

Live Downhole Technology Enables Multizone Testing in a Single Run

Customized Symphony testing string helps KJO optimize its field development strategy while saving >4 offshore rig days

Al-Khafji Joint Operations (KJO) used Symphony* live downhole reservoir testing to orchestrate multizone flow and buildup tests as well as a large-scale vertical interference test in a single run—saving more than 4 days offshore.

Optimize field development strategy across multizone reservoir while minimizing DST time and cost

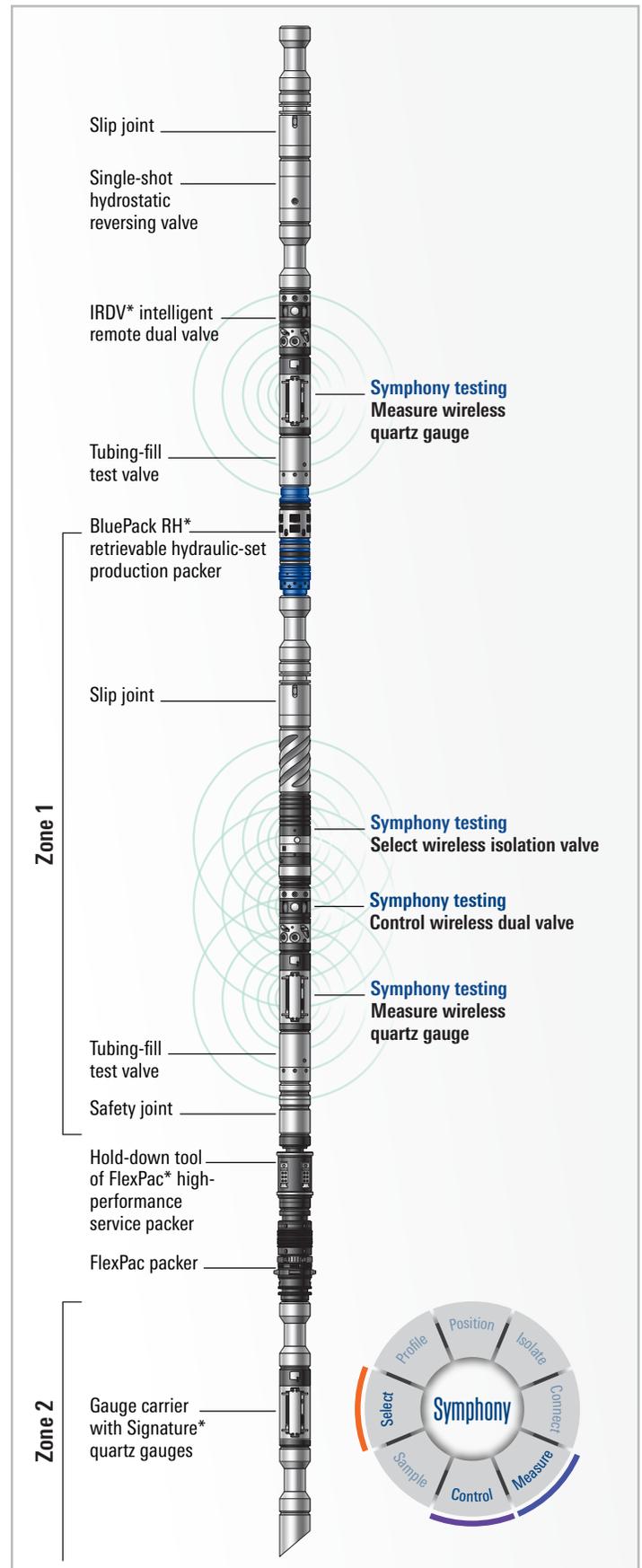
KJO needed to optimize its field development strategy and water injector placement to improve oil recovery in a multizone carbonate reservoir with light oil, heavy oil, and water. To do this, KJO wanted to confirm the presence of faults and reservoir boundaries, characterize vertical reservoir connectivity across thick reservoir zones under actual production conditions, and understand future well behavior during production—all while minimizing the drillstem test (DST) time and costs.

