

Can Coal Be Clean? Litigation Remedies for Coal Contamination from Mining to
Combustion to Sequestration

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ABSTRACT

The coal industry has launched a campaign to repackage coal as clean energy. However, undeniable environmental, economic, health, and social justice impacts result from mining, burning, and dealing with the pollutants and waste material after coal is burned. As a result, during extraction, combustion, and the disposal of coal combustion wastes, injury may occur that leads to litigation. The scope of this paper is twofold. First, in order to illustrate that coal is not clean, I give a brief background on the environmental and socio-economic issues surrounding coal utilization. Second, I discuss the remedies developed through Anglo-American law as applied to coal utilization cases, remedies available through various environmental statutes, and potential remedies that might be used in coal utilization cases.

Background

Coal is the United States' most abundant fossil fuel,¹ and according to the U.S. Department of Energy, "one quarter of the world's coal reserves are found within the United States, and the energy content of the nation's coal resources exceeds that of all the world's known recoverable oil."² Consequently, the United States is often referred to as "the Saudi Arabia of coal."³ Coal also supplies over half of the United States' electric power needs.⁴ According to the U.S. Energy Information Administration (EIA), the estimated U.S. recoverable reserves of coal with today's mining technology are 263 billion short tons.⁵ If the United States continues to burn coal at the *same* rate, then these recoverable reserves should last about 250 years.⁶ However, given that our economy's health is measured by continued economic growth, then these recoverable reserves would last for a much shorter period of time if consumption and population growth continue to increase exponentially. Considering these facts and the corresponding issues, innovation and technology can increase the reach of recoverable reserves. Likewise, implementing prudent policies that improve energy efficiency can make energy reserves last longer.

¹ U.S. Dep't of Energy, A Brief Overview of Coal, http://fossil.energy.gov/education/energylessons/coal/gen_coal.html (last visited February 27, 2010).

² U.S. Dep't of Energy, Coal, <http://www.energy.gov/energysources/coal.htm> (last visited February 27, 2010).

³ Cathy Booth Thomas, *Is Coal Golden?*, TIME, Oct. 2, 2006, <http://www.time.com/time/insidebiz/article/0,9171,1541270,00.html>.

⁴ U.S. Dep't of Energy, Electric Power, <http://www.energy.gov/energysources/electricpower.htm> (last visited February 27, 2010).

⁵ U.S. Energy Info. Admin., How Much Coal Is Left - Energy Explained, Your Guide To Understanding Energy, http://tonto.eia.doe.gov/energyexplained/index.cfm?page=coal_reserves (last visited February 6, 2010).

⁶ American Coal Foundation, FAQs About Coal, <http://www.teachcoal.org/aboutcoal/articles/faqs.html#howmuch> (last visited February 6, 2010) (emphasis added).

Despite the evolution of technology and conservation policies, it is obvious that reliance on coal—a nonrenewable resource—coupled with the current paradigm of measuring economic growth (or the belief that growth and consumption symbolize a healthy economy), raises energy security or national security issues. Undoubtedly, the current paradigm of energy use in the United States, although improving, is not addressing energy security concerns in a prudent manner. Furthermore, besides energy security, there are corresponding environmental, health, and social justice impacts related to coal utilization and dependency. These impacts are often secondary—a side effect of the United States’ reliance on cheap energy, and these secondary effects, as externalities, are very costly to the environment, governments, and their citizens.

Part I: The Environmental and Health Effects of

Coal Utilization

Coal utilization results in a plethora of direct and indirect environmental impacts, and during every step of the process in coal utilization—from extraction to combustion to storing coal waste—there are negative environmental consequences. Furthermore, these negative environmental impacts translate into public health issues. Nonetheless, despite these issues, the coal industry is peddling coal-based energy as a potential clean energy source.⁷

Repackaging Coal as Clean

⁷ American Coalition for Clean Coal Electricity, <http://www.cleancoalusa.org/> (last visited March 2, 2010).

Pricing the exact cost of energy from coal-fired power plants depends on who is crunching the numbers⁸:

One big question is how much it currently costs companies to produce coal-fired energy, and the answers are often colored by ideology or self-interest. Companies that sell coal or rely on coal-fired electricity often pick a low number; environmentalists cite the indirect costs to society, like strip mining or spills of coal ash. And since the electricity industry became more competitive, the utilities, even municipal ones, have become more secretive about their costs.

In determining the best and most prudent energy policy for the United States, pricing coal to include the indirect costs is wise policy. If every step in the process of coal utilization is considered, in determining the cost of energy from coal-fired power plants, then coal is not a *cheap* energy source, and coal is not a *clean* energy source. Nonetheless, coal is often misrepresented as a clean energy source and as the cheapest energy source.⁹ In making the argument that coal is the cheapest energy source, merely considering how much it costs a company to produce electricity from a coal-fired power plant—thus ignoring the externalities—is seriously misleading. Likewise, describing coal as a clean energy source because carbon dioxide might be captured and stored underground—or ignoring the other pollutants emitted by coal-fired power plants—is deceptive. These narrow characterizations are misleading, because there are hidden costs associated with the utilization of coal, so characterizing coal as a clean energy source or the cheapest

⁸ Matthew L. Wald, *Cost Works Against Alternative and Renewable Energy Sources in Time of Recession*, NEW YORK TIMES, March 28, 2009, <http://www.nytimes.com/2009/03/29/business/energy-environment/29renew.html>.

⁹ Bryan Walsh, *Exposing the Myth of Clean Coal Power*, TIME, Jan. 10, 2009, <http://www.time.com/time/health/article/0,8599,1870599,00.html>.

energy source fails to consider the environmental,¹⁰ economic,¹¹ health,¹² and social justice¹³ impacts of mining coal, burning coal, and storing the coal combustion wastes. Furthermore, in an attempt to advance their claims, the coal industry has launched a campaign to discredit climate change science by spreading disinformation.¹⁴ However, like the claim that coal is the cheapest energy source, characterizing coal as clean means to ignore or omit various material facts, not to mention certain laws of physics.¹⁵ In reality, injury occurs from utilizing coal, and the type of harm caused by the coal industry depends on where in the process of coal utilization the activity and corresponding harm occurs.

Surface and Underground Coal Mining

¹⁰ See World Wildlife Fund, *The Cost Of Coal On The Environment*, <http://www.sciencedaily.com/releases/2007/05/070504151722.htm> (last visited March 2, 2010) (“WWF shows that the short-term economics which are driving the use of coal to generate cheap power have created a “fool’s paradise” that will lead to profound long-term problems.”).

¹¹ See Citizens Action Coalition of Indiana, *Health & Economic Impacts of Coal*, <http://citact.org/newsite/modules.php?op=modload&name=News&file=article&sid=308> (last visited March 2, 2010) (Discussing the economic impacts of coal, which include acid rain damage to cars, buildings, and historic sites in addition to crop losses due to ozone pollution, healthcare costs, impacts to tourism, and the fishing industries).

¹² See Jad Mouawad, *Report Shows Hidden Costs of Energy*, *NEW YORK TIMES*, Oct. 19, 2009, <http://greeninc.blogs.nytimes.com/2009/10/19/report-shows-hidden-costs-of-energy/> (Citing a report from the National Research Council that found coal-fired power plants contribute an estimated “\$62 billion in hidden damages associated with the emissions of pollutants like sulfur dioxide and nitrogen oxide, and particulate matter like soot or fine dust.”).

¹³ See Patrick C. McGinley, *From Pick to Shovel to Mountaintop Removal: Environmental Injustice in the Appalachian Coalfields*, 34 *Envtl. L.* 21 (2004) (Discussing how coal companies purposely create a nuisance to force neighboring landowners to sale.).

¹⁴ See Alex Kaplun, *Coal Industry Group Linked to a Dozen Forged Cap-And-Trade Letters*, *NEW YORK TIMES*, Aug. 4, 2009, <http://www.nytimes.com/gwire/2009/08/04/04greenwire-coal-industry-group-linked-to-a-dozen-forged-ca-2624.html> (last visited February 27, 2010).

¹⁵ See JEREMY RIFKIN, *ENTROPY* (Bantam Books 1981); See also Richard E. White, *E-mails do not change the laws of physics*, *THE DURANGO HERALD*, December 14, 2009, http://www.durangoherald.com/sections/Opinion/letters_to_the_editor/2009/12/14/Emails_do_not_change_the_laws_of_physics.

Examples of negative impacts from coal mining include negative effects on surface and groundwater resources in addition to environmental and property damage caused by subsidence, deforestation, and soil degradation or the loss of topsoil through erosion.¹⁶ Of the methods used to mine coal, perhaps the most controversial is mountaintop mining (MTM). This method of mining coal is considered egregious “due to the scale of mining operations and concern about the post-mining appearance of reclaimed lands, among other issues.”¹⁷ MTM literally involves removing mountains, and during the process, a lot of spoil, or the removed material that is deemed useless, is deposited into valleys.¹⁸ Consequently, MTM has detrimental impacts on stream heads and watersheds.¹⁹ According to an Environmental Protection Agency (EPA) spokesperson, “Mountaintop-removal mining has destroyed roughly 2,040 square miles

¹⁶ See C.J. Booth, *Groundwater as an environmental constraint of longwall coal mining*, 50 *Materials and Geoenvironment* 49 (2003), available at http://www.rmz-mg.com/letniki/rmz50/rmz50_0049-0052.pdf (“Most of the environmental groundwater impacts from longwall are caused indirectly by subsidence-related fracturing. Mining companies are required to compensate landowners for loss of water and to provide alternative water supplies, but the loss of water supply is still a serious concern to the people affected. These impacts are a common reason for opposition to longwall mining from residents and environmental groups; for the companies, they can become a significant obstacle in obtaining mining permits.”); See also John Mcquaid, *Mountaintop Mining Legacy: Destroying Appalachian Streams*, *YALE ENVIRONMENT* 360, July 20, 2010, <http://e360.yale.edu/content/feature.msp?id=2172> (“Of all the environmental problems caused by mountaintop projects — decapitated peaks, deforestation, the significant carbon footprint — scientists have found that valley fills do the most damage because they destroy headwater streams and surrounding forests, which are crucial to the workings of mountain ecosystems.”); See also Physicians for Social Responsibility, “Pervasive and irreversible” Damage in Appalachia, <http://www.psr.org/environment-and-health/code-black/mountaintop-removal.html> (last visited April 13, 2004); See also Erich Hiner, *Ohio’s abandoned coal mines undercut homes, roads, government budgets*, *ACCESS NEWS*, April 13, 2010, <http://accessnews.com/index.php/articles/show/id/20002> (“According to data from the geological survey office, Ohio is now home to about 5,000 documented [abandoned underground mines or] AUMs. As many as 2,000 additional AUMs might exist for which there are no records. . . . Ohio’s AUMs are mostly overseen, observed and reclaimed by the state with financial help from the federal government.”).

¹⁷ U.S. GOV’T ACCOUNTABILITY OFFICE, *CHARACTERISTICS OF MINING IN MOUNTAINOUS AREAS OF KENTUCKY AND WEST VIRGINIA 1* (2009), available at <http://www.gao.gov/new.items/d1021.pdf>.

¹⁸ See Andrew C. Revkin, *Scientists Reject Mountaintop Mining Methods*, *NEW YORK TIMES*, January 7, 2010, <http://dotearth.blogs.nytimes.com/2010/01/07/scientists-decry-mountaintop-mining-methods>.

¹⁹ See MARGARET A. PALMER AND EMILY S. BERNHARDT, *MOUNTAINTOP MINING VALLEY FILLS AND AQUATIC ECOSYSTEMS: A SCIENTIFIC PRIMER ON IMPACTS AND MITIGATION APPROACHES*, available at <http://wvgazette.com/static/mtrwhitepaper.pdf>.

of land in Appalachia and buried more than 2,000 miles of streams.”²⁰ Furthermore, an EPA study has found evidence to support “a causal link between MTM and biological degradation.”²¹ Also, unique montane aquatic ecosystems and organisms are especially sensitive to water pollution or to the increased levels of turbidity caused by erosion of the spoil left over by MTM.²² However, the environmental impacts of MTM are not limited to areas where the actual mining occurs or to montane ecosystems. Data obtained by environmental groups through the Freedom of Information Act illustrate that “water quality downstream from surface coal-mining operations in West Virginia and Kentucky greatly exceeds recommended toxicity limits” by as much as “50 times the federal guidelines.”²³ Consequently, it is no surprise that the environmental impacts of MTM translate into human impacts as well²⁴:

Although its scale and efficiency has enabled the mining of once-inaccessible coal seams, this mining practice often stresses the natural environment and impacts the health and welfare of surrounding human communities. Streams once used for swimming, fishing, and drinking water have been adversely impacted, and

²⁰ Renee Schoof, *After review, scientists urge end to mountaintop mining*, MCCLATCHY NEWSPAPERS, Jan. 7, 2010, <http://www.mcclatchydc.com/2010/01/07/81902/after-review-scientists-urge-end.html> (Citing an email from EPA spokeswoman Enesta Jones).

²¹ Gregory J. Pond et al., *Downstream effects of mountaintop coal mining: comparing biological conditions using family- and genus-level macroinvertebrate bioassessment tools*, 27(3) J. N. AM. BENTHOL. SOC. 717, 731 (2008), available at <http://www.epa.gov/region3/mtntop/pdf/downstreameffects.pdf>.

²² See MARGARET A. PALMER AND EMILY S. BERNHARDT, MOUNTAINTOP MINING VALLEY FILLS AND AQUATIC ECOSYSTEMS: A SCIENTIFIC PRIMER ON IMPACTS AND MITIGATION APPROACHES, available at <http://wvgazette.com/static/mtrwhitepaper.pdf> (“Where mining activities destroy stream habitat and degrade stream water quality[,] many of these taxa become locally extinct[,] and for species with small geographic distributions[,] mining activities will contribute to their global extinction.”).

