

Insider Buying Foretells Higher Resource Value

Summary and Recommendation

The pending takeover of Rocky Mountain natural gas producer Tom Brown, Inc. (TBI), in a tender offer now underway, is credible support for our view that energy resource values are higher than commonly perceived. The acquirer, buy-recommended **Encana (ECA)**, the largest competitor among independent producers, has a record of smart decisions. The price being paid is in cash, not stock, and is at a sharp 24% premium to recent stock price. Yet the premium is less than the 40% appreciation potential implied by our anticipatory estimate of present value for the target's small cap peers. A similar scenario unfolded three decades ago as illustrated in excerpts of our research from 1978. Our small cap producer recommendations today include **Berry Petroleum (BRY)**, **Cimarex Energy (XEC)** and **Encore Acquisition (EAC)**.

Deal Delivers a Message

Encana's purchase of Tom Brown may be a telltale transaction pointing to future profits for oil and gas investors. A knowledgeable purchaser has paid a large premium to current stock price, in cold cash, after oil and gas prices have already had a good run. The ordinary instinct of analysts and investors is to dismiss the deal as one where the buyer inevitably has overpaid.

One apparent justification for the deal price is that the buyer is not going to wait for someone else to build a pipeline to tap land-locked natural gas. Encana proposes to build the Entrega line to connect the Piceance Basin of western Colorado to the interstate grid. Management suggests lightheartedly that "Entrega" is Spanish for "higher netback", a reference to the greater value that the new line would add to new natural gas production.

That makes sense, but we think there is also a broader dynamic. The buyer is demonstrating a greater conviction about the future value of natural gas and oil resources than are stock market and commodity traders. We have also been trying to express that greater conviction since we moved our present value estimates ahead of the level implied by six-year futures earlier this year. Whether that conviction will be vindicated we cannot say, but it feels a lot like something we have seen before.

The following unconventional analysis from 1978 measured forces that presaged dynamic stock price gains in subsequent years:

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Meter Reader

A Weekly Analysis of Energy Stocks Using the McDep Ratio

April 27, 2004

"Exploration Company Acquisition Prices

The pricing of takeovers of independent exploration companies reached 100% of future revenue at constant price in the 1976-77 period compared to 60% in the 1973-1975 period (see Table 1). To appreciate the significance of the finding let us explain what we did in our analysis. First, the acquisition price for equity was adjusted for debt and for assets other than oil and gas reserves. Second, reported reserves of oil and gas were converted to undiscounted future revenue at constant price by multiplying reported reserves times average wellhead price for oil and gas during the most recent 12 months period. This simple measure avoids the need to express any final price in dollars per equivalent barrel or equivalent mcf.

Table 1
Independent Exploration Companies
Acquisition Price

	<u>1976-77</u>	<u>1973-75</u>
Acquisition Price as Percent of Future Revenue at Constant Price	100%	60%
Current Production Price		
Oil (\$/bbl)	8.30	6.00
Gas (\$/mcf)	0.64	0.39
Average (\$/heat equivalent mcf)	1.00	0.85
Natural Gas Percent of Future Revenue	50%	23%
Sample Characteristics		
Aggregate Future Revenue (million dollars)	540	1,140
Companies	Austral Basin Eason Hanover Hilliard Exchange Coquina LVO Apexco General Crude Cotton Cardinal	

These results may appear startling since it has usually been customary to apply some discount to future revenues. Moreover, operating costs are usually subtracted from future revenues. Buyers of companies have apparently determined that the potential for price escalation and for adding to proven reserves offsets a time discount and operating cost deduction.

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We wish to emphasize that this acquisition price represents what buyers actually paid for companies, not some theoretical or judgmental value of our own determination. Obviously the actual parties to these acquisitions supported their prices with more extensive analysis. However, the public shareholders which own the majority of shares in most of the companies sold out had no more information than that available in SEC approved proxy statements which, in turn, provided the basis for our conclusions."

Source: DLJ Oil & Gas Valuation, July 5, 1978

Asset Values Lead Stock Prices

That historical analysis triggered higher estimates of present value for independent producers. The resulting ratios of stock price to asset value ranged from 0.21 to 0.65. "Asset values lead stock prices" was a recurring theme at that time.

