Re-fracking Old Wells Is Extending the Fracking Revolution

News that the oil industry is importing many of the new technologies developed by natural-gas producers, which led to steadily declining natural-gas prices, was greeted with great disappointment by at least one green group. Upon learning that fracking was not only a long way from disappearing in the face of declining oil prices but was actually on the verge of a resurgence, Sharon Wilson, a Texas organizer for Earthworks, told Bloomberg, "It's terribly disappointing."

It might be disappointing to Wilson, but it's the natural reaction of the free market to adversity: Instead of hunkering down or closing up shop, producers are now motivated to expand production on existing wells, using the newest technology called "refracking" — the practice of returning to older shale oil and gas wells that had been fracked in the recent past to capitalize on newer, more effective, and less costly extraction technology.

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Said Hans-Christian Freitag, vice president of Integrated Technology at Baker Hughes, one of the world's largest oilfield service companies:

> The timing is absolutely perfect for this opportunity. Right now, the North American unconventional oil and gas industry is in a bit of a crisis.

That might prove to be an understatement. With the crash in oil and natural-gas prices, pricing models that allowed developers to coin money at $100 a barrel are under severe pressure at $50. At $30 a barrel or lower, those models turn cash cows into gaunt scarecrows.

Enter refracking. New wells can cost as much as $12 million a piece to drill while re-fracking the same well, utilizing the same piping, pumps and facilities, can cost $2 million, or less. And early results are showing that refracking is often obtaining more production from a three-year-old well than the well originally generated. Up until now, the oil producers were engaging in something called "The Red Queen," referring to the character in Lewis Carroll's *Through the Looking-Glass*, who tells Alice that in order to remain in place she must run faster:

> Now, here, you see, it takes all the running you can do, to keep in the same place. If you want to get somewhere else, you must run twice as fast as that!

With production rates of new wells using fracking technology falling off dramatically after the first year or so, by as much as 60 to 80 percent, companies were committed to punching more and more holes in the ground above shale formations just to maintain production. But with the drop in oil prices, marginal producers were faced with the stark reality of lower revenues, putting some of them at risk of default on debts now backed by declining reserves.

Refracking those wells not only improves their production but does so at much lower costs. Carl Larry, a director at Houston's Frost and Sullivan energy consulting firm exulted: "You want to talk about the next step to increasing production without increasing costs? Re-fracking looks great."

The new technology involves blocking off the old fissures in the shale rock with diverting agents, described as tiny plastic balls, thus allowing new fissures to develop when the well is re-fracked under high pressures.

This technology, which some are calling Fracking 2.0, is not only reviving old wells, but it is also causing major rethinking about oil and gas as providing a source of increasing production even during times of declining prices. The traditional thinking goes like this: A marginal producer idles some of his rigs, hoping to cut expenses while waiting out the storm of declining prices, hoarding cash in the process. With enough marginal producers pulling back, so that thinking goes, production of gas and oil will fall far enough to bring supply and demand back into balance and make those marginal producers profitable once again.

According to Donovan Schafer, a research analyst at *Seeking Alpha*, exactly the opposite happens. Imagine a company, he suggests, that can't make money drilling in today's low-price environment. It has three choices:

> • The company might — out of hope and desperation — continue producing … to generate enough cash to make its interest payments in the hopes that oil prices will eventually rebound enough for it to repay its otherwise unpayable lump-sum principal payments when they come due;
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> • If oil prices do not rebound and the company defaults, the company will go through some form of bankruptcy that will … recapitalize the company under some arrangement that will allow it to be profitable [at today's lower prices]; or
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> • The company may try to sell its assets at distressed prices … in an attempt to dig itself out.… The resources will be acquired by a new producer who can profitably produce the resource.

In each case, the oil will be produced, even as the market price continues to decline. Adds Schafer: "Only if prices fall below the minimum price required for profitability will [that resource] remain undeveloped."

OPEC may be making the same mistake it did back in 1986 in assuming that production will be removed from the market if it continues to pressure oil prices today. But Daniel Yergin, author of *The Prize*, noted their failure to recognize market forces back then:

> Was the price now poised for a great fall? Most of the exporters [primarily OPEC] thought so, but they expected no more than a drop [from more than $30 a barrel] to $18 or $20 a barrel, below which, they thought, production … would not be economical.…
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> Actually, operating costs — the cash costs to extract oil — were only $6 per barrel [at the time], so there would be no reason to shut in production at any price above that.

The combination of market forces, re-fracking technologies (which are bringing extraction costs ever lower), and a change in the mindset from the continually failing "peak oil" hypothesis to the recognition that energy is available out there somewhere — given sufficient time and incentive to find and develop it — is assuring investors and consumers alike that life in the oil patch continues to grow and thrive and prosper. It also further confirms the emasculation of the OPEC cartel whose days of political manipulation and punishment for its enemies are close to an end.

Photo of fracking wellhead: Joshua Doubek

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