Caspian Sea

# GeoTech® drill bit and iCruise® rotary steerable system combine to achieve operator's target to drill in one run

Increased efficiency and achieved required ROP with precise directional control

#### **CHALLENGE**

- Drill and underream section in one run in challenging deep water conditions offshore the Caspian Sea
- Fault planes and layers with unstable "green shale"

#### SOLUTION

 Deploy 12-1/4 in. GeoTech<sup>®</sup> GTi65WIMH drill bit and 8 in. iCruise<sup>®</sup> RSS tool in one run

#### RESULT

- All directional requirements were achieved with excellent bit performance
- Section was drilled with little to no vibration
- Maintained ROP
- Zero NPT or drilling-related issues
- Bit remained adequate for reuse in further applications at no additional cost to operator

### Challenge

An operator of a deep water installation at a depth of 175 meters in the Caspian Sea approached Halliburton to drill and underream a  $12-1/4 \times 13-1/2$  in. hole section in one run. The section consists of fault planes and layers with unstable "green shale". Thus, directional drilling is restricted in some areas because of the potential for stuck pipe, overpull, and pack offs. Another major challenge is adjusting the drilling parameters to minimize wellbore pressure and keep equivalent circulation density (ECD) as low as possible to achieve balance between wellbore instability and the risk of loss.

# Solution

Using the 12-1/4 in. GeoTech<sup>®</sup> GTi65WIMH drill bit in combination with the 8 in. iCruise rotary steerable system (RSS), Halliburton developed a strategy to maintain 69° inclination and 268° azimuth to 3,980 meters measured depth (MD), and then build to 71° and turn right from 268.5 to 297° to 4,460 meters MD, keeping the tangent to the end of section.

# Result

All directional requirements were achieved and the section was drilled smoothly in one run with little to no vibration. Bit performance was good with zero nonproductive time (NPT) or issues encountered during drilling. Despite wellsite



cuttings reinjection (CRI) system and wellbore ECD limitations, an average ROP of 20 m/hr. was maintained on the longest section ever drilled with the iCruise RSS in the Caspian Sea area. The operator was pleased with drill bit performance and the dull grade enabled the bit to be used for further applications at no additional cost.

For more information, contact your local Halliburton representative or visit us on the web at www.halliburton.com

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