



IHS ENERGY

Kingdom[®] 2015

Kingdom Geosteering: Guide Wells to the Sweet Spot by Hank Chambers

While the potential rewards in unconventional plays are great, so are the technological and economic challenges. The most effective way to reach reserves is through horizontal wells, which can cost many times more than traditional vertical wells. The accompanying increased investment makes accurately targeting reservoirs even more critical.

Traditional geosteering tools provide techniques for determining where a well should be located within a specific formation and for predicting the geology ahead of the bit to aid in adjusting the well's trajectory. However, these tools rely heavily on well information to feed their decisions and rarely integrate efficiently with the interpretation software that is used to build the subsurface models.

Kingdom Geosteering provides a unique set of capabilities that enable geosteers, geologists, drilling engineers, and geophysicists to effectively collaborate within a single environment and accurately position wells in the target of interest. This integrated approach dramatically reduces the cycle times associated with updating the subsurface structural and stratigraphic models.

Kingdom Geosteering leverages the power of dynamic depth conversion and map updates, providing insights into the subsurface that have been described by some of our clients as being truly transformational. "Kingdom is game-changing," said Bruce J. Moriarty, geophysical advisor, Swift Energy Operating, LLC. "It allows effective multi-disciplinary collaboration in a common language: depth. With this software solution, we can in minutes instead of hours enter tops for a drilling well, compute the localized depth conversion, and very accurately predict the geology ahead of the bit. Our geologists and engineers have fully embraced real-time, depth-converted seismic data for geosteering wells."

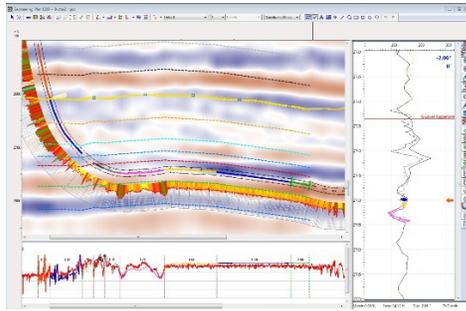


Figure 1. Kingdom Geosteering uses dynamic depth conversion to easily and efficiently incorporate seismic volumes, horizons, and faults in its integrated well steering environment.

Where seismic data isn't available to aid in steering a well, users can rely on Dynamic Map Update. Dynamic Map Update builds a consistent subsurface model that leverages the existing interpretations in all of the wells in close proximity to the drilling well to drive real-time decisions (figure 2). While constructing subsurface maps can be complex and time-consuming, Dynamic Map Update revolutionizes this process by completely automating the generation of structure grids while honoring geological principles that the user has defined. This transforms map-making to an entirely new level of sophistication, providing unprecedented speed, efficiency, and accuracy over traditional workflows. It also empowers the geosteerer by making the most accurate and up-to-date interpretation of the subsurface available at all times. Greater success can be achieved compared to traditional workflows for landing and drilling wells through the optimal portion of the reservoir.

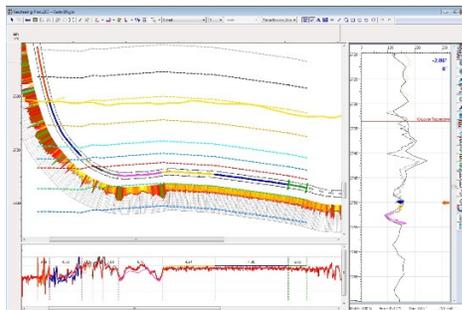


Figure 2. Users can leverage Dynamic Map Update to build geologically consistent subsurface models to better predict the landing and location of the target interval.

"From well planning through drilling of horizontal wells in the Eagle Ford, Kingdom's automated depth conversion, map update, and geosteering software has already proven to be invaluable," said Moriarty. "We can plan wells faster and more effectively make adjustments while drilling in order to stay in zone."

ABOUT IHS

IHS is a global information company with world-class experts in the pivotal areas shaping today's business landscape: energy, economics, geopolitical risk, sustainability and supply chain management. We employ more than 8,000 people in more than 31 countries around the world.