March 15, At the Field Scale Discussion Sessions

Reservoir Modeling Workflow Processes (DRT, PRT, SW, Ø, Fractures, Faults)
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End user workflow now being used

- Electrofacies
- Reservoir Rock Types

Electrofacies (EF) Workflow

- Establish sequence stratigraphy (time lines) layering scheme
- Selection of log set for clustering
- Clustering of Well Log Electrofacies
- Definition of potential barriers
- Integration of core (if available) facies to log electrofacies
- Electrofacies conceptual model
- Distinguish Electrofacies using concepts and variograms

Minuses

- Uncertainties due to different well log vintages
- Difficult to develop conceptual models
    - EF are in well log space
- No influence from geological attributes (depositional vs. diagenetic)

Pluses

- Easy to apply
- Inexpensive in terms of manpower time and data required
- Fast updating

Reservoir Rock Type Workflow

- Establish sequence stratigraphy framework (layering)
- Depositional Rock Types (DRT) versus log response (need core representing all your depositional areas)
    - If a good correlation than use DRTs
    - If a poor correlation than:
        - Look at diagenetic modifiers
            - Unravel the effect of diagenetic modifiers
        - Use logs to define Petrophysical Rock Types (PRT) (Ø, K, SCAL, MICP, Pore Types)
        - Need to establish a link between PRTs and geological attributes (depositional vs. diagenesis)
    - Use multiple point statistics (MPS) or variograms to distribute (MPS preferred since it allows for realistic geological influence)
    - Predict PRTs
    - Predict DRT and then modify using diagenetic concepts (almost impossible)

Obstacles / Minuses

- Expensive – need more time, more people, more data

- High level of expertise

Pluses

- Settles definition of Flow Units
- Integrates Geological, Petrophysical data plus Knowledge
- Less uncertainty in geological model
- Multidisciplinary satisfaction