



August 19, 2015

Kimberly Sager
Statewide Water Reservation Specialist
Department of Natural Resources Water Resources Section
550 West 7th Avenue, Ste. 1020
Anchorage, Alaska 99501

Dear Ms. Sager,

I write to provide additional comments to our April 2012 letter to the Department of Natural Resources ("Department") in its deliberations on the Chuitna Citizens Coalition's applications to reserve water within Middle Creek in the Chuitna watershed near Beluga, Alaska. This commentary is offered to assist with the August 21, 2015 public hearing and subsequent decision-making.

I am the Director of Finance for the Institute for Energy Economics and Financial Analysis. My work for the last eight years involves extensive research on the financing of coal mining and coal plants. During my career I have held senior financial management positions in the State and City governments of New York, including auditing, contracting, investment of the New York's \$156 billion pension fund and oversight of a bond portfolio in the hundreds of billions of dollars.

This letter responds to public statements made by the proponents of the mine regarding the quality and marketability of the coal, and offers some additional information that may assist the Department.

In summary, based upon public disclosures by the developer, the coal from the proposed Chuitna mine has no inherent competitive advantage over other coal products currently competing in the global marketplace. Chuitna coal contains average levels of sulfur for a low-sulfur product. Chuitna coal contains a low heat value. Companies that produce similar coal, with similar sulfur levels and better heating values, are having difficulty in today's marketplace, and coal with similar sulfur levels and similar heat levels to Chuitna coal has no export potential currently and for the foreseeable future.

Global coal markets are oversupplied and there is no evidence that an Alaskan mine with no product advantage would succeed as a new entrant in the global thermal market place. Difficult market conditions have persisted for the past several years and will continue for at least the next six years, according to the best available data. The condition of oversupply has driven world coal prices to historic lows. If this project goes forward, it is unlikely that the State of Alaska will receive the developer's proposed \$12.5 million in annual new revenues from the sale of coal from Chuitna.

PacRim is asking the State of Alaska to make an economic and financial judgment on the proposed mine, even though the company has not set forth its current, updated business assumptions regarding the mine in the form of a coherent business plan. A business plan would contain at minimum the cost of production of coal from Chuitna, costs of capital, projected revenues based on an estimated market price (and presumably some specified market), an estimate of operating margins and a general debt/equity plan. None of this information is publicly available.

PacRim's Low Sulfur Coal Product Is Quite Typical of Other Low Sulfur Coal Products – It Has No Competitive Advantage

Much of PacRim's public discussion around Chuitna emphasizes the low-sulfur content of the coal. The company asserts that this characteristic will provide Chuitna coal with a competitive edge when it is marketed to other countries. The PacRim mining presentation¹ that is currently available to the public lists the heating value of the coal at between 7,650 and 8,800 Btu/lb with a sulfur content of 0.34 percent. This coal is considered sub-bituminous (low heat content) and low sulfur content.

First, describing Chuitna coal as "ultra low" sulfur coal is misleading. Chuitna coal has a sulfur content that is the same as the average Powder River Basin (PRB) coal product, according to the National Energy Technical Laboratories (NETL) (See Table I).² The table summarizes the weighted average sulfur content of coals from the Powder River Basin at 0.34 percent. This is the average sulfur level of what is typically designated low-sulfur coal.

¹ PacRim Coal, *Development Status Chuitna Coal Project*, November 22, 2005, Slide 9.

²https://www.netl.doe.gov/File%20Library/research/energy%20analysis/publications/QGESS_DetailCoalSpecs_Rev4_20130510.pdf, p. 42

Table I: Comparison of Various Coal Types by Btu/lb, Sulfur and Ash content (copied from NETL Report)

Exhibit 6-1 Form 423 summary of 2001-2003 coal quality by coal type

	Weighted Average, As Received		
	HHV, Btu/lb	Sulfur, %	Ash, %
Illinois No.6	11,176	2.95	8.29
PRB	8,652	0.34 ^{1,2}	5.03
Texas Lignite	6,482	1.27	17.07

Notes:

