



March 11, 2022

*Via U.S. mail and e-mail*

Kelly Fortin, Acting Chief, Air Permits Section  
Bonnie Sawyer, Counsel  
United States Environmental Protection Agency, Region 4  
Sam Nunn Federal Center  
61 Forsyth St SW  
Atlanta, GA 30303

**Re: The Environmental Protection Agency's Review of Alabama Department of Environmental Management's Request for Delegation of Authority to Operate an Alabama State CCR Permitting Program**

Dear Ms. Fortin and Ms. Sawyer:

The Sierra Club, on behalf of its approximately 4,000 members and supporters in Alabama, and the Southern Environmental Law Center (SELC) are writing to request a meeting to address the Alabama Department of Environmental Management's (ADEM) request for delegation of authority to operate an Alabama State Coal Combustion Residuals ("CCR") permitting program. We wish to address ADEM's issuance of unlawful final CCR closure permits at almost every coal ash site in Alabama —Plants Barry, Gadsden, Gaston, Gorgas, Greene County, Lowman and Miller. ADEM approved its state CCR program in 2018, and these final CCR permits were issued between 2020 and 2022.

ADEM has not followed federal or state law when issuing these permits, and EPA can and should deny ADEM's request for delegation of authority for this program. In addition, EPA should initiate an enforcement action in Alabama per its authority under the WIIN Act regarding these final coal ash closure permits because they violate multiple sections of the CCR Rule, 40 C.F.R. § 257 Subpart D.

Below, we outline the legal basis for denying ADEM's state CCR permit program. We then use Plant Barry as an example of why these final permits are illegal under EPA's interpretation of the law. Next, we provide short summaries of the remaining plants that have received final state CCR permits from ADEM and provide background on those plants' locations and coal ash issues. These summaries are supported by the expert reports attached to this letter. Finally, we urge EPA to initiate enforcement action at those sites where federal CCR regulations are violated.

**A. There is Clear Legal Support for EPA to Deny ADEM's Request to Operate its Alabama State CCR Program.**

ADEM has failed time and time again to properly implement the CCR Rule and EPA, under its statutory authority and past practices, must deny ADEM's request to operate its own Alabama State CCR Program in lieu of the federal program.

First and foremost, RCRA Section 4005(d)(1)(B) (42 U.S.C. § 6945(d)(1)(B)) states that EPA may delegate responsibility for a permitting program “if the Administrator determines that the program or other system requires each coal combustion residuals unit located in the State to achieve compliance” with the technical requirements of 40 C.F.R. § 257 or standards that are equivalent to the federal requirements (emphasis added). In addition, EPA's interim final report, which it issued to provide guidance to states planning to apply for CCR permitting approval, states: “if the State had already issued permits based on its final rule, but before EPA had approved their CCR permitting program, the facility would still be required to comply with both the federal CCR rule and the state permit.” *Coal Combustion Residuals State Permit Program Guidance Document; Interim Final* (Aug. 2017), included as Attach. A, at 8.<sup>1</sup>

Second, EPA also has an established pattern and practice of how it interprets 42 U.S.C. § 6945(d)(1)(B) when it is deciding whether to approve a delegation of a CCR program. EPA considers how the state has “address[ed] non-compliance by working with facilities to correct deficiencies,” including by “issuing a notice of violation (NOV) and work[ing] with the facility to resolve it.” 85 FR 1269 at 1275.<sup>2</sup>

Finally, EPA recently issued the Proposed Denial of Alternative Closure Deadline for a CCR surface impoundment at the General James M. Gavin Plant in Ohio, included as Attach. B (“Gavin Proposed Decision”). EPA's recent Gavin Proposed Decision should be controlling in EPA's decision to deny ADEM's request to operate a state CCR program. The Gavin Proposed Denial focuses on, among other violations including groundwater monitoring, how the unlined pond at Plant Gavin has coal ash sitting in groundwater. EPA states in the Gavin Proposed Decision that this is a violation of the CCR performance standards, 40 C.F.R. §§ 257.102(b), (d)(1)-(2), which requires the unit to be closed in such a way as to “control, minimize or eliminate...post-closure infiltration of liquids into the waste and releases of CCR, leachate, or contaminated run-off to the ground or surface waters...” Attach. B at 39, 45-49. Based on the violations and analysis outlined

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<sup>1</sup> Page reference is to the PDF page number in Attach. A.

<sup>2</sup> See 85 FR 1269 at 1275, where EPA approved delegation to Georgia of Georgia's CCR program, finding that the Environmental Protection Division “conduct[ed] inspections of groundwater monitoring networks at numerous facilities,” and “has been reviewing groundwater monitoring reports, issuing comments on alternative source demonstrations (ASD), issuing comments on Assessment of Corrective Measures, issuing comment letters imposing regulatory deadlines for the submittal of an ASD or initiating assessment monitoring, and conducting inspections of groundwater monitoring networks at numerous facilities.” *Id.* There is no evidence of ADEM similarly addressing instances of noncompliance at its permitted plants.

in the Gavin Proposed Decision, violations are also occurring at all the coal ash sites in Alabama that currently have been permitted under ADEM’s state CCR program.

As discussed in greater detail below, ADEM issued final state CCR permits authorizing closure of CCR impoundments in a manner inconsistent with minimum federal CCR requirements and their state equivalent. For example, ADEM already issued a final cap-in-place permit at Plant Barry, which has an unlined impoundment with coal ash sitting in groundwater, similar to the situation at Plant Gavin in Ohio. Both Plant Barry and Plant Gavin have CCR impoundments with coal ash submerged in groundwater, which constitutes violations of 40 C.F.R. §§ 257.102(b), (d), in addition to a shared violation of the groundwater monitoring system requirements, 40 C.F.R. § 257.91(b).

