

February 21, 2017

Marathon Oil (MRO) A Third, a Third, a Third

Symbol	MRO	Ebitda Next Twelve Months ending 12/31/17 (US\$mm)	2,230						
Rating	Buy	North American Natural Gas/Ebitda (%)	7						
Price (US\$/sh)									
Pricing Date	2/17/17 Adjusted Reserves/Production NTM								
Shares (mm)	847	EV/Ebitda	9.7						
Market Capitalization (US\$mm)	13,700	PV/Ebitda	11.1						
Debt (US\$mm)	7,800	Undeveloped Reserves (%)	27						
Enterprise Value (EV) (US\$mm)	21,600	Natural Gas and Oil Ebitda (US\$/boe)	15.60						
Present Value (PV) (US\$mm)	24,800	Present Value Proven Reserves(US\$/boe)	12.40						
Net Present Value (US\$/share)	20	Present Value Proven Reserves(US\$/mcfe)	2.07						
Debt/Present Value	0.32	Earnings Next Twelve Months (US\$/sh)	-0.77						
McDep Ratio - EV/PV	0.87	Price/Earnings Next Twelve Months	-21						
Dividend Yield (%/year)	1.2	Indicated Annual Dividend (US\$/sh)	0.20						
Note: Estimated cash flow and ear	nings tied to one-y	year futures prices for oil and natural gas.							
Reported results may vary	widely from estim	ates. Estimated present value per share revised only infrequent	tly.						
Estimated present value cap	pped by unlevered	cash flow multiple.							
For historical research on I	Marathon since 200	01 see http://www.mcdep.com/3mro.htm							

Summary and Recommendation

Latest results disclosed on February 16 for buy-recommended Marathon Oil (MRO) tracked industry trends and support our targeted Net Present Value (NPV) of \$20 a share (see tables Operating and Financial Estimates and Present Value on pages 2-3). Oil and gas volumes that declined with low price in 2016 are likely to grow again in 2017 after bottoming in the first quarter. A capital program expanding with cash flow focuses a third on Oklahoma, a third on the Eagle Ford in Texas and a third on the Bakken in North Dakota. Production is already growing steeply in MRO's newest shale play, the STACK trend (see slide Oklahoma on page 3). Flat production in the latest quarter in Texas will likely turn to growth with increasing efficiency from a 7-rig program (see slide Eagle Ford on page 4). After a drilling hiatus in North Dakota, four rigs have been mobilized to grow oil volume in 2017 (see slide Bakken on page 4). Current futures price of \$54 a barrel for the year 2017 for the U.S. benchmark is close to the \$55 on which the company has laid its plans. We expect higher price, though no one can know for sure. By historical patterns, MRO's trends are within the range of peers in price, volume and cash flow (see charts Price, Production and Ebitda on pages 5-6). Fixed cost has been high for the company's overall oil and gas mix, which suggests higher operating leverage or more sensitivity to price (see chart Operating Leverage on pages 6). Yet, McDep Ratio differences may be slight among closely ranked Large Cap Independent Producers in our coverage (see Tables 1-4 on pages 7-10). In any case, we believe that MRO stock is a worthy investment in the world-changing innovation of shale oil and gas. Dividend yield of 1.2% matches the median for large independent shale oil producers and beats the interest rate on money market funds.

