

Injection Control Increases Production

CASE HISTORY

Gaines County, Texas, USA

Challenge

Isolate an upper completion interval from a new lower injection zone in 28 CO₂ injection wells. Methods reviewed to attain isolation included cemented conventional liners, scab liners, dual packer setups, cement squeezes, re-drill wells, and sidetrack operations – all proved problematic.

Objective

To completely isolate the main pay zone (MPZ) from lower residual oil zone (ROZ) with options to set conventional liner in future if needed for conformance work. Installation of 5-1/2" x 7", 23 lb SET® Cased-hole Liners (CHL) to isolate the upper perforations in each well would enable injection through newly-perforated lower intervals.

Results

The SET Systems were successfully installed in the 28 injection wells in lengths between 200–350 ft, and at depths between 5,000–5,500 ft. Pressure tests on each well confirmed that elastomeric seals on the CHL had successfully shut off the older upper perforations. The expandable solution also minimized the space above the top perforation needed for injection packers.

Value Added

- Enabled access to ROZ with potential pay equal to that of the MPZ.
- Reliably and consistently provided zonal isolation as opposed to previous attempts.
- Allowed for future workovers by minimizing hole loss.

