UNITED STATES BANKRUPTCY COURT
EASTERN DISTRICT OF MISSOURI
EASTERN DIVISION

In re **PATRIOT COAL CORPORATION, *et al.*,** **Debtors.**[1]	**Chapter 11** **Case No. 12-51502-659** **(Jointly Administered)** **Hearing Date:** **April 23, 2013 at 11:00 a.m. (prevailing Central Time)** **Hearing Location:** **Courtroom 7 North** **Re: ECF Nos. 416, 3445, 3446**

DECLARATION OF SETH SCHWARTZ IN SUPPORT OF THE DEBTORS' OBJECTIONS TO MOTION OF CERTAIN INTERESTED SHAREHOLDERS FOR ENTRY OF AN ORDER DIRECTING THE APPOINTMENT OF AN OFFICIAL COMMITTEE OF EQUITY SECURITY HOLDERS[2]

Seth Schwartz declares pursuant to 28 U.S.C. § 1746:

1. I am President of Energy Ventures Analysis, Inc. ("EVA"), which was retained in June 2012 by Patriot Coal Corporation ("Patriot") as an expert consultant in connection with these chapter 11 proceedings.

2. I have been a partner at EVA since its founding in 1981. EVA is a consulting firm that specializes in the analysis of energy markets, including coal, oil, natural gas, electric power and emissions. I manage EVA's consulting practice in coal markets, including the following areas:

[1] The Debtors are the entities listed on Schedule 1 attached to the Objection. The employer tax identification numbers and addresses for each of the Debtors are set forth in the Debtors' chapter 11 petitions.

[2] Capitalized terms used but not otherwise defined herein shall have the meanings ascribed to such terms in the Objection.

- Analysis and projection of coal supply, demand and market prices;
- Management of coal procurement activities, including negotiation of coal supply and transportation contracts;
- Evaluation of coal mine operations and production costs, including labor costs and mine productivity;
- Purchase and sale of coal properties; and
- Publication of coal market data reports and forecast reports.

3. Our clients in these areas include:

- Coal consumers, such as electric power generators, industrial companies and steel producers;
- Coal producers, reserve owners and transportation companies;
- Coal brokers and trading companies;
- Investors in the coal and power industries, such as banks, private equity firms and hedge funds;
- Regulatory agencies such as public utility commissions; and
- Trade associations.

4. My work has included expert testimony in federal and state courts, arbitration panels and regulatory hearings. I have testified regarding coal markets and prices, coal contract provisions, prudence of coal procurement practices and damages from breach of contract. My resume and a list of prior testimony are attached hereto as Appendix 1, and a list of the documents that I have considered in forming my opinions in this matter is attached as Appendix 2. EVA receives a monthly retainer for our work for Patriot in its restructuring effort, against which EVA charges my hourly rate of $400 for my services in this matter.

SUMMARY OF OPINIONS

5. My declaration is prepared in rebuttal to the opinion offered by Mr. Christopher Wu, who relied upon a report prepared by Mr. Jeffrey Stufsky of KLR Group (the "KLR Report"). The following is a summary of my principal opinions in this matter.

- The range of prices for Patriot's average future coal sales used by KLR in its valuation analysis is much higher than any reasonable expectations due to the numerous flaws in KLR's analysis of the expected forward market price for Patriot's coal.
- The range of Patriot's future operating costs used by KLR in its valuation analysis is much lower than any reasonable expectation due to numerous flaws in KLR's analysis of Patriot's historic costs and failure to consider the impact that new adverse regulations and unit cost inflation will have on Patriot's costs.

A. Patriot's Coal and Market Developments

6. Coal is a combustible sedimentary and metamorphic rock which is formed through the progressive carbonization of plant matter under pressure and temperature. As a result of differences in types, grades, qualities, sources and uses, coal is a highly differentiated product.

7. The largest uses of coal are for combustion in boilers (for steam or power generation) and the conversion to coke for use in steel making. Coal used in power generation is generally known as "steam coal" or "thermal coal," while coal used in steel making is called metallurgical or "met coal." There are other uses for coal as a feedstock, including chemical and synthetic fuel manufacturing.

8. Steam (or thermal) coal includes many coals with different origins and types, grades and quality characteristics. The wide variation in coal quality affects the design of steam boilers and their ability to use different coals. It is difficult and expensive for boilers designed

for one type of coal to be switched to another type of coal. Further, there are emissions limitations on the combustion of coal which limit the maximum sulfur content that certain customers can use, depending on their emissions control equipment. Thus, thermal coal is not generally fungible.

9. Coal type, grade and quality differences are even more significant for metallurgical coal, including coal used to make coke ("coking" coal) and pulverized coal used for injection in a blast furnace ("PCI" coal). Only a small fraction of coals are suitable for use in coke ovens. At a minimum, coking coals require the characteristic of "caking," which is swelling upon heating in a low-oxygen atmosphere and forming a cohesive mass upon cooling, which is known as coke. Steel companies prefer a strong coke to support the burden of a blast furnace. Only high-rank bituminous coals possess the properties needed to make coke. Steel companies are very selective in the sources and blends of coal to make a strong coke for use in blast furnaces. They also use a limited amount of coal for pulverized coal injection.

10. Coal is found in geological coal basins, established by the depositional environment of the coal. The most important coal basins in the United States are Appalachia (frequently divided by location into Northern, Central and Southern Appalachia), the Illinois Basin, and the Powder River Basin ("PRB"). There are also various bituminous coal basins in the western United States, sometimes classified as the Rockies, and lignite basins in North Dakota and the Gulf Coast with substantial production and economic value.

11. While the types, grades and qualities of coal vary widely among different coal basins, the coal is more homogenous within the same coal basin. Nonetheless, there often are significant differences among coals from different sources in the same basin, particularly in the case of metallurgical coal.

