

# Compact™ Logging Tools and Interpretation Services Identify Bypassed Pay Zone and Increase Potential Oil In Place By 50%

## Objectives

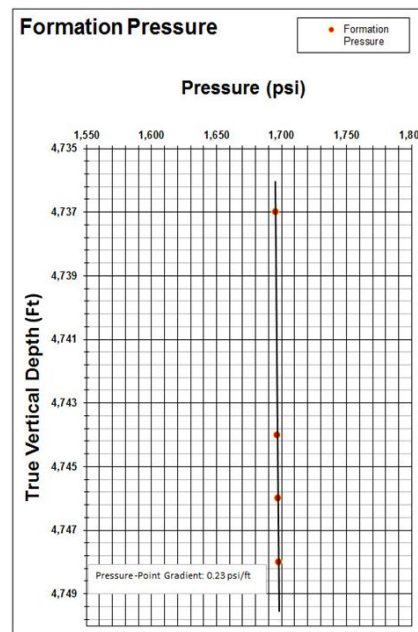
- Characterize a formation using wireline logging tools in a 8 1/2-in. well in the Orinoco heavy-oil belt. Identifying petrophysical properties would be challenging because of the low-resistivity, high-thorium content of the formation. Additionally, previous logs and interpretation services performed in the formation indicated high water saturation.
- Determine whether hydrocarbons are present in the formation. Previous formation analysis could not identify the presence of hydrocarbons. As a result, the operator had concluded that this was a no-pay zone.

## Our Approach

- Weatherford recommended its suite of Compact™ logging tools: the microimager (CMI), triple-combo tools, spectral gamma ray (SGS) tool, and formation pressure tester (MFT). The team deployed the triple-combo tools alongside the SGS tool, followed by the CMI and the MFT.
- All the Compact logging tools ran downhole in a single trip to a logging depth of 4,700 ft (1,433 m) with no issues, despite the complex conditions in the formation.
- Together, these tools gathered data that enabled an integrated interpretation of formation characteristics.
- During formation analysis, the team identified a pressure-point gradient (seen in the depth versus pressure plot, upper right) that revealed hydrocarbon values in the formation.

## Value to Client

- The combination of data acquired from the Compact logging tools and Weatherford formation-interpretation services enabled the operator to confirm the presence of a previously bypassed zone and reclassify the well as a potential producer.
- These results will enable the operator to increase oil in place by approximately 50% and to increase oil production throughout the field in the near future.



The figure shows the true vertical depth (ft) versus pressure levels (psi) in the well. The pressure-point gradient of 0.23 psi/ft indicates the presence of hydrocarbons.

### LOCATION

Anzoátegui, Venezuela

### WELL TYPE

Onshore, vertical, heavy oil

### FORMATION

Cretaceous

### HOLE SIZE

8-1/2 in.

### LOGGING DEPTH

4,700 ft (1,433 m)

### TOTAL VOLUME DEPTH

4,900 ft (1,494 m)

### PRODUCTS/SERVICES

- Compact logging tools:
  - Microimager (CMI)
  - Triple-combo tools
  - Spectral gamma ray (SGS) tool
  - Formation pressure tester (MFT)
- Interpretation and evaluation services (IES)

