

## ***Meter Reader***

*A Weekly Analysis of Energy Stocks Using the McDep Ratio*

May 24, 2005

# **Clean Air Tradeoff Indicator**

## **Summary and Recommendation**

Buy natural gas stocks including **Anadarko (APC)**, **Burlington Resources (BR)** and **Devon Energy (DVN)** among others while natural gas is priced at a discount to oil signaling that the clean fuel could be more widely used. In a clean, safe world, electric power would be generated only from natural gas, refined oil or gasified coal. In the cheap and dirty world, electric power is generated predominantly from coal with minimal or moderate effort to control unhealthful pollution. Current pricing relationships suggest that we can afford to use more natural gas. A healthy oil and gas portfolio might include a disproportionate weighting in natural gas rich stocks.

## **High-Tech Electrical Economy Powered by Coal**

Demand for electricity, the cleanest and highest form of raw power may be limitless. Each new technological advance seems powered by electricity. As Huber and Wells put it in their recent book, [The Bottomless Well](#), energy-efficient semiconductors are the product of an energy-intensive manufacturing process. Energy efficiency begets more consumption as we apply the savings to more convenience, more enjoyment and a higher level of existence.

The electrical economy is powered by coal. The *Energy Information Administration* tells us that in 2004, the U.S. economy consumed 99.7 quadrillion btus (quads) of primary energy, 22.7 quads from coal and 19.3 quads from natural gas. Literally all of the coal was consumed in generating half of electricity supply. A third of natural gas was consumed in generating 18% of electricity supply. It is clear we cannot live without coal, but we could live with a little less of it by replacing some of it with natural gas.

## **Air Quality is No Contest**

One does not have to be a scientist to know that coal is dirty and gas is clean. In fact, the most promising technique to create “clean coal” is to combine it with water (steam) and turn it into synthetic gas. The pollutants of coal would be removed more effectively before burning than after the fact. The waste heat associated with coal gasification is minimized in the Integrated Gasification Combined Cycle (IGCC) facility operated by Tampa Electric.

Instead we burn raw coal and step by step remove the pollutants after the burning. Forty years ago the great campaign was to get coal burning utilities to build tall stacks. Get the Historical independent energy investment analysis by Kurt Wulff doing business as McDep Associates is posted at [www.mcdep.com](http://www.mcdep.com). Analyses are prepared from sources and data believed to be reliable, but no representation is made as to their accuracy or completeness. Mr. Wulff is not paid by covered companies. Neither he nor his spouse trade a subject stock within a week before or after a change in rating.

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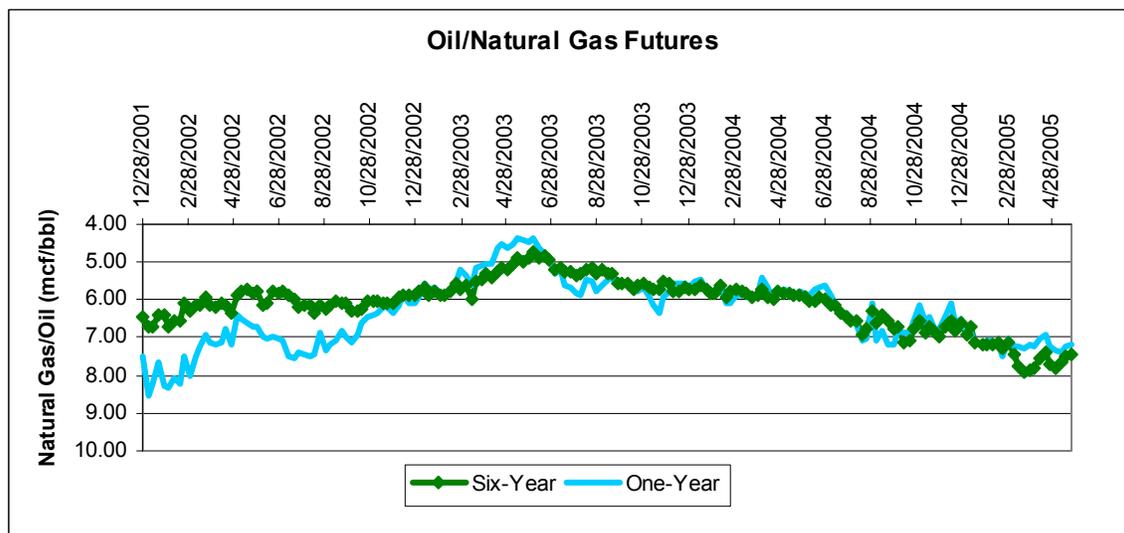
May 24, 2005