Kurt H. Wulff, CFA



				hon Oil Cor						
	1	Next Twelv	e Months	Operating a	ind Financi	ial Estimate	S			
										Next
										Twelve
	Q4	Year	Q3	Q4	Year	Q1E	Q2E	Q3E	Q4E	Months
	12/31/15	2015	9/30/16	12/31/16	2016	3/31/17	9/30/17	9/30/17	12/31/17	12/31/17
Volume										
Natural Gas (mmcfd)										
U.S. (or North America)	345	351	315	315	314	280	290	300	310	295
Overseas (or Int'l)	467	439	489	482	453	430	445	461	477	453
Total	812	789	804	797	766	710	735	761	787	748
Days	92	365	92	92	366	90	91	92	92	365
Oil (mmb)	27	109	25	26	101	23	24	25	26	97
Oil (mbd)	292	298	273	286	276	252	261	270	279	266
Total gas & oil (bcf)	236	942	225	231	886	200	209	219	227	855
Total gas & oil (mbd))	427	430	407	419	404	370	383	397	411	390
Price										
Natural gas (\$/mcf)										
Henry Hub (\$/mmbtu)	2.28	2.67	2.81	2.98	2.46	3.39	3.02	3.15	3.24	3.20
U.S. (or North America)	2.12	2.66	2.67	2.87	2.38	3.26	2.90	3.03	3.12	3.08
Overseas (or Int'l)	0.58	0.68	0.46	0.53	0.53	0.53	0.53	0.53	0.53	0.53
Total	1.23	1.56	1.33	1.45	1.29	1.61	1.47	1.52	1.55	1.53
Oil (\$/bbl)										
WTI Cushing	42.21	48.79	44.91	49.21	43.31	53.09	54.09	54.66	54.82	54.17
Worldwide	32.35	38.21	34.75	39.69	33.65	41.25	42.03	42.09	42.21	41.91
Total gas & oil (\$/mcf)	4.08	4.90	4.32	4.98	4.24	5.19	5.23	5.26	5.28	5.24
Revenue (\$mm)										
Natural Gas										
U.S. (or North America)	67	341	77	83	274	82	77	84	89	331
Overseas (or Int'l)	25	109	21	24	87	21	21	22	23	88
Total	92	449	98	107	361	103	98	106	112	419
Oil	869	4,162	873	1,044	3,396	936	997	1,045	1,085	4,063
Other	514	1,249	258	238	893	238	238	238	238	952
Total	1,475	5,861	1,229	1,389	4,650	1,276	1,334	1,390	1,435	5,435
Expense	1,234	4,205	886	834	3,369	765	790	816	837	3,208
Ebitda (\$mm)	241	1,656	343	555	1,281	511	543	573	599	2,227
Exploration	312	743	83	34	330	100	100	100	100	400
Deprec., Deplet., & Amort.	668	2,957	594	631	2,395	631	631	631	631	2,524
Other non cash	(325)	(978)	(278)	(57)	,					,-
Ebit	(414)	(1,066)	(56)	(53)	(722)	(220)	(188)	(158)	(132)	(697
Interest	87	267	87	77	335	77	77	77	77	308
Ebt	(501)	(1,333)	(143)	(130)	(1,057)	(297)	(265)	(235)	(209)	(1,005
Income Tax	(175)	(466)	(50)	(46)	(370)	(104)	(93)	(82)	(73)	(352
Net Income (\$mm)	(325)	(866)	(93)	(85)	(687)	(193)	(172)	(153)	(136)	(653
Shares (millions)	678	677	847	847	789	847	847	847	847	847
Per share (\$)	(0.48)	(1.28)	(0.11)	(0.10)	(0.87)	(0.23)	(0.20)	(0.18)	(0.16)	(0.77
Ebitda Margin (E&P)	25%	36%	35%	48%	34%	49%	50%	50%	50%	50%
Tax Rate	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%



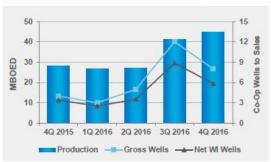
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Marati	non Oil Cor	poration									
Functional Ca	sh Flow and	l Present Val	ue								
	NTM Adjusted PV/ Present										
	<u>Ebitda</u>	<u>R/P</u>	<u>Ebitda</u>	<u>Value</u>							
North American Natural Gas	160	8.3	12.5	2,000	8%						
Rest of World Natural Gas	40	5.9	10.0	400	2%						
Oil	1,852	8.8	10.4	19,300	78%						
Synthetic Crude Oil	178	48	16.8	3,000	12%						
	2,230	12.2	11.1	24,700	100%						
Ebitda R/P North American Natural Gas 160 8.3 Rest of World Natural Gas 40 5.9 Oil 1,852 8.8 Synthetic Crude Oil 178 48					7,800						
Net Present Value (\$mm)					16,900						
Shares					847						
Net Present Value - Standard Estimate (US\$/sh)					20						
NPV Approximation by Cash Flow Multiple Deper	ding on Res	erve Life (US	S/sh)		22						

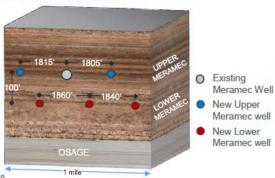
Oklahoma Focused on Delineation and Leasehold

Progressing strategic objectives through ramp in activity

Production Volumes and Wells to Sales



Yost Infill Pilot Cross Section



- Production averaged 45 net MBOED; up 10% from 3Q 2016
- · 8 gross operated wells to sales
 - 1,160 BOED (78% oil) IP30 from North Canadian Co. Schroeder SL well
 - 4Q program heavily weighted towards delineation
- Yost Co-op Meramec infill pilot to sales in 1Q
 - 6-well infill in Kingfisher County; Upper and Lower Meramec at 106 acre spacing
- Increasing activity to 7 rigs in 1Q
 - ~15 gross operated STACK wells to sales
 - Continuing focus on downspacing and delineation





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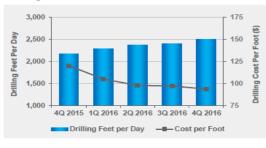
Record Low Eagle Ford Well Costs

Maintaining 6 rig activity level in 2017

Oil Production Volumes



Drilling Performance



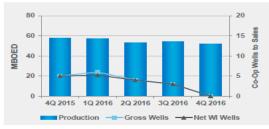
- Production averaged 94 net MBOED; down ~3% from 3Q 2016
 - Oil production up 2% sequentially
- 52 gross operated wells to sales (33 net working interest wells)
- \$3.9MM completed well costs; down ~20% from year-ago quarter
 - Record drilling efficiency averaging 2,500 ft per day in 4Q
 - >70% increased proppant loading per lateral ft from year-ago quarter
- Expect 40 45 gross operated wells to sales in 1Q

