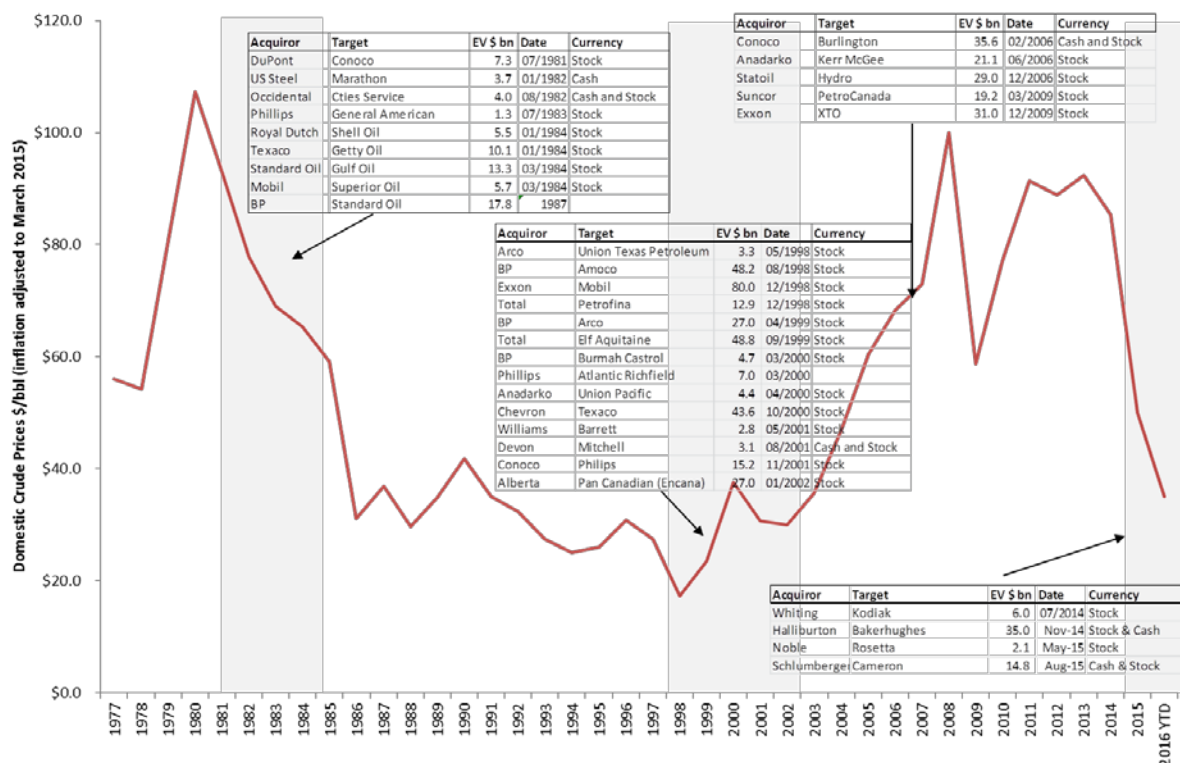


Find Me Somebody to Love: The Rise of the Basin Dominator

In September 2015 we presented the Kimmeridge outlook for commodity prices and suggested that the environment of 2015-16 strongly echoes the cycle that unfolded in 1998-99. Both periods follow a similar schematic: a collapse in commodity prices to levels where returns on capital are the lowest seen in 20 years, a deceleration in emerging markets coupled with currency instability as US-denominated debt becomes harder to sustain, stabilization in demand, and eventually, a reduction in supply leading to a recovery in price. Another output of previous down-cycles was industry consolidation, a trend that is also likely to dominate 2016. In this note we outline the specific factors influencing the types of consolidation which appear most likely to occur, emphasizing that while we expect transactions for both Majors and mid-sized E&Ps, the strategic rationale for each industry class will be different.