Therefore, EPA has clear evidence of the failure of ADEM’s CCR program to “require[] each coal combustion residuals unit located in the State to achieve compliance” with the technical requirements of 40 C.F.R. § 257 or standards that are equivalent.” 42 U.S.C. § 6945(d)(1)(B). EPA should deny delegation, and moreover, to ensure that CCR units in Alabama come into compliance with minimum federal standards, EPA should initiate enforcement actions against those CCR facilities in Alabama that are out of compliance with 40 C.F.R. § 257, such as the units at Plants Barry, Gadsden, Gaston, Gorgas, Greene, Lowman and Miller Ash Ponds. Doing so expeditiously would help ensure that the owners of CCR facilities in Alabama do not expend ratepayer funds to remediate CCR facilities in a manner that is inconsistent with federal CCR requirements.

#### **B. ADEM’s Final CCR Permit for the Plant Barry Ash Pond Authorizes Closure in a Manner Inconsistent with Minimum Federal CCR Standards.**

ADEM’s permit for the Plant Barry Ash Pond authorizes a cap-in-place remedy that fails to comply with 40 C.F.R. § 257 and ADEM’s own CCR permit program regulations, codified at ADEM Admin. Code 335-13-1 through 335-13-16. The Sierra Club and SELC’s concerns incorporate and rely upon multiple expert reports that are attached: Mark Quarles Professional Geologist with the BBJ Group, included as Attach. C (hereinafter “Quarles Report”);<sup>3</sup> Doug Cosler, Principle Chemical Hydrogeologist with Adaptive Groundwater Solutions, included as Attach. D (hereinafter “Cosler Barry Report”);<sup>4</sup> Mark Hutson, Professional Geologist with Geo-Hydro, Inc., included as Attach. E (hereinafter “Hutson Barry Report”);<sup>5</sup> and, finally, Gordon Johnson, Professional Engineer with Burgess Environmental, included as Attach. F (Johnson produced two expert reports concerning Plant Barry; one in 2018 and an updated report in 2021; hereinafter “Johnson Barry Report 2018” and “Johnston Updated Barry Report 2021”).<sup>6</sup>

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<sup>3</sup> Mark Quarles is a registered Professional Geologist, who has expertise in karst geology investigations, as well as CCR contaminant investigations, closure methods, and groundwater monitoring.

<sup>4</sup> Doug Cosler is registered Professional Geologist with extensive experience in hydrogeology, as well as fate and transport of chemicals

<sup>5</sup> Mark Hutson is a registered Professional Geologist with over 30 years’ experience on a wide range of environmental characterization and remediation sites.

<sup>6</sup> Gordon Johnson is a Professional Engineer with extensive experience in hydrogeology and remediation.

- i. ADEM failed to ensure that the final Plant Barry Ash Pond permit prevents or minimizes the ongoing release of CCR and leachate, eliminates free liquids from the coal ash, and precludes the future impoundment of water, sediment, and slurry.

40 C.F.R. § 257.102(d)(1)(i) and (ii) along with ADEM Admin Code r. 335-13-15-.07(3)(d)(1)(i) and (ii) require facilities to control, minimize, or eliminate, to the maximum extent feasible, post-closure releases of CCR, leachate, or contaminated run-off to the ground or surface waters and require units to “[p]reclude the probability of future impoundment of water, sediment, or slurry.” ADEM Admin Code r. 335-13-15-.07(3)(d)(2)(i) also requires that “free liquids must be eliminated by removing liquid wastes or solidifying the remaining wastes and waste residues.”

There is abundant evidence in the record, which was submitted to ADEM during the permitting process, demonstrating that Alabama Power’s closure plan for Plant Barry, which was approved by ADEM through the state CCR permitting process, will allow toxic contaminants to continue to leach into ground and surface waters, including the Mobile River. See, e.g., Attach. C, Quarles Report at 4; Attach. D, Cosler Barry Report at 2; Attach. E, Hutson Barry Report at 3-4. The consolidated closure of the Plant Barry Ash Pond will not “[p]reclude the probability of future impoundment of water, sediment, and slurry as required by ADEM Admin Code r. 335-13-15-.07(3)(d)1(ii), because the CCRs will remain saturated under the cap because the CCRs will not be completely dewatered.” Attach. C, Quarles Report at 18-19; *See also*, Attach. D, Cosler Barry Report at 9-10; Attach. D, Hutson Barry Report at 12-13; Attach. F, Johnson Updated Barry Report at 4. For the same reasons, this permit does not require the elimination of free liquids from the coal ash at Plant Barry.

The CCRs will continue to remain saturated as groundwater moves laterally through the Plant Barry Ash Pond. In other words, failure to remove the water will allow the coal ash to continue to sit in groundwater, thereby leading to post-closure release. However, even if ADEM required Alabama Power to dewater the interstitial water and cap the ash in place, that alone would not prevent the CCR from becoming saturated again through lateral groundwater infiltration and from the bottom of the pond since the groundwater table is at or above the bottom of the pond. Attach. C, Quarles Report at 9, 19. “Capping of the [Ash Pond] is predicted to have minimal effects on site groundwater levels (less than 1-inch average reduction).” Attach. D, Cosler Barry Report at 2. Only removal of the ash from the unlined pit will comply with the CCR Rule.

In its response to comments, ADEM claims that Alabama Power’s proposed “cut-off” wall will meet the federal and state requirements to prevent the ongoing release of CCR or leachate. ADEM’s Response to Public Comments, included as Attach. G at 2 (ADEM’s Response to Comments). It is not even clear if there will be a “cut-off” wall. In the 1600-page draft permit application and supporting documents, Alabama Power made only one off-handed reference to a cut-off wall, and yet provided no design plans that included this cut-off wall. ADEM Preliminary Determination Initial Permit and Variance, February 2021, at 926, *see also generally* pp.192-94 (ADEM Preliminary Determination).<sup>7</sup> More importantly, neither ADEM in its Preliminary

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<sup>7</sup> Due to its voluminous size, we are not attaching ADEM’s Preliminary Determination, Initial Permit and Variance.

