

Using Seismic Inversion to Map Sand Porosity / Quality in the Delaware Mountain Group, Eddy County, NM

Jasha Cultreri
Geophysical Consultant.

Seismic trace inversion can be used to provide a qualitative look at sand porosity in the Delaware Mountain group Brushy Canyon interval. A close look at the correlation between well logs and seismic trace inversion is presented.

A very brief review of the Delaware sand is followed by an examination of seismic trace inversion explaining what it is, how we get it, and some limitations and pitfalls.

A methodology for calibrating seismic trace inversion is presented showing how each well log in the survey is tied to the inversion, and how the inversion is presented to best tie the well logs.

Mapping of one Brushy Canyon sand is shown along with results of a horizontal well drilled to test the target sands on the inversion. The inversion results are tied to oil and gas shows on the mud log. Resolution of the inversion is compared to the well logs and to the wiggle trace seismic data.