12. Patriot mines several different varieties of coal from several different sources:

- Central Appalachia ("CAPP") low-sulfur thermal coal. Patriot has a number of complexes that produce thermal coal in southern West Virginia, including Big Mountain, Corridor G, Kanawha Eagle, Logan County, Midland Trail, and Paint Creek. The Big Mountain complex was closed during 2012. The Corridor G and Logan County complexes ship coal principally by CSX rail while the Midland Trail complex ships coal by barge and Kanawha Eagle and Paint Creek ship by either transportation mode. Patriot sold 8.2 million tons of low-sulfur thermal coal in 2012.

- CAPP high-volatile metallurgical coal. Coal produced from the Panther, Rocklick, Wells, Kanawha Eagle and Paint Creek (Winifrede) complexes is sold in the "high-volatile" met coal market. Patriot sold 6.3 million tons of metallurgical coal in 2012, which includes sales from its Rhino Eastern joint venture.

- Northern Appalachia ("NAPP") high-sulfur thermal coal from the Federal #2 mine. Patriot sold 4.0 million tons of NAPP coal in 2012.

- Illinois Basin ("ILLB") high-sulfur thermal coal, from three complexes with varying quality: the Bluegrass complex (which was closed at the end of 2012), the Dodge Hill mine and the Highland mine. Patriot sold 6.4 million tons of ILLB coal in 2012.

13. There are published prices for various types of thermal coal by trade publications and brokers. The thermal coal types most like Patriot's coal are:

- CAPP, CSX rail origin, 12,500 Btu and 1.0% sulfur;

- CAPP, NYMEX barge origin, 12,000 Btu and 1.0% sulfur;

- NAPP, MGA rail origin, 13,000 Btu and 4.5 pounds SO_2 per million Btu (2.9% sulfur); and,

- ILLB, barge origin, 11,500 Btu and 5.2 pounds SO_2 per million Btu (3.0% sulfur).

14. There are significant price differences among the four varieties of coal sold by Patriot. CAPP low-sulfur steam coal is the only one of the four varieties listed above that has a market price that is similar to the NYMEX market price used by KLR. CAPP high-volatile

metallurgical coal sells at a much higher price than the NYMEX market because of its metallurgical properties. NAPP high-sulfur thermal coal sells at a lower price than the NYMEX market, because of its higher sulfur content. And ILLB high-sulfur thermal coal sells at a much lower price than the NYMEX market because of its higher sulfur content, lower heat content, and lower mining costs in this region.

B. KLR's Analysis of Patriot's Expected Future Coal Prices

15. The valuation opinions of KLR in its methods "B – Operating Results" and "C – Comparable Company Multiples" rely on KLR's analysis of expected coal prices which Patriot will receive for its future coal sales. KLR uses the forward price curve for only one type of coal – the NYMEX market for CAPP low-sulfur thermal coal – to project the range of market prices which Patriot will receive for all of the coal it sells. It did so by looking at the historical relationship between Patriot's average sales price for all of its coal sales in the Appalachian region,[3] and the NYMEX spot price for CAPP low-sulfur thermal coal. Based on the relationship between these two sets of prices between September 1, 2009 and September 1, 2012, KLR concluded that Patriot received a 26.75% premium over the spot market price for that period, which it interpreted to mean that "Patriot has consistently received a significant premium to spot prices."

16. There are several majors flaws in KLR's method and calculations which collectively result in a gross over-estimate of Patriot's future sales prices, including:

- KLR calculated the historical price "premium" for only Patriot's Appalachian coal sales and then applied this premium to the expected

[3] This includes Patriot's CAPP low-sulfur thermal coal, CAPP high-volatile metallurgical coal and NAPP high-sulfur thermal coal, but excludes its ILLB high-sulfur thermal coal.

future price for all of Patriot's coal sales, including sales of its much lower-priced Illinois Basin high-sulfur coal.

- KLR's use of the NYMEX forward market prices is outdated and does not reflect the current forward market, where prices are much lower than the old market prices used by KLR.
- KLR assumes that the historical difference between Patriot's average sales price and the NYMEX coal market index is an inherent characteristic of Patriot's coal, which will apply consistently in the future, rather than an accidental measure of the difference between volatile spot market prices and fixed contract prices set in advance of the period of delivery. KLR has selected a historical time period for this analysis which distorts the effect of the timing difference between spot and contract prices.
- KLR assumes that the future market prices for each of Patriot's different grades of coal will move in the same direction and amount as the forward market price for one of Patriot's coal products (low-sulfur CAPP thermal coal), which is a flawed assumption.

17. KLR's workpapers show its calculations of the historical price premium for Patriot's coal sales compared to the spot price for CAPP coal. KLR calculated the historical difference between the reported average sales prices for Patriot's Appalachia coal sales, not the reported price for all of Patriot's coal sales. As shown on Exhibit A, Patriot reports separate average sales prices for its two reporting segments: Appalachia and Illinois Basin. In order to use the NYMEX forward price index for CAPP prices to forecast the average price for Patriot's

total sales, KLR should have calculated the historical price premium for Patriot's total sales, not just the price premium for Appalachia sales. The market price for sales of Illinois Basin coal is much lower than the market price for Appalachia coal, which significantly brings down the average price for Patriot's total coal sales. The effect of (i) KLR's use of just the historical premium for Patriot's Appalachia coal to the spot price for CAPP coal, and (ii) application of this premium to the forward market price for CAPP to estimate the future sales price for Patriot's total coal sales is a gross distortion.

