Real-Time Communication and Control Expedite Remote Deepwater Exploration Test

Symphony live downhole reservoir testing united by Muzic wireless telemetry saves 24 rig hours with single-run DST in well

By using Muzic* wireless telemetry for real-time monitoring and control during a one-run drillstem test (DST) conducted with Symphony* live downhole reservoir testing, the operator was able to connect, measure, sample, and control with significantly improved efficiency and safety, including collecting fluid samples.

The operator’s concerns
The operator needed real-time communication and control of the downhole test tools to prevent severe sand mobilization during gas release from unconsolidated shallow formations. Release typically occurs in response to changes in the effective stress during a test, so real-time pressure management is critical.

What Schlumberger recommended
Symphony reservoir testing unites the test string with Muzic wireless telemetry to provide the downhole control that is critical for complex and remote operations. Real-time pressure and temperature measurements from downhole gauges would keep the operator fully informed and enable quick adjustment to connect, measure, sample, and control via the SenTREE 3* subsea test tree’s electrohydraulic communication system.

Successful testing with real-time pressure management
The operator saved 16 hours of rig time right away by activating the electronic firing head via wireless acoustic commands instead of deploying wireline perforating, which was extremely important because there were existing open perforations with losses lower in the well. An additional 8 hours was saved through optimizing the flow and buildup periods by monitoring real-time bottomhole pressure.

The fairly shallow depth of the well at 1,500 m meant that conducting a conventional DST with pressure pulses was a concern, posing the potential for pumpout of the light string. Instead, wireless communication reliably provided tool control for quickly modifying the test sequence as guided by the real-time data. Closely monitoring pressure at numerous points in the well made it possible to track fluid density and wellbore cleanup for certainty in collecting downhole samples that confirmed stable gas production while avoiding excessive sand production.

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