To: The North Carolina Department of Environment and Natural Resources  
Re: 5306-STRUC-2015, Colon Mine Site Structural Fill in conjunction with NCDENR DEMLR Mine Permit 53-05 and 1910-STRUC-2015, Brickhaven No.2 Mine Tract “A” Mine Structural Fill in conjunction with NCDENR DEMLR Mine Permit 19-25  

May 16, 2015  

On behalf of the members and Directors of Blue Ridge Environmental Defense League and our member Chapters in Lee and Chatham counties, I offer the following comments on the permits under consideration by the Division of Energy, Mineral, and Land Resources (DEMLR), and the Division of Waste Management (DWM). The applicant and the Department have failed to address important environmental, public health and safety, and statutory concerns. The permit application is deficient and should be denied.  

Mine Reclamation:  

The applicant has stated and the Department of Environment and Natural Resources (DENR), through its associated divisions has accepted that the projects are “mine relemations.” This is an unsupportable claim.  

The Mining Act of 1971 states:
"Reclamation" means the reasonable rehabilitation of the affected land for useful purposes, and the protection of the natural resources of the surrounding area. Although both the need for and the practicability of reclamation will control the type and degree of reclamation in any specific instance, the basic objective will be to establish on a continuing basis the vegetative cover, soil stability, water conditions and safety conditions appropriate to the area.

The applicant, as part of its permitting documents has described the project as a “beneficial” use of coal combustion residuals. Session Law 2014-122 (Senate Bill 729) states at:

130A-309.201. Definitions. Unless a different meaning is required by the context, the definitions of G.S. 130A-290 and the following definitions apply throughout this Part:

(1) "Beneficial and beneficial use" means projects promoting public health and environmental protection, offering equivalent success relative to other alternatives, and preserving natural resources.

(14) "Structural fill" means an engineered fill with a projected beneficial end use constructed using coal combustion products that are properly placed and compacted. For purposes of this Part, the term includes fill used to reclaim open pit mines and for embankments, greenscapes,

The project currently under consideration does not meet the uses defined by North Carolina law. Don Kovasckitz of Lee County strategic services evaluated the information submitted to DENR by the applicant and found that over 70% of the cell footprint has never been mined. Mr. Kovasckitz made a presentation to the Lee County Commissioners on December 15, 2014. In a media report, Don Kovasckitz stated: “On the drawings, it showed different cells [of land] that

1 Video will included on a data stick, presentation included with comment documents.
would be used for the fill. It was about 118 acres. Over 70 percent of the area they are going to reclaim has not been [excavated].” Mr. Kovasckitz also noted that the completed project would be 5 stories high. The unexcavated area is similar at the Brickhaven site in Chatham County.

Additionally, nature has already “reclaimed” the sites. The pits have become ponds which are home to fish, reptiles, and amphibians. Wildlife and birds are plentiful, and much of the area around the pits is vegetated. Local people regularly fish from the ponds, some to supplement their diet. See photos below:

*Brickhaven Site in Chatham County*

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2 Potter, Zach. Local officials feel mislead by plans for Sanford. The Sanford Herald. 17 December 2014. Hard copy included with comment documents.
Colon Site in Lee County
The applicant also claims that the site could be used for “future development.” The City of Charlotte recently turned down a smaller project, which would have been designed and constructed by Charah, Inc., the parent company of Green Meadow, LLC. In a “due diligence” report on the project, it was stated: “In addition, placing coal ash at the Airport presents other challenges. Because the coal ash would be fully encapsulated and topped with six to eight feet of compactable soil, the size of the encapsulation creates development restrictions. Because the Airport is bordered by a rail line and highways, developable property at the airport is limited. Restricting the future
use of any portion of Airport property was deemed unacceptable and contributed to the negative
determination.”

