Appendix B – Scoping

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Project Name: Bull Run Fossil Plant CCR Disposal
Project Number: 2014-10

BULL RUN FOSSIL PLANT CCR DISPOSAL SCOPING REPORT

Anderson County, Tennessee
Rev 0

Prepared by:
TENNESSEE VALLEY AUTHORITY
Chattanooga, Tennessee

September 2015

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US Environmental Protection Agency

1.0 Introduction

The Tennessee Valley Authority's (TVA's) Bull Run Fossil Plant (BRF) is an 870 megawatt (MW) coal-fired generating station located near Clinton, Tennessee. BRF was constructed between 1962 and 1967. When operating at full capacity, BRF consumes 7,300 tons of coal daily in a single generating unit and produces approximately 560,000 cubic yards ($yds^{3)}$ of coal combustion residuals (CCRs) a year. The CCRs are currently managed in various dry stacks, wet stacks, and impoundments. In September 2012, TVA decided to construct a mechanical dewatering facility at BRF to support future dry stacking operations (TVA 2012). This facility and will allow TVA to manage bottom ash and gypsum in dry form. TVA already handles and stores BRF fly ash on a dry basis. Existing storage capacity for dry stack CCRs at BRF is projected to be expended within 10 years.

On May 21, 2015, TVA published a Notice of Intent (NOI) in the Federal Register to prepare an Environmental Impact Statement (EIS) in accordance with the National Environmental Policy Act (NEPA). The NOI initiated a public scoping period, which concluded on July 6, 2015. As stated in the NOI, TVA is preparing the EIS to inform decision makers, other agencies, and the public about the potential for environmental impacts associated with a decision to locate and utilize additional storage capacity for CCRs generated by BRF.

NEPA regulations require an early and open process for deciding what should be discussed in an EIS (i.e., the scope of the document). The scoping process involves requesting and using comments from the public and interested agencies to help identify the issues and alternatives that should be addressed in the EIS. This document summarizes the input that TVA received during the scoping process and defines the scope of the EIS. In addition to agency and public input, the EIS will also address specific requirements associated with a number of federal laws such as National Historic Preservation Act of 1966, Endangered Species Act of 1973, Clean Water Act of 1972, and the Clean Air Act of 1970, as amended would satisfy the requirements of Executive Order (EO) 11988 (Floodplains Management), EO 11990 (Protection of Wetlands), EO 12898 (Environmental Justice), EO 13112 (Invasive Species), and EO 13653 (Preparing the United States for the Impacts of Climate Change).

2.0 Purpose and Need

BRF has state-of-the-art air pollution controls and is one of the coal plants that TVA plans to continue operating in the future. When operating at full capacity, TVA produces approximately 240,000 yds^3 per year of ash (bottom and fly ash) and 318,000 yds^3per year of gypsum. Therefore, a total of approximately 11 million yds^3 of disposal capacity is desired to meet the needs for a long-range (20-year) comprehensive disposal plan. At this rate, onsite storage capacity is currently projected to be expended within approximately 10 years. In conjunction with TVA's goal of maintaining a balanced power portfolio for meeting power demand, and in consideration of the objectives of providing least cost planning, TVA needs to identify additional storage capacity for the long-term disposal of the dry CCR materials (fly ash, bottom ash, and gypsum) produced by the BRF facility. Additional storage capacity would also enable TVA to continue operations at BRF as planned, (TVA 2015a), and would be consistent with TVA's commitment to convert wet CCR management systems to dry systems. Conversion from wet to dry management of CCR would also enable TVA to close ash impoundments which would support compliance with the US Environmental Protection Agency (USEPA)'s recently issued CCR Rule [40 Code of Federal Regulations (CFR) Parts 257 and 261].

3.0 Alternatives

TVA is evaluating disposal options to meet the need for additional storage capacity for CCRs generated at BRF. Additional storage capacity would be provided at either a newly-constructed landfill or a currently permitted landfill. Three alternatives are considered in the EIS to evaluate potential effects of identifying and developing additional storage capacity for the long-term disposal of the dry CCR materials (fly ash, bottom ash, and gypsum) produced by the BRF facility.

1. Alternative A: No Action Alternative

Under the No Action Alternative, TVA would not seek additional disposal options for dry placement of CCR generated by BRF. CCRs would continue to be stored in the current disposal areas for as long as storage capacity is available. There is limited capacity for additional CCR disposal onsite, and at some point in the future the capacity to store CCRs on site would become a limiting factor. This alternative would not meet the Purpose and Need for the proposed action and therefore, is not considered viable or reasonable. It does provide a benchmark for comparing the environmental impacts of implementation of other alternatives retained for detailed study.

2. Alternative B: Construct and Operate a Landfill for the Dry Storage of Coal Combustion Residuals

Under this Alternative, TVA originally considered 10 alternative site locations for construction of a new landfill for CCR disposal, including two sites located at BRF. The onsite locations were eliminated from further consideration as they had insufficient capacity, were located on steep terrain, and would have caused direct impacts to the natural and human environments. The resultant eight sites were evaluated in terms of potential impacts to the natural environment, human environment, geological stability, and factors related to landfill development and transport of CCR materials and based on the results of that evaluation, one site was selected for detailed evaluation in the EIS. Under this alternative, TVA would construct a landfill for disposal of dry CCRs on TVA-owned property located adjacent to BRF (also known as Site J). This site, located approximately 0.4 miles east of BRF, encompasses 144 acres. The conceptual landfill footprint design of 54 acres would potentially provide 6.6 million yds^3 of storage capacity, yielding an estimated 12 years of landfill life. Development of Site J would also include construction of an on-site haul road to convey dry CCRs from the plant to the landfill. TVA would construct this road near the BRF site next to an existing railroad track.

3. Alternative C: Off-Site Transport of CCRs to an Existing, Permitted Landfill

Under Alternative C, TVA would utilize an existing, permitted landfill for the disposal of CCR generated by BRF. Although a number of permitted landfills are located in the region, the landfill closest to BRF is located on the county line of Anderson and Knox counties and is adjacent to Interstate 75. That landfill, the Chestnut Ridge Sanitary Landfill, is a Class 1 Municipal Solid Waste Facility located approximately 12 miles northeast of BRF.

Under this Alternative, TVA would transport dry CCRs by truck from BRF to Chestnut Ridge using existing roadways. The landfill is owned and operated by Waste Management of Tennessee and serves the Knoxville metro area and central Tennessee. Sufficient capacity

at this landfill can be made available to accommodate TVA's requirement for 20 years of storage of CCRs generated at BRF.

The location of all of the CCR disposal sites evaluated are shown on Figure 1. Environmental features associated with Site J (Alternative B) and the Chestnut Ridge Landfill (Alternative C) are shown on Figures 2 and 3.

No decision has been made about CCR disposal beyond the current available onsite capacity. TVA is preparing the EIS to inform decision makers, other agencies, and the public about the potential for environmental impacts associated with a decision to locate and utilize additional storage capacity for CCRS generated by BRF..

