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## Conventional in Unconventional—Where's The Love?

*by Mark Nibbelink | Feb 27, 2019 | Oil and Gas Industry | 0 Comments*



You'd think our industry, built on the broad shoulders of countless wildcats and new field discoveries, would have a soft spot in its heart for conventional prospects and targets. With Valentine's Day just passed, however, we're probably all reminded of past relationships that ended once we'd met our true love.

The industry's "true love" these days are unconventional resource plays.

Wall Street's analysis of the value proposition of unconventional oil & gas development is laser focused on the reserves potential of individual reservoirs — Eagle Ford, Haynesville, Bakken.

In the Permian, the investment community has talked at length about the stacked pay nature of the reservoirs — Wolfcamp and Bone Spring, for example — but there has been little to no discussion regarding potential uphole reserves in the fairways of the Eagle Ford, Bakken, Haynesville, and other resource plays.

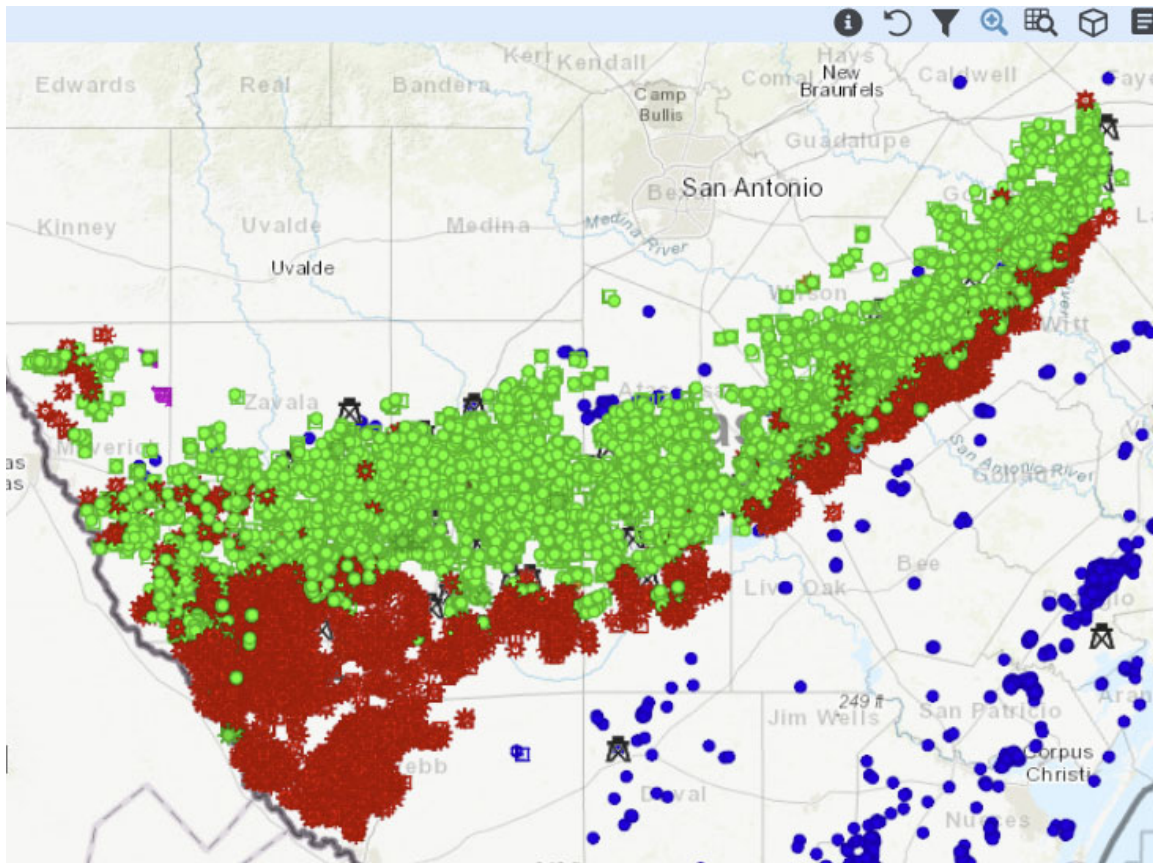
Since these uphole reserves have, in most cases, not been targeted or tested with either dual completion (too much depth separation) operations or new wells, it's understandable these "hidden" reserves are not part of the "normal" valuation discussion. There are just too few company press releases that give guidance on these potential assets.

Recently, I was looking at a well-respected company's website and scouring through their press releases. All the commentary in quarterly earnings releases

were focused mostly on Permian and somewhat on Eagle Ford operations. There was no mention — that I could find — of a shallower field development program that was 4,500 feet uphole to the primary target. This field is within the fairway of the primary target, and when net revenues from net production are added to the recent field asset sale price, this unexpected conventional prospect delivered an estimated 8-9X return on invested drilling and completion capital.