Liners and Associated Issues

The applicant has proposed a single composite liner system for the projects. However, this
design is not likely to protect groundwater from contamination. The applicant and Duke Energy
have made fabulous claims for liner longevity to local officials, the US Army Corps of
Engineers, and the media. The efficacy of using composite liner systems for containment of
coal ash has not been demonstrated. Dr. Dennis Lemly, Research Associate Professor of Biology
at Wake Forest University points out that there is no performance data to indicate that this design
is suitable for coal ash disposal. In a report submitted to the United States Environmental
Protection Agency, Dr. Lemly concluded, “Coal ash produces leachate with an exceptionally
high anionic strength due to the presence of sulfate, chloride, and many other constituents.
Sulfate concentrations alone can exceed 30,000 mg/L. Moreover, ammoniated coal ash,
which is the predominant form produced today, enhances the leaching rate of elements that form
anionic compounds in solution, in particular, selenium, arsenic, molybdenum, fluoride, and
vanadium. Collectively, these factors suggest that failure of HDPE liner material in a coal

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3 City of Charlotte Coal Ash Due Diligence Study August 13, 2014. Report included with comment documents.

4 See attached letter from Duke Energy in response to Chatham County Board of Commissioners.

5 See attached comments by Therese Vick, Blue Ridge Environmental Defense League to US Army Corp of
Engineers.

http://www.newsobserver.com/news/local/coal-ash-issue/article20108082.html, Article included with comment
documents.
ash application is very possible for chemical reasons unrelated to direct degradation of the membrane itself.”  Dr. Lemly also submitted comments to DENR outlining his concern that there is little experience using the proposed liner system for coal ash disposal sites. For example compaction of coal ash causes the liquid in the waste to rise to the surface, possibly creating problems.

In a 2013 presentation to the New York Federation of Solid Waste and Recycling, Abigail Beck, M.S., P.E., commented that it was, “Possible but not probable to install leak-free geomembrane.” Indeed, the standard manufacturer’s warranties of two potential suppliers of the HDPE liner to the applicant are five years, with some products having a warranty up to 20 years.

World renowned landfill expert Dr. G. Fred Lee has long been critical of the “dry tomb” approach for municipal solid waste landfills. His many studies and reports outline the certainty of liner failure, insufficient monitoring wells placed far apart, inadequate post-closure care and financial assurance. In comments prepared for Blue Ridge Environmental Defense League, Dr. Lee stated, “However, there is no doubt that eventually the liner will fail to prevent pollution of groundwater with waste-derived leachable components. Since landowners in the vicinity of a

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11 Emails to Therese Vick 23 February 2015 and 2 March 2015.
landfill should be entitled to groundwater free of hazardous and deleterious chemicals forever, wastes with leachable components such as coal combustion ash should not be permitted to be deposited in landfills that do not provide protection of the groundwater resources forever.”

The applicant has not provided performance or other data to demonstrate that this design will protect the environment.

**Characteristics of the Colon/Osgood and Brickhaven Communities**

Disposing of 20,000,000 tons of dangerous coal ash at these sites, less than 10 miles apart, places a disproportionate impact on the Brickhaven and Colon/Osgood communities. Every truck or train car of coal ash will ultimately end up in these communities, no matter the route taken. The safety, environmental, and public health impacts of the possible 200,000 train car loads, 666,667 truckloads, or some combination of the two, have not been evaluated by the applicant, Duke Energy, or DENR. The negative air quality and public health impacts of diesel emissions are well documented. The accelerated permit review including scheduling one hearing on three different permits for each site is unprecedented, and the confusing electronic commenting process (until very recently the link provided simply said “public notice”) exacerbate this already unjust and unfair process. DENR’s actions combined with already existing facilities in the communities, and the potential for oil and gas development, place a disproportionate toxic burden on the two communities.

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13 Lee, G. Fred, PhD. Lee, Anne-Jones, PhD. [Comments on Proposed Disposal of Coal Combustion Ash](#) Comments included with comment documents.
A survey of residences within a 3 - 5 mile radius from the center of the Duke Energy/Charah coal ash dump site was conducted during April and May 2015 by Environmental members. The following information was gathered from 317 residents, most living zero to three miles from the site. The survey is ongoing.