²³ Ken Ward Jr., *EPA report: Streams near mining toxic*, THE CHARLESTON GAZETTE, March 15, 2010, <http://sundaygazette.com/News/MiningtheMountains/201003150780>; See also DR. CARYS L. MITCHELMORE, REPORT ON THE U.S. ENVIRONMENTAL PROTECTION AGENCY’S CHRONIC WHOLE EFFLUENT TOXICITY TESTING AT SELECTED SITES IN THE COALFIELDS OF KENTUCKY AND WEST VIRGINIA (2010), available at <http://wvgazette.com/static/coal%20tattoo/WETTestingReport.pdf>.

²⁴ MEMORANDUM OF UNDERSTANDING AMONG THE U.S. DEPARTMENT OF THE ARMY, U.S. DEPARTMENT OF THE INTERIOR, AND U.S. ENVIRONMENTAL PROTECTION AGENCY (2009), available at http://www.epa.gov/wetlands/pdf/Final_MTM_MOU_6-11-09.pdf.

groundwater resources used for drinking water have been contaminated. Some forest lands that sustain water quality and habitat and contribute to the Appalachian way of life have been fragmented or lost. These negative impacts are likely to further increase as mines transition to less accessible coal resources within already affected watersheds and communities.

As a result of the environmental impacts and corresponding human impacts of MTM, the EPA is currently “working with coal companies and the Army Corps to reduce the amount of waste dumped or the number of valleys filled.”²⁵ Recently, the EPA, through its veto power under the Clean Water Act, moved to block a federal permit issued by the Army Corps of Engineers for “the development of what would have been the largest surface mine West Virginia.”²⁶ If the permit is vetoed by the EPA, “it would be the 13th time since the passage of the Clean Water Act in 1972 that the agency has vetoed a project, and it would be the first time the agency revoked an existing coal mining permit.”²⁷ Although rarely used, EPA’s power to veto any project that might have an “unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas” is an important mechanism to prevent harm before it occurs.²⁸ EPA’s veto acts as a permanent injunction against allowing the activity, since the activity will have unacceptable adverse effects on the environment.

²⁵ Patrick Reis, *Critics on Both Sides of Coal Mining Debate Assail EPA on Mountaintop Regulation*, NEW YORK TIMES, March 18, 2010, <http://www.nytimes.com/gwire/2010/03/18/18greenwire-critics-on-both-sides-of-coal-mining-debate-as-87304.html>.

²⁶ Ry Rivard, *EPA moving to veto permit for W.Va.’s largest surface mine*, CHARLESTON DAILY MAIL, March 26, 2010, <http://www.dailymail.com/News/201003250867>.

²⁷ *Id.*

²⁸ 33 U.S.C. § 1344(c) (2009).

Like surface mining, underground coal mining (UCM) can result in environmental degradation and property damage. For example, land subsidence and water quality impacts are associated with underground coal mining activities. In fact, surface damage—due to UCM activities associated with subsidence—has been estimated to be “in excess of \$1 billion from 1973 to the year 2000, with \$30 million of damage to structures annually.”²⁹ According to the U.S. Geological Survey (USGS), “Underground mining for coal accounts for most of the mining-related subsidence in the United States.”³⁰ In fact, “coal mining impacts a vastly larger amount of land than all other types of mining combined.”³¹ Often, property owners are not aware of the subsidence risks or the existence of coal mines beneath their property.³² For instance in *Calvaresi v. National Development Co., Inc.*,³³ due to a coal mine situated under a subdivision and the subsequent risk of subsidence, property owners had their property declared a geologic hazard zone by officials. As a result, their ability to use their property was restricted, so the property owners sued the developers, alleging that they knew of the coal mine when they sold the lots. In this case, the remedy presumably could have been money damages for repair to the property and for the diminution in value of the property caused by the subsidence. However, with rescission, under contract law, the plaintiffs could get all their

²⁹ R.E. Gray, *Mining subsidence — past, present, future*, 8 *Geotechnical and Geological Engineering* 400, 400 (1990).

³⁰ U.S. GEOLOGICAL SURVEY, *LAND SUBSIDENCE IN THE UNITED STATES* 3 (1999), http://pubs.usgs.gov/circ/circ1182/pdf/circ1182_intro.pdf.

³¹ R.E. Gray, *Mining subsidence — past, present, future*, 8 *Geotechnical and Geological Engineering* 400, 400 (1990).

³² See Pa. Dep’t of Env’tl. Prot., *What is Mine Subsidence?*, <http://www.dep.state.pa.us/MSI/WhatIsMS.html> (last visited February 27, 2010).

³³ *Calvaresi v. National Development Co., Inc.*, 772 P.2d 640 (Colo. App. Div. 1988).

money back, and the defendants could get the property back minus any benefits either side conferred. For example, the defendants could receive rent for the time the plaintiffs lived on the property, and plaintiffs could be reimbursed for any improvements they made on the property.

In addition to issues with subsidence, abandoned coal mines can concentrate unbreathable gases. Dangerous levels of various gases in abandoned coal mines can cause suffocation.³⁴ Also, these gases are odorless.³⁵ The dangerous environmental conditions created in coal mines are called blackdamp. Blackdamp occurs “when oxygen is removed from an enclosed atmosphere and largely replaced by nitrogen, argon, carbon dioxide and water vapour.”³⁶ Coal mines that harbor dangerous environmental conditions, if not properly contained or closed off, can result in wrongful death actions. For example, in *Drew v. Lett*,³⁷ a young boy entered an unrestricted abandoned coal mine located on the defendant’s property. The mine had been concentrating poisonous gases. As a result, the boy succumbed to blackdamp and died from suffocating on the poisonous air within the mine. Consequently, due to the dangerousness of abandoned coal mines, landowners that fail to properly secure abandoned mines on their property may be held liable for damages resulting from accidents or death. In *Davis v. Halter*,³⁸ another boy was killed when he fell from a ladder that descended into the ventilating shaft of an abandoned coal mine. The boy probably succumbed to blackdamp while climbing down

³⁴ Wikipedia, Blackdamp, <http://en.wikipedia.org/wiki/Blackdamp> (last visited February 27, 2010).

³⁵ *Id.*

³⁶ *Id.*

³⁷ *Drew v. Lett*, 95 Ind. App. 89 (App. Ct. 1932).

³⁸ *Davis v. Halter*, 79 Ohio App. 419 (App. Ct. 1944).

the ladder. According to the court in that case, since the boy was a willful trespasser and familiar with the abandoned mine, as opposed to entering the mine inadvertently, no recovery for damages was allowed.

Another problem with UCM is acid mine drainage (AMD). AMD can disrupt aquatic ecosystems and cause economic damage by corroding infrastructure and negatively impacting outdoor tourism and recreational fisheries.³⁹ For example, according to the USGS⁴⁰:

Drainage from thousands of abandoned coal mines has contaminated more than 3,000 miles of streams and associated ground waters in Pennsylvania and is the most extensive water-pollution problem affecting the four major river basins in Pennsylvania. . . . [and] consequently, Pennsylvania loses approximately \$67 million annually that could be generated if sport fishing were restored in the affected streams.” Restoring these watersheds is estimated to cost up to \$15 billion.

The cost to restore these watersheds is estimated at \$15 billion.⁴¹ Consequently, UCM can have costly environmental and economic repercussions⁴²:

Acid mine drainage from coal and mineral mining operations is a difficult and costly problem. In the eastern U.S., more than 7,000 kilometers of streams are affected by acid drainage from coal mines (Kim et al. 1982). In the western U.S., the Forest Service estimates that between 20,000 and 50,000 mines are currently generating acid on Forest Service lands, and that drainage from these mines is impacting between 8,000 and 16,000 kilometers of streams (U.S. Forest Service 1993). In addition to the acid contribution to surface waters, AMD may cause metals such as arsenic, cadmium, copper, silver, and zinc to leach from mine wastes. According to the Forest Service, the metal load causes environmental damage, and is of greater concern than the acidity in environmental terms.

³⁹ See U.S. Env'tl Prot. Agency, Abandoned Mines' Role in Nonpoint Source Pollution, <http://www.epa.gov/reg3wapd/nps/mining/mines.html> (last visited March 21, 2010).

⁴⁰ U.S. Geological Survey, Coal-Mine-Drainage Projects in Pennsylvania, <http://pa.water.usgs.gov/projects/amd/> (last visited March 1, 2010).

⁴¹ *Id.*

⁴² U.S. Env'tl Prot. Agency, Acid Mine Drainage Prediction, <http://www.epa.gov/epawaste/nonhaz/industrial/special/mining/techdocs/amd.pdf> (last visited March 21, 2010).

Furthermore, according to the EPA, AMD also results in the “loss of aquatic life, increased water treatment costs for industries and municipalities, corrosion of barges, boats, bridge piers, dams and other structures, and diminished recreational value of affected rivers and streams.”⁴³ Obviously, given the problems associated with AMD, mines can create a nuisance for property owners.

For example, in *Com. v. Barnes & Tucker Co.*,⁴⁴ the Commonwealth of Pennsylvania, in order to remedy discharges of acid mine water, used its police powers to force the operator of a coal mine “to take affirmative steps to treat the acid mine drainage emanating from its now abandoned mine.”⁴⁵ On appeal, the operator argued that Pennsylvania’s use of police power was unreasonable and resulted in “a ‘taking’ of private property in violation of the Fourteenth Amendment to the United States Constitution.”⁴⁶ The Supreme Court of Pennsylvania disagreed. It determined that the “mining operations constitute[d] a public nuisance which require[d] abatement.”⁴⁷ The Court stated that police power is constitutional if the public interest permits it and “the means are reasonably necessary for the accomplishing of the purpose, and not unduly oppressive upon individuals.”⁴⁸ Also, the Court declared that “the police power of the state is as comprehensive as the demands of society require under the circumstances.”⁴⁹

⁴³ *Com. v. Barnes & Tucker Co.*, 371 A.2d 461, 466 (Pa. 1977).

⁴⁴ *Com. v. Barnes & Tucker Co.*, 371 A.2d 461 (Pa. 1977).

⁴⁵ *Id.* at 464.

⁴⁶ *Id.*

⁴⁷ *Id.* at 466.

⁴⁸ *Id.* at 465 (quoting *Lawton v. Steele*, 152 U.S. 133, 137 (1894)).

⁴⁹ *Id.* at 467.

Accordingly, the Court reasoned, “To permit appellant to avert responsibility for abating a nuisance which it created under the proposition that it may abandon its enterprise, rather than operate such enterprise within the parameters of the environmental regulations, would nullify the environmental policy of this Commonwealth.”⁵⁰ Most importantly, it was the appellant’s conduct that was a significant factor in upholding the State of Pennsylvania’s use of police power to abate the AMD nuisance. The Court stressed that “the conduct of Barnes & Tucker in its mining activity remains the dominant and relevant fact without which the public nuisance would not have resulted where and under the circumstances it did.”⁵¹ Essentially, the mine operator’s negligence in managing the mine created the nuisance or the AMD. Consequently, the polluter’s attitude or conduct is an important factor to consider in deciding these nuisance cases. Furthermore, creating and maintaining a nuisance is not a property right that a defendant can maintain in an alleged taking of private property under the Fourteenth Amendment Takings Clause. Another part of the coal utilization process that results in serious economic, environmental, and public health problems is burning coal.

Burning Coal and the Subsequent Waste

⁵⁰ *Id.*

⁵¹ *Id.* (quoting *Com. v. Barnes & Tucker Co.* 353 A.2d 471, 479 (Commw. Ct. Pa., 1976)).

When coal is burned, dozens of hazardous or toxic substances⁵² in addition to “trapped” carbon dioxide⁵³—a greenhouse gas pollutant—are released.⁵⁴ Consequently, some of these substances released through coal combustion, such as mercury, disseminate by means of deposition throughout the landscape and into aquatic environments.⁵⁵ The hazardous substances not released directly into the atmosphere are present in combustion wastes such as fly ash.⁵⁶ The coal combustion wastes released into the atmosphere are a public health hazard, and the corresponding healthcare costs are passed off to the consumer and government entities. In fact, states are seeking to abate combustion from some coal-fired power plants over economic, environmental, and public health concerns.⁵⁷ Although the negative health impacts of burning coal may be not be readily

⁵² ALAN H. LOCKWOOD ET AL., *COAL’S ASSAULT ON HUMAN HEALTH*, (2009), *available at* <http://www.psr.org/assets/pdfs/psr-coal-fullreport.pdf> (Discussing that “coal combustion releases sulfur dioxide, particulate matter (Pm), nitrogen oxides, mercury, and dozens of other substances known to be hazardous to human health.”).

⁵³ The problem is that the burning fossil fuels, such as coal, results in a release of carbon dioxide that has been trapped for millions of years. As a result, burning coal contributes an increase in concentrations of atmospheric carbon dioxide over time. This additional carbon dioxide is problematic due to carbon dioxide’s warming effect. For this reason, carbon dioxide is a greenhouse gas. *See* The Carbon Dioxide Greenhouse Effect, <http://www.aip.org/history/climate/co2.htm> (last visited February 17, 2010).

⁵⁴ *See* American Institute of Physics, The Carbon Dioxide Greenhouse Effect, <http://www.aip.org/history/climate/co2.htm> (last visited March 1, 2010).

⁵⁵ *See* U.S. Env’tl Prot. Agency, Environmental Effects of Mercury, <http://www.epa.gov/hg/eco.htm> (last visited February 27, 2010).

⁵⁶ *See* Tim Lucas, *Toxic Coal Ash Threatens Health And Environment*, DUKE UNIVERSITY, Aug. 18, 2009, <http://news.duke.edu/2009/08/toxiccoal.html> (Discussing how hazardous elements remain in fly ash and how toxic ash can leave storage ponds or spill sites by becoming “re-suspended in the air as dust [upon drying] and could have a severe health impact on local residents or workers who inhale them”).

