

An Improper Disposal: Coal Ash, Groundwater Contamination, and The Need for Federal Regulation

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Introduction

Millions of tons of industrial coal ash waste, the byproduct of coal combustion for energy production,¹ are haphazardly dumped into unlined, unregulated storage “ponds” (or “lagoons”) every year. Laced with carcinogens,² this waste is seeping into groundwater and contaminating nearby water supplies.³ Local communities and the environment are suffering as a result.⁴ Across the nation, nearly one-third of these dumping sights remain unregulated and known sources of pollution to local groundwater.⁵ Nearly half⁶ of the coal ash ponds acknowledged by the Environmental Protection Agency (EPA) are currently without any form of protective liner that would function to control toxic substances from leaching into the water supply of surrounding communities.⁷ Despite these facts, the EPA currently lacks a federal policy to regulate coal ash disposal, and classifies the substance as non-hazardous industrial waste, thus rendering it exempt waste from the Resource Conservation and Recovery Act (RCRA),⁸ which

¹ *Coal Ash Contaminates our Lives*, EARTH JUST., http://earthjustice.org/our_work/campaigns/coal-ash-contaminates-our-lives (last visited Oct. 23, 2012).

² *Legal Fight for Long Overdue Coal Ash Protections*, EARTH JUST., http://earthjustice.org/our_work/cases/2012/legal-fight-for-long-overdue-coal-ash-protections (last visited September 29, 2012) (listing arsenic, lead, copper, and mercury as carcinogens).

³ *Coal Combustion Residuals—Proposed Rule*, U.S. ENVTL. PROT. AGENCY, <http://www.epa.gov/wastes/nonhaz/industrial/special/fossil/ccr-rule/> (last visited Sept. 27, 2012).

⁴ *Coal Ash Ponds Threaten Well Water and Drinking Water Reservoirs*, CATAWBA RIVERKEEPERS, <http://www.catawbariverkeeper.org/News/coal-ash-ponds-threaten-drinking-water> (last visited Jan. 4, 2013).

⁵ *Id.*

⁶ Approximately 535/1,161 coal ash ponds acknowledged by the EPA are currently without any form of protective liner. *New EPA Data Show Coal Ash Problem Much Worse*, EARTH JUST., <http://earthjustice.org/news/press/2012/new-epa-data-show-coal-ash-problem-much-worse> (last visited Sept. 29, 2012).

⁷ *Id.*

⁸ Resource Conservation and Recovery Act (RCRA), 42 U.S.C.S. § 6901 (1976).

only regulates hazardous solid wastes.⁹ Given the lack of federal policy, regulation has fallen to the states.¹⁰

The EPA acknowledges that there is great danger to human health and the environment from coal ash disposal.¹¹ In a proposed rule, the Agency has offered two options for managing coal ash, both of which fall under its authority granted to it by RCRA.¹² One option is to classify coal ash under subtitle C of the act, which would regulate it as a “special waste subject to regulation.”¹³ A subtitle C classification would result in both federal and state regulation of coal ash disposal, corrective action for existing sites monitored by the EPA, and federal requirements on permitting of dumping sites.¹⁴ The second option is to classify coal ash under subtitle D of the act, which would classify it as a non-hazardous waste.¹⁵ A non-hazardous RCRA classification would result in regulation enforcement through citizen and state suits, no permitting requirements, and more relaxed guidelines for coal ash storage site construction and management.¹⁶ However, working against the recognized need for federal regulation and oversight from the EPA, U.S. Senators John Hoeven (R-N.D.), Kent Conrad (D-N.D.) and Max Baucus (D-Mont.) introduced the bill in the summer of 2012, the Coal Ash Recycling and

⁹ *Coal Combustion Residuals—Proposed Rule*, *supra* note 3.

¹⁰ *Coal Ash: A National Problem Needs a National Solution*, SIERRA CLUB, <http://www.sierraclub.org/coal/downloads/2009-07-coal-ash.pdf> (last visited November 2, 2012).