Today the median McDep Ratio for small cap independents is about 0.75 (see Table 2-1). Considering the median ratio of Debt/Present Value under 0.20, the comparable ratio of Price to Net Present Value is about 0.71.

Ratios depend on the denominator as well as the numerator. In 1978 our denominator values did not go up until after the deals. Now our values seem ahead of deals. The Encana purchase appears to have narrowed much of the gap. The Encana folks seem to be the ultimate "insiders" with more knowledge of what is going on in North American natural gas and the willingness to act on it than most industry, government and financial players.

Kurt H. Wulff, CFA

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Table 1-1
Energy Producers
Rank by McDep Ratio: Market Cap and Debt to Present Value

	Symbol/ Rating	Price (\$/sh) 26-Apr 2004	Shares (mm)	Market Cap (\$mm)	Net Present Value (\$/sh)	Debt/ Present Value	McDep Ratio
Mega Cap							
Exxon Mobil Corporation	XOM	43.01	6,612	284,000	43.00	0.09	1.00
BP plc	BP	52.92	3,684	195,000	60.00	0.13	0.90
Total S.A.	TOT	95.56	1,251	119,600	113.00	0.16	0.87
Royal Dutch/Shell	RD B	48.45	3,389	164,000	60.00	0.18	0.84
ChevronTexaco Corporation	CVX B	92.25	1,064	98,200	125.00	0.14	0.78
<i>Total or Median</i>				861,000		0.14	0.87
Producer/Refiners - Large Cap and Mid Cap							
Kinder Morgan, Inc.	KMI s	61.93	124	7,680	14.00	0.80	1.67
Valero Energy Corporation	VLO	62.23	121	7,510	55.00	0.43	1.07
Imperial Oil Limited (30%)	IMO	45.60	110	5,010	44.00	0.12	1.03
Murphy Oil Corporation	MUR	64.32	93	5,970	62.00	0.20	1.03
Marathon Oil Corporation	MRO	34.34	350	12,020	41.00	0.31	0.89
ConocoPhillips	COP B	72.70	680	49,500	110.00	0.28	0.76
ENI S.p.A.	E	102.76	755	77,600	150.00	0.12	0.72
Petro-Canada	PCZ	45.21	265	11,980	68.00	0.10	0.70
Petroleo Brasileiro S. A.	PBR	31.50	1,096	34,500	65.00	0.20	0.59
Norsk Hydro ASA	NHY B	62.80	257	16,120	120.00	0.12	0.58
Lukoil Oil Company	LUKOY b	113.50	211	24,000	208.00	0.05	0.57
Suncor Energy	SU	25.34	475	12,040	48.00	0.08	0.57
PetroChina Company Ltd (10%)	PTR b	45.07	176	7,920	88.00	0.07	0.54
<i>Total or Median</i>				272,000		0.12	0.72
Independent Natural Gas and Oil							
Canadian Natural Resources Limited	CNQ	58.81	137	8,060	88.00	0.29	0.77
XTO Energy Inc.	XTO B	26.75	236	6,310	38.00	0.16	0.75
Encana Corporation	ECA B	42.05	472	19,800	63.00	0.18	0.73
Unocal Corporation	UCL	38.41	274	10,500	60.00	0.22	0.72
Apache Corporation	APA	42.94	324	13,900	64.00	0.15	0.72
Occidental Petroleum Corp.	OXY	48.69	396	19,300	75.00	0.19	0.72
CNOOC Limited (19%)	CEO b	39.22	78	3,070	55.00	-	0.71
Pogo Producing Company	PPP	48.28	64	3,090	70.00	0.07	0.71
Pioneer Natural Resources Company	PXD	34.08	119	4,060	57.00	0.22	0.69
Anadarko Petroleum Corp.	APC B	54.77	252	13,800	94.00	0.21	0.67
Burlington Resources	BR B	67.95	198	13,500	115.00	0.15	0.66
Devon Energy	DVN	62.24	242	15,100	120.00	0.24	0.64
<i>Total or Median</i>				130,000		0.18	0.72
Service							
Baker Hughes Inc.	BHI	36.55	336	12,300	30.00	0.07	1.21
Halliburton Company	HAL	30.90	435	13,400	28.00	0.28	1.07
Schlumberger Ltd.	SLB	61.98	585	36,300	60.00	0.17	1.03
<i>Total or Median</i>				62,000		0.17	1.07

Buy/Sell rating after symbol: B - Buy full position, b - buy half position, s - short half position

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

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A Weekly Analysis of Energy Stocks Using the McDep Ratio

April 27, 2004

Table 1-2
Energy Producers
Rank by EV/Ebitda: Enterprise Value to Earnings Before Interest, Tax, Deprec.