pollution high up into the air and away from the local population. At the same time, we attacked smoke, otherwise known as particulates. Most coal burners have devices to diminish smoke. After that, sulfur was the obvious pollutant to control. Much of the reduction in sulfur was achieved by hauling low sulfur coal from the West to the East. "Low sulfur" is still a euphemism where coal is concerned. We have also taken some steps to reduce oxides of nitrogen that contribute to smog. The Kyoto treaty attempts to reduce emissions of carbon dioxide. Huber and Wells point out the flaws in the science, economics and sociology of that approach. The U.S. does little about carbon dioxide and coal is the largest fossil fuel source. In recent years we have learned that coal burning emits mercury, a seemingly newly-discovered pollutant. There are probably more pollutants and carcinogens in coal that have gotten little attention up to now.

### More Economic Natural Gas Supply Available

As is often the case after a price increase, supply expands. North American natural gas producers are doing surprisingly well in developing new volumes from unconventional resources. Volumes are not growing in total, but not declining much either. A few more years down the road large quantities of liquefied natural gas (LNG) are likely to be available.

The most sensitive clue to natural gas availability is commodity price relative to oil, the world's largest traded energy source. Natural gas price is at its lowest relative to oil in three years (see chart Oil/Natural Gas Futures). That seems to be the case for futures price for the next year or the next six years.



The approximate heating value equivalent of natural gas is the oil price in dollars per barrel divided by about six. The current ratio between seven and eight is a steep discount of 20-30%.

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The actual heating equivalent is at the point of use while transportation cost and availability varies by fuel. We feel that Americans are breathing unnecessarily polluted air when we read in the May 23 issue of *Natural Gas Week* that in New York natural gas is \$6.87 per million btu (mmbtu) and heating oil is \$9.87 per mmbtu. Natural gas is begging for a market while the dirtiest, old coal plants spew their deadly toxins. The discount is not only in the Northeast. In Texas, natural gas is quoted at \$6.40 compared to heating oil at \$9.70. Even heating oil is an environmental compromise. Though it is a relatively clean refined product, it is not as clean as natural gas.

### **Electric Growth Can Surprise**

While we would encourage our political leaders to shut down some of the dirtiest coal plants immediately, we may not need to depend on political action for narrowing the price discount for natural gas. We could be surprised as early as this summer if demand for electricity is especially strong in the peak air conditioning period.

Similarly if our economy continues to grow at its potential, electricity demand will grow nicely. Natural gas could take a disproportionate amount of incremental demand as much of the new generating capacity added in recent years has been gas-fired and is only lightly used.

### **5:1 is Normal, 4:1 is Reasonable**

When we said that 6:1 is heating equivalency for natural gas we were comparing the clean fuel to unrefined crude oil. Heating oil, diesel fuel or jet fuel, the substitutes for natural gas in efficient power plants, are worth about a 20% premium to crude oil. That changes our price ratio to 5:1. We reached that ratio as recently as the cold winter of two years ago.

Longer-term the price of natural gas can continue to advance relative to oil. In the next decade, 4:1 could be reasonable, in our opinion.

### **Put Natural in Your Portfolio**

The three stocks we highlighted at the beginning have the lowest McDep Ratios among stocks with more than half of value in North American natural gas (see table [Natural Gas Concentration and McDep Ratio](#)). The 27 stocks average about 12% North American natural gas. We would concentrate holdings on natural gas rich stocks to take the oil and gas portfolio percentage toward a third.

