

The background of the top section features a large pile of dark, jagged coal on the left. On the right, there is a semi-transparent financial chart with a red line graph showing a downward trend. The chart includes labels such as 'indexes - day, 5' with a 61.81% change, 'indexes - day, 12' with a 50.00% change, and 'indexes - day, 200' with a 78.60% change. The y-axis of the chart has numerical values ranging from 1575 to 1875.

Coal Risk Update

FEBRUARY, 2013

Selenium Risk at Alpha Natural Resources's Mountaintop Removal Mines:

Insight from the Patriot Coal Bankruptcy and Regulatory Monitoring Data

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Introductory Note

This is the first installment of a new series of research updates by the Rainforest Action Network on the environmental and social risks involved with investment in the coal industry. These updates will highlight emerging risks facing companies involved with coal extraction, processing, or combustion. In this update, we analyze litigation-driven environmental compliance risks at Alpha Natural Resources related to selenium emissions at the company's surface mines.

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Selenium Risk at Alpha Natural Resources's Mountaintop Removal Mines:

Insight from the Patriot Coal Bankruptcy and Regulatory Monitoring Data

Companies mentioned: Alpha Natural Resources (NYSE: ANR) and Patriot Coal (OTC: PCX).

Executive Summary

- **Alpha Natural Resources (NYSE: ANR) faces several ongoing environmental lawsuits at its surface mines in Appalachia.** Environmental groups and state regulators filed five separate lawsuits against the company in 2012 alleging selenium contamination at the company's surface mines. Selenium, a pollutant found in Appalachian coal deposits, has been linked to serious health and environmental impacts.
- **Selenium compliance settlements and remediation expenditures at Patriot Coal's surface mines (OTC: PCX) indicate that selenium compliance costs can be material.** Selenium contamination lawsuits against Patriot Coal have resulted in costly settlements and court orders. Between 2007 and 2012, Patriot's asset retirement obligations increased fivefold from \$134 million to \$743 million. In 2012, after its estimated selenium-related compliance obligations reached \$449 million, Patriot filed for bankruptcy and subsequently committed to phase out its mountaintop removal mining operations.
- **West Virginia regulatory enforcement data indicates that selenium levels in mine effluent at Alpha's surface mines may be of concern to investors.**
 - » 11 outfalls at Alpha's surface mines in West Virginia received 47 selenium-related violations between 2005 and 2011, compared to 42 outfalls and 207 violations at Patriot's surface mines in the state.
 - » Stream and outfall monitoring at Alpha's surface mines between 2005 and 2010 identified 989 instances of selenium levels above federal guidelines, compared to 1951 at Patriot's surface mines.
- **Improved disclosure by Alpha would enable investors to better understand its selenium-related litigation risks and compliance management strategy.**
 - » Alpha reports selenium monitoring data to West Virginia environmental regulators, but has not disclosed it to investors in its sustainability reporting.
 - » Patriot Coal warned investors that "the lack of a known, proven technology to meet selenium effluent limits is an industry-wide issue,"¹ making it imperative that Alpha report to investors on its selenium compliance strategy.
 - » Additional disclosure by Alpha's about its accounting treatment of selenium compliance expenses may be of interest to investors in light of an SEC review that prompted Patriot to restate similar selenium treatment expenses.

I. Mountaintop removal mining's selenium contamination risks

Mountaintop removal surface mines in Appalachia excavate topsoil and blast subsurface rock layers above and between coal seams. Mines deposit the resulting waste rock and soil in neighboring mountain valleys as massive valley fills that are hundreds of feet long and hundreds of feet high, and can leach pollutants such as selenium into streams and groundwater. At very high concentrations, selenium can damage the liver, kidneys, and nervous system in humans.² Birds and fish are also threatened by selenium, which can cause reproductive problems and damage gills and internal organs.³

Federal and state laws regulate surface water pollution from surface mining. The federal Safe Drinking Water Act sets a limit for selenium of 0.05 milligrams per liter (mg/L).⁴ Many Clean Water Act permits for surface mines issued by state regulators require permitted mine outfalls to be tested regularly for compliance with this, or similar limits. Where water tested at mine outfalls exceeds these limits, regulators can issue penalties and third parties can sue over violations under the Clean Water Act's citizen suit provision.⁵ Court orders and settlements from these lawsuits can also compel companies to install equipment to reduce concentrations of selenium in mine discharges to comply with permit limits.