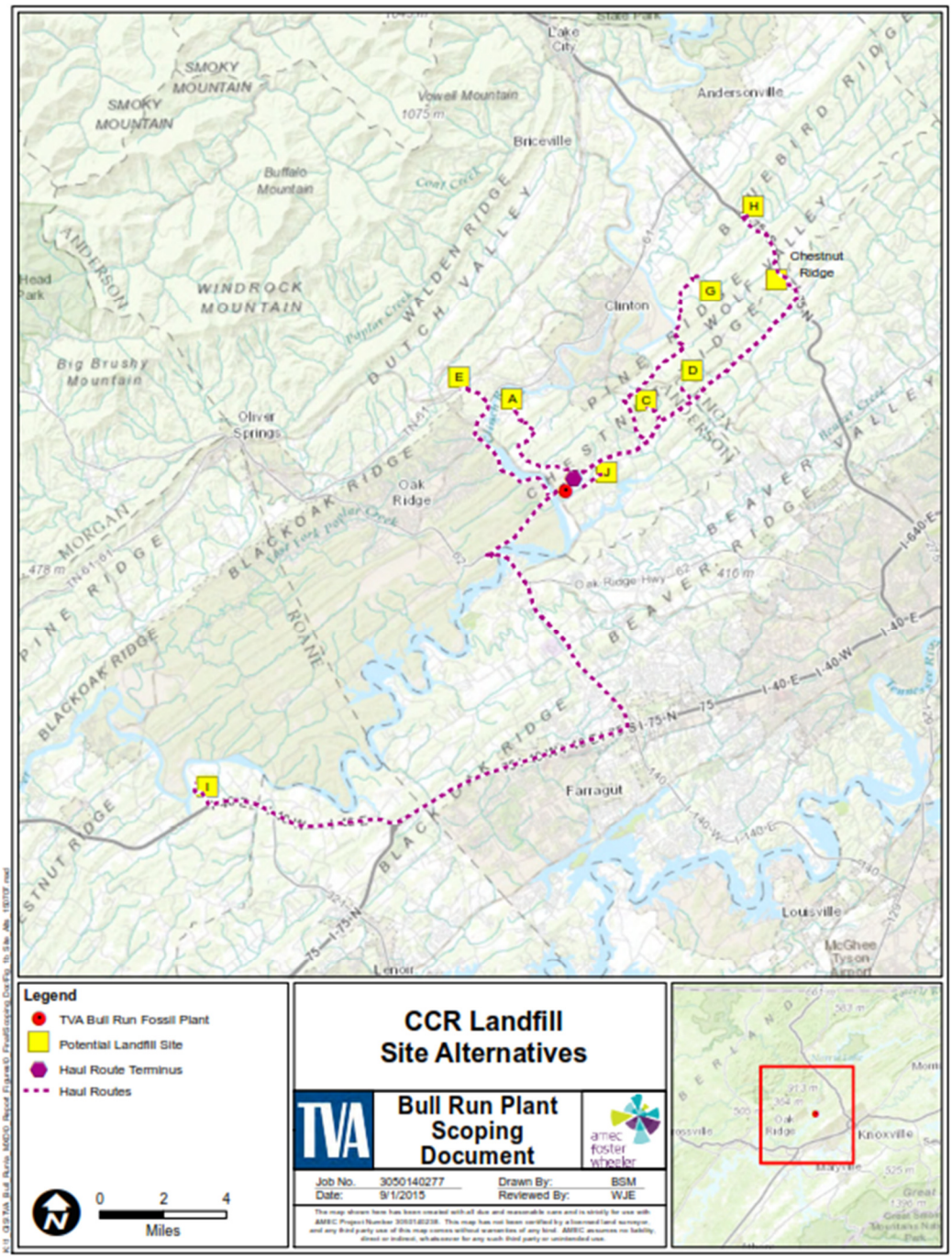

Figure 1. Alternative CCR Disposal Sites Evaluated

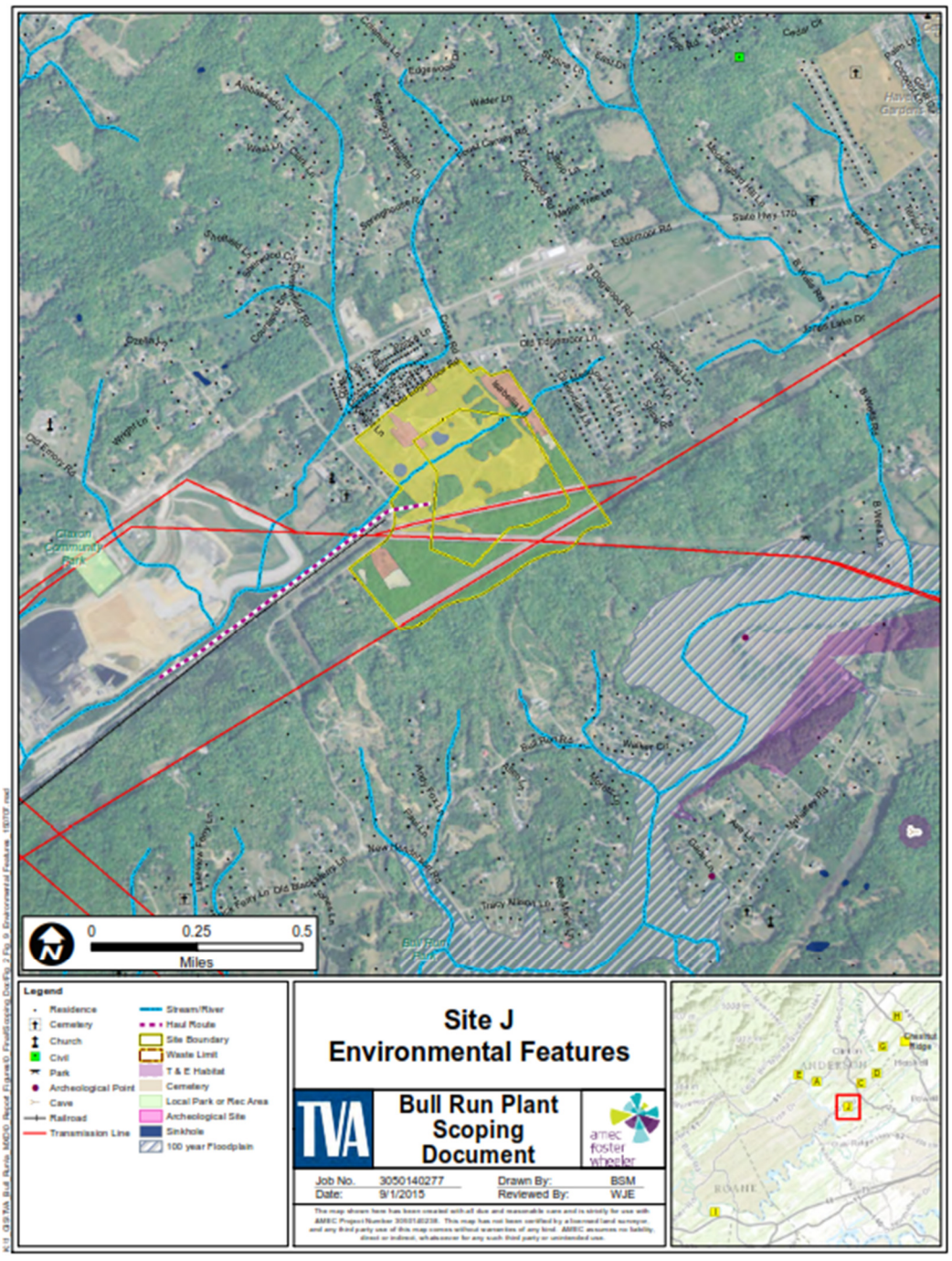

Figure 2. Environmental Features on and in the Vicinity of Site J

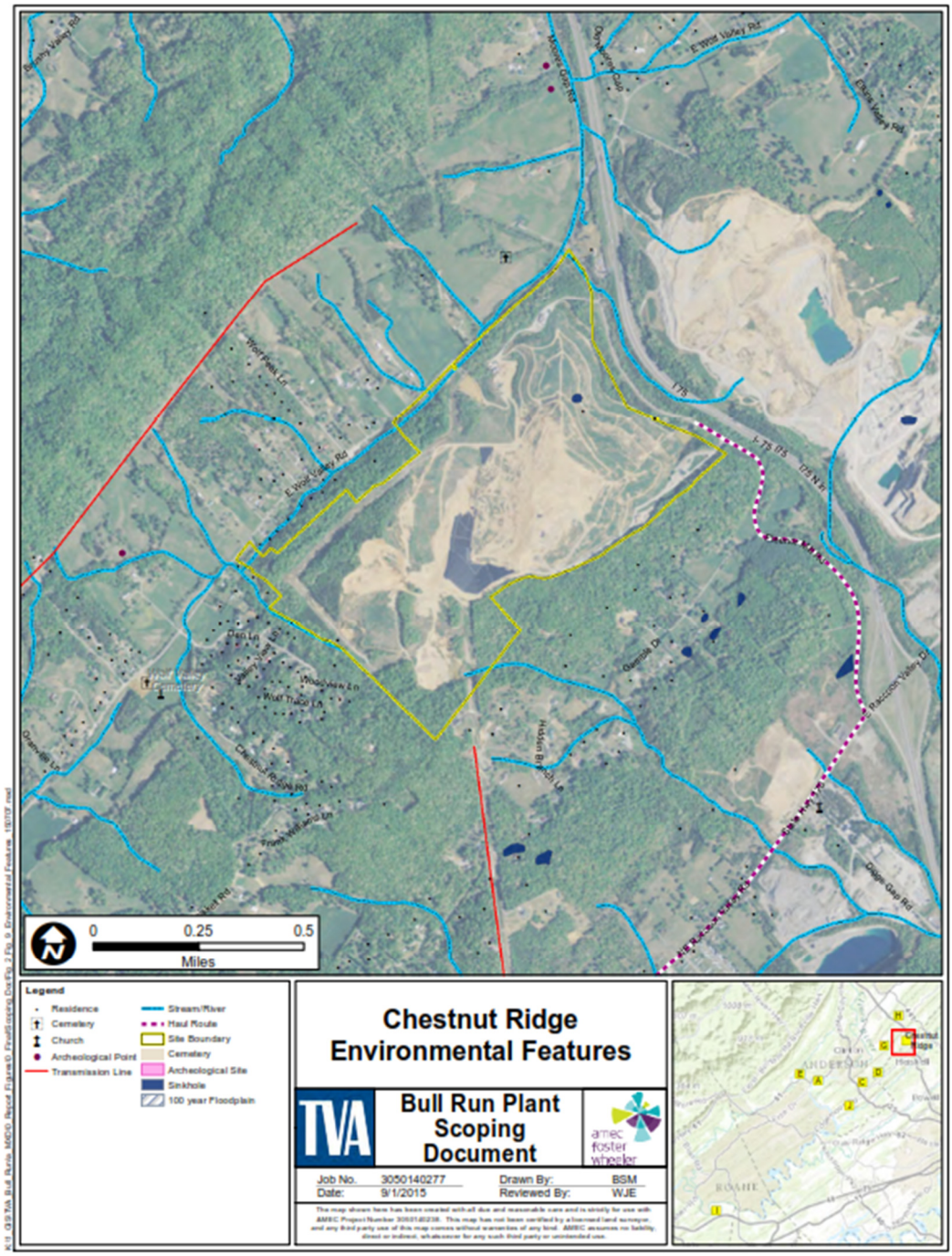

Figure 3. Environmental Features on and in the Vicinity of Chestnut Ridge

4.0 Public and Agency Involvement

TVA intends to prepare an EIS, the most intensive level of NEPA review, to consider options for additional disposal of CCRs generated by BRF. When completed, the draft EIS will be available for public review for 45 days. Once the public and other agencies have reviewed the document, TVA will make revisions, if necessary, and publish a final EIS. TVA will make a final decision after the final EIS is published.

Public scoping for this project was initiated with the publication of the NOI to prepare an EIS in the Federal Register on May 21, 2015. In addition to the NOI in the Federal Register, TVA published notices regarding this effort in regional and local newspapers; issued a news release to media; posted the news release on the TVA website; and posted flyers and signs near the Alternative 2 landfill site to solicit public input.

To initiate scoping, TVA also sent copies of the NOI to the Tennessee Department of Environmental and Conservation and the United States Department of Interior.

5.0 Scoping Feedback

TVA received six responses regarding the NOI. The majority of the public response to the NOI focused on specific resources that should be considered in the EIS, including:

- Wastewater treatment requirements and potential impacts associated with USEPA Effluent Limitations Guidelines
- Beneficial reuse of gypsum
- Impacts to wildlife near BRF and potential visual impacts.

One comment form was submitted by several interested parties. These comments included:

- A request that TVA modify the Purpose and Need and consider the retirement of BRF as a reasonable alternative.
- TVA should consider cumulative impacts.
- TVA should evaluate groundwater impacts.