Marathon Oil

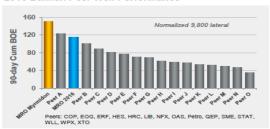
Bakken Base Production Resilient

Preparing for increased activity in 2017

Production Volumes and Wells to Sales



2016 Bakken Peer Well Performance



Source: Drilling info with estimated NGL conversion to 3-stream

Data includes wells completed in 2016 in the Middle Bakken and Three Forks formations

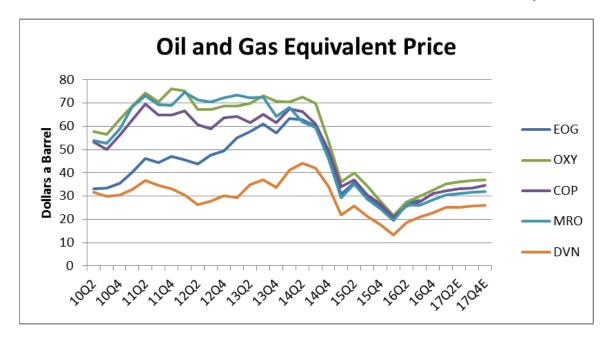
- Production averaged 52 net MBOED with no new wells to sales; down 4% from 3Q 2016
- Delivering basin-leading 90-day production from recent Myrmidon wells
- Significant improvements in well economics driving increased 2017 activity
- Production expense per boe reduction of ~25% year over year
- Mobilized 4 rigs to Myrmidon since Dec to support development program
- Expect 4 gross operated wells to sales in 1Q

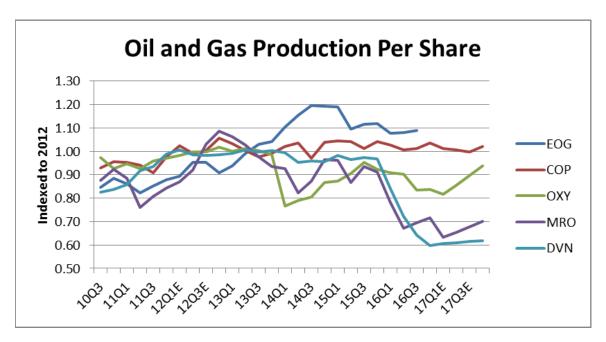


Please see disclosures on the final page.

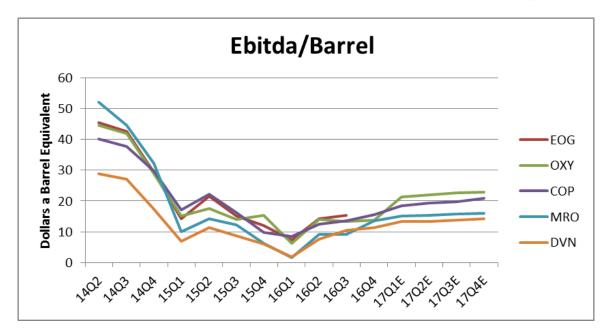
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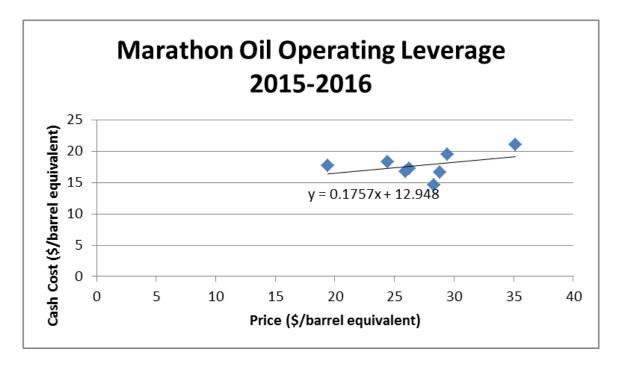