18. Exhibit A uses the data from KLR's workpapers supporting its calculation of the historical price premium for Patriot's coal sales. Exhibit A shows the same calculation as performed by KLR for the price of Patriot's total coal sales as well as for just Appalachia coal sales.[4] The revised calculation shows that the average difference between Patriot's coal sales prices for this 3-year period was 12.66% for all of Patriot's coal sales, not 26.75% as used by KLR.

[4] Exhibit A also corrects for a mistake by KLR in Patriot's historical sales price for Appalachia coal in the 4th quarter of 2009.

Exhibit A

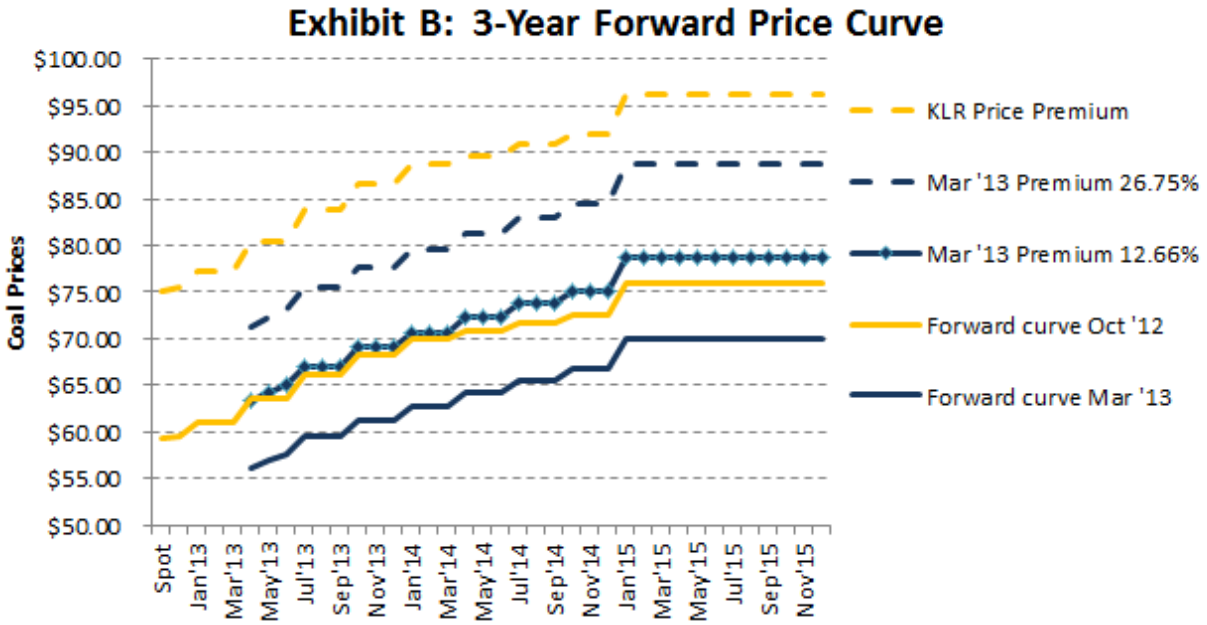
KLR's Incorrect Calculation of Patriot's Historical Sales Price Compared to Spot Prices

