

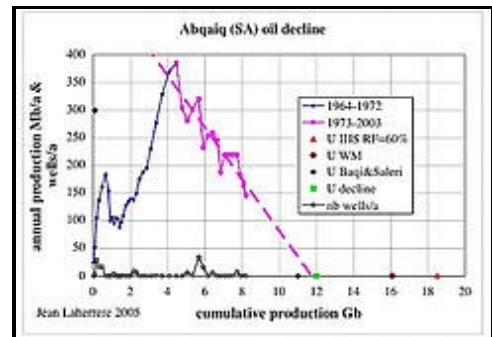


Twilight in the Desert

Posted by [Heading Out](#) on June 13, 2005 - 9:14am

Topic: [Alternative energy](#)

As it happened, a colleague dropped by just as I was finishing Matthew Simmons new book, *Twilight in the Desert*. He seemed a little interested in the topic of oil supply, which was relatively new to him, and so I started chatting to him about it. At the end I was tempted to loan him my copy of the book. Then I realized that, without putting some of the subject matter in a somewhat broader context than the book covers, that he would be unlikely to realize the full scale of the problem that is revealed methodically and inexorably, as this well-written book goes through the Saudi Arabian oil story. And so I'll loan him another one first (probably one of Kenneth Deffeyes two).



[Abqaiq production Laherrere Lisbon](#)
Originally uploaded by [Heading Out](#).

And that is, in the end, the only quibble that I have about this book. It does not explain in sufficient detail what the results of the effort mean to the rest of the world. We are at a time when the Russian production levels of oil are stalling before beginning to drop again, when the countries of South America are seeing their major fields go into decline; where China, India, Europe and the United States are searching for new reserves to meet their growing needs, and where the North Sea and North Slope oil production sink further and further into depletion.

Forget the increasingly irrelevant arguments about the proper mathematical descriptions for the true shape of Hubbert's Peak, the blunt truth, regardless, is that the world needs to find supplies for additional volumes of oil. And in this time of growing need, the world has, in their still fleeting awareness of the problem, increasingly assumed that the OPEC countries could save our global oil-based economy. More particularly that Saudi Arabia would play the hero that it has before, and ride to the rescue by providing new quantities of oil to meet our growing demand.

Starting with the founding of the modern country, Mr Simmons shows how the Saudi Arabian oil industry grew, and most particularly, how the individual oil fields were found and developed. And then he goes on, and in the most critical part of the book, takes the data from published scientific papers on those fields, and explains the production problems that can arise in the later stages of their development. And for some of the major oil fields (globally as well as nationally) of Saudi Arabia we are now at those latter days of production. Abqaiq, the "Dowager Queen" of the oil fields was discovered in 1940, began production in 1946, and is now more than 70% depleted. The Ain dar/Shedgum regions, the most prolific portions of the Ghawar field, the King of Kings of all oilfields, began production in 1951 and are over 60% depleted.

In itself this is a concern because it would normally signify that production would be declining rapidly all across the fields. But by introducing a new design of oil well extraction, that of the maximum reservoir contact (see [June 11 entry](#) for a picture) the Aramco engineers that are

working the field have been able to extract more and faster than has previously been possible at this stage in an oilfields life. But in doing so they are accelerating oil removal and creating increasing problems in keeping the wells producing oil, rather than the water that they are pumping into the field underneath the oil to keep it flowing under pressure (see [picture on June 1](#)). In order to get more oil out the engineers have turned the wells horizontally through the green oil zone, increasing well exposure and increasing production – this is explained a bit more [in the May 16 entry](#)).

It is a little difficult to explain to those not familiar with geology what the problems that are starting to appear really mean, and in this sense the book could have done with a few more illustrations – they are after all in the pdf files of the lectures that the author is giving on the subject (see the Articles by Matt Simmons site on the blogroll). But the concerns are steadily, and in progression, detailed. And although, it is a geologist's argument it is clear enough to be followed to its grim conclusion. And because it is so detailed, and uses published information and opinions from Aramco engineers and scientists to make the case, it becomes credible, understandable and difficult to refute.

In previous times when the world needed additional oil, Saudi Arabia had fields that had been developed, but were then "shut in" since demand was not there for the oil. Those days are largely over and all the fields that have been developed are, for the most part, at current maxima in production. Greater levels of supply will require a greater number of wells be drilled in existing fields, and the development of new fields. Outside of the new production planned (see [June 2 entry](#)) which may well barely replace the depletion rates of the older fields, Matt Simmons explains why it is going to be very difficult, if it is possible, to make the projected numbers. It is a detailed argument and has to be read with some diligence to be fully understood. But when finished, you will understand the concerns that he has raised, largely alone, that question the reassurances that come, with some frequency, from Riyadh.

Arabian stallions are beautiful horses, but alas Matt Simmons shows that in this real story that we should not expect that they will carry some Omar Sharif* type who will come, riding out of the desert, to the rescue this one last time.

(*Revisiting the David Lean version "Laurence of Arabia" might give you some idea of the country and the severe problems that are described in putting in some of the wells and supporting structure out in that desert. And yes I know that Omar Sharif was born in Egypt, but it was a very powerful image in the movie).



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