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TOXIC IMPACT: THE REGULATION OF COAL ASH AND THE INFLUENCE OF BIG MONEY ON SMALL COMMUNITIES

*Patricia Helman**

*It is increasingly said that civilization, Western civilization at least, stands in need of a new ethic . . . setting out people's relations to the natural environment, in Leopold's words "an ethic dealing with man's relation to land and to the animals and plants which grow upon it."*¹

PROLOGUE

Imagine a seemingly perfect, picturesque, family development complete with community events, pools, playgrounds, and shopping. Imagine also a coal and gas burning power plant which stands just three miles away. While easy to see, it is rarely looked at—the elephant in the room that no one wants to talk about. To some, it may seem obvious that residing in such close proximity to a power plant would undoubtedly have adverse health effects; but to most, a lack of warning means that it must be safe.

Over time, a child develops a persistent cough; a friend and neighbor both develop unusual tumors. Then, the unthinkable occurs, a 16-month-old baby girl is diagnosed with a rare brain cancer, succumbing to it just days later. She lived just three miles away from the power plant. Questions begin to arise regarding the smoke-breathing concrete and steel monolith on the horizon.

A search for answers uncovers that the power plant utilizes an unlined landfill and leaking surface impoundments.² The power plant, by storing wet coal ash, poses a danger to surrounding groundwater and surface water.³ The discovery of the extensive list of toxic metals contained within coal ash is jarring: arsenic, lead, mercury, cadmium, chromium, and other cancer causing agents.⁴ Finally, and perhaps most alarming, the discovery that coal ash and its toxic hazards are not

* Patricia Helman, J.D. Candidate, 2018, Barry University School of Law; B.A., 2003, University of Central Florida. The writing of this article was inspired by those families and communities who are unaware of the potential hazards that surround them and who are entitled to information and adequate protections by the federal government. I wish to provide a special thank you to my family, friends, editors of Barry L.J., and to Professor Judith Koons for her thoughtful guidance, feedback, and support in the writing of this article.

1. Richard (Routley) Sylvan, *Is there a Need for a New, an Environmental Ethic*, in ENVIRONMENTAL ETHICS: THE BIG QUESTIONS 98 (David R. Keller ed., 2010) (quoting ALDO LEOPOLD, *The Ethical Sequence*, in A SAND COUNTY ALMANAC 238 (1966)).

2. *Out of Control: Mounting Cases from Coal Ash Waste Sites*, ENVIRONMENTAL INTEGRITY PROJECT & EARTHJUSTICE, Feb. 24, 2010, at 6, <http://earthjustice.org/sites/default/files/library/reports/ej-eipreportout-of-control-final.pdf>; see also, Amy Green, *Here Comes the Sun, Part Three: Central Florida's Biggest Polluters*, WMFE (March 14, 2018), <http://www.wmfe.org/conversations-a-look-at-central-floridas-biggest-polluters/84080>.

3. *Out of Control: Mounting Cases from Coal Ash Waste Sites*, supra note 2, at 6.

4. *Id.* at iv.

federally regulated,⁵ bringing to light the true nature of the regulations and the influence the power industry has on the nation.⁶

I. IN THE BEGINNING

These concerns became harsh reality for many on December 22, 2008, when, while most of the town of Harriman, Tennessee slept soundly in their beds, calamity struck, changing their lives forever.⁷ A 40-acre dam holding toxic coal ash collapsed, inundating residents' homes with one billion gallons of toxic coal ash,⁸ encasing "300 acres with thick, toxic sludge."⁹ Residents described the toxic coal ash not as a thin coating, but as "boulders" as large as a house.¹⁰ Homes were damaged and destroyed, the surrounding rivers contaminated, effectively devastating the community.¹¹ The United States Environmental Protection Agency (EPA) conducted testing of the water after the spill and "found toxic heavy metals including arsenic, which . . . measured at 149 times the allowable standard for drinking water."¹²

The failed dam belonged to an unlined forty-acre pond at the Tennessee Valley Authority (TVA) Kingston Fossil Plant in Harriman, Tennessee.¹³ The pond was used as a permanent storage site for toxic coal ash, reaching an elevation level of 820 feet.¹⁴ Investigatory reports identified several reasons for the spill, including the high elevation level of the coal ash,¹⁵ the continued use of the dam,¹⁶ and the policies and practices of TVA management that allowed deteriorating conditions to advance.¹⁷ The toxic spill in Harriman was the largest of its kind in United States history,¹⁸ leading to federal recognition that regulation of toxic coal ash was required to prevent future destruction to humanity and the environment.¹⁹

5. *Id.*

6. *See generally id.*

7. *See EPA Response to Kingston TVA Coal Ash Spill*, EPA, <https://www.epa.gov/tn/epa-response-kingston-tva-coal-ash-spill> (last updated Dec. 23, 2016).

8. Barbara Gottlieb et al., *Coal Ash: The Toxic Threat to our Health and Environment*, A REPORT FROM PHYSICIANS OF SOCIAL RESPONSIBILITY AND EARTH JUSTICE, v (Sept. 2010).

9. *Id.*

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

11. Gottlieb et al., *supra* note 8, at v.

12. *Id.*

13. *Id.*

14. *Mays v. Tennessee Valley Authority*, 699 F. Supp. 2d 991, 998 (E.D. Tenn. 2010).

15. *Id.* at 999.

16. *Id.*

17. *Id.*

18. Hazardous and Solid Waste Management System; Identification and Listing of Special Wastes; Disposal of Coal Combustion Residuals From Electric Utilities, 75 Fed. Reg. 35128, 35150 (proposed June 21, 2010) [hereinafter *2010 Proposal*]; *see also* Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities, 80 Fed. Reg. 21302, 21361 (Apr. 17, 2015) [hereinafter *Final Rule*]; Duane Gang, *5-Years After Coal Ash Spill, Little Has Changed*, USA TODAY, Dec. 23, 2013, <https://www.usatoday.com/story/news/nation/2013/12/22/coal-ash-spill/4142995>.

19. *See 2010 Proposal*, *supra* note 18, at 35128.

The dam that collapsed in Harriman was built in 1955,²⁰ when regulations over the power industry were largely non-existent.²¹ Power plants similar to Kingston have been operating for decades and still store and dispose of coal ash within structures that were built without adequate safeguards and which are deteriorating.²² Risk of another spill similar to that of Kingston is high, as evidenced by the Dan River spill in 2014, where 39,000 tons of toxic coal ash spilled into the Dan River in Eden, North Carolina.²³ More recently, it was revealed during trial that 27 billion gallons of toxic coal ash spilled into the Cumberland River from the Gallatin Fossil Plant (also managed by TVA) in Nashville, Tennessee, over an eight-year period, and that toxic metals continue to leach into the river.²⁴

Risk of a massive breach looms over communities such as Shippingport, Pennsylvania, where the largest coal ash pond in the country is located.²⁵ Little Blue Run, an unlined 1,700-acre pond located at the Bruce Mansfield power plant, which closed at the end of 2016,²⁶ is the subject of ongoing litigation due to its toxic leakage and negative health effects on the surrounding community.²⁷ Residents of Shippingport were at one time told they could swim and play in the lake of toxic coal ash.²⁸ A picture was painted of a seemingly pristine lake—the true hazards of its contents remained unspoken.²⁹ The lack of information regarding the toxic hazards of coal ash is not uncommon and is equally as damaging as the failure to regulate the disposal and storage methods of coal ash.³⁰

20. *Kingston Fossil Plant*, TENN. VALLEY AUTH., <https://www.tva.gov/Energy/Our-Power-System/Coal/Kingston-Fossil-Plant> (last visited Mar. 17, 2017).

21. See 2010 Proposal, *supra* note 18, at 35128; *Legislative and Regulatory Timeline for Fossil Fuel Combustion Wastes*, EPA, <https://www.epa.gov/coalash/legislative-and-regulatory-timeline-fossil-fuel-combustion-wastes> (last updated Mar. 24, 2016).

22. *Final Rule*, *supra* note 18, at 21326.

23. *The Spill at Dan River*, 60 MINUTES, (CBS Television Broadcast Dec. 7, 2014) (transcript of program, which aired on December 7, 2014, and re-aired on June 14, 2015), <https://www.cbsnews.com/news/duke-energy-on-coal-ash-waste-at-dan-river-2/>; Jonathan Rodriguez, *NC Coal Ash Spill Clean Up Continues 2 Years Later*, WNCN (Feb. 2, 2016), <http://wncn.com/2016/02/02/nc-coal-ash-spill-clean-up-continues-2-years-later>.

24. Stacey Barchenger, *Trial over TVA's Storage of Coal Ash Begins*, THE TENNESSEAN, Jan. 30, 2017, <http://www.tennessean.com/story/news/2017/01/30/trial-over-tennessee-valley-authority-storage-coal-ash-begins/97152294/>; see also Tatiana Schlossberg, *2 Tennessee Cases Bring Coal's Hidden Hazard to Light*, N.Y. TIMES, Apr. 15, 2017, https://www.nytimes.com/2017/04/15/climate/tennessee-coal-ash-disposal-lawsuits.html?_r=0.

25. Joby Warrick, *Dam Breaks, Tainted Wells Prompt New Look At Coal-Ash Dumps That Escaped EPA Review*, WASH. POST, Dec. 18, 2014, https://www.washingtonpost.com/national/health-science/dam-breaks-tainted-wells-prompt-new-look-at-coal-ash-dumps-that-escaped-epa-review/2014/12/18/8-1739d6-8619-11e4-b9b7-b8632ae73d25_story.html?utm_term=.67c8d77cd300.

