

VSP Analysis at the Ross Lake Heavy Oilfield, Saskatchewan

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Abstract/Excerpt

In June 2003, the CREWES Project, Husky Energy Inc., and Schlumberger Canada conducted a multi-offset VSP survey at Ross Lake oilfield, Saskatchewan. This paper describes processing two of the data sets with vibrator source offsets of 53m and 400m. The processing results have a frequency bandwidth from 10Hz to 90Hz. The corridor stack (from 53m offset) ties the offset section (from 400m) nicely as well as the synthetic seismogram generated from wireline log data. Q values for both P wave and shear wave were also estimated through spectral ratio method. We extracted Q_p values from 28 to 51 over the interval of 450m to 1000m and Q_s values from 6 to 22 over the interval of 200 to 800m. Observed velocity dispersion across the spectrum from sonic to seismic frequencies is consistent with the previous Q values.