

CLR, CRC, RRC, WLL, XEC Small Cap Producers Rising Again

			Price (US\$/sh)	Market Cap (US\$m)	Enterprise Value (\$mm)	EV/ Market Cap	EV/ Ebitda NTM	PV/ Ebitda NTM	Oil Prod'n/ PV (%)	Dist. Yield NTM (%)	McDep Ratio (EV/PV)
	Symbol/Rating	24-Feb 2017									
Small Independent											
	XEC		126.03	12,000	13,300	1.11	10.9	12.9	63	0.3	1.05
	CLR	B	44.64	5,300	7,400	1.40	11.9	11.3	74	-	0.85
	CRC		18.12	800	7,000	9.16	9.5	15.3	88	-	0.84
	WLL		10.80	3,900	7,400	1.92	7.8	10.4	93	-	0.74
	RRC	B	27.64	6,700	11,200	1.67	8.4	10.0	31	0.3	0.62
	<i>Total or Median</i>			29,000	46,000	1.67	9.5	11.3	74	-	0.84

Summary and Recommendation

Up from the lows of a year ago, Small Cap Independent Producers are looking to further stock price gains as global economic activity and energy demand advance. In a nod to the higher risk of investing in small caps, we classify two stocks as attractive options, rather than investments, meaning that the upside appears strong, but the downside might be severe. Among the three investment candidates, we recommend **Range Resources (RRC)** as a buy for its lowest McDep Ratio and greatest concentration on shale gas. We recommend **Continental Resources (CLR)** as a buy for its best volume per share trend and its lowest operating leverage. Though the highest McDep Ratio keeps us from recommending **Cimarex (CVX)** as a buy, we don't hesitate to hold the stock for its lowest risk and best historical trend in Net Present Value (NPV) per share. **Whiting Petroleum (WLL)** has a low McDep Ratio that points to upside in a favorable market, but because NPV declined so much when the market turned unfavorable, we would keep the relative size of a position in the stock small. Similarly, **California Resources (CRC)** stock is also more suitable as an option size position for its highest combination of high financial and operating leverage. Most of the differentiating measures appear in our regular valuation tables (see [Tables 1-4](#) on pages 2-5). Particularly striking past trends are also reproduced (see charts [Volume per Share](#) and [NPV](#) on page 6). Finally, latest results are incorporated in quarterly analyses and NPV details by company in alphabetical order of stock symbol (see tables [Operating and Financial Estimates](#) and [Present Value](#) on pages 7-11).

Kurt H. Wulff, CFA



Industry Idea

Analysis of Oil and Gas Stocks

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Table 1
McDep Energy Stocks
Ranked by McDep Ratio

			Price (US\$/sh)	Market Cap (US\$m)	Enterprise Value (\$mm)	EV/ Market Cap	EV/ Ebitda NTM	PV/ Ebitda NTM	Oil Prod'n/ PV (%)	Dist. Yield NTM (%)	McDep Ratio (EV/PV)
	Symbol/Rating		24-Feb 2017								
Global Integrated											
	Chevron Corporation	CVX	110.12	208,000	278,000	1.34	8.8	10.3	64	3.9	0.86
	Exxon Mobil Corporation	XOM	81.08	339,000	430,000	1.27	9.4	11.2	53	3.7	0.84
	Royal Dutch Shell	RDS-A B	51.72	205,000	339,000	1.65	6.4	8.6	51	7.3	0.75
	Total S.A.	TOT B	50.26	122,000	185,000	1.51	6.1	9.2	55	5.2	0.66
	<i>Total or Median</i>			874,000	1,232,000	1.42	7.6	9.8	54	4.6	0.80
Large Independent											
	EOG Resources, Inc.	EOG	96.30	52,800	59,900	1.14	11.6	12.0	86	0.7	1.12
	Devon Energy Corporation	DVN	42.81	22,600	30,900	1.37	12.8	11.5	63	0.6	0.97
	Occidental Petroleum Corp.	OXY	64.89	49,600	62,300	1.26	10.4	11.7	85	4.7	0.89
	Marathon Oil Corporation	MRO B	15.73	13,320	21,100	1.59	9.5	11.1	90	1.3	0.85
	ConocoPhillips	COP B	47.04	59,000	98,000	1.67	9.2	11.9	73	2.3	0.77
	<i>Total or Median</i>			197,300	272,000	1.37	10.4	11.7	85	1.3	0.89
Small Independent											
	Cimarex Energy Company	XEC	126.03	12,000	13,300	1.11	10.9	12.9	63	0.3	1.05
	Continental Resources (32%)	CLR B	44.64	5,300	7,400	1.40	11.9	11.3	74	-	0.85
	California Resources	CRC	18.12	800	7,000	9.16	9.5	15.3	88	-	0.84
	Whiting Petroleum Corporation	WLL	10.80	3,900	7,400	1.92	7.8	10.4	93	-	0.74
	Range Resources	RRC B	27.64	6,700	11,200	1.67	8.4	10.0	31	0.3	0.62
	<i>Total or Median</i>			29,000	46,000	1.67	9.5	11.3	74	-	0.84
Income											
	Permian Basin RT	PBT	9.43	440	440	1.00	9.9	17.4	79	7.2	0.86
	San Juan Basin Royalty Trust	SJT	6.65	310	310	1.00	13.2	21.6	-	8.8	0.83
	Dorchester Minerals, L.P.	DMLP B	16.80	520	520	1.00	11.9	17.1	76	7.6	0.70
	Sabine Royalty Trust	SBR B	36.70	540	540	1.00	10.7	12.9	61	7.6	0.61
	Cross Timbers Royalty Trust	CRT	16.57	100	100	1.00	12.9	15.1	29	9.1	0.57
	<i>Total or Median</i>			1,900	1,900	1.00	11.9	17.1	61	7.6	0.70
Canada											
	EnCana Corporation	ECA	11.19	10,900	17,500	1.61	11.4	10.6	56	0.5	1.07
	Imperial Oil Limited (30%)	IMO	31.54	8,000	10,100	1.26	8.5	9.9	63	1.5	0.86
	Suncor Energy	SU B	31.50	52,500	70,000	1.33	7.6	9.9	86	3.1	0.77
	Cenovus Energy Inc.	CVE	12.94	10,800	14,900	1.38	7.0	9.8	81	1.2	0.72
	Birchcliff Energy Ltd.	BIREF B	5.50	1,500	2,100	1.40	8.8	13.8	36	1.4	0.63
	<i>Total or Median</i>			84,000	115,000	1.38	8.5	9.9	63	1.4	0.77

