

The Success Story of High Pressure Gas Lift In Onshore Unconventional Production

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Abstract:

Scope/Objective

This presentation explores an artificial lift method whose use is rapidly expanding in onshore North American unconventional reservoirs. High Pressure Gas Lift (HPGL) as it is known, is reviewed both from a historical and technical perspective. The factors behind HPGLs success are disclosed. Attempt is made to educate operators of the HPGL process out of a desire to ease and enhance the artificial lift process.

Methods/Procedures/Processes

First, a thorough literature review is made of HPGL to understand previous work, successes, failures and learnings. Next, interviews of industry experts on HPGL are conducted given the process is relatively new and published work on the process is expected to be limited. Unpublished case history is sought, reviewed, analyzed and documented.

Results/Observations/Conclusions

Since its first onshore implementation in 2017, HPGL usage has expanded rapidly to an estimated 3,000 installations. Not entirely new, HPGL is a marriage of two longstanding variants of gas lift, single point gas lift and annular gas lift. It was conceived as an artificial lift method to help operators produce high liquid rate unconventional wells. Previously onshore operators were left to turn to Electric Submersible Pumps (ESPs), which were often negatively impacted by high gas/oil ratios (GORs) and high solids production. However, true to conventional gas lift, HPGL readily handles high gas/oil ratios (GORs) and high solids content production. Relatively new to onshore production, HPGL now offers operators a cost-effective and trouble-free artificial lift method to produce high fluid rates often needed early in the life of a well."