26. Daniel Moore, *Waste Disposal Problems Halt Operations At Firstenergy's Beaver County Plant*, PITTSBURGH POST-GAZETTE, Feb. 16, 2017, <http://powersource.post-gazette.com/powersource/companies/2017/02/16/Waste-disposal-problems-halt-operations-at-FirstEnergy-s-Beaver-County-coal-power-plant/stories/201702150041>.

27. *Pennsylvania DEP v. FirstEnergy Generation Corp.*, No. 2:12CV01061 (W.D. Pa. Dec. 17, 2012) (Consent Decree), <http://files.dep.state.pa.us/RegionalResources/SWRO/SWROPortalFiles/FirstEnergyConsentDecreeFinal1.pdf>; *Bank Files Lawsuit Over Little Blue Run*, MORNING JOURNAL (July 18, 2016) <http://www.morningjournalnews.com/news/local-news/2016/07/bank-files-lawsuit-over-little-blue-run-contamination/>.

28. Warrick, *supra* note 25.

29. *Id.*

30. See generally *Final Rule*, *supra* note 18, at 21302.

This comment addresses the need for enforceable regulations and practical solutions related to the disposal and storage of coal ash, specifically in relation to the final rule implemented by the EPA, *Hazardous and Solid Waste Management Systems: Disposal of Coal Combustion Residuals from Electric Utilities*.³¹ Part II of this comment will discuss coal ash and its toxic and hazardous chemical components; Part III will address the history and final implementation of the final rule; Part IV will address the impact the rule will have on the environment and humanity; and Part V will provide a practical, plausible, and easily attainable solution based on lead paint as a historical model.

II. COAL ASH

A. What is Coal Ash?

Coal ash is the waste byproduct produced through the burning or combustion of coal to generate power.³² Coal is used as a heat source within power plants to convert water into steam which in turn drives a generator that produces electricity.³³ The coal is first pulverized into a fine powder and then released into the air of a combustion chamber where it catches fire.³⁴ The airborne residual is known as fly ash.³⁵ The fly ash either exits via the smoke stacks³⁶ (leading to brownish-green smoke permeating the sky)³⁷ or is caught in a pollution control device known as a scrubber.³⁸ The coal residuals that fall to the bottom of the combustion chamber are known as bottom ash and boiler slag.³⁹ Flue gas desulfurization materials are the final form of coal ash.⁴⁰ The residuals are “produced through a process used to reduce sulfur dioxide (SO₂) emissions from the exhaust gas system.”⁴¹ Collectively, fly ash, bottom ash, boiler slag, and flue gas desulfurization materials are coal combustion residuals,⁴² commonly referred to as coal ash.⁴³

31. See generally *id.*

32. Gottlieb et al., *supra* note 8, at vii.

33. *How Coal Works*, UNION OF CONCERNED SCIENTISTS, <https://www.ucsusa.org/clean-energy/all-about-coal/how-coal-works#.WkQgB7Q-dAY> (last visited Dec. 27, 2017).

34. *Id.*

35. *2010 Proposal*, *supra* note 18, at 35137.

36. Gottlieb et al., *supra* note 8, at vii.

37. *Id.*

38. *Id.* A scrubber is a pollution control device utilized to capture fly ash before it becomes airborne escaping through the smoke stack. See *The Clean Coal Technology Program*, U.S. DEPT. OF ENERGY, https://fossil.energy.gov/education/energylessons/coal/coal_cct2.html (last updated Feb. 12, 2013).

39. *2010 Proposal*, *supra* note 18, at 35130 (defining boiler slag as “molten bottom ash collected at the base of . . . furnaces”).

40. *Id.*

41. *Id.*

42. *Id.*

43. Gottlieb et al., *supra* note 8, at vii.

B. What Happens to Coal Ash?

Once burned, coal ash is either: (1) deposited in dry landfills;⁴⁴ (2) deposited in surface impoundments (also known as wet ash ponds) where it is mixed with water;⁴⁵ (3) discharged into nearby waterways under the plant's water discharge permit;⁴⁶ or (4) reused through recycling methods.⁴⁷ Wet ash ponds pose the greatest risk to human health and the environment due to the combining of coal ash with water and the absence of composite liners within the ponds “to prevent leaking and leaching.”⁴⁸ According to EPA findings, “because of the mobility of metals and the large size of typical disposal units, metals (especially arsenic) have leached at levels of concern from unlined landfills and surface impoundments.”⁴⁹ Many power companies, including TVA, and even those located immediately adjacent to residential communities, use wet ash ponds without liners.⁵⁰

The EPA evaluated the disposal facilities at coal-burning power plants and found that in 2012 over 470 coal-burning power plants “burned over 800 million tons of coal, generating approximately 110 million tons of [coal ash],” of which approximately 60 percent were disposed in 735 surface impoundments and 310 landfills.⁵¹ Of the 735 wet ash ponds, the EPA designated 318 as having a “high or significant hazardous rating,”⁵² thereby categorizing these locations as having a greater potential for loss of human life and environmental damage in the event of catastrophic failure.⁵³

The EPA confirmed a total of 157 damage cases—the greatest number in history—in which mismanagement of coal ash has caused damage to human health and the environment.⁵⁴ Additionally, the EPA found that the older the wet ash pond, the greater likelihood of leaking.⁵⁵ Out of the 735 wet ash ponds accounted for, approximately 56 were older than 50 years of age, 195 exceeded 40 years of age, and 340 were between 26 and 40 years of age.⁵⁶ Unlined wet ash ponds typically operate for twenty years before leaking or leaching occurs.⁵⁷

44. See *2010 Proposal*, *supra* note 18, at 35130 (describing a landfill as a disposal facility where coal ash is placed, such as “piles, sand and gravel pits, quarries, and/or large scale fill operations”).

45. *Id.* (describing a surface impoundment as a large hole dug into the ground, or already existing in the ground, containing liquid that will be mixed with the coal ash).

46. *What is Coal Ash*, EPA, <https://www.epa.gov/coalash/coal-ash-basics#01> (last updated June 7, 2016).

47. Gottlieb et al., *supra* note 8, at 7; see also *2010 Proposal*, *supra* note 18, at 35129–30 (describing the reuse of coal ash as “beneficial use” considered to provide a functional and useful benefit of the waste by replacing alternative materials and natural resources that may have been previously used).

48. Gottlieb et al., *supra* note 8, at 7.

49. *2010 Proposal*, *supra* note 18, at 35137.

50. *Tennessee and Coal Ash Disposal in Ponds and Landfill*, EARTH JUSTICE, <http://earthjustice.org/sites/default/files/tn-coal-ash-factsheet-1111.pdf> (last visited Mar. 17, 2017).

51. *Final Rule*, *supra* note 18, at 21303 (describing landfills as averaging over 120 acres in size with an average depth of over 40 feet, and surface impoundments averaging over 50 acres in size with an average depth of 20 feet).

52. *Id.* at 21327.

53. *Id.*

54. *Id.* at 21325.

55. *Id.* at 21327.

56. *Id.*

57. *Final Rule*, *supra* note 18 at 21326–27.

C. Coal Ash, a Hazardous Waste

The EPA defines a hazardous waste as “a waste with properties that make it dangerous or capable of having a harmful effect on human health or the environment.”⁵⁸ Characteristics of a hazardous waste include “ignitability, corrosivity, reactivity or toxicity.”⁵⁹ Coal ash commonly contains some of the world’s deadliest toxic metals, including “arsenic, lead, mercury, cadmium, chromium and selenium . . . [as well as] aluminum, antimony, barium, beryllium, boron, chlorine, cobalt, manganese, molybdenum, nickel, thallium, vanadium, [] zinc,”⁶⁰ and “uranium and thorium.”⁶¹ Each toxic metal poses its own individual health risks, but when exposed to multiple contaminants at one time (as would occur with exposure to coal ash) the grave risk to the health of humans and other species compounds exponentially.⁶² For humans and other species, all major organ systems are potentially affected, resulting in possible death.⁶³

In 2015, the Agency for Toxic Substances and Disease Registry (ATSDR) updated a biennial report identifying 785 toxic metals found at Superfund spill sites throughout the United States.⁶⁴ The toxic metals were ranked in order of those posing “the most significant potential threat to human health due to their known or suspected toxicity and potential for human exposure.”⁶⁵ Arsenic, lead, and mercury, the primary toxic metals found in coal ash,⁶⁶ were named as the top three most commonly occurring toxic metals, with the highest rankings of toxicity.⁶⁷

58. EPA, *Learn the Basics of Hazardous Waste*, <https://www.epa.gov/hw/learn-basics-hazardous-waste> (last updated Jan. 5, 2017).

59. EPA, *Defining Hazardous Waste: Listed, Characteristic and Mixed Radiological Wastes*, <https://www.epa.gov/hw/defining-hazardous-waste-listed-characteristic-and-mixed-radiological-wastes> (last updated Dec. 26, 2016).

60. Physicians for Social Responsibility, *Coal Ash: Hazardous to Human Health*, <http://www.psr.org/assets/pdfs/coal-ash-hazardous-to-human-health.pdf> (last visited Mar. 17, 2017); see also *The Priority List of Hazardous Substances*, ATSDR, <https://www.atsdr.cdc.gov/spl/> (last updated Feb. 12, 2016) [hereinafter *ATSDR Priority List of Hazardous Substances*].

61. Mara Hvistendahl, *Coal Ash Is More Radioactive Than Nuclear Waste*, SCIENTIFIC AMERICAN (Dec. 13, 2007), <https://www.scientificamerican.com/article/coal-ash-is-more-radioactive-than-nuclear-waste/> (describing fly ash as carrying into the surrounding communities “100 times more radiation than a nuclear power plant producing the same amount of energy”).

