

SPAWLA BREAKUP SESSION

Rock Typing, Downhole

Measurements and

Representativeness

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Rock Typing

- Rock Typing: It is not an easy task.
- Involves Planning:
 - Purpose (Simple-advance)
 - Data Availability (Core, Number of Wells, conventional Logs, non-conventional logs (NMR)).
 - Recognize drilling environment.
- Involves a purpose based workflow.
 - Use data available to best capture:
 - Rock Character (Por, Perm, Sw),
 - Fluid Effect
 - Composition (Pyrite, Anhydrite).

Rock Typing

- Are we dealing with Original Rock or Is there Diagenetic or Fracture overprinting?.
- Consistent Logs are the key to Further populate core-log relationships to All logs.
- Rock Typing in carbonates vs Clastics:
 - Do not count on Vsh as discriminator.
 - Carbonates possess simple Mineral Composition.
 - Carbonates present less Structuring.
 - Carbonates show More Heterogeneity
- Can we Characterize electrofacies response along with sedimentologic description?
- Are we just looking macroporosity assessment?

Rock Typing: Workflow

- Rock Typing Clients:
 - GeoModeler, Simulation Eng. Reservoir. Engineers.
- Integrated and Systematic approach:
 - Stratigraphic/Sedimentologic, Well-log Data (old-New), Laboratory data (CCA-SCAL), Reservoir Engineering.
- Is lab data calibrated to log data?
- Can I see rock typing Out of conventional Logs?
- YES= Continue Workflow.
 - No =Only see Porosity~ Review Data/ STOP Workflow.
- Are we characterizing pore throat Dimensions?
- Can we explain logs clustering in terms of flow units and/or stratigraphic position?
- Does Rock Type makes sense- Too simplistic or too refined?
- Do not trust unsupervised Rock Typing... Always prove that You are Human!!

Rock Typing: Representativeness

- Rock Typing Quality:
 - Quality and Quantity of Data (Availability).
 - Does it make sense: From geological or engineer context.
 - Do we understand inter-well relationships?
 - Does propagation Logic make sense?
- Ways of testing ROCK TYPING TASK:
 - Static Model uncertainty and sensitivity Evaluation
 - Prognosis/Forecast/Predictions vs. Results.
 - Drilling well and results.