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#### Natural Gas Concentration and McDep Ratio

	<i>North Amer. Natural Gas (%)</i>	<i>Over- seas Natural Gas (%)</i>	<i>Oil Prod'n (%)</i>	<i>Down- stream (%)</i>	<i>Total (US\$mm)</i>	<i>McDep Ratio</i>
San Juan Basin Royalty Trust	100	-	-	-	1,490	1.09
XTO Energy Inc.	82	-	18	-	16,400	0.85
Encana Corporation	81	-	19	-	43,400	0.91
Cimarex Energy Company	71	-	29	-	4,800	0.77
Burlington Resources	68	4	28	-	29,500	0.76
Devon Energy Corporation	63	-	37	-	37,300	0.75
Anadarko Petroleum Corp.	56	-	44	-	32,200	0.70
Energy Partners Ltd.	53	-	47	-	1,480	0.79
Encore Acquisition Company	29	-	71	-	2,280	0.70
Unocal Corporation	27	27	46	-	22,300	0.88
Petro-Canada	22	4	52	22	22,700	0.82
Marathon Oil Corporation	18	12	35	35	21,000	1.08
Occidental Petroleum Corp.	15	1	73	12	41,100	0.83
Berry Petroleum Company	14	-	86	-	1,480	0.87
Imperial Oil Limited	13	-	61	26	25,000	1.06
ConocoPhillips	13	7	41	39	125,300	0.79
BP plc	10	12	45	32	262,000	0.94
Exxon Mobil Corporation	10	19	37	35	409,000	0.92
Chevron Corporation	6	8	52	34	177,000	0.72
Suncor Energy	5	-	88	8	27,700	0.72
Royal Dutch/Shell	4	17	33	46	257,000	0.91
Total S.A.	-	24	39	37	177,000	0.90
Norsk Hydro ASA	-	23	38	38	30,200	0.81
CNOOC Limited	-	12	88	-	27,600	0.81
PetroChina Company Ltd	-	7	73	20	174,000	0.68
Lukoil Oil Company	-	-	71	29	44,900	0.65
Canadian Oil Sands Trust (US	-	-	100	-	10,300	0.69

#### Weekly Numbers

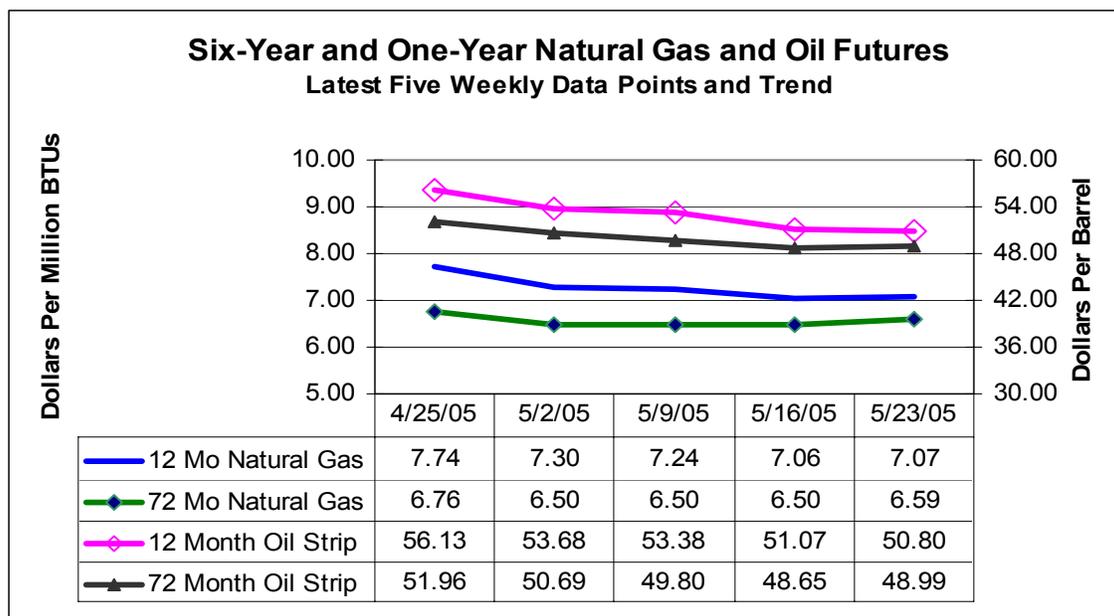
Take a look at the latest oil quotes (see chart [Latest Five Weekly Data Points and Trend](#)). Six-year oil at \$48.99 implies six-year natural gas at \$8.16 at 6:1, not to mention 5:1. Instead six-year natural gas at \$6.59 is only 7.4:1. It looks like we are in more of a 19<sup>th</sup> Century coal economy rather than a 21<sup>st</sup> Century natural gas economy.

