

Successful Deployment of a very long gun string via Intelligent Coiled Tubing

Perforating Services

Background:

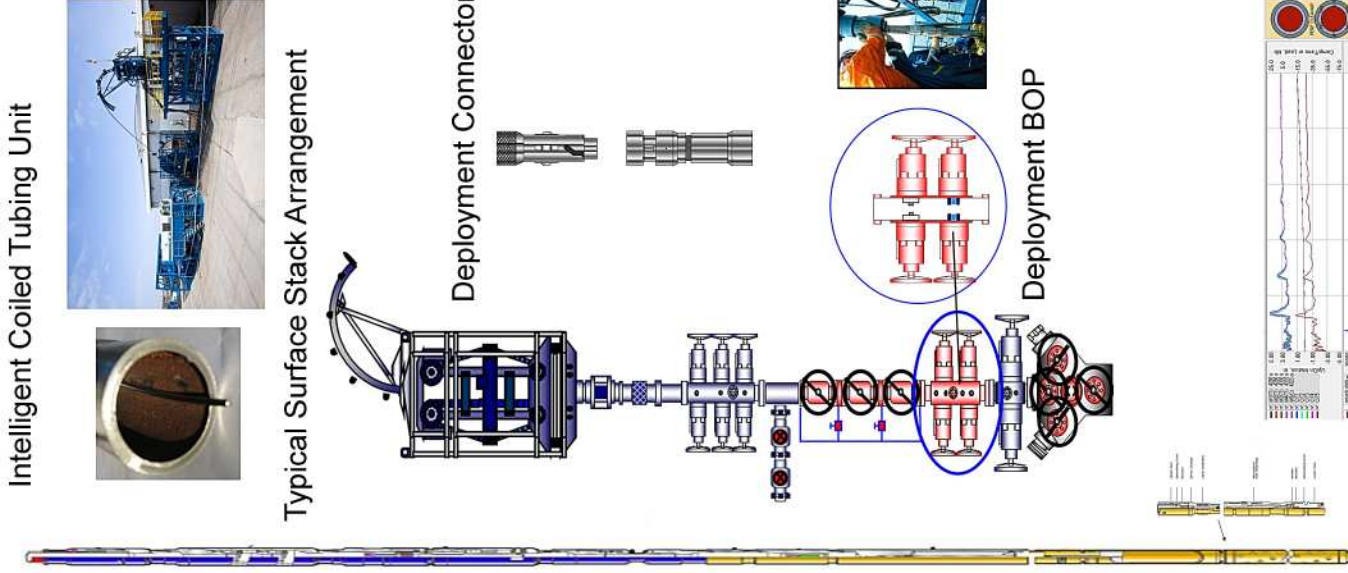
- Failure of a gravel pack screen in the lower completion resulted in the potential loss of the well.
- An interval was identified higher in the well, however more than 7 days of rig time was calculated to complete this zone with wireline.

Pre Job:

- The job was extensively modeled for risk mitigation using both dynamic and conventional software suites.
- The deployment subs were extensively tested for reliability under extreme conditions.

Result:

- The snap latch feature of the tools allowed for the deployment of the 313 m gun string in 3 hours.
- A real time gamma ray CCL was used to accurately position the guns at depth.
- An conventional W/L firing head was used to detonate the guns, a hydraulic firing head could have also been run for redundancy.
- Gun were recovered under 1,450 psi pressure, in 48 hours , all shots fired.
- Hi Speed Gauges helped validate model results



Challenge:

- Deploy 313 metres of 3 3/8" 6 spt 60° phased gun in one run
- Accurately position the gun system.
- Perforate the 5 1/2" tubing and 7 5/8" casing
- Recover the assembly without killing the well.

Technique:

- Use a proven live well deployment system.
- Use intelligent coiled tubing to position the gun
- Hold back pressure on base oil to control underbalance and prevent potential sand inflow.

Result:

- Successful deployment and recovery of the gun string.
- Live well deployment system allowed for recovery of the guns under 1,450 psi surface pressure.
- Well was never killed