	Symbol/ Rating	Price (\$/sh) 26-Apr 2004	EV/ Sales NTM	EV/ Ebitda NTM	P/E NTM	Divd or Distrib NTM (%)	PV/ Ebitda NTM	
Mega Cap								
Exxon Mobil Corporation	XOM	43.01	1.2	7.7	14	2.3	7.7	
Total S.A.	TOT	95.56	1.0	6.5	12	4.6	7.4	
BP plc	BP	52.92	0.9	6.4	14	3.1	7.1	
ChevronTexaco Corporation	CVX	B	92.25	1.0	5.7	10	3.2	7.4
Royal Dutch/Shell	RD	B	48.45	1.0	5.6	12	4.5	6.6
	<i>Median</i>		<i>1.0</i>	<i>6.4</i>	<i>12</i>	<i>3.2</i>	<i>7.4</i>	
Producer/Refiners - Large Cap and Mid Cap								
Kinder Morgan, Inc.	KMI	s	61.93	3.0	13.1	19	2.6	7.8
Imperial Oil Limited (30%)	IMO		45.60	1.3	7.7	15	1.5	7.4
Murphy Oil Corporation	MUR		64.32	1.4	6.9	14	1.2	6.7
Suncor Energy	SU		25.34	2.5	6.3	11	0.6	11.1
Valero Energy Corporation	VLO		62.23	0.3	6.1	8	0.8	5.7
ConocoPhillips	COP	B	72.70	0.7	5.7	9	2.4	7.5
Marathon Oil Corporation	MRO		34.34	0.4	5.2	10	2.9	5.9
ENI S.p.A.	E		102.76	1.6	5.1	10	4.5	7.1
Petro-Canada	PCZ		45.21	1.4	4.1	10	1.0	5.9
PetroChina Company Ltd (10%)	PTR	b	45.07	2.2	4.1	8	4.8	7.5
Norsk Hydro ASA	NHY	B	62.80	0.8	4.0	11	2.5	6.9
Petroleo Brasileiro S. A.	PBR		31.50	1.6	3.6	4	3.2	6.1
Lukoil Oil Company	LUKOY	b	113.50	1.0	3.4	5	2.3	6.0
	<i>Median</i>		<i>1.4</i>	<i>5.2</i>	<i>10</i>	<i>2.4</i>	<i>6.9</i>	
Independent Natural Gas and Oil								
XTO Energy Inc.	XTO	B	26.75	4.9	6.8	12	0.1	9.0
CNOOC Limited (19%)	CEO	b	39.22	4.5	5.9	12	4.1	8.3
Occidental Petroleum Corp.	OXY		48.69	2.6	5.6	10	2.3	7.8
Pioneer Natural Resources Company	PXD		34.08	3.8	5.4	19	-	7.8
Anadarko Petroleum Corp.	APC	B	54.77	3.7	5.3	10	1.0	8.0
Burlington Resources	BR	B	67.95	3.5	4.9	11	0.9	7.5
Unocal Corporation	UCL		38.41	2.2	4.8	11	2.1	6.7
Apache Corporation	APA		42.94	3.4	4.7	9	0.6	6.6
Canadian Natural Resources Limited	CNQ		58.81	3.2	4.6	10	0.8	6.0
Encana Corporation	ECA	B	42.05	2.1	4.4	11	1.0	6.1
Pogo Producing Company	PPP		48.28	2.7	3.7	8	0.4	5.2
Devon Energy	DVN		62.24	3.1	3.7	7	0.3	5.7
	<i>Median</i>		<i>3.3</i>	<i>4.9</i>	<i>10</i>	<i>0.8</i>	<i>7.1</i>	
Service								
Baker Hughes Inc.	BHI		36.55	2.4	13.2	34	1.3	11.0
Halliburton Company	HAL		30.90	1.1	13.0	28	1.6	12.1
Schlumberger Ltd.	SLB		61.98	3.1	11.0	38	1.2	10.7
	<i>Median</i>		<i>2.4</i>	<i>13.0</i>	<i>34</i>	<i>1.3</i>	<i>11.0</i>	