- About 49 percent of PRB supplied coal in 2003 had sulfur content not exceeding 0.3 percent (AR, by wt); About 28 percent of PRB supplied coal in 2003 had sulfur content between 0.3 percent and 0.4 percent (AR, by wt); About 16 percent of PRB supplied coal in 2003 (all from the same source) had sulfur content above 0.5 percent (AR, by wt)*
- The PRB coal supply contracts appear to comprise two distinct groups. One group (approximately 33 percent of total tonnage) is so called "super compliance coal," with the sulfur content around 0.2 percent; the second group (approximately 16 percent of total tonnage) is coal with relatively high sulfur content of 0.5 percent.*

Second, the use of the term "ultra" does not appear to have a specific uniform standard that is accepted by independent standard setting agencies like NETL or the United States Energy Information Administration (EIA). The EIA does not recognize the term.³ The term seems to be used more as a promotional device. Peabody Energy has used the term ultra low sulfur coal on product with 0.55 percent sulfur. As noted in the footnotes of the NETL chart, the term used for coal with exceptionally low levels of sulfur is "super compliance" coal. This term is reserved for coal with 0.2 percent sulfur or less. There are some commercial testers that use the term "ultra low sulfur" coal, but there the standards are different. According to PacRim's presentation, its coal product would not meet the definition of "super compliance." The coal from Chuitna would therefore not enjoy any of the competitive advantages of this class of coal. It is typical low sulfur coal.

³ <http://www.eia.gov/tools/glossary/index.cfm?id=U>. The EIA does recognize ultra low sulfur diesel fuel.

U.S. Companies That Are Producing Low-Sulfur, Higher-Heat-Content Products Superior to Chuitna Coal Are Finding It Difficult to Export in Current Market Conditions

The two most significant companies that have exported low-sulfur coal off the West Coast of the United States into Pacific Rim markets for several years are Cloud Peak Energy (which runs Spring Creek mine, Montana) and First Energy/Gunvor (which runs Bull Mountain mine, Montana).

Table II: Comparison of Chuitna Heat Value and Sulfur Content with Spring Creek and Bull Mountain Mines

Mine	Heating Value (Btu)	Sulfur Content (lb/mmbtu)
Chuitna Mine	7,650-8,800	0.34
Bull Mountain (Signal Peak)	10,300	.038 -.043 ⁴
Spring Creek	9,350	0.28-0.38 ⁵

Coal from the two Montana mines noted above have higher sulfur levels and superior heat content compared to what Chuitna would produce. Both Cloud Peak's Spring Creek and First Energy/Gunvor's Signal Peak mines have found niche markets in the Pacific Rim.⁶ But total coal exports from the U.S. to Asia have peaked at 12 million tons per year, and just this year, Cloud Peak announced that its shipments to Asia would decrease from 6.3 mtpa to 4.3 mtpa, or 46 percent. Cloud Peak is the most successful of the publicly traded companies that produce PRB coal that goes to Asia, specifically to Korea, Taiwan and Japan. Its second-quarter earnings statement estimates further shipment will decrease in 2016 and indicates uncertainty about any market turnaround. Its current sales to Asia are losing money.⁷

⁴ IEEFA owns a license from SNL Energy for its database of United States mines. The information from the database comes from various filings (including EIA Form-423). These filings are made by coal companies doing business in the United States for each coal shipment. SNL Energy, Signal Peak, Power Plants Served (2011-2015), % Sulfur. The specific data from the system is available to the Department upon request.

⁵ SNL Energy, Spring Creek, Power Plants Served (2011-2015), % Sulfur.

⁶ http://www.coalage.com/features/2110-signal-peak-energys-bull-mountain-mine-has-pulled-it-together-and-is-pulling-ahead.html#.Vc9IW_IViko (First Energy Asia markets)

⁷ <http://investor.cloudpeakenergy.com/press-release/earnings/cloud-peak-energy-inc-announces-results-second-quarter-and-first-six-months-5>

