

CobraMaxSM Fracturing Service

Provides the Performance of Conventional Through Tubing Fracturing with the Speed and Versatility of Coiled Tubing Operations

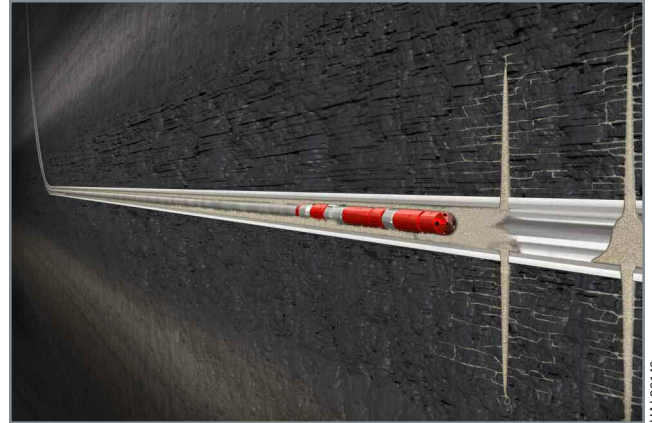
New CobraMaxSM service enables more efficient performance than ever before possible for fracturing multiinterval vertical wells. The process makes it possible to achieve the performance of conventional through-tubing fracturing with the speed and versatility of coiled tubing. CobraMax service enables optimizing key treatment parameters such as:

- Injection rate
- Proppant volume
- Proppant concentration

In addition, Pinpoint Stimulation helps assure that every viable payzone is stimulated.

CobraMax service combines the proven technology of Halliburton's SurgiFrac[®] service with the well control capabilities and speed of coiled tubing. This innovative process enables operators to quickly and cost effectively exploit multiple zones that require larger, higher rate treatments than possible with conventional coiled tubing fracturing. CobraMax service provides several important benefits:

- Enables perforating and fracturing in the same trip in the hole
- Eliminates the need to set mechanical plugs that must be removed later
- Enables the use of conventional coiled tubing units, typically 1-3/4- or 2-in. OD units
- No temperature limits with the bottomhole assembly (BHA)
- No depth limitations, except for the reach of the coiled tubing
- Enables fracturing in casing sizes of 3-1/2 in. or greater
- No downhole packer or bridge plug to manipulate
- All operations are on a live well



CobraMax service combines proven SurgiFrac technology with coiled tubing capabilities for cost-effective stimulation of vertical multi-interval wells.