Determination nor Alabama Power, in its permit application and closure plans, provided any discussion or explanation of how this “cut-off” trench will prevent CCRs from continuing to leach into ground and surface water, especially considering that this omission is in direct contrast with ADEM’s claim that the wall would “be constructed in accordance with design drawings submitted with the permit application,” Attach. G (ADEM’s Response to Comments) at 2, since no design drawings of the wall were submitted with the application or its attachments. *See generally* ADEM Preliminary Determination at 192-194. If Alabama Power submitted additional documents or design drawings regarding this cut-off wall, ADEM should have provided those documents to the public so they could adequately comment on this cut-off wall and its alleged ability to protect groundwater and leachate contamination. Likewise, there is no also indication or explanation of how this “cut-off” wall could possibly eliminate free liquids from the coal ash at Plant Barry or preclude the impoundment of water, sediment, and slurry.

In sum, the permit approved by ADEM at Plant Barry does not eliminate free liquids, preclude future impoundment of water, sediment, and slurry, or control, minimize, or eliminate infiltration as required by the federal CCR Rule or even as required by Alabama’s own state rules. These failures are a fundamental disregard for the basic closure requirements essential to protecting the environment and the public.

ii. ADEM failed to ensure an adequate groundwater monitoring system.

Both federal and state law require the following for groundwater monitoring systems:

- “consist[] of a sufficient number of wells, installed at appropriate locations and depths, to yield groundwater samples from the uppermost aquifer that, ... [a]ccurately represent the quality of groundwater passing the waste boundary of the CCR unit;”
- “downgradient monitoring system must be installed at the waste boundary that ensures detection of groundwater contamination in the uppermost aquifer.” 40 C.F.R. § 257.91(a)(2); *see also* ADEM Admin Code r. 335-13-15-.06(2)(a)(2).
- “[t]he number, spacing, and depths of monitoring systems shall be determined based upon site-specific technical information.” 40 C.F.R. § 257.91(b); ADEM Admin Code r. 335-13-15-.06(2)(b).
- “All contaminant pathways” must be monitored. 40 C.F.R. § 257.91(a)(2); *see also*, ADEM Admin Code r. 335-13-15-.06(2)(a)(2).

The Quarles Report establishes that Alabama Power’s groundwater monitoring system, approved by ADEM in the final permit, fails to monitor *all* contaminant pathways. More specifically, the groundwater monitoring system “does not meet the technical requirements of ADEM Admin Code r. 335-13-15-.06(2)(b) to establish a comprehensive monitoring system capable of detecting contaminants from the uppermost portion of the uppermost aquifer.” Attach. C at 3. Significantly, the groundwater monitoring system excludes the critical monitoring of the shallowest portion of the aquifer that discharges into the banks of the Mobile River and adjacent canal, and which is “most likely to have the highest contaminant concentrations.” *Id.* at 13, *see also* Attach. C at 8-9. The Quarles Report concludes that because the background wells themselves are located in CCR-related contaminated groundwater, they cannot provide accurate, reliable monitoring of

contamination in the groundwater itself. Attach. C at 5. ADEM, in both its response to comments and its Preliminary Determination, failed to acknowledge this inappropriate placement of background wells. *See generally*, Attach. G (ADEM's Response to Comments) at 10, ADEM Preliminary Determination at 9-11.

Alabama Power's approved groundwater system also fails "to ensure detection of groundwater contamination in the uppermost aquifer because the wells were drilled and screened too deep, thus missing the uppermost portion of the uppermost aquifer located closest to the bottom of the CCRs in the unlined impoundment," Attach. C at 13. ADEM again failed to respond to this egregious concern in its response to comments. Attach. G (ADEM's Response to Comments) at 10. The rules are clear, it is inadequate to simply have wells drilled deep into the uppermost aquifer, they must provide accurate representations of groundwater contaminations. 40 C.F.R. § 257.91(a)(2); ADEM Admin Code r. 335-13-15-.06(2)(a). As the Quarles Report concludes, the wells cannot be accurate if they are below the Mobile River, because they miss the uppermost portion of the uppermost aquifer located closest to the bottom of the CCRs in the unlined impoundment. Attach. C at 13.

### **C. EPA's Proposed Denial of Alternative Closure Deadline for a CCR surface impoundment at Plant Gavin vs. Parallel Violations at Plant Barry**

EPA recently issued its Gavin Proposed Denial for two of the same violations plaguing the Plant Barry Ash Pond. One of the reasons for the denial was based on the fact that the unlined pond at Plant Gavin has coal ash sitting in groundwater, which is a violation of 40 C.F.R. §§ 257.102(b), (d)(1)-(2). Attach. B at 39, 45-49. The Plant Barry Ash Pond is similar to the one at Plant Gavin since it too violates 40 C.F.R. §§ 257.102(d)(1)-(2) because its final CCR closure permit (1) does not require the removal of all interstitial water from the ash pond, which will allow the coal ash to continue to sit in groundwater, thereby leading to post-closure release; and (2) groundwater will continue to infiltrate the ash pond laterally because the groundwater table is at or above the bottom of the pond. Attach. C at 9, 19.

Furthermore, both Plant Gavin and Plant Barry employ groundwater monitoring systems that are woefully insufficient to meet the federal requirements. As noted above, 40 C.F.R. § 257.91(b) requires that "[t]he number, spacing, and depths of monitoring systems shall be determined based upon site-specific technical information." EPA found evidence of groundwater mounding at Plant Gavin, which occurs when water is discharged into soil and infiltrates into the uppermost aquifer at a rate that is faster than the rate at which groundwater migrates away. EPA explains that mounding is a major problem for accurate groundwater monitoring systems, and thus a violation, because it "can create a localized rise in groundwater elevations, which would cause groundwater to flow away from it in all directions." Attach. B at 54. As the Quarles Report concludes, groundwater mounding is also present at Plant Barry. Attach. C at 10. Given the identical violations of post-closure release and groundwater monitoring found at both Plant Gavin and Plant Barry, EPA's recently proposed decision to deny the application at Gavin should be controlling in EPA's decision to deny ADEM's request for delegation of authority to operate a state CCR permitting

program because ADEM issued a final permit to Alabama Power to cap-in-place its ash pond in direct violation of 40 C.F.R. §§ 257.102(b), (d), and 40 C.F.R. § 257.91(b) and other provisions.