KLR Calculation of Patriot Price Premium - Workpapers					Corrected Calculation Using KLR Methodology					
						Patriot Sales Prices				
Date	CAPP Spot	Patriot App Sales Price	Premium	Premium %	Quarter	Appalachia	Illinois Basin	Total	Appalachia Premium	Total Premium
11/30/2012	$59.65				2012 Q4	$80.41	$49.19	$73.11		
10/31/2012	$59.55				2012 Q3	$80.41	$49.19	$73.11		
9/30/2012	$54.40	$82.11	$27.71	51%	2012 Q3	$82.11	$49.76	$74.16	51%	36%
8/31/2012	$58.20	$82.11	$23.91	41%	2012 Q3	$82.11	$49.76	$74.16	41%	27%
7/31/2012	$60.87	$82.11	$21.24	35%	2012 Q3	$82.11	$49.76	$74.16	35%	22%
6/30/2012	$56.28	$85.48	$29.20	52%	2012 Q2	$85.48	$50.20	$76.93	52%	37%
5/31/2012	$55.75	$85.48	$29.73	53%	2012 Q2	$85.48	$50.20	$76.93	53%	38%
4/30/2012	$57.78	$85.48	$27.70	48%	2012 Q2	$85.48	$50.20	$76.93	48%	33%
3/31/2012	$57.77	$89.18	$31.41	54%	2012 Q1	$89.18	$50.19	$77.37	54%	34%
2/29/2012	$60.67	$89.18	$28.51	47%	2012 Q1	$89.18	$50.19	$77.37	47%	28%
1/31/2012	$59.13	$89.18	$30.05	51%	2012 Q1	$89.18	$50.19	$77.37	51%	31%
12/31/2011	$69.72	$89.10	$19.38	28%	2011 Q4	$89.09	$43.09	$78.49	28%	13%
11/30/2011	$69.40	$89.10	$19.70	28%	2011 Q4	$89.09	$43.09	$78.49	28%	13%
10/31/2011	$73.12	$89.10	$15.98	22%	2011 Q4	$89.09	$43.09	$78.49	22%	7%
9/30/2011	$73.92	$90.82	$16.90	23%	2011 Q3	$90.82	$42.77	$78.68	23%	6%
8/31/2011	$77.08	$90.82	$13.74	18%	2011 Q3	$90.82	$42.77	$78.68	18%	2%
7/31/2011	$76.57	$90.82	$14.25	19%	2011 Q3	$90.82	$42.77	$78.68	19%	3%
6/30/2011	$77.63	$87.12	$9.49	12%	2011 Q2	$87.12	$43.35	$77.05	12%	-1%
5/31/2011	$77.08	$87.12	$10.04	13%	2011 Q2	$87.12	$43.35	$77.05	13%	0%
4/30/2011	$79.33	$87.12	$7.79	10%	2011 Q2	$87.12	$43.35	$77.05	10%	-3%
3/31/2011	$77.75	$79.97	$2.22	3%	2011 Q1	$79.97	$42.35	$71.64	3%	-8%
2/28/2011	$66.27	$79.97	$13.70	21%	2011 Q1	$79.97	$42.35	$71.64	21%	8%
1/31/2011	$77.07	$79.97	$2.90	4%	2011 Q1	$79.97	$42.35	$71.64	4%	-7%
12/31/2010	$79.98	$75.24	-$4.74	-6%	2010 Q4	$75.23	$41.54	$67.77	-6%	-15%
11/30/2010	$70.53	$75.24	$4.71	7%	2010 Q4	$75.23	$41.54	$67.77	7%	-4%
10/31/2010	$66.07	$75.24	$9.17	14%	2010 Q4	$75.23	$41.54	$67.77	14%	3%
9/30/2010	$63.78	$72.52	$8.74	14%	2010 Q3	$72.52	$41.54	$66.32	14%	4%
8/31/2010	$61.98	$72.52	$10.54	17%	2010 Q3	$72.52	$41.54	$66.32	17%	7%
7/31/2010	$68.08	$72.52	$4.44	7%	2010 Q3	$72.52	$41.54	$66.32	7%	-3%
6/30/2010	$62.90	$72.28	$9.38	15%	2010 Q2	$72.28	$42.20	$66.18	15%	5%
5/31/2010	$59.42	$72.28	$12.86	22%	2010 Q2	$72.28	$42.20	$66.18	22%	11%
4/30/2010	$62.50	$72.28	$9.78	16%	2010 Q2	$72.28	$42.20	$66.18	16%	6%
3/31/2010	$55.16	$66.74	$11.58	21%	2010 Q1	$66.74	$42.28	$61.12	21%	11%
2/28/2010	$54.40	$66.74	$12.34	23%	2010 Q1	$66.74	$42.28	$61.12	23%	12%
1/31/2010	$53.17	$66.74	$13.57	26%	2010 Q1	$66.74	$42.28	$61.12	26%	15%
12/31/2009	$49.10	$71.73	$22.63	46%	2009 Q4	$65.38	$37.85	$59.77	33%	22%
11/30/2009	$46.30	$71.73	$25.43	55%	2009 Q4	$65.38	$37.85	$59.77	41%	29%
10/31/2009	$49.17	$71.73	$22.56	46%	2009 Q4	$65.38	$37.85	$59.77	33%	22%
9/30/2009	$50.70	$69.76	$19.06	38%	2009 Q3	$69.76	$38.55	$62.95	38%	24%
8/31/2009	$44.33				2009 Q3					
3-year average				**26.75%**					**25.68%**	**12.66%**

19. In addition to improperly applying a premium based on a comparison of Patriot's Appalachian coal sales to Patriot's ILLB coal sales, KLR also used an outdated price curve from October 2012, which is materially higher than the March 2013 forward price curve.

20. KLR relies upon the 3-year NYMEX forward price curve for CAPP coal as its proxy for the outlook for Patriot's future coal sales price used in KLR's valuation opinion. KLR takes the range in future coal prices over the 3-year curve times its calculated "premium" for Patriot's coal sales to derive an expected range for Patriot's future coal sales price. KLR multiplies the forward curve (which ranged from about $60 to $76 per ton at the time) by its 26.75% "premium" for Patriot to estimate future prices for Patriot ranging from $77 to $96 per ton. KLR used this range of prices to calculate the range of operating revenue in its valuation methods B and C and is a key input to its valuation opinion.

21. In its report, KLR never provides the date of the forward price curve which it used; however in its workpapers it is clear that the date was during October 2012 because the "spot" price shown is for November 2012 (the spot price is the month following the date of trading). The NYMEX forward market price curve for CAPP coal has declined significantly since October 2012 and KLR's analysis is out of date. The current NYMEX forward curve ranges from about $56 to $70 per ton, almost 10% less than KLR's outdated analysis. As a result, the range of expected prices for Patriot's coal sales would be $71 to $89 per ton, using KLR's flawed 26.75% premium for Patriot. Using a Patriot price premium of 12.66% (which is the actual 3-year average premium for all of patriot's coal sales), the expected range of future prices would be just $63 to $79 per ton. The comparison of the KLR calculations and the current forward price curve is shown on Exhibit B.



22. KLR uses a forward price index for only one type of coal (NYMEX market for CAPP low-sulfur thermal coal with barge origin) to project the range of market prices which Patriot will receive for all of its coal sales. The use of only one forward price curve has the effect of projecting that the prices of all of Patriot's coal products will increase at the same rate as the NYMEX index selected by KLR.

23. However, there are forward price curves available from brokers and trade publications for all of Patriot's thermal coal products[5], including CAPP low-sulfur rail, NAPP high-sulfur rail, and ILLB high-sulfur barge. The forward price curve for the NYMEX product increases at a faster rate than any of the other coal products sold by Patriot, as shown on Exhibit C. Therefore, it is not reasonable for KLR to assume that Patriot's average sales price for all coal will increase at the same rate as the forward market for the CAPP NYMEX coal.

[5] There is no forward price curve available for Patriot's metallurgical coal products.

