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FEATURE: Best US shale acreage may produce for some years: analysts

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* Best lands may produce up to a dozen-plus years

* Returns for less-core acreage go up with higher oil price

* May require new learning curves for less-productive properties

Low oil prices have dragged on to a point where US shale oil producers are now trying to establish just how much prime acreage is left before they must either further consolidate or begin tackling second-best properties.

And that could require a bit of time to learn all over again how to make higher-cost plays economic, analysts say.

NYMEX front-month crude prices have lingered between $40/b and $50/b since April, forcing producers to focus on the most prolific acreage. Best guesses are that there are several to more than a dozen years left in the core of major shale US plays -- what is also known as Tier 1 acreage.

Based on recent analysis, for example, the DJ Basin in Colorado and Williston Basin in North Dakota and Montana "still have some good years ahead of them," Taylor Cavey, an analyst at Platts Analytics' Bentek Energy.

While unsure of precise time frames, Cavey said there are "something like 15 years left in the core acreage" of those basins. But if commodity prices rise to a level that spurs more widespread drilling, "that number could be reduced very quickly."

During nearly two years of industry stagnation, upstream operators have selected their very best leases that promise the most oil and gas for the least cost and produced those, largely shelving less-profitable areas for the time being. But this process cannot continue indefinitely, as at some point companies would need more blue-ribbon properties if they want to continue making profits. And such leases are increasingly harder to come by.

HIGHER OIL PRICES TO SPUR NON-CORE DRILLING

Higher prices will incentivize development on non-core acreage, analysts said, although Cavey added the oil price needed for this to occur was currently "unclear."

For example, Platts Analytics' well analysis shows that the western Permian, the most economic oil play, yields on average slightly more than a 20% return at $45/b -- near the current price. That jumps to nearly 30% at $55/b and 40% at $65/b. Of course, the lowest-cost operators may receive higher percentages.

On the other hand, for Tier 2 and Tier 3 acreage "you're probably looking at something closer to $65/b to $70/b [needed for drilling] than $40/b to $44/b," James Williams, president of WTRG Economics, said.

"When you get out to the second tier, typically your production is lower but your drilling cost isn't," Williams said. "You're going to get a lower return on a new well."

The industry has become more efficient, with oil companies lowering costs, improving drilling times and enhancing the quality of well completions.

But this has occurred only for Tier 1 acreage, Michelle Michot Foss, program manager, Center for Energy Economics at the University of Texas' Bureau of Economic Geology, said.

"That's where the geology makes it worth spending the money" for shale leases, Foss said. Once outside the best acreage, profit "goes downhill fast."

"You fall much faster out of the liquids window in the Eagle Ford Shale and more slowly in Permian Basin which is why everyone is in the Permian," Foss said of the two unconventional plays respectively sited in south Texas and West Texas/New Mexico.

SWEET SPOTS VARY

Even within basins, the so-called sweet spots are often variable in results and change over time as basin geologies, and the best ways of drilling and producing them, are better understood.

For example, six to nine months ago, Howard and Glasscock counties in the eastern Permian of West Texas were not viewed as favorably as Midland and Martin counties, but today they are hot locales, Canaccord Genuity analyst Sam Burwell said. The same goes for Reeves County, in the western Permian, which "today looks way more economic" than earlier in 2016, he said.

"Operators in the Permian have done a good job of proving initial production rates can be high and you can get solid recoveries in parts of the basin previously written off as not good," Burwell said.

Larger companies tend to focus more and earlier on the so-called "core of the core" and choicest acreage -- often because they could afford to pay more for it in the first place and have larger and more experienced technical staffs. Even if not, in some cases operators can spin black gold out of proverbial straw: they can convert Tier 2 to Tier 1 simply by lowering costs and tinkering with better well completions and drill bit placement.

EOG Resources, one of the premiere US shale companies, is doing just that with its focus on what it calls "premium" drilling locations -- the only kind the company plans to drill from now on. These are wells that yield at least a 30% after-tax return rate at $40/b.

Over the last two years, that provides a roughly 95% increase in the quality of EOG's wells to be drilled and a 50% uplift for this year, company CEO Bill Thomas said in a quarterly call earlier this year.

Thomas believes "a large percentage" of EOG inventory will be converted to premium over time because of its existing quality and through technology, efficiency gains and "as we continue to learn how to target the rock more correctly and [get] better at picking out the high-quality rock in the target zone."

HOW WILL DUCS PERFORM?

Pipeline companies are also trying to determine how wells will perform, in order to keep pipelines full -- particularly from oil flowing from the hundreds of drilled but uncompleted wells that may be produced in the next year or so.

These wells, commonly called DUCs, were drilled at low oil and gas prices and then "banked" while operators awaited higher prices before completing and bringing them on production.

Slowly, they are coming online. But in the months in-between, conditions may have changed, Foss said.

"There's no clue on how these wells will perform," she said. "You can't claim to investors that a DUC will provide the same recovery as existing wells, because the variability in these plays is so high and you may encounter complexities and other things [that didn't exist] in your previous drilling and well results."

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