Consider how many wells have been drilled in unconventional plays that lie within known producing fairways of “normal” reservoirs. How much new data has been added to the geoscience database?

This map shows the general outline of Eagle Ford development.



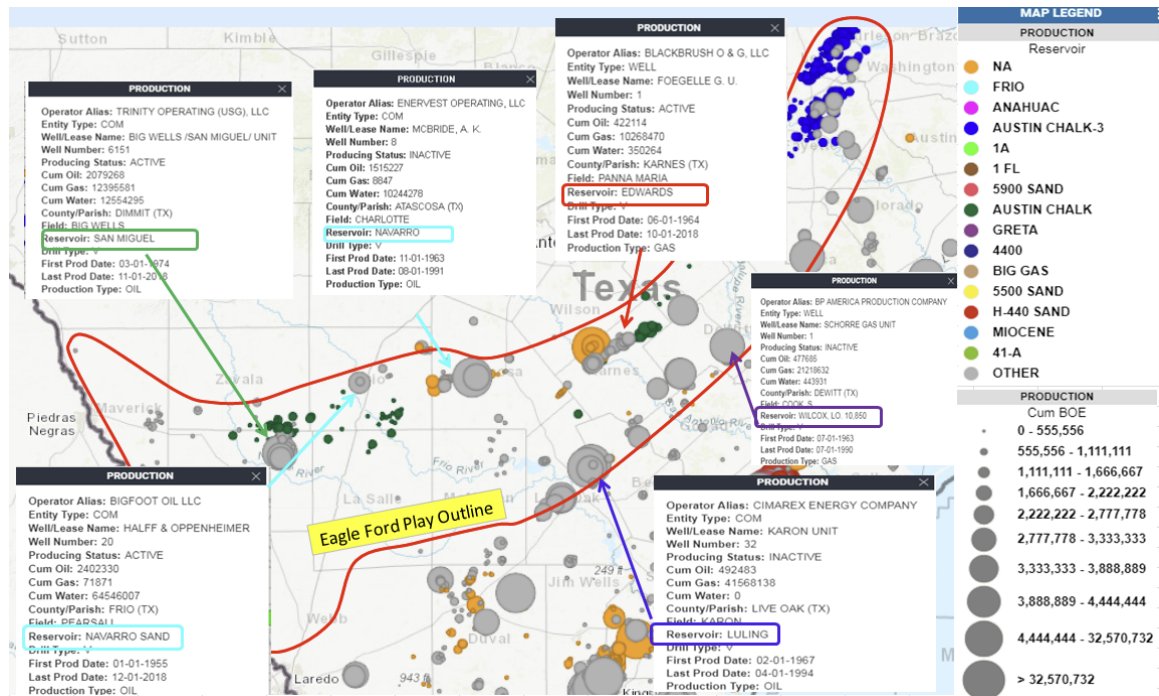
There has been a huge amount of subsurface information added to the geology database in this area. If you add the 3D seismic that has been shot to fine tune wellbore positions and geosteering, it's clear there is now a massive amount of new high-tech digital well and seismic information to support re-interpretation of CONVENTIONAL opportunities existing above and below the Eagle Ford.

This assumes, of course, Eagle Ford operators logged the open hole above kick-

off points with good quality, well-chosen logging suites, or at the very least, had a mudlogger on location.