- TVA should evaluate the impacts of coal ash at BRF.
- TVA should characterize existing coal ash deposits at BRF.
- TVA should consider the CCR Rule when making current and future coal ash disposal recommendations.

TVA also received a request for additional information from a neighboring landowner. These comments are included in Appendix A.

The remaining comment was from the US Department of the Interior in response to the NOI acknowledging receipt of the NOI with no additional comment. This comment is attached in Appendix B.

Issues to be Addressed

Based on TVA's internal scoping and input gathered from the public scoping process, the proposed action may affect the following:

- Water resources – TVA will characterize surface water and groundwater resources, and will analyze the extent to which each alternative would affect water quality directly or indirectly (i.e., through runoff).

- Biological Resources (vegetation, wildlife and aquatic life) – Community types within the project area will be described. Significant natural features, including rare species habitat, important wildlife habitat, or locally uncommon natural community types will be identified. TVA will evaluate the effect of each alternative on terrestrial ecosystems.

- Threatened and Endangered Species – State or federally listed threatened and endangered plants and animals known to exist in the vicinity of BRF or any of the landfill alternatives will be identified. The effects of each alternative on endangered, threatened, and rare species in need of management will be evaluated.

- Floodplains and Wetlands - Wetlands and floodplains on the proposed landfill sites will be identified and impacts will be quantified. The effects of each alternative on wetlands and floodplains will be evaluated.

- Geology and Soils – Regional geology and soils on the proposed landfill sites will be identified and any limitations related to construction and operation of a CCR landfill will be evaluated. Prime farmland soils are not expected to be impacted.

