

# Interpolation, PSTM, AVO, and a Thin Gas Charged Viking Shoreface in West Central Alberta

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## Abstract/Excerpt

Exploration and development of the Viking in West Central Alberta is challenging because this prolific zone is deep, structured, and very thin relative to tuning thickness. It represents an attractive economic prize, but even on the extensive 3D coverage that exists in the area, reservoir quality indicators such as porosity-thickness (Phi-H) are difficult to accurately predict. We attempted to exploit the AVO response of the gas charged zone on migrated gathers to obtain a more accurate estimate of Phi-H. A coarse 3D geometry led to the need to use a 5D interpolation prior to migration to minimize the migration artifacts that arise due to the insufficient sampling of the seismic wavefield. This interpolation migration flow was the most effective flow relative to other methods tried on this data, and represents an important new paradigm for land AVO analysis. This assertion is validated by 29 well ties and the resultant maps which are consistent with the structural erosional model of the Viking.