¹¹ *Id.*

¹² *Id.*

¹³ *Id.*; see also *Coal Combustion Residuals - Key Differences Between Subtitle C and Subtitle D Option*, ENVTL. PROT. AGENCY, available at <http://www.epa.gov/osw/nonhaz/industrial/special/fossil/ccr-rule/ccr-table.htm> (last visited Oct. 28, 2012).

¹⁴ *Coal Combustion Residuals - Key Differences Between Subtitle C and Subtitle D Option*, ENVTL. PROT. AGENCY, available at <http://www.epa.gov/osw/nonhaz/industrial/special/fossil/ccr-rule/ccr-table.htm>.

¹⁵ *Supra* note 8.

¹⁶ *New EPA Data Show Coal Ash Problem Much Worse*, EARTH JUST., <http://earthjustice.org/news/press/2012/new-epa-data-show-coal-ash-problem-much-worse> (last visited Sept. 29, 2012).

Oversight Act.¹⁷ The bill would effectively halt any EPA proposed rules regarding coal ash by permanently granting the states the power of regulation—the very situation which currently is failing in effectiveness.¹⁸ In September of 2012, over three-hundred public interest groups collaboratively drafted a letter in opposition to the bill, in which they lament that “[the] bill is merely a giveaway to industry that will hurt the health and well-being of millions of Americans.”¹⁹ There is a marked distrust among environmental activists of the ability of states to implement the sort of regulation that coal ash requires because of the state’s immediate interest in their industry and economics.²⁰ A recent lawsuit brought by the Southern Environmental Law Center (SELC) against the South Carolina Department of Health and Environmental Control (SC DHEC) illustrates the reason for concern over state based regulation.²¹ Using South Carolina’s failure to regulate highlights the reasons that federal regulation is preferable from an environmental standpoint.

Risks Posed to Ground and River Water Quality in the Carolinas by Coal Ash

When electric utility power companies burn coal to produce energy, the process produces ash containing highly concentrated levels of the radioactive elements uranium and thorium, as well as many toxic metals such as arsenic.²² Once created, the power companies dispose of the resultant ash in on-site ponds landfills or retention ponds.²³ This ash is referred to as coal combustion residue (CCRS), which consists of bottom ash, fly ash, coal slag, and flue gas

¹⁷ S. 3512, 112th Cong. (2012); *More Than 300 Public Interest Groups Ask Senate to Oppose Anti-Health Coal Ash Bill*, EARTH JUST. (Sept. 14, 2012), <http://earthjustice.org/news/press/2012/more-than-300-public-interest-groups-ask-senate-to-oppose-anti-health-coal-ash-bill>.

¹⁸ *Id.*

¹⁹ *Id.*

²⁰ *Id.*

²¹ *Case Filed to Protect Waccamaw River from Coal Waste’s Arsenic Contamination*, EARTH JUST. (June 7, 2012), http://www.southernenvironment.org/newsroom/press_releases/coal_ash_waccamaw_river_6-6-12.

²² Matthew Pearl, Recent Development, *The Aftermath of the December 2008 Incident in East Tennessee Illuminates the Inadequate Regulation of Coal Ash Impoundments*, 16 U. Balt. J. Env’tl. L. 195, 195 (2009).

²³ *Id.*

desulfurization.²⁴ These byproducts create ponds when mixed with water.²⁵ Due to the lack of current federal regulations coupled with lax state regulations, these ponds are frequently unlined.²⁶ In the Southeast alone there are forty-six such coal-ash disposal units operating without any protective liner to block the toxins from reaching groundwater supplies.²⁷ The carcinogenic elements found in this coal ash may seep into the water supply and pose an extremely elevated cancer risk to humans that become exposed.²⁸

