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Deployment Strategies to Reduce Risk in the Acquisition of Formation Evaluation Data

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Abstract

Effective reservoir management requires sound decision making that is based on formation evaluation data acquired during all stages of the life of the well. Without this data, reservoir understanding is compromised, which can impact long term well productivity. Given the increasing challenges of acquiring data in today's geometrically complex wells, new methods of data acquisition are constantly being developed and refined. This has led to a new area of oilfield innovation called conveyance. This paper is an analysis of the risks associated with the acquisition of formation evaluation data.

These risks are generally classified as follows:

1. Non Productive time due to the inability of logging tools getting to bottom.
(bridging)
2. Non Productive time due to delays associated with making last minute arrangements for alternative logging methods when bridging problems become too severe.
3. Lost in hole charges associated with permanently sticking logging tools due to challenging hole conditions.
4. Unsound decision making throughout the life of the well, because challenging hole conditions, made the acquisition of formation evaluation data impossible.

The risks outlined above can also be assessed depending upon the data requirements and the conveyance method employed. A new risk assessment will be presented that discusses the risks associated with acquiring the data that provides insight into the six main formation properties required by the industry to understand reservoirs. Several conveyance techniques that assure the acquisition of data will be discussed along with case history's of some of these applications.

This paper will serve as a means to understand and assess the risks associated with the acquisition of formation evaluation data. It will also increase awareness of the techniques that exist for acquiring data, and ultimately allow for developing the best strategy to acquire formation evaluation data.