62. Gottlieb et al., *supra* note 8, at 4.

63. See *Final Rule*, *supra* note 18 at 21444; A. Dennis Lemly & Joseph Skorupa, *Wildlife and the Coal Waste Policy Debate: Proposed Rules for Coal Waste Disposal Ignore Lessons from 45 Years of Wildlife Poisoning*, 46 ENVTL. SCI. TECH 8595, 8696 (2012); Gottlieb et al., *supra* note 8, at 4.

64. *Summary Data for 2015 Priority List for Hazardous Substances* (2015), ATSDR, https://www.atsdr.cdc.gov/spl/resources/atsdr_2015_spl_detailed_data_table.pdf [hereinafter *ATSDR Summary Data of Hazardous Substances*].

65. *ATSDR Priority List of Hazardous Substances*, *supra* note 60.

66. Gottlieb et al., *supra* note 8, at v–vi.

67. *ATSDR Priority List of Hazardous Substances*, *supra* note 60; *ATSDR Summary Data of Hazardous Substances*, *supra* note 64; Barbara Gottlieb, *Selling our Health Down the River*, SoundCloud, 6:19 (June 17, 2015) (Discussing the hazardous impact of coal ash on the environment, Barbara Gottlieb described the discharge of toxic metals from power plants at “over 80,000 pounds of arsenic each year” and over “67,000 pounds of lead and mercury each year.”).

Arsenic, considered a human carcinogen,⁶⁸ is one of the most common and deadliest toxic metals found within coal ash.⁶⁹ Exposure to arsenic can result from contaminated drinking water,⁷⁰ contaminated soil where children play,⁷¹ and by absorption through the skin in areas where a coal ash spill is present or through coal ash dust.⁷² At low levels, exposure to arsenic can result in nausea, vomiting, cardiovascular effects, and damage to the nervous system.⁷³ Chronic exposure, even at low levels, and exposure to high levels of arsenic can result in multiple forms of cancer—some of which may not develop for years after exposure⁷⁴—and death.⁷⁵ In children, harm is further expounded by the added potential to cause neurological effects, resulting in decreased IQ scores and “increased mortality.”⁷⁶

Lead, another common and deadly toxic metal found in coal ash,⁷⁷ was identified by the ATSDR as the most commonly occurring toxic metal, and has been found at 1,274 spill sites identified on the National Priority List.⁷⁸ This neurotoxin has been considered so hazardous that when purchasing or leasing a house, disclosure is required as to whether lead paint potentially exists in the home, and warnings are required regarding the hazards of lead.⁷⁹ Exposure to lead in children could *quickly* result in “swelling of the brain, kidney disease, effects on the hemoglobin and possible death.”⁸⁰

Mercury, also considered a human carcinogen,⁸¹ is extremely toxic to the developing fetus and children.⁸² When mercury leaches into soil or water from coal ash, it converts into an organic form which can be absorbed by smaller organisms which are then eaten by larger organisms, such as fish.⁸³ Bioaccumulation results in a high concentration of methylmercury within the fish, thus becoming a major pathway for human exposure.⁸⁴ Additional methods of exposure include breathing

68. *Toxic Substances Portal—Arsenic* (Aug. 2007), ATSDR, <https://www.atsdr.cdc.gov/toxfaqs/TF.asp?id=19&tid=3>.

69. Physicians for Social Responsibility, *supra* note 60.

70. Gottlieb et al., *supra* note 8, at 1.

71. *Public Health Statement—Arsenic* (Aug. 2007), ATSDR, <https://www.atsdr.cdc.gov/ToxProfiles/tp2-c1-b.pdf>.

72. Gottlieb et al., *supra* note 8, at 2.

73. *Id.* at 1.

74. *Id.* at 1–2.

75. *Id.* at 1.

76. *ATSDR Arsenic*, *supra* note 68.

77. Gottlieb et al., *supra* note 8, at v-vi.

78. *Support Document to the 2015 Priority List of Hazardous Substances 2* (Oct. 2015), ATSDR, https://www.atsdr.cdc.gov/spl/resources/atsdr_2015_spl_support_document.pdf. (The National Priority List is compiled pursuant to the Superfund Amendments and Reauthorization Act, and is required to identify the nation’s worst hazardous waste sites due to “known or threatened releases of hazardous substances, pollutants, or contaminants throughout the U.S.”).

79. EPA, *EPA and HUD Real Estate Notification and Disclosure Rule Questions and Answers*, <https://www.epa.gov/sites/production/files/documents/1018qa.pdf>.

80. Gottlieb et al., *supra* note 8, at 3.

81. *Toxic Substances Portal—Mercury* (Apr. 1999), ATSDR, <https://www.atsdr.cdc.gov/toxfaqs/TF.asp?id=113&tid=24> [hereinafter *ATSDR Mercury*].

82. *Id.*

83. Gottlieb et al., *supra* note 8, at 3.

84. *Id.*

contaminated air,⁸⁵ as well as consuming contaminated food⁸⁶ and water.⁸⁷ Harmful effects of exposure to the fetus include “brain damage, mental retardation, incoordination, blindness, seizures, and inability to speak.”⁸⁸ Children exposed to mercury “may develop problems of their nervous and digestive systems, and kidney damage.”⁸⁹

Coal ash ponds provide two additional injurious methods of exposure to fish and wildlife: direct exposure to the ponds’ toxic waters⁹⁰ and exposure via leaking and leaching.⁹¹ Fish and wildlife become poisoned from exposure to toxic metals, such as selenium, arsenic, and mercury.⁹² The result is severe physical deformities, damage to reproductive development resulting in the elimination of entire species, and death.⁹³

In communities immediately adjacent to power plants using unlined wet ash ponds, where drinking water is derived from wells, the EPA has determined that residents of that community have “as much as a 1 in 50 chance of getting cancer from drinking water contaminated by arsenic, one of the most common and dangerous pollutants in coal ash.”⁹⁴ Repeated low level exposure over an extended period of time can ultimately have the same effect as “a one-time high level of exposure,” where the results of cancer may not be seen for years following exposure.⁹⁵ The EPA, through its own admissions, has defined coal ash as a toxic, hazardous waste,⁹⁶ the management of which should be regulated as such due to the inherent risk, and enforced at a national level.

III. THE HISTORY OF THE TOXIC COAL ASH DISPOSAL REGULATIONS

A. Solid Waste Disposal Act

The regulation of coal ash has been hotly contested for decades.⁹⁷ The first step towards regulating these toxic metals was in 1965 through the implementation of the

85. *Toxic Substances Portal—Mercury*, *supra* note 81.

86. *Id.*

87. *Id.*

88. *Id.*

89. *Id.*

90. Lemley et al., *supra* note 63; Gottlieb et al., *supra* note 8, at 8.

91. *Id.*

92. Lemley et al., *supra* note 63, at 8596.

93. *Id.*

94. Gottlieb et al., *supra* note 3, at vii (citing EPA findings within the *Human and Ecological Risk Assessment of Coal Combustion Wastes, Draft Version*, RTI, (Aug. 6, 2007), available at <http://grist.files.wordpress.com/2010/05/coalash-doc2.pdf>).

95. *Id.* at 1.

96. LINDA LUTHER, CONG. RESEARCH SERV., R43149, BACKGROUND ON AND IMPLEMENTATION OF THE BEVILL AND BENTSEN EXCLUSIONS IN THE RESOURCE CONSERVATION AND RECOVERY ACT: EPA AUTHORITIES TO REGULATE SPECIAL WASTES (2013), <http://nationalaglawcenter.org/wp-content/uploads/assets/crs/R43149.pdf>; *see also*, 2010 *Proposal*, *supra* note 18 at 35144–46.

97. Sue Sturgis, *Big Energy vs. Coal Ash Regulation*, GRIST (May 27, 2010), <http://grist.org/article/power-politics/full/>.

Solid Waste Disposal Act (SWDA).⁹⁸ This was the first federal regulation of its kind, designed to improve waste disposal technology.⁹⁹ The purpose of SWDA “was to protect human health and the environment, to reduce wastes, and to limit the generation of hazardous waste.”¹⁰⁰ As the EPA was not yet formed, the regulations provided states with minimum safety regulations for local landfills in an effort to control solid waste.¹⁰¹ After the EPA was formed in 1970, it became clear that stricter standards were needed to regulate solid waste disposal,¹⁰² which led to a major expansion of the SWDA through Congress’s passage of the Resource Conservation and Recovery Act (RCRA).¹⁰³

B. Pre-2015 Resource Recovery and Conservation Act

RCRA is the backbone of solid and hazardous waste regulations, which sets forth federal guidelines on disposal of solid waste¹⁰⁴ and implements EPA enforcement authority of hazardous waste.¹⁰⁵ Upon promulgation, the goals of RCRA were to “[e]nsure that wastes are managed in a manner that protects human health and the environment; [r]educe or eliminate, as expeditiously as possible, the amount of waste generated, including hazardous waste; and [c]onserve energy and natural resources through waste recycling and recovery.”¹⁰⁶ The “National Policy”¹⁰⁷ under RCRA further expanded upon these goals, and stated that “wherever feasible, the generation of hazardous waste . . . be reduced or eliminated as expeditiously as possible. Waste that is nevertheless generated should be treated, stored, or disposed of so as to minimize the present and future threat to human health and the environment.”¹⁰⁸ Two subchapters of RCRA have led to the greatest contention over the past thirty years.¹⁰⁹ The first is Subchapter III, “Hazardous Waste Management,”¹¹⁰ commonly referred to as Subtitle C, regulating the management and disposal of hazardous waste.¹¹¹ The second is Subchapter IV, “State or Regional Solid Waste Plans,”¹¹² commonly referred to as Subtitle D, regulating the disposal of solid waste deemed non-hazardous.¹¹³ As written in 1976, the purpose of Subtitle C and D were clear,¹¹⁴ but

98. *Solid Waste Management on Tribal Lands*, EPA <https://www3.epa.gov/region9/waste/tribal/reg.html> (last updated May 6, 2016).