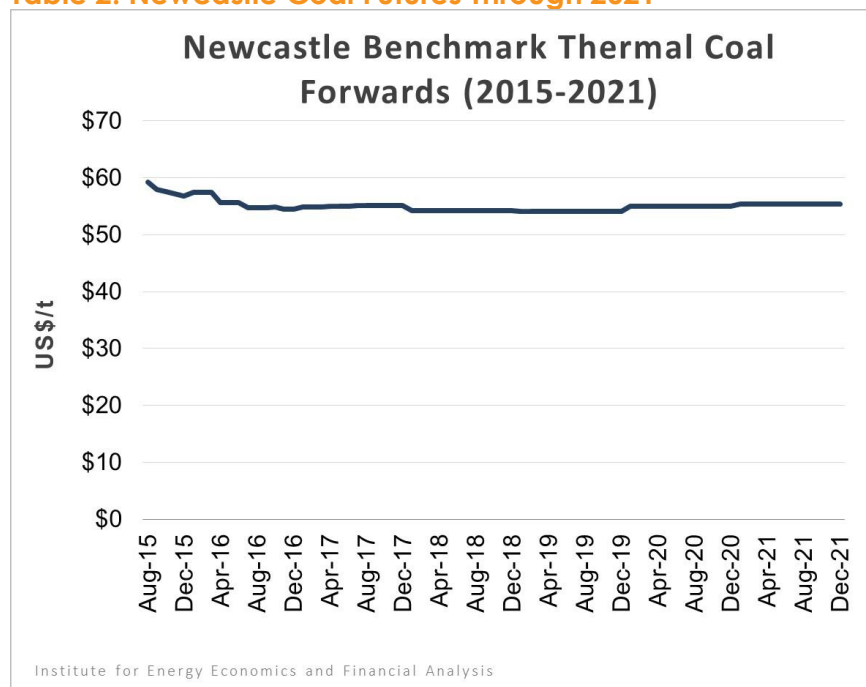
Alpha Natural Resources, Arch Coal and Peabody Energy have all announced plans to ship PRB coal to Asia. Their products are comparable to Chuitna coal in their heating value and sulfur content. These companies are not reporting any significant sales activity to Asia, however, and Arch Coal has reported that it is now making penalty payments to Canadian ports under its export agreements with those ports. The company pays a penalty when it fails to ship coal for which it has reserved terminal space.

Alpha Natural Resources, Peabody Energy, Arch Coal and Cloud Peak are all in various stages of financial distress. All of these companies have lost from 80- 95 percent of their value in recent years. None of their efforts to ship PRB coal to Asia has resulted in meaningful levels of exports. U.S. coal producers continue to press for export deals even in the weak market, however, and PacRim will face competitive pressures from these U.S. producers. Some of these competitors have better-quality products, and all have the reserve capacity to compete.

PacRim also faces competition from non-U.S. coal producers. Indonesian⁸ and Russian⁹ coal products are of similar low-sulfur content and similar heat content. Coal produced in each of those countries more often than not has a distinct transport-cost advantage because it is mined closer to China, India, Taiwan, Japan and Korea. Low-sulfur demand is not the entirety of the global thermal-coal market. The entire market is oversupplied and coal producers from South Africa, Australia and Colombia are also looking to ship coal to Asian markets.

Our analysis is not based on current market conditions alone. As we noted in our April letter, we pay careful attention to coal markets around the world. Table 2 has been updated from our April 2015 letter; it shows how the outlook for coal prices remain about the same through 2021 at below \$60 per ton. As we noted, too, in our April letter, most of the planning for expansion

Table 2: Newcastle Coal Futures Through 2021



⁸ http://www.marston.com/portals/0/marston_review_of_indonesian_thermal_coal_industry.pdf

⁹ <http://www.coalage.com/features/3522-russian-coal-exports-in-the-pacific-rim.html#.Vc-YYvIviko>

of coal-export facilities emerged during a period when prices spiked—as when Newcastle coal prices peaked at \$140 per ton in 2011. The current Newcastle price is \$59.40 per ton.¹⁰ Such prices are an indication that new coal mines are not needed.

We do not limit our analysis to quantitative assessments of current and future markets and our views are shaped in part by credible information from reputable news organizations. Major business news outlets, coal industry trade publication and web-based reporting organizations have been reporting for some time now on the oversupplied coal market and its many ramifications. Reuters,¹¹ the Wall Street Journal,¹² SNL,¹³ Business Insider,¹⁴ Bloomberg,¹⁵ Minewatch, and Indonesia Investments¹⁶ have all reported on the depth of the decline of the industry, its causes and the likelihood of its continuation.