A History of Energy M&A: What Goes Around Comes Around

Since 1980 there have been two major down-cycles in the oil price which resulted in abnormally low returns. These include the periods between 1982-86 and 1997-2000. In the first cycle of the early 1980s, the industry saw a wave of consolidation as the companies created by the breakup of Standard Oil in 1911 began to recombine. This trend began in 1983, when Phillips merged with General American and continued in full-force in 1984 with the mergers of Texaco and Getty, and Standard Oil of California and Gulf Mobil and Superior, and with Royal Dutch acquiring the remaining portion of Shell that it did not yet own. The combination of BP and Standard Oil in 1987 marked the end of the wave.



Source: Company Reports, Google, and Bloomberg

For almost a decade following this consolidation, Major M&A activity was minimal, while return on capital for the peer group hovered around 9%, or “normal” levels. However in 1998, with the drop in crude prices, the major oil companies were once again forced to reevaluate their strategies. BP led the charge with the creation of the SuperMajor through its acquisition of Amoco in 1998. That same year saw copycat transactions between Exxon and Mobil, and Total and PetroFina (later adding Elf), and the trend continued in 2000 with the merger of Chevron and Texaco, and in 2001 with Conoco and Phillips. The one-upmanship didn’t stop there either, as BP also acquired Arco in 1999 and Castrol in 2000, while five years later, ConocoPhillips went on to add Burlington, and ChevronTexaco acquired Unocal. Further down the food chain the merger mania also accelerated, as Anadarko acquired Union Pacific, Western Gas Resources, and Kerr McGee, Alberta Energy and PanCanadian formed EnCana, Devon bought Mitchell and Ocean Energy, and Chesapeake bought Gothic, to name just a few.

Looking at today’s down-cycle, the markets have been less active, but the trend for rising M&A has arguably already begun with the BG/Shell transaction and the Halliburton/Baker Hughes merger. These likely represent the first of many more transactions, while the proposed Anadarko/Apache trade is a clear harbinger of things to come. This raises the question of who will be next and what the implications are for oil and gas markets.

Now as ever, one of the reasons that the upstream oil & gas sector is ripe for consolidation is that companies operate within a highly disaggregated industry in which everyone is a “price taker”. The four largest publicly-listed producers each represent just 1.5-2.6% of the total oil and gas production base globally. In the US gas market, the largest producer ExxonMobil accounts for 4.3%, followed by Chesapeake (4%) and Anadarko (3.3%). There are some larger companies, but these are unlisted. For example, Saudi Aramco represents 10.8% of the world oil market, but there are 1,000 operators in the US alone. This suggests that unlike the oil service industry, the refining and marketing business, and the power space, which are more consolidated, the upstream segment is ripe for a wave of M&A.

While other forecasters have also predicted a rise in M&A in response to record low returns, the more pressing questions are what the strategic rationales will be for the various participants and what shape these transactions will likely take.

The Rationale: The First Cut is the Deepest

A merger is rarely the primary solution for a management team given its impact on career development. As prices fall, operators slash headcount, reduce drilling, and squeeze service providers. Sooner or later, however, little fat remains to cut, with service providers operating at cash costs and operations lean. At this point, combining to create further synergies becomes an obvious, if not necessary, fix.

Historically the urge to merge has been driven by the following efficiencies:

- Head count reduction – typically the removal of one corporate headquarters and removal of duplicative staff
- Capital spending reductions – through high grading the drilling program and consolidation of acreage
- Service/operations leverage, i.e. concentrating buyer bargaining power

- Cheaper financing – lowering cost of capital through a more profitable, diversified portfolio