				Table	1						
			Mc	Dep Ener	gy Stocks						
			Rank	ked by Mc	Dep Ratio	0					
			Price						Oil	Dist.	
			(US\$/sh)	Market	Enterprise	EV/	EV/	PV/	Prod'n/	Yield	McDe
	Symbol/Rai	tino	17-Feb	Сар	Value	Market	Ebitda	Ebitda	PV	NTM	Rati
	J.110001114		2017	(US\$mm)	(\$mm)	Сар	NTM	NTM	(%)	(%)	
Global Integrated			2017	(ОБфиин)	(ψππτ)	Сир	11111	7,17,17	(70)	(70)	(27/17
Chevron Corporation	CVX		110.33	209,000	277,000	1.33	8.8	10.3	64	3.9	0.86
Exxon Mobil Corporation	XOM		81.76	341,000	436,000	1.28	9.6	11.2	53	3.7	0.85
Royal Dutch Shell	RDS-A			207,000	341,000	1.65	6.5	8.6	51	7.2	0.76
Total S.A.	TOT		50.55	123,000	185,000	1.51	6.1	9.2	55	5.2	0.66
Total or Median				880,000	1,239,000	1.42	7.6	9.8	54	4.6	0.80
Large Independent				,	-,,						
EOG Resources, Inc.	EOG		99.03	54,300	61,400	1.13	12.8	12.9	86	0.7	1.14
Devon Energy Corporation	DVN		44.17	23,300	34,200	1.47	13.1	11.5	65	0.5	0.99
Occidental Petroleum Corp.	OXY		66.27	50,600	63,300	1.25	10.6	11.7	85	4.6	0.90
Marathon Oil Corporation	MRO	В		13,750	21,600	1.57	9.7	11.1	90	1.2	0.87
ConocoPhillips	COP			59,000	99,000	1.67	9.2	11.8	73	2.2	0.78
Total or Median	001		.,.51	201,000	280,000	1.47	10.6	11.7	85	1.2	0.90
Small Independent				201,000	200,000	1177	10.0	1117	02	1.2	0.70
Cimarex Energy Company	XEC		132.02	12,600	13,900	1.11	11.6	13.4	63	0.2	1.09
Continental Resources (32%)	CLR	В	45.97	5,400	7,600	1.40	12.1	11.1	78	-	0.86
California Resources	CRC		17.67	700	6,900	9.38	11.4	17.2	88	_	0.84
Whiting Petroleum Corporation	WLL		11.11	4,000	7,500	1.89	8.1	10.8	93	_	0.75
Range Resources	RRC			7,600	11,900	1.56	8.3	10.0	28	0.3	0.66
Total or Median	rate	- 5	31.27	30,000	48,000	1.56	11.4	11.1	78	-	0.84
Income				30,000	40,000	1.50	11.7	11.1	70		0.01
San Juan Basin Royalty Trust	SJT		7.32	340	340	1.00	13.9	21.2	_	8.6	0.91
Permian Basin RT	PBT		9.63	450	450	1.00	9.9	17.0	79	7.1	0.88
Dorchester Minerals, L.P.	DMLP	В		520	520	1.00	11.9	16.9	76	7.7	0.70
Sabine Royalty Trust	SBR		39.35	570	570	1.00	11.0	12.0	61	7.2	0.66
Cross Timbers Royalty Trust	CRT		16.75	100	100	1.00	13.1	14.9	29	9.3	0.58
Total or Median	CITI		10.75	2,000	2,000	1.00	11.9	16.9	61	7.7	0.70
Canada				2,000	2,000	1.00	11.7	10.7	01	,.,	0.70
EnCana Corporation	ECA		12.35	12,000	18,600	1.55	11.7	10.2	56	0.5	1.14
Imperial Oil Limited (30%)	IMO		32.72	8,300	10,800	1.30	8.5	9.5	62	1.4	0.89
Suncor Energy	SU	В		53,600	71,100	1.33	7.8	10.0	86	3.0	0.78
Cenovus Energy Inc.	CVE		13.66	11,400	15,500	1.36	7.3	9.8	81	1.1	0.75
Birchcliff Energy Ltd.	BIREF			1,600	2,200	1.38	8.6	13.1	36	1.3	0.75
Total or Median	DIKE	ь	5.65	87,000	118,000	1.36	8.5	10.0	62	1.3	0.78
					ĺ						
EV = Enterprise Value = Market C											
Estimated Ebitda (cash flow) tied to	o NTM futi	ires	prices for oil	and natural ga	as. $NTM = Ne$	xt Twelve	Months e	nding 12	/31/17		