Exhibit C
Thermal Coal Forward Price Curves

		Forward Prices 3/22/13				Percent Over Spot		
		April Spot	CY 2014	CY 2015	CY 2016	CY 2014	CY 2015	CY 2016
CAPP	NYMEX	$56.35	$64.85	$70.05	$72.55	15%	24%	29%
CAPP	CSX rail	$63.25	$68.45	$73.60	$76.10	8%	16%	20%
NAPP	MGA rail	$57.50	$57.25	$60.00	$62.50	0%	4%	9%
ILLB	Barge	$41.75	$45.63	$48.13	$50.63	9%	15%	21%

Source: ICAP Energy

24. Further, KLR mistakenly assumes that the 3-year historical relationship (the "premium') of Patriot's average sales price to the spot market price is due to factors which may reasonably be assumed to continue into the future; thus KLR applies its historical price premium to future sales prices. Such a factor might be a difference in coal quality, if Patriot produced coal with higher quality than the CAPP thermal market index used by KLR. In reality, however, the difference between Patriot's historical realized price and the spot market price at the time the coal was shipped is principally due to the common practice in the coal industry of selling most coal under contracts with terms of greater than one year. The historical difference between Patriot's realized price at any point in time and the spot market price at that time is caused by the fact that, like all other coal companies, the large majority of Patriot's coal is sold under long-term contracts at fixed prices. Because, as stated by KLR, "coal prices are cyclical and volatile,"[6] the fluctuations of the spot market price measured against the stable pricing of long-term contracts creates a price difference, which KLR misinterprets as a "premium," KLR then applies to Patriot's future sales prices.

25. Patriot reports the amount of coal which it has sold under "long-term" (one year or greater) contracts and the amount of coal which it has sold for delivery in future years in its

[6] KLR Group, Analysis and Discussion of Coal Market and Forecast, page 18

annual Form 10-K. Exhibit C shows the amount of coal which Patriot sold in each year under long-term contract and the amount which was committed at year end for sale in the following year and future years. As shown on Exhibit D, for coal sold in the years 2009 – 2012 (the period in which KLR measured Patriot's price "premium"), 82% - 97% of Patriot's coal sales were sold prior to the start of the year. Thus, when KLR purports to measure the "premium" which Patriot receives for its coal sales, KLR is merely reflecting the fact that the spot market during the year fluctuated from the contract prices which Patriot had committed to prior to the start of the year.

Exhibit D
Patriot Coal Sales Under Forward Contracts

	Current Year		Following Year		Contracted for Future Years		
Year	Tons Sold (mm)	Long-Term Contracts %	Contracted Sales (mm tons)	Contracted Sales %	Year 2 (mm tons)	Year 3 (mm tons)	Later Years (mm tons)
2008	28.5	78%	35.9	97%	24.0	15.4	19.8
2009	32.8	83%	29.5	85%	19.9	11.3	11.9
2010	30.9	77%	24.5	82%	10.0	2.9	6.6
2011	31.1	78%	25.9	90-95%	10.6	4.6	6.1
2012	24.9	65%	16.5	70-75%	3.9	2.0	0.0

Source: Patriot Coal Corporation SEC Forms 10-K

26. Like all coal producers, Patriot enters into contracts with terms of greater than one year at fixed prices in order to schedule its production and hedge its future price risk. Because, as KLR points out, coal market prices are volatile, there are periods where Patriot's long-term sales contracts are priced higher than the spot market price when the coal is shipped and there are times when the contract sales prices are below market. In periods of time when spot market prices are falling, Patriot's average sales price will be above the spot market price and Patriot will receive a "premium" in KLR's analysis. However, in periods of time when spot market

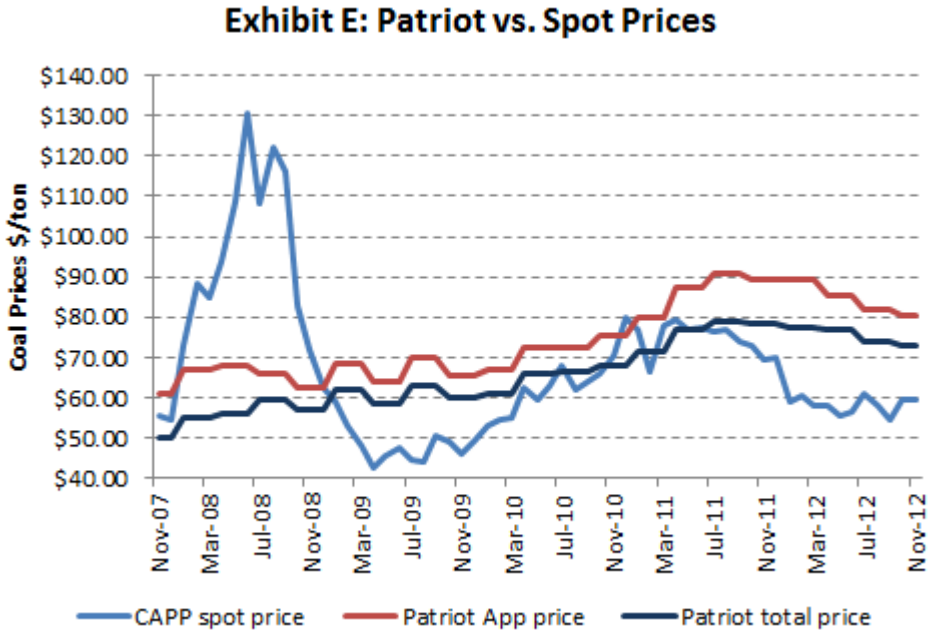
prices are rising[7], Patriot will receive a discount to the average price. KLR's analysis appears to show a premium for Patriot's historical sales prices merely because KLR has measured the price history over two periods of falling market prices (2009 and 2012[8]) and only one period of rising spot market prices (2010). Had KLR simply extended its analysis of historical prices over a 5-year period, which captures an equal number of cycles of rising and falling prices, the results would have been much different.[9] Exhibit E shows the historical spot prices using the NYMEX CAPP thermal coal price index relied upon by KLR compared to Patriot's average realized sales prices, both for Appalachia coal and for total coal sales.[10] Patriot's average sales price for all coal over the last 5 years (November 2007 to November 2012) averaged just 4.39% above the NYMEX spot price over the same period of time.