The Carolinas are home to several coal combustion power stations which dispose of coal ash in these polluting ponds. Approximately nine ponds in North and South Carolina have documented on-site groundwater contamination.²⁹ Among the ponds in the Carolinas, all were found to have on-site groundwater contamination, with the contamination either moving off site or already sprawling to the surrounding communities' drinking water supply and waterways.³⁰ Furthering the environmental damage caused by these ponds, two of the ponds, one in North Carolina³¹ and one in South Carolina,³² were found to have contaminated the surrounding surface water as well. The contamination is alarming not only because the water is used for drinking

²⁴ *Coal Combustion Residues (CCR) - Surface Impoundments with High Hazard Potential Ratings*, U.S. ENVTL. PROT. AGENCY, <http://www.epa.gov/osw/nonhaz/industrial/special/fossil/ccrs-fs/index.htm> (last updated April, 2012).

²⁵ *Coal Waste: Regulation of Coal Combustion Waste*, S. ENVTL. L. CENTER, http://www.southernenvironment.org/cases/coal_waste_spill (last updated Dec. 11, 2012).

²⁶ *Id.*

²⁷ *Id.*

²⁸ Lisa Evans, Michael Becher & Bridget Lee, *State of Failure: How States Fail to Protect our Health and Drinking Water from Toxic Coal Ash*, EARTH JUST. 6 (Aug. 2011), <http://earthjustice.org/sites/default/files/StateofFailure.pdf> (describing a risk assessment study conducted in 2010 by the EPA which aimed to measure the risk to human health and the environment of dumping coal combustion waste in landfills and lagoons).

²⁹ *Out of Control: Mounting Damages from Coal Ash Waste Sites*, EARTH JUST. iv (Feb. 24, 2010), <http://earthjustice.org/sites/default/files/library/reports/ej-eipreportout-of-control-final.pdf> (Sutton Steam Plant (N.C.), Lee Steam Plant (N.C.), Cape Fear Steam Plant (N.C), Swift Creek Structural Fill (N.C.) Belews Creek Steam Plant (N.C.), Asheville Steam Electric Plant (N.C.), Urquhart Station (S.C), Grainger Station (S.C), Wateree Station (S.C)).

³⁰ *Id.*

³¹ *Id.* at xv.

³² *Id.* at xix.

purposes but also because of the effects on aquatic ecosystems.³³ Of the contamination reported at these Carolina sites, arsenic and lead were the leading pollutants identified.³⁴ For instance, at the Grainger Station in Horry County, South Carolina, (the center of the SELC lawsuit) the levels of arsenic recorded in the groundwater surrounding the Waccamaw River were a staggering ninety-one times the accepted level for safe drinking water standards.³⁵

Emphasizing the enormity of the coal-ash problem in the Carolinas, Progress Energy's Sutton Steam Plant in Wilmington, N.C., was the only site for which the state had given the company notice of the water standard violations and demanded that the company address the issue.³⁶ This request was issued because Sutton Steam Plant is the only plant in North Carolina which monitors groundwater beyond the boundaries required by the state.³⁷ This allowed the plant to detect groundwater conditions in violation of federal maximum containment levels more than 500 feet from the impoundment area compliance boundaries, which led the North Carolina Department of Environment and Natural Resources to request action.³⁸ Had these monitoring wells outside of the compliance boundaries not been in place,³⁹ this request would have never been made. This fact illustrates state failure to regulate water contamination at monitored sites. Additionally, many coal ash dumping sites across the United States have a total lack of monitoring.⁴⁰ Thus there is an ever-pressing need for federal regulation, yet the EPA continues

³³ See also Tim Lucas, *Toxic Coal Ash Threatens Health and Environment*, DUKE TODAY (Aug. 18, 2009), available at <http://today.duke.edu/2009/08/toxiccoal.html> (explaining the carcinogenic risk of these toxins to humans as well as the potential threat to aquatic ecosystems. As mercury accumulates in the water, anaerobic bacteria converts it into a more potent toxin, methylmercury, which "accumulates in the food web," thus spreading the harm to more animals (including back to humans)). *Id.*

³⁴ *Out of Control*, *supra* note 29.