- Of the 317, sixty-two are senior citizens, and eighty-three are children.
- 93 confirmed chronic illnesses including (from highest to lowest occurrence) allergies, asthma, cancer, COPD, bronchitis, and several others.

Ten additional residents registered unspecified health concerns

- 202 livestock consisting of chickens, turkeys, pigs, ducks, goats, horses, and a llama were listed. Some animals are a food source (meat, eggs, milk, cheese). In addition, 14 households included cats and dogs which drink from the ponds, streams, and springs.

- 20 homes have water wells for human consumption, watering gardens, and feeding animals.
87 homes receive water from the city of Sanford.

- 54 households maintain a garden as a source of food for their families. Some irrigate with water from creeks and ponds.
- 53 families supplement diets by hunting and fishing on their own land and adjacent property.

Public Park

Depot Park is centrally situated between the rail tracks which run through downtown Sanford. Shops, restaurants, and other small locally owned businesses run along the outside of the tracks between street crossings.

City and county sponsored events at the park are free to the public. The most popular event is the outdoor Summer Concert in the Park series.

The performance area and stage are within a few feet of the tracks.

According to its director, Depot Park...

- Draws 10,000 to 15,000 patrons a year
- hosts in addition to summer concerts, other outdoor activities including seasonal Farmer's Markets every Saturday, movies in the park on Fridays ten weeks a year, an open fountain area for children to play in, and frequent festivals
- is also available to churches, community, corporate, and private events (fees may apply)

***Because the source of this information is a city employee, he declined to comment on any
Daycare surveys

Three child daycares and one adult care facility within a three mile radius of the proposed coal ash dump site were surveyed. The adult care facility operates twenty four hours a day seven
days a week. Two additional child daycares exist along the rail tracks within city limits, one is approximately only ten feet from the tracks for the entire length of the building and recreational area, and the other daycare is within one block of the tracks along its main entrance and play area for two, three, and four year olds.

Of the five daycare facilities surveyed:

• One daycare did not return survey or correspondence after numerous attempts

• One has been operating about 15 years, three others have operated more than 30 years

• 10 to 20 children are enrolled at one, more than 50 at two of the preschools, and greater than 100 children are enrolled at another

• Two of the daycares schedule outdoor recreation sessions once a day, and two schedule outdoor recreation twice a day. Activities last thirty to forty-five minutes per session every day for ten months.

• 25 children and 6 staff experience chronic allergies/asthma

• On a scale of 0 to 10, ranking understanding of coal ash, its transportation, and storage issues, directors of the facilities ranked themselves:

  1 ranked an 8 (spouse employed by Duke Progress Energy)

  1 ranked a level 7

  1 ranked a level 1

  1 declined to specify

The adult care facility houses greater than 100 residents, of varying condition and needs, short
term and long term. Located less than a mile from rail tracks and a crossing, air pollution and immediate access to emergency assistance is a concern.

Brickhaven:

A survey of residences within a 3 mile radius from the center of the Duke Energy/Charah coal ash dump site was conducted during April and May 2015 by Chatham Citizens Against Coal Ash Dump members.

The following information was gathered from 424 residents, most living zero to three miles from the site. The survey is ongoing.
• Of the 424, ninety-three are senior citizens, and thirty-eight are children.

• 33 admitted health problems

• Livestock consisting of chickens, ducks, goats, horses, turkeys, swans, and sheep were listed. Some are food sources. In addition, 16 households included pets.

• 78 homes have water wells for human consumption, watering gardens, and feeding animals. Of the 75, all survey respondents on the Moncure-Flatwood Road use well water.

64 homes receive water from the county.

• 41 households maintain a garden as a source of food for their families. In addition, much hay and straw is grown in the area for consumption by livestock, bedding, and landscaping material.

• 29 families supplement diets by hunting and fishing.