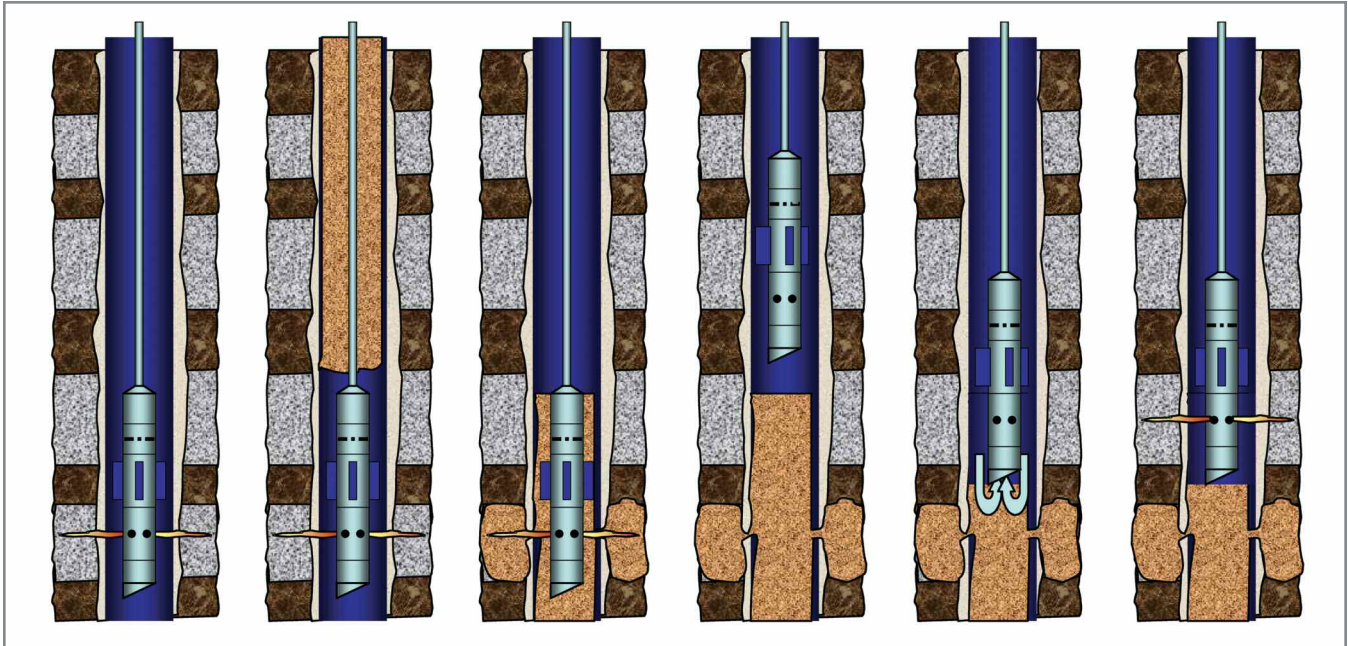
HSE and Quality Focus

- Requires fewer trips in the hole and to the wellsite.
- Requires smaller operating footprint for improved environmental performance.

CobraMax service is continually monitored and improved under Halliburton's Correction, Prevention and Improvement (CPI) process to achieve a high level of health, safety and environmental performance. Halliburton's Management System (HMS) process helps achieve global transfer of best practices and consistently high service quality.

Case History

The process has been used to place over 2.2 million lb of proppant into 17 individual intervals in a single wellbore at a treatment rate of 20 bbl/min with proppant concentration up to 12 lb/gal. The production results after load recovery showed a 120 percent increase as compared to two offset wells that were treated in five stages using bridge plugs and limited entry fracturing techniques.



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The CobraMax Service Process

The process entails pumping through conventional coiled tubing using Hydra-JetSM service to create perforations and to initiate fractures. The main fracture treatment is pumped concurrently through the coiled tubing/casing annulus.

Using the annulus as the main flow path for stimulation fluids offers many distinct advantages:

1. Maximum injection rates can be achieved due to the larger flow area in the annulus. Since jetting is accomplished at much lower rates through the coiled tubing, the annulus treatment pressure is free from the high jet differential pressures. This makes the annulus the optimum flow path to achieve higher treatment rates at lower pressures.
2. Maximum proppant volumes can be accomplished through injection of treatment slurries down the annulus.
3. Multiple intervals can be treated without the need for tripping to change out the BHA – regardless of the volume of proppant used on each treatment. With CobraMax service, a limited amount of
- abrasive fluid is pumped through the coiled tubing to create perforations through the casing, to create tunnels in the near-wellbore reservoir rock and to initiate fractures. This extends the longevity of the jetting tool to enable treating multiple zones without changing the BHA.
4. Maximum slurry proppant concentration, particularly in the near-wellbore of a fracturing treatment, results in enhanced conductivity necessary for treatment load recovery and production. The CobraMax process provides a near-wellbore proppant pack at the end of the treatment while providing a means of removing excess proppant via the coiled tubing.
5. Maximum asset value can be achieved through a single trip to the wellsite to deliver multiple, customized fracture treatments on individual productive horizons without the need for conventional perforating methods. This means reduced cycle time to production, lower cost per BOE and higher efficiency in the stimulation efforts.

For more information about how CobraMaxSM service can help add production from multiple zones and improve your ROI, contact your local Halliburton representative or e-mail stimulation@Halliburton.com.