For Patriot, which has faced significantly more selenium-related litigation than its industry peers, the cost of remediating selenium contamination from its mountaintop removal mines has been unexpectedly high.

II. The financial impacts of Patriot Coal's selenium cleanup obligations

Since 2007, environmental groups such as the Appalachian Mountain Advocates, the Ohio Valley Environmental Coalition, the West Virginia Highlands Conservancy, and the Sierra Club have filed lawsuits alleging elevated selenium concentrations in water discharges from mountaintop removal mine sites. These lawsuits have primarily targeted mines operated by Patriot Coal and have resulted in costly settlements and court orders that required the company to install water treatment equipment at mine outfalls.⁶ These groups also filed similar lawsuits against other mountaintop removal mine operators, including Alpha Natural Resources. In 2011, Alpha paid \$4.5 million in penalties and agreed to install selenium treatment technology at an estimated cost of more than \$55 million to settle a selenium compliance lawsuit.⁷ As of September 2012, Alpha faced four additional citizen lawsuits over water discharges at its surface mines that allegedly violated selenium limits in mine permits.⁸

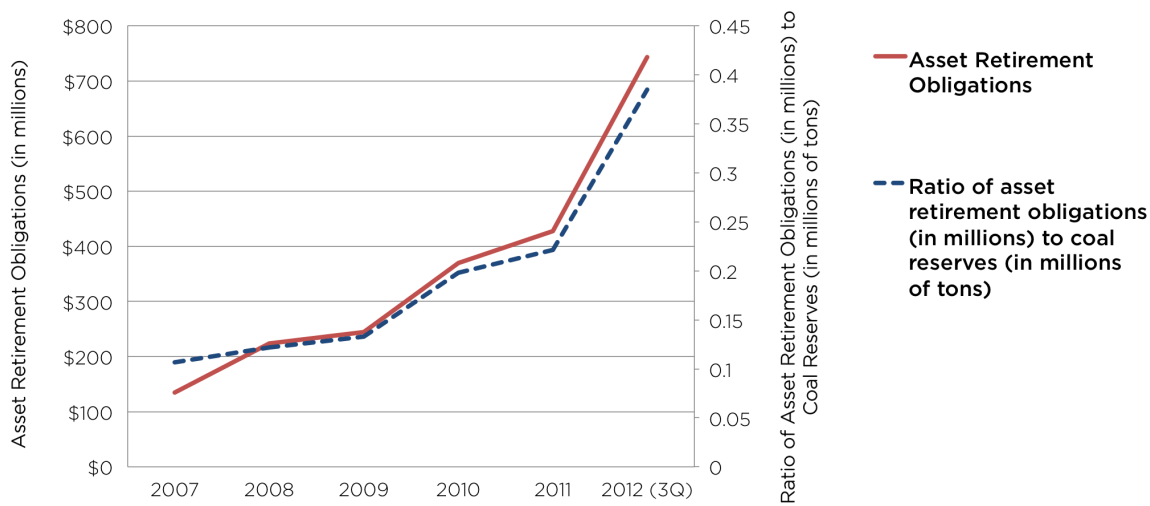
For Patriot, which has faced significantly more selenium-related litigation than its industry peers, the cost of remediating selenium contamination from its mountaintop removal mines has been unexpectedly high. Between 2007 and 2011, environmental groups filed a series of lawsuits against the company alleging violations of permitted selenium effluent limits at several Patriot surface mines. The West Virginia Department of Environmental Protection (WVDEP) also filed two similar lawsuits against the company in 2010, one of which was pending as of September 2012.⁹

The lawsuits resulted in multiple settlements that required the company to install selenium control equipment.¹⁰ The company has struggled to meet its obligations under these settlements and related court orders, and in 2010, a federal judge found the company to be in contempt of a settlement when two surface mines failed to meet court-ordered selenium effluent limits.¹¹ Due in large part to expenses related to these lawsuits, Patriot's accruals for environmental compliance ballooned from \$134 million to \$743 million between 2007 and 2012, increasing 554% on an absolute basis and by 362% after normalizing for the size of the company's coal reserves (see figure one).¹² In 2010, Patriot reported that it would cost just under \$400 million to meet its company-wide selenium compliance obligations. Plaintiffs in selenium lawsuits against the company argued that this figure dramatically underestimated the expenses involved with selenium treatment.¹³ As of September 2012, the company's selenium water treatment obligations stood at \$449 million.¹⁴

“The lack of a known, proven technology to meet selenium effluent limits is an industry-wide issue.”