Environmental Justice

The North Carolina Department of Environment and Natural Resources’ (DENR) Equity Policy reads (in part): “To meet the goals DENR will:

- Promote greater use and analysis of demographic information to identify communities that may be disproportionately impacted by sources of pollution

- Use demographic information to determine whether there is: 1) A need for greater outreach to community in order to encourage more meaningful participation, or 2) special health risks based on the nature of the population.”

Article 9 of the Solid Waste Management Act, Part 1, § 130A-294. Solid waste management program states that:
c. The Department shall deny an application for a permit for a solid waste management facility if the Department finds that:

(9) The cumulative impact of the proposed facility, when considered in relation to other similar impacts of facilities located or proposed in the community, would have a disproportionate adverse impact on a minority or low-income community protected by Title VI of the federal Civil Rights Act of 1964. This subdivision shall apply only to the extent required by federal law.

Poor rural communities and communities of color are more likely to be targeted for waste disposal. Coal ash disposal is no exception. For example, coal ash waste from the Kingston, Tennessee spill was taken to Uniontown, Alabama, which is a primarily African American community over 300 miles away. Similarly, coal ash waste from the Wilmington area (over 100 miles away), and the Charlotte area (also over 100 miles away) is proposed to be transported to rural communities in Lee and Chatham counties. Additionally, the permit documents submitted by the applicant to DENR identify all of North and South Carolina as potential service areas. There is nothing in federal or state law to prohibit coal ash from coming from anywhere.

Upon review of US Census data, Chatham County is 82.3% white, Lee County is 75.5% white, and the state of North Carolina is 71.7% white. Using the US Environmental Protection Agency’s EJ View mapping tool\textsuperscript{14}, it is clear that the Colon/Osgood and Brickhaven communities have a statistically higher percentage of people of color than the Counties they are located in, and the state as a whole.

\textsuperscript{14} EPA Environmental Justice Mapping
Area of Brickhaven Site

Area of Colon Site
The Department must consider the cumulative and disproportionate impacts to the Colon/Osgood and Brickhaven communities.

Compliance Review and Financial Assurance

Compliance Review

Article 9 of the Solid Waste Management Act Part 2 § 130A-295.3 Solid Waste Management Program “Environmental compliance review requirements for applicants and permit holders” states that:

(a) For purposes of this section, "applicant" means an applicant for a permit and a permit holder and includes the owner or operator of the facility, and, if the owner or operator is a business entity, applicant also includes: (i) the parent, subsidiary, or other affiliate of the applicant; (ii) a partner, officer, director, member, or manager of the business entity, parent, subsidiary, or other affiliate of the applicant; and (iii) any person with a direct or indirect interest in the applicant, other than a minority shareholder of a publicly traded corporation who has no involvement in management or control of the corporation or any of its parents, subsidiaries, or affiliates.

(b) The Department shall conduct an environmental compliance review of each applicant for a new permit, permit renewal, and permit amendment under this Article. The environmental compliance review shall evaluate the environmental compliance history of the applicant for a period of five years prior to the date of the application and may cover a longer period at the
discretion of the Department. The environmental compliance review of an applicant may include consideration of the environmental compliance history of the parents, subsidiaries, or other affiliates of an applicant or parent that is a business entity, including any business entity or joint venturer with a direct or indirect interest in the applicant, and other facilities owned or operated by any of them. The Department shall determine the scope of the review of the environmental compliance history of the applicant, parents, subsidiaries, or other affiliates of the applicant or parent, including any business entity or joint venturer with a direct or indirect interest in the applicant, and of other facilities owned or operated by any of them. An applicant for a permit shall provide environmental compliance history information for each facility, business entity, joint venture, or other undertaking in which any of the persons listed in this subsection is or has been an owner, operator, officer, director, manager, member, or partner, or in which any of the persons listed in this subsection has had a direct or indirect interest as requested by the Department.

