

# Compact™ Thru-Drillpipe Tools and Testers

## Provide Complete Well Characterization Despite Washouts and 48° Deviation, Save 60 Hr of Rig Time



Thru-drillpipe logging provides openhole sampling at a reduced risk in four steps:

1. The drillpipe is positioned below the challenging borehole conditions.
2. Compact tools are run on wireline and deployed through the drillpipe, into the open hole, and to total depth (TD).
3. The tools acquire reservoir data and are then pulled through the drillpipe and back to the surface.
4. The drillpipe trips to TD, and circulation conditions the well for casing running.

### Objectives

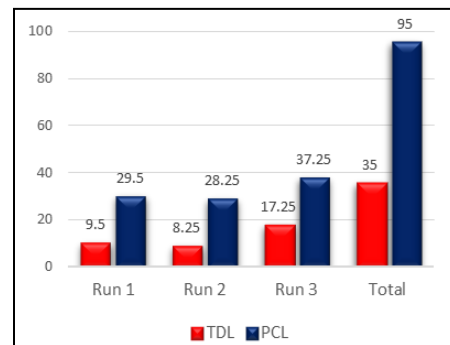
- Acquire comprehensive formation evaluation data—including quad-combo and formation-sampling data—in a 6,630 ft (2,021 m) openhole well with washout zones and 48° deviations.
- Minimize the risk of tool sticking. Previous attempts to deploy wireline tools with conventional means had failed.

### Our Approach

- Following a thorough pre-job analysis, a Weatherford wireline team recommended a suite of Compact tools deployed with the thru-drillpipe logging method in three runs. To prepare for the operation, the crew ran drillpipe across the potentially washed out zones to a depth just above the zone of interest.
- In the first two runs, the wireline team acquired quad-combo data. They deployed Compact tools on wireline and through the drillpipe to acquire nuclear, gamma ray, dual-neutron, photodensity, and array-induction logs. They also acquired dual laterolog, shallow-focused electric, and microlaterolog data along with acoustic sonic waveforms and compressional and shear travel times.
- In the third run, the team deployed the Compact formation tester and acquired more than 25 pressure tests across the formation. With the logging complete, they conditioned the well for casing running.

### Value to Customer

- Using a suite of Compact wireline and formation-testing tools, the Weatherford services provided a high-quality suite of reservoir data with no lost time or tool sticking despite difficult well conditions.
- Compared to pipe-conveyed logging, the operation reduced risks and saved 60 hours of rig time.



The above graph illustrates the number of hours required by thru-drillpipe logging versus pipe-conveyed logging for each trip of the operation.

**LOCATION**  
Kuwait

**Field**  
Burgan

**WELL TYPE**  
Onshore, oil development

**FORMATION**  
Sandstone with carbonate layering

**HOLE SIZE AND ANGLE**  
12-1/4 in., 48°

**CASING SIZE**  
13-3/8 in.

**TEMPERATURE**  
141°F (60.56°C)

**WELL DEPTH**  
6,630 ft (2,021 m)

- PRODUCTS/SERVICES**
- Wireline services
  - Compact photodensity tool
  - Compact dual-neutron tool
  - Compact array-induction tool
  - Compact gamma ray tool
  - Compact sonic sonde
  - Compact formation tester
  - Interpretation and evaluation services