EV = Enterprise Value = Market Cap and Debt; Ebitda = Earnings before interest, tax, depreciation and amortization; NTM = Next Twelve Months Ended March 31, 2005; P/E = Stock Price to Earnings; PV = Present Value of oil and gas and other businesses

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Table 2-1
Independent Natural Gas and Oil Producers - Small Cap
Rank by McDep Ratio: Market Cap and Debt to Present Value

	Symbol/ Rating	Price (\$/sh) 26-Apr 2004	Shares (mm)	Market Cap (\$mm)	Net Present Value (\$/sh)	Debt/ Present Value	McDep Ratio
Short Life							
Spinnaker Exploration Company	SKE	36.62	34.2	1,250	28.00	0.11	1.27
Western Gas Resources	WGR	55.70	37.0	2,060	50.00	0.17	1.09
Southwestern Energy Company	SWN	26.03	36.0	940	29.00	0.22	0.92
The Houston Exploraton Company	THX	45.95	31.0	1,420	55.00	0.20	0.87
Newfield Exploration Company	NFX	53.30	56.0	2,990	67.00	0.20	0.84
Denbury Resources Inc.	DNR	19.31	55.7	1,080	25.00	0.21	0.82
Stone Energy Company	SGY	49.70	26.6	1,320	72.00	0.20	0.75
Cimarex Energy Company	XEC	28.45	42.7	1,220	38.00	0.00	0.75
St. Mary Land and Exploration Company	SM	35.70	29.0	1,040	50.00	0.10	0.74
Chesapeake Energy Corporation	CHK	13.90	220	3,060	24.00	0.29	0.70
PetroKazakhstan Inc.	PKZ	28.86	81.0	2,340	42.00	0.03	0.70
Energy Partners Ltd.	EPL	13.82	37.4	517	22.00	0.14	0.68
Westport Resources Corporation	WRC	34.81	68.0	2,370	57.00	0.17	0.68
Range Resources Corporation	RRC	12.95	57.0	740	24.00	0.26	0.66
Forest Oil Corporation	FST	26.76	53.5	1,430	53.00	0.25	0.63
				<i>Total or Median</i>			
				23,800		0.20	0.75
Long Life							
Ultra Petroleum Corp.	UPL	34.80	78.0	2,710	25.00	0.06	1.37
Unit Corporation	UNT	29.75	44.1	1,310	25.00	0.01	1.19
Penn Virginia Corporation	PVA	66.03	9.1	600	72.00	0.14	0.93
Quicksilver Resources Inc.	KWK	45.01	25.2	1,130	50.00	0.19	0.92
Swift Energy Company	SFY	22.10	27.4	610	32.00	0.29	0.78
Evergreen Resources, Inc.	EVG	41.07	44.0	1,810	59.00	0.10	0.73
Encore Acquisition Corp.	EAC	30.27	30.5	922	47.00	0.18	0.71
Whiting Petroleum Corporation	WLL	24.99	18.8	470	40.00	0.21	0.70
Magnum Hunter Resources, Inc.	MHR	11.18	68.0	760	20.00	0.32	0.70
Berry Petroleum Company	BRY	27.80	22.1	614	43.00	0.07	0.67
Vintage Petroleum, Inc.	VPI	15.54	63.0	980	33.00	0.28	0.62
				<i>Total or Median</i>			
				11,900		0.18	0.73
Micro Cap							
Abraxas Petroleum Corporation	ABP	2.57	35.8	92	1.50	0.77	1.16
Purcell Energy, Ltd. (US\$)	PEL.TO	1.85	48.0	89	2.80	0.27	0.75

Buy/Sell rating after symbol: b - buy half unlevered position in diversified energy portfolio

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Table 2-2
Independent Natural Gas and Oil Producers - Small Cap
Rank by EV/Ebitda: Enterprise Value to Earnings Before Interest, Tax, Deprec.

