Petroleum Professional Development Center
221 N. Main Street
Midland, TX 79701
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Log Analysis of Shaly Sandstones

Course Description:

The presence of shale or clay in a sandstone reservoir has two effects on petrophysical logs: it lowers resistivity and it causes porosity logs (sonic, neutron and density) to generally record too high of a porosity. The lowering formation resistivity results in the over estimation of the reservoir's water saturation so that a hydrocarbon zone appears water productive.

The course will review the types of clay minerals and how they affect both the resistivity and porosity logs. Next, the various methods of calculating volume of clay (Vcl) and the determination of effective porosity (PHIe) will be outlined. Before the total water saturation (Sw) is corrected to effective water saturation (Swe), a series of petrophysical cross-plots and calculations will be presented to determine if the reservoir is productive or not.

These cross plots and calculations are very critical, because before geologists or engineers attempt to calculate Swe, they must first be sure the zone is productive. It must be remembered that shaly sand equations are designed to lower water saturation and the geologists or engineers need to be sure that they do not lower water saturation in a wet zone.

The class continues with a review and application of the various shaly sandstones. This review will include a discussion on when to apply the different equations based on logging suite and the type of clay distribution and concludes with a series of case histories.

Pre-Requisites:

Students should have a basic knowledge of Well Log Analysis.

Instructor:

George B. Asquith, Ph.D. (University of Wisconsin/Madison) is a Professor of Geosciences at Texas Tech University and a former recipient of the Pevehouse Chair in Petroleum Geology. At Texas Tech he has served as a Director with The Center for Applied Petrophysical and Reservoir Studies. In 2018 Dr. Asquith was awarded Distinguished Alumnus from the University of Wisconsin Geosciences. Dr. Asquith has received AAPG's Harrison Schmitt Award, Presidents Award, Distinguished Educator Award, and the Leverson Award. During his career he has published numerous abstracts, papers and books including the best-selling AAPG book *Basic Well Log Analysis*. Additionally he has worked for ARCO Research, Pioneer and Mesa Petroleum, Search Drilling and Alpar Resources. Dr. Asquith currently teaches a variety of training courses including Hydrocarbon-Bearing Mud Rocks, Shaly Sand Analysis, Old E log Analysis, Basic Well Log Analysis, and Carbonate Petrophysics. Contact email: george.asquith@ttu.edu

Date & Time:
January 28, 2022
Friday
8:00 am to 5:00 pm

Location:
Midland College PPDC
105 W. Illinois Ave.
Midland, TX 79701

Cost:
In-State: $500.00
Out-of-State: $525.00

Section Number:
PTRT2005.OG13212Q

Number of CEUs:
0.8 CEUs

For registration, visit our website at https://mcce.midland.edu > Oil and Gas Training > Geoscience