Meters

Wellhead production surveillance on offshore gas condensate field

Objectives/background

• An operator in West Africa operating a gas condensate field (with two satellite platforms, along with a central production and processing platform)
• The satellite platforms are equipped with production separators and the central platform is equipped with a test separator and production separator – a gas compression facility was brought online to lower the wellhead pressure and increase production
• The client wanted to obtain production surveillance data at normal well flow conditions as there are no test separators on the satellite platforms – the production surveillance data is also used to verify the total flow rates from the separator gas and liquid outlets across all three platforms
• There was also a requirement to see the impact of the lower wellhead pressures (as a result of compression) on the individual well flow rates

Expro Excellence

• Mobilisation of 6” ActiveSONAR™ flow meters and field surveillance technician to test each well on the platforms, each quarterly campaign – 10 to 15 wells tested per campaign, with no production losses or process interruptions
• Provision of real-time flow rates onsite, followed up with comprehensive well test report including detailed and summarised data and history from the previous sonar testing campaigns, using the trends to evaluate well performance
• Over a 12 month period, well optimisation opportunities have been identified, based on the sonar data collected from each well, with more frequent well testing and no deferred loss of production; e.g. a pipe layout modification was done by the client for a particular well and Expro was able to quantify the increase in production pre- and post-modification (15%).

Value to client

• Expro’s quarterly surveillance across the three platforms has enabled the client to increase the frequency and efficiency of production testing/surveillance, resulting in better production allocation
• Production engineers and reservoir engineers are able to analyse data and make more informed decisions
• Clamp-on non-intrusive installation, resulting in efficiency and reduced HSE risk
• Well testing on demand
• Small footprint, compact design
• No need to shut down production to divert wells through the test separator

Production allocation is a crucial factor in the oil and gas industry. Diverting wells through test separators, which operate at different pressures than the wells normal operating pressure, can yield results which are not representative of the actual production potential. Production surveillance and monitoring of individual well using clamp-on metering allows operators to efficiently allocate production to each well without diverting production to a test separator, measuring well production under normal operating conditions. This can help identify underperforming wells and/or justify remedial or well intervention campaigns.

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