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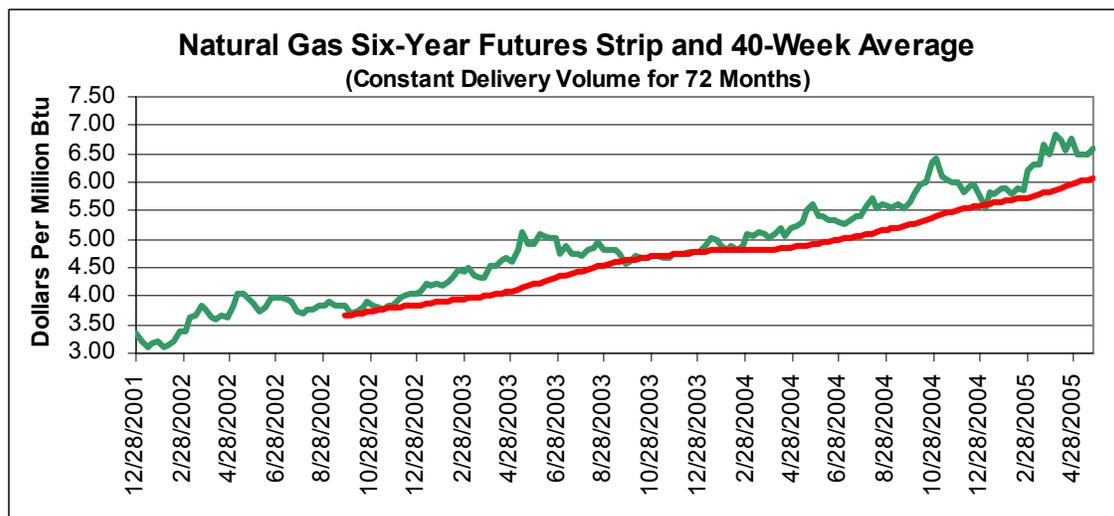
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Fortunately, the trend points to more value for clean fuel (see chart below).



McDep Ratios at a median 0.85 imply that stocks are valued as though oil were \$34 a barrel or less (see table [Rank by McDep Ratio](#)). Considering the industry prospects, other valuation measures all seem low at a median unlevered cash flow multiple of 5.0 times, median P/E at 9.9 and median dividend yield at 2.4% per year (see table [Rank by EV/Ebitda](#)). Single-stock analyses are available on more than 31 stocks (see [Index of Recent Research](#)).