- Land Use – Land uses within the proposed landfill sites and within the vicinity (5-mile radius) will be identified. Permanent and temporary direct and indirect impacts to land use associated with each of the proposed landfill sites will be evaluated.

- Transportation – The existing roadway network in the vicinity of BRF, Site J and the Chestnut Ridge Landfill, including physical road characteristics (number of lanes, shoulders, and posted speed limit) and existing traffic characteristics will be identified. The effect of construction and operation of each storage alternative on the nearby roadway network will be evaluated.

- Recreational and Managed Areas – Natural areas, parks, and other managed areas within the vicinity of the alternatives (5-mile radius) will be identified and potential impacts associated with the proposed alternatives will be addressed.

- Visual Resources – The aesthetic setting of each alternative site will be described (including the presence of the existing onsite storage facility) and an analysis of changes to scenic attractiveness and scenic integrity associated with each of the proposed storage alternatives will be completed.

- Cultural Resources – TVA will characterize archaeological and historic resources within the Area of Potential Effect of each alternative site. TVA also will discuss any known National Register sites. The potential effects of each alternative on historic and archaeological resources will be evaluated. Results of the analysis will be reviewed by the Tennessee State Historic Preservation Officer.

- Solid and Hazardous Waste – CCRs will be characterized based upon existing BRF operations. Current practices regarding hazardous materials/waste management at BRF will also be identified. In addition, TVA will identify any impacts from waste generation during construction and operation at each alternative site. Operational measures (waste management practices) will be incorporated into the assessment of impacts.

- Public Health and Safety – Potential effects of each alternative on public health and safety will be evaluated. The evaluation will include potential effects of transportation of CCR along public roadways.

- Noise – Baseline noise conditions will be characterized and noise emissions associated with the construction phase equipment use and truck traffic during operations will be assessed to determine the potential noise impact of each alternative landfill site on sensitive receptors.

- Air Quality and Climate Change – Air quality considerations including attainment status, and regional air quality information will be presented. Impacts to air quality from construction and operations associated with each of the alternatives will be evaluated. The impact of emissions from each of the alternatives on climate change will be addressed.

- Socioeconomics and Environmental Justice – Demographic and community characteristics associated with each of the proposed alternative sites will be evaluated. Special attention will be given to identification of potential low income and minority populations to evaluate the potential for disproportionate impacts in accordance with Executive Order 12898. Economic effects associated with changes in workforce as a result of construction and operation of each of the proposed landfill sites will also be evaluated.

The potential direct and indirect impacts of each resource will be assessed in the EIS. Mitigative measures designed to minimize impacts also will be identified. In addition, the EIS will include an analysis of the cumulative impacts of each of the alternatives. A cumulative impact analysis considers the potential impact to the environment that may result from the incremental impact of the project when added to other past, present, and reasonably foreseeable future actions (40 CFR § 1508.7). The methodology for performing such analyses is set forth in Considering Cumulative Effects under NEPA (Council on Environmental Quality, 1997).

6.0 Related Environmental Documents

The following environmental reviews have been prepared for actions related to CCRs at BRF:

- *Integrated Resource Plan: 2015 Final Report* (TVA 2015a). This plan provides a direction for how TVA will meet the long-term energy needs of the Tennessee Valley region. This document and the associated Supplemental Environmental Impact Statement evaluate scenarios that could unfold over the next 20 years. It discusses ways that TVA can meet future power demand economically while supporting TVA's equally important mandates for environmental stewardship and economic development across the Valley. This report indicated that a diverse portfolio is the best way to deliver low-cost, reliable electricity. TVA released the accompanying Final Supplemental Environmental Impact Statement for TVA's Integrated Resource Plan in July 2015 (TVA 2015b).

- *Bull Run Fossil Plant House Demolition and Hydrogeologic Investigations Environmental Assessment* (TVA 2013). TVA purchased approximately 166 acres adjacent to BRF. To protect public health and safety, TVA proposed to remove the structures and implement other actions to manage the acquired land. TVA also performed a hydrogeologic investigation on a portion of the property to determine potential future uses of the property, including construction and operation of a CCR landfill.

- *Bottom Ash and Gypsum Mechanical Dewatering Facility Bull Run Fossil Plant* (TVA 2012). This Environmental Assessment (EA) evaluates the installation of equipment to remove water from gypsum and bottom ash generated at BRF. The dewatering equipment allows TVA to convert its bottom ash and gypsum handling processes to a dry basis. *Installation of Flue Gas Desulfurization System at Bull Run Fossil Plant* (TVA 2005). This EA evaluates the impacts of construction and operation of flue gas desulfurization or scrubber equipment designed to reduce sulfur dioxide emissions.

The description of the affected environment and the assessment of impacts contained in the documents listed above will be considered in the analysis of the proposed action.

7.0 Environmental Review Process

NEPA requires federal agencies consider and study the potential environmental consequences of major actions. The NEPA review process is intended to help Federal agencies make decisions that are based on an analysis of the impacts of the action and, if necessary, to take actions to protect, restore, and enhance the environment. NEPA also requires federal agencies to provide opportunities for public involvement in the decision – making process. The general project schedule which includes opportunities for public involvement is shown in Section 8.

TVA's agency involvement also includes circulation of the draft EIS to local, state, and federal agencies and federally recognized tribes to request comments on the proposed action. A list of agencies and tribes that will be notified of the availability the draft EIS is set forth below.

Federal Agencies

- United States Fish and Wildlife Service, Cookeville, Tennessee
- United States National Park Service, Gatlinburg, Tennessee

Federally Recognized Tribes

- Absentee Shawnee Tribe of Oklahoma
- Alabama-Quassarte Tribal Town
- Cherokee Nation
- Eastern Band of Cherokee Indians
- Eastern Shawnee Tribe of Oklahoma
- Kialegee Tribal Town
- Muscogee (Creek) Nation of Oklahoma
- Shawnee Tribe of Oklahoma
- The Chickasaw Nation
- Thlopthlocco Tribal Town
- United Keetoowah Band of Cherokee Indians in Oklahoma

State Agencies

- Tennessee Department of Environment and Conservation, Nashville
- Tennessee Wildlife Resources Agency, Nashville
- Tennessee Department of Transportation, Nashville

Individuals and Organizations

- Ms. Terry Frank, Mayor of Anderson County, Tennessee
- Mr. Tim Burchett, Mayor of Knox County, Tennessee
- Mr. Buddy Bradshaw, Mayor of Loudon County, Tennessee
- Mr. Ron Woody, County Executive, Roane County, Tennessee
- Earthjustice
- Environmental Integrity Project
- Southern Alliance for Clean Energy
- Southern Environmental Law Center
- Statewide Organizing for Community eMpowerment
- Sierra Club
- Tennessee Clean Water Network

8.0 Schedule for EIS Preparation and Review

Following is a tentative schedule for the completion of the EIS.

Task	Start Date	End Date
NOI	May 21, 2015	July 6, 2015
Public Review of Draft EIS	Spring, 2016	Summer 2016 (60 days)
Development of Final EIS	Summer, 2016	Fall, 2016
Final EIS Comment Period	Fall, 2016	Winter, 2016 (30 days)
Record of Decision		Spring, 2017

9.0 References

TVA 2015a. Tennessee Valley Authority. 2015. *Integrated Resource Plan: 2015 Final Report*. Knoxville, Tennessee. Retrieved from: <http://www.tva.com/environment/reports/irp/index.htm> (n.d.).

