

Controlled-amplitude, controlled-phase broadband processing of a 3C/3D Oklahoma dataset

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Summary

Between May and October 2014, a 603 mi² 3C/3D Vibroseis survey was acquired in the Loyal and Kingfisher area of Oklahoma. Final processing of PP PSTM data volumes was completed by March 2015, and final processing of PS PSTM data volumes was completed by July 2015.

The objective of the processing was the production of high-resolution 3C/3D seismic volumes and gathers for reservoir characterization analysis. The figure below shows an example of the high-quality, broadband PSTM images that were obtained. The amplitude spectra were computed from the primary zone of interest in the data (blue boxes).

The presentation will include discussion of all the important steps in the processing that affect high-fidelity simultaneous and joint inversions: deconvolution, scaling, phase estimation and control, noise attenuation, multiple attenuation, Q-compensation, velocity analysis, 5D-interpolation, PSTM, anisotropic NMO, shear-statics compensation, vertical and effective Vp/Vs estimation, shear-wave splitting analysis and compensation.