		<i>Price</i>	<i>EV/</i>	<i>EV/</i>	<i>Divd or</i>	<i>PV/</i>		
	<i>Symbol/</i>	<i>(\$/sh)</i>	<i>Sales</i>	<i>Ebitda</i>	<i>P/E</i>	<i>Ebitda</i>		
	<i>Rating</i>	<i>26-Apr</i>	<i>NTM</i>	<i>NTM</i>	<i>NTM</i>	<i>NTM</i>		
		<i>2004</i>	<i>NTM</i>	<i>NTM</i>	<i>NTM</i>	<i>NTM</i>		
					<i>Distrib</i>			
					<i>(%)</i>			
Short Life								
Western Gas Resources	WGR	55.70	0.9	9.8	20	-	9.0	
Southwestern Energy Company	SWN	26.03	3.4	5.9	11	-	6.4	
Spinnaker Exploration Company	SKE	36.62	4.9	5.6	15	-	4.4	
Denbury Resources Inc.	DNR	19.31	3.5	5.2	10	-	6.3	
Range Resources Corporation	RRC	12.95	3.7	4.9	9	0.3	7.4	
Chesapeake Energy Corporation	CHK	13.90	3.1	4.3	8	0.9	6.2	
Stone Energy Company	SGY	49.70	3.1	4.3	9	-	5.7	
St. Mary Land and Exploration Company	SM	35.70	2.8	4.1	10	0.3	5.6	
Westport Resources Corporation	WRC	34.81	3.2	4.1	10	-	6.1	
Cimarex Energy Company	XEC	b	28.45	3.1	4.1	10	-	5.5
Newfield Exploration Company	NFX	53.30	2.9	4.0	9	-	4.8	
Forest Oil Corporation	FST	26.76	2.9	3.9	20	-	6.3	
The Houston Exploraton Company	THX	45.95	2.9	3.7	8	-	4.2	
PetroKazakhstan Inc.	PKZ	28.86	1.9	3.4	5	-	4.8	
Energy Partners Ltd.	EPL	13.82	2.2	3.2	11	-	4.7	
	<i>Median</i>		<i>3.1</i>	<i>4.1</i>	<i>10</i>	<i>-</i>	<i>5.7</i>	
Long Life								
Ultra Petroleum Corp.	UPL	34.80	12.0	15.4	25	-	11.3	
Quicksilver Resources Inc.	KWK	45.01	6.8	10.3	19	-	11.2	
Unit Corporation	UNT	29.75	3.7	8.7	21	-	7.4	
Evergreen Resources, Inc.	EVG	41.07	5.8	8.2	13	-	11.2	
Penn Virginia Corporation	PVA	66.03	3.7	6.4	14	1.4	6.9	
Berry Petroleum Company	BRY	b	27.80	3.6	6.2	10	1.6	9.2
Swift Energy Company	SFY	22.10	4.1	6.0	14	-	7.7	
Encore Acquisition Corp.	EAC	b	30.27	4.3	5.9	10	-	8.3
Whiting Petroleum Corporation	WLL	24.99	3.4	5.4	11	-	7.6	
Magnum Hunter Resources, Inc.	MHR	11.18	3.2	4.8	9	-	6.9	
Vintage Petroleum, Inc.	VPI	15.54	2.3	3.9	8	1.2	6.4	
	<i>Median</i>		<i>3.7</i>	<i>6.2</i>	<i>13</i>	<i>-</i>	<i>7.7</i>	
Micro Cap								
Abraxas Petroleum Corporation	ABP	2.57	7.6	11.5		-	9.9	
Purcell Energy, Ltd. (US\$)	PEL.TO	1.85	3.1	4.1	7	-	5.5	

EV = Enterprise Value = Market Cap and Debt; Ebitda = Earnings before interest, tax, depreciation and amortization; NTM = Next Twelve Months Ended March 31, 2005; P/E = Stock Price to Earnings; PV = Present Value of oil and gas and other businesses

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