Figure 1: Patriot Coal's asset retirement obligations, 2007-2012¹⁵

Patriot Coal's Asset Retirement Obligations



Rising environmental compliance costs, coupled with large pension obligations and softening demand for coal prompted Patriot to file for bankruptcy in July 2012. In December 2012, the company committed to phasing out its surface mining operations in Appalachia as part of an agreement with the Sierra Club and other plaintiffs in selenium litigation.¹⁶

Patriot continues to struggle to meet court-ordered selenium discharge standards due in part to technical challenges involved with selenium treatment. In its 2011 10-K, the company reported to shareholders that selenium water treatment technology is still in its infancy, noting that "despite continued efforts, we have been unable to identify a treatment system that can remove selenium sustainably, consistently and uniformly under all variable conditions experienced at our mining operations. The lack of a known, proven technology to meet selenium effluent limits is an industry-wide issue."¹⁷

During the second quarter of 2012, the company increased its asset retirement obligation liability for selenium water treatment by \$307.4 million to \$440 million. This adjustment was prompted by the additional cost involved with installing an alternative water treatment technology at outfalls where the company's initial technology failed to reduce selenium in mine effluent below court-ordered limits.¹⁸ In its 10-Q for the third quarter of 2012, Patriot issued a broad warning to shareholders about future selenium costs, which noted that "[t]here can be no assurance as to if or when a definitive solution will be identified and implemented for outfalls covered by the Hobet WVDEP Action and the February 2011 Litigation. As a result, actual costs may differ from our current estimates...Additionally, there are no assurances we will meet the timetable stipulated in the various court orders, consent decrees and permits."¹⁹

In contrast to these forthright warnings about selenium in its most recent 10-Q, Patriot's first 10-K filed in 2007 after it was spun off from Peabody Energy did not contain a single reference to selenium.²⁰ The company eventually began to bring its surface mines into compliance with permitted selenium limits, but only after legal settlements and court orders forced it to do so. For Patriot's shareholders, however, the company's candid disclosures about selenium risks were too little too late, as the company did not fully report the cost and risks involved with selenium contamination at its surface mine sites until shortly before it filed for bankruptcy protection.²¹

III. Comparison of recent selenium emissions data at Patriot and Alpha surface mines

In December 2011, a lawsuit settlement agreement between Alpha Natural Resources and the West Virginia Chapter of the Sierra Club, West Virginia Highlands Conservancy, Ohio Valley Environmental Coalition, and Coal River Mountain Watch forced the company to begin spending over \$55 million to bring its mountaintop removal operations into compliance with permitted selenium limits.²² Although significant, this figure is less than Patriot's \$449 million in selenium treatment liabilities.

In 2012, environmental groups filed four separate lawsuits against Alpha alleging violations of permitted selenium standards at its surface mines.²³ These lawsuits, in addition to two other water quality lawsuits (one active, one settled) against the company filed by the WVDEP could potentially result in material risks for investors if plaintiffs prove that Alpha's surface mine sites are in violation of permitted selenium limits.

In 2012, Alpha announced plans to idle eight mines, lay off 1,200 workers, and reduce expenses by \$150 million.²⁴ The company faces declining domestic demand for thermal coal as well as a weak export market for metallurgical coal.²⁵ These ongoing operational difficulties and a challenging coal market environment leave Alpha vulnerable to potential capital expenditures or other expenses related to environmental liabilities stemming from existing mining activity.

To estimate Alpha's level of exposure to regulatory action or third-party litigation on selenium, the Rainforest Action Network reviewed water quality violation and monitoring data from 2005 to 2011 obtained from the WVDEP. While there have been fewer selenium enforcement actions brought against Alpha's surface mining operations in West Virginia as compared to Patriot, the WVDEP data indicates that Alpha may face significant regulatory compliance and litigation risks related to selenium.

Table one compares WVDEP environmental enforcement data at Patriot and Alpha surface mines from January 2005 through June 2011. Some, though not all surface mine permits in West Virginia set limits on selenium concentrations at mine outfall locations, so the enforcement data does not provide a comprehensive picture of mines that may be emitting selenium-contaminated effluent. State regulators may choose not to enforce certain documented violations, or may choose to settle a violation under terms less stringent than those allowed under the law. A company remains exposed to potential citizen enforcement suits for those violations. Therefore, Alpha may face selenium compliance risks at other monitoring points in addition to the 11 mine outfalls referenced in the table.