B = Buy 2017 (mmboe) (%boe) (%boe) (%boe) (%mm) Price chg Robal Integrated (excl. Downstream) CVX 110.33 882 39.42 8 22 22.70 20.030 1.35 Concernor Corporation XOM 81.76 1.499 39.07 7 35 18.40 27.581 1.38 Concernor Corporation XOM 81.76 1.499 39.07 7 35 18.40 27.581 1.38 Concernor Corporation XOM 81.76 1.499 39.07 7 35 18.40 27.581 1.38 Concernor Corporation XOM 81.76 1.499 39.07 7 35 18.40 27.581 1.38 Concernor Corporation XOM 81.76 1.499 39.07 7 35 18.40 27.581 1.38 Concernor Corporation XOM X					Table 2							
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B = Buy 2017 (mmboe) (%boe) (%boe) (%boe) (%mm) Price chg Robal Integrated (excl. Downstream) Chevron Corporation CVX 110.33 882 39.42 8 22 22.70 20.030 1.35 CEXON Mobil Corporation XOM 81.76 1.499 39.07 7 35 18.40 27.581 1.38 CEXON Mobil Corporation XOM 81.76 1.499 39.07 7 35 18.40 27.581 1.38 CEXON Mobil Corporation XOM 81.76 1.499 39.07 7 35 18.40 27.581 1.38 CEXON Mobil Corporation XOM 81.76 1.499 39.07 7 35 18.40 27.581 1.38 CEXON Mobil Corporation XOM 81.76 1.499 39.07 7 35 18.40 27.581 1.38 CEXON Mobil Corporation XOM XON	C,	mbol/Pa	tin a		Volumo	-	•				•	McDe
Chevron Corporation			- 0								U	Ratio
Chevron Corporation	Clobal Integrated (evel Downstream)	Б –	Buy	2017	(mmboe)	(φ/υσε)	(\$/DUE)	(70)	(\$/DUE)	(\$mm)	Trice chg	Kan
Exxon Mobil Corporation XOM 81.76 1,499 39.07 7 35 18.40 27,581 1.38 Co.	0 1	CVV		110.22	992	20.42	0	22	22.70	20.020	1 25	0.86
Royal Dutch Shell										-,		0.85
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Large Independent EOG Resources, Inc. EOG 99.03 211 34.09 10 6 22.20 4.687 1.45 1.4		101	В	30.33	892	38.33	U	39	23.40	20,877		
EOG Resources, Inc. EOG 99.03 211 34.09 10 6 22.20 4,687 1.45 1											1.21	0.80
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ConocoPhillips	•		_									0.90
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Small Independent	•	COP	В	47.51	564	32.84	6	24	19.00	10,724		0.78
Cimarex Energy Company XEC 132.02 65 27.73 6 15 17.60 1,148 1.34 1 Continental Resources (32%) CLR B 45.97 26 32.54 3 14 25.10 656 1.12 0 California Resources CRC 17.67 47 41.07 15 20 17.80 834 1.84 0 Whiting Petroleum Corporation WLL 11.11 42 36.81 9 15 22.20 925 1.41 0 Range Resources RRC B 31.27 121 17.28 8 4 8.60 1,043 1.93 0 Income Total or Median Total or Median Total or Median 1.41 0 Permian Basin RY PBT 9.63 2 34.67 10 9 21.67 34 1.46 0 Sabine Royalty Trust SBR B 39.35 2 30.80											1.45	0.90
Continental Resources (32%) CLR B 45.97 26 32.54 3 14 25.10 656 1.12 California Resources CRC 17.67 47 41.07 15 20 17.80 834 1.84 California Resources CRC 17.67 47 41.07 15 20 17.80 834 1.84 California Resources CRC 11.11 42 36.81 9 15 22.20 925 1.41 California Resources RRC B 31.27 121 17.28 8 4 8.60 1,043 1.93 California Resources RRC B 31.27 121 17.28 8 4 8.60 1,043 1.93 California Resources RRC B 31.27 121 17.28 8 4 8.60 1,043 1.93 California Resources RRC B 31.27 121 17.28 8 4 8.60 1,043 1.93 California Resources RRC B 31.27 121 17.28 8 4 8.60 1,043 1.93 California Resources RRC B 31.27 121 17.28 8 4 8.60 1,043 1.93 California Resources RRC B 31.27 121 17.28 8 4 8.60 1,043 1.93 California Resources RRC B 31.27 121 17.28 8 4 8.60 1,043 1.93 California Resources RRC B 31.27 121 17.28 8 4 8.60 1,043 1.93 California Resources RRC B 31.27 121 17.28 8 4 8.60 1,043 1.93 California Resources RRC B 31.27 121 17.28 8 4 8.60 1,043 1.93 California Resources RRC B 31.27 121 17.28 8 4 8.60 1,043 1.93 California Resources RRC B 31.27 121 17.28 8 4 8.60 1,043 1.93 California Resources RRC B 31.27 121 17.28 8 4 8.60 1,043 1.93 California Resources RRC B 31.27 121 17.28 8 4 8.60 1,043 1.93 California Resources RRC B 31.29 RRC B 32.67 10 9 21.67 34 1.41 California Resources RRC B 31.29 RRC B 32.67 33.53 7 10 23.04 44 1.30 California Resources Resources RRC B 32.67 10 9 21.67 34 1.46 California Resources RRC B 32.67 10 8 23.04 44 1.30 California Resources RRC B 32.67 10 8 23.04 10 1.30 California Resources RRC B 32.67 10 8 23.04 10 1.30 California Resources RRC B 32.67 10 10 10 10 10 10 10 10 10 10 10 10 10												
California Resources CRC 17.67 47 41.07 15 20 17.80 834 1.84 0 Whiting Petroleum Corporation WLL 11.11 42 36.81 9 15 22.20 925 1.41 0 Range Resources RRC B 31.27 121 17.28 8 4 8.60 1,043 1.93 0 Total or Median Total or Median SIT 7.32 3 16.41 5 14 9.05 31 1.55 0 Permian Basin Royalty Trust SIT 7.32 3 16.41 5 14 9.05 31 1.55 0 Permian Basin Royalty Trust SIR B 16.85 2 33.53 7 10 23.04 44 1.30 0 Sabine Royalty Trust CRT 16.75 0 35.33 8 14 22.39 10 1.36 0 <td>Cimarex Energy Company</td> <td>XEC</td> <td></td> <td></td> <td>65</td> <td>27.73</td> <td></td> <td></td> <td>17.60</td> <td>1,148</td> <td>1.34</td> <td>1.09</td>	Cimarex Energy Company	XEC			65	27.73			17.60	1,148	1.34	1.09