Perform live multizone DST in a single run

The DST was conducted in two different zones in a single run using Symphony live downhole reservoir testing to wirelessly and selectively activate downhole testing equipment. United by Muzic* wireless telemetry, Symphony testing provides real-time data and downhole tool control for complete flexibility in the operational testing sequence. The DST configuration was customized for multizone testing, enabling flow and buildup tests as well as a large-scale vertical interference test based on reservoir flow simulations. The low-pressure water zone was also tested in real time without producing it to surface. To optimize the test design, Schlumberger provided reservoir domain support and real-time interpretation based on actual reservoir behavior during the test.

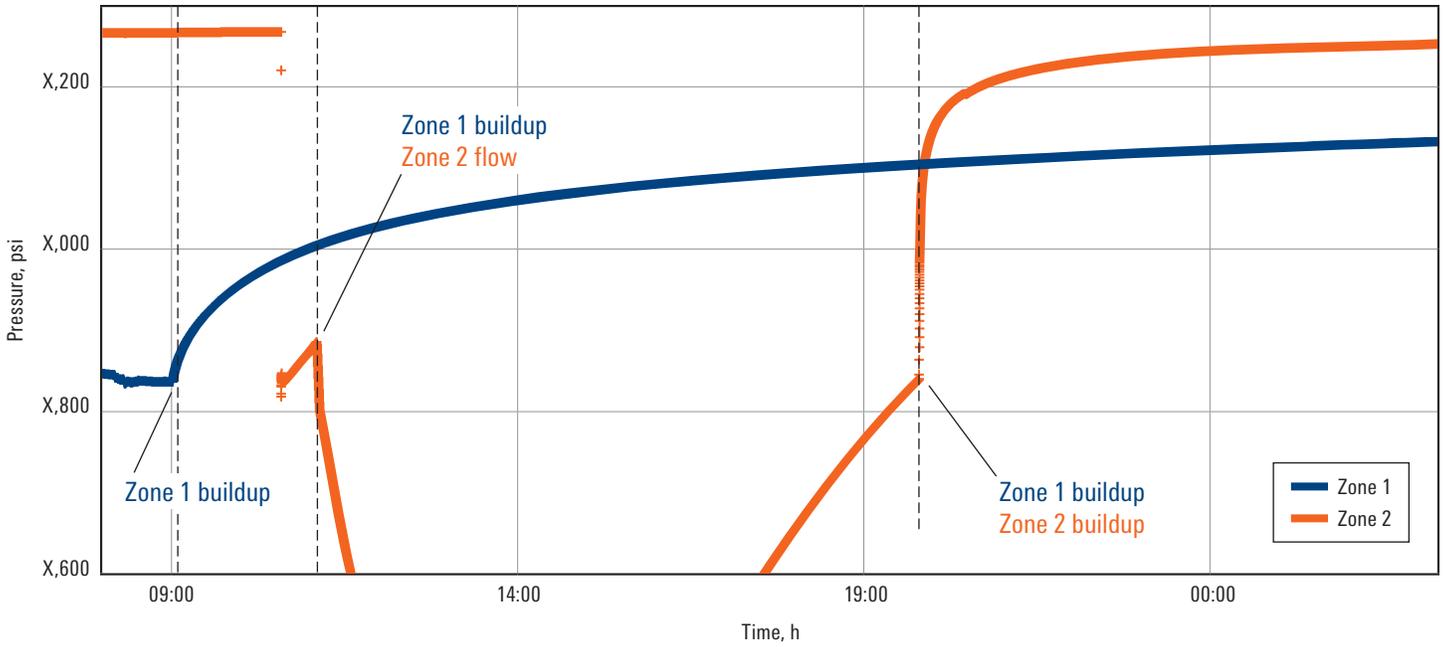
Save offshore rig days

The test results enabled KJO to understand individual reservoir zone characteristics, connectivity, and future production well behavior—improving the field development strategy. And because of the flexibility to test multiple zones in a single run, KJO minimized the DST costs, saving more than 4 offshore rig days.



Customized Symphony testing toolstring.

Case study: Live downhole technology enables multizone testing in a single run, Saudi Arabia



The Symphony testing operation enabled flow testing in one zone while simultaneously buildup testing in another zone—saving time without compromising data quality.

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