

FORMATION PRESSURE PREDICTION USING SEISMIC INVERSION TECHNIQUE IN MARI GAS FIELD, CENTRAL INDUS BASIN, PAKISTAN

Mirza Naseer Ahmad¹, Tufail Khoso², Muhammad Shifaat Alam², Shahazad Amin¹, and Muhammad Saqib¹

¹*LMKR, Islamabad, nmirza@lmkr.com, samin@lmkr.com, msaqib@lmkr.com*

²*Mari Gas Company Ltd, Islamabad, t_khoso@marigas.com.pk, mshifaat@marigas.com.pk*

Knowledge of the distribution of pore pressure is one of the key parameters required for safe and economical drilling. Apart from direct pressure measurements from wells, several technologies developed in different earth science disciplines exist to predict variation of subsurface pore pressure. In the present article, a workflow is designed for the prediction of formation pressure using Seismic Inversion techniques.

Present study is conducted in different geological formations of Mari Gas Field of Central Indus Basin, Pakistan. Drilling data was analyzed to determine pressure data at borehole locations. The relationship was established between formation pressure data & seismic velocities at well locations. Further, this was applied on velocities obtained from seismic inversion method. The predicted formation pressure is in good agreement with actual data at well locations. The designed workflow can also help to predict formation pressure in geologically complex area such as Upper Indus basin of Pakistan.