#### **D. Short Summaries of Other Coal Ash Ponds Illegally Permitted by ADEM under the current State CCR Program**

For the remaining sites that have already received a final state CCR permit, Alabama Power and PowerSouth plan to close all of their ash ponds in a similar fashion with some variation at each site. Regardless, all sites will be capped-in-place. The utilities plan to, or have already completed, the dewatering of the surface water from the ash ponds. They will then consolidate the ash into a pile to reduce the footprint of the coal ash. At some sites, they will then build earthen dikes around the new consolidated coal ash, at others, no new dikes will be built around the new pile of coal ash. At every site, save for Lowman,<sup>8</sup> no ash will be excavated outside of the footprint of the current ponds.

Every site is contaminating ground and surface water according to ADEM and the utilities' own data. And, at every site, groundwater will remain in contact with coal ash. To address current groundwater contamination, Alabama Power and PowerSouth have chosen "monitored natural attenuation" ("MNA", which involves only monitoring, no actual remediation) as the option to meet the remedy selection requirements of 40 C.F.R. § 257.97 and Ala. Admin. Code r. § 335-13-15-.06(8). It does not appear in the utilities' permit applications that excavation was even considered.

##### 1. Plant Gadsden

It is undisputed that the Plant Gadsden Ash Pond is illegally discharging toxic contaminants to state waters, groundwater and surface water, and will continue to do so for the foreseeable future under its current final permit issued by ADEM. Alabama Power itself estimates that groundwater remediation will take years, at the least.<sup>9</sup> It was not until Alabama Power posted online results of their groundwater monitoring, as the Company was forced to do by federal regulations, that ADEM acknowledged and fined Alabama Power for its contamination from the Gadsden Ash Pond to state waters.<sup>10</sup> Alabama Power's own data showed extensive contamination around this Ash Pond, and the sampling showed that these violations were frequent and consistent. For example, in ADEM's Administrative Order filed in 2018, Alabama Power exceeded the MCL for arsenic and combined radium.<sup>11</sup> Further, groundwater monitoring reports documented nine maximum contaminant level (MCL) exceedances for arsenic and lithium from December 6, 2017 through September 20, 2019,

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<sup>8</sup> At Plant Lowman, the Co-Operative is excavating coal ash from one pond to another.

<sup>9</sup> Alabama Power Company, Permit Application for CCR Surface Impoundment, Plant Gadsden Ash Pond, 335-13-15-.09(1)(c) [hereinafter "Permit Application"].

<sup>10</sup> ADEM, Administrative Order in the Matter of Alabama Power Company Plant Gadsden Ash Pond, <http://adem.alabama.gov/newsEvents/notices/may19/pdfs/5alpower.pdf>.

<sup>11</sup> *Id.* at Appendix A.

and nine exceedances for arsenic and cobalt over the same time period, in addition to other exceedances.<sup>12</sup>

This pond has already been capped-in-place and issued a final permit by ADEM, and the contamination persists. In fact, contamination encircles the Ash Pond. Furthermore, keeping groundwater out of the coal ash in this location is not possible, and this problem is further exacerbated by the fact that Alabama Power's own plans show that the coal ash at Plant Gadsden is currently saturated with groundwater and buried below the groundwater table. For example, the base of the CCR waste is located at an elevation of approximately 506 feet above mean sea level (amsl); hence, the base of the CCR waste is beneath the top of the groundwater surface and will remain so because it is also below the surface elevation of the Coosa River.<sup>13</sup> The bottom of the disposed ash will likely continue to be located approximately 4 to 12 feet below the water table depending on river stage. Drawings included with the permit application show the approximate bottom of ash in the impoundment at an estimated elevation of 505 feet amsl.<sup>14</sup> The potentiometric surface maps of the site show groundwater within the closed impoundment at elevations from 517 to 509 feet amsl.

## 2. Plant Gaston

Alabama Power has known about groundwater contamination from the Plant Gaston Ash Pond for more than 20 years. In the early 1990s, when Alabama Power received approval from ADEM to build a landfill over a location that previously served as a dry coal ash storage area, ADEM required it to conduct groundwater sampling, which showed elevated levels of arsenic, lead and iron at the Ash Pond. ADEM noted that “[d]ue to the elevated metal concentrations from the initial sampling event, the existing coal ash deposited at the recently permitted landfill site could result in groundwater impacts (leaching of metal) during heavy precipitation events in the future.”<sup>15</sup>

In addition, site conditions make the Ash and Gypsum Ponds uniquely ill-suited to permanently store CCR wastes at Plant Gaston. The geology underlying Plant Gaston is made up of “soluble rocks that are subject to the formation of sinkholes and caves and steep limestone cliffs along major streams, including the Coosa River and other waterways.”<sup>16</sup> This Knox Group geology is

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<sup>12</sup> Alabama Power Company, 2019 Semi-Annual Groundwater Monitoring and Corrective Action Report Plant Gadsden Ash Pond, Appendix A (Feb. 1, 2020), <https://www.alabamapower.com/content/dam/alabamapower/Our%20Company/How%20We%20Operate/ccr/plant-gadsden/ash-pond/groundwater-monitoring-and-corrective-action/2019%20Second%20Semi-Annual%20Groundwater%20Monitoring%20and%20Corrective%20Action%20Report%20-%20Plant%20Gadsden.pdf>.

<sup>13</sup> Draft Permit at Appendix 8, Appendix A Drawings.

<sup>14</sup> *Id.*

<sup>15</sup> Ala. Dep't of Env'tl. Mgmt., Memo from K. Keller, Groundwater Branch, ADEM to G. Hardy, Engineering Services Branch, ADEM re: groundwater sampling results (Nov. 12, 1993).