[7] The change in future spot prices relative to the forward curve will determine whether Patriot's average sales price for a given coal product is greater than or less than the spot market price for that coal product at the time of delivery.

[8] KLR opines that Patriot's "premium" is rising in "recent months" of 2012 to 42.5%, which simply means that the coal market prices were falling sharply and Patriot's average price was not falling as fast. In KLR's analysis, the declining market prices increase Patriot's enterprise value, because it means that Patriot's sales price "premium" is larger. In the real world, falling market prices reduce Patriot's enterprise value because it means that Patriot's average sales price will decline in the future.

[9] KLR shows the 5-year coal price history on page 5 of the supplement Analysis and Discussion of Coal Market and Forecast dated 11/21/2012, but does not use this data in its analysis of Patriot's coal price premium in its report Appendix A.

[10] KLR mistakenly calculates the historical price premium for only Patriot's Appalachian coal sales to the NYMEX spot price and applies this premium to the NYMEX forward price to project Patriot's future sales price for all coal sales, not just Appalachia coal sales. I strongly disagree with this "apples-and-oranges" analysis, but I have provided both price data series to be complete.



27. Lastly, KLR is using a forward price curve with rising coal prices, yet applying a price "premium" which exists only in times of falling coal prices. Given that Patriot has entered into long-term contracts at fixed prices for delivery in 2013 and beyond (although lesser commitments than in prior years), one would expect Patriot to receive an average sales price less than the spot market price in a period of rising prices (if spot prices increased faster than the expectations embedded in the forward curve), not a price premium.

28. If KLR were to use its same methodology but corrected for its errors in timing and analysis, the range of future sales prices which it should have used in its valuation opinion would be significantly lower. The effects of using: 1) the current forward market price instead of an outdated forward market price from October 2012; 2) the historical price "premium" for Patriot's sales of total coal (not just Appalachia coal) to the spot market price in order to use the forward market price to forecast the future price for the Patriot's total coal sales; and, 3) a 5-year history (instead of 3 years) of Patriot's coal sales price relationship to the spot market price to

have an equal number of price cycles in the analysis would reduce the range of future coal price used by KLR from $77 - $96 per ton to $59 - $73 per ton. This lower price range would be more appropriate to use in KLR's valuation opinions.

B. KLR's Analysis of Patriot's Future Operating Costs

29. KLR used Patriot's historical average cash production costs for the period 2009 Q3 – 2012 Q3 as the basis for projecting a range of Patriot's future operating costs in the calculation of gross profit per ton and the resulting enterprise value. KLR concluded that "over the past 3 years, Patriot's operating costs has varied from $51.29 per ton to $70.51 per ton." Based on this analysis, KLR concluded that future operating costs were likely to be in a range from $53.00 to $65.00 per ton, which KLR used in its valuation method B – Operating Results. KLR has significant flaws in its methodology and calculations and it has projected a future operating cost far below any reasonable expectation. The major problems are:

- KLR made a large error in its calculation of Patriot's cash costs for 2012 Q2. This error led KLR to erroneous conclusions regarding the range of Patriot's future costs.
- KLR assumed that Patriot's future costs will be similar to the range of costs experienced over the last 3 years. KLR ignores the fact that costs have been increasing for Patriot and the entire coal industry over time. Thus, Patriot's operating costs in 2009 were significantly lower than Patriot's more recent costs in 2012 and are not indicative of Patriot's future costs. It is more reasonable to expect that Patriot's costs will continue to escalate in the future, not that they will return to 3-year-old cost levels.

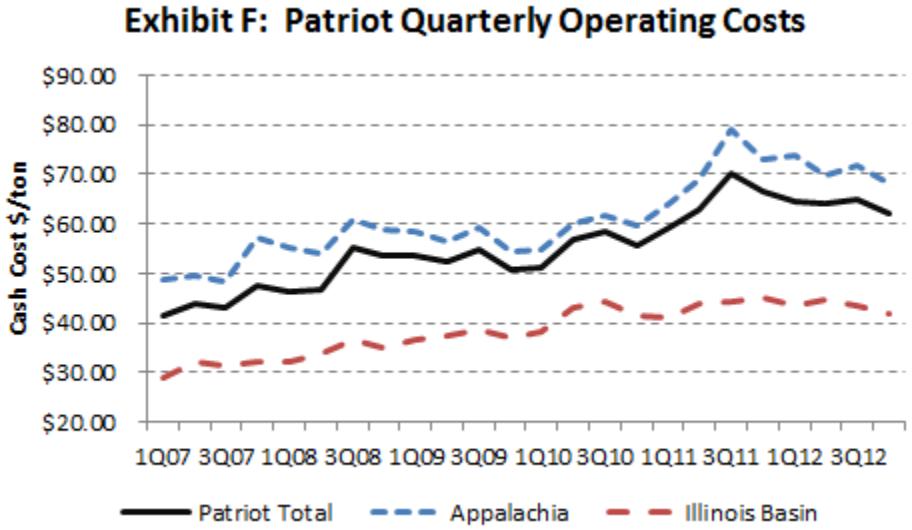
30. KLR calculated Patriot's historical quarterly operating costs per ton by dividing Patriot's total segment (the total of the Appalachia and the Illinois basin segments) operating costs by the total tons produced, using data from Patriot's SEC Forms 10-Q. For the second quarter of 2012, KLR mistakenly divided the operating costs[11] for just the Appalachia segment ($357,855,000) by the total tons sold (6,737,000 tons, including the Illinois Basin 1,633,000 tons sold) to get an average operating cost of $53.12 per ton. The correct calculation would have been to divide the total operating costs of $430,991,000 by the total tons, which would yield a result of $63.97 per ton sold.