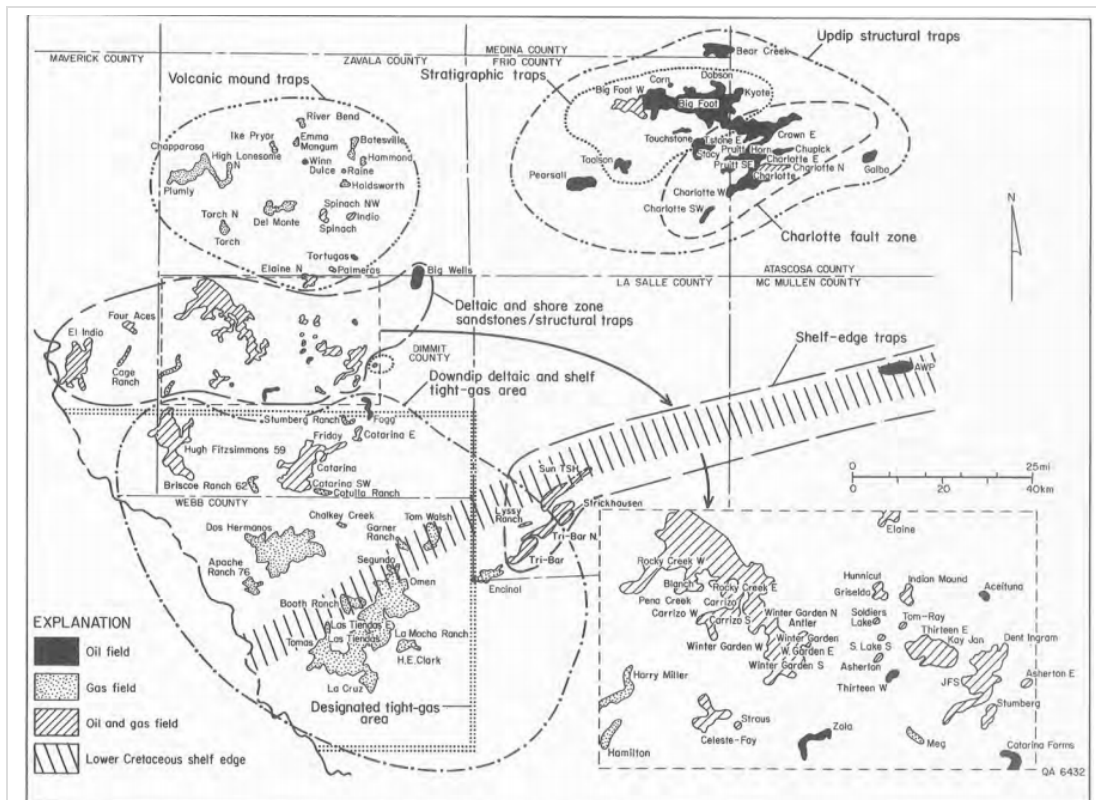
Assuming they did, what might they be looking at?

The map below shows wells with cumulative BOE values of 300,000 or more that were completed in non-Eagle Ford reservoirs.



Note the variety of reservoirs flagged — San Miguel (AE-above Eagle Ford), Navarro sand (AE), Lower Wilcox (AE), Edwards (BE-below Eagle Ford). Other reservoirs in the mix include the Austin Chalks (AE), Olmos (AE), and Luling (AE).

However, the distribution of favorable reservoir facies in these clastic reservoirs can be complex. Reservoir development is patchy, non-linear, affected by faulting, and can change abruptly, as the following South Texas map shows.



(Source: DEPOSITIONAL SYSTEMS AND OIL AND GAS PLAYS IN THE CRETACEOUS OLMOS FORMATION, SOUTH TEXAS, Noel Tyler and William A. Ambrose, Bureau of Economic Geology, 1986)

**All this new data should help to bring clarity to the geological interpretation of these complex plays.**

It's critical to realize a number of these fields were discovered many years before 1970, the first year the Railroad Commission of Texas (RRC) digitized production information. Anything before that is not available in digital form from the RRC.

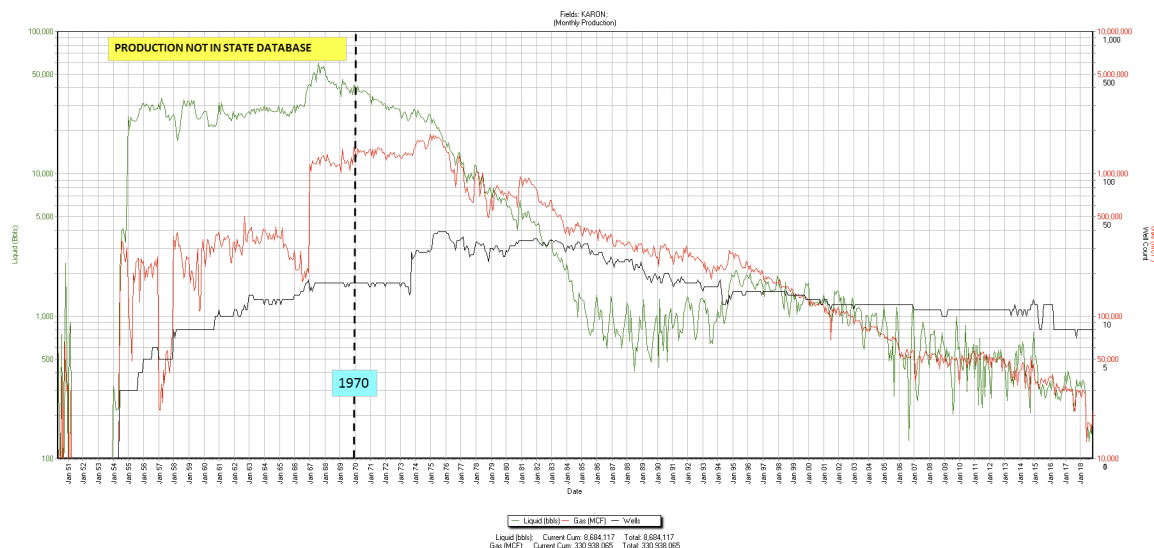
For example, the Jourdanton (Edwards) field had first production in 1946. These early discoveries were made when 3D seismic was not the default standard for seismic data acquisition, so interpretations relied on fewer well data and the very gross statistical sampling of the subsurface inherent in 2D operations.