Whiting Petroleum Corporation WIL 11.11 42 36.81 9 15 22.20 925 1.41 0 Range Resources RRC B 31.27 121 17.28 8 4 8.60 1,043 1.93 0 Income San Juan Basin Royalty Trust SJT 7.32 3 16.41 5 14 9.05 31 1.55 0 Permian Basin RT PBT 9.63 2 34.67 10 9 21.67 34 1.46 0 Porchester Minerals, L.P. DMILP B 16.85 2 33.53 7 10 23.04 44 1.30 0 Sabine Royalty Trust SBR B 39.35 2 30.80 2 9 25.92 41 1.08 0 Cross Timbers Royalty Trust CRT 16.75 0 35.33 8 14 22.39 10 1.36 0 Canada (excl. Downstream) EA	Continental Resources (32%)	CLR	В	45.97	26	32.54	3	14	25.10	656	1.12	0.86
Range Resources	California Resources	CRC		17.67	47	41.07	15	20	17.80	834	1.84	0.84
Total or Median SIT SIT Total or Median SIT	Whiting Petroleum Corporation	WLL		11.11	42	36.81	9	15	22.20	925	1.41	0.75
Name	Range Resources	RRC	В	31.27	121	17.28	8	4	8.60	1,043	1.93	0.66
San Juan Basin Royalty Trust SJT 7.32 3 16.41 5 14 9.05 31 1.55 0 Permian Basin RT PBT 9.63 2 34.67 10 9 21.67 34 1.46 0 Dorchester Minerals, L.P. DMLP B 16.85 2 33.53 7 10 23.04 44 1.30 0 Sabine Royalty Trust SBR B 39.35 2 30.80 2 9 25.92 41 1.08 0 Cross Timbers Royalty Trust CRT 16.75 0 35.33 8 14 22.39 10 1.36 0 Total or Median CRT 16.75 0 35.33 8 14 22.39 10 1.36 0 Canada (excl. Downstream) ECA 12.35 119 26.43 11 8 13.43 1,594 1.82 1 Imperial Oil Limited (30%) IMO 32.72	Total or Median										1.41	0.84
Permian Basin RT PBT 9.63 2 34.67 10 9 21.67 34 1.46 0 Dorchester Minerals, L.P. DMLP B 16.85 2 33.53 7 10 23.04 44 1.30 0 Sabine Royalty Trust SBR B 39.35 2 30.80 2 9 25.92 41 1.08 0 Cross Timbers Royalty Trust CRT 16.75 0 35.33 8 14 22.39 10 1.36 0 Total or Median CRT 16.75 0 35.33 8 14 22.39 10 1.36 0 Canada (excl. Downstream) CRT 12.35 119 26.43 11 8 13.43 1,594 1.82 1 Imperial Oil Limited (30%) IMO 32.72 73 35.85 14 12 17.50 1,280 1.80 0 Suncor Energy SU B 32.17<	Income											
Dorchester Minerals, L.P. DMLP B 16.85 2 33.53 7 10 23.04 44 1.30 0 0	San Juan Basin Royalty Trust	SJT		7.32	3	16.41	5	14	9.05	31	1.55	0.91
Sabine Royalty Trust SBR B 39.35 2 30.80 2 9 25.92 41 1.08 0 Cross Timbers Royalty Trust CRT 16.75 0 35.33 8 14 22.39 10 1.36 0 Canada (excl. Downstream) ECA 12.35 119 26.43 11 8 13.43 1,594 1.82 1 Imperial Oil Limited (30%) IMO 32.72 73 35.85 14 12 17.50 1,280 1.80 0 Suncor Energy SU B 32.17 355 48.61 18 10 25.71 9,129 1.70 0 Cenovus Energy Inc. CVE 13.66 115 30.62 11 3 18.57 2,127 1.59 0 Birchcliff Energy Ltd. BIREF B 5.85 21 19.18 1 32 12.00 252 1.08 0	Permian Basin RT	PBT		9.63	2	34.67	10	9	21.67	34	1.46	0.88
Cross Timbers Royalty Trust CRT 16.75 0 35.33 8 14 22.39 10 1.36 0 Canada (excl. Downstream) ECA 12.35 119 26.43 11 8 13.43 1,594 1.82 1 Imperial Oil Limited (30%) IMO 32.72 73 35.85 14 12 17.50 1,280 1.80 0 Suncor Energy SU B 32.17 355 48.61 18 10 25.71 9,129 1.70 0 Cenovus Energy Inc. CVE 13.66 115 30.62 11 3 18.57 2,127 1.59 0 Birchcliff Energy Ltd. BIREF B 5.85 21 19.18 1 32 12.00 252 1.08 0	Dorchester Minerals, L.P.	DMLP	В	16.85	2	33.53	7	10	23.04	44	1.30	0.70
Cross Timbers Royalty Trust CRT 16.75 0 35.33 8 14 22.39 10 1.36 0 Canada (excl. Downstream) EnCana Corporation ECA 12.35 119 26.43 11 8 13.43 1,594 1.82 1 Imperial Oil Limited (30%) IMO 32.72 73 35.85 14 12 17.50 1,280 1.80 0 Suncor Energy SU B 32.17 355 48.61 18 10 25.71 9,129 1.70 0 Cenovus Energy Inc. CVE 13.66 115 30.62 11 3 18.57 2,127 1.59 0 Birchcliff Energy Ltd. BIREF B 5.85 21 19.18 1 32 12.00 252 1.08 0	Sabine Royalty Trust	SBR	В	39.35	2	30.80	2	9	25.92	41	1.08	0.66
Total or Median Langle of Canada (excl. Downstream) Langle of Canada (excl. Downs		CRT		16.75	0	35.33	8	14	22.39	10	1.36	0.58
Canada (excl. Downstream) ECA 12.35 119 26.43 11 8 13.43 1,594 1.82 1 Imperial Oil Limited (30%) IMO 32.72 73 35.85 14 12 17.50 1,280 1.80 0 Suncor Energy SU B 32.17 355 48.61 18 10 25.71 9,129 1.70 0 Cenovus Energy Inc. CVE 13.66 115 30.62 11 3 18.57 2,127 1.59 0 Birchcliff Energy Ltd. BIREF B 5.85 21 19.18 1 32 12.00 252 1.08 0											1.36	0.70
EnCana Corporation ECA 12.35 119 26.43 11 8 13.43 1,594 1.82 1 Imperial Oil Limited (30%) IMO 32.72 73 35.85 14 12 17.50 1,280 1.80 0 Suncor Energy SU B 32.17 355 48.61 18 10 25.71 9,129 1.70 0 Cenovus Energy Inc. CVE 13.66 115 30.62 11 3 18.57 2,127 1.59 0 Birchcliff Energy Ltd. BIREF B 5.85 21 19.18 1 32 12.00 252 1.08 0												
Imperial Oil Limited (30%) IMO 32.72 73 35.85 14 12 17.50 1,280 1.80 0 Suncor Energy SU B 32.17 355 48.61 18 10 25.71 9,129 1.70 0 Cenovus Energy Inc. CVE 13.66 115 30.62 11 3 18.57 2,127 1.59 0 Birchcliff Energy Ltd. BIREF B 5.85 21 19.18 1 32 12.00 252 1.08 0		ECA		12.35	119	26.43	11	8	13 43	1 594	1.82	1.14
Suncor Energy SU B 32.17 355 48.61 18 10 25.71 9,129 1.70 0 Cenovus Energy Inc. CVE 13.66 115 30.62 11 3 18.57 2,127 1.59 0 Birchcliff Energy Ltd. BIREF B 5.85 21 19.18 1 32 12.00 252 1.08 0												0.89
Cenovus Energy Inc. CVE 13.66 115 30.62 11 3 18.57 2,127 1.59 0 Birchcliff Energy Ltd. BIREF B 5.85 21 19.18 1 32 12.00 252 1.08 0			R									0.78
Birchcliff Energy Ltd. BIREF B 5.85 21 19.18 1 32 12.00 252 1.08 0	63		В							.,		0.75
			P									0.75
Total or Median 1.70 0	Total or Median	DIKEA,	ь	3.63	21	19.10	1	32	12.00	232	1.70	0.78



