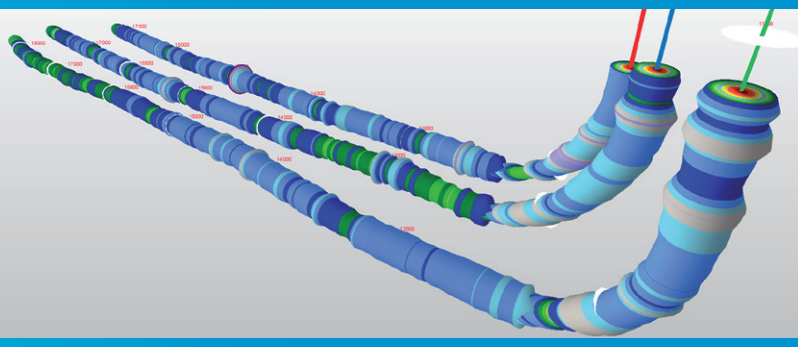
RoqScan Lateral

Lateral well pseudo-elastic logs from advanced cuttings analysis



INDUSTRY CHALLENGES

Data

Although lateral well data is essential for understanding formation heterogeneities away from vertical well control, the data is typically acquired with costly and risky lateral well logging tools.

Risk & Cost

Running logging technology in lateral wells can increase the risk of tool loss in the borehole and incur additional recovery costs to development programs.

Production

Well performance is affected by near wellbore properties; knowing these can help improve effective fracture initiation and optimum stimulated rock volume (SRV).

ROQSCAN SOLUTIONS

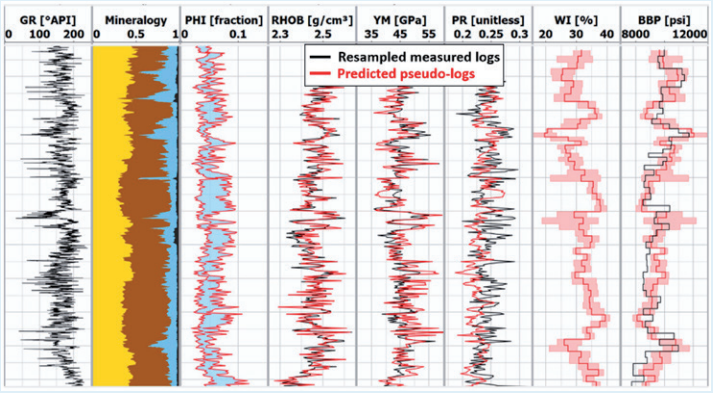
ADVANTAGES

- Enhance subsurface knowledge with digital mineralogical and textural data from cuttings acquired through a non-destructive sampling and analysis technique
- Achieve cost-effective lateral well characterization as an alternative to conventional horizontal logging techniques
- Reveal near-wellbore factors that influence SRV and hydrocarbon production
- Acquire pseudo-elastic logs (VP, VS, YM, PR) from cuttings analysis coupled with calibrated rock physics models as an alternative to logging suites used in mechanical earth models

CASE STUDY

A recent **RoqScan™ Lateral** project successfully predicted the elastic properties and breakdown pressures of a Wolfcamp A lateral well in the Midland Basin.

The predicted results were compared to the "blind" lateral well sonic results and the pressure per stage from the completion data. The image on the right presents the RoqScan Lateral results from this well.



RoqScan Lateral pseudo-elastic logs (YM, PR) and breakdown pressure (BBP) prediction results vs. measured data.

ROQSCAN LATERAL DELIVERABLES

Vertical well characterization

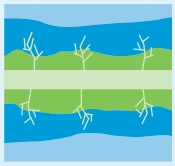
- Well-to-well stratigraphy from consistent mineralogical-based rock typing
- Identification of potential landing zones
- Formation evaluation and elastic properties prediction on unlogged wells or intervals with poor log data

Lateral well characterization

- Consistent mineralogical and rock fabric characterization of lateral well cuttings
- Assistance in defining proportion of in-zone drilling
- Elastic properties of lateral wells to improve or review completion designs

Completion characterization

- Prediction of elastic properties and breakdown pressures to improve completion
- Prediction of formation elastic properties and completion breakdown pressures to assist with drilling and completion decisions



ROQSCAN LATERAL ADD-ONS

ResPack Biostratigraphy	Evaluation and determination of formation age and depositional environment. Key input in the petroleum systems modeling phase. It also provides information related to deposition, erosion, and hiatus throughout basin evolution.
ResPack Sedimentology	Evaluation of core to determine depositional setting and sedimentary architecture. Sedimentological facies are used in core-to-log-to-seismic constraint and upscaling, ensuring the correct assignment of facies maps in the 3D petroleum systems model.
ResPack Petrophysics	Detailed study of reservoir properties and their vertical/lateral variations. Key properties, such as effective porosity, permeability, saturations, and lithological variations, are required to define the seal and reservoir rocks. Petrophysical evaluation based on log response (calibrated with core data) provides valuable information for petroleum system modeling.
ResPack Pore Pressure	The study of pore pressure and its variability within the subsurface. Pore pressure is a key factor in determining hydrocarbon productivity of unconventional plays.
ResPack Production Analysis	Advanced analysis to identify crucial production drivers within your asset, critical to understanding the potential remaining reserves in place.
GeoAnalytics	Advanced data analytics to identify production performance drivers within the subsurface from the integration of seismic, geology, and engineering data.

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