<sup>16</sup> Town of Wilsonville, Comprehensive Plan (2012).



characterized by carbonate rocks that, “[w]hen weathered . . . can yield a cherty residual clay or incipient karst type topography.”<sup>17</sup>

It is uncontested that both the Ash Pond and the Gypsum Pond are contaminating state waters. Alabama Power was subject to an ADEM Administrative Order due to maximum contaminant level (MCL) exceedances for arsenic, lead, and combined radium at the Plant Gaston Ash Pond and for arsenic at the Gypsum Pond.<sup>18</sup> Alabama Power’s 2020 Groundwater Monitoring and Corrective Action Reports show statistically significant increases (SSIs) of contaminants around the entirety of the Ash Pond. In addition, Groundwater Protection Standard exceedances of arsenic, lithium and/or molybdenum have been detected in at least 16 wells, and there are SSIs for these same contaminants in multiple monitoring wells, indicating further deterioration of groundwater. These known problems around the Ash Pond are not the only issue. Alabama Power’s monitoring wells cannot detect the pollution that has migrated outside the boundary of the Ash Pond; therefore, the full extent of groundwater contamination from Plant Gaston CCR has not been determined.

Alabama Power’s own plans show that the Ash Pond CCR is below the groundwater table. Alabama Power’s Location Restriction Demonstration admits simply that “the Ash Pond is absent the minimum 5-foot separation between the base of the CCR unit and the upper limit of the uppermost aquifer.”<sup>19</sup> Based on Alabama Power’s estimates for Ash Pond depth, more than 40 feet of saturated coal ash exists in some areas of the basin.<sup>20</sup> This groundwater migrates offsite and will continue to do so, and when groundwater rises in tandem with Coosa River elevation rises, the CCR will be rewetted, resulting in “renewed and enhanced leachate generation.”<sup>21</sup>

### 3. Plant Gorgas

In order to build the Gorgas Ash Pond, Alabama Power dammed a jurisdictional Water of the United States, Rattlesnake Creek, and buried this creek in coal ash. This original ash pond was built in the early 1950s, and since that time, the ash pond has expanded tremendously in size and scope. It is estimated that over 25 million tons of toxic coal ash are currently in the Gorgas ash pond, and it is one of the largest, if not the largest, ash ponds in the state. The surrounding watershed which flows into the Ash Pond covers over 1,300 acres, and the ash pond itself is over 400 acres in size with pooled water behind impoundments.<sup>22</sup> Numerous tributaries flow into the Ash Pond from the

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<sup>17</sup> Permit Application, Appendix 4, Alabama Power Company, History of Construction for Existing CCR Surface Impoundment Plant Gaston Ash Pond, at 55.

<sup>18</sup> ADEM, In the Matter of Alabama Power Company E.C. Gaston Electric Generating Plant, Order No. 18-095-GW (Aug. 15, 2018), at 1-2, 9-10.

<sup>19</sup> Alabama Power Company, Location Restriction Demonstration Placement Above the Uppermost Aquifer (40 C.F.R. 257.60 and ADEM Admin. Code r. 335-13-15-.03(1)) Plant Gaston Ash Pond.

<sup>20</sup> Attach. H, Cosler Gaston Report, at 4; Attach. I, Hutson Gaston Report, at 8.

<sup>21</sup> Attach. I, Hutson Gaston Report, at 9.

<sup>22</sup> Ala. Power Co., Revised Closure Permit Application for the Plant Gorgas Ash Pond, History of Construction Documents, Appendix 4 (Apr. 30, 2020).

surrounding Rattlesnake Creek watershed, and many of these tributaries have been destroyed or inundated by the creation of the ash pond.

We know that the 25 million tons of coal ash waste in the Gorgas Ash Pond at Rattlesnake Lake has been contaminating the surrounding ground and surface waters in the Rattlesnake Creek and Mulberry Fork watersheds for years. We also know from the most recent groundwater sampling results that many Appendix IV contaminants, such as arsenic, fluoride, lithium, molybdenum and radium, have been found at many times above groundwater protection standards (GWPS). In numerous instances, this contamination is hundreds (100s) to thousands (1,000s) of percent (%) *above* GWPS. For example, arsenic has been detected at over 2,000% GWPS in several wells down-gradient of the Ash Pond, and arsenic concentrations in general are on average a factor of eight (8) times greater than GWPS. Lithium has been detected 100% to 1,000% above GWPS dozens of times in multiple wells. In 2019 and 2020 alone, GWPS exceedances have been detected in approximately 30 detection or monitoring wells.

Under Alabama Power's current final permit for this pond, which allows cap-in-place, this contamination will not stop. Alabama Power's own plans show that the coal ash is below the groundwater table, and after closure, much of the 25 million tons of coal ash will remain saturated, even under a cap.<sup>23</sup> This continued saturation of coal ash from groundwater flow due to rainwater infiltration in the watershed and groundwater infiltration from the sides and below the pond will create contaminated leachate that discharges into the surrounding environment.<sup>24</sup>

#### 4. Plant Greene County

Originally constructed between 1960 and 1965, the ash pond at Plant Greene County currently occupies approximately 489 acres on the banks of the Black Warrior River near Forkland, Alabama.<sup>25</sup> According to USGS topographic maps, the ash pond was built across Big Slough, and associated wetlands, which flows into Backbone Creek, a tributary of the Black Warrior River. At last inspection, the ash pond was filled to capacity, containing over 10,300,000 cubic yards (yd<sup>3</sup>) of coal ash.<sup>26</sup>

According to EPA's environmental justice mapping and screening tool, the areas around Plant Greene County have three environmental justice indexes above the 80<sup>th</sup> percentile.<sup>27</sup> These indexes measure the environmental burden upon the surrounding community; the higher the index score,

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<sup>23</sup> Attach. J, Cosler Gorgas Report, at 12.

<sup>24</sup> *Id.* at 3, 8.

<sup>25</sup> Alabama Power Company. History of Construction. at 1-2 (Appendix 4 of Draft Permit) [hereinafter "History of Construction"]; Alabama Power Company, Amended Closure Plan for Ash Pond, at 1, 3 (Apr. 2020) (Appendix 9 of Draft Permit) [hereinafter "Amended Closure Plan"]; Alabama Power Company. Amended Closure Plan for Ash Pond. Appendix 9 of the permit.

