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Pushing the limits of the Montney at Gold Greek – from seismic to stimulation

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Part 3 - Summary

Hydraulic fracturing of unconventional resource plays has become the norm across the western Canadian sedimentary basin. Advances in engineering technology has resulted in longer laterals, higher tonnage and closer spacing as companies attempt to maximize recoverable hydrocarbons. Correspondingly, the role of seismic data for optimizing unconventional resources has become increasingly technically demanding. In addition to the specialized geophysical processes, integration with other data sets becomes critical to asset optimization. Like most datasets, seismic in isolation is limited in its interpretation power. However, combining various sources of seismic, geologic and engineering data can establish a geologic model with production relevance addressing fracture geometries and flow performance.

During this session, we'll show how seismically guided 3D geocellular models were used to build a more confident description of the sub-surface. The team at Velvet incorporated, not only log data, but valuable information from core analysis, NMR data and FMI interpretation to build a picture of in-situ reservoir properties. Advanced seismic imaging techniques have facilitated the delivery of full azimuthal attributes into the model, which enhances our understanding of the stress state of the reservoir. Microseismic data and dynamic hydraulic fracture modelling has allowed us to visualize the rock response to hydraulic fracturing parameters and to ground truth our interpretations.

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