99. *Id.*

100. *Id.*

101. *25 Years of RCRA: Building on Our Past to Protect Our Future*, EPA 1 (Apr. 2002), <https://nepis.epa.gov/Exe/ZyPDF.cgi/10000MAO.PDF?Dockey=10000MAO.PDF>.

102. *Id.*

103. *Id.* at 1–2.

104. *Solid Waste Management on Tribal Lands*, *supra* note 97.

105. *Id.*

106. *Id.* at 2.

107. 42 U.S.C. § 6902(b) (1976).

108. *Id.*

109. 42 U.S.C. §§ 6921–49(a) (1976).

110. 42 U.S.C. § 6921 (2006).

111. *2010 Proposal*, *supra* note 18, at 35135.

112. 42 U.S.C. § 6941 (2006).

113. *2010 Proposal*, *supra* note 18, at 35136.

114. 42 U.S.C. § 6901(b) (2006) (containing the same language as the 1976 version of the statute).

as the years went on, money and corporate interests corroded their effectiveness. Subtitle D will be addressed first.

i. Subtitle D

Subtitle D differed greatly from its counterpart, Subtitle C.¹¹⁵ The purpose of this subtitle is to regulate solid waste that did not fall within the definition of a hazardous waste and which was not identified by the EPA as a hazardous waste.¹¹⁶ In sum, Subtitle D regulates the disposal of household garbage.¹¹⁷ Where Subtitle C provides stringent requirements on the management of hazardous waste through a “cradle-to-grave approach,”¹¹⁸ Subtitle D manages only the *disposal* of solid waste.¹¹⁹ While these differences are significant, the glaring difference is that the EPA does not have any authority to enforce the provisions of Subtitle D.¹²⁰ Non-compliance with the guidelines set forth in Subtitle D can therefore only be enforced through citizen suit.¹²¹ For this reason, combined with the broad requirements of Subtitle D,¹²² logic concludes that management of *any* hazardous waste should not fall under purview of Subtitle D.

ii. Subtitle C

Under Subtitle C, the EPA is “authorized to enforce standards applicable to hazardous waste generators and transporters, and to owners and operators of hazardous waste treatment, storage, and disposal facilities . . . sometimes referred to as ‘cradle-to-grave’ management.”¹²³ Therefore, all wastes deemed hazardous by the EPA are regulated by the strict standards of Subtitle C at the federal level.¹²⁴ At the time of enactment, hazardous wastes were not yet identified.¹²⁵ No later than eighteen months following promulgation, the EPA provided Congress the criteria required to identify hazardous wastes and a list of hazardous wastes to be regulated under Subtitle C.¹²⁶ When making these determinations, the EPA was required to consider “toxicity, persistence, and degradability in nature, potential for

115. Compare 42 U.S.C. §§ 6921–39g, with 42 U.S.C. §§ 6941–49(a).

116. 2010 Proposal, *supra* note 18, at 35136.

117. Basic Information about Landfills, EPA, <https://www.epa.gov/landfills/basic-information-about-landfills> (last updated Feb. 21, 2017).

118. Learn the Basics of Hazardous Waste, EPA, <https://www.epa.gov/hw/learn-basics-hazardous-waste> (last updated Jan. 5, 2017) (defining the “cradle-to-the grave hazardous waste system management” as a “comprehensive regulatory program to ensure that hazardous waste is managed safely . . . from the time it is created, [to] while it is transported, treated, and stored, and until it is disposed”).

119. 42 U.S.C. § 6941.

120. 42 U.S.C. § 6972 (2006) (providing limited enforcement of Subtitle D through lawsuits from citizens and States); 2010 Proposal, *supra* note 18, at 35134.

121. *Id.*

122. 42 U.S.C. § 6941.

123. LUTHER, *supra* note 95, at 1.

124. *Id.*

125. 42 U.S.C. § 6921(a) (1976).

126. *Id.*

accumulation in tissue, and other related factors such as flammability, corrosiveness, and other hazardous characteristics.”¹²⁷

In 1978, the EPA presented Congress with the required report establishing criteria for hazardous waste and identifying hazardous waste to be regulated under Subtitle C.¹²⁸ Coal ash was identified as a potential hazardous waste.¹²⁹ The EPA, expressing concern that it did not have enough information on the effects of coal ash, while at the same time recognizing that it was a hazardous waste, proposed regulation under a “limited subset of Subtitle C standards” called “special waste standards.”¹³⁰ This proposal was met with fierce opposition by supporters of the coal industry,¹³¹ leading to a bill placed before Congress in 1980 known as the Bevill Amendment.¹³²

C. Coal Industry, Welcome to the Show—The Bevill Amendment

The Bevill Amendment was sponsored by Representative Thomas Bevill of Alabama,¹³³ the chair of the House Energy Development and Water Appropriations Subcommittee, who opposed identifying coal ash as hazardous waste and regulating it under strict requirements of Subtitle C.¹³⁴ During the Congressional debate, Bevill argued that “it would be unreasonable for EPA to impose costly and burdensome regulatory requirements without knowing if a problem really exists, and if it does, the true nature of that problem.”¹³⁵ The Bevill Amendment was drafted in Alabama, a state that obtained most of its power from coal.¹³⁶

Under the Amendment, the EPA was required to conduct an extensive study and provide a detailed report by October 21, 1982, on the “adverse effects on human health and the environment” of the disposal and use of coal ash.¹³⁷ Pending those findings, certain hazardous waste products, including coal ash, were exempt from Subtitle C, thus placing them within the mandates of Subtitle D, the regulation of household garbage.¹³⁸ Cost and inconvenience to the power industry were the determining factors leading to the passage of the Bevill Amendment.¹³⁹ A big win

127. *Id.*

128. *See* Hazardous Waste Guidelines and Regulations, 43 Fed. Reg. 58946, 58946 (proposed Dec. 18, 1978) (to be codified at 40 C.F.R. pt. 250).

129. *Id.* at 59021.

130. LUTHER, *supra* note 95, at 4.

131. *Id.* at 6.

132. *Id.* at 4.

133. *Id.*

134. Sue Sturgis, *supra* note 96, at 2.

135. *Resource Recovery and Pollution Amendments of 1979*, 126 Cong. Rec. H 1086, 1101 (daily ed. Feb. 20, 1980) (statement of Representative Thomas Bevill, Alabama).

136. Stan Diel, *Alabama gets more power from coal than national average, but impact of EPA carbon standards unclear*, AL (June 2, 2014), http://www.al.com/business/index.ssf/2014/06/alabama_gets_more_power_from_c.html.

137. 42 U.S.C. § 6982(n) (1984) (containing the same language as the 1980 version of the statute).

138. 42 U.S.C. § 6921(b)(3)(A).

139. LUTHER, *supra* note 95, at 4.

for the power industry and its associates,¹⁴⁰ the Bevill Amendment was seen as a major loss for residents, the natural world, and future generations.¹⁴¹ Thus, the EPA's first attempt to regulate coal ash as hazardous waste was thwarted by profit margins and politics.

The deadline of October 21, 1982 came and went without any report provided.¹⁴² Finally, in 1998 and 1999 the EPA provided two reports, both of which claimed damage to human health and the environment did not warrant lifting the Bevill Amendment to regulate coal ash as hazardous waste.¹⁴³ In 2000 however, there was a drastic shift in the EPA's stance when the EPA was inundated with thousands of comments,¹⁴⁴ some of which brought to light damage cases the EPA had not previously identified.¹⁴⁵ The result was a new report proposing, for a second time, that coal ash be regulated under Subtitle C as a hazardous waste.¹⁴⁶ The report stated therein that:

[Coal ash] waste[] could pose risks to human health and the environment if not properly managed, and [that] there is sufficient evidence that adequate controls may not be in place—for example, while most states can now require newer units to include liners and groundwater monitoring, 62% of existing utility surface impoundments do not have groundwater monitoring.¹⁴⁷

The proposal collided with other interests when it was introduced to Congress.¹⁴⁸ The debate did not focus on human or environmental health, but on cost.¹⁴⁹ The EPA estimated costs to the power industry to be an additional \$1 billion per plant per year, while the power industry estimated costs to be an additional \$13 billion per plant per year.¹⁵⁰ Due to political and industry-driven considerations, the EPA backed away from the proposed regulations and claimed it would consider regulating coal ash as a non-hazardous waste.¹⁵¹ Those regulations however, did not come until it was too late.

140. See generally Sturgis, *supra* note 96 (discussing how the coal industry avoided the imposition of costly and burdensome regulatory requirements, while evidence was “mounting that coal ash posed a growing threat to environmental and human health”).

141. *Id.*

142. *Legislative and Regulatory Timeline for Fossil Fuel Combustion Wastes*, EPA, <https://www.epa.gov/coalash/legislative-and-regulatory-timeline-fossil-fuel-combustion-wastes> (last updated Feb. 8, 2017).

143. Sturgis, *supra* note 96.

144. *Id.*

145. *Id.*

146. Notice of Regulatory Determination on Wastes From the Combustion of Fossil Fuels, 65 Fed. Reg. 32,214, 32,214 (May 22, 2000) (to be codified at 40 C.F.R. pt. 250).

