Research & Reviews: Journal of Medicinal Chemistry

Extended Abstract
Vol. 7, Iss. 3
2020

Petro Chemistry 2020: Devised Workflow for Shale Play Evaluation and Brittleness Index Calculation using Petrophysical Techniques

Muhammad Hamza Sajid
University of the Punjab, Pakistan

Unconventional reservoirs have been the centre of attention throughout the world as we run out of conventional reserves. In 2016, 69% of US oil and Gas production was from unconventional resources. In Pakistan, conventional reserves are fast depleting and more than 70% of wells are producing water. The paper presents an analytical workflow for evaluation of shale play using conventional logs to counter data limitations in restricted basins. Workflow includes calculation of all the parameters that are important to delineate a shale reservoir. As a first, Toc is calculated using petrophysical methods integration with burial history curves for calculation of thermal maturities. Quantification of Kerogen volume and log maturity index is done and correlated with Toc values. For calculation of kerogen corrected porosity in shale reservoirs, sodergeld equation is calibrated with wards equation for kerogen density. Effective porosities for shale reservoir require accurate vaues of volume of shale which are computed using SGR and N-D method. Saturations are carefully predicted after incorporating the value of shale resistivity and Rw in shales. Smectite to Illite ratio is studied after identifying the type of clays present in the studied formation. Fracking is an integral part in creating permeabilities in shale reservoirs. Brtittleness Index (BI) value is evaluated by converting full waveform sonic responses into Poisson's ratio/Young's Modulus cross-plots. Pakistan faces water shortage problems and considering the fact that a shale well requires about 7 to 20 million litres of watrer to frack, a greener method is introduced based on the calculated results.

The Computer actualized strategy for portraying flexible properties of a subsurface development at different liquid immersion conditions is revealed. The technique incorporates the highlights of evaluating densities and mass moduli of liquids and encompassing stone grid material present in an attacked zone around a wellbore and past the attacked zone to record a lot of log bends of thickness and mass modulus of the liquids and the encompassing stone lattice material present in the attacked zones and past the attacked zone versus profundity; recording a lot of shale pattern compaction bends in each wellbore; settling a lot of reaction conditions for rock and liquid volumes dependent on the recorded arrangement of log bends and shale pattern compaction bends to process lithology, porosity and hydrocarbon immersion to construct PC models to appraise hydrocarbon immersion for the stone network material entered in the wellbore; and utilizing the assessed densities and the mass moduli of the liquids and the stone framework material close the wellbore, the shale pattern compaction bends and the registered lithology, porosity and hydrocarbon immersion close the wellbore to describe flexible properties of a subsurface development at different liquid immersion conditions.

Computer actualized technique for describing versatile properties of a subsurface arrangement at different liquid immersion conditions is unveiled. The strategy incorporates the highlights of assessing densities and mass moduli of liquids and encompassing stone grid material present in an attacked zone around a wellbore and past the attacked zone to record a lot of log bends of thickness and mass modulus of the liquids and the encompassing stone framework material present in the attacked zones and past the attacked zone versus profundity; recording a lot of shale pattern compaction bends in each wellbore; explaining a lot of reaction conditions for rock and liquid volumes dependent on the recorded arrangement of log bends and shale pattern compaction bends to process lithology, porosity and hydrocarbon immersion to manufacture PC models to evaluate hydrocarbon immersion for the stone network material infiltrated in the wellbore; and utilizing the assessed densities and the mass moduli of the liquids and the stone lattice material close the wellbore, the shale pattern compaction bends and the registered lithology, porosity and hydrocarbon immersion close the wellbore to portray flexible properties of a subsurface development at different liquid immersion conditions.

This work is partly presented on 15th International Conference and Exhibition on Petro chemistry and chemical Engineering, November 26-27, 2020

Computer executed strategy as depicted underneath in different parts of the current innovation is utilized when adequate log information is accessible to make a fit for reason petrophysical translation in geographical conditions where the Gassmann condition, portrayed further beneath, is substantial. These are mainly clastic and blended lithology oil and gas supplies. The technique might be applied through and through of the logged span any place adequate wireline and LWD information are accessible. A few wells ordinarily have fractional or no shear sonic log inclusion. In these cases, the shear gradualness (the equal of the shear wave speed) can be evaluated utilizing privately determined boundaries at the same time with liquid replacement, depicted further below.These and different items, highlights, and attributes of the current development, just as the strategies for activity and elements of the related components of structure and the blend of parts and economies of production, will turn out to be increasingly endless supply of the accompanying portrayal and the annexed claims concerning the going with drawings, all of which structure a piece of this particular, wherein like reference numerals assign comparing parts in the different FIGS. It is to be explicitly seen, nonetheless, that the drawings are with the end goal of delineation and portrayal just and are not expected as a meaning of the constraints of the development. As utilized in the determination and in the cases, the solitary type of "an", "an", and "the" incorporate plural referents except if the setting unmistakably directs something else.

E-mail: muhammadhamzasajid@yahoo.com

This work is partly presented on 15th International Conference and Exhibition on Petro chemistry and chemical Engineering, November 26-27, 2020