Kurt H. Wulff, CFA

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#### Oil and Gas Producers Rank by McDep Ratio: Market Cap and Debt to Present Value

	Symbol/ Rating		Price (\$/sh) 23-May 2005	Shares (mm)	Market Cap (\$mm)	Net Present Value (\$/sh)	Debt/ Present Value	McDep Ratio
<b>Mega Cap</b>								
Shell Transport and Trading Co. plc	SC	B	52.53	1,587	83,000	56.00	0.14	0.95
BP plc	BP	B	59.77	3,574	214,000	64.00	0.13	0.94
Exxon Mobil Corporation	XOM	B	54.75	6,421	352,000	60.00	0.06	0.92
Royal Dutch Petroleum	RD	B	58.90	2,018	119,000	66.00	0.14	0.91
Total S.A.	TOT	B	110.69	1,192	132,000	126.00	0.15	0.90
Chevron Corporation	CVX	B	52.57	2,100	110,000	76.00	0.10	0.72
<i>Total or Median</i>					<i>1,010,000</i>		<i>0.13</i>	<i>0.91</i>
<b>Producer/Refiners - Large Cap and Mid Cap</b>								
Kinder Morgan, Inc.	KMI	S2	75.76	125	9,470	20.00	0.74	1.73
Marathon Oil Corporation	MRO	B	47.10	349	16,420	42.00	0.30	1.08
Imperial Oil Limited (30%)	IMO	B	68.28	105	7,160	64.00	0.10	1.06
Petro-Canada	PCZ	B	54.75	263	14,420	70.00	0.19	0.82
Norsk Hydro ASA	NHY	B	78.57	252	19,820	101.00	0.16	0.81
ConocoPhillips	COP	B	103.35	710	73,400	140.00	0.21	0.79
Suncor Energy	SU	B	37.00	461	17,060	54.00	0.10	0.72
PetroChina Company Ltd (10%)	PTR	B	61.97	176	10,890	94.00	0.05	0.68
Lukoil Oil Company	LUKOY	B	33.25	834	28,000	52.00	0.03	0.65
<i>Total or Median</i>					<i>197,000</i>		<i>0.16</i>	<i>0.81</i>
<b>Independent Natural Gas and Oil - Large Cap and Mid Cap</b>								
Encana Corporation	ECA	B	34.26	909	31,100	38.50	0.19	0.91
Unocal Corporation	UCL	B	55.39	271	15,000	65.00	0.21	0.88
XTO Energy Inc.	XTO	B	29.34	366	10,750	36.00	0.19	0.85
Occidental Petroleum Corp.	OXY	B	69.66	406	28,300	87.00	0.14	0.83
CNOOC Limited (19%)	CEO	B	54.07	78	4,220	67.00	-	0.81
Burlington Resources	BR	B	48.67	389	18,900	67.00	0.12	0.76
Devon Energy Corporation	DVN	B	44.20	500	22,100	63.00	0.16	0.75
Anadarko Petroleum Corp.	APC	B	73.39	246	18,100	113.00	0.14	0.70
<i>Total or Median</i>					<i>148,000</i>		<i>0.15</i>	<i>0.82</i>
<b>Independent Natural Gas and Oil - Small Cap</b>								
Berry Petroleum Company	BRY	B	42.73	22	960	50.00	0.12	0.87
Energy Partners Ltd.	EPL	B	22.06	39	870	30.00	0.20	0.79
Cimarex Energy Company	XEC	B	36.66	81	2,970	50.00	0.15	0.77
Encore Acquisition Company	EAC	B	36.00	33	1,170	57.00	0.19	0.70
<i>Total or Median</i>					<i>6,000</i>		<i>0.17</i>	<i>0.78</i>
<b>Income</b>								
Kinder Morgan Energy Partners, L.P.	KMP	S3	47.43	150	7,110	15.00	0.52	2.04
Kinder Morgan Management, LLC	KMR	S3	44.20	56	2,490	15.00	0.52	1.94
Pengrowth Energy Trust	PGH		20.27	153	3,100	16.00	0.18	1.22
San Juan Basin Royalty Trust	SJT		34.97	47	1,630	32.00	-	1.09
Enerplus Resources Fund	ERF		34.53	105	3,620	32.00	0.16	1.07
Canadian Oil Sands Trust (US\$)	COSWF	B	59.51	93	5,510	94.00	0.16	0.69
<i>Total or Median</i>					<i>23,500</i>		<i>0.17</i>	<i>1.16</i>

B = Buy, S2 = Short half unlevered position, S3 = Short quarter unlevered position

McDep Ratio = Market cap and Debt to present value of oil and gas and other businesses

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#### Oil and Gas Producers

Rank by EV/Ebitda: Enterprise Value to Earnings Before Interest, Tax, Deprec.