³⁵ *Id.* at xx.

³⁶ *Id.* at xiii.

³⁷ *The State of Coal Ash Regulation in North Carolina*, N.C. CONSERVATION NETWORK, 4, http://appvoices.org/resources/coal_ash/State-of-Coal-Ash-Regulation-in-NC-0909.pdf (last visited Jan. 4, 2013).

³⁸ *Id.*

³⁹ *Id.* This is the case at twelve tested coal ash impoundment sites in North Carolina.

⁴⁰ *Out of Control*, *supra* note 29, at vii.

to delay proposing national regulations, which has resulted in an “inconsistent patchwork or lax and ineffective state regulations.”⁴¹ The SELC lawsuit is an example of the weaknesses of state regulations on coal ash disposal and environmentalist groups’ strong opposition to state-based regulation.

SELC v. SC-DHEC: *State Regulation of Coal Ash Disposal*

The Southern Environmental Law Center, on behalf of the Winyah Rivers Foundation, Inc. and the Southern Alliance for Clean Energy, took action to address South Carolina’s lax regulation of coal ash.⁴² They filed a suit on September 18, 2012, naming the South Carolina Department of Health and Environmental Control (SC-DHEC) as the defendant.⁴³ In their brief, plaintiffs allege that the SC-DHEC has not acted on the applications to renew National Pollutant Discharge Elimination System (NPDES) permits for Santee Cooper’s coal ash lagoons for six years.⁴⁴ The failure to act has allowed pollutants⁴⁵ to flow from these lagoons in unregulated amounts into South Carolina’s environment, and has barred the access of conservation groups to have a meaningful participation in the NPDES permit process for the Santee Cooper’s Grainger Station.⁴⁶ This suit also addresses the SC-DEHC’s failure to issue a new Clean Water Act (“CWA”) permit to Santee Cooper’s coal ash lagoons at the Grainger Station in Conway, South Carolina.⁴⁷ Under the CWA, the agency is required to issue new permits every five years to waterway polluting industries to make sure that they are up-to-date; Santee Cooper’s last permit

⁴¹ *Coal Waste*, *supra* note 25.

⁴² Andrew M. Ballard, *Solid Waste: Environmental Groups Sue S.C. Agency to Force New Permit for Coal Ash Lagoons*, DAILY ENV’T REPORT, BNA (September 19, 2012).

⁴³ *Id.*

⁴⁴ *Winyah Rivers Foundation Inc. v. SCDHEC*, No. 2012-CP-40-6252, at 1 (S.C. Cir. Ct. filed Sept. 18, 2012)

⁴⁵ *Id.* (listing arsenic, mercury, copper as the responsible pollutants).

⁴⁶ *Id.* at 2.

⁴⁷ *Conservation Groups Sue to Require DHEC to Issue Santee Cooper Coal Ash Permit*, S. ENVTL L. CENTER (Sept. 18, 2012),

http://www.southernenvironment.org/newsroom/press_releases/conservation_groups_sue_to_require_dhec_to_issue_santee_cooper_coal_ash_per/.

was issued a decade ago, and expired in 2006.⁴⁸ The suit argues that the State has allowed the polluter itself, Santee Cooper, to determine when to issue these new permits in spite of both the State's and Santee Cooper's years of knowledge of the damage their coal ash dumping techniques have on the water supply around the Grainer plant.⁴⁹ SELC alleges that the South Carolina agency has given Santee Cooper special treatment, allowing the agency to continue running the coal ash lagoon without compliance with new pollution treatment techniques. These new treatments could protect groundwater and the nearby Waccamaw River from the high levels of arsenic, mercury, and copper contamination currently present in these waters.⁵⁰ Finally, SELC contests that the practices of the SC-DHEC shut out citizens from reviewing permits and vocalizing any objections. Inability for citizen participation limits the flow of information to the users of the contaminated water supply themselves.⁵¹