TVA 2015b. Tennessee Valley Authority. 2015. *Integrated Resource Plan 2015 Final Supplemental Environmental Impact Statement Volume 2*. Retrieved from: http://www.tva.com/environment/reports/irp/index.htm (n.d.)

TVA 2013. Tennessee Valley Authority. 2013. *Bull Run Fossil Plant House Demolition and Hydrogeologic Investigations Environmental Assessment*. Retrieved from: http://www.tva.gov/environment/reports/bull_run_demo/ (n.d)

TVA 2012. Tennessee Valley Authority. 2012. *Bottom Ash and Gypsum Mechanical Dewatering Facility Bull Run Fossil Plant.* Knoxville, Tennessee. Retrieved from: http://www.tva.com/environment/reports/BRFdewater/index.htm (n.d.).

TVA 2005. Tennessee Valley Authority. 2005. *Installation of Flue Gas Desulfurization System at Bull Run Fossil Plant.* Anderson County, Tennessee. Retrieved from: http://www.tva.gov/environment/reports/bullrun2/ (n.d.).

Appendix A

Public Comments Submitted During the Scoping Period

(May 21, 2015 through July 6, 2015)

Bob Alexander
321 Rosa L. Parks Blvd., Nashville, TN

The continued disposal of solid waste/CCR at Bull Run Fossil also entails potentially substantial changes in wastewater discharges to the Clinch River. The discussion of the project and the affected environment, i.e. surface waters, must address the potential direct impacts occurring from this program/project and must address any required mitigation of these impacts.

Request the EIS specifically address the wastewater treatment requirements which will arise from conversion to dry ash management at Bull Run Fossil. Changes must be identified in wastewater volume and characteristics occurring after ceasing to sluice bottom ash and after startup of the FGD/bottom ash dewatering system, and must be compared to existing conditions in the discharge to the Clinch River. These changes, along with the capability of the existing treatment system, must be assessed and any needed alternative treatment technologies must be evaluated in light of the pending final EPA Effluent Limitations Guidelines, or ELGs, for the Steam Electric Power industrial sector. These ELGs are expected to become final in Fall 2015 and would be in effect during the completion of this EIS.

Chuck Bowman
110 Henderson Bend Road, Knoxville, TN

Consideration should be given to using the resulting gypsum as raw material for sheet-rock as is done at the Cumberland Steam Plant. I understand that a large part of the cost of using power plant gypsum in the cost of dewatering which is now to be done in any event.

I understand that this alternative was considered previously but was objected to by the city of Oak Ridge due to the need to transport over their roads. However, since it is to be solidified on site, that objection may no longer be valid.

Richard Shipley
3530 Oakvilla Lane, Knoxville, TN

While I wish TVA would shut all coal fired power plants I understand the need to balance cheap, reliable energy production against cleaner air. If investing in Nuclear power is not the choice at this time I would prefer TVA move to dry storage of coal ash to prevent another disaster similar to the one that occurred in Kingston, TN. My only concern with expanding the coal ash storage at TVA Bull Run is the destruction of the beautiful field and ridgeline along the East side of Henderson Hollow Road. While I understand TVA paid fair market value, along with other costs to the families living along Henderson Hollow, it would be nice to see the fields on the East side of the road preserved. TVA officials are very aware these fields support deer, turkey, waterfowl, and many other species of animals. If TVA moves forward with expansion in the area of Henderson Hollow it would be nice to see the total height of the pile reduced. The current

storage area has become a gray mountain protruding into the evening skyline that appears obviously out of place in the valley. From Edgemore Road the coal ash pile appears as a giant moonscape. When coming North on Henderson Hollow it is the first thing you see when topping over the ridge line. The barren gray mountain is an awful neighbor.
TVA has taken great strides in cleaning its image. It is my sincerest hope that TVA continues down that path by listening to those most affected by this decision and reducing the height of the storage pile. Please consider the addition of native trees to the man-made mountain of ash if it doesn't affect the integrity of the storage membrane. Creating a standoff or buffer around the ash storage cell would be very beneficial. Thank you for your consideration of this mater.

Sincerely,

Richard Shipley

Anita E. Masters, NEPA Project Manager
Tennessee Valley Authority
1101 Market Street, BR 4A
Chattanooga, Tennessee 37402
aemasters@tva.gov

Via Electronic Mail

July 2, 2015

Re: Scoping Comments on TVA's Environmental Impact Statement for the Disposal of Coal Combustion Residuals from the Bull Run Fossil Plant

Dear Ms. Masters,

The Southern Alliance for Clean Energy, Tennessee Clean Water Network, Southern Environmental Law Center, Environmental Integrity Project, Sierra Club, Statewide Organizing for Community eMpowerment and Earthjustice submit the following comments for the scope of the Tennessee Valley Authority's ("TVA") Environmental Impact Statement ("EIS") for the Disposal of Coal Combustion Residuals from the Bull Run Fossil Plant. We appreciate the opportunity to weigh in prior to the formation of the EIS.

I. Comments on the Legal Requirements for Scope of Analysis Required in EIS

The National Environmental Policy Act ("NEPA") is "our basic national charter for protection of the environment."[1] Other environmental statutes focus on particular media (like air, water or land), specific natural resources (such as wilderness areas, or endangered plants and animals), or discrete activities (such as mining, introducing new chemicals, or generating, handling or disposing of hazardous substances). In contrast, NEPA applies broadly "to promote efforts which will prevent or eliminate damage to the environment."[2] "[NEPA] has 'twin aims. First, it places upon [a federal] agency the obligation to consider every significant aspect of the environmental

[1] 40 C.F.R. § 1500.1(a).
[2] NEPA § 2, 42 U.S.C. § 4321.

impact of a proposed action. Second, it ensures that the agency will inform the public that it has indeed considered environmental concerns in its decision-making process.'"[3]

A. Purpose and Need

NEPA requires TVA to "briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action."[4] TVA "cannot define a project's purpose and need so narrowly that it contravenes NEPA's mandate to evaluate reasonable alternatives."[5]

The Scoping Notice appears to identify "expanding [TVA's] capacity for managing CCRs" at Bull Run Fossil Plant as the purpose and need for the proposed action, making additional storage a foregone conclusion and precluding the consideration of reasonable alternatives, including cessation of coal-fired generation at Bull Run Fossil Plant. To achieve NEPA's purposes of full disclosure and consideration of environmental impacts associated with the proposed action and alternatives, the underlying purpose and need must not be defined so narrowly. TVA must re-characterize the purpose and need as "addressing the limited storage capacity for dry stack CCRs" at Bull Run Fossil Plant in order to properly evaluate a reasonable range of alternatives in the EIS.