The two major economies that drive the global thermal coal trade are China and India. China has announced its intention to decrease the amount coal it imports, and 2014 was the first year in almost a decade in which Chinese coal imports declined.¹⁷ It is expected that this trend will continue. India has announced it will cease importing coal over the next several years. While 2014 saw an increase in imports to India, the first part of 2015 has seen a slowing of the import rate.¹⁸

We supplied substantial background in our April letter on the importance of Chinese and Indian import demand to the global coal trade. Even if these countries burn more coal in the coming years, they are likely to get that coal from Chinese and Indian mines. As they cut demand for imported coal, the other supplier countries simply intensify their sales efforts to a much smaller market. The competition increases, pricing is tighter and there is little room for new entrants.

The coal industry itself has acknowledged oversupplied markets in every region of the world that has an active interest in coal markets. The CEO of Alpha Natural Resources, a major player in the global metallurgical market (and a thermal coal exporter) has acknowledged that coal markets are in more than a cyclical downturn;¹⁹ Glencore, a

¹⁰ http://ycharts.com/indicators/australia_coal_price

¹¹ <http://www.reuters.com/article/2015/08/11/us-column-russell-coal-asia-idUSKCN0QF14220150811>

¹² <http://www.wsj.com/articles/as-coal-prices-fall-miners-cut-output-1433269071>

¹³ <https://www.snl.com/MobileX/UI/Pages/News/Article.aspx?cid=A-32872208-12845&FreeAccess=1> . SNL maintains a running tally of U.S. coal mining bankruptcy filings. There have been 36 such filings in the last three years. The loss of employment and revenue to state and local government has been steep.

¹⁴ <http://www.businessinsider.com/coal-markets-in-oversupply-2012-6>

¹⁵ <http://www.bloomberg.com/news/articles/2015-01-21/global-coal-market-seen-in-bad-shape-as-supply-glut-expands>

¹⁶ <http://www.indonesia-investments.com/news/todays-headlines/earnings-indonesian-coal-miners-down-on-weak-global-coal-prices/item5384>

¹⁷ <http://www.worldcoal.com/coal/29072015/Chinese-market-remains-oversupplied-with-coal-on-lower-consumption-2651/>

¹⁸ IEEFA has commented extensively on the program by the Indian government to decrease imports. <http://ieefa.org/india-electricity-sector-transformation/>

¹⁹ http://trib.com/opinion/columns/crutchfield-alpha-is-restructuring-for-the-future/article_a47d5d8b-d599-5a78-a7af-22ad44173cbc.html

global mining concern, has announced more cuts in production and staff in the wake of persistent low prices;²⁰ BHP has issued investor warnings about long-term oversupply issues;²¹ Teck Resources has cut back plans for new mines in Canada in the wake of weak markets;²² Indonesian coal producers are looking at new strategies to address the drop in prices and shrinking markets;²³ and South African companies report cutbacks due to oversupply in the markets.²⁴

The depth of the problem also has hit Alaska's most significant coal producer, Usibelli Coal. Recent reports indicate that the company has lost 57 percent of its production since 2011. Most of the loss is attributed to diminished demand from Usibelli's global trade partners.²⁵

Conclusion

The PacRim proposal for the Chuitna mine development is based on unsupported statements about the quality of the coal and speculative financial assumptions about coal prices and the revenue potential for the state. Such a speculative investment carries an exceedingly low likelihood of success on its merits within a reasonable time frame. At best, this mine would underperform, and like the rest of the coal industry in the U.S., leave local and state governments with weaker budgets, companies with bankruptcies or distressed sales and communities with economic disruption and layoff notices. While the Chuitna mine proposal purports to offer employment, revenues and robust economic activity, its developer offers little to support these promises.

Sincerely,



Thomas Sanzillo
Director of Finance

²⁰ <http://www.marketwatch.com/story/glencore-may-cut-coal-output-more-to-combat-glut-2015-06-04>

²¹ <http://www.mineweb.com/news/iron-and-steel/bhp-warns-oversupply-to-keep-metal-prices-lower-for-much-longer/>

²² <http://business.financialpost.com/news/mining/teck-resources-ltd-suspends-coal-production-at-six-canadian-mines-as-demand-and-prices-plunge>

²³ <http://www.indonesia-investments.com/news/todays-headlines/earnings-indonesian-coal-miners-down-on-weak-global-coal-prices/item5384>

²⁴ <http://www.heraldlive.co.za/coal-oversupply-cuts-back-profits/>

²⁵ <http://www.adn.com/node/2777546>