Environmental groups complain that the State allows industry to avoid installing improved technologies that would give South Carolina citizens protection from the water pollution created by old technology and unlined coal ash lagoons.⁵² When given power, the State has demonstrated that it will favor industry at the expense of the environment and the health of its citizens.⁵³ This lawsuit has also shed light on a wider scale problem within South Carolina. Not only has the DHEC allowed Santee Cooper to operate facilities with an expired permit, but there are an additionally over five-hundred companies that are currently polluting

⁴⁸ *Id.*

⁴⁹ *Id.*

⁵⁰ *Id.*

⁵¹ *Id.*

⁵² *Id.*

⁵³ See *Give DHEC What it Needs to Fix the Mess*, AIKEN STANDARD, October 5, 2012, available at <http://www.aikenstandard.com/article/20121005/AIK02/121009734/1018/AIK02/other-views-give-dhec-what-it-needs-to-fix-the-mess>.

South Carolina water and air without up-to-date permits for their facilities.⁵⁴ Press coverage of this suit has led the director of the SC-DHEC to reprioritize permitting of industries in South Carolina.⁵⁵ This is not, however, an issue isolated to one state. Similar state agency failures to protect water supplies exist nationwide,⁵⁶ reiterating the reason for environmentalists' concern over the Coal Ash Recycling and Oversight Act that gives regulation power to the states. This suit is just one example of how the current state of coal ash regulation is inadequately responding to the risk presented.

Current Status of National Coal Ash Regulation

The EPA, under stress from a lawsuit being brought by environmental groups and activist organizations,⁵⁷ indicated it plans to issue a final rule by the end of 2014 regarding the classification of coal-ash under RCRA—a classification that would lay out the future of coal ash regulation.⁵⁸ A Senate bill introduced on August 2, 2012, the Coal Ash Recycling and Oversight Act,⁵⁹ would amend subtitle D of the Solid Waste Disposal Act. This bill would put “states at the forefront of regulating coal ash” but set federal standards that the states would be mandated to comply with to ensure safe drinking water to its citizens.⁶⁰ The bill focuses on both recycling coal ash (which can be used for cement in construction of infrastructure) and setting out

⁵⁴ *Id.*

⁵⁵ *See id.*

⁵⁶ *Combustion Residues (CCR) - Surface Impoundments with High Hazard Potential Ratings*, *See supra* note 24

⁵⁷ Anthony Adragna, *Solid Waste: Electric Utility, Mining Groups Intervene in Lawsuit Over EPA Coal Ash Regulation*, DAILY ENVTL. REPORT, BNA (June 26, 2012); *Appalachian Voices v. Jackson*, D.D.C., No. 1:12-CV-00523 (June 19, 2012) (brought by the environmental advocacy group, Appalachian Voices and coal ash recyclers against the EPA).

⁵⁸ Adragna, *supra* note 57. Through testimony, the EPA indicated it would like not promulgate a final rule until 2014. *EPA: Coal Ash Rule Not Likely Until 2014*, EBI (October 30, 2012), <http://ebionline.org/news-wire/1448-epa-coal-ash-rule-not-likely-until-2014>.

⁵⁹ S. 3512 112th Cong. (2012): *Coal Ash Recycling and Oversight Act of 2012*, GOVTRACK.US, <http://www.govtrack.us/congress/bills/112/s3512/text> (last visited Jan. 4, 2013).

⁶⁰ Adragna, *supra* note 57, at 1.