EV = Enterprise Value = Market Cap and Debt; Ebitda = Earnings before interest, tax, depreciation, amort.

Estimated Ebitda (cash flow) tied to NTM futures prices for oil and natural gas. NTM = Next Twelve Months ending 12/31/17.

Estimated Present Value (PV) presumes a long-term price for oil of US\$70 a barrel and natural gas, \$4.00 a million btu.

McDep Ratio = Market cap and Debt to present value of oil and gas and other businesses. For historical research see www.mcdep.com



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			Price (US\$/sh)	Volume	Oil Equiv. Price (\$/boe)	Operating Expense Fixed Var. (\$/boe) (%)	Ebitda NTM (\$/boe)	Ebitda NTM (\$mm)	Oper Lev Ebitda chg/ Price chg	McDep Ratio
Symbol/Rating		24-Feb	2017	(mmboe)						
	B = Buy									
Global Integrated (excl. Downstream)										
Chevron Corporation	CVX		110.12	882	39.49	8 22	22.80	20,098	1.35	0.86
Exxon Mobil Corporation	XOM		81.08	1,497	39.03	7 35	18.40	27,541	1.38	0.84
Royal Dutch Shell	RDS-A	B	51.72	1,358	37.10	2 24	26.10	35,435	1.08	0.75
Total S.A.	TOT	B	50.26	894	38.43	0 39	23.40	20,929	1.00	0.66
<i>Total or Median</i>									<i>1.21</i>	<i>0.80</i>
Large Independent										
EOG Resources, Inc.	EOG		96.30	211	34.02	10 5	22.20	4,674	1.45	1.12
Devon Energy Corporation	DVN		42.81	166	25.81	9 3	16.10	2,668	1.56	0.97
Occidental Petroleum Corp.	OXY		64.89	269	36.34	8 17	22.20	5,974	1.36	0.89
Marathon Oil Corporation	MRO	B	15.73	143	31.43	13 9	15.60	2,223	1.83	0.85
ConocoPhillips	COP	B	47.04	562	32.76	6 24	19.00	10,681	1.32	0.77
<i>Total or Median</i>									<i>1.45</i>	<i>0.89</i>
Small Independent										
Cimarex Energy Company	XEC		126.03	65	27.33	6 15	17.20	1,123	1.35	1.05
Continental Resources (32%)	CLR	B	44.64	26	33.35	3 14	25.80	678	1.12	0.85
California Resources	CRC		18.12	47	40.96	15 20	17.70	829	1.85	0.84
Whiting Petroleum Corporation	WLL		10.80	45	35.74	9 16	21.10	959	1.43	0.74
Range Resources	RRC	B	27.64	126	17.46	8 0	9.40	1,185	1.85	0.62
<i>Total or Median</i>									<i>1.43</i>	<i>0.84</i>
Income										
Permian Basin RT	PBT		9.43	2	34.42	10 8	21.67	34	1.46	0.86
San Juan Basin Royalty Trust	SJT		6.65	3	15.75	5 15	8.45	29	1.59	0.83
Dorchester Minerals, L.P.	DMLP	B	16.80	2	33.24	7 10	22.83	43	1.31	0.70
Sabine Royalty Trust	SBR	B	36.70	2	30.38	2 9	25.56	41	1.08	0.61
Cross Timbers Royalty Trust	CRT		16.57	0	34.77	8 14	21.91	10	1.37	0.57
<i>Total or Median</i>									<i>1.37</i>	<i>0.70</i>
Canada (excl. Downstream)										
EnCana Corporation	ECA		11.19	119	25.93	11 8	12.93	1,535	1.85	1.07
Imperial Oil Limited (30%)	IMO		31.54	68	35.92	14 12	17.60	1,191	1.80	0.86
Suncor Energy	SU	B	31.50	354	48.78	18 10	25.90	9,178	1.70	0.77
Cenovus Energy Inc.	CVE		12.94	115	30.60	11 3	18.56	2,126	1.59	0.72
Birchcliff Energy Ltd.	BIREF	B	5.50	21	18.60	1 34	11.30	238	1.09	0.63
<i>Total or Median</i>									<i>1.70</i>	<i>0.77</i>