	Symbol/ Rating		Price (\$/sh) 23-May 2005	Adjstd Resrvs/ Prod NTM	PV/ Ebitda NTM	EV/ Ebitda NTM	P/E NTM	Divd or Distrib NTM (%)	
<b>Mega Cap</b>									
Exxon Mobil Corporation	XOM	B	54.75	11.2	6.8	6.2	11	2.0	
BP plc	BP	B	59.77	9.4	6.0	5.6	10	3.4	
Total S.A.	TOT	B	110.69	9.0	5.9	5.3	9	3.1	
Shell Transport and Trading Co. plc	SC	B	52.53	7.3	5.3	5.0	10	3.8	
Royal Dutch Petroleum	RD	B	58.90	7.3	5.3	4.8	9	3.9	
Chevron Corporation	CVX	B	52.57	9.8	6.4	4.6	8	3.4	
	<i>Median</i>				9.2	5.9	5.2	10	3.4
<b>Producer/Refiners - Large Cap and Mid Cap</b>									
Kinder Morgan, Inc.	KMI	S2	75.76		7.5	12.9	17	3.7	
Imperial Oil Limited (30%)	IMO	B	68.28	9.9	7.5	7.9	15	1.0	
Suncor Energy	SU	B	37.00	20.1	10.4	7.4	16	0.5	
Marathon Oil Corporation	MRO	B	47.10	7.5	4.5	4.9	8	2.4	
Petro-Canada	PCZ	B	54.75	5.4	5.6	4.6	9	0.9	
ConocoPhillips	COP	B	103.35	11.6	5.8	4.6	7	2.4	
Norsk Hydro ASA	NHY	B	78.57	8.5	5.3	4.3	10	4.0	
PetroChina Company Ltd (10%)	PTR	B	61.97	13.5	6.0	4.1	8	5.1	
Lukoil Oil Company	LUKOY	B	33.25	12.2	4.4	2.9	5	3.0	
	<i>Median</i>				10.7	5.8	4.6	9	2.4
<b>Independent Natural Gas and Oil - Large Cap and Mid Cap</b>									
XTO Energy Inc.	XTO	B	29.34	11.8	7.2	6.2	12	0.7	
Occidental Petroleum Corp.	OXY	B	69.66	11.6	6.0	5.0	9	1.8	
Unocal Corporation	UCL	B	55.39	8.5	5.2	4.6	10	1.4	
Burlington Resources	BR	B	48.67	9.9	6.1	4.6	10	0.7	
Anadarko Petroleum Corp.	APC	B	73.39	11.9	6.4	4.5	9	1.0	
Devon Energy Corporation	DVN	B	44.20	7.9	5.5	4.1	10	0.7	
Encana Corporation	ECA	B	34.26	7.2	5.7	5.2	11	1.8	
CNOOC Limited (19%)	CEO	B	54.07	8.7	4.7	3.8	7	3.8	
	<i>Median</i>				9.3	5.9	4.6	10	1.2
<b>Independent Natural Gas and Oil - Small Cap</b>									
Berry Petroleum Company	BRYP	B	42.73	11.2	6.5	5.6	14	1.1	
Encore Acquisition Company	EAC	B	36.00	15.4	7.7	5.4	13	-	
Cimarex Energy Company	XEC	B	36.66	7.5	5.2	4.0	10	-	
Energy Partners Ltd.	EPL	B	22.06	4.8	3.7	2.9	8	-	
	<i>Median</i>				9.4	5.8	4.7	11	-
<b>Income</b>									
Kinder Morgan Energy Partners, L.P.	KMP	S3	47.43		7.6	15.5	20	6.2	
Kinder Morgan Management, LLC	KMR	S3	44.20		7.6	14.7	19	6.6	
San Juan Basin Royalty Trust	SJT		34.97	12.1	9.3	10.2	11	8.9	
Pengrowth Energy Trust	PGH		20.27	7.4	6.3	7.6	13	10.7	
Enerplus Resources Fund	ERF		34.53	9.4	6.3	6.7	13	9.6	
Canadian Oil Sands Trust (US\$)	COSWF	B	59.51	20.0	8.8	6.1	6	2.7	
	<i>Median</i>				10.8	7.6	8.9	13	7.7