⁵⁷ *See* North Carolina ex rel. Cooper v. Tennessee Valley Authority, 515 F.3d 344 (4TH Cir. 2008) (Due to impacts to human health and environmental quality, the State of North Carolina brought a public nuisance action against Tennessee Valley Authority seeking an injunction prohibiting it from operating its plants in a harmful manner.).

recognized, healthcare costs have been estimated to be in the billions.⁵⁸ For example, “the National Research Council has estimated the external costs associated with emissions of nitrogen oxides, sulfur dioxide, and PM from coal-fired power plants in the U.S. at \$62 billion in 2005.”⁵⁹ Another study released in 2010 found that “filthy air in California cost federal, state and private health insurers \$193 million in hospital costs.”⁶⁰ That same study determined that “Medicare and MediCal, California’s Medicaid program, paid for more than two-thirds of the costs, while private insurers paid the rest.”⁶¹ Granted, coal-fired power plants are not the sole contributor of air pollution, but they are a significant producer of air pollution.⁶² In fact, coal-fired power plants are significant contributors of carbon dioxide, mercury emissions, nitrogen oxide emissions, ozone pollution or smog, and particulate matter pollution.⁶³ Furthermore, an EPA study found that “coal plants were found to release 67 different air toxics, many of which are

⁵⁸ For the FY 2008, EPA estimates that its 10 largest civil enforcement actions against stationary source Clean Air Act violations of emissions of sulfur oxides, nitrogen oxides, and particulate matter resulted in annual health benefits valued at \$35 billion. According to the EPA, some of these health benefits translated into thousands of avoided premature deaths, fewer emergency room visits, fewer cases of chronic and acute bronchitis, fewer nonfatal heart attacks, fewer cases of respiratory problems, and a reduction of days of people missing school or work. U.S. ENVIRONMENTAL PROTECTION AGENCY, EPA FY2008 ENFORCEMENT & COMPLIANCE ANNUAL RESULTS (2008), *available at* <http://www.epa.gov/compliance/resources/reports/endofyear/eoy2008/fy2008results.pdf>.

⁵⁹ ALAN H. LOCKWOOD ET AL., COAL’S ASSAULT ON HUMAN HEALTH 10, (2009), *available at* <http://www.psr.org/assets/pdfs/psr-coal-fullreport.pdf>.

⁶⁰ Kristina Shevory, *Health Costs of California Air Pollution*, NEW YORK TIMES, March 12, 2010, <http://greeninc.blogs.nytimes.com/2010/03/12/health-costs-of-california-air-pollution>.

⁶¹ *Id.*

⁶² See PHYSICIANS FOR SOCIAL RESPONSIBILITY, COAL-FIRED POWER PLANTS: UNDERSTANDING THE HEALTH COSTS OF A DIRTY ENERGY SOURCE, *available at* http://action.psr.org/site/DocServer/Coal_Power_Fact_Sheet.pdf?docID=2821.

⁶³ *Id.*

known or probable human carcinogens and neurotoxins that can harm brain development and irritate the respiratory system.”⁶⁴

Mercury, in particular, negatively impacts the health of ecosystems and the health of humans. The EPA has estimated “that about one third of U.S. [anthropogenic mercury] emissions are deposited within the contiguous U.S. and the remainder enters the global cycle.”⁶⁵ Mercury emissions are problematic, because there is a connection between blood mercury levels and intellectual performance, and the costs to society over “lifelong diminution in intelligence” has been estimated to be \$8.7 billion per year.⁶⁶ As a result, mercury is recognized as posing a public health threat,⁶⁷ since mercury is a neurotoxin.⁶⁸ The most dangerous form of mercury is the organic form of mercury or methylmercury,⁶⁹ which is produced by microbial activity in aquatic environments.⁷⁰ Methylmercury is the most dangerous form of mercury, because it is easily absorbed by the human body.⁷¹ Furthermore, methylmercury is a bioaccumulative environmental toxicant,⁷² and as a

⁶⁴ *Id.*

⁶⁵ U.S. Env'tl Prot. Agency, Human Exposure to Mercury, <http://www.epa.gov/hg/exposure.htm> (last visited February 27, 2010).

⁶⁶ PHYSICIANS FOR SOCIAL RESPONSIBILITY, COAL'S EFFECTS ON THE NERVOUS SYSTEM 32, *available at* <http://www.psr.org/assets/pdfs/coals-assault-chapter-5.pdf>.

⁶⁷ *See* U.S. Env'tl Prot. Agency, Former Mercury Mine Above Cottage Grove Reservoir Proposed for Federal Cleanup List, <http://yosemite.epa.gov/opa/admpress.nsf/d0cf6618525a9efb85257359003fb69d/d76a7f9d4c5368448525763a007f0099!OpenDocument> (last visited February 27, 2010).

⁶⁸ U.S. Env'tl Prot. Agency, Human Health and Mercury, <http://www.epa.gov/hg/health.htm> (last visited February 27, 2010).

⁶⁹ *See* U.S. Env'tl Prot. Agency, Health Effects and Mercury, <http://www.epa.gov/hg/effects.htm> (last visited February 27, 2010).

⁷⁰ U.S. Env'tl Prot. Agency, Environmental Effects, <http://www.epa.gov/hg/eco.htm> (last visited on March 22, 2010).

⁷¹ Laura Griesbauer, Methylmercury Contamination in Fish and Shellfish, <http://www.csa.com/discoveryguides/mercury/review.pdf> (last visited April 13, 2010).

⁷² Wikipedia, Methylmercury, <http://en.wikipedia.org/wiki/Methylmercury> (last visited on March 22, 2010).

result, undergoes biomagnification within food chains.⁷³ As a result, seafood consumption is directly related to methylmercury intake by humans.⁷⁴ In fact, the Food and Drug Administration (FDA) and the EPA advise “women who may become pregnant, pregnant women, nursing mothers, and young children to avoid some types of fish and eat fish and shellfish that are lower in mercury.”⁷⁵ Despite warnings, according to the EPA, “it is estimated that more than 300,000 newborns each year may have increased risk of learning disabilities associated with in utero exposure to methylmercury.”⁷⁶

In *Fellner v. Tri-Union Seafoods, L.L.C.*, a litigant successfully brought a toxic tort claim against Tri-Union Seafoods, which “produces, cans and distributes [the] Chicken-of-the-Sea brand tuna fish” over mercury poisoning.⁷⁷ In the lawsuit, plaintiff Deborah Fellner alleged that she obtained mercury poisoning from eating the company’s canned albacore tuna. Tri-Union Seafoods argued that “Fellner’s state claim for damages [was] preempted by federal law.”⁷⁸ However, the Third Circuit Court of Appeals disagreed and reasoned that “state law is not preempted whenever an agency has merely

⁷³ FRANCES SOLOMON, *IMPACTS OF METALS ON AQUATIC ECOSYSTEMS AND HUMAN HEALTH* (2008), available at <http://www.infomine.com/publications/docs/Mining.com/Apr2008c.pdf>.

⁷⁴ See Raquel Rutledge, Mercury in sushi can hit risky levels, *MILWAUKEE JOURNAL SENTINEL*, Jan. 11, 2008, <http://www.jsonline.com/news/29548599.html> (“But while sushi is packed with protein and essential omega-3 fatty acids, some types are also tainted with methyl mercury, a dangerous neurotoxin that causes brain damage in babies and other problems for adults who ingest too much. . . . Tests showed the two pieces of tuna had potentially dangerous, and nearly illegal, levels of mercury. Most of the other samples, such as shrimp, salmon and mackerel, contained only trace amounts.”).

⁷⁵ U.S. Food and Drug Admin., Seafood, <http://www.fda.gov/food/foodsafety/product-specificinformation/seafood/> (last visited on March 22, 2010).

⁷⁶ U.S. Envtl Prot. Agency, Human Exposure to Mercury, <http://www.epa.gov/hg/exposure.htm> (last visited on March 22, 2010).

⁷⁷ *Fellner v. Tri-Union Seafoods, L.L.C.*, 539 F.3d 237, 241 (3rd Cir. 2008), *cert. denied*, 129 S.Ct. 1987 (2009).

⁷⁸ *Id.* at 242.

‘studied’ or ‘considered’ an issue; state law is preempted when federal *law* conflicts with state law.”⁷⁹

A very similar issue was litigated in California with opposite results. In *People ex rel. Lockyer v. Tri-Union Seafoods, LLC*,⁸⁰ the State of California wanted to force tuna canners “to place a Proposition 65 compliant health warning on defendants’ tuna cans because of the potential health risks of methylmercury in canned tuna.”⁸¹ The tuna canners failed to comply, and the FDA sent a letter to the California Attorney General arguing that Proposition 65 conflicted with FDA advisories on seafood consumption. As a result, the FDA determined that “Proposition 65 warnings frustrate FDA’s carefully considered and nuanced approach to advising the public concerning the benefits and risks of consuming canned tuna.”⁸² The Superior Court of California found that the Attorney General’s lawsuit was preempted by federal law, since “it is impossible for the Tuna Canners to comply with the FDA/EPA 2004 Advisory as well as Proposition 65’s warning requirement.”⁸³ The court reasoned that “the Tuna Canners cannot comply with Proposition 65 without rendering their products misbranded under federal law.”⁸⁴ The

⁷⁹ *Id.* at 254.

⁸⁰ *People ex rel. Lockyer v. Tri-Union Seafoods, LLC*, No. CGC-01-402975, 2006 WL 1544384 (Super. Ct. Cal. May 11, 2006), *aff’d*, 171 Cal.App.4th 1549 (2009).

⁸¹ *Id.* at *1.

⁸² *Id.* at *7.

⁸³ *Id.* at *55.

⁸⁴ *Id.* at *60.

tuna canners also argued that “virtually all methylmercury in canned tuna is naturally occurring.”⁸⁵ The court agreed with the tuna canners⁸⁶:

The Tuna Canners met their burden of proof that virtually all methylmercury in canned tuna is naturally occurring by providing substantial evidence through credible expert witnesses. The State’s witness conceded that up to seventy percent of methylmercury in tuna is naturally occurring.

It appears from the evidence that methylmercury is a natural constituent of tuna, and is almost exclusively absorbed from the ocean environment independently of human pollution. The Tuna Canners do not put methylmercury into canned tuna, and there is no known way for them to remove methylmercury from their products.

Despite the California Superior Court’s findings, a U.S. Geological Survey study found that “mercury levels in the North Pacific Ocean water have risen about 30 percent over the last 20 years[, and the study] project[ed] a 50 percent increase in Pacific Ocean mercury levels by the year 2050 based on published projections of increases in mercury emissions over the same timeframe.”⁸⁷

Other environmental issues associated with coal-fired power plants include acid fallout or acid rain.⁸⁸ Sulfur dioxide and nitrogen oxide emissions from coal-fired power plants are converted into acids that fall with rain and impact the chemical composition of freshwater ecosystems by making them more acidic.⁸⁹ Therefore, damaged ecosystems

⁸⁵ *Id.* at *33.

⁸⁶ *Id.* at *72.

⁸⁷ U.S. Geological Survey, A New Source of Methylmercury Entering the Pacific Ocean, http://toxics.usgs.gov/highlights/pacific_mercury.html (last visited on March 22, 2010).

⁸⁸ U.S. Env’tl Prot. Agency, Reducing Acid Rain, <http://www.epa.gov/oar/cao/peg/acidrain.html> (last visited April 13, 2010).

⁸⁹ U.S. Env’tl Prot. Agency, What is Acid Rain?, <http://www.epa.gov/acidrain/what/index.html> (last visited February 27, 2010).

translate into economic loss for communities that depend on recreational fishing and tourism.⁹⁰ Another environmental issue connected to burning coal is the eutrophication of aquatic ecosystems as a consequence of nitrogen deposition.⁹¹ Eutrophication is the growth of aggressive algal blooms that choke out other forms of aquatic life.⁹² When coal is burned, nitrogen pollution is produced, which increases the nitrogen deposition over landscapes and aquatic ecosystems.⁹³ As a result, too many nutrients cause algal blooms result in fish kills and choked waterways. Consequently, eutrophication can also translate into economic loss for communities⁹⁴:

KSU researchers estimate that losses in recreational use of the waters (swimmers and skiers too grossed out to jump in or anglers not anxious to pull fish from some nasty-smelling, algae-covered lake) could exceed \$1 billion a year. Diminished value of waterfront property due to eutrophic waters was estimated to range from \$300,000 to \$2.8 billion per year. Conservative costs of cleaning up drinking water that's been impaired by eutrophication exceeds \$800,000 per year. And even the costs of trying to save threatened and endangered species living in oxygen-starved waters could cost some \$45 million a year.

⁹⁰ See U.S. Env'tl Prot. Agency, Effects of Acid Rain - Surface Waters and Aquatic Animals, http://www.epa.gov/acidrain/effects/surface_water.html (last visited April 13, 2010).

⁹¹ See Mark E. Fenn et al., *Ecological effects of nitrogen deposition in the Western United States*, 53 *BIOSCIENCE* 404 (2003), available at http://www.fs.fed.us/psw/publications/fenn/psw_2003_fenn012.pdf ("Western ecosystems affected by N deposition generally fall into one of three categories: (1) sites downwind of large urban source areas; (2) regions with a mix of emissions sources that may include urban, mobile, agricultural, and industrial sources; and (3) sites near a large point source of N (e.g., an industrial complex or a coal-burning power plant).").

⁹² See USGS, Eutrophication, <http://toxics.usgs.gov/definitions/eutrophication.html> (last visited April 13, 2010) ("Eutrophication is a process whereby water bodies, such as lakes, estuaries, or slow-moving streams receive excess nutrients that stimulate excessive plant growth (algae, periphyton attached algae, and nuisance plants weeds). This enhanced plant growth, often called an algal bloom, reduces dissolved oxygen in the water when dead plant material decomposes and can cause other organisms to die.").

⁹³ See Chesapeake Bay Foundation, CBF Report Finds Surry Coal-Fired Power Plant Would Increase Mercury, Nitrogen Pollution Across Virginia, <http://www.cbf.org/Page.aspx?pid=1449> (last visited April 13, 2010) ("Nitrogen pollution is a chief cause of the massive algal blooms and 'dead zones' that appear annually in Hampton Roads and the Chesapeake Bay, threatening fish, crabs, and oysters and crippling the state's seafood industry.").