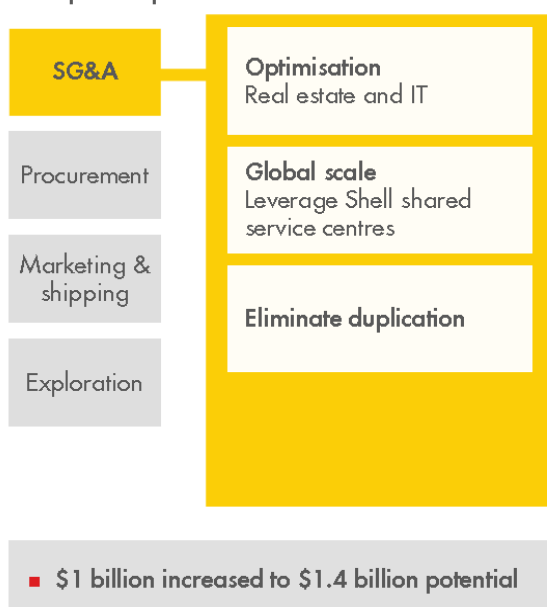
The relative balance of these motivations changes with each cycle, and it is important to understand how they weigh over time. In the early 1980s, M&A activity was focused primarily on deriving benefits from scale and was somewhat US-centric. It was also largely led by a survival instinct; borrowing costs were high and OPEC spare capacity of almost 10 million barrels per day suggested a long down-cycle. The strategic drivers in the mergers of the late 1990s were primarily driven by financing needs. As the industry moved into the ultra deepwater and away from the US onshore, the enormous capital costs involved in mega projects (Angola, Nigeria, Brazil, Kazakhstan, etc.) meant that only the largest players could bid; as a result there was a significant competitive advantage in scale here too but for a much different reason. This led many bankers to look at the acreage overlap in the international market, hence the combinations of BP/Amoco/Arco, ExxonMobil, and ChevronTexaco. In addition, consolidation within the downstream and chemical segments implied further cost reductions.

Today the rationale is different as compared to previous cycles and depending on one’s position in the sector. Looking at the Majors, it is clear that the strategic drivers are not access to capital or service leverage. For the Majors it is a question of replacing the reserve base, which has become increasingly difficult as the deepwater has disappointed and Russia/Middle East has become more difficult to access. Their other motivation, as always, is head count reduction. In this respect, the Shell/BG transaction makes perfect sense in that Shell is acquiring LNG/gas growth while the relative overlap allows for the removal of an entire organization.

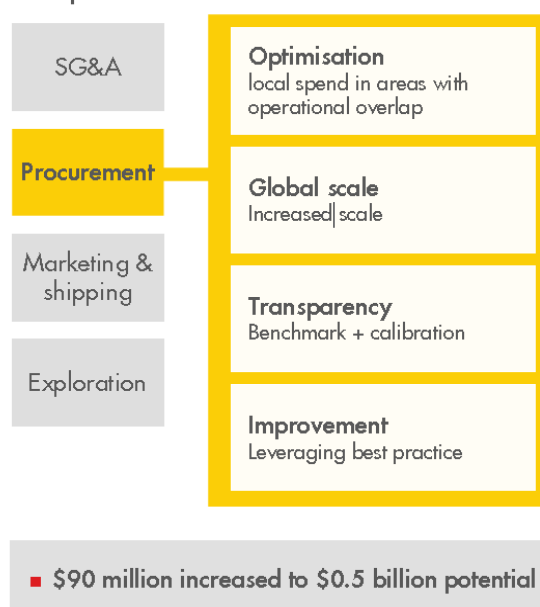
SYNERGIES UPDATE: SHELL + BG



Example: Corporate costs



Example: Procurement



Source: Company Report

Outside the US, obvious acquisition candidates for BP, Total, and Exxon are limited to the likes of Oxy (by Total), Marathon Oil, Apache (ENI), Anadarko (BP/ExxonMobil), and perhaps Noble. However, the scale of these deals is smaller – even Anadarko would only be a 40% addition to BP/Total by market cap. Santos and Woodside could also be candidates, although both have unique challenges.