<sup>26</sup> Alabama Power Company. Report of Annual Inspection.

<https://www.alabamapower.com/content/dam/alabamapower/Our%20Company/How%20We%20Operate/ccr/plant-greene-county/ash-pond/operating-criteria/Report%20of%20Annual%20Inspection%202019%20-%20Ash%20Pond.pdf>

<sup>27</sup> See, <https://echo.epa.gov/detailed-facility-report?fid=110000608398>.

the greater the burden on the local community. Plant Greene County's score for wastewater discharge concerns is 90.4.

Alabama Power plans to use the cap-in-place closure method for the Plant Greene County ash pond. The Company plans to remove and treat the water in the pond, consolidate the waste ash to a final footprint of approximately 250 acres, and then cover the ash with a liner and a system of channels and ditches for stormwater control.<sup>28</sup> Alabama Power began the first step of dewatering the pond on or about April 8, 2019 with final closure of the pond expected in late 2025.<sup>29 30 31</sup> Even after final pond closure, the remaining ash will continue to be located in close proximity to the underlying aquifer and the bottom of the ash will be stored within the groundwater table.

The Company proposes to address the groundwater contamination by a process known as "monitored natural attenuation," and plans to "reduce the source contribution to groundwater" and "enhance subsurface hydraulics for other treatments" by constructing a vertical barrier wall that will extend into the "low permeability Demopolis Chalk" below the pond.<sup>32</sup> In other words, Alabama Power will do nothing to treat the present or future groundwater contamination on site or in the surrounding environment.

The bottom of the disposed ash is now and will continue to be located below the water table. Cross-sections included with Alabama Power's closure plans indicate that the bottom of the ash/top of underlying sediment is located at an elevation of approximately 80-feet above mean sea level (amsl).<sup>33</sup> Maps of the potentiometric surface, included in groundwater monitoring reports, show that the groundwater elevation varies from approximately 80 to 95-feet (amsl). Drawings included with the closure plan indicate that the normal water elevation between the inner and outer dikes will be 87.5-feet amsl.<sup>34</sup> This is the lowest elevation that water would be expected to drain to, even if the proposed synthetic cap and barrier walls had zero defects and allowed no infiltration into the waste, something that is very unlikely. Accordingly, the draft Permit will allow a minimum of 7.5 and possibly as much as 15-feet of coal ash permanently submerged in groundwater. At flooding stages, it will be much more.

## 5. Plant Lowman

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<sup>28</sup> Alabama Power Company. Amended Closure Plan for Ash Pond. Appendix 9 of the permit.

<sup>29</sup> Letter from Alabama Power to Alabama Department of Environmental Management *Re: Commencement of Dewatering Activities* (Apr. 5, 2019).

<sup>30</sup> According to the Alabama Department of Environmental Management's "eFile" system, APCO had multiple toxicity test failures in June and September 2019 at Greene and had to suspend dewatering through the end of 2019. ADEM issued a Notice of Violation to APCO for the toxicity failures. <http://app.adem.alabama.gov/eFile/>.

<sup>31</sup> Alabama Power Company. Amended Closure Plan for Ash Pond. Appendix 9 of the permit.

<sup>32</sup> Alabama Power Company. Assessment of Corrective Measures Greene County Ash Pond. <https://www.alabamapower.com/content/dam/alabamapower/Our%20Company/How%20We%20Operate/ccr/plant-greene-county/ash-pond/groundwater-monitoring-and-corrective-action/Assessment%20of%20Corrective%20Measures%20Greene%20County%20Ash%20Pond.pdf>

<sup>33</sup> Alabama Power Company. Amended Closure Plan for Ash Pond, sheet 803. Appendix 9 of the permit.

<sup>34</sup> Alabama Power Company. Amended Closure Plan for Ash Pond, sheet 907. Appendix 9 of the permit.

PowerSouth's Ash Pond Complex at Plant Lowman sits just yards away from the Tombigbee River. It is on a significant bend in the river, surrounded by wetlands, in the floodplain and submerged in groundwater. In high water events, which are common for the Tombigbee River, the Ash Pond Complex is almost completely surrounded by water. PowerSouth used native soils from the floodplain of the river to construct the impoundments for each of these ponds.

PowerSouth initiated excavation of Unit 1 after the last receipt of CCR waste into pond on May 31, 2019.<sup>35</sup> The Unit 1 CCR material has been excavated and removed into the Unit 2/3 and the FGD impoundments.<sup>36</sup> Approximately 300,000 tons of CCR waste was moved from the Unit 1 Ash Pond into these impoundments.<sup>37</sup> The Unit 1 impoundment area is currently being used as a stormwater detention basin and has been designated for future plant purposes.<sup>38</sup> The Unit 2/3 Ash Pond shares an interior impoundment with the Unit 1 and the FGD Ash Ponds.

The Ash Pond Complex has been contaminating, and still continues to contaminate, the ground and surface water in this area. In 2018, ADEM cited PowerSouth for Maximum Contaminate Level (MCL) violations in the groundwater of beryllium and arsenic, based on data collected in 2016 and 2017.<sup>39</sup> And PowerSouth's most recent data shows widespread contamination of by all coal ash contaminants. The Ash Pond Complex has been contaminating ground and surface water with most, if not all, monitored Appendix III contaminants (boron, calcium, chloride, fluoride, pH, sulfate and Total Dissolved Solids) at levels multiple times over the statistically significant levels (SSLs). We also know from recent groundwater sampling events that Appendix IV contaminants (arsenic, beryllium, cobalt, lithium and molybdenum) are found many times above their groundwater protection standards (GWPS).<sup>40</sup> Ever since coal ash was first wet sluiced to these ponds, over 50 years ago, this coal ash has likely been contaminating ground and surface water.