⁹⁴ Janet Raloff, *Costs of Choked-Up Waters*, *SCIENCE NEWS*, Nov. 13, 2008, http://www.sciencenews.org/view/generic/id/38559/title/Costs_of_Choked-Up_Waters; See also Walter K. Dodds et al., *Eutrophication of U.S. Freshwaters: Analysis of Potential Economic Damages*, 43(1) *ENVIRON. SCI. TECHNOL.* 12 (2009).

Despite the aforementioned environmental impacts from coal utilization, the coal industry peddles coal as a clean energy source merely because of unproven carbon capture and storage technology or CCS, which “involves capturing carbon dioxide (CO₂) from emission sources, and injecting it into deep underground geologic formations below the lowest source of drinking water.”⁹⁵ CCS is prohibitively expensive technology,⁹⁶ and the underground storage of carbon is not an option in all areas, “since economic carbon capture and storage is site-dependent and difficult to retrofit.”⁹⁷ Also, there are health risks associated with CCS. According to the *Journal of the American Medical Association*, “potential health risks of CCS include asphyxiation of humans and animals, compromise of safe drinking water supplies, in addition to the well-known cardiorespiratory disease and mortality consequences of continued coal combustion.”⁹⁸ Furthermore, “injecting carbon dioxide into or near underground aquifers leads to the formation of carbonic acid. . . . [which] can dramatically alter water quality by increasing the leaching of contaminants such as arsenic, lead, mercury, and organic compounds.”⁹⁹

⁹⁵ FREDRIC P. ANDES & KARI A. EVANS, CARBON CAPTURE AND STORAGE: ANALYSIS OF POTENTIAL LIABILITIES ASSOCIATED WITH GROUNDWATER CONTAMINATION DUE TO GEOLOGICAL SEQUESTRATION OPERATIONS 1 (2008), available at <http://www.appanet.org/files/PDFs/APPA%20CCS%20white%20paper%20Waters%20of%20the%20US.pdf>.

⁹⁶ See David G. Victor & Varun Rai, *Dirty Coal is Winning*, NEWSWEEK, Jan. 12, 2009, available at <http://www.newsweek.com/id/177684> (“The problem is that clean-coal plants are a lot more expensive than conventional “dirty coal” technology, and the financial crisis is obliterating schemes that would have paid the extra cost.”).

⁹⁷ Wikipedia, Hydrogen economy, http://en.wikipedia.org/wiki/Hydrogen_economy. See also MCKINSEY & COMPANY, CARBON CAPTURE & STORAGE: ASSESSING THE ECONOMICS 7 (2008), available at http://www.mckinsey.com/client-service/ccsi/pdf/ccs_assessing_the_economics.pdf (“Retrofitting of existing power plants is likely to be more expensive than new installations, and economically feasible only for relatively new plants (with high efficiencies).”).

⁹⁸ John Fogarty & Michael McCally, Health and Safety Risks of Carbon Capture and Storage, JAMA 67, 67 (2010).

⁹⁹ *Id.* at 68.

Even if CCS could be implemented throughout the United States, it does not neutralize other negative impacts that are associated with coal utilization. For example, as previously discussed, surface and underground mining result in environmental and property damage. Also, as stated previously, coal-fired power plants in the United States are significant emitters of mercury pollution. CCS does not mitigate or remedy these negative side effects, so to characterize coal energy as clean on the basis of CCS is seriously misleading.

In addition to the pollutants released into the atmosphere when coal is burned, there are wastes produced from burning coal that are not released into the atmosphere, and these coal combustion wastes can result in environmental and health damage. In fact, “without proper monitoring and safeguards, disposing of toxic coal combustion waste can pose serious dangers to nearby ground and surface waters—and the people who rely on these sources for safe drinking water.”¹⁰⁰ Due to the Kingston Fossil Plant spill, perhaps the best known coal combustion waste is fly ash. As the aftermath of the Kingston Fossil Plant spill has shown, fly ash has the potential to cause catastrophic environmental damage and property damage. In addition to the *Exxon Valdez* oil spill, one of the greatest environmental disasters was the Kingston Fossil Plant coal fly ash slurry spill. It is estimated that “5.4 million cubic yards [of wet coal ash], or enough to flood more than 3,000 acres one foot deep” spilled from the ash pond at the Kingston Fossil Plant.¹⁰¹ In fact, the Kingston fly ash spill was “100 times bigger than the *Exxon Valdez* oil spill in

¹⁰⁰ NATURAL RESOURCES DEFENSE COUNCIL, DANGEROUS DISPOSALS: KEEPING COAL COMBUSTION WASTE OUT OF OUR WATER SUPPLY (2007), available at <http://www.nrdc.org/health/files/coalwater.pdf>.

¹⁰¹ Shaila Dewan, *Tennessee Ash Flood Larger Than Initial Estimate*, NEW YORK TIMES, Dec. 26, 2008, <http://www.nytimes.com/2008/12/27/us/27sludge.html>.

1989[, and] the cleanup of the river, which will take years to complete, is expected to cost as much as \$1 billion.”¹⁰² Furthermore, a study found that ash from the Kingston fly ash spill “contained high levels of toxic metals and radioactivity.”¹⁰³ As a result of its toxicity, fly ash has been blamed for numerous health problems, so fly ash has been the subject of various lawsuits.

For example, in *Government of Dominican Republic v. AES Corp.*,¹⁰⁴ the Government of the Dominican Republic sued energy companies for dumping coal ash onto its land and beachfronts. The Dominican Republic alleged that the AES Corporation “formed a civil conspiracy . . . in order to dispose of hazardous coal ash in a manner less expensive than safe disposal.”¹⁰⁵ More specifically the Dominican Republic alleged that the AES conspired to pollute “Manzanillo and Samana Bay, wrecked the beach, caused nearby residents to suffer physical injuries that required the state-run healthcare system to provide medical care, hampered tourism, and caused business in the region to suffer.”¹⁰⁶ In order to remedy the wrong, the Dominican Republic asked for “compensatory and punitive damages for environmental damages (including removing the ash, restoring local ecology, and monitoring cleanup), healthcare costs for injured residents, and economic damages for the loss of tourism.”¹⁰⁷ The defendants argued that the plaintiffs did not

¹⁰² Jeff Goodell, *Coal's Toxic Sludge*, ROLLING STONE, March 17, 2010, http://www.rollingstone.com/politics/story/32742962/coals_toxic_sludge.

¹⁰³ Tim Lucas, *Toxic Coal Ash Threatens Health And Environment*, DUKE UNIVERSITY, Aug. 18, 2009, <http://news.duke.edu/2009/08/toxiccoal.html>.

¹⁰⁴ *Government of Dominican Republic v. AES Corp.*, 466 F. Supp. 2d 680 (E.D. Va. 2006).

¹⁰⁵ *Id.* at 684.

¹⁰⁶ *Id.*

¹⁰⁷ *Id.* at 686.

have standing to bring suit. However, the court determined that the plaintiffs had “standing to bring suit for compensatory damages to remediate the pollution damages to Manzanillo and Samana Bay because all three standing requirements.”¹⁰⁸ In late 2009, another lawsuit was filed against the AES Corporation alleging that the company “caused horrendous birth defects, lung injuries, and other acute and chronic medical problems from illegally dumping 100 million pounds of toxic coal ash onto a pristine Caribbean beachfront.”¹⁰⁹

Furthermore, courts have determined that fly ash can be considered a hazardous waste under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) if the fly ash contained one of the listed hazardous wastes under CERCLA.¹¹⁰ However, under the Resource Conservation and Recovery Act or RCRA, the EPA considers fly ash a special waste, utility waste, or fossil fuel combustion (FFC) waste, which “[has] been exempted from federal hazardous waste regulations under Subtitle C of the Resource Conservation and Recovery Act (RCRA).”¹¹¹ Despite being expressly exempted from RCRA, fly ash is considered more radioactive than nuclear waste¹¹²:

¹⁰⁸ *Id.* at 688.

¹⁰⁹ PRforLAW, *Illegally Dumping 100 Million Pounds of Toxic Coal Ash Waste Onto A Pristine Dominican Republic Beach, U.S. Power Corporation Created A Genetic Time Bomb, Mass Tort Complaint Alleges*, <http://www.prforlaw.com/news/LPK%20AES%20News%20Release%20FINAL.pdf> (last visited March 29, 2010).

¹¹⁰ *See* *United States v. Conservation Chem. Co.*, 619 F.Supp. 162 (D.C. Mo. 1985).

¹¹¹ U.S. Env'tl Prot. Agency, *Fossil Fuel Combustion Waste*, <http://www.epa.gov/osw/nonhaz/industrial/special/fossil/index.htm> (last visited February 8, 2010).

¹¹² Mara Hvistendahl, *Coal Ash Is More Radioactive than Nuclear Waste*, *SCIENTIFIC AMERICAN*, Dec. 13, 2007, <http://www.scientificamerican.com/article.cfm?id=coal-ash-is-more-radioactive-than-nuclear-waste>.

[T]he waste produced by coal plants is actually more radioactive than that generated by their nuclear counterparts. In fact, the fly ash emitted by a power plant—a by-product from burning coal for electricity—carries into the surrounding environment 100 times more radiation than a nuclear power plant producing the same amount of energy.

At issue is coal's content of uranium and thorium, both radioactive elements. They occur in such trace amounts in natural, or "whole," coal that they aren't a problem. But when coal is burned into fly ash, uranium and thorium are concentrated at up to 10 times their original levels.

Fly ash uranium sometimes leaches into the soil and water surrounding a coal plant, affecting cropland and, in turn, food. People living within a "stack shadow"—the area within a half- to one-mile (0.8- to 1.6-kilometer) radius of a coal plant's smokestacks—might then ingest small amounts of radiation. Fly ash is also disposed of in landfills and abandoned mines and quarries, posing a potential risk to people living around those areas.

In a 1978 paper for *Science*, J. P. McBride at Oak Ridge National Laboratory (ORNL) and his colleagues looked at the uranium and thorium content of fly ash from coal-fired power plants in Tennessee and Alabama. To answer the question of just how harmful leaching could be, the scientists estimated radiation exposure around the coal plants and compared it with exposure levels around boiling-water reactor and pressurized-water nuclear power plants.

The result: estimated radiation doses ingested by people living near the coal plants were equal to or higher than doses for people living around the nuclear facilities. At one extreme, the scientists estimated fly ash radiation in individuals' bones at around 18 millirems (thousandths of a rem, a unit for measuring doses of ionizing radiation) a year. Doses for the two nuclear plants, by contrast, ranged from between three and six millirems for the same period. And when all food was grown in the area, radiation doses were 50 to 200 percent higher around the coal plants.

In addition to being burned by power plants, significant amounts of coal are burned underground. Although underground coal fires do result from natural processes, they do occur as a consequence of anthropogenic activities. For example, coal mining activities such as "underground and surface mine operations, coal stockpiles and coal

waste piles” can spark coal fires and cause “ground surface subsidence, air pollution, forest and brush fires, and destruction of property and surface improvements, in addition to the potential massive loss of energy resources.”¹¹³ In the United States, there are 200 underground coal fires burning around 20 states.¹¹⁴ Perhaps the most infamous coal fire is the Centralia, Pennsylvania, coal fire, which has been burning since 1962.¹¹⁵

Furthermore, coal fires are a “worldwide catastrophe”¹¹⁶:

Across the globe, thousands of coal fires are burning. Nearly impossible to reach and extinguish once they get started, the underground blazes threaten towns and roads, poison the air and soil and, some say, worsen global warming. The menace is growing: mines open coal beds to oxygen; human-induced fires or spontaneous combustion provides the spark. The United States, with the world’s largest coal reserves, harbors hundreds of blazes from Alaska to Alabama. Pennsylvania, the worst-afflicted state, has at least 38—an insignificant number compared with China . . . and India, where poverty, old unregulated mining practices and runaway development have created waves of Centralias. “It’s a worldwide catastrophe,” says geologist Anupma Prakash of the University of Alaska at Fairbanks.

Like coal-fired power plants, these coal fires also release large amounts of pollutants—like carbon dioxide and mercury—into the atmosphere.¹¹⁷ As a result, these coal fires, like coal-fired power plants, are significant contributors of pollutants into the atmosphere.

Social Justice Impacts

¹¹³ Gary J. Colaizzi, *Prevention, control and/or extinguishment of coal seam fires using cellular grout*, 59 Int’l J. of Coal Geology 75, 75 (2004).

¹¹⁴ See Mark Clayton, *Centralia, Pa., coal fire is one of hundreds that burn in the U.S.*, THE CHRISTIAN SCIENCE MONITOR, Feb. 5, 2010, <http://www.csmonitor.com/Environment/2010/0205/Centralia-Pa.-coal-fire-is-one-of-hundreds-that-burn-in-the-U.S.>

¹¹⁵ Katharine Sanderson, *50-year-old fire put out*, NATURE, Nov. 22, 2007, <http://www.nature.com/news/2007/071122/full/news.2007.281.html>.

¹¹⁶ Kevin Krajick, *Fire in the Hole*, SMITHSONIAN MAGAZINE, May 2005, <http://www.smithsonianmag.com/travel/10013541.html>.

¹¹⁷ Michael Reilly, *Pollution from Underground Coal Fires Tallied*, DISCOVERY NEWS, Nov 4, 2009, <http://news.discovery.com/earth/coal-fire-pollution-global.html>.

In addition to the aforementioned economic, environmental, and health impacts, there are social justice impacts that result from coal utilization—particularly during the mining processes. For example, black lung disease has been a costly problem for coal miners and their families. Black lung disease or coal workers’ pneumoconiosis is caused by the inhalation of coal dust.¹¹⁸ According to the CDC, “in the last decade, over 10,000 miners have died of coal workers’ pneumoconiosis, or what is commonly called black lung disease.”¹¹⁹ The federal government has provided relief to miners suffering from black lung through the Black Lung Benefits Act, which provides “compensation to coal miners who are totally disabled by pneumoconiosis arising out of coal mine employment, and to survivors of coal miners whose deaths are attributable to the disease[, and] the Act also provides eligible miners with medical coverage for the treatment of lung diseases related to pneumoconiosis.”¹²⁰ Recently, Senator Robert C. Byrd introduced amendments to the Patient Protection and Affordable Care Act of 2010, which was signed into law by President Obama, to expand coverage to coal miners and their families under the Black Lung Benefits Act.¹²¹ The changes to the Black Lung Benefits Act create a presumption

¹¹⁸ Centers for Disease Control and Prevention & National Institute for Occupational Safety and Health, Pneumoconioses, <http://www.cdc.gov/niosh/topics/pneumoconioses> (last visited April 10, 2010).