					ble 3						
			Mo	cDep Ei	nergy St	ocks					
			Net P	resent V	alue Pe	r Share					
	Ra	nked	l by Res	erve Li	fe (Adjust	d Resrvs/l	Prod N	TM)			
			Price					Down-	Proven	Adjustd	Net
			(US\$/sh)			Dividend		stream/	Undev.	Resrvs/	Presen
	Symbol/Ra	tino	17-Feb	Shares	Debt	NTM	P/E	PV	Resrvs	Prod	Value
	-	Buy	2017	(mm)	(\$mm)	(\$/sh)	NTM	(%)	(%)	NTM	(US\$/sh
Global Integrated		Day	2017	(mm)	(ψππτ)	(φ/3π)	11111	(79)	(70)	111111	(000/3/1
Exxon Mobil Corporation	XOM		81.76	4,176	95,027	3.00	21	25	27	14.2	100.00
Total S.A.	TOT	В	50.55	2,433	62,452	2.63	22	23	47	9.4	90.00
Royal Dutch Shell	RDS-A	В	52.20	3,965	133,961	3.76	15	24	34	9.2	80.00
Chevron Corporation	CVX		110.33	1,890	68,829	4.32	26	19	38	9.1	135.00
Median										9.3	
Large Independent											
Marathon Oil Corporation	MRO	В	16.23	847	7,811	0.20		-	27	12.2	20.00
ConocoPhillips	COP	В	47.51	1,246	39,395	1.06		-	37	11.0	70.00
Devon Energy Corporation	DVN		44.17	548	7,151	0.24	89	9	20	9.2	45.00
Occidental Petroleum Corp.	OXY		66.27	764	12,700	3.04	57	9	21	8.5	75.00
EOG Resources, Inc.	EOG		99.03	527	10,895	0.67	182	-	30	7.5	85.00
Median										9.2	
Small Independent											
Range Resources	RRC	В	31.27	42	6,200	0.08	102	-	44	12.9	56.00
California Resources	CRC		17.67	244	4,290	-		-	25	12.0	50.00
Continental Resources (32%)	CLR	В	45.97	95	1,321	-		-	57	11.4	56.00
Whiting Petroleum Corporation	WLL		11.11	358	3,560	-		-	67	9.3	18.00
Cimarex Energy Company	XEC		132.02	118	2,178	0.32	33	-	21	6.6	120.00
Median										11.4	
Income											
Sabine Royalty Trust	SBR	В	39.35	47	-	2.82	14	-	5	10.1	60.00
San Juan Basin Royalty Trust	SJT		7.32	15	-	0.63	12	-	-	9.8	8.00
Permian Basin RT	PBT		9.63	6	-	0.69	14	-	-	8.6	11.00
Dorchester Minerals, L.P.	DMLP	В	16.85	31	-	1.29	16	-	-	7.4	24.00
Cross Timbers Royalty Trust	CRT		16.75	47	-	1.55	11	-	-	7.1	29.00
Median										8.6	
Canada											
Imperial Oil Limited (30%)	IMO		32.72	255	2,478	0.46	13	37	12	32.7	38.00
Suncor Energy	SU	В	32.17	1,667	17,497	0.98	21	14	46	20.4	44.00
Cenovus Energy Inc.	CVE		13.66	833	4,131	0.15		9	76	15.8	20.00
Birchcliff Energy Ltd.	BIREF	В	5.85	269	599	0.08	30	-	69	13.7	10.00
EnCana Corporation	ECA		12.35	972	6,603	0.06		-	33	5.5	10.00
Median										15.8	