31. KLR's mistake had a significant impact on its analysis of Patriot's future operating costs. The graph of historical costs and KLR's commentary leave the impression that Patriot's costs "vary" and that "recently the coal price has swung from $53.12/ton in Q2 2012 to $64.93/ton in Q3 2012."[12] Actually, Patriot's costs have not swung up and down by large amounts; they have been steadily increasing over time. Patriot's quarterly operating costs per ton are shown on Exhibit F for the period 2007 – 2012.[13] This shows that the average cash costs have been over $62.00 per ton for the last 7 quarters. There is no evidence that Patriot's costs might fall below $60.00 per ton in the future, which result is assumed by KLR in the range used in its valuation.

[11] Patriot's operating costs exclude the costs for past mining obligation expense (principally post-employment benefits and reclamation), which were $44 - $48 million per quarter in 2011 and 2012.

[12] The calculated value of $53.12 was a mistake; it was actually $63.97 per ton.

[13] Exhibit F contains data from Patriot's SEC Forms 10-Q and 10-K, as well as quarterly earnings releases.



32. Patriot's historical costs show an average annual increase of 7.2% since the first quarter of 2007, with an average rate of 6.0% for its Appalachia operations and 6.6% for its Illinois Basin mines.[14] There is ample reason to expect that production costs will continue to increase and little reason to expect that costs will fall to levels not seen since 2009.

33. New adverse regulations are restricting the production of coal, especially in regions where Patriot operates. New standards have made it more difficult to obtain mining permits and have increased the cost of coal production, including:

- Limits on permits for disposal of waste rock in the coal-mining process have restricted coal operations, especially in Appalachia.
    - While commonly seen as limiting "mountaintop removal mining," the new limits on downstream water quality have made all mining more expensive, including waste disposal from preparation plants for underground mines.
    - Smaller areas for valley fills used for the disposal of excess mining rock have meant that companies must truck waste rock back to the pit, significantly increasing the costs of surface mining.

[14] The higher growth rate for the total company reflects a change in the mix from lower-cost Illinois Basin coal to higher-cost Appalachian coal over the time period.

- New limits on selenium discharges have required companies like Patriot to invest in expensive water treatment systems to continue mining.

- New underground mine safety regulations have been imposed as a result of the MINER Act of 2006, which has required investments in mine safety equipment and changes in operating practices, which have reduced mine productivity and increased costs.

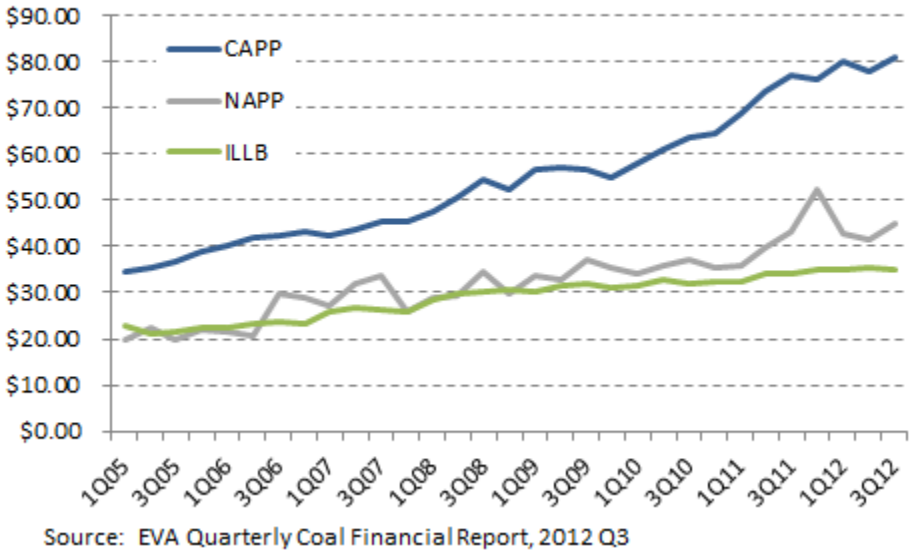
- Pending new regulations to protect surface waters from disturbance by mining (the re-write of the "stream buffer rule") could further restrict both surface and underground mining.

- EPA has been conducting an "enhanced" review of coal mining permits based on potential impacts to water quality, holding up approval of new mine permits and, in one case, invalidating existing permits.

34. In addition to the impact of new regulations on mining costs, there has been a steady increase in the unit costs of the inputs used in coal mining, including labor, diesel fuel, explosives, supplies, steel and equipment. This inflation has had a significant impact on mining costs and input prices are not likely to return to levels seen in 2009, as KLR assumes in its cost ranges.

35. The impact of the new regulations and unit cost inflation has been to increase mining costs in all of the coal basins where Patriot operates. As shown on Exhibit G, the average cash costs of production reported by public coal companies have more than doubled for Appalachian production since 2005.

Exhibit G:
Average Cash Production Costs for Public Companies



Source: EVA Quarterly Coal Financial Report, 2012 Q3

36. Further, there are cost factors which are directly set by the sales price of the coal. Royalties and state severance taxes are levied as a percentage of the coal sales price, typically totaling 10% - 14%. As KLR is projecting that Patriot's coal sales price will increase in its valuation, it must assume that these sales-related costs will increase also.

37. It is unreasonable for KLR to assume that Patriot's future gross margin will be the difference between its future sales price (expected to rise along with the forward price curve) and its historical operating costs. KLR must compare Patriot's future prices with its future costs, not its historical costs, which ignore the effects of inflation and cost increases.

