

Sampling Heavy Oil in Kuwait—Raising the Bar with 3D Probe and Advanced Formation Evaluation Workflow

**M. Al-Ibrahim¹, V. Naik¹, M. Rashaid¹, B. Khan¹, A. Al-Ajmi¹; H. Ayyad², M. Van Steene², S. Jamal², P. Sangani², S. Devkar², K. Eid²,
R. Paramatikul², and M. Al-Ramadhan²**

¹KOC

²Schlumberger

Abstract

The Greater Burgan field has been on production since 1946 from a series of highly permeable Cretaceous reservoirs. To increase production in the long term, new reservoirs are being evaluated. These new targets show greater recovery challenges, either due to the poorer rock quality or due to the lower oil quality, or both. There is a particular focus on heavy oil because Kuwait has an abundance of it.

This paper focuses on the exploration for heavy oil resources. First, we investigate the evaluation of an extensive heavy oil layer in the Lower Burgan sand of the Greater Burgan field, and then we investigate exploration of the Lower Fars formation in the Umm Niqa field. In characterizing heavy oil reservoirs, obtaining representative heavy oil samples is critical for determining the recovery mechanism and designing the surface facilities. This study demonstrates how the heavy oil challenges were tackled to enable successful, efficient, and unprecedented fluid sampling in heavy oil reservoirs.