

2nd Variable: **C**

Kelkar's Survey of GoM: Middle Value of 3 and "extreme" "High" Value of 10

Water-Flooding Incremental Oil Recovery Study in Middle Miocene to Paleocene Reservoirs, Deep-Water Gulf of Mexico

Bin Liu, Richard Dessenberger, SPE, Kenneth McMillen, SPE, Joseph Lach, SPE, Knowledge Reservoir LLC, Mohan Kelkar, SPE, University of Tulsa

SPE 115669

Water-Flooding Incremental Oil Recovery Paleocene Reservoirs, Deep-Water Gulf of Mexico
Bin Liu, Richard Dessenberger, SPE, Kenneth McMillen, SPE, Joseph Lach, SPE, Knowledge Reservoir LLC, Mohan Kelkar, SPE, University of Tulsa

Copyright 2008, Society of Petroleum Engineers

This paper was prepared for presentation at the 2008 SPE Asia Pacific Oil & Gas Conference and Exhibition held in Perth, Australia, 13-15 October 2008.

This paper was selected for presentation by an SPE program committee following review and recommendation by the Society of Petroleum Engineers and was subject to correction by the author(s). The copyright for this paper remains with the author(s). This paper includes abstract and conclusions that are subject to correction by the author(s). This paper is part of the SPE International Journal of Oilfield Economics and Production.

Abstract

Many deep-water Gulf of Mexico discoveries of the past five years (Magnus, K-2, Thunder Horse, Ikonos, Great White, Trident, St. Malo) Paleocene reservoirs are characterized by high pressure and steeply dipping reservoirs exhibit high primary oil recovery due to significant rock compression to suppress reservoir drive energy. Improve oil recovery in development planning for the same, ultra-deep Gulf production experience to use as guidance.

The purpose of this study is to provide a risk-based estimate of the oil recovery. A parametric simulation study was performed using water-flooding in ultra-deep Tertiary reservoirs in the Gulf of Mexico primary and water flood creation, based on the selected secondary flood oil recovery rates generated from the simulation results. Static equations. By comparing the simulation results for two year production per acre higher than no-injection case based on PVO estimates.

Introduction

Many deep-water Gulf of Mexico (GoM) discoveries of the past five years are in water depths greater than 4,000 feet and in

older Tertiary reservoirs of middle Miocene to Paleocene age (water depths include compressional tectonics, turbid structures and oil these reservoirs are highly compressionalized by faulting. In this oil production drive mechanism, and aquifer support (possibly segment Primary and permeability decrease is related to greater burial depth, compression. Older middle Miocene to Paleocene reservoirs in GoM.

- Reservoirs are often at greater subsurface depths (10,000 to 20,000 feet).
- Reservoirs often have high pressures (>11,000 psi) and steeply dipping.
- Turbidite deposition was in confining basin floor fans, i.e., seismic imaging is poor due to allochthonous over-lying.
- Reservoirs are consolidated, resulting in lower rock compaction.
- Increased diagenesis in sands with volcanoclastic components.
- Paleocene reservoirs often have poorer porosity (<15%) and lower permeability.
- Primary recovery factors are expected to be low due to the

For each parameter, high and low **extreme** values and medium value are determined according to the extensive study on lower Tertiary reservoirs in GoM

Parameter	Low	Medium	High
Rock Comp (10E-6 1/Psi)	1	3	10