

Mud Logging Gas Data Utilization: Better Definition of Reservoir Parameters.

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ABSTRACT:

Over the last few years significant challenges faced the petroleum geologist when it comes to the integration of the data encountered during drilling along with the geological static model, which rarely match the real world geology.

Uncertainties where occurs for the Optimum well plans and STOIP results compared with mud logging data.

Optimum well plans and STOIP results achieved using static geological interpretation and modeling tools rarely match the real world geology encountered during drilling.

The objectives of reducing the associated uncertainty mentioned and the need to enhance the interpretation, introduced this new approach, which focuses on utilization of mud logging data (as an additional data source).

The principles and purposes of this new approach by using chromatographic gas ratios i.e. $\{TG/\Sigma C_{cor}, C1/C2, (C5+C4/ (C1+C2)), \text{ etc...}\}$ in reservoir evaluation, to determine Hydrocarbon types, contact points, fluid contacts and supports the interpretation of conventional wire-line logs in such as LRPZ determination, as well as the lithology variation are well recognized by understanding the relative relationship of gas logs rather than absolute values.

Included examples clearly demonstrate that traditional mud logging data package is constrained by its poor quality and errors which limits its quantitative use, for instance in drilling optimization or later in geo-modeling work.

This abstract of ratio evaluation, and other mud Logging data can be successfully applied to the field development plans and other potential G&G studies.