

# Perspectives on refracturing

New technologies and methodologies are key to the successful revitalization of mature shale wells.

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When it comes to the concept of refracturing within the industry, the key word is “potential.” This concept of returning to mature shale wells to refracture them to increase or at the minimum to restore EUR has the potential to help operators get more out of their wells. Even so, it is currently being greeted with varied responses.

Service companies are referring to it as the next wave. It may be the next wave for these companies as it represents an opportunity to maintain work in an economic downturn and to continue conversations with operators. But is it the next wave by which it’s going to increase our production levels or simply maintain? There are many considerations to be made. Each case is very different, and decisions are based on economics and risk as operators are asking themselves, “If I spend this amount, how much will I get back?”

## Case for refracturing in shale

Oruganti *et al.* cited a reason to pursue refracturing in shales. Results presented from the Eagle Ford and Bakken plays showed increased reserves and incremental net present value. Refracturing operations showed an increase in EUR of 53% and 69% for the Eagle Ford and Bakken, respectively.

According to another author, refracturing operations on a well in the Woodford Shale resulted in a ninefold production rate increase.

Such stories are fueling interest in refracturing shale wells. Also driving interest in the refracturing technique are the low oil recovery factors in horizontal wells, improved fracturing techniques and the current oil price environment. Fracturing techniques have dramatically improved, with wells originally fractured using older and less effective techniques becoming potential refrack candidates.

Given lower oil and gas prices, operators are reassessing new wells, and service companies are seeking to grow business opportunities. With about 600 refractured wells documented since 2000 along with countless restimulations, operators stand to maximize what they already possess at 25% of original fracturing costs.

## Why not refracture?

It’s been said that refracturing is a competitor to drilling. Refracturing is absolutely not going to decrease the number of wells drilled. Some operators are just unsure and take a wait-and-see approach. Also, there may be strategic reasons and acquisition targets involved. Because the refrack business is estimated to represent only about 11% of the horizontal wells fractured by 2020, some operators say that the percentage is too small to warrant their time.

## Things to consider

There are a multitude of points that need to be considered before making a decision to refracture a well. Some of the key elements are whether or not there are enough hydrocarbons in place to justify going after them, the condition of the well and if tools can be run into the wellbore. Casing integrity is a key consideration. It is important to avoid failure should high pressures be reintroduced into older wells. Nonideal conditions might exist such as weak casing due to stress or corrosion; a poor-quality cement job; too much stress from

large dogleg severity; and natural faults, which could reactivate and crush the casing.

Refracturing offers an opportunity for the industry to innovate and change the quality of the well. Now, with more than 70% of U.S. land wells containing two or more wells on a pad, might it be economical to refracture two or three out of five wells on a pad using a frack factory-style approach? **ESP**

*References available.*

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