¹¹⁹ Centers for Disease Control and Prevention, Faces of Black Lung, http://www.cdc.gov/NIOSH/blog/nsb081808_blacklung.html (last visited April 10, 2010); *See also* Centers for Disease Control and Prevention & National Institute for Occupational Safety and Health, Work-Related Lung Disease (WoRLD) Surveillance System, <http://www2a.cdc.gov/drds/WorldReportData/SectionDetails.asp?ArchiveID=1&SectionTitleID=2> (last visited April 10, 2010).

¹²⁰ U.S. Department of Labor, About the Black Lung Program, <http://www.dol.gov/owcp/dcmwc/> (last visited April 10, 2010).

¹²¹ U.S. Department of Labor, Important Notice Regarding Recent Changes in the Black Lung Benefits Act, <http://www.dol.gov/owcp/dcmwc/ImportantNotice.htm> (last visited April 10, 2010).

that the miner, if he or she can prove so, obtained black lung from working in coal mines¹²²:

“[I]f a miner can prove that he has a totally disabling lung disease and that he worked in the mines for 15 years, then the presumption is that he got this disease because of his employment and is entitled to black lung benefits.

“The burden of proving otherwise is then on the company, which is where it should be. As Sen. Byrd has pointed out, if a company did not take the proper and legally-required steps to protect its employees from too much exposure to respirable coal dust, then by all that is fair and right it has the responsibility to compensate that miner.

Black lung disease is entirely preventable,¹²³ since mining companies are required to limit coal dust within their coal mines.¹²⁴ Nonetheless, violations exist. In fact, “coal companies are cited for dust violations far more often than any other problem at underground mines, according to U.S. Mine Safety and Health Administration data[, and] . . . mine operators were cited more than 7,000 times — about 20 citations per day — for allowing unsafe accumulations of dust underground” in 2005.¹²⁵ Furthermore, although regulations exist, enforcement is weak. Coal companies routinely challenge and

¹²² United Mine Workers of America, Passage of Byrd black lung amendments in health care bill a victory for miners, widows, <http://www.umwa.org/?q=news/passage-byrd-black-lung-amendments-health-care-bill-victory-miners-widows> (last visited April 10, 2010).

¹²³ Dr. Ranit Mishori, *Miners Face Growing Black-Lung Risk*, PARADE MAGAZINE, March 28, 2010, <http://www.parade.com/news/intelligence-report/archive/100328-miners-face-growing-black-lung-risk.html>.

¹²⁴ 30 U.S.C. § 814 (2009).

¹²⁵ Ken Ward Jr., *Beyond Sago: Coal dust most common violation*, THE CHARLESTON GAZETTE, December 17, 2006, <http://sundaygazette.com/News/BeyondSago/200612170006>.

settle safety violations to avoid enforcement.¹²⁶ This tactical strategy to minimize the impact of regulations has created a monstrous backlog and administrative nightmare¹²⁷:

The backlog of contested citations has grown since the 2006 Mine Improvement and New Emergency Response Act boosted the number of inspectors, stiffened fines and toughened safety regulations for the nation's coal mines, inadvertently overloading the Federal Mine Safety and Health Review Commission, which has a backlog of more than 16,600 contested cases. The commission's judges are each handling more than 900 cases a year, compared with the 175 a year typically handled by judges at the Occupational Safety and Health Administration, which oversees other workplaces. Two-thirds of penalties are being litigated, according to the House Education and Labor Committee.

Mine worker safety is another issue. Although in modern times federal regulations have improved working conditions in mines, major accidents still occur.¹²⁸ For example, twelve men were killed in the Sago Mine disaster on January 2, 2006.¹²⁹ More recently, “an explosion that occurred on April 5, 2010 at Massey Energy's Upper Big Branch coal mine” in West Virginia resulted in the death of twenty-nine coal miners.¹³⁰ These major accidents are connected to coal companies skirting federal regulations.¹³¹ For example, the Upper Big Branch Mine has been cited for fifty-seven

¹²⁶ Kimberly Kindy, Steven Mufson & Ed O'Keefe, *Mines avoid crackdowns by challenging safety citations*, WASHINGTON POST, April 10, 2010, <http://www.washingtonpost.com/wp-dyn/content/article/2010/04/09/AR2010040905653.html>.

¹²⁷ *Id.*

¹²⁸ See Ben Adducchio, *Upper Big Branch brings into question safety of non-union mines*, WEST VIRGINIA PUBLIC BROADCASTING, April 13, 2010, <http://www.wvpubcast.org/newsarticle.aspx?id=14376> (“In the last five years, fatal accidents at three non-union West Virginia coal mines have resulted in 43 fatalities.”).

¹²⁹ Wikipedia, Sago Mine disaster, http://en.wikipedia.org/wiki/Sago_Mine_disaster (last visited April 13, 2010).

¹³⁰ Wikipedia, Upper Big Branch Mine disaster, http://en.wikipedia.org/wiki/Upper_Big_Branch_Mine_disaster (last visited April 13, 2010).

¹³¹ Margaret Cronin Fisk, Brian K. Sullivan & Karen Freifeld, *Massey's Blankenship Fought Regulators, Town, Maid as Coal CEO*, BUSINESSWEEK, April 10, 2010, <http://www.businessweek.com/news/2010-04-10/massey-s-blankenship-fought-regulators-town-maid-as-coal-ceo.html>.

safety violations one month before the accident alone.¹³² In fact, in the past five years, the Upper Brach Mine was cited for safety violations a total of 1342 times.¹³³

In addition to bearing the burden of losing loved ones, coal mining communities face increased health risks as well. For example, a 2001 West Virginia University study “found that residents of coal mining communities have a 70 percent increased risk for developing kidney disease; a 64 percent increased risk for developing chronic pulmonary disease like emphysema; and are 30 percent more likely to report hypertension.”¹³⁴ These communities also bear the burdens of proximate environmental degradation. In fact, the “resulting waste that then fills valleys and streams can significantly compromise water quality, often causing permanent damage to ecosystems and rendering streams unfit for swimming, fishing and drinking.”¹³⁵ However, although government officials may have failed to enforce regulations adequately, these communities are not without remedies. The court system is an essential forum to litigate issues arising from coal utilization activities, since litigation is an important tool to force change if Congress and administrative officials are slow to act.

¹³² Chris McGreal, *Hopes fade for US miners still missing after explosion*, THE GUARDIAN, April 6, 2010, <http://www.guardian.co.uk/world/2010/apr/06/us-miners-missing-explosion>.

¹³³ Jerry Markon, David A. Fahrenthold & Kimberly Kindy, *Mine company faulted on safety issues, regulators say*, WASHINGTON POST, April 8, 2010, <http://www.washingtonpost.com/wp-dyn/content/article/2010/04/06/AR2010040604984.html>.

¹³⁴ Don Hopey, *W.Va. study unearths higher health risks in coal mining communities*, PITTSBURGH POST-GAZETTE, April 02, 2008, <http://www.post-gazette.com/pg/08093/869656-114.stm>.

¹³⁵ U.S. Env'tl Prot. Agency, EPA Issues Comprehensive Guidance to Protect Appalachian Communities From Harmful Environmental Impacts of Mountaintop Mining, <http://yosemite.epa.gov/opa/admpress.nsf/e77fdd4f5afd88a3852576b3005a604f/4145c96189a17239852576f8005867bd!OpenDocument> (last visited April 13, 2010).

Part II: Litigation Remedies for Coal Contamination from Mining to Combustion to Sequestration

Remedies are “anything a court can do for a litigant who has been wronged or is about to be wrong.”¹³⁶ The remedy can be a money judgment to compensate for a wrong or take the form of an order from the court to compel the defendant to do something. Consequently, remedies might be specifically tailored by the court to prevent harm or mitigate harm, while others are designed to make the plaintiff whole. Furthermore, statutory laws are important in determining what remedies are available, because certain remedies may or may not be permitted by statute. Ultimately, the remedy available depends on the facts of the case and the jurisdiction where the case is tried.

Compensatory Remedies

The goal of compensatory damages is “to compensate the wronged party for the loss or injury sustained by the wrongdoer’s conduct” by placing “the wronged party, as nearly as possible, to the position the party would have been in had the wrongful conduct not occurred.”¹³⁷ Placing the plaintiff in the position he or she would have been in but for the wrong is sometimes called the “plaintiff’s original position” or the “plaintiff’s rightful position.”¹³⁸ In determining the plaintiff’s rightful position, compensatory damages are categorized as general or special. General damages “result from the violation complained of, or as damage that ‘the law implies or presumes.’”¹³⁹ Contrarily, special damages are

¹³⁶ DOUGLAS LAYCOCK, *MODERN AMERICAN REMEDIES* 1 (Aspen Publishers 2002) (1985).

¹³⁷ *Beaty v. McGraw*, 15 S.W.3d 819, 828-29 (Tenn. Ct. App. 1998).

¹³⁸ DOUGLAS LAYCOCK, *MODERN AMERICAN REMEDIES* 16 (Aspen Publishers 2002) (1985).

¹³⁹ *Id.* at 60 (quoting *Howard Supply Co. v. Wells*, 176 F. 512, 515 (6TH Cir. 1910)).

“proximately resulted, but do not always immediately result’ from the violation complained of.”¹⁴⁰ To illustrate the difference, “pain and suffering is so universally foreseeable as to be [a] general damage but that medical expenses are not.”¹⁴¹ As a result, medical expenses must be proven while pain and suffering may be generally alleged “and do not need to be specifically claimed.”¹⁴²

Damages caused by coal utilization include activities that result in real property damage and damage to chattels. For example, coal utilization activities can pollute a farmer’s stream that provides water to her livestock, and her livestock might become sick. The farmer can recover the diminution in value to her real property as a consequence of permanent damages to her real property. Loss of use is an appropriate remedy to recover lost profits or loss of income as a consequence of her livestock becoming sick. If the farmer’s children become sick from swimming in the polluted water, then any medical expenses are recoverable. In addition to recovering damages for economic losses, a plaintiff can potentially recover for noneconomic losses. For example, in a wrongful death action, damages might be awarded for a loss of companionship¹⁴³ or for a loss of the benefit of having an individual living in the household.¹⁴⁴ Economic damages recoverable in a wrongful death action include damages for a loss of services as they

¹⁴⁰ *Id.*

¹⁴¹ *Id.* at 60.

¹⁴² BLACK’S LAW DICTIONARY 417 (8th ed. 2004).

¹⁴³ See *Pasquale v. Ohio Power Co.*, 187 W.Va. 292, 310-311 (App. Div. 1992) (Widow of employee brought a wrongful death suit against a power company, and at trial was awarded money damages for “lost income plus \$5,000,000 for loss of companionship, sorrow, and mental anguish.”).

¹⁴⁴ *Kozar v. Chesapeake & O. Ry. Co.*, 449 F.2d 1238, 1244 (6TH Cir. 1971) (Due to a lack of evidence illustrating a close relationship, the Sixth Circuit Court of Appeals denied damages for the “loss of the care, attention and training his father would have provided him during both his minority and thereafter.”).

relate to economic benefits that were provided¹⁴⁵ or to compensate for funeral expenses.¹⁴⁶ In theory, depending on the facts of the case, evidence provided, jurisdiction or whether certain damages are allowed or limited by statute, any of these damages might be awarded due to injury from coal utilization activities.

The damage to real property and personal property can be either temporary or permanent. Consequently, the nature of the damage, particularly in cases involving a nuisance, reflects the compensatory remedy available.¹⁴⁷ Generally, if real property is permanently damaged or irreparable, then the measure of damages is diminution in market value or “the difference in values of the property before and after the injury.”¹⁴⁸ If the damage to real property is temporary and repairable, then “the measure of the damages is the reasonable cost of restoration plus the reasonable compensation for any loss of use of the property between the times of injury and restoration.”¹⁴⁹ To put it another way, if the damage to real property is temporary, then the proper measure of damages is the depreciation of useable value while the injury occurred.¹⁵⁰ In *Bartlett v.*

¹⁴⁵ *Hoyal v. Pioneer Sand Co., Inc.*, 188 P.3d 716, 721 (Colo. 2008) (The Supreme Court of Colorado discussing the “net pecuniary loss rule[, which] is intended to compensate the plaintiff for the loss of pecuniary benefits the decedent would have provided to him or her, had the decedent survived.”).

¹⁴⁶ DOUGLAS LAYCOCK, *MODERN AMERICAN REMEDIES* 153 (Aspen Publishers 2002) (1985) (Discussing that “all American jurisdictions provide funeral expenses and some measure of compensation for the financial support that decedent would have provided to dependents.”).

¹⁴⁷ *See Id.* at 68 (Discussing that the “law of nuisance distinguishes permanent damages, awarded when the nuisance appears to be permanent, and measured by the value of plaintiff’s property before and after the creation of the nuisance; from temporary damages, where the nuisance could be removed, and measured by the harm of putting up with the nuisance for however long it lasts”).

¹⁴⁸ *Upton Coal & Mining Co. v. Williams*, 1905 WL 1323, at *3 (Cir. Ct. Ohio, 1905).

¹⁴⁹ *Id.*

¹⁵⁰ *See Bartlett v. Hume-Sinclair Coal Min. Co.*, 351 S.W.2d 214 (Ct. App. Mo. 1961).

Hume-Sinclair Coal Min. Co., a coal company's mining activities caused damage to both real property and personal property of a farmer¹⁵¹:

[T]heir cattle and other livestock were sickened and depreciated in weight and value; plaintiffs lost the use of the water as a source of supply for livestock; they lost the use of valuable pasture and crop land; their trees were killed; the land adjacent to the streams was damaged and rendered useless; the entire farm was damaged and its value decreased.

