SUMMARY

The majority of wellbore data is collected whilst developing the reservoir. In many cases this data will need to be acquired in horizontal wells where traditional wireline conveyance is technically challenging. Wireline technologies and methods have been developed to overcome these difficulties yet total cost of data acquisition which includes rig time, mean alternatives are often sought. Migration of data acquisition to a ‘whilst drilling’ approach is one such alternative allowing an increasingly comprehensive dataset to update static and dynamic models during field development. In addition to the update of geological descriptions with shallow to deep images and borehole geophysical data, recording reservoir saturation changes and pressure depletion as the reservoir is being produced allows for improved reservoir and/or sector simulation and subsequent optimisation of future wells. In this case the value of continually gathering porosity, saturation and formation pressure in new well penetrations cannot be understated. Finally opportunities to acquire dynamic data through deployment of cased hole / production logging technologies give high resolution information on the evolution of contact positions, precise values for changes in saturation over time across producing intervals and ultimately measurement of residual saturations as those intervals water out.
Introduction

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Figure 1 Example of realtime horizon gridding using deep reading azimuthal resistivity measurements in a horizontal well.

Conclusions

This presentation provides an overview of what data can be collected in the development of oil and gas fields. Both traditional and emerging technologies are covered.