PetroSkills

Plunger Lift - PLS

COURSE

About the Course

There are about 400,000 gas wells in the USA and most are liquid loaded. Solving this problem may increase production as much as ~40%. Plunger lift is a very popular method of gas well dewatering as it is initially inexpensive, has a long operating life and requires no power to operate in most wells. Each component of a plunger lift system is described in detail, and tools for analysis are provided to participants. Several methods of cycles analysis, including analysis by shape of the SCADA traces of CP, TP, rate, and LP are discussed and applied throughout the course using a spreadsheet provided to participants to estimate the cycle slug size, the CP required to lift it at the correct speed, the minimum time for shut-in for the plunger to fall, the maximum liquid possible, the cycle times, and other information on the plunger cycle. Proven methods of how to adjust cycles to increase production are presented. Details about plunger lift operation are covered, with emphasis on trouble free cycles and more gas production. Continuous (bypass), conventional, gas assisted and casing plunger lift are presented. Special equipment and techniques used in unconventional or horizontal wells are discussed, as well as the effect that well deviation has on system operation.

Target Audience

Engineers and field technicians that design, operate, monitor, and optimize plunger lift operations.

You Will Learn

Participants will learn how to:

- Recognize liquid loading in a gas well from field performance, and using critical velocity, and nodal analysis. Decline curve analysis is discussed.
- Understand the advantages and disadvantages of using a plunger system to lift a well, compared to other lift methods and the optimum conditions to use one method over another
- Apply, design, and diagnose continuous plunger lift and conventional plunger lift
- Increase production when operating plunger lift
- Know when conventional plunger ceases to work, what are other workable plunger related systems to switch to for continued production
- Recognize important considerations for unconventional and horizontal wells

Course Content

- Introduction to methods to solve loading problems

- Lifting capability comparison between Plunger Lift and other artificial lift methods
- Continuous Plunger Lift
- Conventional Plunger Lift
- Trouble shooting using decline curves, SCADA traces, and cycle set points
- Drawdown capability of plunger lift
- IPRs for plunger lift
- Systems used to monitor plunger in the well
- What systems to use when conventional plunger no longer works

Product Details

Categories: Upstream

Disciplines: Production and Completions Engineering

Levels: Intermediate

Product Type: Course

Formats Available: In-Classroom

Instructors: PetroSkills Specialist