For historical research see www.mcdep.com



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			<i>Price (US\$/sh)</i>					<i>Down- stream/ PV</i>	<i>Proven Undev. Resrvs</i>	<i>Adjustd Resrvs/ Prod NTM</i>	<i>Net Present Value (US\$/sh)</i>
	<i>Symbol/Rating</i>		<i>24-Feb 2017</i>	<i>Shares (mm)</i>	<i>Debt (\$mm)</i>	<i>Dividend NTM (\$/sh)</i>	<i>P/E NTM</i>	<i>(%)</i>	<i>(%)</i>		
	B = Buy										
Global Integrated											
Exxon Mobil Corporation	XOM		81.08	4,176	91,439	3.00	21	26	31	11.2	100.00
Total S.A.	TOT	B	50.26	2,433	62,452	2.62	21	23	47	9.4	90.00
Chevron Corporation	CVX		110.12	1,890	69,941	4.32	26	19	32	9.3	135.00
Royal Dutch Shell	RDS-A	B	51.72	3,965	133,961	3.76	14	24	34	9.2	80.00
	<i>Median</i>									9.4	
Large Independent											
Marathon Oil Corporation	MRO	B	15.73	847	7,811	0.20		-	27	12.2	20.00
ConocoPhillips	COP	B	47.04	1,246	39,395	1.06		-	37	11.0	70.00
Devon Energy Corporation	DVN		42.81	527	8,317	0.24	87	9	20	9.2	45.00
Occidental Petroleum Corp.	OXY		64.89	764	12,700	3.04	56	9	23	9.2	75.00
EOG Resources, Inc.	EOG		96.30	548	7,151	0.67	183	-	30	7.5	85.00
	<i>Median</i>									9.2	
Small Independent											
Range Resources	RRC	B	27.64	244	4,483	0.08	24	-	44	12.4	56.00
Continental Resources (32%)	CLR	B	44.64	118	2,097	-		-	59	11.4	56.00
California Resources	CRC		18.12	42	6,200	-		-	29	10.4	50.00
Whiting Petroleum Corporation	WLL		10.80	358	3,579	-		-	53	10.0	18.00
Cimarex Energy Company	XEC		126.03	95	1,321	0.32	33	-	21	6.6	120.00
	<i>Median</i>									10.4	
Income											
Sabine Royalty Trust	SBR	B	36.70	15	-	2.78	13	-	5	10.1	60.00
San Juan Basin Royalty Trust	SJT		6.65	47	-	0.59	11	-	-	9.8	8.00
Permian Basin RT	PBT		9.43	47	-	0.68	14	-	-	8.6	11.00
Dorchester Minerals, L.P.	DMLP	B	16.80	31	-	1.28	16	-	-	7.4	24.00
Cross Timbers Royalty Trust	CRT		16.57	6	-	1.51	11	-	-	7.1	29.00
	<i>Median</i>									8.6	
Canada											
Imperial Oil Limited (30%)	IMO		31.54	255	2,075	0.46	13	36	23	10.1	38.00
Suncor Energy	SU	B	31.50	1,667	17,488	0.98	20	14	46	20.4	44.00
Cenovus Energy Inc.	CVE		12.94	833	4,129	0.15		9	76	15.8	20.00
Birchcliff Energy Ltd.	BIREF	B	5.50	269	599	0.08	34	-	69	13.7	10.00
EnCana Corporation	ECA		11.19	972	6,603	0.06		-	33	5.5	10.00
	<i>Median</i>									13.7	
P/E = Stock Price to Earnings. For historical research see www.mcdep.com .											



