

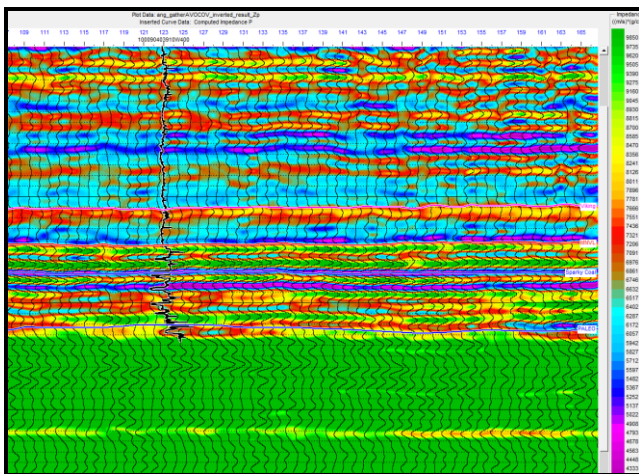
## Enhanced Data Quality Through 5D Interpolation, Pre-Stack Time Migration for Stratigraphic Targets, Provost, AB

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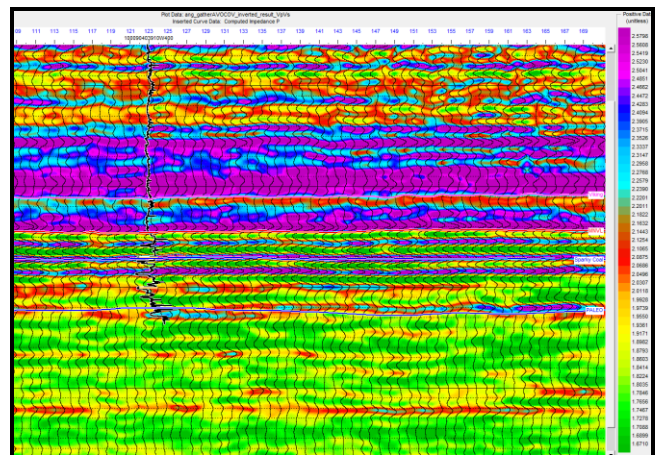
Imaging has been a challenge in Provost due to thin, stratigraphically discontinuous targets and irregular acquisition geometries. New processing methodologies, such as 5D interpolation pre-stack, increases spatial sampling density to improve the Pre-stack time migrated images while preserving azimuthal and offset amplitude variations

In the past three years, Prestack time migration (PSTM) has been applied to all Provost datasets. However, the effect of sparsely sampled wide-azimuth land data causes fold fluctuations and holes in coverage compromising the Pre-stack time migration results. The benefits of using 5D interpolation (inline, crossline, azimuth, offset and frequency) can improve images by reducing geometry-related migration artefacts by filling in gaps and increasing fold. It also generates cleaner, regularly populated pre-stack gathers with preserved AVO characteristics for reservoir characterization.

In the Battle River and Hamilton Lake Fields, 3D seismic surveys were acquired in 2010 to include in a reservoir characterization study of each pool. The improvements in pre-stack data quality have improved the rock property analysis for geological modelling in Petrel.



ZP



VP/VS Ratio