E&P Mergers: It's About the Zip Code

The strategic rationale for the E&Ps is different from the Majors. Balance sheets are more leveraged, mergers can lead to true operational synergies and leverage against service providers, and the market continues to reward those who sit at the front of the cost curve with a pure play story. We thus expect that the theme across E&P mergers will be the rise of the Basin Dominator E&P, where, taken to its extreme, one E&P controls 50% of the position in a single basin like the Bakken, Marcellus, Utica, Eagle Ford, Delaware, Midland, or SCOOP. The upside prize in this approach is significant. Not only should a Basin Dominator be able to remove an entire organization's SG&A, but the surviving entity should be able to further lower service costs, increase transport flexibility (lowering differentials), combine acreage (minimizing partial interests/undrillable acreage), increase the percentage of single pads, share frac pits, drill a higher proportion of longer laterals, and high grade the acreage/well set. It is with this ambition in mind that the majority of activity should occur.

Breaking down the Basins

When breaking down the major US unconventional plays there are clearly basins that are easier to consolidate than others. Key elements are:

- Maturity (is the basin approaching a plateau of production?);
- Level of disaggregation in acreage and production; and
- Distribution of ownership (who are the relevant players?).

In the current environment it is difficult to envisage consolidation in the Midland or Delaware Basin. Despite the high number of smaller E&Ps (Laredo, RSP Permian, and Diamondback in the Midland, and Cimarex, Concho, and Energen in the Delaware), both basins are growth areas, while share performance has been relatively solid and access to capital remains open. As a result, management teams are likely to avoid combinations out of fear that they will miss out (on commodity price upside and/or geologic de-risking of additional targets) or because of perceptions that they can have outpaced growth in the next 2-3 years, and would thus be giving away value by combining today.

In the Bakken, an opposite problem exists. The top 10 acreage holders include Continental, Whiting, Hess, Conoco, EOG, Exxon, Oasis, Marathon, Statoil, and Occidental, or seven large-cap E&Ps/Majors (greater than \$10Bn EV).

Bakken Shale Net Acreage

Company	Net Acreage
Continental Resources	1,170,000
Whiting Petroleum	811,737
ConocoPhillips	626,000
Hess Corp.	613,000
EOG Resources	600,000
ExxonMobil	580,000
Oasis Petroleum	505,703
Marathon Oil	370,000
Occidental Petroleum	341,000
Statoil	330,000

Source: Shale Experts, Company Reports, and Kimmeridge Estimates

Here, consolidation would most likely take one of two paths. In one scenario, Continental and Whiting could merge, with the combined entity then set up as a buyer of Oasis or a seller to Hess (arguably more accretive). However, this could be challenging given the strong controlling influence of Harold Hamm at Continental. The second path could involve Conoco or Hess acquiring Whiting or Oasis, but would fall short of developing a truly dominant land position.

In the Eagle Ford the challenges are similar to that of the Bakken. Ownership of acreage is heavily skewed towards large-cap companies who are more likely to be buyers than sellers. However, the relative overlap in the Delaware, Eagle Ford and Bakken does highlight the appeal of EOG to ConocoPhillips if they should choose to focus on a domestic unconventional strategy. Outside of Lewis Energy (private) and Sanchez, there are few obvious merger/acquisition candidates.

