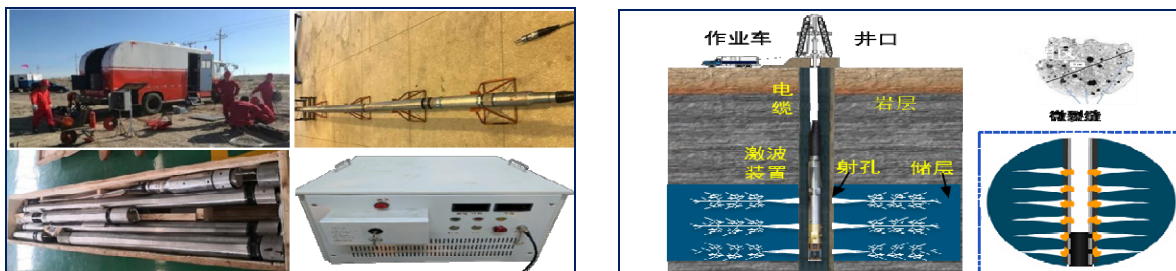


Hydroelectric Pulse Shock Wave Stimulation Technology

Technical principle and characteristics: The basic principle of technology is a hydroelectric effect, forming a high-voltage strong electric field and performing instantaneous pulse discharge inside the liquid. Inside the fluid channel, the explosion caused by fluid rapidly gasification, expansion due to the huge energy is instantly released in the discharge channel which generates a powerful shock wave, and meanwhile, the shock wave could break the blockage, expand the pore throat radius and connectivity of the pores, increase the micro-cracks of the rock formation, improve the effective seepage range, finally achieve the purpose of increasing oil well production and water injection.



Technology Superiority

- ◆ Pure physical method to break the lockage which will not cause secondary pollution of the reservoir.
- ◆ Simpler operation procedure, shorter operation period, the operation could be finished within 4 hours and the tools could RIH together with WORKOVER string.
- ◆ The powerful energy shock wave, the effective range of blockage breaking in the reservoir > 3m;
- ◆ Pulse shock wave achieves directional strengthening, acting the formation vertically, no damage for the casing, no affect for quality of cement bonding;

Product Parameter

- ◆ Instrument size: OD: 102mm, L: 7.6m
- ◆ The maximum output power of single pulse: 1200MW
- ◆ Pulse repetition rate: 5-20 times /min
- ◆ Pulse strength: 40MPa (5cm from the electrode)
- ◆ Maximum operating temperature/pressure: 120°C/60MPa
- ◆ Service life: more than 10,000 times



Technology Application

- ◆ Shale oil/Gas, Coal bed gas, Thin oil, Heavy oil
- ◆ Water drive、Steam drive reservoir
- ◆ Conventional low permeability and medium high permeability reservoirs

