

**EXPRO**

WELL FLOW MANAGEMENT™

/ Expro Excellence Well Testing

Expro provide innovative well testing solution for new subsea well in Gulf of Mexico



Objectives

- To provide flowback/completion equipment to allow accurate monitoring of BHP and BHT, as well as pressure and flow rates at surface for a new subsea well, deepwater Gulf of Mexico (water depth 7,143ft; well depth 30,483ft)
- Establish stable production rates in the test separator and confirm that the production chemicals would work on the wells

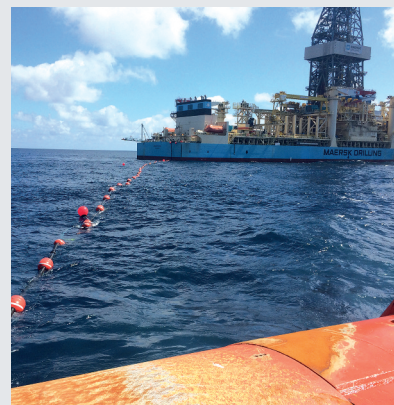
Expro Excellence

- The well was flowed back through Expro's subsea landing string and surface well test package on the drill ship
- Gas was flared using a 30ft boom with a king post designed for 90ft
- Oil of an API gravity/density between 17-23 was transferred through a 4" 1,500ft oil export hose to a tanker which had a storage capacity of 750,000bbls, with a height of 60ft to the deck on the tanker
- Expro overcame the challenge of moving the heavy oil from the drill ship to the tanker through the oil export hose by additional steam heat exchangers and introduced a

recirculation loop in the flowback spread to keep the crude oil moving through the system in the event of an unexpected shut-in

Value to client

- Flowing back the well confirmed that production chemicals would work for the wells, which enhanced production and eliminated the need to flowback the other wells
- A chemical treatment plan was devised, including emulsion breakers and de-foamer treatment, allowing a chemical management strategy for the subsea infrastructure to be implemented giving the client confidence to continue with the additional 55 wells without further surface flow back tests
- Innovative solution provided, including design review to evaluate the impact of full annular pressure applied below the rams after closing them against the components of the subsea test tree
- All operations performed with zero NPT allowing the client to eliminate a run that typically took 36 hours, saving valuable rig time and without additional equipment



Environmental restrictions prohibit the amount of well tests that can be performed in the Gulf of Mexico. With a zero flaring restriction, hydrocarbons are transferred to tender-assist tankers during the test. The client had not performed such an operation in excess of 15 years and contracted Expro to manage both the well test design and well test operations.

Of particular importance was collecting data on the performance of chemical treatments for emulsion breaking and antifoam treatments on live hydrocarbon at separator conditions, to optimise chemical treatment at the host facility post commissioning of the new wells. This involved comingled flow from reservoirs different properties and resulted in an extended test period, beyond normal clean-up operations.

Recognising the test duration would prohibit routine BOP testing, Expro were able to provide a solution. Typically BOP testing is carried out with a dedicated test tool run on drill pipe, which would require recover of the landing string to surface, typically taking 36 to 48 hours of rig time. The solution was to test the BOP stack with the landing string in-situ.

Contact

For further information, please contact:

welltesting@exprogroup.com

or visit:

www.exprogroup.com/welltesting

**Expro Excellence**exprogroup.com

Well Testing