B. Alternatives

The alternatives analysis is "the heart of the environmental impact statement."[6] In evaluating alternatives, TVA is required to "[r]igorously explore and objectively evaluate all reasonable alternatives."[7] "Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant."[8] The discussion in the EIS must "present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues

[3] *Kern v. Bureau of Land Management*, 284 F.3d 1062, 1066 (9th Cir. 2002) (quoting *Baltimore Gas & Elec. Co. v. Natural Res. Def. Council, Inc.*, 462 U.S. 87, 97 (1983)) (internal quotations and citations omitted, alteration in original).
[4] 40 C.F.R. § 1502.13.
[5] *Coal. for Advancement of Reg'l Transp. v. Fed. Highway Admin.*, 576 F. App'x 477, 487 (6th Cir. 2014) (quoting *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 196 (D.C.Cir.1991)).
[6] 40 C.F.R. § 1502.14.
[7] 40 C.F.R. § 1502.14.
[8] Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations, 46 Fed. Reg. 18026-01 (March 23, 1981).

and providing a clear basis for choice among options by the decisionmaker and the public."[9] The EIS must include consideration of a "no-action" alternative as well as other reasonable alternatives.[10]

In the Scoping Notice, TVA identifies a range of alternatives that it plans to consider in the EIS, including (1) construction of a new CCR storage area onsite; (2) hauling CCR to an existing permitted landfill; and (3) constructing a new CCR storage area offsite and hauling CCR to it. In addition, TVA states that it will consider a "'No Action' Alternative under which TVA would not seek additional storage capacity for CCR from BRF."[11]

The "no-action" alternative should evaluate the impacts of an agency's choice *not* to take action, including the impacts of predictable actions by others based on the agency's decision not to act.[12] It is not clear from the description of the no-action alternative in the Scoping Notice how TVA plans to analyze the environmental consequences associated with continuing to dispose of CCR in an overflowing landfill and other coal ash disposal areas that will trigger corrective action under federal law. One predictable consequence of that choice would be enforcement by the State of Tennessee or citizens, which could ultimately lead to temporary or permanent cessation of coal-fired generation at Bull Run Fossil Plant. Thus, in evaluating the no-action alternative, TVA must take into account the impacts of temporary or permanent cessation of coal-fired generation at Bull Run Fossil Plant.

Similarly, TVA must consider retirement of Bull Run Fossil Plant as a reasonable alternative to the proposed action. As noted above, TVA cannot dismiss an alternative simply because it is not "desirable" from TVA's standpoint. Although the Scoping Notice makes the conclusory assumption that Bull Run Fossil Plant "is one of TVA's coal plants that is planned to continue operating in the future,"[13] it offers no explanation of why retirement of the coal-fired units at Bull Run would be technically or economically infeasible. Over the past few years, TVA has announced retirements of all units at Allen, Colbert, Johnsonville, Widows Creek and John

[9] 40 C.F.R. § 1502.14.
[10] *Id.*; *id.* § 1508.25.
[11] Scoping Notice at 3-4.
[12] Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations, 46 Fed. Reg. 18026-01 (March 23, 1981).
[13] Scoping Notice at 3.

Sevier, as well as some units at Paradise and Shawnee.[14] TVA's most recent retirement announcement was the last operational unit at Widows Creek, citing lack of CCR storage and the expense of complying with EPA's new CCR rule as primary drivers for the retirement.[15] A Google data center, powered by 100 percent renewable energy, will replace the coal-fired units at Widows Creek.[16]

As TVA recognizes in its draft 2015 IRP, coal generation is increasingly uneconomic, and changing environmental standards for carbon emissions will drive retirement decisions within the next ten years.[17] Given the regulatory uncertainty and economic vulnerability associated with coal-fired generation, TVA must consider retirement of the coal-fired units at Bull Run as a reasonable alternative to additional storage capacity for CCRs in its EIS.

C. Cumulative Impacts

In addition to examining a reasonable range of alternatives, NEPA also requires TVA to identify connected and cumulative actions and to analyze the cumulative impacts of its proposed action in relation to those actions.[18] Actions are connected if they are "interdependent parts of a larger action and depend on the larger action for their justification."[19] A cumulative action is an action that "when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed in the same impact statement."[20] Cumulative impacts are "the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions."[21] These impacts "can result from individually minor but collectively significant actions taking place over a period of time."[22]

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[14] TVA, Draft 2015 Integrated Resource Plan 40 (March 2015).
[15] TVA, TVA Board Updated on Operations at its Quarterly Meeting (May 7, 2015), available at http://www.tva.com/news/releases/aprjun15/board_meet_5-7-15.html.
[16] TVA, Google Chooses TVA Site for Next Data Center (June 24, 2015), available at http://www.tva.com/news/releases/aprjun15/google.html.
[17] TVA, Draft 2015 Integrated Resource Plan 91 (March 2015).
[18] 40 C.F.R. §1508.25.
[19] *Id.*
[20] *Id.*
[21] 40 C.F.R. § 1508.7.
[22] *Id.*

Among the concerns TVA is required to consider is the Project's impact on climate change.[23] And, as both the Supreme Court and the Council on Environmental Quality have recognized, because climate change is necessarily a global problem, it can only be addressed incrementally by reducing or eliminating emissions from many individual relatively small sources.[24] The Bull Run Fossil Plant is one such source.

The Scoping Notice does not identify any connected or cumulative actions that will be analyzed in the EIS. Nor does it identify any cumulative impacts. Based upon the limited information in the Scoping Notice, connected and cumulative actions, and the cumulative impacts associated with them, that must be analyzed in the EIS, include, but are not limited to:

- Coal mining, including any coal sourced from mines that engage in mountain-top removal;
- Impact of no longer burning any percentage of Appalachian coal in Bull Run's boiler;
- Transportation of coal to Bull Run;
- Coal combustion, including impacts from common air pollutants and carbon pollutants;
- Dewatering, including water quality impacts;
- Closure of existing coal ash ponds;
- Storage, including water quality impacts from existing coal ash ponds and fugitive dust from existing dry storage;
- Impact on wildlife and endangered species.

In addition, to the extent that TVA intends to use the proposed action as a model for storage of CCRs at its other coal-fired plants, the cumulative impacts associated with replicating the proposed action across its fleet, including the above-mentioned cumulative impacts, should be analyzed in the EIS.[25]

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[23] Council on Environmental Quality, Draft Guidance on Consideration of the Effects of Climate Change under NEPA 8-10 (December 2014) ("Draft Climate Change Guidance").
[24] *Massachusetts v. EPA*, 549 U.S.497, 524 (2007); Draft Climate Change Guidance at 9 ("Government action occurs incrementally, program-by-program and step-by-step, and climate impacts are not attributable to any single action, but are exacerbated by a series of smaller decisions, including decisions made by government.").
[25] 40 C.F.R. § 1508.25.

II. Comments on Specific Environmental Impacts Required to be Included in EIS

As laid out in TVA's notice, we agree that the following environmental impacts analysis must be included in the EIS:

- Water resources (surface water, groundwater quality, and use);
- Vegetation;
- Wildlife;
- Aquatic ecology;
- Endangered and threatened species;
- Floodplains and wetlands;
- Geology;
- Land use;
- Transportation;
- Recreational and managed areas;
- Visual resources;
- Archaeological and historic resources;
- Solid and hazardous waste;
- Public health and safety;
- Noise;
- Air quality and climate change;
- Socioeconomics and environmental justice

As TVA notes in the request for comments, the TVA Board of Directors decided to phase out wet handling and storage of fly ash six years ago. We strongly support that decision and remain hopeful that TVA will accomplish the goal as soon as possible. It is unfortunate, however, that as TVA works to convert its coal fleet to dry handling it has systematically failed to admit the legacy of contaminated groundwater across all of its coal facilities. Existing coal ash disposal also presents risks to human health and the environment through air, soil, surface water, and

sediment exposure pathways. TVA must evaluate the risks that these exposure pathways pose currently, and must also evaluate the extent of the risks associated with new disposal areas.

