

Case study: Rio de Janeiro, Brazil

High technology flow test plant in Brazil enhanced capabilities for ESP Subsea Boosting solutions

ESP Subsea Boosting solution is composed by an electrical submersible pump mounted in a retrievable pump cartridge (skid), which allows a fast replacement with reduced intervention costs.

The technology helps to reduce backpressure on the reservoir, leading to increased production rates and enhanced oil recovery. This technology is essential for mature field and deep water applications, where high well productivity becomes crucial. Additionally, artificial lift methods, including subsea boosting, play an essential role in maintaining and increasing daily oil production.

Reliability and maintenance cost are challenges to be surpassed in such application.

Expand operational capabilities in testing subsea boosting systems unlocks the true potential of market share development given the existent lack of facilities equipped with required resources in Latin America.

Baker Hughes have successfully revitalized and upgraded the flow test facility in Brazil, demonstrating exceptional commitment and project management skills by completing the task ahead of schedule.

Two consecutive subsea boosting systems tests have been flawless executed at full load and proved company competence to deliver outstanding results on this market.

Challenges

- Maximize brown field potential
- Reduce maintenance downtime
- Fill gap of flow test facility for subsea boosting solutions in Latim America

Results

- Upgraded operational capability to execute high performance tests on subsea boosting systems
- Faster flow test schedule minimizing production deferment and expediting field production recovery in at least 10 days
- Integrated portfolio reducing the number of companies involved and simplifying the maintenance process
- High technology flow test plant
 - Modern control room
 - 129.6m³ water reservoir
 - 125m (410ft) deep well
 - 20-ton overhead crane
 - 1550kVA VFD for high power systems
 - 260kVA VFD for low power systems
 - Temperature up to 158°F (70°C)
 - Pressure up to 3700 psi (255 bar)
 - Flowrate up to 86.000 bpd (427m³/h)



Flow test plant located at Rio de Janeiro–Brazil with one ESP Subsea Boosting System under testing.