147. *Id.* at 32,216.

148. See Kristen Lombardi, *Coal Ash, The Hidden History*, THE CENTER FOR PUBLIC INTEGRITY, <https://www.publicintegrity.org/2009/01/07/2980/hidden-history> (last updated May 19, 2014, 12:19 PM).

149. *Id.*

150. *Id.*

151. *Id.*

In 2007, just one year before the Kingston TVA spill, the EPA prepared a study, *Human and Ecological Risk Assessment of Coal Combustion Wastes*, describing inherent risks in the disposal of coal ash.¹⁵² Within this study, the EPA found that state management of coal ash disposal sites were insufficient,¹⁵³ coal ash disposal sites were not monitored by the states,¹⁵⁴ and most states did not require liners.¹⁵⁵ Additionally, the study identified the existence of state programs that permitted disposal methods of coal ash which directly threatened drinking water supplies from underground aquifers.¹⁵⁶ Yet these findings were not enough for the EPA to propose regulations on the storage and disposal of coal ash.¹⁵⁷ It took a catastrophic disaster in Harriman, Tennessee,¹⁵⁸ shocking the nation with the horror of coal ash and the risks imposed on the communities, for the federal government to finally stir.¹⁵⁹

D. 2010, The Proposal

As a direct result of the 2008 TVA spill,¹⁶⁰ in 2010, the EPA proposed regulations for the disposal and storage of coal ash.¹⁶¹ The proposal provided two main options to regulate coal ash and requested public comments before a final determination was made.¹⁶² The first option proposed regulation of coal ash (disposed of through landfills or surface impoundments) through Subtitle C of RCRA,¹⁶³ thereby reversing its previous determinations to regulate coal ash as a non-hazardous waste and lifting the Bevill exemption.¹⁶⁴ By falling under the mandates of Subtitle C, federal enforcement would be required, as well as state adoption and implementation.¹⁶⁵ This was the EPA's third attempt to regulate coal ash as hazardous waste.¹⁶⁶

The second option proposed regulation of coal ash through Subtitle D of RCRA, drafted for the regulation of non-hazardous waste.¹⁶⁷ Consistent with the provisions of Subtitle D, these guidelines would be self-regulating,¹⁶⁸ providing citizens and states the opportunity to bring suit for failure to comply,¹⁶⁹ but prohibiting the federal

152. *Human and Ecological Risk Assessment of Coal Combustion Wastes, Draft Version*, RTI, (Aug. 6, 2007), available at <http://grist.files.wordpress.com/2010/05/coalash-doc2.pdf>.

153. *Id.*

154. *Id.*

155. *Id.*

156. *Id.*; see also Sturgis, *supra* note 96.

157. See Sturgis, *supra* note 96.

158. *Id.*; see also *2010 Proposal*, *supra* note 18, at 35132.

159. See Sturgis, *supra* note 96.

160. See *2010 Proposal*, *supra* note 18, at 35132, 35150.

161. *Id.* at 35150.

162. *Id.*

163. *Id.* at 35133.

164. *Id.*

165. *Id.* at 35135–36.

166. See generally Sturgis, *supra* note 96 (discussing the three attempts made to regulate coal ash in 1978, 2000, and 2010).

167. *2010 Proposal*, *supra* note 18, at 35136.

168. *Id.*

169. *Id.*

government from enforcement due to the Bevill exemption.¹⁷⁰ The EPA justified regulation under Subtitle D by claiming that while certain safeguards (such as lining ponds) must be in place to protect against *hazardous effects* of coal ash, the safeguards did not need to be as stringent as those required under Subtitle C.¹⁷¹ The EPA would not go as far as defining coal ash as non-hazardous, yet proposed it could be regulated as such.¹⁷²

Over 400,000 comments and submissions came pouring in from communities, the power industry, and environmentalists as to preferred methods of regulation.¹⁷³ Environmentalists and members of concerned communities relied on the proven toxic hazards of coal ash and the weight of historical events to support regulation under Subtitle C.¹⁷⁴ The power industry however took a firm stance in affirming its belief in profit over people and the continued regulation of coal ash under Subtitle D, stating that the Subtitle C compliance costs “*cannot be justified.*”¹⁷⁵

E. 2014, The Final Rule

On December 19, 2014, the EPA published the final rule regulating coal ash, a proven hazardous waste, under the self-regulating standards of Subtitle D.¹⁷⁶ Within the Summary of the Rule, the EPA acknowledged that “the risks posed to human health and the environment by certain . . . [coal ash] management units warrant regulatory controls.”¹⁷⁷ The rule requires the closure, or retrofitting, of any existing unlined surface impoundments that are contaminating groundwater above a regulated limit and the closure of landfills and surface impoundments that cannot meet structural integrity requirements, as well as maintaining a publicly available website containing compliance information.¹⁷⁸ The rule limits regulation to active power facilities and specifically excludes inactive surface impoundments at closed facilities,¹⁷⁹ which could continue to store coal ash with the potential of contaminating groundwater with toxic metals.¹⁸⁰

170. *Id.*

171. *Id.*

172. *Id.*

173. Docket Folder Summary, 2010 Proposal, REGULATIONS.GOV, <https://www.regulations.gov/docket?D=EPA-HQ-RCRA-2009-0640> (last visited Mar. 17, 2017).

174. *Final Rule*, *supra* note 18, at 21302.

175. Duke Energy, Comment on 2010 Proposal, REGULATIONS.GOV, 46 (Nov. 19, 2010), <https://www.regulations.gov/document?D=EPA-HQ-RCRA-2009-0640-6398>.

176. *Final Rule*, *supra* note 18, at 21302 (As a Subtitle D regulation, the guidelines are not federally enforceable, with regulations only being enforceable through state and citizen suit.). The Final Rule was pre-published on December 19, 2014, prior to publication in the Federal Registrar on April 17, 2015.

177. *Id.*

178. *Id.*

179. *Id.* at 21340.

180. Kari Lydersen, *Long-term Protection of Illinois River from Coal Ash Falls in Regulatory Gray Area*, MIDWEST ENERGY NEWS (Sept. 28, 2016), <http://midwestenergynews.com/2016/09/28/long-term-protection-of-illinois-river-from-coal-ash-falls-in-regulatory-gray-area/>.

On October 6, 2016, the rule was further amended to extend the deadline for compliance of closing surface impoundment locations.¹⁸¹ The closure of these locations is required due to potentials risks imposed through inadequate surface impoundment structures.¹⁸² The extension of the deadline therefore grossly increases the risk of exposure to toxic, carcinogenic metals, potentially having catastrophic effects to nearby residents and the environment.¹⁸³

IV. THE NET EFFECT

A. Failure to Comply Results in Toxic Impacts on Communities and Environment

Despite the fact that coal ash is “regulated” under Subtitle D, it is a hazardous waste due to the toxic metals that comprise coal ash.¹⁸⁴ Improper storage and disposal of coal ash resulting from lack of enforcement have had, and will continue to have, detrimental and deadly impacts on neighboring communities.¹⁸⁵

Following the Kingston TVA spill, the toxic coal ash was transferred from Tennessee to a small, low-income, minority town in Uniontown, Alabama.¹⁸⁶ The coal ash was placed into a landfill, uncapped, and resulted in severely hazardous health effects to the community.¹⁸⁷ Residents of the community and environmental advocates have described the potential impacts of the massive coal ash landfill as causing coal dust storms in windy conditions; coal ash to seep down the sides of the “mountain” in the rain; paint to peel off houses and cars; animals to become ill and die; and residents to experience grave health effects.¹⁸⁸

In 2014, just prior to EPA’s final rule, a massive coal ash spill occurred in Eden, North Carolina from a retired Duke Energy plant, resulting in “canyons and ridges of industrial waste the size of 20 football fields, buried right by the river where people fish and swim and get their drinking water.”¹⁸⁹ As much as 39,000 tons of coal ash and 27 million gallons of toxic pond water were released into the Dan

181. Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals from Electric Utilities; Extension of Compliance Deadlines for Certain Inactive Surface Impoundments; Response to Partial Vacatur, 81 Fed. Reg. 51802–03 (Aug. 5, 2016).

182. *Id.*

183. *See id.* The lack of regulation of closed facilities, continuing to store coal ash, warrants a related, but entirely separate writing and legal analysis.

184. *See* Physicians for Social Responsibility, *supra* note 60; *see also* ATSDR, *The Priority List of Hazardous Substances*, *supra* note 60.

185. *See generally* Physicians for Social Responsibility, *supra* note 60; *Human and Ecological Risk Assessment of Coal Combustion Wastes, Draft Version*, RTI, (Aug. 6, 2007), available at <http://grist.files.wordpress.com/2010/05/coalash-doc2.pdf>.

186. Mark Harrison Foster, Jr., Note, *Ash Holes: The Failure to Classify Coal Combustion Residuals as a Hazardous Waste Under RCRA and the Burden Borne by a Minority Community in Alabama*, 12 VT. J. ENVTL L. 735, 744; *see also* *Ashes: A Community’s Toxic Inheritance*, EARTHJUSTICE (last visited Oct. 21, 2016) <http://earthjustice.org/features/campaigns/photos-a-toxic-inheritance>.

187. Foster, *supra* note 185; *see also* Kristen Lombardi, *Welcome to Uniontown: Arrowhead Landfill Battle a Modern Civil Rights Struggle*, NBC NEWS (Aug. 5, 2015, 10:44 AM) <http://www.nbcnews.com/news/nbcblk/epa-environmental-injustice-uniontown-n402836>.

