

Radial Drilling Delivers Productivity Increase for Petrobras Brazil in both depleted formations and new drill wells.

Lateral jetting technique used to stimulate depleted formations cost effectively.

CHALLENGE

Stimulate wells with depleted formations and declining production. Complete two new drill wells.

SOLUTION

Apply a sequence of laterals placed to maximize transfer of jetting horsepower and subsequent additional fluid migration & flow. Upwards of 16 laterals placed in individual wells on multi horizons.

RESULTS

Completed & stimulated 10 wells, all achieving an increased annual production rate.

Large number of depleted formations & under performing wells

Operating in the Vitoroa & Aracayu fields, Petrobras Brazil, needed to regenerate production in depleted Mucuri, Urucu, Sao Mateo, Cantu, and Cinza sand formations.

Formation analysis indicated good response to various stimulation fluids, opening additional flow channels not normally seen with their conventional completion.

Effective solution through sequenced lateral placement.

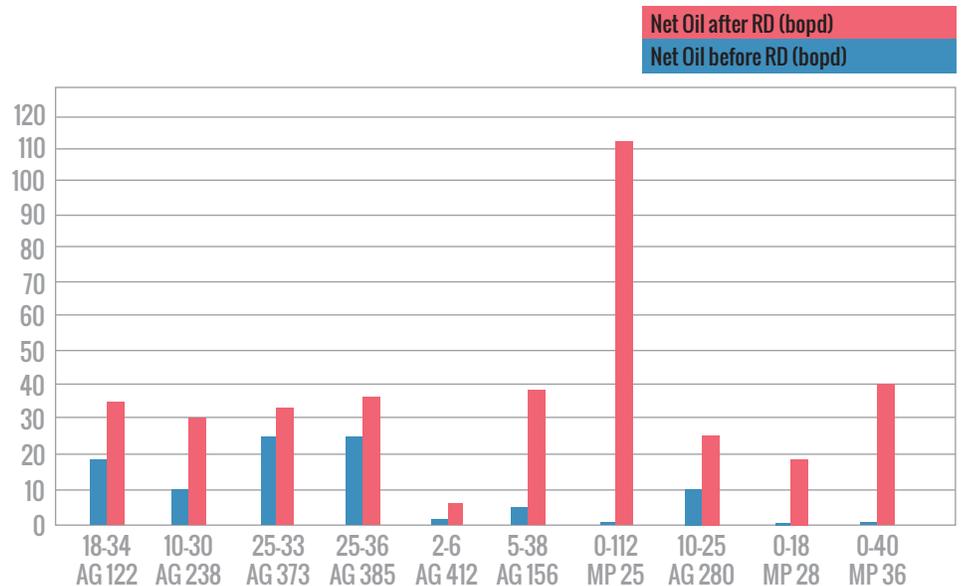
The operator decided to evaluate the effectiveness of sequential placement of laterals in addressing zero to low production rates associated with conventional completions and production methods.

The laterals were systematically placed to allow delivery of maximum natural flow returns to the main wellbore and to surface.

Laterals were achieved using specifically designed fluids sensitive to formation parameters. Volumes of no more than 1,000 liters per lateral were used at pressures configured for zero formation invasion.

Higher production without loss of efficiency or added cost.

Following lateral placement, the wells flowed back and produced using similar choke sizes. Placement of the laterals increased production in what were depleted formations as well as providing a higher than normal production flow in new drill wells. This far exceeded the operators original expectations.



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