

The Effects of Faults and Fractures on Microseismic in Horn River Basin Shales

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Abstract

Hydraulic fracturing of wells in unconventional shale reservoirs creates fractures but also has the potential to reactivate pre-existing faults. When this occurs, microseismic events in fault zones take on unique characteristics. Parameters that are explored include magnitude, b-value, location and focal mechanism. Understanding the characteristics of faults and fractures can help avoid fault reactivation in real-time or during lengthy completions by recognizing changes in magnitude, b-value, event location or focal mechanism. Distinguishing differences in these event properties can aid operators to better understand how target formations will respond to hydraulic fracturing and to evaluate the effectiveness of their completions program based on the microseismic response.

References Cited

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