188. Foster, *supra* note 185.

189. *The Spill at Dan River*, *supra* note 23.

River.¹⁹⁰ The spill traveled as far as seventy miles downstream into Virginia's neighboring riverbeds.¹⁹¹ A damage assessment conducted by the Dan River Natural Resource Trustee Council determined that "concentrations of the hazardous substances associated with coal ash in Dan River sediments were sufficient to cause injury" to wildlife and other species exposed to the coal ash.¹⁹² Both arsenic and selenium were identified amongst the toxic metals at levels of concern.¹⁹³ It is unclear at this point as to the long term effects that this toxic, hazardous exposure will have on the North Carolina community.¹⁹⁴

Litigation has been ongoing in communities such as Shippingport, Pennsylvania,¹⁹⁵ which are exposed to toxic leakage and negative health effects from the largest coal ash pond in the country, Little Blue Run, an unlined 1,700 acre coal ash pond.¹⁹⁶ Built as a coal ash disposal site for Bruce Mansfield power plant,¹⁹⁷ the residents of Shippingport were at one time told that the "lake" would be a boon to the area,¹⁹⁸ a family destination where they could swim and play.¹⁹⁹ Tests have now confirmed that coal ash has penetrated hundreds of yards of rock and soil, contaminated the local ground water, and occasionally spills from the surrounding hillsides into residents' backyards.²⁰⁰ Local wells tested positive for arsenic.²⁰¹ While this pond was closed at the end of 2016,²⁰² the community and environment continue to suffer from its hazardous impact.²⁰³

Almost ten years after the Kingston spill, TVA facilities continue to contaminate rivers and drinking water of neighboring communities due to improper disposal and management of coal ash, this time at the Gallatin Fossil Plant located just south of Nashville, Tennessee.²⁰⁴ This plant, similar to the Kingston Plant, is surrounded by

190. Dan River Natural Resource Trustee Council, *Dan River Coal Ash Spill Natural Resource Damage Assessment Plan, Draft Version*, 6 (June 2015), https://www.fws.gov/northeast/virginiafield/pdf/contaminants/20150616_Draft_DAP_with_Appendices.pdf.

191. *Id.*

192. *Id.* at 19, 32.

193. *Id.* at 6; see also Gerry Broome, *Officials: Unsafe Levels of Arsenic from Duke Energy Coal Ash Dump Pouring Into River*, ASSOCIATED PRESS (Feb. 18, 2014, 9:46 PM) <http://www.cbsnews.com/news/officials-unsafe-levels-of-arsenic-from-duke-energy-coal-ash-dump-pouring-into-river/>.

194. See Sara Peach, *Coal Ash Poisons Wells and Community Relations*, SCIENTIFIC AMERICAN (Apr. 18, 2016) <https://www.scientificamerican.com/article/coal-ash-poisons-wells-and-community-relations/>; see also Michael Biesecker, *Testimony: Health Director Covered Up Cancer-Causing Water In North Carolina*, ASSOCIATED PRESS (Aug. 2, 2016, 3:39 PM) <http://www.pbs.org/newshour/runtdown/state-health-director-may-covered-toxic-water-north-carolina/>.

195. Pennsylvania DEP, *supra* note 27; see also MORNING JOURNAL, *supra* note 27.

196. Warrick, *supra* note 25; Peach, *supra* note 193.

197. Warrick, *supra* note 25.

198. *Id.*

199. See *Short Film Released About American Dreams Turned Into Toxic Nightmare*, EARTHJUSTICE (Oct. 17, 2014), <http://earthjustice.org/news/press/2014/short-film-released-about-american-dreams-turned-into-toxic-nightmare>.

200. Warrick, *supra* note 25.

201. *Id.*

202. *Id.*

203. See MORNING JOURNAL, *supra* note 27; EARTHJUSTICE, *supra* note 198.

204. *Gallatin Coal Ash Trial Concludes as SELC Reveals Decades-Long Trouble at TVA Site*, SOUTHERN ENVIRONMENTAL LAW CENTER (Feb. 3, 2017), <https://www.southernenvironment.org/news-and-press/news-feed/gallatin-coal-ash-trial-concludes-selc-reveals-decades-long-trouble-at-tva> [hereinafter *Gallatin Coal Ash Trial*].

residential homes, with children and families who drink the water, swim in pools, and play in the soil.²⁰⁵ The Southern Environmental Law Center (SELC) filed suit against TVA as a result of this contamination.²⁰⁶

During trial, which concluded on February 3, 2017, the TVA acknowledged that contamination began as early as the 1970's.²⁰⁷ The mixture of water with coal ash leaked "through the porous bottom of the ash ponds at a rate of 6,000 gallons a minute. The total volume of coal ash wastewater lost [from 1970 to 1978] . . . was 27 billion gallons."²⁰⁸ SELC experts visited the site just prior to trial and testified that "they encountered coal ash sludge on the banks of the Cumberland River that was at times waist deep."²⁰⁹ As a result of this toxic leaching, the Cumberland River is likely, as of the date trial concluded, polluted with "arsenic, cadmium, selenium and other toxic agents harmful to both humans and wildlife."²¹⁰

B. Political Upheaval—Compliance Unlikely

*"Please allow me to introduce myself
I'm a man of wealth and taste
I've been around for a long, long year
Stolen many a man's soul and faith"*
-Sympathy for the Devil, The Rolling Stones²¹¹

Using the EPA's own definition of hazardous waste, coal ash disposal and storage should fall under federal enforcement and be regulated under Subtitle C. The exclusion of coal ash from Subtitle C, combined with the lack of federal enforcement, could have devastating effects on those communities endangered due to the risks of leakage and exposure. Applying Subtitle C to coal ash would restore value to both humanity and the earth. While this rule provides a small step towards protecting the health of the community and the environment, compliance is unlikely due to its self-regulating nature, and the unraveling of environmental regulations by the federal government.

On January 20, 2017, within hours of Donald Trump taking office, all reference to climate change and the impact of mankind on the environment were removed from the White House website and replaced with an aggressive plan to access the nation's

205. Steven Hale & Steve Cavendish, *TVA, Coal Ash and Pollution on the Cumberland River*, NASHVILLE SCENE (Jan. 19, 2017, 5:00 AM), <http://www.nashvillescene.com/news/cover-story/article/20849376/tva-coal-ash-and-pollution-on-the-cumberland-river>.

206. *Gallatin Coal Ash Trial*, *supra* note 203; Tatiana Schlossberg, *2 Tennessee Cases Bring Coal's Hidden Hazard to Light*, NY TIMES (Apr. 15, 2017), https://www.nytimes.com/2017/04/15/climate/tennessee-coal-ash-disposal-lawsuits.html?_r=0.

207. *Gallatin Coal Ash Trial*, *supra* note 203.

208. *Id.*

209. *Id.*

210. Hale & Cavendish, *supra* note 204.

211. MICK JAGGER & KEITH RICHARDS, *Sympathy For the Devil*, *on* BEGGARS BANQUET (Olympic Sound Studios 1968).

shale, oil, and gas reserves, and revive the coal industry.²¹² This plan is coming to fruition at an alarming rate as evidenced through significant rollbacks and elimination of essential environmental regulations,²¹³ including the decision to remove the United States from the Paris Climate Change Agreement,²¹⁴ sending shockwaves across the globe.²¹⁵ The elimination and rollback of regulations meant to protect mankind and the environment align with President Trump's redirection of the EPA,²¹⁶ to overhaul and dismantle any environmental regulations that the Administration deems overly burdensome (i.e. costly) for the power industry and corporations.²¹⁷

On May 12, 2017, the Utility Solid Waste Activities Group (USWAG) petitioned the EPA to reconsider and significantly rollback requirements within the Final

212. *An America First Energy Plan*, THE WHITE HOUSE, <https://www.whitehouse.gov/america-first-energy> (last visited June 1, 2017); see also Tom Di Christopher, *The White House Page on Climate Change Just Disappeared*, CNBC (Jan. 20, 2017), <http://www.cnbc.com/2017/01/20/the-white-house-websites-page-on-climate-change-just-disappeared.html>. *Contra generally*, *A Historic Commitment to Protecting the Environment and Addressing the Impacts of Climate Change*, THE WHITE HOUSE PRESIDENT BARACK OBAMA, <https://obamawhitehouse.archives.gov/the-record/climate> (last visited June 1, 2017) (reflecting the expansive environmental protection plans under former President Obama's Administration).

213. See Hiroko Tabuchi, *Republicans Move to Block Rule on Coal Mining Near Streams*, THE NEW YORK TIMES (Feb. 2, 2017), <https://www.nytimes.com/2017/02/02/business/energy-environment/senate-coal-regulations.html> (the House and Senate votes to repeal the Stream Protection Rule, designed to protect waterways from the dumping of coal ash from mining); Chris Mooney & Juliet Eilperin, *Trump's EPA Moves To Dismantle Programs That Protect Kids From Lead Paint*, THE WASHINGTON POST (Apr. 5, 2017), https://www.washingtonpost.com/news/energy-environment/wp/2017/04/05/trumps-epa-moves-to-defund-programs-that-protect-children-from-lead/?utm_term=.3750e47361a1 (describing a proposal by the EPA to eliminate two programs that limit children's exposure to lead-based paint); David Henry, *EPA Halts Obama-era Rule on Methane Pollution*, THE HILL (May 31, 2017, 12:08 PM), <http://thehill.com/policy/energy-environment/335777-epa-halts-obama-era-methane-regulation> (describing steps taken by the EPA to rollback regulations meant to reduce methane leaks and cut down on methane pollution); see also Brady Denis & Juliet Eilperin, *EPA Remains Top Target With Trump Administration Proposing 31 Percent Budget Cut*, THE WASHINGTON POST (May 23, 2017), https://www.washingtonpost.com/news/energy-environment/wp/2017/05/22/epa-remains-top-target-with-trump-administration-proposing-31-percent-budget-cut/?utm_term=.f19da198658f; Coral Davenport, *Trump Budget Would Cut E.P.A. Science Programs and Slash Cleanups*, THE NEW YORK TIMES (May 19, 2017), <https://www.nytimes.com/2017/05/19/climate/trump-epa-budget-superfund.html>.