The lower court awarded compensation to the plaintiffs, and the defendant appealed. On appeal, the defendant argued that the nuisance was not abatable, so “the [lower] court should have treated the nuisance as permanent and submitted the case upon the basis of permanent damages-to be recovered in one action.” However, the Kansas City Court of Appeals disagreed with the defendant's argument. The court determined that “the measure of damages is not the depreciation of the value of the property, but the depreciation of the rental or usable value during the continuance of the injury.”¹⁵² The court reasoned that the damage to the property was not permanent but temporary, since the evidence illustrated that the plaintiffs suffered temporary and special damages¹⁵³:

[The plaintiff suffered] the loss of the streams for farming purposes; the inconvenience suffered and extra labor required; loss of the recreational use of one of the streams; loss of and damage to livestock; loss of use of pasture lands; damage to land and trees; extra expenses incurred in providing a water supply.

¹⁵¹ *Bartlett v. Hume-Sinclair Coal Min. Co.*, 351 S.W.2d 214, 215 (Ct. App. Mo. 1961).

¹⁵² *Id.* at 217.

¹⁵³ *Id.*

As a result, since the evidence illustrated that the nuisance was abatable and the court believed that the property could recover, the damages should reflect the time period of the harm.¹⁵⁴

The court in *Bartlett* discussed loss of use and rental value. Rental value is a method used to measure loss of use.¹⁵⁵ For example, if the plaintiff's livestock did not die from drinking water polluted by the coal mining activities but became ill or weak, then the loss of use and the loss of services that the livestock provide are recoverable.¹⁵⁶ Furthermore, any actual damages resulting from veterinarian expenses would be recoverable as well. If livestock were killed as a consequence of drinking polluted water, then the plaintiff is entitled to recover the fair market value of the animals.¹⁵⁷ As a result, to recover damages to chattel such as livestock, the measure depends on whether the livestock were sickened or whether the livestock died as a consequence of the defendant's activities.

¹⁵⁴ See *Tennessee Coal, Iron & R. Co. v. Hamilton*, 100 Ala. 252 (Ala. 1893) (“[T]he measure of her recovery should be gauged by the injury she suffered in the actual pollution of the water while it lasted.”).

¹⁵⁵ See *Weyerhaeuser Co. v. Brantley*, 510 F.3d 1256, 1266 n.2 (10TH Cir. 2007) (“Weyerhaeuser’s general damages arguably include “loss of use of the land,” as measured by the rental value of the land for grazing purposes.”); See also 8 David A. Thomas, *Thompson on Real Property* § 67.06(a)(2) (ed. 1994) (“If temporary damages are recovered for harm to property, those damages are measured by the loss of the rental value or loss of use value of the property as a result of or during the continuance of the nuisance.”); See also 9 Michael Allan Wolf ed., *Matthew Bender, Powell on Real Property* § 64.07[3] (ed. 1994) (“When the harm caused by a nuisance is only temporary and can be abated, the measure of damages normally is the depreciation in the rental or use value of the affected property.”).

¹⁵⁶ See *Seaboard Oil Co. v. Britt*, 271 S.W. 1038, 1039 (Court of Appeals of Kentucky 1925) (“With respect to such animals as were made sick and which did not die from drinking the polluted water, the plaintiff was entitled to recover such damages as . . . the direct and proximate result of the wrongful conduct of the defendant in polluting the stream, if it did so, resulting in the loss of the use and service of such animal or animals, cost of the medical treatment, and attention rendered necessary by reason of such sickness, if any, not to exceed the amount claimed in the petition.”).

¹⁵⁷ See *Seaboard Oil Co. v. Britt*, 271 S.W. 1038, 1039 (Ct. App. Ky. 1925) (“[T]he value of . . . animals that died as a result of drinking the polluted water should be established by evidence and submitted to the jury by an instruction to find for the plaintiff . . . [for] the fair market value of the animal or animals.”).

In *Wheat v. Freeman Coal Mining Corp.*,¹⁵⁸ farmers brought a private nuisance action against a coal mining company and sought money damages for the tortious interference with the quiet use and enjoyment of their land. The plaintiffs alleged several types of damage to their property. According to the plaintiffs, the farm's soil was contaminated from leachate flowing out of the coal company's holding pond. Also, the plaintiffs alleged that significant amounts of coal dust and smoke blanketed their property¹⁵⁹:

[T]he smoke and dust were constant, heavy and annoying, prohibiting them from doing their work at home or from opening their windows; that the dust interfered with their water supply and infested their food, clothing and furniture; and that the dust damaged the exterior of their house, causing it to blacken.

Furthermore, the odor pollution associated with the defendant's activities "was worse than rotten eggs."¹⁶⁰ Additionally, "hydrogen sulphide in plaintiffs' house paint . . . indicated that the damage to the exterior had been caused by emissions from the operation of the coal mine."¹⁶¹ The defendant argued that the trial court erred in striking its affirmative defense that "by moving into an area known to be rich in coal, and therefore, likely to be the site of coal mining activity, [the plaintiff] had assumed the risk of any damage they might incur from such activities."¹⁶² However, the court determined that it was proper to strike the defense, because "in an action for nuisance, suitability of the location for the specific operation is a factor to be considered, *along with other*

¹⁵⁸ *Wheat v. Freeman Coal Mining Corp.*, 319 N.E.2d 290 (App. Ct. Ill. 1974).

¹⁵⁹ *Id.* at 293.

¹⁶⁰ *Id.* at 295.

¹⁶¹ *Id.*

¹⁶² *Id.* At 294.

factors, in determining whether the invasion of plaintiffs’ rights was unreasonable.”¹⁶³ As a result, the mere “presence of the coal mine would not, of itself, bar recovery.”¹⁶⁴ Furthermore, in order to determine liability, there must be evidence that the defendant’s conduct was intentional and unreasonable. The defendant argued “there was no evidence that indicated that its conduct was intentional and unreasonable under the test embraced in Section 822 of the Restatement of the Law of Torts.”¹⁶⁵ The court disagreed and found that “‘intentional’ for purposes of liability under Section 822 is defined as including knowledge that the invasion of another’s interest is resulting or substantially certain to result.”¹⁶⁶ In this case, the defendant’s activities were intentional, since there was evidence that the defendant had knowledge of the harm it was doing to the farmer’s property. For example, the court found that the “defendant knew of the burning and did nothing to stop it.”¹⁶⁷ Furthermore, the harm to the plaintiffs in *Wheat* was extensive—there was physical damage to the home, coal dust blanketed the plaintiff’s property, there was damage to the soil, and odor pollution was associated with the defendant’s coal mining activities. Therefore, the type of invasion to the plaintiffs’ rights was pervasive and unreasonable.

Lastly, in *Wheat*, the defendant contended that the exclusion of evidence illustrating “the value of plaintiffs’ premises” was improper.¹⁶⁸ However, the court found

¹⁶³ *Id.* at 294 (emphasis added).

¹⁶⁴ *Id.* at 294.

¹⁶⁵ *Id.* at 295.

¹⁶⁶ *Id.*

¹⁶⁷ *Id.* at 296.

¹⁶⁸ *Id.* at 297.

that “the measure of damages for nuisance is not the fair market value of plaintiffs’ land, but rather the damages are measured by the discomfort and the deprivation of the healthful use and comforts of the plaintiffs’ home.”¹⁶⁹ Furthermore, according to the court, “evidence of crop damage and other physical damage . . . did not go to any interference with the use and enjoyment of the house[, so] the evidence of physical damage obviously would not support very much more than the cost of actual repair proven.”¹⁷⁰ The court stressed that the jury’s award of damages was not excessive even though “the damages were nearly twice the fair market value of the house,” because “the damages legitimately took into account the extreme discomfort of the plaintiffs and the deprivation of the healthful use and comforts of their home over a three year period.”¹⁷¹

As in *Wheat*, another case determined that there is no action for a private nuisance if the coal company is located in a suitable location unless interference with the property interest is substantial and unreasonable. In *Patterson v. Peabody Coal Co.*,¹⁷² a farmer brought an action against a coal company alleging a private nuisance. According to the plaintiff and his witnesses¹⁷³:

[W]hen the [coal] drier began operation, soot and dust have come over on him, carried by the prevailing southwest winds, for hours and days at a time; that the land gets black, the fields and crops get black and so does a person working in the fields or garden; that dust gets inside the house, in food and bed clothing; garden stuff sometimes is not fit to eat; it affected his nostrils and throat; sometimes on hot summer nights it was necessary to sleep with windows closed; you couldn’t keep

¹⁶⁹ *Id.*

¹⁷⁰ *Id.* at 299.

¹⁷¹ *Id.*

¹⁷² *Patterson v. Peabody Coal Co.*, 122 N.E.2d 48 (App. Ct. Ill. 1954).

¹⁷³ *Id.* at 50-51.

the house clean; in drying laundry at times it got covered with black soot; water in the cistern (which drains from the roof) was not fit to drink; any water or milk left in open pails or buckets would get soot on it.

In this case, the plaintiff sought recovery for the “loss of value of comforts and conveniences only.”¹⁷⁴ However, unlike *Wheat*, the court held that the invasion of the plaintiff’s interest was not intentional or substantial. The court reasoned that the physical invasion was not intentional but uncertain, since “it [was] caused by spontaneous combustion.”¹⁷⁵ Furthermore, “the evidence showed defendant did all in its power to prevent it and to extinguish fire when it started.”¹⁷⁶ The defendant also provided witnesses that detailed the “methods used in treating the coal were the approved ones in the industry and met the recognized standards.”¹⁷⁷ As a result, the “plaintiff failed to prove any lack of care on behalf of defendant.”¹⁷⁸

Unlike the defendant in *Wheat*, the defendant’s behavior in *Patterson* did not seem unreasonable to the court. Ultimately, these nuisance cases are factually driven, and the court will apply a multi-factor analysis to determine whether a nuisance exists. Factors illustrating a nuisance include whether or not the defendant acted unreasonable, whether or not the defendant had knowledge that the invasion of another’s interest is resulting or substantially certain to result as a consequence of their actions, or whether or not there was an actual substantial invasion of another’s property interest, which is also

¹⁷⁴ *Id.* at 51.

¹⁷⁵ *Id.* at 52.

¹⁷⁶ *Id.*

¹⁷⁷ *Id.* at 51.

¹⁷⁸ *Id.* at 52.

driven by a multi-factor analysis (e.g., the amount of damage caused, the type of damage caused, where the damage occurred, and whether the damage is permanent or temporary). Also, in some circumstances, landowners might be liable for damages caused by their tenant. For example, a landowner that negligently uses his property and causes damages to neighboring landowners is liable for those damages even if the damages were caused by the landlord's tenant.

In *Green v. Asher Coal Min. Co.*,¹⁷⁹ a coal company leased land for strip mine, and the coal company failed to “restore the land to prevent soil erosion or excessive drainage along natural water courses.”¹⁸⁰ As a result, a lower riparian owner sustained property damage and brought suit against the landowner alleging that “vast quantities of loose rock, dirt and coal were washed down the mountainside, obstructing natural water courses, [and] causing the flooding of plaintiffs’ premises.”¹⁸¹ The plaintiff sued the landowner for failing “to exercise ordinary care in the use of its property and was guilty of wanton, reckless and wilful conduct.”¹⁸² The court stressed that the general rule is “the landlord is not liable for the negligent acts of his tenant.”¹⁸³ However, in this case, the court found that due to facts illustrating unreasonableness of the defendant, the landlord was liable for activities of his tenant. Consequently, the court determined that it “will not permit the owner to hide behind a lease.”¹⁸⁴ The court stressed that it limited its

¹⁷⁹ *Green v. Asher Coal Min. Co.*, 377 S.W.2d 68 (Ky. Ct. App. 1964).

¹⁸⁰ *Id.* at 69.

¹⁸¹ *Id.*

¹⁸² *Id.*

¹⁸³ *Id.*

¹⁸⁴ *Id.* at 70.

“decision to the particular facts alleged in [the] plaintiffs’ complaint.”¹⁸⁵ In this case, the defendant was maintaining a nuisance, but the court determined that the plaintiff had no right to maintain a nuisance¹⁸⁶:

While the landowner may consent to having his own land practically destroyed, he may not knowingly expose neighboring lands to injury likely to ensue therefrom and claim immunity from wrongdoing by virtue of a lease. He must act with reasonable prudence, and proof relating to the nature of the operation, the topography of the land, and the likelihood of injury may support a finding of liability.

In order for a plaintiff to succeed on a private nuisance claim, the plaintiff must show that the physical invasion was intentional, substantial, and unreasonable. The invasion is intentional if the defendant had knowledge that the invasion is occurring or is substantially certain to occur. A substantial or unreasonable physical invasion is determined by the facts of the case. For example, an invasion might be substantial if the activity impacts many of the plaintiff’s property interests. For example, mere odor pollution alone might not be enough, but odor pollution coupled with damage to the plaintiff’s home and damage to livestock, like in *Wheat*, might be enough for a court to determine that the physical invasion was substantial. Also, awarding compensatory damages for a substantial and unreasonable physical invasion might not be enough, so in order to maintain and protect the plaintiff’s rightful position, courts may issue an injunction to abate a nuisance to prevent future damages to the plaintiff.

Preventive Remedies

¹⁸⁵ *Id.* at 73.

¹⁸⁶ *Id.* at 73.

Preventative remedies “prevent harm before it happens, so that the issue of compensation never arises.”¹⁸⁷ These remedies can either be coercive or declaratory in nature. The injunction, in particular, is an important remedy used in environmental litigation, because “damages are an inadequate remedy for the loss of something irreplaceable.”¹⁸⁸ As a result, injunctions are an important remedy to avoid or prevent irreparable harm to the plaintiff. Nonetheless, in cases involving property damage and pollution caused by coal utilization activities, the appropriate remedy might be compensatory damages coupled with an injunction to prevent future harm. In order to receive the injunction, the plaintiff must show irreparable harm and that her interests are more important than the defendant’s. Otherwise, the court will deny the injunction but could still reward the plaintiff with money damages. Declaratory remedies are important too, since they are designed to “resolve disputes about the parties’ rights, [and] . . . prevent harm to the litigants by resolving uncertainty about their rights before either side has been harmed by erroneously relying on its own view of the matter.”¹⁸⁹ Like compensatory damages, declaratory judgments might be issued with an injunction.

