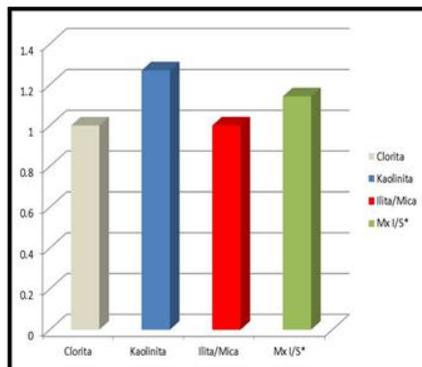
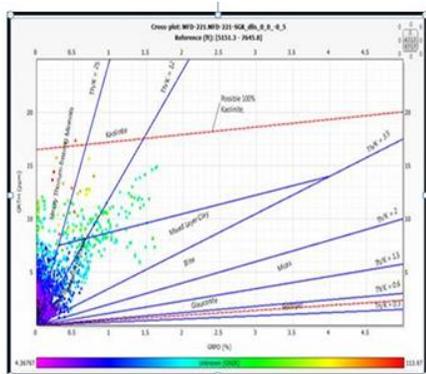


Compact™ Wireline Tools, Laboratory Services

Characterize Unconsolidated Sandstone Well, Enable 20% Decrease in Sand Production



The above spectral gamma ray log and X-ray diffraction results provided a complete analysis of the formation clays.

Objectives

- Acquire formation evaluation data—including mineralogy, grain size, and petrophysical properties—in the 1,600-ft (488-m) horizontal openhole section of an unconsolidated sandstone well. Previous interpretations had been limited to gamma ray and resistivity LWD logs.
- Inform completion design decisions to reduce sand production.

Our Approach

- Following a thorough pre-job analysis, a Weatherford wireline team recommended a multidisciplinary formation-evaluation team. Beginning with a mineralogical analysis, the crew sent well cuttings to a nearby Weatherford laboratory. There, the X-ray diffraction service provided a bulk mineral composition and relative abundance of clay species.
- At the wellsite, the wireline team used the Compact well shuttle for two dedicated wireline runs in memory mode. In the first run, the Compact microimager and triple combo collected sedimentological, structural, and petrophysical data. In the second run, the spectral gamma ray tool identified clay mineral composition. Both runs were completed in 36 hours with no nonproductive time.
- After gathering the raw data from the lab and from both wireline runs, an interpretation and evaluation specialist integrated the data and presented the client with a complete formation analysis.

Value to Client

- Weatherford wireline and laboratory services provided multidisciplinary characterization of an unconsolidated sandstone well, including mineralogy, grain size, and petrophysical properties.
- Based on the integrated data results, the client changed the completion strategy of the well, which reduced sand production by 20%.

LOCATION

Anzoátegui, Venezuela

WELL TYPE

Onshore, horizontal oil

FORMATION

Unconsolidated sandstone

HOLE SIZE

8-1/2 in.

WELL DEPTH

3,200 ft (975 m)

HORIZONTAL SECTION LENGTH

1,600 ft (488 m)

PRODUCTS/SERVICES

- Wireline services
- Compact well shuttle
- Compact microimager (CMI)
- Compact triple combo
- Compact spectral gamma ray tool
- Interpretation and evaluation services
- Laboratory services
- X-ray diffraction services