(c) The Department shall determine the extent to which the applicant, or a parent, subsidiary, or other affiliate of the applicant or parent, or a joint venturer with a direct or indirect interest in the applicant, has substantially complied with the requirements applicable to any activity in which any of these entities previously engaged, and has substantially complied with federal and State laws, regulations, and rules for the protection of the environment. The Department may deny an application for a permit if the applicant has a history of significant or repeated violations of statutes, rules, orders, or permit terms or conditions for the protection of the environment or for the conservation of natural resources as evidenced by civil penalty assessments, administrative or judicial compliance orders, or criminal penalties.
Article 7 of the NC Mining Act, § G.S. 74-51(d), states a permit may be denied for any of the following reasons:

7) That the applicant or any parent, subsidiary, or other affiliate of the applicant or parent has not been in substantial compliance with this Article, rules adopted under this Article, or other laws or rules of this State for the protection of the environment or has not corrected all violations that the applicant or any parent, subsidiary, or other affiliate of the applicant or parent may have committed under this Article or rules adopted under this Article and that resulted in:

a. Revocation of a permit,
b. Forfeiture of part or all of a bond or other security,
c. Conviction of a misdemeanor under G.S. 74-64,
d. Any other court order issued under G.S. 74-64, or
e. Final assessment of a civil penalty under G.S. 74-64.

Neither the applicant nor Duke Energy appear to have been required by the North Carolina Department of Environment and Natural Resources (DENR) to provide a compliance history during the permitting process for the Brickhaven and Colon sites. Duke Energy is a partner in these projects, as they are being developed at their request. DENR is well aware of Duke Energy’s track record yet has failed its statutory responsibility to fulfill this requirement. On May 16, 2015, Duke Energy pled guilty to nine misdemeanors and admitted in open court that
among other things, they had ignored warnings about the pipe that ultimately ruptured and caused the February 2014 coal ash spill into the Dan River. Media reports also indicate the company will be on probation for five years.

Financial Assurance

Duke Energy has reported to the North Carolina General Assembly that the closure of the coal ash impoundments at their 14 facilities would cost billions. According to permit documents submitted to the North Carolina Department of Environment and Natural Resources, the Division of Energy, Mineral, and Land Resources has capped the bond at $500,000.00 at each site. For the structural fill application, the applicant has proposed to set aside $10,380,470 (Colon) and $10,193,600 (Brickhaven) for financial assurance. The amount of the total to be set aside for corrective action at each site is $2,000,000. The applicant states in “Permit Application Addendum 3” for both sites that, “The North Carolina Department of Environment and Natural Resources Division of Waste Management requires that at least $2 million be set aside for corrective action for 2 solid waste management facilities. Because the state is requiring a permit be obtained from the Division of Waste Management, HDR has assumed that the $2 million corrective action threshold also applies to structural fills.” DENR has accepted the applicant’s proposal. The North Carolina General Assembly recognized the need that sufficient financial assurance is vital for large structural fill projects, and grants DENR the authority to require adequate funds be set aside for any eventuality.

Session Law 2014-122 (Senate Bill 729) at 130A-309.217 “Financial assurance requirements for
large projects using coal combustion products for structural fill” states that:

(a) For projects involving placement of 8,000 or more tons of coal combustion products per acre or 80,000 or more tons of coal combustion products in total per project, the applicant for a permit or a permit holder to construct or operate a structural fill shall establish financial assurance that will ensure that sufficient funds are available for facility closure, post-closure maintenance and monitoring, any corrective action that the Department require, and to satisfy any potential liability for sudden and non-sudden accidental occurrences, and subsequent costs incurred the Department in response to an incident at a structural fill project, even if the applicant or permit holder becomes insolvent or ceases to reside, be incorporated, do business, or maintain assets in the State.