I, Seth Schwartz, declare under penalty of perjury that the foregoing is true and correct.

Arlington, Virginia
Dated: March 29, 2013

/s/ Seth Schwartz
Seth Schwartz
President
Energy Ventures Analysis, Inc.

Appendix 1
RESUME OF SETH SCHWARTZ

EDUCATIONAL BACKGROUND

B.S.E. Geological Engineering, Princeton University, 1977

PROFESSIONAL EXPERIENCE

Current Position

Seth Schwartz is the President and co-founder of Energy Ventures Analysis, Inc. Mr. Schwartz directs EVA's coal and utility practice and manages the COALCAST Report Service. The types of projects in which he is involved are described below:

Fuel Procurement

Assists utilities, industries and independent power producers in developing fuel procurement strategies, analyzing coal and gas markets, and in negotiating long-term fuel contracts.

Fuel Procurement Audits

Audits utility fuel procurement practices, system dispatch, and off-system sales on behalf of all three sides of the regulatory triangle, i.e., public utility commissions, rate case intervenors, and utility management.

Coal Analyses

Directs EVA analyses of coal supply and demand, including studies of utility, industrial, export, and metallurgical markets and evaluations of coal production, productivity and mining costs.

Natural Gas Analyses

Evaluates natural gas markets, especially in the utility and industrial sectors, and analyzes gas supply and transportation by pipeline companies.

Expert Testimony

Testifies in fuel contract disputes and rate cases, including arbitration, litigation and regulatory proceedings, regarding prevailing market prices, industry practice in the use of contract terms and conditions, market conditions surrounding the initial contracts, and damages resulting from contract breach.

Acquisitions and Divestitures

Assists companies in acquisitions and sales of reserves and producing properties, both in consulting and brokering activities. Prepares independent assessments of property values for financing institutions.

Prior Experience

Before founding Energy Ventures Analysis, Mr. Schwartz was a Project Manager at Energy and Environmental Analysis, Inc. Mr. Schwartz directed several sizable quick-response support contracts for the Department of Energy and the Environmental Protection Agency. These included environmental and financial analyses for DOE's Coal Loan Guarantee Program, analyses of air pollution control costs for electric utilities for EPA's Office of Environmental Engineering and Technology, Energy Processes Division, and technical and economic analysis of coal production and consumptions for DOE's Advanced Environmental Control Technology Program.

Publications

Crerar, D.A., Susak, N.J., Borcsik, M., and Schwartz, S., "Solubility of the Buffer Assemblage Pyrite + Pyrrhotite + Magnetite in NaCl Solutions from 200^{o} to 350^{o}," Geochimica et Cosmochimica Acta (42)1427-1437, 1978.

EXPERT TESTIMONY

To the best of Mr. Schwartz's recollection, he has testified as an expert at trial or by deposition in the following cases in the last four years (client is underlined):

2013

Resource Sales, Inc. et al v. Louisville Gas & Electric and Kentucky Utilities, Commonwealth of Kentucky, Webster Circuit Court, CA No. 08-CI-00334

2012

Arbitration between Oaktown Fuels Mine No. 1 and Hoosier Energy Rural Electric Cooperative, Inc., Institute for Conflict Prevention and Resolution

Ohio Valley Environmental Coalition, Inc. v. Patriot Coal Corporation, et al, U.S. District Court for the Southern District of West Virginia, Civil Action No. 3:11-0115

2011

Mirant Energy Trading LLC v. Alpha Coal Sales Co. LLC, Superior Court of Fulton County, Georgia, Civil Action File 2008 – EV006209C

Elm Street Resources, Inc. v. International Paper Company, U.S. District Court for the Eastern District of Tennessee, Cause No. 3:09-CV-575

Twin Pines Coal Company Inc. v. Colonial Pipeline Company, U.S. District Court for the Northern District of Alabama, Case No. 2:09-cv-1403-SLB

Arbitration between Bachmann, Hess, Bachmann & Garden, PLLC and James C. Justice Companies, Inc., American Arbitration Association No. 50 194 T 0037110

Traxys North America v. Concept Mining, U.S. District Court for the Western District of Virginia, Case No. 1:10-cv-29

Mountain State Carbon LLC v. Central West Virginia Energy Company, Circuit Court of Brooke County, West Virginia, Civil Action No. 08-C-160

2010

Arbitration between South Carolina Electric & Gas Company and Sequoia Energy, LLC, American Arbitration Association No. 31 198 Y 00032 09

Administrative Hearing, State of North Carolina, North Carolina Waste Awareness et al. v. Duke Energy Carolinas, 08 EHR 0771

Seminole Electric Cooperative, Inc. v. CSX Transportation, Inc., Surface Transportation Board Docket No. 42110

2009

TECO Coal Corporation, et al. v. Orlando Utilities Commission, U.S. District Court for the Eastern District of Kentucky, London Division, Case No. 6:07-cv-444

Arbitration between Duke Energy Carolinas LLC and Dynamic Energy, Inc., American Arbitration Association, No. 31 198 Y 00372 08

Arbitration between Bayer Cropscience LP and Central West Virginia Energy, Inc., American Arbitration Association, No. 55 198 Y 00317 08

Final Offer Arbitration between Teck Coal Limited and Canadian Pacific Railway

Arbitration between Central West Virginia Energy and Mountain States Carbon

Philip Morris USA Inc. v. Appalachian Fuels, LLC, U.S. District Court for the Eastern District of Virginia, Case No. 3:08 CV 527 (JRS)

Appendix 2
MATERIALS CONSIDERED

ICAP Energy weekly coal prices

SEC Forms 10-K, 10-Q and S-1

CME Group, Central Appalachian coal futures prices

Historical financial information provided by Patriot