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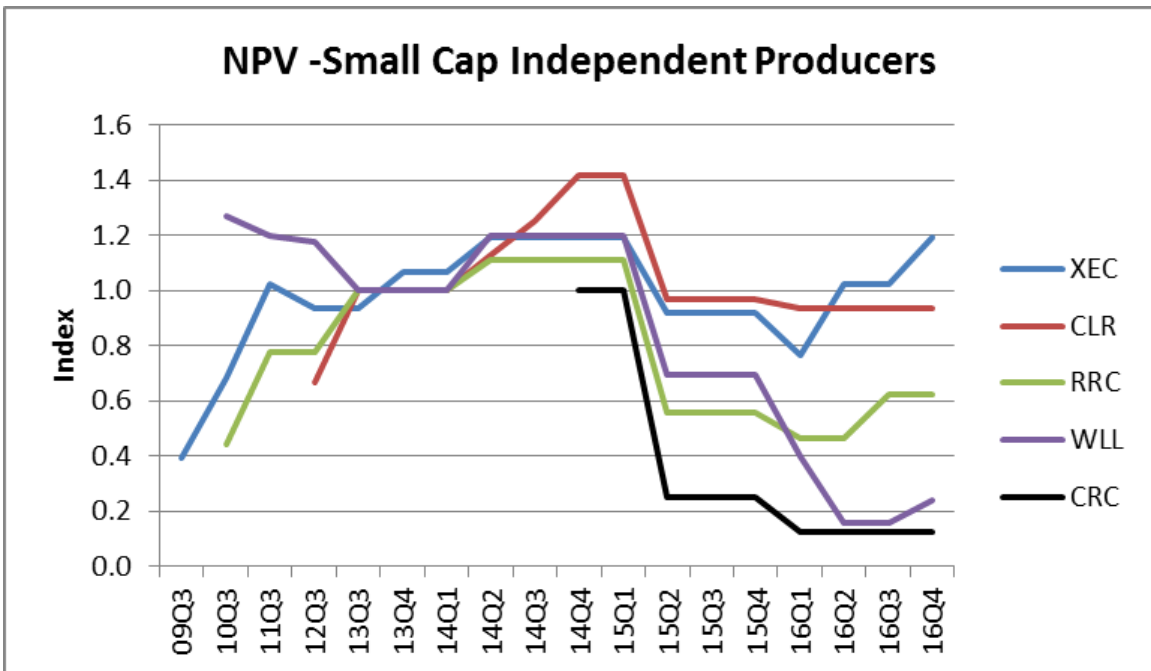
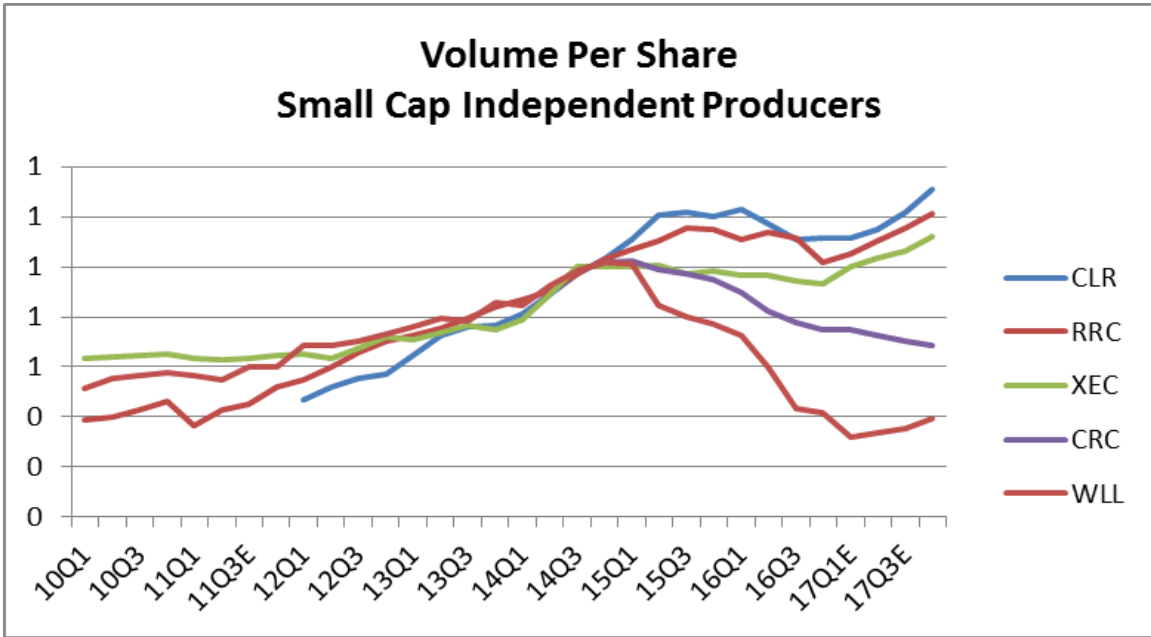
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Table 4										
McDep Energy Stocks										
Total Return Year-to-Date 2017										
Ranked by Unlevered Total Return										
			Price	Price			Equity	Unlevered		
			(\$/sh)	(\$/sh)	Price	Cash	Total	Total		
	Symbol/Rat		24-Feb	30-Dec	Change	Distrib.	Return	Debt	Return	McDep
			2017	2016	(%)	(%)	(%)	(\$/sh)	(%)	Ratio
Global Integrated										
Total S.A.	TOT	B	50.26	50.97	(1)	-	(1)	26	(1)	0.66
Royal Dutch Shell	RDS-A	B	51.72	54.38	(5)	-	(5)	34	(3)	0.75
Chevron Corporation	CVX		110.12	117.70	(6)	-	(6)	37	(5)	0.86
Exxon Mobil Corporation	XOM		81.08	90.26	(10)	-	(10)	22	(8)	0.84
	<i>Median</i>				(6)		(6)		(4)	0.80
Large Independent										
ConocoPhillips	COP	B	47.04	50.14	(6)	-	(6)	32	(4)	0.77
EOG Resources, Inc.	EOG		96.30	101.10	(5)	0.2	(5)	13	(4)	1.12
Devon Energy Corporation	DVN		42.81	45.67	(6)	-	(6)	16	(5)	0.97
Marathon Oil Corporation	MRO	B	15.73	17.31	(9)	-	(9)	9	(6)	0.85
Occidental Petroleum Corp.	OXY		64.89	71.23	(9)	-	(9)	17	(7)	0.89
	<i>Median</i>				(6)		(6)		(5)	0.89
Small Independent										
California Resources	CRC		18.12	21.29	(15)	-	(15)	147	(2)	0.84
Whiting Petroleum Corporation	WLL		10.80	12.02	(10)	-	(10)	10	(6)	0.74
Cimarex Energy Company	XEC		126.03	135.90	(7)	-	(7)	14	(7)	1.05
Continental Resources (32%)	CLR	B	44.64	51.54	(13)	-	(13)	18	(10)	0.85
Range Resources	RRC	B	27.64	34.36	(20)	-	(20)	18	(13)	0.62
	<i>Median</i>				(13)		(13)		(7)	0.84
Income										
Permian Basin RT	PBT		9.43	7.71	22	0.8	23	-	23	0.86
Sabine Royalty Trust	SBR	B	36.70	35.15	4	0.4	5	-	5	0.61
San Juan Basin Royalty Trust	SJT		6.65	6.62	0	0.9	1	-	1	0.83
Dorchester Minerals, L.P.	DMLP	B	16.80	17.55	(4)	1.4	(3)	-	(3)	0.70
Cross Timbers Royalty Trust	CRT		16.57	17.97	(8)	0.5	(7)	-	(7)	0.57
	<i>Median</i>				0		1		1	0.70
Canada										
Suncor Energy	SU	B	31.50	32.69	(4)	-	(4)	10	(3)	0.77
EnCana Corporation	ECA		11.19	11.74	(5)	-	(5)	7	(3)	1.07
Imperial Oil Limited (30%)	IMO		31.54	34.76	(9)	-	(9)	8	(8)	0.86
Cenovus Energy Inc.	CVE		12.94	15.13	(14)	-	(14)	5	(11)	0.72
Birchcliff Energy Ltd.	BIREF	B	5.50	7.01	(21)	-	(21)	2	(16)	0.63
	<i>Median</i>				(9)		(9)		(8)	0.77
	<i>Grand Median</i>				(7)		(7)		(5)	0.83
Natural Gas (\$/mmbtu)			2.63	3.74	(30)					
Oil - West Texas Intermediate (\$/bbl)			54.02	53.72	1					
Total Stock Market - U.S.	VTI		121.98	115.32	6					
Developed Markets - ex US	VEA		38.36	36.54	5					
Emerging Markets	VVO		39.19	35.78	10					
Source: McDep LLC, Yahoo, CME Group, Bloomberg					For historical research see www.mcdep.com					



