

Integrated Approaches to Modeling Late Paleozoic Petroleum Reservoirs in the Greater Midcontinent

Instructor:

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Who Should Attend:

1. Geologists and engineers who are characterizing late Paleozoic reservoirs to optimize oil and gas recovery.
2. Geoscientists exploring for new fields and extensions in the greater Midcontinent.

Objectives:

- Describe oil and gas plays and reservoir characterization in the context of tectonic/structural framework, sequence stratigraphy, and lithofacies distribution.
- Illustrate integrated geomodel development using core descriptions and analyses, wireline log analysis techniques, well tests, 3D seismic, and production histories.
- Effectively integrate recent analogs and surface exposures to define and model reservoir heterogeneity and design appropriate recovery technologies.
- Highlight case studies of carbonate, sandstone, and chert reservoirs ranging from Mississippian (Lower Carboniferous) through Lower Permian age.
- Integrate reservoir characterization in the context of reservoir systems and hydrocarbon accumulation.

Content:

1. Regional structural/tectonic framework during the late Paleozoic.
2. Variations in sequence stratigraphy and reservoir architecture of late Paleozoic strata in the Midcontinent.
3. Common reservoir lithofacies and their Recent analogs.
4. Variations in diagenesis.
5. Petrofacies and pore typing approach to quantitative reservoir analysis and modeling petroleum reservoirs.
6. Case studies and short exercises based on integrated geo-engineering modeling of Pennsylvanian- and Permian-aged ooid and grainstone shoals, phylloid algal mounds, incised valley and estuarine sandstones, and spiculitic bioclastic buildups that comprise shelf and shelf margin environments.