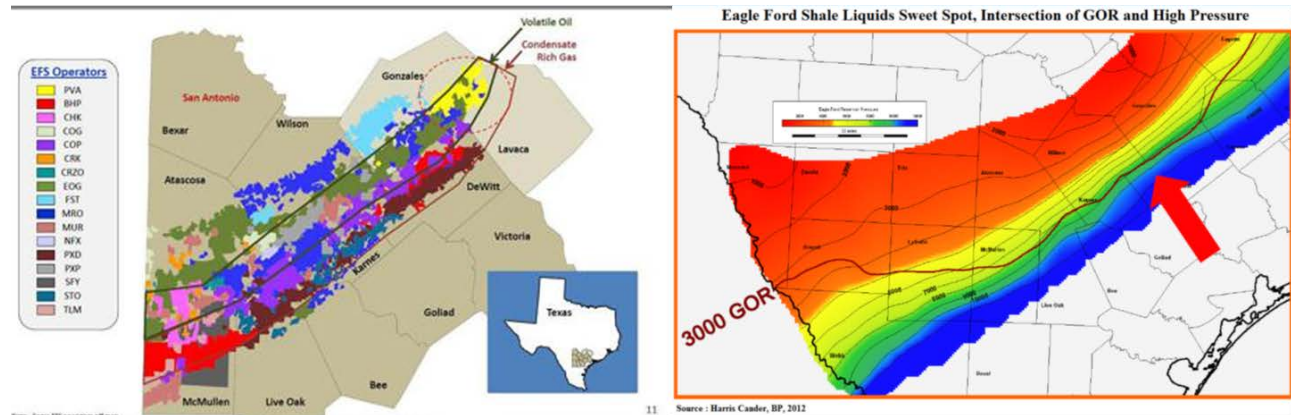
Eagle Ford Shale Net Acreage

Company	Net Acreage
EOG Resources, Inc.	624,000
Chesapeake Energy Corporation	449,000
Lewis Energy	430,000
BHP Billiton Limited	332,000
Sanchez Energy Corporation	223,000
ConocoPhillips	220,000
Marathon Oil Corporation	200,000
Anadarko Petroleum Corp	162,000
Pioneer Natural Resources Co.	150,000
SM Energy Company	144,000
Murphy Oil Corporation	135,591
Penn Virginia Corporation	103,300
Carrizo Oil & Gas Inc.	84,000
Statoil ASA	73,000

Source: Shale Experts, Company Reports and Kimmeridge Estimates

The situation is complicated further by the relative attractiveness of the liquids-rich window and pressure, with the implication (as with other unconventional plays) that not all acreage is equal. Additionally, the major players in the preferred liquid-rich window are EOG, Pioneer, Marathon, and Chesapeake, so it's disproportionately skewed to larger-cap companies as an acquisition target.

Eagle Ford Shale Acreage and GOR



Source: Shale Experts and Company Reports

This is not to say consolidation in the play doesn't have its merits or isn't possible, just that without a Conoco/EOG or Pioneer acquisition, most transactions are likely to be on the sub-\$1 billion scale amongst operators such as Carrizo, Sanchez, Matador, etc.

In contrast, the Marcellus stands out for its attractiveness for the basin consolidation strategy. Among the top 10 acreage holders, seven are below \$10 billion in enterprise value and none are above \$40 billion. In addition, none of these operators have strong controlling shareholders, and most have good overlap of operations, with the exception of the head offices.

Marcellus Shale Net Acreage by Operator

Company	Net Acreage
Chesapeake Energy	1230
Range Resources	1020
National Fuel Gas	908
Southwestern	756
Consol Energy	667
Equitable	600
Anterro Resources	565
Noble	350
Rexx Energy	317
Anadarko	254

