

FloConnect® Surface Automation Platform Enables Safe Test Operations in High-Pressure, Ultra-High H₂S Flowback Conditions

ENHANCED SAFETY BY REMOVING PERSONNEL FROM THE RED ZONE, WHILE PROVIDING SUPERIOR CHOKE MANAGEMENT, DATA COLLECTION/QUALITY, AND ABATEMENT OF EMISSIONS

MIDDLE EAST

CHALLENGE

- » Protect personnel from hazardous well testing operations
- » Automate the testing process to optimize manpower
- » Avoid poor control/performance of equipment
- » Reduce emissions during operations

SOLUTION

- » FloConnect® choke manifold
- » FloConnect wireless data acquisition and real-time gas analyzer systems

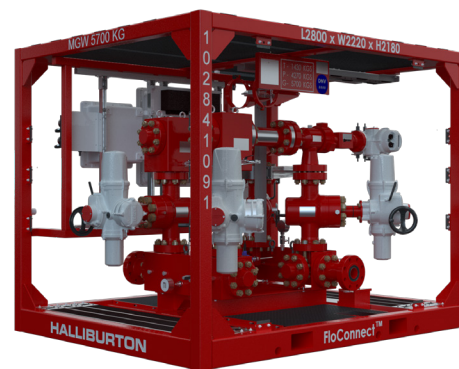
RESULT

- » Safely and efficiently executed well testing operations for multiple zones in ultra-high H₂S reservoirs
- » Removed personnel from the red zone by monitoring and controlling the FloConnect equipment from the Command Center and/or tablets
- » Provided real-time gas analysis measurements without hydrocarbon exposure to the atmosphere

OVERVIEW

A remotely located exploratory well, characterized by multiple zones, was being drilled in a high-pressure and ultra-high hydrogen sulfide (H₂S) environment. Past attempts to flow back these wells proved very challenging, resulting in the client's heightened expectations of a successful flow back operation.

The local Halliburton Testing and Subsea (TSS) team turned this situation around with the design and execution of a groundbreaking technology solution, addressing the technical, HSE, and emissions aspects of operating in such an extreme environment, while also minimizing crew levels to avoid endangering personnel in the red zone.



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

CHALLENGE

Traditionally, when monitoring high-pressure conditions, more equipment is required, and consequently, more personnel are needed to operate the complex well test system. In this case, the operator sought an alternate solution to help mitigate risk to personnel, equipment, and the environment. This not only meant relying on automation to reduce human intervention, but it also involved the maintenance of equipment integrity, reliability, and controllability, with a high degree of accuracy critical to collecting quality test data and gas analysis at surface.

SOLUTION

The TSS team responded to these challenges by providing:

- » **The FloConnect® choke manifold** — highly automated and electronically controlled system
- » **Surface wireless data acquisition system** — for real-time process information with superior data reliability, while reducing rig-up time
- » **Gas analyzer system** — a fully automated system (zero-emission/closed loop, minimal maintenance, and in-field calibration) for real-time H₂S, CO₂, C1-6, and gas density sampling

Client feedback —
“Professionally
executed with
outstanding
performance”.

The FloConnect products deliver full remote-control functionality that keeps personnel out of the line of fire, with computerized access to equipment status and operational conditions at all times. In addition, provide equipment condition monitoring (ECM) to enable personnel to easily view the choke manifold’s health on screen in real-time.

RESULTS

The client’s goals and expectations of safe test operations were achieved with the introduction of the FloConnect choke manifold, surface data acquisition system, and the gas analyzer system, along with the TSS team’s expertise. In addition, the ECM capability optimized preventative maintenance efforts, leading to 100 percent uptime throughout the whole operation—with zero disruptive events recorded.

Rather than a large crew physically performing tasks and operations in the red zone, a fewer number of personnel remotely executed and monitored everything from the FloConnect Command Center, including the tracking of well parameters and health alerts to prevent equipment failure. Zone-rated FloConnect tablets and helmet-mounted displays assisted the personnel with situational awareness during equipment checks. Finally, hydrocarbon releases into the atmosphere due to disruptive events were eliminated.

www.halliburton.com

Sales of Halliburton products and services will be in accord solely with the terms and conditions contained in the contract between Halliburton and the customer that is applicable to the sale.

H014123 7/22 © 2022 Halliburton. All Rights Reserved.

HALLIBURTON