Despite the intent of the General Assembly, DENR is allowing the applicant, Charah, Inc., through its subsidiary Green Meadow, LLC, to post the bare minimum for the structural fill, and is allowing a $500,000.00 bond cap for the mining permit. These amounts are dangerously inadequate. Additionally, the applicant has proposed and DENR has allowed a 30-year post-closure period. The applicant’s sole assets are coal ash landfills and structural fills, and Green Meadow’s assets are unknown. It is incumbent upon DENR to protect the environment and taxpayers of North Carolina and require the applicant to perform post-closure care as long as the coal ash remains a threat, and to provide sufficient financial assurance to cover remediation.¹⁵

Waste Characterization

Coal ash contains toxic constituents and is not a benign waste stream. It contains heavy metals such as arsenic, selenium, mercury, and chromium, often present as hexavalent chromium, and radionuclides. Recently in South Carolina, radioactive waste was found to have been disposed of in a Duke Energy coal ash impoundment. When the Division of Waste Management was queried if the possibility for such a scenario existed in North Carolina, the answer that came was, “…we haven’t heard of it occurring, of course we weren’t kept abreast of what was being disposed of in the impoundments.” Despite the most current research on appropriate test methods for coal combustion residuals, the applicant has stated in permit documents submitted to the North Carolina Department of Environment and Natural Resources (DENR) that they will be relying on Duke Energy’s testing from the Riverbend and Sutton sites, using the “Toxicity Characteristic Leaching Procedure” (TCLP).

TCLP

Duke Energy plans to use the TCLP to determine the toxicity of the coal ash to be disposed of in Colon and Brickhaven. DENR has accepted this proposal. Because the TCLP may underestimate the toxicity of coal ash, the US Environmental Protection Agency (EPA) does not recommend that the test be used for the characterization of coal ash waste. In its recently published final rule on the disposal of coal combustion residues EPA said that, “For landfills, EPA agrees that TCLP, SPLP and other single pH test methods may not be the most appropriate

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leachate extraction methods for all waste streams and all disposal scenarios.” At the November 24, 2014 meeting of the Beneficial Reuse of Coal Ash Ad Hoc Committee meeting, Ellen Lorscheider with the Division of Waste Management (DWM) told the Committee that EPA test methods 1313, 1314, 1315, and 1316 (collectively known as the “LEAF” method) were preferable to TCLP.

PCBS and Other Constituents of Concern

G. Fred Lee, PhD points out that, “As discussed in the above sections of reports on PCB management issues, the TCLP is not a valid test to evaluate whether PCBs in soils, wastes and cement “stabilized” wastes can be leached from the wastes in sufficient concentrations to cause pollution of the environment by PCBs. This same conclusion applies to many other types of hazardous chemicals such as PAHs, heavy metals etc.” There are questions concerning the possibility that PCBs were disposed of in coal ash impoundment. In one media report, a former worker stated that “everything” was poured in the impoundments. Members of EnvironmentaLEE have been told that PCBS were disposed of in the mine pits and onsite at the Colon site. It is not clear that any site assessment of potential legacy contamination at the Colon or Brickhaven mine sites has occurred.

Of equal concern, the TCLP does not measure radionuclides. Coal ash contains varying amounts of Technologically Enhanced Naturally Occurring Radioactive Materials (TENORM). Naturally

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occurring isotopes of uranium, thorium, potassium, and their decay products including radium can be present in coal ash.

The toxicity of the coal ash to be excavated, transported, and ultimately disposed of at both sites has not been established using the most appropriate methods recommended by EPA and others. It is imperative that the Department of Environment and Natural Resources require a thorough waste characterization using the most appropriate testing methods.

Leachate

The applicant has described its plans for leachate disposal in permit documents:

2.2.1 Leachate Collection System “Leachate will either be transported to a wastewater treatment plant or discharged directly into a sanitary sewer system.”

This is no plan.

No receiving wastewater treatment plant or sanitary sewer system has been identified. There is no discussion of the need for pre-treatment, or evaluation of the potential impacts on a municipal waste system. Municipal wastewater treatment plants are designed to treat biological contaminants, not heavy metals, radionuclides, and possibly PCBs or other toxics. These constituents will be partitioned into the discharged effluent or into the sludge - with inherent risks to the environment and public health. For example, in Lee County, the Sanford wastewater treatment plant discharges upstream of the Lee County drinking water intake. Coal ash contains bromide, which can combine with chlorine and form trihalomethane; according to EPA trihalomethane poses a cancer risk. There have already been instances of the creation of
trihalomethanes in Eden and Madison, downstream from the Belews Creek Steam Station discharge.\textsuperscript{19}

How millions of gallons of leachate from millions of tons of coal ash is to be tested, treated and disposed of should be of vital concern to DENR.