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Continental Resources										
Next Twelve Months Operating and Financial Estimates										
	<i>Q4</i>	<i>Year</i>	<i>Q3</i>	<i>Q4</i>	<i>Year</i>	<i>Q1E</i>	<i>Q2E</i>	<i>Q3E</i>	<i>Q4E</i>	<i>Next Twelve Months</i>
	<i>12/31/15</i>	<i>2015</i>	<i>9/30/16</i>	<i>12/31/16</i>	<i>2016</i>	<i>3/31/17</i>	<i>6/30/17</i>	<i>9/30/17</i>	<i>12/31/17</i>	<i>12/31/17</i>
Volume										
Natural Gas (mmcf)	476	451	549	560	533	560	570	590	630	588
Oil (mbd)	146	147	116	116	128	116	120	130	140	127
Total (mb)	20.7	81.0	19.1	19.3	79.3	18.8	19.6	21.0	22.5	82.0
Total (mbd)	225	222	208	209	217	209	215	228	245	225
Price										
Henry Hub (\$/mmbtu)	2.28	2.67	2.81	2.98	2.46	3.32	2.76	2.99	3.04	3.03
Company (\$/mcf)	2.07	2.31	2.02	2.70	1.87	3.00	2.50	2.71	2.75	2.74
WTI Cushing (\$/bbl)	42.21	48.79	44.91	49.21	43.31	53.35	54.29	54.86	54.92	54.36
Company (\$/bbl)	34.23	40.45	37.66	42.23	35.50	45.79	46.29	46.78	46.82	46.45
Total (\$/bbl)	26.55	31.44	26.40	30.62	25.54	33.41	32.46	33.62	33.83	33.35
Revenue (\$mm)										
Natural Gas	91	379	102	139	366	151	130	147	159	587
Oil	460	2,167	402	451	1,659	478	505	559	603	2,146
Total	550	2,546	504	590	2,024	629	635	706	763	2,733
Expense										
Lease operating	80	349	67	70	290	70	72	78	83	303
Production taxes	43	201	35	38	142	44	44	49	53	191
General and administrative	47	190	44	57	169	28	29	32	34	123
Total	170	740	146	165	601	142	146	159	171	617
Ebitda	380	1,806	358	425	1,423	487	489	548	592	2,116
Exploration	5	19	4	8	17	8	8	8	8	32
Deprec., Deplet., & Amort.	461	1,750	415	388	1,709	396	411	441	473	1,721
Other	(35)	(99)	(18)	(7)	(123)					-
Ebit	(51)	136	(43)	36	(180)	84	70	99	111	363
Interest	80	312	82	76	321	76	76	76	76	304
Ebt	(131)	(176)	(125)	(40)	(501)	8	(6)	23	35	59
Income Tax	(46)	(62)	(44)	(14)	(175)	3	(2)	8	12	21
Net Income (\$mm)	(85)	(114)	(81)	(26)	(326)	5	(4)	15	22	38
Per Share (\$)	(0.23)	(0.31)	(0.22)	(0.07)	(0.88)	0.01	(0.01)	0.04	0.06	0.10
Shares (millions)	370	369	370	370	370	370	370	370	370	370
Ebitda Margin	69%	71%	71%	72%	70%	77%	77%	78%	78%	77%
Tax rate	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%