Source: Shale Experts, Company Reports and Kimmeridge Estimates

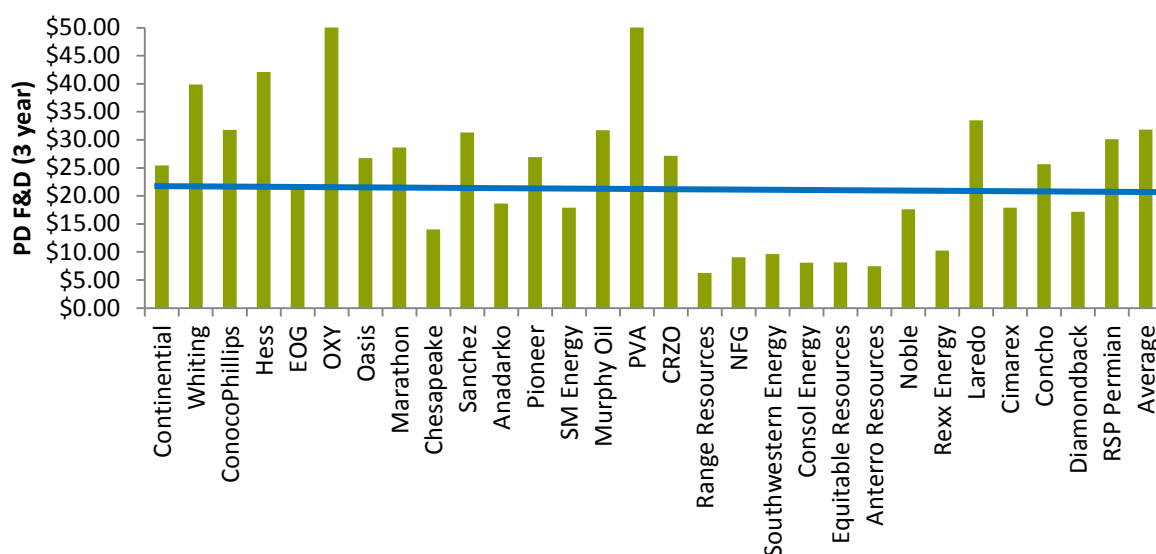
More importantly, the basin has significant operating synergies. Land is disaggregated (dissimilar from the large ranches you see in areas like Texas), infrastructure is a major cost, and three players comprise 48% of the active rig count. Assuming Chesapeake is off the table due to its size, the obvious candidates for a merger are Equitable (\$9.2Bn), Antero (\$9.86Bn), and Range (\$7.58Bn), who have combined annualized SG&A of \$550M, followed by Southwestern (\$7.21Bn), who despite their Fayetteville position would be relatively easy to consolidate, and Consol (\$5.39Bn). Additionally, many of the Marcellus players have high degrees of leverage. For example, Consol, Antero, and Range have combined debt of \$11.6Bn versus annualized operating free cash flow of \$2.3Bn. These heavy debt burdens suggest that many will require some form of restructuring in the next 1-3 years if they are not acquired.

The cheapest reserves are on the floor of the NYSE. But what if they disappear?

One of the oldest adages in the industry is that sometimes the cheapest place to explore for oil is on the floor of the NYSE. During such periods, investors should expect increasing M&A activity. Over time finding and development costs have trended with EV/boe. This makes logical sense given that as the cost of finding reserves goes up, so does the value of the historical reserve base. Consequently, during periods of divergence or volatility, operators often take advantage of depressed public prices to acquire assets. As of 2014 the weighted average PD F&D cost was a staggering \$31.80/boe for the group, versus the current EV/PD boe of reserves of \$21.54 (note: for the peer group XOM is excluded due to the impact of R&M/Chems on the EV).

This suggests that it is currently significantly cheaper to acquire reserves than explore for them. Even taking into account a 30% reduction in capital costs would lower organic PD F&D to \$22.26/boe, suggesting that the potential for broad-based M&A is large.

PD F&D for Selected Names versus Average EV/PD boe of the Peer Group



Source: Annual Reports and Kimmeridge Analysis

If buying is cheaper than exploring, it stands to reason that one of the key data points acquirers are looking at is the reserve base of the target company. Those looking for a wave of M&A may have to wait until March 1, 2016, or until year-end reserves are reported, to see a pick-up in activity. Few management teams will look to announce an acquisition beforehand for fear that the target company could write down 30-50% of their reserves at year-end or take a multi-billion dollar impairment due to lower oil and gas prices. Moreover, debt redeterminations are set by the reserve numbers, and few acquiring companies will want to push forward with a merger or acquisition without line of sight on financing capacity. There are also strong optical reasons for acquiring post year-end reporting:

- Book values will have been written down aggressively, creating little risk of further impairments
- Reserves will have considerable upside by reclassifying PUDs if commodity prices recover
- Post divestments, acquiring companies will be able to show pro forma production growth, while cutting capex and headcount, creating a positive stock story
- An acquiring company may be able to take advantage of historical tax credits taken by the selling company in the former fiscal year, lowering their go-forward tax rate
- Distressed companies will increasingly face 2017 debt expirations and hedges rolling off

Lastly, looking at the financial positions of some of the key independents, it is clear that there is a significant spread between larger-cap names and the small-cap space. For example, the debt-to-market cap of names above \$14Bn is 19%, whereas for those below \$5Bn it is 109%.