EV = Enterprise Value = Market Cap and Debt; Ebitda = Earnings before interest, tax, depreciation and amortization; NTM = Next Twelve Months Ended June 30, 2006; P/E = Stock Price to Earnings; PV = Present Value of oil and gas and other businesses

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#### **Index of Recent Research**

##### **Stock Ideas**

<u>Date</u>	<u>Symbol</u>	<u>Stock</u>	<u>Theme</u>
23-May	SU	Suncor Energy Inc.	Syncrude Sister
20-May	COP	ConocoPhillips	Raise Net Present Value to \$140 a Share
16-May	EAC	Encore Acquisition Company	Momentum Test
11-May	XTO	XTO Energy Inc.	Raise Net Present Value to \$36 a Share
9-May	TOT	Total S.A.	Raise Net Present Value to \$120 a Share
6-May	IMO	Imperial Oil Limited	Oil Sands Strategy
5-May	BRY	Berry Petroleum Company	Oil in the Kitty Litter
29-Apr	MRO	Marathon Oil Corporation	Between China and Canada
28-Apr	* SJT	San Juan Basin Royalty Trust	Ten Bagger
27-Apr	* PCZ	Petro-Canada	Oil Sands Strategy
26-Apr	* COSWF	Canadian Oil Sands Trust	If You Could Own Only One
22-Apr	* OXY	Occidental Petroleum Corporation	Return to Libya
22-Apr	* ECA	EnCana Corporation	Natural Gas Leader
14-Apr	* KMX	Kinder Morgan	Our Contrary View
8-Apr	* NHY	Norsk Hydro ASA	New High for Oil and Aluminum
7-Apr	* LUKOY	Lukoil Oil Company	National Treasure
31-Mar	* BR	Burlington Resources, Inc.	San Juan Basin Value Expanding
29-Mar	* CEO	CNOOC Ltd	Nice Dividend
23-Mar	* CEO	CNOOC Ltd	Volume Gains Expected in 2005
21-Mar	* PTR	PetroChina Company Limited	Nice Dividend
18-Mar	* RD	Royal Dutch Petroleum	Transformation Approaching
18-Mar	* SC	Shell Transport & Trading Company, p.l.c.	Transformation Approaching
17-Mar	* BP	BP p.l.c.	More Cash Flow to Owners
7-Mar	* EPL	Energy Partners, Ltd.	Layer Cake
7-Mar	* DVN	Devon Energy Corporation	Target Diversification
7-Mar	* XEC	Cimarex Energy Company	Raise Net Present Value to \$50 a Share
7-Mar	* XOM	Exxon Mobil Corporation	Raise Net Present Value to \$60 a Share
28-Feb	* CVX	ChevronTexaco Corporation	Raise Net Present Value to \$76 a Share
17-Feb	* APC	Anadarko Petroleum Corporation	Raise Net Present Value to \$113 a Share
10-Feb	* UCL	Unocal Corporation	Raise Net Present Value to \$65 a Share

##### **Meter Reader - A Weekly Analysis**

24-May		Clean Air Tradeoff Indicator
17-May	*	Merger Stocks and Small Cap
10-May	*	Nice Return for Low Risk
3-May	*	In It to Win It
25-Apr	*	Refining Deal

\* Archived on [www.mcdep.com](http://www.mcdep.com)

Also see

**U.S. Natural Gas Royalty Trusts - A Weekly Analysis, and Single-Trust Analyses**

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