Continental Resources						
Functional Cash Flow and Present Value						
	<i>NTM Ebitda</i>	<i>Adjusted</i>	<i>PV/</i>	<i>Present</i>		
	<i>(US\$mm)</i>	<i>R/P</i>	<i>Ebitda</i>	<i>Value</i>		
				<i>(US\$mm)</i>		
North American Natural Gas	455	12.0	15.4	7,000		26%
Oil	1,665	10.1	12.2	20,300		74%
	2,120	10.9	12.9	27,300		100%
Debt (US\$mm)						6,600
Net Present Value (US\$mm)						20,700
Shares (mm)						370
Net Present Value - Standard Estimate (US\$/sh)						56
NPV Approximation by Cash Flow Multiple Depending on Reserve Life (US\$/sh)						53



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California Resources Corporation										
Next Twelve Months Operating and Financial Estimates										
	<i>Q4</i>	<i>Year</i>	<i>Q3</i>	<i>Q4</i>	<i>Year</i>	<i>Q1E</i>	<i>Q2E</i>	<i>Q3E</i>	<i>Q4E</i>	<i>Next Twelve Months</i>
	<i>12/31/15</i>	<i>2015</i>	<i>9/30/16</i>	<i>12/31/16</i>	<i>2016</i>	<i>3/31/17</i>	<i>6/30/17</i>	<i>9/30/17</i>	<i>12/13/17</i>	<i>12/31/17</i>
Volume										
Natural Gas (mmcf)	212	228	193	195	196	195	189	183	178	186
Oil (mbd)	120	122	106	102	107	102	99	96	93	97
Total (mb)	14.3	58.5	12.7	12.4	51.1	12.1	11.9	11.6	11.3	46.9
Total (mbd)	155	160	138	135	140	135	130	127	123	129
Price										
Henry Hub (\$/mmbtu)	2.28	2.67	2.81	2.98	2.46	3.32	2.76	2.99	3.04	3.03
Company (\$/mcf)	2.28	2.62	2.64	2.79	2.28	3.10	2.58	2.80	2.84	2.83
WTI Cushing (\$/bbl)	42.21	48.79	44.91	49.21	43.31	53.35	54.29	54.86	54.92	54.36
Company (\$/bbl)	36.43	43.48	38.82	44.01	37.15	47.72	48.56	49.07	49.12	48.60
Total (\$/bbl)	31.26	36.88	33.47	37.42	31.66	40.69	40.57	41.27	41.37	40.96
Revenue (\$mm)										
Natural Gas	44	218	47	50	164	54	44	47	47	193
Oil	402	1,940	379	413	1,454	438	437	433	421	1,729
Total	447	2,158	425	463	1,618	493	482	480	467	1,922
Expense										
Production	221	951	211	217	800	194	190	186	181	751
Production taxes	30	180	37	26	144	38	38	38	38	152
General and administrative	64	292	58	62	248	49	48	47	46	190
Total	315	1,423	306	305	1,192	281	276	271	264	1,093
Ebitda										
	132	735	119	158	426	212	206	209	203	829
Exploration	5	34	3	10	23	9	9	9	9	36
Deprec., Deplet., & Amort.	247	1,004	137	137	559	212	208	204	198	821
Other	(84)	(158)	(3)	40	7					-
Ebit										
	(36)	(145)	(18)	(29)	(163)	(9)	(11)	(4)	(4)	(28)
Interest	82	326	95	85	328	49	49	49	49	196
Ebt										
	(118)	(471)	(113)	(114)	(491)	(58)	(60)	(53)	(53)	(224)
Income Tax	(41)	(165)	(39)	(40)	(172)	(20)	(21)	(18)	(19)	(78)
Net Income (\$mm)										
	(77)	(306)	(73)	(74)	(319)	(38)	(39)	(34)	(34)	(145)
Per Share (\$)	(2.00)	(8.00)	(1.75)	(1.76)	(7.91)	(0.90)	(0.93)	(0.81)	(0.82)	(3.46)
Shares (millions)										
	38	38	42	42	40	42	42	42	42	42
Ebitda Margin	29%	34%	28%	34%	26%	43%	43%	44%	43%	43%
Tax rate	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%

California Resources Corporation					
Functional Cash Flow and Present Value					
	<i>NTM Ebitda</i>	<i>Adjusted</i>	<i>PV/</i>	<i>Present</i>	
	<i>(US\$mm)</i>	<i>R/P</i>	<i>Ebitda</i>	<i>Value</i>	
				<i>(US\$mm)</i>	
North American Natural Gas	83	8.3	12.0	1,000	12%
Oil	746	11.1	9.8	7,300	88%
	829	10.4	10.0	8,300	100%
Debt (US\$mm)					6,200
Net Present Value (US\$mm)					2,100
Shares (mm)					42
Net Present Value - Standard Estimate (US\$/sh)					50
NPV Approximation by Cash Flow Multiple Depending on Reserve Life (US\$/sh)					94



