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The Use of Acoustic Impedance in Evaluating the Tournaisian Reservoirs in Block 405a - Algeria

A petroacoustic study of the wells in the MLN field and its satellites was carried out in summer 1999. The objective was to condition the log data for use in inversion of the MLN 3D seismic volume, and to determine if petrophysical parameters could be related to Acoustic Impedance. A Constrained Sparse Spike Inversion (CSSI) was performed on the MLN 3D seismic dataset in May-July 1999. The results of this work indicate that the Tournaisian reservoir sands can be 'seen' on the AI volume.

Detailed mapping of the top and base of one reservoir interval has allowed porosity, gross thickness and effective pore column to be predicted across field areas improving both well location selection and interpretation of earth models for input to reservoir simulation. Examples will be given. The predicted reservoir connectivity has been investigated by long-term production, interference tests between appraisal wells.