214. Office of the Press Secretary, *Statement by President Trump on the Paris Climate Accord*, THE WHITE HOUSE (June 1, 2017, 3:32 PM), <https://www.whitehouse.gov/the-press-office/2017/06/01/statement-president-trump-paris-climate-accord>; see also Michael Shear, *Trump Will Withdraw U.S. From Paris Climate Agreement*, THE NEW YORK TIMES (June 1, 2017), https://www.nytimes.com/2017/06/01/climate/trump-paris-climate-agreement.html?_r=0.

215. *UNFCCC Statement on the US Decision to Withdraw from the Paris Agreement*, UNFCCC, (June 1, 2017), <http://newsroom.unfccc.int/unfccc-newsroom/unfccc-statement-on-the-us-decision-to-withdraw-from-paris-agreement/>; Meghan Keneally & Julia Jacobo, *Cities And States Aim To Take Up Paris Accord After Trump's Withdrawal*, ABC NEWS (June 2, 2017, 11:20 AM), <http://abcnews.go.com/US/cities-states-aim-paris-accord-trumps-withdrawal/story?id=47773477>; Bill Chappel, *Bloomberg Promises \$15 Million To Help Make Up For U.S. Withdrawal From Climate Deal*, NPR (June 2, 2017, 1:58 PM), <http://www.npr.org/sections/thetwo-way/2017/06/02/531238185/bloomberg-promises-15-million-to-help-make-up-for-u-s-withdrawal-from-climate-de>.

216. Ted Barret, *Scott Pruitt Confirmed to EPA*, CNN (Feb. 17, 2017), <http://www.cnn.com/2017/02/17/politics/senate-epa-scott-pruitt/>; *Back to Basics Agenda*, EPA, <https://www.epa.gov/home/back-basics-agenda> (last updated May 8, 2017).

217. Exec. Order No. 13,783, 82 Fed. Reg. 16,093 (Mar. 28, 2017); Exec. Order No. 13,778, 82 Fed. Reg. 12,497 (Feb. 28, 2017); see also Juliet Eilperin, *Trump is Poised to Issue a Sweeping Order Dismantling Obama's Climate Plan This Week*, THE WASHINGTON POST (Mar. 14, 2017), https://www.washingtonpost.com/news/energy-environment/wp/2017/03/14/trump-is-poised-to-issue-a-sweeping-order-dismantling-obamas-climate-plan-this-week/?utm_term=.363f809a3787.

Rule.²¹⁸ Taking its lead from the President's Executive Orders,²¹⁹ the justification for reconsideration was (what the USWAG considers) the unnecessary cost of compliance to close or retrofit coal ash ponds leaking and contaminating the environment.²²⁰ Thus, adding to the ever growing list of potential environmental rollbacks,²²¹ the already insufficient regulations related to the storage and disposal of coal ash.

Based on the recent regulatory changes, it is becoming clear that the current Administration cannot be relied upon to be a steward for the health of the environment and humanity.²²² It is the power of the people, acting through the elected members of Congress, which must act to create regulations protecting the citizens of the states to which they represent. It is the realization of the toxic hazards of coal ash that must move Congress to enact federal regulations that are enforceable and protect against the improper storage and disposal of coal ash.

Federal regulations however must go one step further. Too many Americans have unknowingly turned a blind eye towards the potential hazards of the power plant looming over their backyard, learning only too late of the toxic substances slowly leaking into their ground water and surface water.²²³ Education and disclosure of the toxic hazards of coal ash are essential to ensure communities are protected from the hazards surrounding them.²²⁴ In 1992, Congress recognized that education and disclosure were the key to prevention of the detrimental and deadly effects exposure to lead paint was having on millions of children throughout the country.²²⁵ The history and regulation of lead paint can be learned from and utilized to find a solution for those unknowing communities.

218. Letter from James Roewer, Exec. Dir., Utility Solid Waste Activities Group, to Scott Pruitt, Adm'r, EPA, (May 12, 2017) (available at <http://earthjustice.org/sites/default/files/files/CCRRulePetitionCoverletter.pdf>); Utility Solid Waste Activities Group, Petition for Rulemaking to Reconsider Provisions of the Coal Combustion Residuals Rule, 80 Fed. Reg. 21,302 (APRIL 17, 2015).

219. See Exec. Order No. 13,783, 82 Fed. Reg. 16,093 (Mar. 28, 2017); Exec. Order No. 13,778, 82 Fed. Reg. 12,497 (Feb. 28, 2017).

220. Utility Solid Waste Activities Group, *supra* note 218; REQUEST TO HOLD IN ABEYANCE CHALLENGE TO COAL COMBUSTION RESIDUAL RULE, NO. 15-1219, ET AL. (D.C. CIR.) (May 12, 2017), <http://earthjustice.org/sites/default/files/files/Final%20USWAG%20Petition%20for%20Reconsideration%205%2012%202017%20%282%29.pdf>; https://www.washingtonpost.com/business/utilities-group-petitions-epa-head-to-upend-coal-ash-rule/2017/05/12/d3ce1f24-3763-11e7-ab03-aa29f656f13e_story.html?utm_term=.ac3052384851

221. Nadja Popovich et al., *67 Environmental Rules on the Way Out Under Trump*, N.Y. TIMES, <https://www.nytimes.com/interactive/2017/10/05/climate/trump-environment-rules-reversed.html> (last updated Jan. 18, 2018).

222. Exec. Order No. 13,783, *supra* note 219; Exec. Order No. 13,778, *supra* note 219.

223. *Short Film Released About American Dreams Turned Into Toxic Nightmare*, EarthJustice (Oct. 17, 2014), <http://earthjustice.org/news/press/2014/short-film-released-about-american-dreams-turned-into-toxic-nightmare>; Schlossberg, *supra* note 24.

224. *Id.*

225. 42 U.S.C. § 4851 (1992).

V. THE PRACTICAL SOLUTION

A. Lead Paint, a Historical Model

Lead, a primary toxic metal within coal ash,²²⁶ has its own lamented history as a public health hazard.²²⁷ As a standalone risk,²²⁸ lead-based paint in particular was deemed dangerous enough to compel Congress to come together in order to protect the health of humanity through the passage of legislation banning the usage of lead paint and requiring disclosure of the health hazards associated with lead.²²⁹ Such history and bi-partisan efforts can contribute to a viable solution for coal ash.

In the early part of the nineteenth century, paint manufacturing was limited to druggists within local communities, who had easy access to minerals and dyes.²³⁰ With the rise of transportation, came the rise of the corporate lead industry in the United States, making it the largest lead producing nation in the world.²³¹ In 1906, National Lead began its fifty year campaign to promote white lead with promises of health, prosperity, and purity.²³² As a result, by the early 1920's the use of lead paint reached its peak in the United States,²³³ due to claims by the lead industry that lead paint, easily washable and durable, provided better protections from germs than that of wallpaper and glue.²³⁴ The white "cleanliness" of the paint drew consumers through advertisements of the famed Dutch Boy, claiming "lead helps guard your health."²³⁵

As the United States was ramping up its use of lead-based paint, many countries were prohibiting its use due to the severe, and rising, cases of lead poisoning.²³⁶ In 1921, the White Lead Convention was organized by the International Labour Conference,²³⁷ leading to the prohibition of lead paint in several countries.²³⁸ The United States however did not join in this prohibition,²³⁹ the interests of the Lead Industries Association took priority over the health of humanity,²⁴⁰ not unlike the influence the coal industry and its lobbyists have on the federal government.²⁴¹

226. Gottlieb et al., *supra* note 8, at 1, 3.

227. *Id.* at 3.

228. *Id.*

229. EPA, *Lead Laws and Regulations*, <https://www.epa.gov/lead/lead-laws-and-regulations>.

230. GERALD MARKOWITZ & DAVID ROSNER, DECEIT AND DENIAL: THE DEADLY POLITICS OF INDUSTRIAL POLLUTION 35 (2013); U.S. DEP'T. HOUS. URB. DEV., COMPREHENSIVE AND WORKABLE PLAN FOR THE ABATEMENT OF LEAD-BASED PAINT IN PRIVATELY OWNED HOUSING, REPORT TO CONGRESS (Dec. 7, 1990), <http://www.huduser.gov/portal/Publications/pdf/HUD-5716.pdf>.

231. MARKOWITZ et al., *supra* note 230, at 36.

232. *Id.* at 38.

233. *Id.*

234. *Id.* at 68; see also *Why was Lead Paint Ever Popular*, H2 ENVTL., <http://www.h2environmental.com/lead-paint-ever-popular/> (last visited June 1, 2017).