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Range Resources Corporation										
Next Twelve Months Operating and Financial Estimates										
	Q4	Year	Q3	Q4	Year	Q1E	Q2E	Q3E	Q4E	Next Twelve Months
	12/31/15	2015	9/30/16	12/31/16	2016	3/31/17	6/30/17	9/30/17	12/13/17	12/31/17
Volume										
Natural Gas (mmcf)	1,056	993	1,016	1,244	1,027	1,326	1,390	1,458	1,528	1,426
Oil (mbd)	63.1	67.0	82.1	101.6	85.9	99.0	103.8	108.8	114.1	106.5
Total (mmb)	22.0	85	23.1	28.4	94	29.1	30.9	32.4	33.9	126
Total (mmcf)	1,435	1,395	1,509	1,854	1,542	1,920	2,013	2,111	2,213	2,065
Price										
Henry Hub (\$/mmbtu)	2.28	2.67	2.81	2.98	2.46	3.32	2.76	2.99	3.04	3.03
Company (\$/mcf)	1.89	2.13	2.11	2.53	2.01	3.32	2.16	2.39	3.04	2.72
WTI Cushing (\$/bbl)	42.21	48.79	44.91	49.21	43.31	53.35	54.29	54.86	54.92	54.36
Company (\$/bbl)	12.15	12.96	14.17	18.06	14.10	19.58	19.92	20.13	20.15	19.96
Total (\$/bbl)	11.55	12.84	13.15	16.13	12.73	19.81	15.12	16.13	18.83	17.46
Revenue (\$mm)										
Natural Gas	184	773	197	290	754	400	276	320	427	1,425
Oil	71	317	107	169	443	176	190	202	212	780
Total	254	1,089	304	458	1,197	577	467	522	639	2,204
Expense										
Transportation	112	396	139	164	565	164	164	164	164	396
Production	36	167	29	37	121	38	40	43	45	167
General and administrative	29	136	29	44	131	45	48	51	54	136
Total	177	699	197	245	817	247	252	257	263	1,019
Ebitda										
	77	390	107	213	380	330	215	265	376	1,185
Exploration	3	43	7	13	48	13	13	13	13	52
Deprec., Deplet., & Amort.	128	581	131	150	524	169	180	188	197	735
Other	(159)	(523)	(60)	(83)	(369)	(47)	(81)	(64)	(29)	(221)
Ebit										
	105	289	29	133	177	195	103	127	194	619
Interest	41	166	46	47	169	47	47	47	47	188
Ebt										
	64	123	(17)	86	8	148	56	80	147	431
Income Tax	22	43	(6)	30	3	52	19	28	52	151
Net Income (\$mm)										
	42	80	(11)	56	5	96	36	52	96	280
Per Share (\$)	0.25	0.48	(0.06)	0.23	(0.07)	0.39	0.15	0.21	0.39	1.15
Shares (millions)										
	167	167	181	244	(74)	244	244	244	244	244
Ebitda Margin	30%	36%	35%	47%	32%	57%	46%	51%	59%	54%
Tax rate	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%

Range Resources Corporation					
Functional Cash Flow and Present Value					
	NTM Ebitda	Adjusted	PV/	Present	
	(US\$mm)	R/P	Ebitda	Value	
				(US\$mm)	
North American Natural Gas	766	11.7	16.3	12,500	69%
Oil	419	14.1	13.6	5,700	31%
	1,185	12.4	15.4	18,200	100%
Debt (US\$mm)					4,500
Net Present Value (US\$mm)					13,700
Shares (mm)					244
Net Present Value - Standard Estimate (US\$/sh)					56
NPV Approximation by Cash Flow Multiple Depending on Reserve Life (US\$/sh)					50



Industry Idea

Analysis of Oil and Gas Stocks

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Whiting Petroleum Corporation										
Next Twelve Months Operating and Financial Estimates										
	<i>Q4</i>	<i>Year</i>	<i>Q3</i>	<i>Q4</i>	<i>Year</i>	<i>Q1E</i>	<i>Q2E</i>	<i>Q3E</i>	<i>Q4E</i>	<i>Next Twelve Months</i>
	<i>12/31/15</i>	<i>2015</i>	<i>9/30/16</i>	<i>12/31/16</i>	<i>2016</i>	<i>3/31/17</i>	<i>6/30/17</i>	<i>9/30/17</i>	<i>12/31/17</i>	<i>12/31/17</i>
Volume										
Natural Gas (mmcf)	115	113	108	113	114	105	110	116	130	115
Oil (mbd)	136	144	102	103	112	96	101	106	118	105
Total (mb)	14.3	59.6	11.0	11.2	47.8	10.2	11.0	11.5	12.9	45.5
Total (mbd)	155	163	120	122	131	114	119	125	140	124
Price										
Henry Hub (\$/mmbtu)	2.28	2.67	2.81	2.98	2.46	3.32	2.76	2.99	3.04	3.03
Company (\$/mcf)	1.50	2.20	1.79	1.87	1.41	2.17	1.61	1.84	1.89	1.87
WTI Cushing (\$/bbl)	42.21	48.79	44.91	49.21	43.31	53.35	54.29	54.86	54.92	54.36
Company (\$/bbl)	32.14	37.98	31.76	35.03	30.24	39.17	40.11	40.69	40.74	40.22
Total (\$/bbl)	29.27	35.13	28.61	31.33	27.07	35.13	35.41	36.10	36.19	35.74
Revenue (\$mm)										
Natural Gas	16	90	18	19	59	21	16	20	23	79
Oil	402	2,002	298	331	1,234	339	372	395	443	1,549
Total	418	2,093	316	350	1,293	359	388	415	466	1,628
Expense										
Lease operating	120	555	88	88	395	92	91	95	107	385
Production taxes	38	183	26	30	109	32	35	37	42	146
General and administrative	39	173	34	35	148	31	33	34	39	137
Total	197	911	148	153	652	155	159	167	187	668
Ebitda										
Exploration	53	213	24	36	121	30	30	30	30	120
Deprec., Deplet., & Amort.	321	1,243	285	271	1,172	256	274	287	322	1,138
Other	(104)	(374)	(24)	(52)	(128)	(100)	(100)	(100)	(100)	(400)
Ebit	(49)	99	(117)	(58)	(524)	19	25	30	27	101
Interest	86	334	85	70	316	49	53	55	62	219
Ebt	(135)	(235)	(202)	(128)	(840)	(31)	(27)	(25)	(35)	(118)
Income Tax	(47)	(82)	(71)	(45)	(294)	(11)	(10)	(9)	(12)	(41)
Net Income (\$mm)	(88)	(153)	(132)	(83)	(546)	(20)	(18)	(16)	(23)	(76)
Per Share (\$)	(0.43)	(0.79)	(0.47)	(0.28)	(2.30)	(0.06)	(0.05)	(0.04)	(0.06)	(0.21)
Shares (millions)										
Ebitda Margin	53%	56%	53%	56%	50%	57%	59%	60%	60%	59%
Tax rate	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%

