

FloConnect® Surface Automation Platform Allows Earlier, More Accurate Data Capture While Monitoring and Reducing Emissions

USING ONLY ADJUSTABLE CHOKES, THE FLOCONNECT CHOKE MANIFOLD IMPROVED WELL TEST RELIABILITY AND TIME FOR DATA, PROVIDING OPTIMIZED RESERVOIR INSIGHT TO THE OPERATOR

MIDDLE EAST

CHALLENGE

- » Acquire full and accurate well testing information with minimal human intervention
- » Eliminate the release of toxic gas during sampling
- » Minimize flaring emissions

SOLUTION

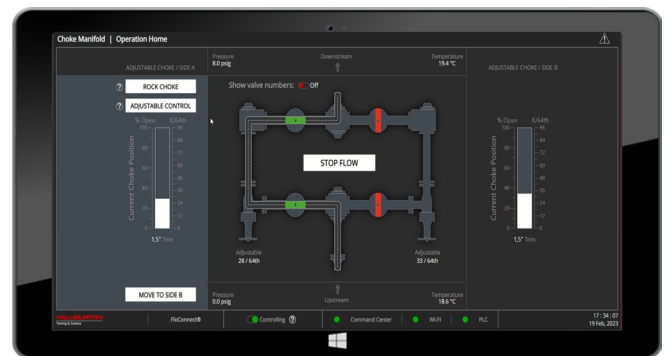
- » FloConnect® Choke Manifold with dual-adjustable chokes
- » Zero-emissions sampling system
- » FloConnect Emissions Management Solutions

RESULT

- » High-quality flow parameters with no disruptions for multi-zone high-H₂S testing
- » Safely captured water cut samples to verify electronic water cut meter results
- » Generated detailed reports quantifying and qualifying emissions from sources

OVERVIEW

A major operator has embarked on an extensive exploration campaign, expecting extremely high levels of H₂S. Because of associated health, safety, and environmental (HSE) risks, the testing period must be as brief as possible to help reduce exposure time while still acquiring accurate and representative reservoir data.



The FloConnect® platform enables operator's to control and monitor wellhead parameters from a tablet or safe command center.

CHALLENGE

Inaccurate and/or incomplete data is a major challenge during any well testing operation. The presence of elevated H₂S adds to this complexity, requiring minimal human intervention while operating equipment or acquiring critical data (e.g., flow parameters and well effluent properties). Additionally, well testing and reservoir engineers rely on the incorporation of fixed chokes in the choke manifold to help ensure accurate and comparable flow parameters throughout different flowrates.

The operator's existing choke manifold design requires a minimum of two personnel to change the fixed choke size while hydrocarbon with toxic gas flows through the opposite side of the manifold. In such a scenario, any mistake can be a potential injury.

Also, because of the remote nature of the well location, produced hydrocarbon must be flared at the wellsite. To comply with regulatory requirements, minimizing the carbon footprint during these operations is a major goal of operators.

SOLUTION

Halliburton's Testing and Subsea team developed a strategy to overcome these challenges:

FloConnect® Choke Manifold: industry-first true automated choke manifold complete with dual engineered trim adjustable chokes.

- » **No operator in the line of fire:** does not require personnel to manually change choke sides during operation.
- » **Addresses invisible lost time:** unleashes unseen efficiencies, reducing operational time performing tasks not usually captured in job logs.

Zero-emissions sampling system: allows liquid samples to be captured without releasing toxic gases into the atmosphere.

FloConnect Emissions Management Solutions

- » **Environmentally Distinctive Burner:** the first crude oil burner in the industry that enables quantification and reduction of CO₂ emissions while all functionalities are fully automated for monitoring well conditions at the burner head in real time.
- » **Emissions Dashboard:** a fully featured real-time system to understand where and what emissions are generated in real-time. “What gets measured, gets managed.”

RESULTS

The operator acquired a complete and accurate set of well testing data without disruption, which could be generated during manual choke manifold manipulations. No manual sampling with toxic gas release was required to verify water cut. In addition to 100% operational uptime, the complete operation was performed with zero HSE/SQ incidents.

Spill-free and smokeless oil flaring was achieved during the operation, while also creating a benchmark in terms of CO₂ quantified throughout the operation. The emissions dashboard enabled the operator to understand emissions generated during well testing operations. This awareness provided direct benefits, such as improved understanding of risks, established datums, and then identified trends/opportunities used to benchmark future activities and build adequate strategies to minimize such emissions.



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