Expro Excellence

# Unlocking remaining hydrocarbons in mature field through advanced pulsed neutron logging

## Well Intervention & Integrity

### Objectives and background

- The customer needed a dependable way to identify the remaining hydrocarbon potential behind casing in the mature wells where production was in decline and water cut exceeded 90%
- Reservoir complexity, mixed salinity systems, and shale content created significant uncertainty when distinguishing between oil, gas and water
- The main challenge was to reduce ambiguity in saturation interpretation and provide the confidence required to make high impact completion decisions on whether to isolate water producing zones or perforate new intervals while supporting effective time-lapse reservoir monitoring in a late life asset

### Expro Excellence

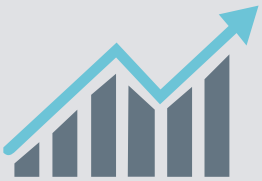
- Expro applied its advanced pulsed neutron logging expertise and industry leading sigma interpretation workflows to deliver a clear and reliable subsurface picture in challenging cased hole conditions
- By integrating time-lapse sigma analysis, synthetic modelling, and high-quality depth matched data, Expro successfully differentiated fluids and quantified the remaining hydrocarbons despite environmental, salinity and thin bed complexities
- This physics-based, reservoir focused approach was proven across the Beryl field, set Expro apart and enabled high confidence interpretation where conventional methods fall short

### Value to the client

- Expro transformed complex logging data into clear, actionable insight, allowing the customer to optimize their intervention strategy and unlock value from a mature asset
- This solution reduced uncertainty, minimized the risk of incorrect zonal isolation, and enabled targeted perforation that delivered immediate production uplift, significantly reduced water cut, and extended the well life
- Reference for another case study in the same field that we have published in 2025

*Refer to SPE 228506 Producing the Hidden Barrels: A Case Study in Using Pulsed Neutron Surveillance in a Mature Field with Complex Displacement and Recovery to review all details of this case study*

**Enhanced production**



**Insight**