Table 1: Comparison of Patriot Coal and Alpha Natural Resources selenium violations in West Virginia: Instances of regulatory enforcement actions at WV surface mine outfalls, 2005-2011²⁶

	Patriot Coal	Alpha Natural Resources
Mine outfall average selenium concentration violations	207	47
Mine outfall maximum selenium concentration violations	296	38
Number of separate mine outfalls with selenium violations	42	11

These ongoing operational difficulties and a challenging coal market environment leave Alpha vulnerable to potential capital expenditures or other expenses related to environmental liabilities stemming from existing mining activity.

Patriot's first 10-K filed in 2007 after it was spun off from Peabody Energy did not contain a single reference to selenium

The data in table two provides a broader measurement of mine selenium compliance risks. Surface mine operators in West Virginia are required to conduct regular selenium concentration monitoring at outfalls and in streams near mine sites that are at risk for being contaminated by mine runoff. Table two summarizes selenium stream monitoring readings at Patriot and Alpha's surface mine sites in West Virginia that exceeded federal limit for average selenium concentration (0.05 mg/L) or four times the federal limit for maximum selenium concentrations (0.20 mg/L) between 2005 and 2010.²⁷ These readings include all instances where selenium readings at streams and mine outfalls exceeded these limits, regardless of whether these readings prompted regulatory action or violated permitted limits. According to the table, Alpha's selenium compliance record may be cause for concern. Streams near the company's West Virginia surface mines exceeded federal limits for average selenium concentration about half as frequently as streams near Patriot's mines.

Table 2: Comparison of self-reported stream and outfall concentrations of selenium in excess of federal standards at Patriot Coal and Alpha Natural Resources WV surface mines, 2005-2010²⁸

	Patriot Coal	Alpha Natural Resources
Instances of average selenium concentration readings in stream and outfall monitoring > 0.05 mg/L (federal limit)	1951	987
Instances of maximum selenium concentration readings in stream and outfall monitoring > 0.2 mg/L (4x federal limit)	354	125

It is difficult to predict the outcomes of future regulatory action by the WVDEP or litigation initiated by environmental plaintiffs (for additional caveats and notes about the data, see note 29).²⁹ However, a pattern of selenium violations at a mine site can be an indicator of heightened environmental risk. For example, WVDEP issued Patriot's No. 22 surface mine 20 violations for exceeding average selenium concentration levels at a single mine outfall between 2005 and 2011.³⁰ Streams near the mine also had 22 selenium readings in excess of federal guidelines between 2005 and 2011.³¹ After environmental groups filed a lawsuit against the company, a federal court order forced Patriot to install and maintain a water treatment system at the outfall in 2011 at a cost of \$60.6 million.³² This price tag for selenium treatment equipment at a single mine outfall indicates that even a few instances of selenium non-compliance at a surface mine can be extremely costly to remediate.

Alpha’s 2011 Sustainability Report’s notes that the company had a “99.7% water quality compliance rate.” This one-sentence disclosure does not provide an adequate basis for investors to understand the company’s exposure to environmental compliance risks from selenium or other pollutants.

IV. Transparency and environmental risk disclosure at Alpha

WVDEP data on selenium contamination at Alpha’s West Virginia surface mines provides cause for concern about the company’s environmental management strategy. Alpha could address some of these concerns by reporting outfall-by-outfall and mine-by-mine stream water quality data to investors on an ongoing basis. Mining companies already provide much of the data referenced in this report to the WVDEP and could therefore disclose it to the public at minimal cost. Alpha’s 2011 Sustainability Report’s notes that the company had a “99.7% water quality compliance rate.”³³ This one-sentence disclosure does not provide an adequate basis for investors to understand the company’s exposure to environmental compliance risks from selenium or other pollutants.

Alpha’s most recent 10-K states that selenium-related lawsuit settlements will not have a material effect on its financial position.³⁴ However, the company’s shareholders may face potential risks and unanticipated costs associated with selenium treatment in light of Patriot’s warning that “the lack of a known, proven technology to meet selenium effluent limits is an industry-wide issue.”³⁵ Greater transparency and disclosure by Alpha about its selenium management plans and cost estimates would enable investors to better understand these risks.