Furthermore, the ratio of debt-to-annualized operating cash flow is 1.6x for the large caps, 3.5x for the mid caps, and 3.75x for the small caps.

Group	MC	EV	Debt	Debt to MC	Op CF Annualized	OP CF/Debt
Large Cap	\$528,080	\$626,820	\$98,740	19%	\$60,573	163%
Mid Cap	\$58,880	\$106,610	\$47,730	81%	\$13,452	355%
Small Cap	\$11,165	\$23,344	\$12,179	109%	\$3,260	374%

Source: Annual Reports, Yahoo Finance and Kimmeridge Analysis

Summary

The current environment increasingly indicates that the industry is set for a period of heavy consolidation, as operators fight for survival. The greatest upside is likely to accrue to the E&Ps who can consolidate within a single basin to become the Basin Dominator, with the Niobrara and Marcellus as the most obvious candidates for such an initiative. While the stronger balance sheets of the Majors make them likely to also participate, their involvement will be driven by a desperate need to replace reserves at a price below their organic F&D cost. The losers in this environment are likely to be the service companies who face the heightened potential for an extended trough as merger synergies are generated from capex reductions and operating leverage.

All this being said, little activity is likely to occur until commodity prices stabilize and year-end reserves are reported, since few will want to undertake an acquisition and leave themselves vulnerable to major reserve write-downs or catastrophic debt redeterminations.

