In 2015, the U.S. Environmental Protection Agency finalized the first-ever coal ash regulations designed to protect communities from one of the largest toxic waste streams generated by U.S. industry and to prevent environmental disasters like coal ash spills in Kingston, Tennessee, and the Dan River coal ash spill in North Carolina.

Per the demands of the utility industry, the Trump Administration is working with unprecedented speed to reverse those hard-won safeguards in a multi-pronged attack on the EPA rule. So much is happening on so many fronts that it can be hard for even dedicated reporters to keep track of it all. This resource is intended as a backgrounder on coal ash and its impacts, a summary of the years-long efforts to safeguard communities from this toxic waste, and a guide to the ongoing attempts to erase those gains. As these attempts plow through the regulatory process, there will be many opportunities to report on their progress. Hopefully, this resource will provide important context.

WHAT IS COAL ASH?
Coal ash is the toxic waste left after coal is burned to generate electricity. Coal ash is made up of fly ash, bottom ash, boiler slag and FGD (flue gas desulphurization) sludge. Coal-fired power plants generate about 110 million tons of coal ash every year. This
toxic waste contains deadly substances, including carcinogens like arsenic, cadmium and hexavalent chromium, and neurotoxins such as lead and lithium.

Coal ash contaminates the environment and threatens health in numerous ways. Fine, powdery ash blows off exposed piles, fills and pits, contaminating the air we breathe. Water used to clean ash out of boilers and flush scrubbers in air stacks becomes a highly contaminated sludge. When rain water passes through this sludge, which is stored in open pits or “ponds,” or when water passes through dry, uncovered dumps, toxic chemicals seep into groundwater, and excess wastewater from the pits is dumped into the nearest waterbody.

Throughout their history, coal-fired plants have disposed of coal ash in the cheapest way possible, with little regard for potential health or environmental harm. The most common form of disposal has been to simply dump coal ash (mixed with water) into massive, unlined pits adjacent to the power plant. It is important to realize that most power plants are located near bodies of water to provide the steam that generates electricity, meaning that these unlined, leaking pits of toxic waste have generally been located near rivers and lakes that get contaminated when the ash pits leak. EPA estimates that there are about 1,000 coal ash pits or ponds across the U.S., as well as more than 400 landfills and thousands of uncounted coal ash fill sites.

Hundreds of millions of tons of coal ash have been used as fill material, a cheap but dangerous alternative to clean soil. It has been used to level ground for construction, fill in low-lying areas, and serve as foundations for roads and buildings, as a so-called “beneficial” use. It has been used at schools, playgrounds and sports fields.
Coal ash is also sometimes stored in mountainous piles — an ash pile in Guayama, Puerto Rico, has reached 12 stories high. These piles sit directly on the ground and are uncovered, leaving the coal ash open to the elements. Wind blows the ash onto nearby communities. Rain filters through the ash and the contaminated water sinks into the ground, poisoning groundwater, or runs off the pile, taking toxic ash along with it.

**COAL ASH IS A HAZARDOUS SUBSTANCE**

Coal ash contains a toxic stew of hazardous and even radioactive substances that leach into groundwater and nearby lakes, rivers and streams. Tiny particles from dry ash piles, pits, and coal ash fill are spread by wind.

“These experiments suggest that when coal ash interacts with water, there is extensive mobilization of chromium in the form of highly toxic hexavalent chromium.”

— Dr. Avner Vengosh, Duke University

Vengosh, a Duke University scientist, show that exposure of coal ash to water results in the leaching of high levels of hexavalent chromium — the cancer-causing chemical at the heart of Erin Brockovich’s lawsuit against a California utility made famous in the Julia Roberts movie.

Groundwater monitoring data required by the 2015 rule and released by U.S. utilities shows that 92 percent of coal plants with coal ash ponds and landfills have polluted groundwater with unsafe levels of arsenic, lithium, cadmium, cobalt, selenium, mercury, lead and other toxins.

Wastewater used to flush out accumulated ash in combustion chambers and flush out smokestack scrubbers that remove pollution from emissions also contains dangerous levels of a variety of toxins — and for more than 100 years no federal rule limited the levels of toxic metals in that wastewater when it is dumped in waterways. Yet coal plants are by far the largest source of toxic water pollution in the U.S. Dozens of rivers, lakes, streams and bays that received these discharges have been declared contaminated because of poor water quality and their fish pronounced unsafe to eat.