“provisions to protect the environment and human health.”⁶¹ As a means of achieving these legislative goals, the bill vests a large portion of the responsibility in the states.⁶² The bill would require states to enact regulatory programs mandating the use of protective liners to prevent leeching of toxins from coal ash ponds, establish groundwater monitoring programs, and create structurally sound barriers to prevent disasters such as the 2008 Kingston Fossil Plant disaster.⁶³

Proponents of the bill believe it could bring “regulatory certainty” to the industry of coal ash recycling, thus alleviating disposal problems by diminishing the need for disposal at all. Supporters see the bill as being able to set a national standard—state based regulation—for coal ash before the “stalled EPA rulemaking process [could]”⁶⁴ as their principal reasons for supporting the proposed act. Opponents, primarily environmental groups, complain that the bill falls short in its ability to safeguard public health and addresses the issue in a manner more favorable to industry—the polluters—than to the environment and public health.⁶⁵ Neither the House nor the Senate acted on the bill during the 112th Congress. It is unclear whether Senators John Hoeven and Max Baucus will introduce the same legislation during the 113th Congress.

Effects of the Proposed Coal Ash Recycling and Oversight Act of 2012

As mentioned, the most common rationale for opposition to this bill is its reliance in the states, rather than the federal government—namely the EPA—to regulate coal ash ponds to protect against the significant health risk posed by the ponds to the water supply. This skepticism stems from the loose language of the Coal Ash Recycling and Oversight Act, which opponents protest allows states to get away with treating coal ash “less stringently than the

⁶¹ *Id.* at 2.

⁶² *Id.*

⁶³ *Id.*

⁶⁴ *Id.*

⁶⁵ *Id.*

household trash you set out on the curb.”⁶⁶ To environmentalists, a few of the short-comings of the bill include the lack of enforceable deadlines for the states to take action to either permit or forcibly close coal ash dumps (landfills and ponds), the weak standards for clean-up of existing unlined dump sites, no guidelines for states to address water pollution from dumping sites no longer in use, and no method for the public to access information about their drinking water from groundwater monitoring.⁶⁷ Environmental groups are wary of the consequences of a bill that would strip the EPA of its ability to regulate this industrial waste despite the harm it poses to groundwater quality and safety.⁶⁸ If passed, the environmental issues brought out by the SELC lawsuit will be able to continue across the nation absent pressure from similar lawsuits.

Conclusion

The current state of coal ash disposal regulation is one of failure, as SELC’s South Carolina lawsuit highlights.⁶⁹ The EPA has not promulgated regulations addressing the environmental and public health concerns presented by coal ash. As a result, the regulation of such coal ash ponds has fallen on the states, which have historically favored lax, industry-friendly policies or, often, no policies at all.⁷⁰ Although the need for federal regulation is demonstrated, legislation currently in the Senate, the Coal Ash Recycling and Oversight Act of 2012, would allow the trend of state run regulation to continue by making it the national policy on coal ash disposal.⁷¹ An investigation into the current state of coal ash regulation in the United States coupled with the suit against the SCDHEC make it clear why environmentalists anxiously

⁶⁶ *Solid Waste: Transportation: In Brief*, DAILY ENVTL. REPORTER 1 (October 25, 2012), available at 206 LEXIS DEN A-16.

⁶⁷ *Senate Bill Threatens Public Safety: Fails to Protect Communities from Toxic Coal Ash*, EARTH JUST., http://earthjustice.org/sites/default/files/S3512-fact-sheet_2012-09.pdf (last accessed October 3, 2012).

⁶⁸ Walter G. Wright, *Legislation Addressing Coal Ash Recycling Introduced*, ENVTL., ENERGY, & WATER BLOG (Aug. 6, 2012), <http://www.mitchellwilliamsllaw.com/legislation-addressing-coal-ash-recycling-introduced>.

⁶⁹ *Case Filed to Protect Waccamaw River from Coal Waste’s Arsenic Contamination*, *supra* note 21.

⁷⁰ *Coal Ash: A National Problem Needs a National Solution*, *Supra* note 10.

⁷¹ *Senate Bill Threatens Public Safety: Fails to Protect Communities from Toxic Coal Ash*, *supra* note 63.

anticipate the ramifications of the Coal Ash Recycling and Oversight Act for water standards.

To ensure water quality in the United States, federal regulatory standards are necessary.⁷²

⁷² See *Coal Ash: A National Problem Needs a National Solution*, *supra* note 10.