

# Step-down tests help save \$8.7 million over one year —Eagle Ford

Impressive reductions in screen-outs, acid consumption, gel loading enhance economics.

## Eagle Ford, South Texas

### The challenge

The client placed a premium on ensuring proper placement of its fracture stimulation jobs to avoid costly screen-outs and reduce the high consumption levels of expensive acid and gels. To reach that objective, a valuable diagnostic tool was utilized in performing routine step-down tests to determine near-wellbore friction values prior to the main treatment of every fracture stage. Step-down tests are beneficial in any environment as they allow the on-site consultant to make remedial changes to the treatment in order to ensure a successful placement of the job.

### The solution

Over the course of one year, STRATAGEN®, using data generated by the FRACPRO® fracture design and analysis software, conducted step-down tests as part of its on-site consulting services for this client. The analysis, which were performed on 50 of the operator’s wells, across 30 pads, quantified near-wellbore pressures to ensure proper placement. For example, on one well using 20/40 resin-coated sand, the step-down analytical data revealed an unacceptable build-up of pressure, prompting a treatment adjustment, to cut sand and flush the well. Fundamental to the ongoing analysis was the continual tracking of formation response (fracture gradients and leak-off) to allow real-time adjustments to maximize treatment efficiencies and reduce costs.

### Well Data

Location: Eagle Ford, South Texas

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Operator: Cabot Oil & Gas

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Well type: Oil

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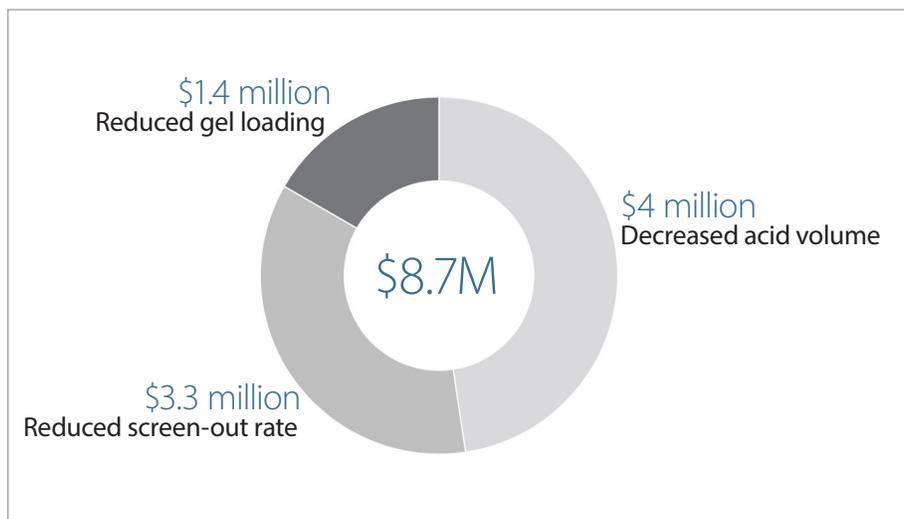
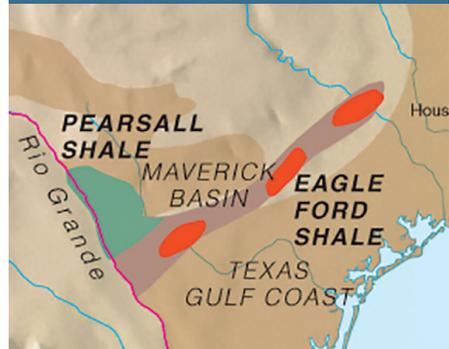
Number of wells/stages: 50 wells/ 1,400 stages pumped

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Completion design: Plug & perf

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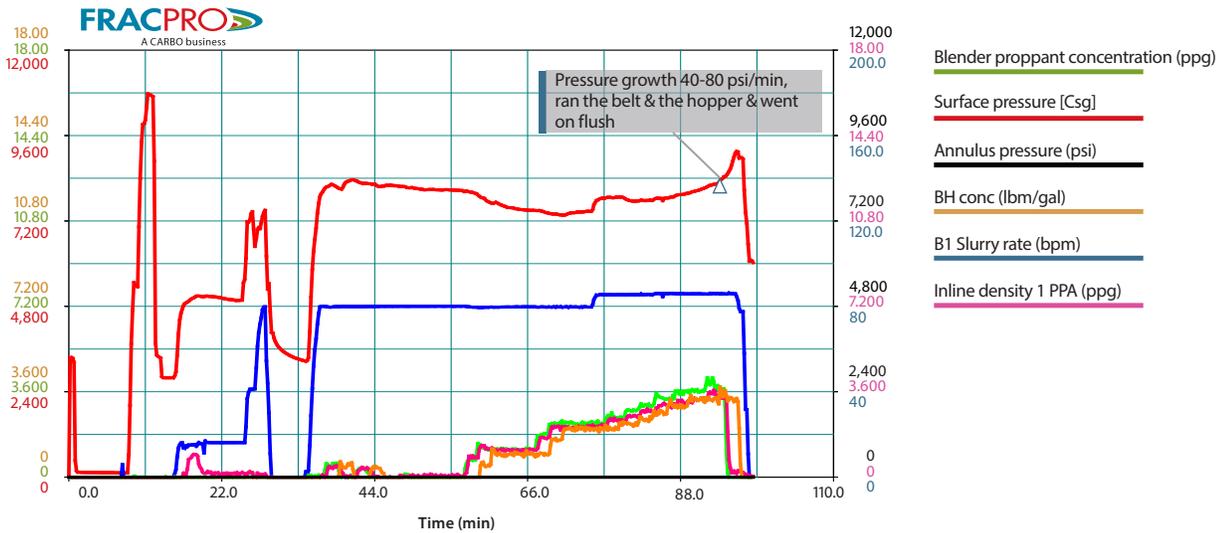
Diagnostics: FRACPRO fracture design & analysis software



Ongoing step-down tests reduce the operator’s overall costs by \$8.7 million

### The results

During the year, a cumulative 1,400 stages were pumped with the screen-out rate dropping from the industry average of 2% to an impressive 0.5%, reducing the associated costs by some \$3.3 million. Further, the use of very costly stimulation acid was cut from 5,000 to 2,000 gal, saving a total of \$4 million throughout the year. Add in the \$1.4 million saved by using approximately 280,000 lb less gel, and the ongoing step-down tests reduced the operator’s overall costs by approximately \$9 million.



When step-down test data revealed a build-up in near-wellbore pressure, the treatment schedule was adjusted in real-time with 20/40 resin-sand cut and the well flushed.

For more information on this case history contact:

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