Pollution of air, water and soil by coal ash has significantly harmed human health. It has been associated with cancer clusters, as well as respiratory illnesses, neurological impairments, developmental and reproductive issues, blood disease, liver disease, thyroid damage and more. Water contamination has also caused massive fish kills and harmed aquatic life in water bodies across the U.S., costing the nation billions in lost commercial and recreational resources.
REGULATION OF COAL ASH

“Coal ash was treated like dirt throughout the area. 40,000 tons of coal ash were laid next to our local high school in 2001. My daughter went to school there along with many other students who were diagnosed with various cancers. Some of these kids have died.”

— Susan Wind, whose daughter was diagnosed with a rare form of thyroid cancer.

Despite the dangers and toxicity of coal ash, its disposal went almost entirely unregulated by state or federal governments for most of the history of coal-fired electric generation.

Even after a number of catastrophic coal ash dam failures — from the Clinch River Power Plant spill in 1967 to the 2008 Kingston, Tennessee, coal ash disaster in 2008 and the 2014 Dan River spill in North Carolina — regulation was slow coming.

The 2008 Kingston spill was the largest toxic waste spill in U.S. history. The failure of a dike holding back nearly 10 million tons of coal ash sludge at the Tennessee Valley Authority’s Kingston Fossil Plant in Roane County, Tennessee, dumped more than a billion gallons of coal ash slurry into the Emory and Clinch Rivers. The flood of sludge knocked dozens of homes off their foundations and destroyed the riverfront community forever.

Although the flood itself didn’t immediately cause casualties, hundreds of workers who cleaned up the spill have been sickened by exposure to coal ash sludge, and more than 40 have died. Workers brought a class-action lawsuit in 2018 against the contractor TVA hired to undertake the cleanup who demanded clean-up workers forgo protective gear.

In addition to catastrophic spills, the dangers of coal ash contamination are clear. In 2005, the Town of Pines, Indiana, became a Superfund site after contamination of its water was discovered — the result of a partially unlined coal ash landfill and widespread use of ash for construction fill throughout the town on driveways, in wetlands and even on playgrounds. In Gambrills, Maryland, in 2005, dozens of people were sickened by drinking water tainted with heavy metals from coal ash dumping. In 2007, in Chesapeake, Virginia, a golf course built using 1.5 million tons of coal ash contaminated the aquifer beneath it with arsenic and lead. In North Carolina, a number of cancer clusters were discovered in proximity to coal ash ponds and coal ash fill sites. By 2010, EPA and environmental groups had identified more than 200 sites where coal ash had contaminated water.

Despite all of this evidence of harm from coal ash, the U.S. Environmental Protection Agency didn’t do anything to regulate its disposal or storage until Earthjustice, an Indian tribe, and several other public interest groups sued them. As a result, EPA’s first coal ash rule was finalized in early 2015.
The rule set up important safeguards, including design standards for coal ash dumps and deadlines for closing leaking, unstable and dangerous coal ash pits and requiring the utility industry to shift to safer methods of coal ash disposal in dry, lined landfills. A second rule by EPA in 2015 under the Clean Water Act, also addressing coal ash pollution, established more stringent safeguards for disposing of toxic wastewater from coal-fired power plants.

The 2015 coal ash rules were a significant step forward, a real if belated attempt to finally impose some safeguards on toxic ash disposal and re-use. These rules were weaker than they should have been, and Earthjustice has won recent lawsuits requiring the EPA to strengthen aspects of both rules.

**TRUMP ADMINISTRATION WANTS TO ELIMINATE HARD-WON SAFEGUARDS**

Rather than strengthening the 2015 coal ash waste and water protection rules, as the federal court ordered, EPA has proposed multiple rules this summer that substantially weaken their coal ash rules, ending protections for coal ash waste piles, ending safeguards for coal ash fill projects, and letting coal plants off the hook for paying for coal ash cleanups. Upcoming proposals slated to be released this fall will erode protections against water contamination, end required groundwater monitoring, and delay closure of leaking, unlined waste pits.

Here is a brief summary of those efforts and where they currently stand:

**Removing Regulations on Coal Ash Waste Piles and Fill Projects**

EPA published its “Phase 2 rollback” in August. This roll back would weaken the 2015 Coal Ash Rule in two important ways: (1) by lifting health-protective safeguards on coal ash waste piles, which are currently subject to all the requirements applicable to coal ash landfills; and (2) by substantially increasing the amount of coal ash that can be used, without restriction, for fill projects (“beneficial” use). This rollback will hurt communities near the largest (12-story) coal ash waste pile in the U.S. at the AES plant in Guayama, PR, and it may encourage other utilities to dump waste in dangerous piles. Lifting restrictions on coal ash fill projects will harm communities across the U.S. and likely increase the use of ash as fill without the necessary protections like liners, monitoring and siting requirements. The comment deadline for this proposal closed October 15, 2019.