Whiting Petroleum Corporation						
Functional Cash Flow and Present Value						
	<i>NTM Ebitda</i>	<i>Adjusted</i>	<i>PV/</i>	<i>Present</i>		
	<i>(US\$mm)</i>	<i>R/P</i>	<i>Ebitda</i>	<i>Value</i>		
				<i>(US\$mm)</i>		
North American Natural Gas	47	12.5	15.0	700		7%
Oil	913	9.5	10.2	9,300		93%
	959	10.0	10.4	10,000		100%
Debt (US\$mm)						3,600
Net Present Value (US\$mm)						6,400
Shares (mm)						358
Net Present Value - Standard Estimate (US\$/sh)						18
NPV Approximation by Cash Flow Multiple Depending on Reserve Life (US\$/sh)						21



Industry Idea

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Cimarex Energy Company										
Next Twelve Months Operating and Financial Performance										
	Q4	Year	Q3	Q4	Year	Q1E	Q2E	Q3E	Q4E	Next Twelve Months
	12/31/15	2015	9/30/16	12/31/16	2016	3/31/17	6/30/17	9/30/17	12/13/17	12/31/17
Volume										
Natural Gas (mmcf)	475	463	447	457	460	484	499	513	526	506
Oil (mbd)	85.1	86.9	83.3	83.8	84.0	91.1	93.8	96.6	104.0	96.4
Total (bcfe)	90.7	359	86.2	87.3	350	92.7	95.5	99.5	104.7	392
Total (mmcf)	986	984	947	960	964	1,030	1,061	1,093	1,150	1,084
Price										
Henry Hub (\$/mmbtu)	2.28	2.67	2.81	2.98	2.46	3.32	2.76	2.99	3.04	3.03
Company (\$/mcf)	2.20	2.53	2.66	2.86	2.31	3.18	2.65	2.87	2.91	2.90
WTI Cushing (\$/bbl)	42.21	48.79	44.91	49.21	43.31	53.35	54.29	54.86	54.92	54.36
Company (\$/bbl)	26.34	31.19	28.24	32.58	27.09	35.32	35.95	36.33	36.36	36.01
Total (\$/bbl)	20.00	23.67	22.44	25.24	20.77	27.70	26.52	27.34	27.73	27.33
Revenue (\$mm)										
Natural Gas	96	428	108	119	385	139	119	134	139	531
Oil	206	989	214	248	826	289	303	319	344	1,256
Total	302	1,418	322	367	1,211	428	422	453	484	1,787
Expense										
Operating	130	482	102	102	422	113	117	121	128	479
Production taxes	17	85	16	18	62	23	22	24	26	95
General and administrative	24	74	20	18	73	21	22	23	24	90
Total	171	641	138	138	557	157	161	168	177	664
Ebitda	131	777	184	229	654	271	261	285	306	1,123
Deprec., Deplet., & Amort.	162	788	111	106	473	116	119	124	131	490
Other Non Cash	(9)	22	(0)	21	22					-
Ebit	(22)	(33)	74	103	159	155	142	161	175	633
Interest	14	52	15	15	60	15	16	17	18	66
Ebt	(36)	(85)	59	88	99	140	126	144	157	567
Income Tax	(13)	(30)	21	31	35	49	44	50	55	198
Net Income (\$mm)	(23)	(55)	38	57	65	91	82	93	102	369
Per Share (\$)	(0.25)	(0.62)	0.41	0.60	0.68	0.96	0.86	0.98	1.07	3.87
Shares (millions)	93	93	93	95	95	95	95	95	95	95
Ebitda Margin	43%	55%	57%	62%	54%	63%	62%	63%	63%	63%
Tax rate	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%

Cimarex Energy Company					
Functional Cash Flow and Present Value					
	NTM Ebitda	Adjusted	PV/	Present	
	(US\$mm)	R/P	Ebitda	Value	
				(US\$mm)	
North American Natural Gas	330	7.1	14.2	4,700	37%
Oil	793	6.1	10.1	8,020	63%
	1,123	6.6	11.3	12,720	100%
Debt (US\$mm)					1,320
Net Present Value (US\$mm)					11,400
Shares (mm)					95
Net Present Value - Standard Estimate (US\$/sh)					120
NPV Approximation by Cash Flow Multiple Depending on Reserve Life (US\$/sh)					115



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