			Tabl		_					
			Dep Ene							
	Tota	ıl Re	turn Ye	ar-to-D	ate 201	7				
	Rank	ed by	y Unleve	red Tot	al Retu	rn				
			Price	Price			Equity	U	nlevered	
			(\$/sh)	(\$/sh)	Price	Cash	Total		Total	
	Symbol/	Ratir	17-Feb	30-Dec	Change	Distrib.	Return	Debt	Return	McDe
			2017	2016	(%)	(%)	(%)	(\$/sh)	(%)	Ratio
Global Integrated	TOT	- D	50.55	50.07	(1)		(1)	26	(1)	0.66
Total S.A.	TOT	В	50.55	50.97	(1)	-	(1)	26	(1)	0.66
Royal Dutch Shell	RDS-A	В	52.20	54.38	(4)	-	(4)	34	(2)	0.76
Chevron Corporation	CVX		110.33	117.70	(6)	-	(6)	36	(5)	0.86
Exxon Mobil Corporation	XOM		81.76	90.26	(9)	-	(9)	23	(8)	0.85
Median					(5)		(5)		(4)	0.80
Large Independent	FOC		00.02	101.10	(2)	0.0	(2)	10	(2)	
EOG Resources, Inc.	EOG		99.03	101.10	(2)	0.2	(2)	13	(2)	1.14
Devon Energy Corporation	DVN	-	44.17	45.67	(3)	-	(3)	21	(2)	0.99
ConocoPhillips	COP	В	47.51	50.14	(5)	-	(5)	32	(3)	0.78
Marathon Oil Corporation	MRO	В	16.23	17.31	(6)	-	(6)	9	(4)	0.87
Occidental Petroleum Corp.	OXY		66.27	71.23	(7)	-	(7)	17	(6)	0.90
Median					(5)		(5)		(3)	0.90
Small Independent										
California Resources	CRC		17.67	21.29	(17)	-	(17)	147	(2)	0.84
Cimarex Energy Company	XEC		132.02	135.90	(3)	-	(3)	14	(3)	1.09
Whiting Petroleum Corporation	WLL		11.11	12.02	(8)	-	(8)	10	(4)	0.75
Range Resources	RRC	В	31.27	34.36	(9)	-	(9)	18	(6)	0.66
Continental Resources (32%)	CLR	В	45.97	51.54	(11)	-	(11)	18	(8)	0.86
Median					(9)		(9)		(4)	0.84
Income										
Permian Basin RT	PBT		9.63	7.71	25	0.8	26	-	26	0.88
Sabine Royalty Trust	SBR	В	39.35	35.15	12	0.4	12	-	12	0.66
San Juan Basin Royalty Trust	SJT		7.32	6.62	11	0.9	11	-	11	0.91
Dorchester Minerals, L.P.	DMLP	В	16.85	17.55	(4)	1.4	(3)	-	(3)	0.70
Cross Timbers Royalty Trust	CRT		16.75	17.97	(7)	0.5	(6)	-	(6)	0.58
Median					11		11		11	0.70
Canada										
EnCana Corporation	ECA		12.35	11.74	5	-	5	7	3	1.14
Suncor Energy	SU	В	32.17	32.69	(2)	-	(2)	10	(1)	0.78
Imperial Oil Limited (30%)	IMO		32.72	34.76	(6)	-	(6)	10	(5)	0.89
Cenovus Energy Inc.	CVE		13.66	15.13	(10)	-	(10)	5	(7)	0.75
Birchcliff Energy Ltd.	BIREF	В	5.85	7.01	(16)	-	(16)	2	(12)	0.66
Median					(6)		(6)		(5)	0.78
Cur. 134 1		-			(6)		(6)		(2)	0.04
Grand Median Natural Gas (\$/mmbtu)		+	2.04	2.74	(6) (24)		(6)		(3)	0.84
			2.84	3.74	` /					
Oil -West Texas Intermediate (\$/bbl)	VTI		53.40	53.72	(1)					
Total Stock Market - U.S.		++	121.31	115.32	5					
Developed Markets - ex US	VEA		38.47	36.54	5					
Emerging Markets	VWO		39.17	35.78	9					



February 21, 2017

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