Appendix

Company	Market Cap \$M	EV \$M	EV/2014 boe	Debt \$M	M/C \$M	Debt to 9M OpCF (annualized)	Debt to Annualize CF	SG&A d	SG&A as a % of pre SG&A CF	3 year PD/F&D	EV/PD reserves	Year End PD Reserves				
												Oil (Mbbbls)	Gas (Bcf)	Mboe	% Oil % PUD	
Continental	\$7,860	\$14,800	\$11.0	\$6,940	88%	\$1,887	3.68	\$191.16	9%	\$25.44	\$29.45	342.1	962.1	502	68%	63%
Whiting	\$1,540	\$6,760	\$8.7	\$5,220	339%	\$1,201	4.35	\$178.38	13%	\$39.88	\$16.40	362.5	298.2	412	88%	47%
ConocoPhillips	\$54,400	\$76,880	\$8.6	\$22,480	41%	\$7,968	2.82	\$893.33	10%	\$31.74	\$13.62	2,763.0	17,301.0	5,647	49%	37%
Hess	\$12,480	\$15,910	\$11.1	\$3,430	27%	\$1,811	1.89	\$556.00	23%	\$42.09	\$20.87	609.0	919.0	762	80%	47%
EOG	\$35,980	\$41,680	\$16.7	\$5,700	16%	\$3,972	1.44	\$343.73	8%	\$21.60	\$30.92	759.9	3,528.3	1,348	56%	46%
OXY	\$49,080	\$54,860	\$19.5	\$5,780	12%	\$3,181	1.82	\$1,266.67	28%	\$78.16	\$27.59	1,477.0	3,069.0	1,989	74%	29%
Oasis	\$888	\$3,260	\$12.0	\$2,372	267%	\$374	6.35	\$89.55	19%	\$26.75	\$22.28	127.3	114.0	146	87%	46%
Marathon	\$7,230	\$13,200	\$6.0	\$5,970	83%	\$1,617	3.69	\$254.67	14%	\$28.62	\$8.98	1,245.0	1,350.0	1,470	85%	33%
Chesapeake	\$2,930	\$13,720	\$5.6	\$10,790	368%	\$1,407	7.67	\$322.00	14%	\$14.01	\$7.36	427.8	8,615.0	1,864	23%	25%
Sanchez	\$234	\$1,770	\$13.1	\$1,536	656%	\$305	5.04	\$79.05	21%	\$31.33	\$27.47	46.0	110.5	64	71%	52%
Anadarko	\$20,380	\$35,800	\$12.5	\$15,420	76%	\$4,101	3.76	\$1,244.00	23%	\$18.62	\$18.18	859.0	6,662.0	1,969	44%	31%
Pioneer	\$17,410	\$19,490	\$24.4	\$2,080	12%	\$1,052	1.98	\$184.50	15%	\$26.91	\$30.21	397.4	1,486.3	645	62%	19%
SM Energy	\$1,090	\$3,620	\$6.6	\$2,530	232%	\$1,046	2.42	\$165.37	14%	\$17.92	\$12.62	156.0	784.6	287	54%	48%
Murphy Oil	\$3,340	\$5,390	\$7.1	\$2,050	61%	\$1,462	1.40	\$317.20	18%	\$31.69	\$11.30	341.6	812.1	477	72%	37%
PVA	\$19	\$1,210	\$10.5	\$1,191	6219%	\$216	5.51	\$43.73	17%	\$316.26	\$26.37	30.1	94.6	46	66%	60%
CRZO	\$1,290	\$2,700	\$17.9	\$1,410	109%	\$377	3.74	\$73.17	16%	\$27.17	\$41.23	40.5	149.7	65	62%	57%
Range Resources	\$4,010	\$7,590	\$4.4	\$3,580	89%	\$687	5.21	\$48.25	7%	\$6.24	\$8.51	294.5	3,583.1	892	33%	48%
NFG	\$3,540	\$5,510	\$14.1	\$1,970	56%	\$854	2.31	NA	NA	\$9.03	\$21.79	33.4	1,316.8	253	13%	35%
Southwestern Energy	\$2,630	\$7,270	\$4.1	\$4,640	176%	\$1,636	2.84	\$250.67	13%	\$9.61	\$7.33	46.1	5,675.0	992	5%	45%
Consol Energy	\$1,670	\$5,320	\$4.7	\$3,650	219%	\$539	6.77	\$56.11	9%	\$8.08	\$9.98	36.5	2,979.9	533	7%	53%
Equitable Resources	\$7,910	\$9,580	\$5.4	\$1,670	21%	\$1,200	1.39	\$257.89	18%	\$8.14	\$11.91	94.8	4,257.4	804	12%	55%
Antero Resources	\$5,800	\$10,180	\$4.8	\$4,380	76%	\$1,065	4.11	\$238.74	18%	\$7.48	\$16.07	86.0	3,285.0	634	14%	70%
Noble	\$13,150	\$20,040	\$14.3	\$6,890	52%	\$1,981	3.48	\$104.67	17%	\$17.59	\$22.75	246.0	3,809.0	881	28%	37%
Rexx Energy	\$54	\$20,040	\$3.6	\$741	1384%	\$18	4.139	\$31.34	64%	\$10.26	\$8.12	36.8	365.7	98	38%	56%
Laredo	\$1,450	\$2,770	\$11.2	\$1,320	91%	\$301	4.39	\$90.63	23%	\$33.46	\$26.24	57.0	291.5	106	54%	57%
Cimarex	\$7,740	\$8,340	\$16.0	\$600	8%	\$769	0.78	\$67.21	8%	\$17.87	\$20.83	189.7	1,264.0	400	47%	25%
Concho	\$10,540	\$13,750	\$21.6	\$3,210	30%	\$1,014	3.17	\$239.70	19%	\$26.64	\$36.48	211.4	992.6	377	56%	41%
Diamondback	\$4,030	\$4,470	\$39.6	\$440	11%	\$453	0.97	\$293.03	6%	\$17.14	\$67.23	55.1	68.3	66	83%	41%
RSP Permian	\$2,110	\$2,750	\$25.8	\$640	30%	\$169	3.78	\$26.55	14%	\$30.11	\$65.60	35.9	35.9	42	86%	61%
Average	\$280,785	\$409,414	\$ 13.07	\$128,629	46%	\$42,665	3.01	\$7,859.31	16%	\$ 31.80	\$ 21.54	11,408	74,180	23,771	\$0.53	39%

Source: Annual Reports, Yahoo Finance and Kimmeridge Analysis

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