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Tunu Field Light Architecture Wells

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Abstract

One of the challenges of the mature Tunu giant gas and condensate field development is the size reduction of new reserves associated to each new target, which tends to reduce the economical value of future drilling projects, especially in a context of increasing services prices. To allow maintaining a production plateau of the field, currently sustained by intensive infill drilling and perforation activity, an innovative light architecture well solution is being implemented to help reduce drilling costs.

More than 500 development wells have already been drilled on Tunu field since 1991, to produce multi-layered reservoirs deposited in deltaic environment, down to 4,500 mSS. One of the main drilling challenges resides in developing some of the reservoirs located underneath pressurised shales, which imply to design multi-phased wells. Efforts were put together to design light architecture wells within technical drilling limits, to produce those reservoirs, without compromising the SAFETY of the drilling operations.

The result of the detailed engineering studies was to drill and complete wells to a maximum 4,200 mSS, 1,500 m departure, with only one driven Conductor Pipe, one combined surface, intermediate and production casing, and one tubingless completion string. This yields to an average 30% savings on cost and duration.

This has been made possible thanks to a joint effort of both geosciences and drilling teams. A comprehensive mapping of the low pressure zones along with significant observed production has allowed defining the areas where light architecture wells could be proposed, without jeopardizing well deliverability and ultimate reserves of the field.

The next step is to increase the percentage of light architecture wells to continue the development of Tunu field by challenging the technical drilling limits as well as maximising the target candidates for light well architecture.