

Abrasive Perforating

The Horizontal Well Experts



In abrasive perforating, the entry hole created reveals no tubular deformation or presence of flow obstructing debris. Consequently, the sand-laden fluid moves past cement, damaged zone or filter cake and into virgin formation. At that instant, velocity generated through the nozzles propagates abrasive fluid into multiple reservoir layers creating numerous pathways.

Utilizing conventional thru tubing equipment, orientation can be achieved with an engineered weight bar placed below a free rotating swivel joint. Optimizing the direction of perforations allows for cost effective stimulation through conventional fracturing techniques.

Key Features:

- **Eliminates the Use of Explosives**
- **Setting and Perforating in a Single Trip Reduces Costs Associated to Multiple Runs**

Plug Set and Abrasively Perforate



Location: Sweetwater County, WY

Conveyance: 1-3/4" CT

Tool String:

*Oriented Perforating System
Hydraulic Setting Tool*

The objective was to perforate a 1,000' horizontal section of a new well at approximately 11,900' deep in the Baxter Shale. The horizontal leg was successfully perforated in four zones and within the first 5 days the well's daily production was 5MSCF.

Abrasive Perforating System Equalizes Annulus Pressure Allowing Safe Removal of Cut Drill Pipe



Location: Offshore, Australia

Conveyance: 1-3/4" CT

Tool String:

2.13" OD MHA

2.63" Abrasive Perf. w/ (2) 0.125" Nozzles

2.13" High Velocity Wash Nozzle

The objective was to perforate 5-7/8" 26# drill pipe at 2,700m to perform cement squeeze, as well as perforating at 1,300m below BOPs to allow communication to annulus. The operation was successful and the drill pipe was perforated with only 20bbl of sand slurry pumped. Trapped gas in the annulus was able to be circulated out of the hole allowing for cut drill pipe to be stripped out of the hole safely.

Bypassing Perforating System Reaches TD on "Toe-Up" Lateral Section



Location: LaSalle County, TX

Conveyance: 2" CT

Tool String:

2.88" OD MHA

3.50" Bypassing Perforator

2.88" XRV

2.88" Titan SuperMax Motor

4.50" Bit

The customer needed to perforate a well with a lateral section that was "toe-up" a full 5,975'. The tool string tagged PBTD at 15,695'. After the Bypassing Perforator was engaged, 13 intervals were perforated before activating the motor and cleaning to bottom.



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