

The Haynesville Shale

The E&Ps Should Start Pricing In Optionality

As we predicted last week, Petrohawk unveiled the Haynesville (a.k.a. Bossier) Shale play at its analyst conference. This is the first time any large public company has released details about this emerging play in North Louisiana. Over the past week we surveyed our buy-side clientele, and less than 5% were aware that this new play existed, and no investors were pricing in any value associated with this play. Therefore, we believe that stocks with exposure to this play like GDP and HK have significant upside potential. Additionally, our research indicates that HK's parameters for the play are conservative and that the Haynesville is likely capable of producing 5+ Bcfe for \$5-6MM, which would mean its economics could rival the Barnett and that acreage could be worth over \$40,000/acre.

- **Haynesville Shale horizontal wells should be 5+ Bcfe.** As we highlight later in the note, data from different sources is triangulating to the conclusion that wells in the Haynesville are capable of producing much more than the 3 Bcf that Petrohawk's management identified. Given what we know about production rates, current leasing activity, and gas-in-place, we think that wells near CHK's current activity in southern Caddo Parish are capable of producing 5+ Bcf.
- **5+ Bcf wells would suggest acreage is worth \$40,000+/acre.** These wells only cost \$5-6MM/well, which would mean that these reserves would be worth ~\$1.25/Mcf in the ground using \$7.50/Mcf gas prices. Given a 5 Bcf well (4 Bcf after royalty) on 120 acres, this equates to \$42,000/acre in value.
- **Companies have significant upside exposure.** We realize that it is still very early in this play, and it will take significant exploration work to derisk this acreage. However, we are confident that the acreage between Elm Grove and East Carthage is worth \$10,000-42,000/acre. As shown in Table 1, even if we assume a conservative valuation of \$10,000/acre it would mean that GDP and HK have significant upside potential. We think investors will start ascribing this value to the stocks in the coming weeks. SM, STR, PVA, XCO, EP, and CRK are also in the immediate vicinity, and DVN, APC, EOG, XTO, PQ, and GMXR have acreage in East Texas (see Figure 1) that could potentially be prospective as the play expands.

Table 1: Companies with exposure to the Haynesville Shale (Valuing at \$10k/acre)

	Fields	Net Acres (k)	Value (\$MM)	Value / Share	% of Share Price
GDP	Bethany Longstreet	20	200	\$ 8.00	30.9%
HK	Elm Grove	30	300	\$ 1.56	8.5%
CHK	Various	50-100	750	\$ 1.58	3.4%

Source: JPMorgan estimates, Company data.

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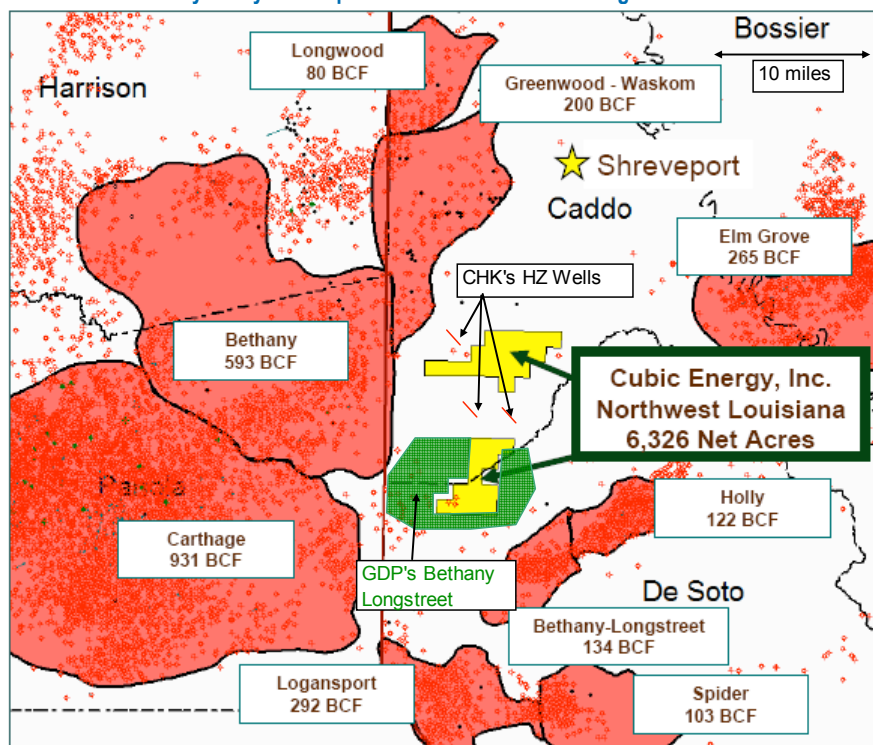
Haynesville horizontal wells should be 5+ Bcfe wells

Actively leasing acreage for \$10,000/acre. We have talked to several operators, and they have confirmed that CHK is leasing just the deeper rights (below the Cotton Valley, which is the primary producing formation) for \$7-12,000/acre. In order to justify these bonuses, CHK obviously thinks the acreage is worth much more than that.

Reported results would indicate potentially 5+ Bcfe wells. Several operators have drilled vertical tests, but only CHK has drilled horizontals. We know of 3 horizontal wells that tested between 2.5-5.5 MMcfe/d, but were significantly choked back so they could likely produce at 10+ MMcfe/d each. This would suggest recoveries of 5+ Bcfe/well.

Gas-in-place study confirms 5+ Bcfe wells. HK was unable to release the core data that would help us analyze the specifics of the Haynesville Shale, but that's okay because Cubic Energy Inc already released its core data from 2 wells adjacent to GDP's Bethany Longstreet field back in November 2007. It found 100-150 Bcf/section of gas in place. We think that total recoverable gas is likely ~25Bcf/section, which would be the equivalent of 5 Bcf wells on 120 acre spacing.

Figure 1: Goodrich's Bethany Longstreet field and Petrohawk's Elm Grove field are not far from CHK's current activity. Many other operators are in the surrounding area as well



Source: Cubic Energy Inc, Goodrich Petroleum

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