

Time-Lapse (4D) Seismic Monitoring - Expanding Applications

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Abstract

This paper highlights the increasingly varied application of 4D and how this is achieved. We are now able to quantitatively monitor pressure injection signals, pressure depletion (compaction) signals, and in many cases, accurately separate the effect of pressure changes and saturation changes. This has been enabled by world-leading marine 4D repeatability (NRMS noise as low as 7%), sparse acquisition systems (enabling high quality 4D from 10 fold data), cheap acquisition (making offshore well decisions from \$300 000 swaths), and from intense effort in simulator synthetic and geomechanical modelling.