In 2006, Drillinginfo embarked on a very comprehensive project to digitize old field production records in Texas, Oklahoma, New Mexico, and Louisiana. In some cases, production volumes from the mid-to-late 1930s were captured.



The reserves potential in the reservoirs that have produced in these old fields may be unknown to many current unconventional operators simply because they don't have access to this older production data. Companies that have seen steady retirements of experienced geoscientists may also find themselves lacking the broad play and reservoir insight retired geoscientists have developed.

Being unaware of true potential can be costly and leave money in the ground. For example, the Karon (Luling) field produced 5.5 million barrels of oil before 1970, which was 64% of its total field cumulative production.



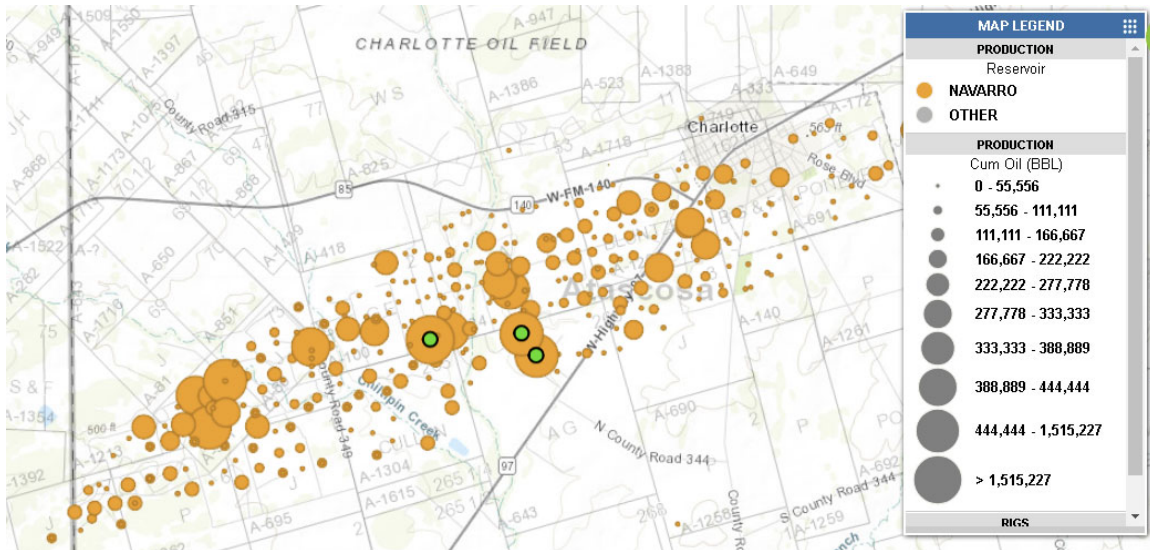
Gas production for the field pre-1970 was 83.6 BCF, which represents 25% of total field production.

Without access to pre-1970 production data, a prospect generator might well conclude that with a median oil production of 10,552 barrels and median gas production of 1.19 BCF, an analogy to Karon field may not be worth chasing, especially in an era of weak gas pricing.

However, the median value for cumulative pre-1970 oil production is 56,474 barrels, and the pre-1970 median gas production value is 2.76 BCF. There are five wells with first production pre-1970 that have produced more than 300,000 barrels of oil, whereas the post-1970 data has a maximum production volume of 169,900 barrels.

The Charlotte (Navarro) field, also produced 33 MMBO (64% of total field

production) before 1970.



If the executive decision to ignore Luling, Navarro, or other conventional reservoir production is misinformed by its reliance on field or per-well cumulatives that do not include pre-1970 production, it's likely the decision relied on grossly underreported EUR potential

That's a big opportunity missed.

The story can be repeated in the DJ, Powder River, Haynesville, SCOOP/STACK, and other unconventional plays.

Equity analysts ought to be paying attention to this hidden uphole and downhole potential. Given the size of the possible reserves, and the shallow drilling (read inexpensive) drilling costs, these "hidden assets" could potentially have an NPV higher than their deeper unconventional brethren, especially if unconventional practices such as horizontal drilling are deployed in newly discovered, tight, "mature" conventional reservoirs.

How are conventional exploration opportunities being assessed at your company?

Are you showing them any love?

Let me know by emailing me at [mnibbelink@drillinginfo.com](mailto:mnibbelink@drillinginfo.com). I'm a prospect

generator at heart and am interested in your thoughts.

Bio

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