



Devised Workflow for Shale Play Evaluation and Brittleness Index Calculation using Petrophysical Techniques, Lower Indus Basin, Pakistan.

Muhammad Hamza Sajid

University of the Punjab, Lahore, PAKISTAN

Abstract:

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 values 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 R_w in shales. Smectite to Illite ratio is studied after identifying the type of clays present in the studied formation.

Biography: Muhammad Hamza Sajid has completed his Masters at the age of 23 from Institute of Geology, University of the Punjab, Lahore, Pakistan. He has done work on Sedimentology, Geological mapping, Sequence stratigraphy, Fractures interpretation using image logs, Clastics petrophysics, Carbonate petrophysics and unconventional petrophysics of open and cased hole logs.



Publications:

1. Factors Affecting Investment Decision Making: Evidence from Equity Fund Managers and Individual Investors in Pakistan
2. Causality Relationship among Foreign Direct Investment, Gross Domestic Product and Exports for Pakistan
3. The Impact of Macroeconomic Variables on Stock Market Returns: A Case of Pakistan
4. How Prices of Gold Harmonize to Stock Index: Analysis of South Asian Stock Exchanges

[World Congress on Oil and Gas Engineering, Webinar, September 28-29, 2020](#)

Abstract Citation: [Muhammad Hamza Sajid, Devised Workflow for Shale Play Evaluation and Brittleness Index Calculation using Petrophysical Techniques, Lower Indus Basin, Pakistan., Oil Gas 2020, World Congress on Oil and Gas Engineering, Webinar, September 28-29, 2020](#)