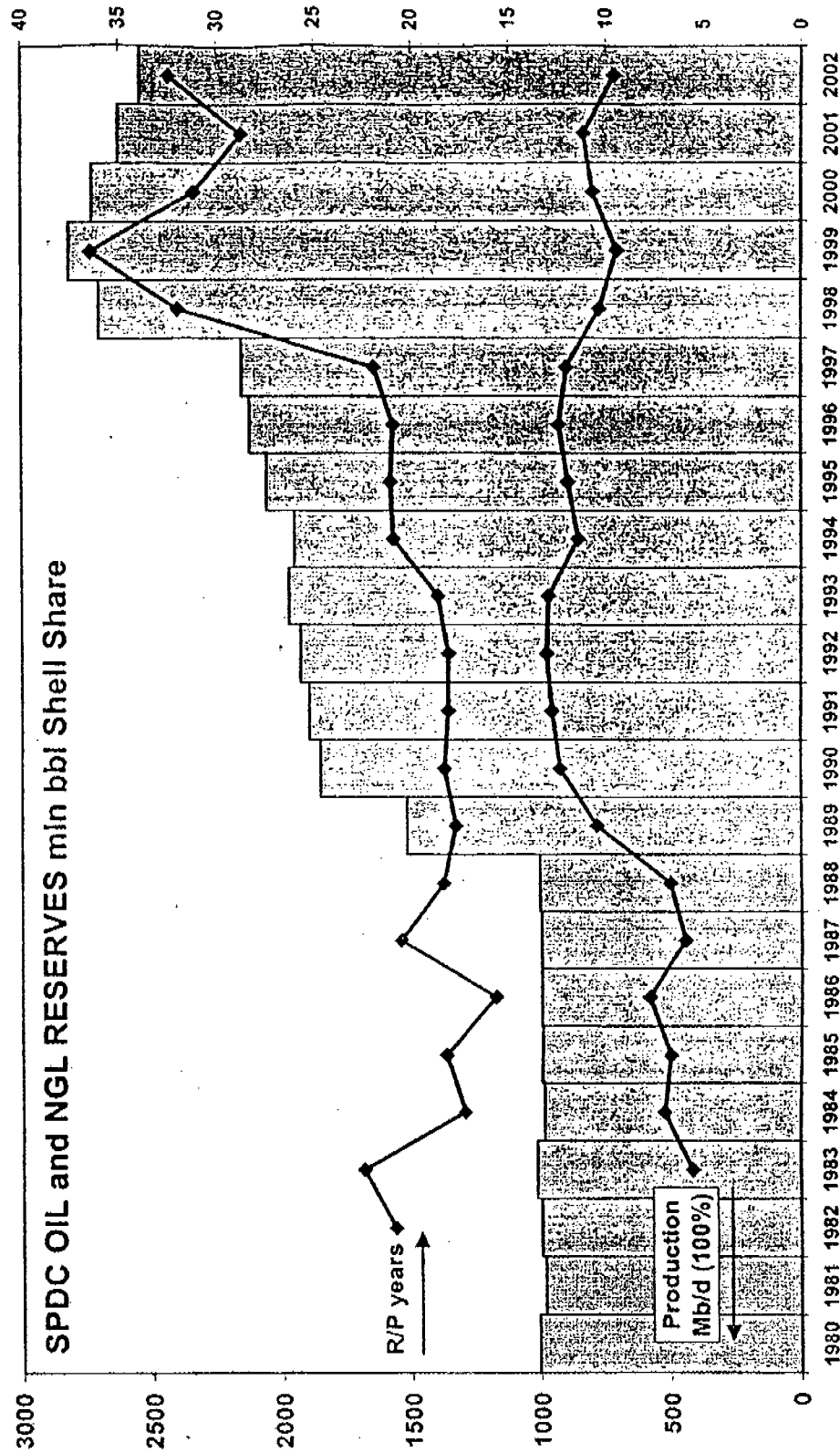
18

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# SPDC Oil and NGL Reserves As currently booked



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