OVERVIEW

Horizontal completions are the most costly part of onshore unconventional projects—often consuming 60% or more of a well’s budget. While technology for directional drilling in unconventional fields has seen marked improvement in recent years, unconventional completion capabilities have not increased as quickly. Weatherford aims to raise the bar on unconventional completions with an integrated solution that combines our hydraulic fracturing, completion, formation evaluation, and reservoir engineering technologies and expertise to improve well productivity and hydrocarbon recovery.

CHALLENGES

INCREASE PRODUCTION EFFICIENCY

Optimizing stage design and perforation placement based on critical data

OPTIMIZE PRODUCTION RATES

Determining the cause of rapid production drops and chronically underperforming wells

REDUCE COMPLETION COST

Selecting the right equipment to minimize the cost of completing long laterals

COMPLETIONS INTEGRATED APPROACH

Our integrated approach to optimizing completion design and, ultimately, production in unconventional fields is exemplified through our FracAdvisor® solution. The FracAdvisor solution leverages Weatherford’s experience in unconventional fields to deliver geo-engineered completion designs.

- **MULTISOURCE DATA ANALYSIS**
  - Expert review of all petrophysical and geomechanical data

- **FULLY INTEGRATED COMPLETION DESIGN**
  - Proprietary workflow for stage, perforation, duster, and frac design

- **FRACTURING OPTIMIZATION**
  - Operational efficiency enhances well productivity
MULTISOURCE DATA ANALYSIS

The FracAdvisor solution integrates data from a range of sources including wireline and logging-while-drilling (LWD) logs, lab tests, and core analysis. Our proprietary, basin-specific algorithms provide consistent stage and perforation placement and are validated using production records from nearby wells.

FULLY INTEGRATED COMPLETION DESIGN

Leveraging the knowledge gained during the data analysis step, we determine perforation and/or packer placement alongside stage-by-stage frac modeling.

FRACTURING OPTIMIZATION

Once the optimal design is ready to put in place, we select the right proppant type and loading. Biodegradable agents further enhance perforation-cluster efficiency and provide the temporary zonal pressure isolation necessary for well refracturing.

TECHNOLOGIES

Technology is at the heart of our approach to meeting clients’ needs. We constantly update and refine our technologies to solve new challenges encountered in the field.

ZONESELECT® COMPLETION SYSTEM

The ZoneSelect system is a unique family of lower-completion technologies, including mechanical and swellable packers, high-torque frac sleeves, and durable composite plugs. The suite comprises solutions for openhole completions, coiled-tubing stimulation, and multizone fracturing treatments.


TBLOCKSURE® DIVERTING AGENT

The TBlockSure temporary diverting and fluid-loss-control agent enhances zonal isolation during stimulation and workover applications. The agent is made of a degradable mesh that provides temporary mechanical diversion and then dissolves, minimizing cleanup and shortening the time to production.


CROSSWAVE® AZIMUTHAL SONIC TOOL

Sonic logs are among the most important data sets when determining the presence and character of natural fractures. The CrossWave azimuthal tool captures 360° borehole images that reveal compressional and shear waveforms as well as rock mechanical properties. By enhancing the amount of information available to completion engineers, these logs enable more efficient fracturing operations without adding to the total rig time.

http://www.weatherford.com/doc/wft256294
SLIMWAVE MICROSEISMIC ARRAY TOOL
The SlimWave array tool acquires microseismic data that is used to produce a “frac map” – a visual representation of the height, length, and azimuth of the area affected by a hydraulic fracturing job. From this detailed picture, completion engineers can determine where the rock is breaking and estimate how far into the reservoir the proppant has traveled.


STEALTHFRAC® LARGE-BORE COMPLETION SYSTEM
The StealthFrac system combines multiple features to optimize plug-and-perf completions in large-bore and extended-reach applications. The large inner diameter enhances flow, the ability to remain downhole throughout production enables access to longer laterals, and the metallic hybrid InvisiBall™ stimulation ball eliminates the need for millout.


CASE STUDIES

The combination of our industry-leading technologies and our disciplined approach has produced measurable value for our clients.

ZONESELECT® SYSTEM INCREASES STAGE COUNT
http://www.weatherford.com/doc/wft305444

TBLOCKSURE® AGENT ENABLES RIG-FREE RESTIMULATION
http://www.weatherford.com/doc/wft301166

TBLOCKSURE® AGENT IMPROVES PRODUCTION BY 83%
http://www.weatherford.com/doc/wft299186

SLIMWAVE TOOLS MAP FRACTURING TREATMENTS
http://www.weatherford.com/doc/wft255766

STEALTHFRAC® SYSTEM UNLOCKS 6 PAY ZONES
http://www.weatherford.com/doc/wft289129