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***Acquiring Seismic Data In An Era Of Resource Plays And Increasing Energy Prices***

Increasing prices for oil and natural gas have ‘fueled’ changes in the way seismic data are acquired in the Rockies. Just a few years ago, our industry was focused on using seismic data to reduce drilling risk, but the demand was for the cheapest data possible. Nowadays, the emphasis is on data expediency and data quality. This is particularly true in areas of ‘resource play’ development.

The geologic nature of resource plays tends to involve reservoir variations that are quite subtle in terms of seismic imaging. Furthermore, drilling locations chosen without the benefit of seismic data are often productive – just not optimal. Locating the optimal porosity and permeability requires new levels of seismic resolution and data density. Some of the physical tools being used to acquire improved data are 1) high channel count systems, 2) single sensor recording, and 3) multi-component sensors. These tools can be deployed in ways that preserve high frequency signal while simultaneously characterizing source-generated noise for its subsequent removal.

In addition to better data, the oil/gas industry is demanding faster data. Traditionally, the biggest hurdle to data expediency in the Rockies was the lengthy permit process for public lands and the short acquisition window determined by weather, raptor nesting, winter range, etc. Crew availability has now added to that list.