

“ LOW-RESISTIVITY, LOW-CONTRAST PRODUCTIVE SANDS”

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Major hydrocarbon accumulations have been produced over the past 40 years in low resistivity, low contrast (LRLC) sands in the Gulf of Mexico Basin (GOM). In the past, these LRLC intervals were overlooked, ignored, misidentified as a shale or considered “ wet” . Low-resistivity pay has been commonly defined at or below the 1.0 ohm-meter resistivity level, yet many pays are found at the 0.3 to 0.5 ohm-m level. LRLC pays can be recognized through proper identification and evaluation techniques using standard and high resolution well logs, drill cuttings, sidewall cores and whole core samples and indirectly, seismic.

This workshop focuses on the following aspects of low-resistivity, low-contrast (LRLC) pays:

- geologic causes and the depositional and diagenetic environments in which LRLC pays are commonly found
- identification and evaluation techniques using logs and samples
- quick-scan log techniques to identify possible productive sands
- example problems using basic petrophysical evaluation models
- examples of productive LRLC wells and reservoirs from many basins

This set of notes and accompanying well log examples cover the material presented in a multi-day workshop entitled “ Low-Resistivity, Low-Contrast Productive Sands” . A recommended and included reference is the joint Houston Geological and New Orleans Geological Societies publication “ Productive Low-Resistivity Well Logs of the Offshore Gulf of Mexico” (1993).