Coercive remedies. Coercive remedies include injunctions and restraining orders. The injunction “is a court order, enforceable by sanctions for contempt of court, directing [the] defendant to do or refrain from doing some particular thing.”¹⁹⁰ Ripeness and mootness are pertinent legal doctrines to consider when seeking an injunction. For

¹⁸⁷ LAYCOCK, DOUGLAS, *MODERN AMERICAN REMEDIES* 3 (Chemerinsky et al. eds., Aspen Publishers 2002) (1985).

¹⁸⁸ *Id.* at 380.

¹⁸⁹ *Id.* at 4.

¹⁹⁰ *Id.* at 235.

example, before issuing an injunction, “there must be a ripe threat of injury.”¹⁹¹

Furthermore, the “defendant’s voluntary cessation of [the] allegedly wrongful conduct” may render a case involving an injunction moot, but “the fact that she has already done it once is sufficient to cause the court to take seriously [the] plaintiff’s fear that she will do it again.”¹⁹²

Injunctions can take many forms. For example, courts might issue a (1) mandatory injunction, which “orders an affirmative act or mandates a specified course of conduct”;¹⁹³ (2) prohibitory injunction, which “forbids or restrains an act”;¹⁹⁴ (3) preliminary injunction, which is temporary and “issued before or during trial to prevent an irreparable injury from occurring”;¹⁹⁵ or courts might issue a (4) permanent injunction, which is “granted after a final hearing on the merits.”¹⁹⁶ Before issuing a permanent injunction, the court might issue a preliminary injunction. A preliminary injunction “aim[s] to minimize the probable irreparable loss of rights caused by errors incident to hasty decision[s].”¹⁹⁷ When the court is considering a preliminary or permanent injunction, it balances the hardships to the parties. The plaintiff will win when requesting a permanent injunction “unless the hardship to the defendant is substantially disproportionate to the benefit” of the plaintiff, but when requesting a preliminary injunction, the “relative

¹⁹¹ *Id.* at 236.

¹⁹² *Id.* at 250.

¹⁹³ BLACK’S LAW DICTIONARY 800 (8th ed. 2004).

¹⁹⁴ *Id.*

¹⁹⁵ *Id.*

¹⁹⁶ *Id.*

¹⁹⁷ LAYCOCK, DOUGLAS, MODERN AMERICAN REMEDIES 445 (Chemerinsky et al. eds., Aspen Publishers 2002) (1985).

hardships must be balanced in light of the relative probability of success” of the plaintiff’s claims.¹⁹⁸ Furthermore, whether or not a court will issue an injunction depends on the facts of each case.

For example, in *Jedneak v. Minneapolis General Elec. Co.*,¹⁹⁹ plaintiffs attempted to abate a nuisance through an injunction. The nuisance consisted of particulates emitted from the smokestacks of an electrical power plant. Winds carried these particulates from the smokestacks and coal piles over to the plaintiffs’ properties. However, the power plant was located in an area “zoned by the city for heavy industrial use,” while the plaintiffs resided in an area “zoned for light industrial uses.”²⁰⁰ Nonetheless, according to the plaintiffs, their enjoyment of life was severely impacted by the power plant’s operations²⁰¹:

The windows must be closed, otherwise the cinders and dust come into the house. Once inside, the dust and cinders get into everything—food, clothing, fixtures, and rugs. Ordinary tasks, such as washing of clothes, become very difficult.

The court denied issuing the injunction. The court determined that “a substantial interference with the enjoyment of life in a residential area might very well be perfectly normal and inescapable in an industrial section[, so] the problem becomes one of measuring what is normal and what is abnormal interference with life in an industrial area.”²⁰² The court also stated that “the mere fact that an industry is located in an

¹⁹⁸ *Id.*

¹⁹⁹ *Jedneak v. Minneapolis General Elec. Co.*, 212 Minn. 226 (Minn. 1942).

²⁰⁰ *Id.* at 227-28.

²⁰¹ *Id.* at 227.

²⁰² *Id.* at 230.

industrial district does not in itself justify its maintenance as a nuisance.”²⁰³ Furthermore, although “negligence upon part of [the] defendant need not be proved, whether defendant was doing as much as reasonably was possible in the way of careful operation becomes the measure of whether there has been substantial interference with plaintiffs’ enjoyment of life.”²⁰⁴ Consequently, if the activity is being conducted in an area zoned for such activity, and the operation is reasonable and carefully carried out, then an injunction will likely fail. How the defendant is carrying out its activities is very relevant, and whether the defendant is using the appropriate technology to minimize pollution is also relevant in determining whether there is an action for a private or public nuisance.

Courts also consider the hardship on the defendant if an injunction is issued. Consequently, the court may find a nuisance but may refuse to enjoin the defendant’s activities. For example, in *Boomer v. Atlantic Cement Co.*,²⁰⁵ even though the defendant was using the best available technology, its cement plant poured “dust on the homes of seven plaintiffs.”²⁰⁶ The court found that the defendant’s cement plant created a nuisance, but the court “refused to enjoin [the] operation of the plant, because [the] defendant had invested \$45 million and employed more than 300 workers at the plant.”²⁰⁷ However, the plaintiffs were not completely without remedy, since the court awarded

²⁰³ *Id.*

²⁰⁴ *Id.* at 230-31.

²⁰⁵ *Boomer v. Atlantic Cement Co.*, 257 N.E.2d 870 (N.Y. 1970).

²⁰⁶ LAYCOCK, DOUGLAS, *MODERN AMERICAN REMEDIES* 405 (Chemerinsky et al. eds., Aspen Publishers 2002) (1985).

²⁰⁷ *Id.*

compensatory damages “for the reduced value of their homes.”²⁰⁸ This is a parallel theme in cases involving the operation of coal-fired power plants. Courts will not enjoin the activity through an injunction but may require the defendant to take other affirmative steps to lessen the nuisance by upgrading the plant’s pollution control devices for example. Also, it may be appropriate for compensatory damages, reflecting the diminution in value of the plaintiff’s property, to be awarded as well.

In addition to private property owners, States can bring an action to abate a nuisance, since States have quasi-sovereign interests that must be protected. As a result, state governments are challenging coal utilization activities—especially when costs, as a consequence of the negative side effects of coal utilization, are impacting state coffers and public health. For example, the Supreme Court of the United States, in *Massachusetts v. E.P.A.*,²⁰⁹ found that the State of Massachusetts had standing to petition the EPA’s refusal to regulate greenhouse gas emissions under the Clean Air Act. The Court declared that although states are not independent sovereigns, states have “quasi-sovereign interests” that must be protected.²¹⁰ As a result, states should seek judicial remedies, since states cannot invade another state “to force reductions in greenhouse gas emissions, [just like] it cannot negotiate an emissions treaty with China or India, and in some circumstances the exercise of its police powers to reduce in-state motor-vehicle emissions might well be pre-empted.”²¹¹ Recently, in advancing their quasi-sovereign

²⁰⁸ *Id.*

²⁰⁹ *Massachusetts v. E.P.A.*, 549 U.S. 497 (2007).

²¹⁰ *Id.* at 520.

²¹¹ *Id.* at 519.

interests, several states have brought lawsuits to abate public nuisances caused by coal-fired power plants.

In *North Carolina ex rel Cooper v. Tennessee Valley Authority*,²¹² the State of North Carolina filed a complaint against the Tennessee Valley Authority (TVA) over TVA's coal-fired power plants in Tennessee, Alabama, and Kentucky. The State of North Carolina asserted that TVA's emissions from its coal-fired power plants "adversely affect 'the health and welfare of citizens of [North Carolina], damage [the State's] natural resources and economy, and harm [the State's] finances.'"²¹³ As a result, North Carolina sought an injunction to mitigate the harm. TVA argued that North Carolina had "no justiciable claims against it for alleged air pollution."²¹⁴ However, the District Court disagreed. The court, like the Supreme Court of the United States in *Massachusetts v. E.P.A.*, reasoned that States have quasi-sovereign interests²¹⁵:

The state owns very little of the territory alleged to be affected, and the damage to it capable of estimate in money, possibly, at least, is small. This is a suit by a state for an injury to it in its capacity of quasi-sovereign. In that capacity the state has an interest independent of and behind the titles of its citizens, in all the earth and air within its domain. It has the last word as to whether its mountains shall be stripped of their forests and its inhabitants shall breathe pure air.

The court further reasoned that States do "not renounce the possibility of making reasonable demands on the ground of their still remaining quasi-sovereign interests; and the alternative to force is a suit in this court."²¹⁶ The litigation between North Carolina

²¹² *North Carolina ex rel Cooper v. Tennessee Valley Authority*, 439 F.Supp.2d 486 (D. N.C. 2006), *aff'd*, 515 F.3d 344 (4TH Cir. 2008).

²¹³ *Id.* at 488.

²¹⁴ *Id.* at 489.

²¹⁵ *Id.*

²¹⁶ *Id.*

and TVA continued in *North Carolina ex rel. Cooper v. Tennessee Valley Authority*,²¹⁷ Again, North Carolina alleged a public nuisance and requested injunctive relief. In this case, North Carolina alleged that air pollution from TVA's coal-fired power plants "enter North Carolina in unreasonable amounts, thereby threatening the health of millions of people, the financial viability of an entire region, and the beauty and purity of a vast natural ecosystem."²¹⁸ Furthermore, North Carolina alleged that "TVA's air pollution costs the state government and its citizens billions of dollars every year in health care expenses, sick days, and lost tourism revenue; and that there are also less quantifiable costs to be considered, stemming from the loss of human, animal, and plant life and irreversible environmental damage in protected wilderness areas."²¹⁹ To counter North Carolina's arguments, TVA argued that "the adverse environmental effects experienced by North Carolina are largely attributable to this state's own electric utilities and other industrial sources, or to private sources such as automobile and truck emissions."²²⁰ Consequently, North Carolina had to show that the alleged power plants actually interfered with the citizens of North Carolina by actually emitting pollution into the State of North Carolina.

In the end, the court determined that coal-fired power plants in Alabama and Tennessee interfered with the rights of North Carolina's citizens. The court found that coal-fired power plants in Kentucky and Alabama were too remote to "significantly

²¹⁷ *North Carolina ex rel. Cooper v. Tennessee Valley Authority*, 593 F.Supp.2d 812 (D. N.C. 2009), *denying stay*, Slip Copy, 2009 WL 2497934 (D. N.C. 2009).

²¹⁸ *Id.* at 815.

²¹⁹ *Id.*

²²⁰ *Id.*

impact air quality in North Carolina to the extent necessary to prove public nuisance.”²²¹

In order to abate the public nuisance, the court ordered “an injunction requiring prompt installation and year-round usage of appropriate pollution control technologies at Widows Creek is a necessary outcome of this litigation.”²²² TVA appealed to the Fourth Circuit Court of Appeals.²²³ On appeal TVA is asserting that “the state of North Carolina lacked authority to bring a public nuisance action under the common law of those states.”²²⁴

However, the Environmental and Natural Resources Law Clinic at Vermont Law School submitted an amici curiae brief in November 2009 arguing that “the Clean Air Act specifically preserves the rights of downwind states to abate interstate pollution through the exercise of their parens patriae authority by bringing common law nuisance actions in federal courts.”²²⁵ The outcome of this case is considered a significant, since it “could set a precedent for using common law remedies to fill the gaps in conventional air pollution regulations which often fail to protect downwind states, and also lays the groundwork for tackling CO₂ and other greenhouse gases in climate change cases.”²²⁶

In another public nuisance case—*Connecticut v. American Elec. Power Co., Inc.*²²⁷—a group of eight states, three land trusts, and New York City sued six electric

²²¹ *Id.* at 830.

²²² *Id.*

²²³ See TVA.gov, TVA Files to Appeal in North Carolina Lawsuit, <http://www.tva.gov/news/releases/aprjun09/ncappeal.htm> (last visited March 30, 2010).

²²⁴ Vermont Law School, State of North Carolina v. Tennessee Valley Authority, http://www.vermontlaw.edu/Academics/Clinics_and_Experiential_Programs/Environmental_and_Natural_Resources_Law_Clinic/Cases/Amicus_Briefs.htm (last visited April 13, 2010).

²²⁵ *Id.*

²²⁶ *Id.*

²²⁷ *Connecticut v. American Electric Power Company*, 582 F.3d 309 (2ND Cir. 2009).

power companies to abatement a public nuisance over public health and economic concerns. The states alleged that future “injuries resulting from carbon dioxide emissions will affect virtually their entire populations.”²²⁸ The lower court dismissed the case on grounds that the claim presented a “non-justiciable political question.”²²⁹ On appeal, given the nature of the claim, the Second Circuit Court of Appeals determined that the action did not present non-justiciable political questions. The court reasoned that “not every case with political overtones is non-justiciable[, so] it is error to equate a political question with a political case.”²³⁰ The court also stated that “[New York] City and private entities are not barred by their status from bringing a public nuisance cause of action. . . . [and] that New York City and the [private] Trusts have alleged interference with rights common to the general public.”²³¹

The environment that is being threatened in these nuisance cases goes beyond the typical understanding of environment—trees, animals, and nature. These nuisances—whether narrowly affecting private property or more broadly impacting the citizens of an entire State—impact the human environment. Without a clean environment containing healthy animal populations, an abundance of plant life, or pristine aquatic ecosystems, there cannot be healthy human populations or economies, since people depend on nature for goods, services, and economic opportunities in addition to mental and physical health. Consequently, “environmental injury, by its nature, can seldom be adequately remedied

²²⁸ *Id.* at 338.

