

PS Geologic Framework for the Tengiz and Korolev Isolated Carbonate Platforms, Kazakhstan*

By

Paul M Harris¹, Raymond A Garber¹, and Michael E. Clark²

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¹Chevron Petroleum Technology Company, Houston, TX; currently ETC, Chevron, San Ramon, CA, USA. (MitchHarris@chevron.com)

²Tengizchevroil, Tengiz, Kazakhstan

Abstract

Cross-sections and maps constructed from seismic, core, log and biostratigraphic data from the giant Tengiz and Korolev fields of Kazakhstan indicate many important aspects of the geologic framework for these Carboniferous isolated platform carbonates.

Timing of Platform Growth - The upbuilding of the platforms may have begun in the Tournaisian and was accentuated greatly during Early Viséan time. Subsequent deposition further added to the relief of the platform margins.

Variations in Platform Size - The area covered by the platforms diminished through time as younger margins backstepped. The reduced platform size may be one reason that the platform tops are dominated by ooid grainstones in the Bashkirian.

Stratigraphic framework - A hierarchy of cycles, sequences, and composite sequences is developed for the Bashkirian, Serpukhovian, Viséan (Oksky), Viséan (Tula), and Tournaisian (Tula). The stratigraphic framework, although not finalized, explains many aspects of the reservoir quality.

Depositional Facies - A reef environment, although localized to a very narrow belt within the platform margins, sourced significant amounts of debris to the platform flanks. Steep slopes were apparently maintained on the flanks for much of the platform history. Grainstones and packstones, which are widespread across the platform tops, are the principal reservoir facies.

Karst - Karst zones associated with several sequence boundaries equate with higher porosity zones, and one karst horizon is related directly to a high-productivity zone.

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PAUL M. (MITCH) HARRIS and RAYMOND A. GARBER, Chevron Petroleum Technology Company, Houston, TX
MICHAEL E. CLARK, Tengizchevroil, Tengiz, Kazakhstan

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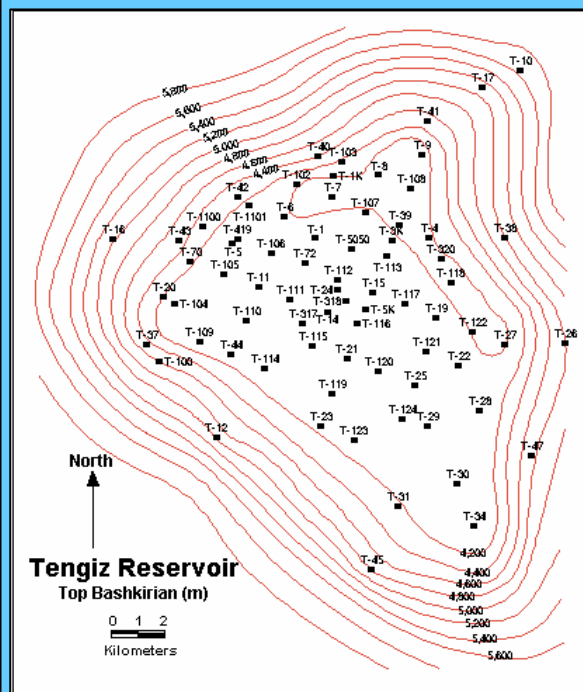
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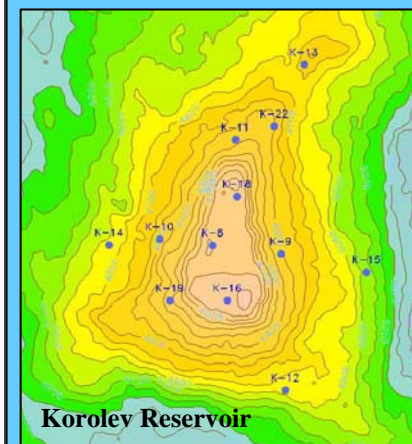
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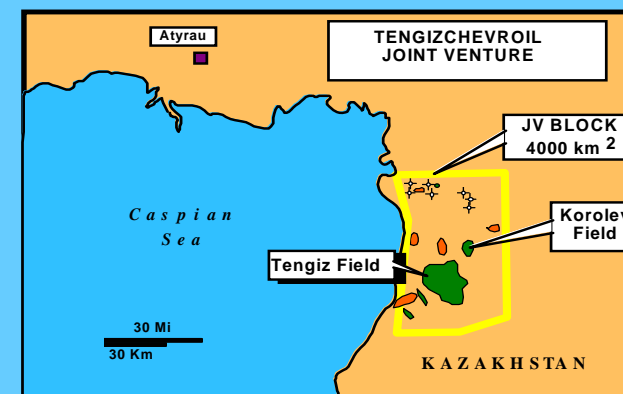
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Field Maps



Regional Setting



TENGIZ STRATIGRAPHIC MODEL