Under PowerSouth's current Closure Plans and this Draft Permit, the contamination will continue long into the future. "This [continuation of contaminant plumes] is because most of the CCR source will remain and natural-attenuation mechanisms, which have limited effect on constituents such as arsenic [cite] will not significantly reduce future CCR concentrations in groundwater, as evidenced by the multiple decades of high-level groundwater contamination that persists at the Lowman site."<sup>41</sup>

PowerSouth's own plans show that the coal ash is below the groundwater table. Potentiometric contour maps show that the groundwater on site is in close hydraulic connection to the Tombigbee

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<sup>35</sup> Black & Veatch, CCR Impoundment Closure and Post Closure Plan (Rev. 3), PowerSouth Energy Cooperative, at 1-1 (Mar. 2021).

<sup>36</sup> *Id.*

<sup>37</sup> *Id.*

<sup>38</sup> Black & Veatch, CCR Impoundment Closure and Post Closure Plan (Rev. 3), PowerSouth Energy Cooperative, at 6-2, 6.1.5, Property Use During Post-Closure (Mar. 2021).

<sup>39</sup> ADEM, In the Matter of PowerSouth Energy Cooperative Charles R. Lowman Power Plant, Order No. 18-099-GW (August 15, 2018).

<sup>40</sup> *See*, Attach. K, Cosler Lowman Report at 6.

<sup>41</sup> Attach. K, Cosler Lowman Report at 8.

River and flows to the river. “[T]he river almost totally controls site groundwater levels.”<sup>42</sup> This is not surprising considering the location of the Ash Pond Complex next to the river. Therefore, when the Tombigbee River rises, so does the groundwater in which the Ash Pond Complex sits. It is like a large bathtub with no bottom. The Tombigbee River fluctuates significantly from 19 to 2 feet amsl.<sup>43</sup> It is estimated that anywhere from 10 feet, or more, of coal ash will remain saturated within groundwater under the cap proposed by PowerSouth and permitted under the final permit by ADEM.<sup>44</sup> This continuing saturation of coal ash, from the rise and fall of the Tombigbee River and groundwater, will continue to create contaminated leachate that discharges into the surrounding environment. In addition, because of the horizontal and vertical groundwater flow, a cap on top of the Ash Pond Complex will do little to abate contamination. “As discussed above, on average at least 10 feet or more of saturated coal ash is expected to remain following closure, which means that significant CCR leachate generation will continue in the future due to post-closure groundwater flow through the ash because the ash basins are unlined.”<sup>45</sup>

## 6. Plant Miller

The Plant Miller Ash Pond was originally constructed in the late 1970s by damming tributaries (at least two) next to the plant.<sup>46</sup> These tributaries naturally drained to the Locust Fork of the Black Warrior River. Numerous headwater streams in these tributaries were buried by the Ash Pond. Two dams were built in the watershed; the main cross-valley dam on the western side and the saddle dike on the eastern side of the Ash Pond. The cross-valley dam is massive, approximately 170 ft. tall, at its highest point, and over 3,300 ft. long. It connects to a large earthen dike that flanks the southwest side of the ash pond. This dike holds back the ponded water along the entire western side of the ash pond and all of the 19.5 million tons of toxic ash deposited there since the 1970s.

Almost the entirety of the immediate watershed and stream valley have been covered by the ash pond; the ash pond is currently 353 acres, and the total facility boundary is approximately 598 acres.<sup>47</sup> Keeping groundwater out of the coal ash in this location is not possible, and this siting problem is further exacerbated by the fact that Alabama Power’s own plans show that the coal ash at Plant Miller is currently saturated with groundwater and buried below the groundwater table. For example, a potentiometric surface map in Alabama Power’s monitoring reports shows that the elevation of the groundwater to be approximately 400 to 410 ft. above amsl.<sup>48</sup> A cross section of the Ash Pond shows that coal ash will be left in place with an approximate bottom elevation 320 ft. amsl., or, in other words, 80-90 ft. of coal ash will be left below the current groundwater table

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<sup>42</sup> *Id.* at 4.

<sup>43</sup> *Id.*

<sup>44</sup> *Id.*

<sup>45</sup> *Id.* at 7.

<sup>46</sup> It is not clear whether permits were ever received to dam these streams.

<sup>47</sup> Draft State CCR Permit, at 2.

<sup>48</sup> Groundwater Monitoring Report, at Figure 7A.

in some portions of the impounded Ash Pond.<sup>49</sup> Capping the coal ash does not slow the natural flow of contaminated leachate from the ash into the groundwater and will not impede the flow of groundwater through and from the waste beneath the artificial cap, especially since the coal ash is capped in a stream valley. The Closure Plans fail to predict the impact of capping the waste on the elevation of the water table within the impoundment, the thickness of the saturated waste, and the magnitude and extent of the released CCR contaminants downgradient of the impoundment. An undetermined thickness of saturated coal ash remaining in the groundwater will continue to contaminate groundwater and surface water far into the future. There will be constant and on-going leaching of toxic contaminants to the Locus Fork for decades, if not centuries.

**E. EPA should initiate enforcement actions due to the impacts caused to the communities and the environment surrounding the coal ash ponds, which will be capped-in-place.**

EPA should exercise its authority to deny ADEM's request for delegation and initiate enforcement actions against the illegal/unlawful CCR closure plans because the brunt of the impact of these unlawful permits will be felt first and foremost by the communities surrounding these plants, including environmental justice communities. EPA has the authority to initiate its own enforcement action against the CCR units that are not in compliance with the minimum federal CCR standards under the WIIN Act. Specifically, 42 U.S.C. § 6945(d)(4)(a)(1) states, “[t]he Administrator may use the authority provided by sections 6927 and 6928 of this title to enforce the prohibition on open dumping under subsection (a) with respect to a coal combustion residuals unit—(i) in a nonparticipating State.”

Exposing communities to the on-going hazards associated with cap-in-place CCR impoundments, including the continued leaching and release of toxic pollutants like arsenic and mercury into, for example, the Mobile River in which the community recreates and fish, would compound this injustice. The Mobile River is on the Alabama Section 303(d) List of Impaired Waters and has been since at least 2010 for mercury.<sup>50</sup> In addition, there is a fish advisory in effect for the Mobile River at Cold Creek (do not eat any species of fish, ever) *and* at David Lake (a limit of two black crappie or largemouth bass per month) both for high levels of mercury.<sup>51 52</sup> Mercury accumulates in fish and shellfish over time, and concentrations increase for fish higher up the food chain who eat contaminated organisms. Contamination is therefore a significant risk for people who eat fish from impaired waters.