²²⁹ *Id.* at 323 (citing *Connecticut v. Am. Elec. Power Co.*, 406 F.Supp.2d 265, 272 (D. N.Y. 2005)).

²³⁰ *Id.* at 332.

²³¹ *Id.* at 369-370.

by money damages and is often permanent or at least of long duration, *i.e.*, irreparable. If such injury is sufficiently likely, therefore, the balance of harms will usually favor the issuance of an injunction to protect the environment.”²³² As a result, despite costs to the defendant, courts are willing to issue injunctions to protect the human environment. However, to minimize risk, parties should take advantage of another type of remedy called the declaratory injunction.

Declaratory remedies. Declaratory remedies are designed to “resolve disputes about the parties’ rights, but they do not end in a direct order to [the] defendant.”²³³ For example, in *Ohio River Valley Environmental Coalition, Inc. v. Green Valley Coal Co.*,²³⁴ a group of environmental organizations requested a “declaratory judgment that the state agency has a mandatory duty to deny any permit application that is not supported by an adequate [cumulative hydrologic impact assessment] and an injunction barring approval of all inadequate pending applications.”²³⁵ The environmental group argued that the “state agency was consistently failing to enforce numerous provisions in the applicable surface mining regulations.”²³⁶ In *Ohio River Valley*, the plaintiffs properly requested a declaratory judgment with an injunction. If the court found that the state agency had a mandatory duty to deny permits that do not contain the requisite information, then an injunction could force the agency to make sure the permits contain the required

²³² *Amoco Production Co. v. Village of Gambell*, AK, 480 U.S. 531, 545 (1987).

²³³ DOUGLAS LAYCOCK, *MODERN AMERICAN REMEDIES 3* (Aspen Publishers 2002) (1985).

²³⁴ *Ohio River Valley Environmental Coalition, Inc. v. Green Valley Coal Co.*, 511 F.3d 407 (4TH Cir. 2007).

²³⁵ *Id.* at 411.

²³⁶ *Id.*

information before issuing them. The declaratory judgment does not result in a direct order to the defendant, so the injunction is needed to prevent future irreparable injury. Unlike an injunction, the plaintiff, in a declaratory judgment action, does “not have to show irreparable injury to get a declaratory judgment.”²³⁷

Subrogation

Subrogation is where “one claimant is substituted for the other[, so] subrogation may be thought of as a tracing remedy in which [the] plaintiff traces through the rights of the other claimant.”²³⁸ In recovering damages, a State in theory could use subrogation to reclaim money damages from coal companies. For example, states decided to sue tobacco companies for money the states “had spent and would spend . . . providing medical care and other social welfare benefits to sick smokers.”²³⁹ Furthermore, a subrogation action is provided for under CERCLA: “Any person, including the Fund, who pays compensation pursuant to this chapter to any claimant for damages or costs resulting from a release of a hazardous substance shall be subrogated to all rights, claims, and causes of action for such damages and costs of removal that the claimant has under this chapter or any other law.”²⁴⁰ Given the nature and incurred costs associated with hazardous waste pollution, the United States Government can acquire rights through subrogation: “Payment of any claim by the Fund under this section shall be subject to the United States Government acquiring by subrogation the rights of the claimant to recover

²³⁷ DOUGLAS LAYCOCK, *MODERN AMERICAN REMEDIES* 517 (Aspen Publishers 2002) (1985).

²³⁸ *Id.* at 706.

²³⁹ *Id.* at 707.

²⁴⁰ 42 U.S.C. § 9612(c)(2) (2009).

those costs of removal or damages for which it has compensated the claimant from the person responsible or liable for such release.”²⁴¹ Since courts have determined that fly ash can be considered a hazardous waste under CERCLA—if the fly ash contained one of the listed hazardous wastes under CERCLA—then a subrogation claim may result from the improper disposal of fly ash.²⁴²

Punitive remedies

Punitive damages are designed to punish and deter future tortious conduct, and a “variety of statutes authorize minimum recoveries in excess of actual damages, or recovery or double or triple plaintiff’s actual damages.”²⁴³ For example, some statutes provide for the recovery of “triple damages for knowingly cutting another’s timber.”²⁴⁴ If the defendant’s activities are egregious, wanton, or willful, then punitive damages are appropriate. For example, the court in *Marigold Coal, Inc. v. Thames*²⁴⁵ upheld an award of punitive damages, since there was evidence of wanton conduct by a coal company. Also, in *Green v. Asher Coal Min. Co.*, punitive damages were also upheld due to the defendant’s “wanton, reckless and wilful conduct.”²⁴⁶ The Massey Energy Company’s practice and policy of avoiding requisite safety measures mandated by regulation and the subsequent Upper Big Branch Mine disaster might be viewed as warranting punitive damages if the issue was brought to trial. The energy company’s mantra seems to be

²⁴¹ 42 U.S.C. § 9612(c)(1) (2009).

²⁴² See *United States v. Conservation Chem. Co.*, 619 F.Supp. 162 (D.C. Mo. 1985).

²⁴³ DOUGLAS LAYCOCK, *MODERN AMERICAN REMEDIES* 5 (Aspen Publishers 2002) (1985).

²⁴⁴ *Id.*

²⁴⁵ *Marigold Coal, Inc. v. Thames*, 274 Ala. 421 (Ala. 1962).

²⁴⁶ *Green v. Asher Coal Min. Co.*, 377 S.W.2d 68, 69 (Ky. Ct. App. 1964).

“production over safety,” and CEO of Massey Energy Company Don Blankenship has stressed in a memo to supervisors, “We seem not to understand that coal pays the bills.”²⁴⁷

Ancillary remedies

Ancillary remedies aid other remedies, and “costs and attorney’s fees are one important set of ancillary remedies.”²⁴⁸ There is a presumption against the recovery of attorney fees. The presumption that “attorney’s fees generally are not a recoverable cost of litigation absent explicit congressional authorization[.]” is known as the American rule.²⁴⁹ As a result, “in the United States, parties are ordinarily required to bear their own attorney’s fees-the prevailing party is not entitled to collect from the loser.”²⁵⁰ However, Congress has allowed for exceptions to the American rule via citizen suit provisions written into various environmental statutes. These citizen suits are important, because these provisions allow for parties, like nonprofit organizations and private citizens, to bring a lawsuit and recover attorney fees and other costs in they are a prevailing party. Therefore, these citizen suits help enforce environmental laws.

Whether or not attorney fees or other costs of litigation are available under a statute is a question of law, which involves statutory interpretation, for the court.²⁵¹

Environmental statutes that allow for a recovery of attorney fees include the (1) Clean Air

²⁴⁷ KDKA.com, Pittsburgh Lawyer Fought Massey Energy In Court Over Aracoma Mine Disaster, <http://kdk.com/local/Massey.Energy.mines.2.1621193.html> (last visited April 14, 2010).

²⁴⁸ DOUGLAS LAYCOCK, *MODERN AMERICAN REMEDIES* 5 (Aspen Publishers 2002) (1985).

²⁴⁹ *Key Tronic Corp. v. U.S.* 511 U.S. 809, 809 (1994).

²⁵⁰ *Buckhannon Bd. and Care Home, Inc. v. West Virginia Dept. of Health and Human Res.*, 532 U.S. 598, 602 (2001).

²⁵¹ *See Holland v. Wal-Mart Stores, Inc.*, 1 S.W.3d 91 (Tex. 1999).

Act;²⁵² (2) Clean Water Act;²⁵³ (3) Solid Waste Disposal Act and Resource Conservation & Recovery Act;²⁵⁴ (4) Emergency Planning and Community Right-To-Know Act;²⁵⁵ (5) Comprehensive Environmental Response, Compensation and Liability Act;²⁵⁶ (6) Endangered Species Act;²⁵⁷ (7) Safe Drinking Water Act;²⁵⁸ and the (8) Surface Mining Control and Reclamation Act.²⁵⁹ ²⁶⁰ Consequently, “a defendant who unsuccessfully defends a citizen suit may be subject not only to penalties and injunctive relief, but also may be obligated to pay the plaintiff’s attorney fees.”²⁶¹ Unlike the aforementioned environmental statutes, NEPA does not have a citizen suit provision that allows for

²⁵² 42 U.S.C. § 7604(d) (2009) (“The court . . . may award costs of litigation (including reasonable attorney and expert witness fees) to any party, whenever the court determines such award is appropriate.”).

²⁵³ 33 U.S.C. § 1365(d) (2009) (“The court . . . may award costs of litigation (including reasonable attorney and expert witness fees) to any prevailing or substantially prevailing party, whenever the court determines such award is appropriate.”).

²⁵⁴ 42 U.S.C.A. § 6972(e) (2009) (“The court . . . may award costs of litigation (including reasonable attorney and expert witness fees) to the prevailing or substantially prevailing party, whenever the court determines such an award is appropriate.”).

²⁵⁵ 42 U.S.C. § 11046(f) (2009) (“The court . . . may award costs of litigation (including reasonable attorney and expert witness fees) to the prevailing or the substantially prevailing party whenever the court determines such an award is appropriate.”).

²⁵⁶ 42 U.S.C. § 9659(f) (2009) (“The court . . . may award costs of litigation (including reasonable attorney and expert witness fees) to the prevailing or the substantially prevailing party whenever the court determines such an award is appropriate.”).

²⁵⁷ 16 U.S.C. § 1540(g)(4) (2009) (“The court . . . may award costs of litigation (including reasonable attorney and expert witness fees) to any party, whenever the court determines such award is appropriate.”).

²⁵⁸ 42 U.S.C. § 300j-8(d) (2009) (“The court . . . may award costs of litigation (including reasonable attorney and expert witness fees) to any party whenever the court determines such an award is appropriate.”).

²⁵⁹ 30 U.S.C. § 1270(d) (2009) (“The court . . . may award costs of litigation (including attorney and expert witness fees) to any party, whenever the court determines such award is appropriate.”).

²⁶⁰ If a temporary restraining order or preliminary injunction is sought, all of the prior environmental statutes—with the exception of the Endangered Species Act—require a bond and contain the following language under the “award of costs and security” provision: “The court may, if a temporary restraining order or preliminary injunction is sought, require the filing of a bond or equivalent security in accordance with the Federal Rules of Civil Procedure.”

²⁶¹ National Business Institute, *Protecting Water Rights and Quality in Idaho*, 28215 NBI-CLE 292, 312 (2005).

attorney fees and costs, so claims for attorney fees and costs are brought under the Equal Access to Justice Act (EAJA).²⁶² Under the EAJA, “a court shall award attorneys’ fees to a ‘prevailing party’ in a civil action brought against the United States ‘unless the court finds that the position of the United States was substantially justified or that special circumstances make the award unjust.’”²⁶³ “Fees and other expenses” under the EAJA include “reasonable expenses of expert witnesses, the reasonable cost of any study, analysis, engineering report, test, or project which is found by the court to be necessary for the preparation of the party’s case, and reasonable attorney fees.”²⁶⁴ The fees and expenses are determined by “prevailing market rates for the kind and quality of the services furnished,” but expert witness fees are capped by the “highest rate of compensation for expert witnesses paid by the United States.”²⁶⁵ Furthermore, “attorney fees shall not be awarded in excess of \$125 per hour,” unless the court determines otherwise.²⁶⁶

There are other exceptions to the American rule against recovery of attorney’s fees. For example, courts have the “inherent power to award fees to punish bad faith litigation. . . . [and a court may impose attorney’s fees] for willful disobedience of a court

²⁶² See *Citizens for Better Forestry v. U.S. Dept. of Agriculture*, 2008 WL 5210945, at *2 (N.D. Cal. 2008) (“parties that prevail under NEPA and the APA may seek attorney’s fees, costs, and other expenses pursuant to the EAJA since NEPA and the APA do not themselves contain a citizen suit provision”). See also 28 U.S.C. § 2412(d)(1)(A).

²⁶³ *Wilderness Soc. v. Babbitt* 5 F.3d 383 (9TH Cir. 1993) (quoting 28 U.S.C. § 2412(d)(1)(A)).

²⁶⁴ 28 U.S.C.A. § 2412(d)(2)(A).

²⁶⁵ *Id.*

²⁶⁶ *Id.*

order.”²⁶⁷ These exceptions to the American rule are known as the bad faith litigation and the contempt-of-court exceptions. Contempt is another important ancillary remedy, since it “enforc[es] the primary remedy against a recalcitrant defendant.”²⁶⁸ For example, “violating an injunction is contempt of court[, and] contempt is a criminal offense if done willfully.”²⁶⁹ In *Sanitary Water Bd. v. Blue Coal Corp.*, the Pennsylvania Sanitary Water Board sought to hold the Blue Coal Corporation in contempt for “failing to comply with an agreed order of court providing for the construction and operation of facilities for the treatment of water discharged from the company’s mine.”²⁷⁰ Consequently, remedies are required to enforce other remedies issued or ordered by the court.

Conclusion

In conclusion, given the diverse negative environmental impacts and the negative human impacts, coal is not a clean energy source. Furthermore, to characterize coal as clean based on carbon capture and storage technology is seriously misleading. In fact, carbon capture and storage is a technology that is not without risks to the human environment. Also, carbon capture and storage does nothing to alleviate impacts to the environment and human health during other phases of the coal utilization process. Coal utilization activities can result in private and public nuisances. In fact, where the federal government has failed to regulate and provide for an adequate remedy, States have successfully sought to remedy threats to their economies, environments, and citizens’

²⁶⁷ DOUGLAS LAYCOCK, *MODERN AMERICAN REMEDIES* 914 (Aspen Publishers 2002) (1985); *See also* *Toledo Scale Co. v. Computing Scale Co.*, 261 U.S. 399 (1923).

²⁶⁸ *Id.* at 5.

²⁶⁹ *Id.* at 237.

²⁷⁰ *Sanitary Water Bd. v. Blue Coal Corp.*, 56 Pa. D. & C.2d 582, 583 (Ct. Comm. Pl. Pa. 1971).

health by bringing public nuisance claims. In the future, a mix of government involvement through legislation and court involvement through litigation will be necessary to correct harmful and wrongful conduct being imposed onto the environment and public.