

OPTIMIZING MONTNEY GAS PRODUCTION



HISTORY

A Montney production field in the heart of the Montney fairway is continually growing and developing. As new wells are completed and commissioned to the process, the higher pressures from these wells are “backing out” the more mature wells from the process. Operator is trying to produce wells at sub-critical rates. Condensate : Water ratios are as high as 4:1. Chlorides range from 100,000 to 200,000ppm.

PROBLEM

Production from older wells are either loaded or flowing on intermittent. In considering other methods of optimization:

Plunger Lift – Poor performance due to production of solids and high deviation in wellbore

Gas Lift – To expensive

Coil Tubing – Expensive and difficult to keep unloaded when line pressures fluctuate and wells slug

Compression – Field is changing too rapidly to properly design ideal compression

Intermittent Flow – Although inexpensive, intermittent flow causes operational issues such as hydrates, ice and can contribute to liquids saturation near the wellbore (formation loading).

Foamers were considered as a viable optimization solution.

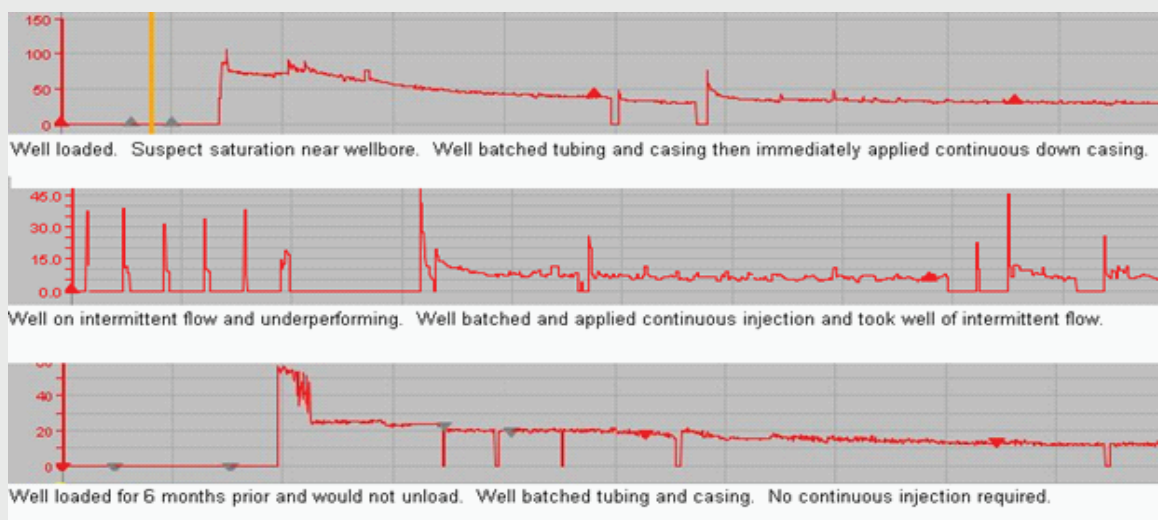
SOLUTION

Candidate wells were reviewed by the producer and the D-Liquefy team. A game plan was made for each well, and field trials ensued shortly thereafter. One important consideration for the foamer application was ensuring system compatibility and there would be no adverse effects to the process from the foamers. Lab testing was completed and a thorough process monitoring program was initiated for pre and post-commission of the trials. Monitoring included: Profiling vessels, water quality testing, water/condensate interface, millipore filtering of gas stream, fluid shots on tubing and casing pre-trial and optimizing foamer rates. Some wells used a batch application, some used a D-Liquefy portable test trailer for continuous injection and some wells used both.

RESULTS

Foamer was extremely effective at unloading wells and maintaining steady production.

This picture is the production trend of 3 wells that were part of the trial. The x-axis is gas production measured in e3m3/d.



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