Industries Challenges

Geoscience Solutions

ResPack HD Advantages

- Reveals the most probable geological features using well and geological information plus seismic data to constrain the reservoir model.
- Enables probabilistic interpretation of geological features within the subsurface—especially thin-bed reservoirs—with detailed enhanced seismic reservoir property volumes.
- Provides reservoir property detail at a scale of 5-25 ft compared with 50-120 ft achieved by deterministic inversions.
- Helps identify stratigraphic elements using additional workflows, such as fans, channels and shoals.

ResPack HD Deliver Subsurface Data to Reveal Profitable Targets

A recent ResPack HD project addressed key subsurface evaluation objectives within the Meramec-Woodford Formations in the STACK plays of Oklahoma. This process included the characterization of rock-constrained petrophysical lithofacies in the target formation and their extrapolation throughout the seismic survey.

Facies classification from geostatistical seismic inversion highlighting potential targets in the SCOOP & STACK plays of Oklahoma [data courtesy of CGG Multi-Client].
ResPack HD DELIVERABLES

Reservoir characterization
- Petrophysical models constrained by real rock data
- 1D petroleum systems model
- Sub-seismic resolution geomodel
- Lithofacies model
- TOC volume
- Porosity volume

Geomechanical properties
- Poisson's ratio, Young’s modulus
- Pore pressure
- Fracture initiation pressure/gradient
- Stress

Fractures, faults, and structure
- Fracture density and orientation (from full-azimuthal seismic data)
- Structural analysis

ResPack HD ADD-ONS

<table>
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<tr>
<th>Geochemistry</th>
<th>Evaluation of source rock potential and hydrocarbon occurrence</th>
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<tr>
<td>Sedimentology</td>
<td>Evaluation of core to determine depositional setting and sedimentary architecture. Facies data are utilized in core-to-log-to-seismic constraints and upscaling.</td>
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<tr>
<td>Biostratigraphy</td>
<td>Evaluation and determination of formation age and depositional environment. Key input to regional stratigraphic understanding with sedimentology.</td>
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<td>RoqScan™</td>
<td>Automated mineralogy to provide geological ground truth calibration for petrophysical analysis, rock physics and reservoir characterization.</td>
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<td>Pore pressure analysis</td>
<td>The study of how pressures within rock pores vary within the subsurface.</td>
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<td>Production analysis</td>
<td>Advanced analysis to identify crucial production drivers within your asset.</td>
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<tr>
<td>GeoAnalytics</td>
<td>Advanced data analytics to identify production performance drivers within the subsurface from the integration of seismic, geology and engineering data.</td>
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