\textbf{Air Quality}

The excavation, transportation, and disposal of millions of tons of coal ash will have significant and deleterious effects in the communities surrounding Duke Energy’s coal ash impoundments, the communities along the transportation routes, and, most profoundly, in the Colon and Osgood communities. Coal ash dust is difficult to control - it is “hydrophobic”, sometimes described as behaving like “dry water”, and because of its fine particle size is easily deposited off-site and along transport routes, depositing on land and surface water. It contains crystallized silica, the culprit in the chronic lung disease silicosis. When inhaled, with its small particle size, coal ash is carried deep into the lungs and can irritate the respiratory system and worsen chronic lung disease. Toxins such as arsenic and lead as well as radionuclides are more concentrated the smaller the particle. In a study of the Kingston, Tennessee coal ash spill Duke University researchers found that, “The high concentrations of trace metals (Tables 1 and 2) and radioactivity (Table 3) reported in this study for the bulk TVA coal ash are expected to magnify, \textsuperscript{19}

\textsuperscript{19} Gutierrez, Bertrand M. “Discharge from Belews Creek power plant affects water quality.” \textit{Winston-Salem Journal}. Winston Salem. 13 April 2014. 

as fine fractions of fly ash (which may be resuspended and deposited in the human respiratory system) are typically 4-10 times enriched in metals relative to the bulk ash and the coarse size fraction (7, 46). The toxic metal content in coal ash, the sizes of fly ash particulates, and the ionizing radiation (IR) exposure (both incorporated and external) may act synergistically or, less frequent, antagonistically, affecting human health directly (predominantly through inhalation of contaminated air) and indirectly through the food chains (consuming contaminated agricultural products) (14).”

Hydrogen sulfide (H2S) can be emitted from coal ash landfills. H2S is considered a broad-spectrum poison, which means it can affect multiple systems of the body. Residents living near coal ash disposal sites report rotten smells in their communities. In Uniontown Alabama, where the coal ash from the 2008 TVA Kingston, Tennessee spill was taken, air dispersion modeling was undertaken to determine the possible air emissions which could be coming from the landfill there. The modeling found that, “…the Arrowhead Landfill generated a substantial amount of H2S and TSP air emissions during normal operations.”

In the permit documents provided to DENR by the applicant, there is no discussion of the use of daily cover. Although the applicant offered to monitor the transport routes for the Charlotte proposal (Due Diligence Report included with comment documents), they have not done the same for the Colon and Brickhaven sites, the communities along the transport routes or at the

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Sutton and Riverbend excavation sites. DENR has not required an air-impact analysis of the impacts on the Lee and Chatham communities, or any permitting or monitoring.

Complaint-driven compliance will not work. Recently, near Duke Energy’s Cape Fear plant, a nearby resident took these pictures of what was apparently fugitive coal ash blowing into the roadway. She was advised to contact me and after several phone calls and emails I was finally put in touch with the right person at DENR.

Fugitive coal ash dust will have a significant impact on public health in the communities targeted for coal ash landfills, along the transport corridors, and around the Riverbend and Sutton sites.
Saltstone: The Alternative for North Carolina

Because of the inherent dangers of landfilling and transportation of coal ash across North Carolina, the Blue Ridge Environmental Defense League has recommended a safer solution, the technology called “Saltstone” for coal ash waste disposal. The technology, developed for the US Department of Energy for use at the Savannah River Site, would allow the waste to be stored on Duke Energy property and isolate the waste from the air, ground and surface water and the land. For further information see: Coal Ash Disposition: The Alternative for North Carolina. 23

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23 Copy of report submitted with comment documents.