geoconvention
Calgary • Canada • May 7-11 2018

Active Geosteering with 3D Models in Unconventionals

Rocky Mottahedeh, P.Geol. P.Eng.
United Oil & Gas Consulting Ltd.

Summary

As technology advances on 3D modeling, information systems, visualization and communication, the expectations on placement accuracy are higher and responsiveness to potential geosteering adjustments is all real-time. An important part of the advance is the automated rig data acquisition of LWD data using WITSML protocol where log data such as gamma, resistivity, gas and survey are pulled from data aggregator servers.

Currently, the majority of the workflow for horizontal well placement is still based on 2D mapping products & databases while the remainders use 3D models that get reduced for 2D Geosteering products. Many 3D geo-models while powerful are cumbersome or awkward for geosteering processes.

Many find the 2D geosteering processes acceptable and continue on this path. However I'd like to propose a workflow improvement that allows us to remain in 3D model environment while eliminating prep time. This results in dynamically improvements in KPI's on every well in the proposed well path(s).

I'll be sharing examples on the workflow and benefits of 3D models using our SMART4D Geosteering System from clients in the Permian, the Marcellus, the Montney and other Resource Plays in the US. Methodologies and results of measuring KPI's such as doglegs and tortuosity pre and post SMART4D will be shared.