Currently, the groundwater beneath the Bull Run site is contaminated; the contamination is caused by decades of unsafe coal ash disposal at the site. This EIS represents an important opportunity for TVA to change course on this issue and address its legacy contamination. The options that TVA is considering for dry ash handling touch on all existing ash disposal areas, therefore the EIS must fully evaluate the environmental impacts of coal ash site-wide:

- If TVA opts for a new coal ash landfill, then it will have to close some or all of the existing ash disposal areas, and how TVA chooses to close them will have important environmental consequences. In addition, a new landfill will have to conform to the requirements of EPA's new Resource Conservation and Recovery Act ("RCRA") Subtitle D rule for coal ash (see detailed comments on that point below).

- TVA is also considering "hauling [coal ash] to an existing permitted landfill." If that landfill is the existing, on-site coal ash landfill, TVA should directly address the ongoing groundwater contamination at that landfill (see below), explain how it happened, and explain in detail how they will prevent it from happening in an expansion (which would also be regulated as a new landfill under the EPA RCRA rule).

- Finally, TVA must describe in sufficient detail the affected environment or "baseline" conditions and the "No Action" alternative. Answering the question "Is an offsite landfill better than ongoing, onsite ash disposal, from an environmental perspective?" requires an accurate characterization of the current baseline in the description of the affected environment and of future conditions under the No Action alternative. The public must be informed about the extent of contamination at Bull Run under the baseline condition in order to form educated opinions about environmental impacts of the alternatives. And if TVA were to adopt the "No Action" alternative, it would be perpetuating site-wide groundwater contamination by continuing to add coal ash to disposal areas that are known to be leaking, at least until enforcement required coal-fired generation to cease.

As an overarching matter, TVA must take responsibility for existing contamination. In the past, TVA has attempted to evade the issue. TVA has asserted that the level of current groundwater

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As an overarching matter, TVA must take responsibility for existing contamination. In the past, TVA has attempted to evade the issue. TVA has asserted that the level of current groundwater

contamination is not in violation of groundwater quality standards (which ignores high levels of pollutants, like boron, that do not currently have standards), or has tried to argue that contamination is naturally occurring. Additionally, TVA has failed to monitor groundwater for coal ash indicator pollutants.[26]

For example, in the February 2014 report for Bull Run's Dry Fly Ash Landfill, TVA concluded that "[g]roundwater analytical data for the February 3-6, 2014, sampling event show no evidence of contamination from the dry fly ash landfill."[27] This statement is plainly false, and is contradicted by TVA's own monitoring results. Downgradient well F45R was sampled twice in February 2014. TVA found boron concentrations of 19.4 and 19.5 mg/L, the highest concentrations measured to date in a well that has shown steadily increasing boron levels since it was installed in 2008.[28] These concentrations are 100 times higher than background concentrations in upgradient well I (consistently less than 0.2 mg/L), so they are clearly caused by the coal ash landfill, and they are unsafe, being much higher than the EPA Child Health Advisory for boron (3 mg/L). As described in more detail below, manganese, sulfate and molybdenum concentrations in this well were also unsafe and also exceed upgradient concentrations by large margins.

In the EIS, TVA should provide an honest assessment of all of the information that it has on hand regarding the extent of coal ash-related groundwater contamination at Bull Run.[29] An example of the straightforward language the public will expect to see in the EIS exists in the February 2014 groundwater monitoring report for the Shawnee plant, where TVA admitted that "statistical findings indicate coal-combustion by-product effects on groundwater beneath and

[26] *See generally* Environmental Integrity Project, TVA's Toxic Legacy: Groundwater Contaminated by Tennessee Valley Authority Coal Ash (November 2013); see also TVA, Bull Run Fossil Plant Gypsum/Coal Ash Landfill February 2014 Groundwater Monitoring Report (Apr. 3 2014) (stating that "constituent concentrations reported for all samples were below TDEC maximum contaminant levels" and finding "no GWPS [Groundwater Protection Standards] exceptions at the site," but ignoring elevated and unsafe concentrations of coal ash pollutants boron, molybdenum, and sulfate).

[27] TVA, Groundwater assessment monitoring report – February 2014, 8 (Mar. 25, 2014).

[28] We recently received sampling data from August 2014, when the boron concentration in well 45R reached a new high of 20.1 mg/L, roughly seven times higher than the EPA Child Health Advisory of 3 mg/L.

[29] In order to provide this assessment, TVA should not discontinue monitoring for coal ash indicator pollutants in wells that have previously shown high levels of these pollutants.

downgradient of the special waste landfill" based on high concentrations of boron, molybdenum, sulfate, and other pollutants.[30]

As described in more detail below, it is indisputable that the coal ash disposal areas at Bull Run have contaminated the groundwater beneath the plant. Under the requirements of RCRA, TVA will eventually have to close these disposal units and/or take corrective action. For the EIS process to have any legitimacy, TVA must be more transparent about the extent, cause, and remedial implications of the contamination.

III. Baseline Groundwater Quality

The Bull Run plant currently has five distinct ash disposal areas: A bottom ash disposal area (Area 1), a gypsum disposal area (Area 2A), an impoundment area that includes a fly ash pond and a stilling pond (Area 2), a dry fly ash landfill, and an abandoned dredge cell.[31] TVA must evaluate groundwater quality at each of these areas and provide the public with details about how it intends to manage these areas in the future, including details about how it intends to remediate known groundwater contamination. The following sections discuss currently available monitoring data at each disposal area.

Area 1: Bottom ash disposal area. TVA's bottom ash disposal area was built over an old fly ash pond on the banks of the Clinch River. As of 2010, the area had a 20-foot thick layer of bottom ash stacked on top of a 30-foot thick layer of fly ash. The water table comes up to roughly where the fly ash and bottom ash layers meet, meaning that most of the fly ash, and some of the bottom ash, is saturated with groundwater.[32]

Not surprisingly, groundwater downgradient of the bottom ash disposal area shows all of the hallmarks of coal ash contamination. As shown in Table 1 below, average concentrations of boron and sulfate, well-known coal ash indicators,[33] are much higher in

[30] TVA, letter to Deborah DeLong, Kentucky Division of Waste Management, transmitting February 2014 quarterly groundwater report for Shawnee Fossil Plant Special Waste Landfill (Apr. 25, 2014)
[31] Stantec Consulting Services, Inc., *Report of Phase 1 Facility Assessment, Tennessee*, Table A.1 (June 24, 2009).
[32] Stantec Consulting Services, Inc., Report of Geotechnical Exploration – Bull Run Fossil Plant, pdf pages 889 *et seq.* (Apr. 12, 2010).
[33] *See, e.g.*, 40 C.F.R. § 257 App. III, listing boron and sulfate as "constituents for detection monitoring" at coal ash disposal units.

downgradient wells 47 and 48 than they are in upgradient well 1. Concentrations of cobalt and molybdenum, also associated with coal ash,[34] show the same pattern.