V. Alpha’s accounting disclosures and selenium-related compliance expenditures

A company’s accounting treatment of selenium-related compliance expenditures can also draw concern from regulators. Patriot Coal was forced to restate its 2010 and 2011 financial results by \$23.6 million and \$49.7 million, respectively, after the U.S. Securities and Exchange Commission (SEC) questioned the company’s accounting classification of court-ordered selenium treatment equipment.³⁶ Patriot had initially classified these costs as capital expenditures, but after the SEC’s comments prompted an additional review by the company and its auditors, Patriot accrued a liability and recognized a loss for the costs because “their primary use will be to treat selenium exceedances in water discharges resulting from past mining under legacy permit standards.”³⁷ Following this restatement, shareholders filed a class action lawsuit against the company.³⁸

If Alpha incurs selenium remediation obligations similar to Patriot’s it may also face scrutiny from the SEC depending on how it reports its selenium-related expenses. In its 2012 3Q 10-Q, Alpha stated that it planned to capitalize its anticipated \$23 million in future selenium treatment costs at mines with active permits.³⁹ The company’s judgment may be correct in this matter, but in light of the SEC comments that prompted Patriot to revise its accounting treatment of selenium compliance expenditures, Alpha’s accounting presentation of its selenium-related compliance costs may be subject to heightened regulatory and shareholder scrutiny.

VI. Conclusion

The bankruptcy of Patriot coal illustrates the danger of managing selenium compliance in the courtroom rather than in the boardroom. Alpha can continue to leave its exposure to selenium non-compliance risk to be handled by its lawyers, but it does so at considerable risk to its investors. Patriot’s costly experience with selenium to date serves as a warning of both the sheer expense of bringing mountaintop removal sites into compliance with environmental regulations and the technical challenges involved with doing so. Improved transparency and the disclosure of detailed selenium risk management plans will enable investors to determine whether or not Alpha’s 0.3% water quality non-compliance rate is a sign of material risks that could potentially jeopardize the company’s financial position.

Appendix: Surface Mine Permitting Update (4/12-9/12)

The major publicly traded coal companies that engage in mountaintop removal mining in Appalachia received several new surface mining permits from April through September of 2012. The table below summarizes new surface mining permits in the Appalachian region issued to publicly traded mining companies.⁴⁰

Company	New permitted acreage (April - Sept 2012)	Subsidiaries	Locations	Dates	State Permit Numbers
Alpha Natural Resources, Inc (NYSE: ANR)	1004.38	Alex Energy Inc, Marfork Coal Company Inc	Nicholas Cty., WV (Alex Energy), Kanawha Cty., WV (Marfork Coal)	September 2012 (Alex Energy), August 2012 (Marfork Coal Company)	WV S300811 (Alex Energy), WV S301712 (Marfork Coal Company)
Arch Coal Inc. (NYSE: ACI)	891.84	ICG Hazard	Perry Cty., KY (June 5 permit) and Breathitt Cty., KY (August 22 permit)	June 5 and August 22, 2012	KY 8970522 (June 5) and KY 8130348 (August 22)
CONSOL Energy, Inc. (NYSE: CNX)	207	Fola Coal Company LLC	Clay Cty., WV	August, 2012	WV S201012
Patriot Coal Inc. (OTC: PCX)	116.19	Catenary Coal Company LLC	Kanawha Cty., WV	September, 2012	WV S303107
Mechel OAO (MCX: MTLR, NYSE: MTL)	0				
ArcelorMittal (AMS: MT, NYSE: MT)	0				

The bankruptcy of Patriot coal illustrates the danger of managing selenium compliance in the courtroom rather than in the boardroom. Alpha can continue to leave its exposure to selenium non-compliance risk to be handled by its lawyers, but it does so at considerable risk to its investors.

Endnotes

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- 28 State of West Virginia. Department of Environmental Protection. "Stream Monitoring: Selenium, Total Recoverable, Groundwater Monitoring: Selenium, Total Recoverable, Outlet: Selenium, Total Recoverable." (1 Jan 2005-31 Dec 2010, via West Virginia DEP Freedom of Information Act request).
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group may initiate its own action to enforce the permit. Nearly all of Patriot's and Alpha's surface mines are located in West Virginia, but both companies had active surface mines in Kentucky from 2005-2011 for which selenium monitoring data was unavailable. WVDEP data from late-2011 and 2012 was not available and may show different patterns of compliance at Patriot and Alpha.

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221 Pine St #500 | San Francisco, CA 94104 | RAN.org

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Vismarkt 15 | 6511 VJ Nijmegen | Netherlands | BankTrack.org

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