

Expro Excellence

CaTS gauges deployed for asset integrity monitoring

Wireless Well Solutions



Customer challenges

- Our customer in South East Asia had a complex oil and gas field located offshore in water depths up to 45m
- The reservoir was highly compartmentalised and consisted of intermediate and deeper high-pressure gas zones that had the potential to charge shallower less competent oil reservoirs and cause subsurface internal blowouts
- To solve this problem a system of 20 Internal Blow Out Monitoring wells were developed specifically for pressure relief and monitoring of the blow-out affected reservoirs
- This well system was developed from converting the use of production wells, which had varying degrees of monitoring instrumentation available for use
- Some of the wells had existing PDGs that were still working but most of the monitoring was achieved by performing regular wireline interventions with memory gauges every 3 months
- Scheduling work around monsoon periods, combined with the ability to access remote platforms and juggling intervention priorities made the well surveillance strategy very challenging

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- Discussions took place with the local Production Technology team to evaluate options to retrofit CaTS gauges into various IBO Monitoring wells and deliver data-to-desk in real time
- Well parameter information was obtained, and offshore surveys were conducted on the Normally Unmanned Installations (NUI) to determine suitability of deploying the CaTS technology
- Expro developed a new type of signal detection method specifically for small offshore fixed platform installations, which provided EM background noise cancellation for the CaTS surface receiver panel

- Having identified several candidate IBO monitoring wells for CaTS, the customer purchased three complete wireless gauge systems
- CaTS Gauges were retrofitted into the well using standard slickline equipment and real time reservoir pressure and temperature data was successfully transmitted to surface
- The depth of the gauges varied between 1400m and 2200m without the need for in-well repeaters
- Gauges were configured to transmit a pressure and temperature data point every 3 days for 2 years. A standard slickline operation is then performed to replace batteries in the downhole gauge

Value to the client

- CaTS Gauges were successfully installed to re-instate downhole monitoring in offshore wells on a Normally Unmanned Installation
- Having access to real-time data allowed the dynamic management of the IBO wells system and ensured production optimisation whilst maintaining integrity of the producing reservoirs
- The number of interventions required on the Normally Unmanned Installation are reduced, saving cost, reducing operational risks and lowering the operational carbon emissions for the client
- Retrofitting CaTS Gauges provides the customer with a cost effective and flexible solution to retrieve and re-deploy real-time downhole monitoring as and when required

Digitalisation



Cost saving



24/7 monitoring



Contact

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