

## An Overview of the Value In Geophysics for Some Specific Applications

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### **Summary**

Geophysics and the geophysicist have typically played a key role in determining spud locations for exploration and to a lesser extent exploitation wells. For wildcat prospecting geophysics and, in particular, multifold seismic were instrumental in reducing the dry hole percentages. For unconventional plays, seismic can play a different but also important role in maximizing the capital employed.

We show four mini case histories that show the value in Geophysics.

The first case history shows a straight up geophysical imaging example of a Bakken well that was initially chosen for ease of access but ultimately drilled into a Bakken low that was created by an underlying Prairie Evaporite salt collapse feature.

The second example shows how a downhole microseismic survey supported horizontal well azimuth and confirmed the minimum and maximum horizontal stress directions.

The third example is from the east coast of Canada where seismic was used to image salt thicknesses for potential gas storage caverns.

The fourth and final example is for Earthquake Early Warning (EEW) systems can be used to potentially save lives.