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<sup>49</sup> See Alabama Power Company, Cross-Section A-A' Profiles and Sections 1 of 2, Closure Design Drawing D-04, Plant Miller Ash Pond Closure Design Plans (Sept. 28, 2018) (PDF P. 117 of Draft Permit).

<sup>50</sup> Available at <http://adem.alabama.gov/programs/water/wquality/2020AL303dList.pdf>

<sup>51</sup> Available at <https://www.alabamapublichealth.gov/tox/assets/al-fish-advisory-2020.pdf>

<sup>52</sup> Mercury is a serious neurotoxin that can cause muscle weakness, speech and hearing impairments, and difficulty walking in adults. In infants and children, including fetuses exposed in the womb, the effects can be dire: mercury exposure can impair memory, attention, cognition, and fine motor skills. EPA, Health Effects of Exposures to Mercury, <https://www.epa.gov/mercury/health-effects-exposures-mercury>.

Plant Barry is located right in between Cold Creek and David Lake.<sup>53</sup> Since mercury is a major issue both upstream and downstream, adding additional mercury via this CCR permit would only compound the problems these communities face. These communities have borne the impacts of this pollution for far too long and will continue to do so under these cap-in-place permits.

Additionally, the historic and present contamination of groundwater in the vicinity of the Plant Barry Ash Pond threatens an ecological treasure—the Mobile River and Mobile-Tensaw Delta. EPA’s 1991 Screening Site Inspection targeted the ecological importance of the Mobile River downstream from Plant Barry.<sup>54</sup> The wetlands surrounding the Mobile River, downstream from Plant Barry, constitute “sensitive environments. . . located along the 15-mile extended surface water migration pathway<sup>55</sup> which is completed in the Mobile River beyond the... corporate boundary near the point of entry of Williams Creek into the river. Wetlands, a sensitive environment, border nearly the entire length of the pathway.”<sup>56</sup> More broadly, the Mobile River system is one of eight major drainages that form the Mobile Basin. The Mobile Basin is considered one of the most naturally-diverse areas in the world. In fact, EPA’s Site Investigation notes that “[t]he extended surface water migration pathway contains several endangered species, including a critical habitat for the Alabama beach mouse . . . , an endangered species; and the American alligator.”<sup>57</sup> The Mobile Basin is home to many species unique to it, including over 40 species of fish, 17 species of mussels, and 72 species of aquatic snails, as well as other turtle, crustacean, water-dwelling insect species, and hundreds of species of invertebrates, fish, birds, amphibians, reptiles, and mammals. *Our Mobile Bay Watershed*, Mobile Baykeeper Website.<sup>58</sup> ADEM’s issuance of the coal ash permit at Plant Barry further endangers these fragile ecosystems and the rare plants and animals in the Mobile River.

## F. Conclusion

Given ADEM’s established track record of issuing seven (7) final permits that fail to comply with either 40 C.F.R. § 257, or its state equivalent, Alabama cannot be said to have a “program or other system [that] requires each coal combustion residuals unit located in the State to achieve compliance with minimum federal standards or their effective equivalent. 42 U.S.C. § 6945(d)(1)(B). EPA cannot and should not approve ADEM’s request to be delegated authority to

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<sup>53</sup> Available at <https://www.sam.usace.army.mil/Missions/Civil-Works/Navigation/Black-Warrior-and-Tombigbee-River/BWT-Alabama-Rivers-Navigation/River-Charts/>

<sup>54</sup> Mobile BayKeeper Pollution Report: Coal Ash at Alabama Power’s Plant Barry (2018), Appendix C – Final Report Screening Site Inspection, Phase II Alabama Power Company – Barry Steam Plant, April 3, 1991, PDF pp. 49-86 (EPA Site Inv). Available at

<https://static1.squarespace.com/static/54d3a0eae4b000d5abdf81c0/t/5abaf7f66d2a733c0770563c/1522202645396/2018+Plant+Barry+Pollution+Report+FINAL-r.pdf>.

<sup>55</sup> The 15-mile extended surface water migration pathway constitutes the EPA’s definitional requirements under the Superfund law of a hazardous substance migration path showing the run-off patterns for 15 miles in surface water. Available at <https://www.epa.gov/superfund/section-11-surface-water-likelihood-release>.

<sup>56</sup> Mobile BayKeeper Pollution Report: Coal Ash at Alabama Power’s Plant Barry (2018), Appendix C, PDF p64.  
<sup>57</sup> *Id.*

<sup>58</sup> Available at <https://www.mobilebaykeeper.org/watershed>.

administer an Alabama state CCR program in lieu of the federal CCR program. ADEM's final permits authorize continued and severe violations of federal CCR requirements and Alabama state law and fly in the face of EPA's stated reasons for developing the CCR rule in the first place: to "address[] the risks from structural failures of CCR surface impoundments [and] groundwater contamination from the improper management of CCR in landfills and surface impoundments."<sup>59</sup>

In addition to denying ADEM's request for delegation, EPA should initiate an enforcement action in Alabama against the CCR units that are out of compliance with the minimum federal CCR Rule standards. EPA should prioritize the unlawful final coal ash permits at Plants Barry, Gadsden, Gaston, Gorgas, Greene, Lowman and Miller, all of which are inconsistent with minimum federal standards. Doing so would ensure that the owners of those facilities do not expend ratepayer funds to implement ADEM approved closure plans that fail to require compliance with minimum federal standards. EPA can and should deny ADEM's request for delegation, and initiate an enforcement action to protect the surrounding ecosystems and nearby communities.

The undersigned urge EPA to meet with our organizations and local communities to address these issues. We look forward to hearing from you in the near future.

Sincerely,

**s/ Keith Johnston**

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<sup>59</sup> 80 FR 21302-01.