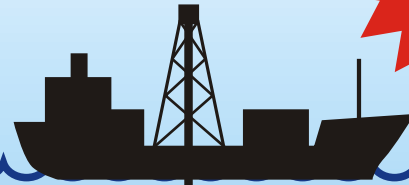


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A new  
study for  
2004



# DEEPWATER RESERVOIRS

**Lessons  
learned from  
exploration  
and field  
development  
projects**

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## Deepwater Reservoirs-Exploration and Development

Exploring for deep-water plays tops the agenda of many E&P companies because it offers unrivalled potential for new reserves in underexplored or unexplored basins. Potentially large field size and superior sand quality, reservoir connectivity and well performance are the key factors that encourage oil companies, both large and small, to attempt deep-water exploration. At the same time, deep-water plays also pose significant technical challenges and risks that undermine their upside potential. Key exploration issues are often tied to the unproven source rocks, prediction of sand fairways and sandbody connectivity and continuity. High drilling and development costs raise the economic threshold to a point that only the largest prospects can be drilled. Once a discovery is made, reservoir delineation, development strategy, choice of EOR techniques, and the optimum number and type of wells needed to drain the reservoir all impact the bottom line of the project and are critical for smaller marginal discoveries.

C&C Reservoirs has so far completed 110 deep-water reservoir case studies. Each case study is presented in a comprehensive reservoir evaluation report that covers exploration history, basin evolution and petroleum systems, structure, trap mechanism, stratigraphy, depositional facies, reservoir architecture, rock and fluid properties, development strategies, reserves and production, recovery mechanism, reservoir management and EOR techniques. These fields come from more than 30 basins worldwide, and nearly half are in present-day deep-water settings. Here, “deep-water” denotes the environment of deposition of the reservoir and not the bathymetry of the present-day field location.

In 2004, C&C Reservoirs completed its E&P Treatise on Deep-water Reservoirs—Exploration and Development, which is based on these deep-water case studies, integrated with public-domain data. Taking a largely empirical approach, the Treatise presents a global analysis of the key geological and hydrocarbon production characteristics of deep-water siliciclastic reservoirs. It is intended as an aid to decision-makers, explorationists, development and production geologists, and reservoir engineers.

The Treatise initially considers the exploration and development aspects of deep-water reservoirs from a global perspective. Then, it focuses on exploration and reservoir characteristics of deep-water reservoirs within three principal basin types—passive margins, transform margins and intracontinental basins—covering exploration histories and technologies, basin development, petroleum systems and traps, the nature of deep-water depositional systems, and reservoir characterization aspects, including seismic expression, depositional processes and facies, reservoir architecture and development implications. Seismic characterization in the Gulf of Mexico and the North Sea is given detailed treatment, with a catalogue of synthetic seismograms generated from 28 discovery wells. The Treatise concludes with a review of development and production aspects of conventional-oil, heavy oil and gas/gas-condensate fields, respectively, concentrating on those in present-day offshore locations.

The E&P Treatise on Deep-water Reservoirs—Exploration and Development is now available digitally on CD-ROM and in Web-deliverable format.

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