**Weakening Toxic Wastewater Guidelines**

In response to an industry petition, EPA is planning to propose a rule this fall that would delay and weaken the 2015 “Effluent Limitations Guidelines” issued under the Clean Water Act that set deadlines for power plants to invest in modern, state-of-the-art wastewater treatment technology to substantially reduce the billions of tons of toxic pollutants such as arsenic, mercury, and selenium that power plants dump into U.S. waterways each year. We expect EPA to propose loopholes in the 2015 standards that
would allow power plants to avoid complying with them 100 percent of the time, exemptions for certain types of plants (such as plants that the owner promises to retire) from the standards, and further delays in compliance deadlines for all plants. This proposed rule is also likely to be published imminently.

Adding Loopholes to Regulations Covering Coal Ash Impoundments
EPA is planning to propose a rule this fall in response to the D.C. Circuit’s order earlier this year allowing EPA a “do-over” on its 2018 “Phase I, Part One” revision of the Coal Ash Rule. The Phase I rule made several changes to the Coal Ash Rule, most notably extending to October 31, 2020, the deadline for closing the most dangerous coal ash ponds in the U.S.—those leaking toxic chemicals and ponds that are too close to underlying groundwater.

EPA promised the court that it would conduct a new rulemaking on how quickly all unlined impoundments would be required to close and that this new rule would bring the Coal Ash Rule into compliance with the D.C. Circuit’s August 2018 decision that it was unlawful for EPA to allow any unlined impoundments to continue operating, even where groundwater contamination had not yet been proven.

We anticipate that EPA will propose a closure date for unlined coal ash pits, but will also provide huge loopholes for utilities to grant themselves long extensions to continue operating dangerous and leaking impoundments. EPA may also take up other changes in this proposal, including a provision that would allow utilities to suspend groundwater monitoring if they demonstrate no potential for migration of coal ash contamination into groundwater. We expect publication of this proposed rule imminently.

Establishing Federal Permitting Guidelines and Hampering Enforcement, Citizen Suits
This proposed rule will establish federal permitting guidelines for coal ash ponds and landfills on Indian lands and in states that do not have approval to implement their own coal ash permit programs (all states except OK). EPA has the authority to issue federal permits for such disposal units and, after promulgation of this rule, can proceed to do so. We expect that such permits are likely to hamper citizen suits, serve as shields to effective enforcement, and provide inadequate public participation. The proposed rule is currently under review at the Office of Management and Budget and expected to be published this fall.

Eliminating Financial Assurance Rule
EPA issued a proposed determination withdrawing its intention to establish financial assurance requirements for coal plants under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) for the electric power generation, transmission, and distribution industry.

In 2010, the Obama EPA determined that such regulations were likely warranted due to the high risk posed to health and the environment from coal ash spills. The Trump EPA’s
rulemaking reversed this determination. A financial assurance rule would have required utilities to set aside sufficient funds for cleanup of coal ash contamination, including the damage from catastrophic spills.

Following the $1 billion cleanup of the 2008 TVA coal ash disaster, the Obama EPA recognized the critical need for utilities to guarantee such funds. With this proposed determination, the Trump EPA would potentially let coal plants off the hook for cleanup from future coal ash disasters. EPA published this proposal in July 2019.

**STATE-LEVEL EFFORTS DEMONSTRATE WHAT CAN BE ACCOMPLISHED**

Although the news is bad at the federal level, several states are showing what effective regulation and remediation of coal ash contamination can look like. North Carolina and Virginia ordered politically powerful utility companies to clean up coal ash pits. Illinois passed stringent guidelines for the construction, operation and closure of the pits. Michigan passed a law mandating safeguards similar to the 2015 federal rule for coal ash pits and landfills. The legislature in Puerto Rico is currently considering a bill that would ban use of coal ash as construction fill — following the dumping of toxic coal ash in dozens of locations on the island.

These are important efforts that show the power of informing the public of the risks posed by coal ash contamination of our air, water and soil. There are interesting and important stories to be told about how these measures came to pass and how political pressure from affected communities was brought to bear to make them reality.

PHOTO BY ALTAHAMA RIVERKEEPER

The polluted groundwater is likely to flow offsite into the nearby Lake Juliette or to wells, if any drinking water wells are within the plume of contamination.
William Gibbs and his wife Annette stand in their front yard, which is near the landfill.