235. MARKOWITZ et al., *supra* note 230, at 83.

236. Sven Hernberg, *Lead Poisoning in a Historical Perspective*, 38 AM. J. INDUS. MED., 244, 246-47 (2000).

237. *Id.*

238. *Id.*

239. *Id.*

240. *Id.*

241. See, e.g., Exec. Order No. 13,783, 82 Fed. Reg. 16,093 (Mar. 28, 2017); Exec. Order No. 13,778, 82 Fed. Reg. 12,497 (Feb. 28, 2017) (evidencing the product and effect of lobbying in relation to government action);

Refusal by the United States to join in the ratification of the White Lead Convention would go on to have detrimental and deadly effects on the United States' population over a span of decades.²⁴² As a direct result, "pediatric lead poisoning became an epidemic, whose shocking magnitude was not understood until the late 1960s or early 1970s."²⁴³

For a large part of the twentieth century, lead poisoning in children was blamed on consumption of lead based paint chips from toys and furniture as well as consumption of peeling and flaking paint from poorly maintained homes.²⁴⁴ The blame was placed on parents,²⁴⁵ and the solution was to better educate parents to prevent children from consuming lead contaminated paint.²⁴⁶ This resulted in the ban of interior lead paint in Baltimore in 1951²⁴⁷ and, in 1955, the adoption of a voluntary national standard by the paint industry and the American Academy of Pediatrics, to prohibit the use of interior lead paint.²⁴⁸ Then, in 1974, a new theory emerged, more damaging than before: lead poisoning in children caused by consuming everyday household dust contaminated with lead, through acts as innocent as children licking their hands.²⁴⁹ A seemingly harmless act was discovered to result in severe lead poisoning.²⁵⁰

The injuries caused from exposure to lead are debilitating and deadly.²⁵¹ According to the Center for Disease Control (CDC), elevated blood lead levels in children can result in "learning disabilities, behavioral problems, mental retardation, and at extremely high levels, seizures, coma, and death."²⁵² Acceptable blood lead levels in children, once not to exceed 80 micrograms per deciliter,²⁵³ are now deemed high risk if exceeding 5 micrograms per deciliter.²⁵⁴ In 1992, as many as three million children were afflicted with lead poisoning.²⁵⁵

Following decades of illness, disease, and death from lead poisoning, Congress recognized the deadly impact that exposure to lead could have on children and that a solution was required at the national level.²⁵⁶ The Residential Lead-Based Paint

Wilson, *Oil, Gas, and Coal Interests Filling Donald Trump's 'Swamp' With Cash*, The Center for Public Integrity (May 2, 2017, 11:52 AM), <https://www.publicintegrity.org/2017/05/02/20848/oil-gas-and-coal-interests-filling-donald-trump-s-swamp-cash>.

242. Hernberg, *supra* note 235, at 249.

243. *Id.*

244. *Id.*

245. David Rosner & Gerald Markowitz, *Why it Took Decades of Blaming Parents Before We Banned Lead Paint*, The Atlantic, (April 22, 2013), <https://www.theatlantic.com/health/archive/2013/04/why-it-took-decades-of-blaming-parents-before-we-banned-lead-paint/275169/>.

246. Hernberg, *supra* note 235, at 249.

247. *Id.*

248. *Id.*

249. *Id.*

250. *Id.*

251. CDC, *Facts on Lead*, <https://www.cdc.gov/nceh/lead/publications/1997/factlead.htm> (last updated Feb. 27, 2013).

252. *Id.*

253. MARKOWITZ et al., *supra* note 230, at 110.

254. CDC, *What Do Parents Need to Know to Protect Their Children?*, https://www.cdc.gov/nceh/lead/acclpp/blood_lead_levels.htm (last updated Jan. 30, 2017).

255. 42 U.S.C. § 4851 (1992).

256. *Id.*

Hazard Reduction Act of 1992 was passed to rectify the uphill battle of lead poisoning caused by years of failure to act.²⁵⁷ The goals of the Act were clear: to prevent childhood lead poisoning,²⁵⁸ to eliminate the hazards related to lead,²⁵⁹ and “to educate the public concerning the hazards and sources of lead-based paint poisoning and steps to reduce and eliminate such hazards.”²⁶⁰ In order to facilitate these goals, Congress mandated the U.S. Department of Housing and Urban Development (HUD) and the EPA to develop regulations requiring disclosure of lead-based paint hazards and disclosure of information known of lead-based paint prior to the sale or lease of residential housing built prior to 1978.²⁶¹

Pursuant to these regulations, sellers and landlords must provide buyers and lessees a pamphlet, approved by the EPA, describing how to identify and control lead-based paint hazards;²⁶² disclose all known information regarding lead-based paint hazards within the home;²⁶³ provide a Lead Warning Statement attached to the contract confirming compliance with lead notification requirements;²⁶⁴ and ensure a 10-day period for buyers to conduct a lead inspection of the home.²⁶⁵ In a society where cost to the industry is the driving factor,²⁶⁶ this solution—disclosure to families choosing whether they will reside within homes that could potentially be contaminated with lead, whose children could suffer grave and deadly effects from that lead²⁶⁷—was of zero cost to the industry.²⁶⁸

B. Written Disclosure, No Cost to the Industry

Similar to Congress’s goals when enacting the Residential Lead-Based Paint Hazard Reduction Act, written disclosure can be the catalyst to educate citizens of the hazards that could occur through exposure to toxic coal ash. The disclosures could be modeled after the already accepted lead paint disclosures and include relevant information regarding the health risks of living near a coal-burning power plant. At a minimum, the disclosures should include: (1) an explanation that the residence is located within a certain proximity to a coal-burning power plant; (2) a definition of coal ash and a comprehensive list of the toxic metals commonly found in coal ash; (3) the harmful effects that exposure to coal ash can have on the health of the individual as well as the environment; and (4) a clear explanation of how exposure to coal ash could occur.

257. *Id.*

258. 42 U.S.C. § 4851 (1992).

259. *Id.*

260. *Id.*

261. *The Lead Disclosure Rule*, DEPT. OF HOUSING AND URBAN DEV., https://portal.hud.gov/hudportal/HUD?src=/program_offices/healthy_homes/enforcement/disclosure (last visited Mar. 17, 2017).

262. *Id.*

263. *Id.*

264. *Id.*

265. *Id.*

266. Exec. Order No. 13, 783, 82 Fed. Reg. 16,093 (Mar. 28, 2017).

267. See generally, *The Lead Disclosure Rule*, *supra* note 260.

268. *EPA and HUD Move to Protect Children from Lead-Based Paint Poisoning; Disclosure of Lead-Based Paint Hazards in Housing*, EPA & DEPT. OF HOUSING AND URBAN DEV., <https://www.epa.gov/sites/production/files/documents/fs-discl.pdf>.

Without due diligence, purchasers and lessees may not be aware that the home they are considering is within blocks of a coal-burning power plant. While they may see the smoke stacks, the understanding of what those smoke stacks are, or what they mean, may not seem like a necessary consideration. Elected officials have a responsibility to ensure the protection of their citizens, and that responsibility must come before the protection of power plants. Requiring disclosure of hazards of toxic coal ash is part of that responsibility.

Requiring written disclosure however does not protect those citizens who already reside within those residential communities close to the power plants. While there are many options for public notice, at a minimum, power plants should be required to display conspicuous signage along the perimeter of the power plant, providing a warning that coal ash is a hazardous waste, a list of the common toxic metals within coal ash, and a general statement regarding the health effects related to exposure of coal ash. This does not resolve the improper storage of coal ash, but it does provide a warning to the surrounding community of the true health hazards of residing near a coal-burning power plant. While the coal industry may object to such disclosures, the out-of-pocket expense is negligible—simply that of a sign.

VI. CONCLUSION

Federal regulation of the disposal and storage of coal ash as a hazardous waste, and disclosure of its toxic hazards to the surrounding community, must be required in order to protect the country and environment on a larger scale. Regulation as a non-hazardous waste is not due to its lack of “ignitability, corrosivity, reactivity or toxicity,”²⁶⁹ but merely a result of the cost and “inconvenience” to the power industry.²⁷⁰ Raised awareness regarding the dangers of coal ash through explicit disclosure is an essential, easily attainable, and cost efficient solution. A similar approach raised awareness of, and greatly reduced, the detrimental effects of lead paint, providing a viable, cost efficient, and easily attainable solution to disclose the dangers of coal ash.²⁷¹

As of March 11, 2018, the EPA’s mission remains “to protect human health and the environment.”²⁷² However, under newly-elected President Trump’s Administration, it is likely coal ash will continue to be regulated as a non-hazardous waste.²⁷³ Just as cities, states, and members of Congress are banding together to fight against the removal of the United States from the Paris Climate Agreement,²⁷⁴ just

269. *Defining Hazardous Waste*, *supra* note 59, at 1.

270. *See generally* Sturgis, *supra* note 96 (discussing how the coal industry avoided the imposition of costly and burdensome regulatory requirements, while evidence was “mounting that coal ash posed a growing threat to environmental and human health”).

271. *See generally* *The Lead Disclosure Rule*, *supra* note 260.

272. *Our Mission and What We Do*, EPA <https://www.epa.gov/aboutepa/our-mission-and-what-we-do> (last updated Feb. 27, 2018).

273. *Back to Basics Agenda*, EPA, <https://www.epa.gov/home/back-basics-agenda> (last updated May 8, 2017).

274. *See* Keneally & Jacobo, *supra* note 214; Bill Chappel, *Bloomberg Promises \$15 Million To Help Make Up For U.S. Withdrawal From Climate Deal*, NPR (June 2, 2017, 1:58 PM), <http://www.npr.org/sections/thetwo->

as Congress implemented stringent regulations due to the inherent harm caused by lead paint,²⁷⁵ those same movements must compel Congress to fight to protect communities from the dangers of coal ash.

way/2017/06/02/531238185/bloomberg-promises-15-million-to-help-make-up-for-u-s-withdrawal-from-climate-de.

275. 42 U.S.C. § 4851 (1992).