

## Stimulation Solutions for Unconventional Reservoir

ANTON provides precise stimulation solutions for unconventional reservoirs such as shale oil/gas and tight oil/gas. Integration of geology and engineering technology as the core, together with other features such as digitization, flow conductivity optimization, technique integration, professional equipment and devices offering, customized chemicals and tools manufacturing, ANTON can provide technical services covering whole well life cycle through project design, on-site operation, post-operation evaluation, real-time production monitoring and wellbore management etc.

### Technical Features:

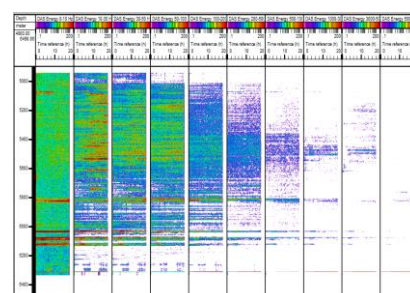
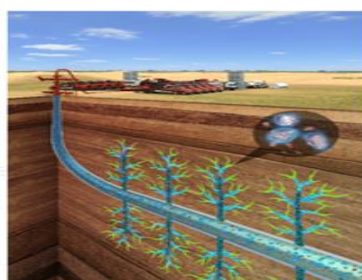
- Digitization: real-time acquisition of reservoir stimulation data via optical fiber, micro-seismic, electro-magnetic imaging and other monitoring technologies; real-time plan optimization to improve pertinence and timeliness; Formation and wellbore conditions displays on the surface to reduce engineering risks
- Flow conductivity optimization: flow conductivity optimization technology from volumetric fracturing contains two aspects: a. nano and temporary plugging technology to achieve multi-scale fractures generation; b. proppant suspension and fracturing fluid self-propping technology to prop these fractures fully
- Integration: project design and implementation to achieve efficiency maximization; complete volumetric pumping system to improve compatibility and efficiency; Advanced coiled tubing technology and customized workover and well testing technology to ensure complex wellbore treatment and post-production maintenance

### Range of Application:

- Providing integrated services for unconventional reservoir including development plan generation, products, equipment, and onsite operation
- Providing technical services including real-time fracturing monitoring and post-frac production monitoring etc.
- Providing individual products and technical services
- Proving wellbore management services for production well

### Achievement:

- Providing services to more than 20 clients globally, including PetroChina, Sinopec, CNOOC, Shell, EOG, LUKE Oil, UEP, Geo-Jade, GCL-Poly, etc.; serving more than 1,000 jobs and setting many industry records
- ANTON is the 1<sup>st</sup> service provider to implement horizontal well staged fracturing technology in major basins involving Sichuan Basin, Ordos Basin, Xinjiang Junggar Basin, Songliao Basin and other unconventional oil/gas production areas, this had accelerated the development of horizontal well staged fracturing technology in China



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