Table 1: Mean groundwater concentrations in wells surrounding the Bull Run bottom ash disposal area (based on data from 2008-2014)[35]

	Boron (mg/L)	Sulfate (mg/L)	Cobalt (ug/L)	Molybdenum (ug/L)
Upgradient well 1	0.16	7	4	10
Downgradient well 47	2.1	810	10	40
Downgradient well 48	1.8	1,577	46	10

The bottom ash disposal area has obviously contaminated the groundwater, which is now unsafe to drink as downgradient concentrations of sulfate, cobalt and molybdenum have all exceeded health-based federal guidelines for drinking water quality.[36] To the extent that the contamination migrates into the Clinch River, it is also contaminating sediments and surface water.

Area 2A: Gypsum disposal area. The gypsum disposal area is located next to the bottom ash area and, like that area, is built over a thick (roughly 20 feet) layer of fly ash from a former ash pond. The dikes of the gypsum disposal area are constructed of bottom ash. Groundwater saturates parts of both the fly ash and bottom ash layers.[37]

There are two groundwater monitoring wells downgradient of the gypsum disposal area. Well 49 shows clear evidence of coal ash contamination, with high concentrations of boron, sulfate, and molybdenum.

[34] *See id.* at Appendix IV, listing "constituents for assessment monitoring."
[35] All data taken from TVA groundwater monitoring reports; for averaging purposes, nondetects were treated as being present at the detection level.
[36] Sulfate concentrations have been as high as 1,800 mg/L, well above the EPA Drinking Water Advisory of 500 mg/L; cobalt concentrations as high as 100 ug/L exceed the EPA Regional Screening Level for tapwater (6 ug/L); and molybdenum concentrations of up to 67 ug/L exceed the EPA Lifetime Health advisory of 40 ug/L.
[37] Stantec Consulting Services, Inc., Report of Geotechnical Exploration – Bull Run Fossil Plant, pdf pages 889 *et seq.* (Apr. 12, 2010).

Table 2: Mean groundwater concentrations in wells surrounding the Bull Run gypsum disposal area (based on data from 2008-2014)[38]

	Boron (mg/L)	Sulfate (mg/L)	Cobalt (ug/L)	Molybdenum (ug/L)
Upgradient well 1	0.16	7	4	10
Downgradient well 49	2.2	451	4	600
Downgradient well 50	0.19	29	4	4

Area 2: Impoundment and stilling pond. The fly ash impoundment and stilling pond are constructed with a base at an elevation of roughly 780 feet. The local water table could be defined as the elevation of water in the ponds (roughly 805 feet) or the elevation of nearby groundwater (roughly the same elevation) or, at a minimum, the elevation of the Clinch River (roughly 795 feet). In any case, the base of this unlined impoundment complex is well below the water table, which facilitates the migration of leachate from the thick layer of accumulated coal ash in the impoundment. Available monitoring data are limited to three shallow wells screened in the clay dikes between the impoundments and the river. Since TVA rarely measures coal ash indicators in these wells, we do not have a good sense of the extent of contamination in this area. We do know that well 10-52 has arsenic concentrations roughly three times higher than the Maximum Contaminant Level ("MCL") for arsenic.

Dry fly ash landfill. The Bull Run fly ash landfill, which TVA has been using since 1982, is monitored by three downgradient wells (G, J, and 45R), which can be compared to upgradient well I. Well 45R was installed in 2009 to replace well 45. All downgradient wells show clear evidence of contamination, with particularly high concentrations of coal ash indicators in wells 45 and 45R.

[38] All data taken from TVA groundwater monitoring reports; for averaging purposes, nondetects were treated as being present at the detection level.

Table 3: Mean groundwater concentrations in wells surrounding the Bull Run dry fly ash landfill area (based on data from 2008-2014)[39]

	Boron (mg/L)	Sulfate (mg/L)	Manganese (ug/L)
Upgradient well I (eye)	0.2	4.9	10
Downgradient well G	1.2	210	60
Downgradient well J	1.1	367	80
Downgradient well 45 (2008-2009)	4.2	910	10,000
Downgradient well 45R (2009-2014)	15.8	1,800	6,400

East-West Dredge Cell. According to a 2009 engineering report, TVA disposed of fly ash in this area between 1981 and 1995.[40] Although all of that fly ash is presumably still in place, and despite known seepage along the base of the area,[41] TVA does not monitor the groundwater around the dredge cell. It is nonetheless likely that the groundwater in this area is contaminated. Accordingly, TVA must investigate and characterize conditions in the East/West Dredge cell, including seepage and groundwater quality, and to restore the area to its original condition.

IV. Federal Legal Requirements for Coal Ash Disposal.

In April of this year, EPA promulgated a coal ash disposal regulation under RCRA.[42] The regulation imposes a number of important requirements on TVA, requirements that affect both current and future coal ash disposal and storage. These include, but are not limited to, the following:

- Existing coal ash ponds, and all new coal ash disposal areas, must be built at least five feet above the uppermost groundwater aquifer. The Bull Run fly ash impoundment fails this requirement and therefore must be closed per RCRA regulations. TVA must also demonstrate that any new coal ash landfill is at least five feet above local groundwater.

[39] All data taken from TVA groundwater monitoring reports; for averaging purposes, nondetects were treated as being present at the detection level.
[40] Stantec Consulting Services, Inc., *Report of Phase 1 Facility Assessment, Tennessee, Bull Run Fossil Plant, East/West Dredge Cell* [pdf pages 89 et seq.] (June 24, 2009).
[41] *Id.*
[42] US EPA, Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals From Electric Utilities; Final Rule, 80 FR 21302 (Apr. 17, 2015); 40 CFR § 257.

- New coal ash disposal areas cannot be built in wetlands, fault areas, or seismic impact zones.
- New coal ash disposal areas cannot be built in geologically unstable areas, such as areas with karst bedrock.
- New coal ash landfills must have composite liners and leachate collection systems.
- TVA (and other owners and operators) must prepare and follow fugitive dust control plans for all coal ash disposal areas.
- TVA must design and maintain run-on and run-off control systems for all coal ash landfills.
- TVA must monitor the groundwater around all active coal ash disposal areas for boron, calcium, chloride, fluoride, pH, sulfate, and Total Dissolved Solids (TDS).
- If downgradient groundwater wells show any of the above-listed monitoring parameters at concentrations that exceed background, TVA must also monitor for antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, lead, lithium, mercury, molybdenum, selenium, thallium, and radium 226/228; these are collectively defined as "assessment monitoring" constituents in the rule.
- Existing, unlined surface impoundments must be closed if they cause assessment monitoring constituents to exceed the groundwater standards prescribed by the rule.
- For all landfills that cause assessment monitoring exceedances, TVA must undertake corrective measures "to prevent further releases, to remediate any releases and to restore affected areas to original conditions."[43]
- The rule also provides requirements for how TVA must close its coal ash disposal areas, including requirements for post-closure care.

[43] 40 CFR § 257.96(a).

V. Other Environmental Impacts of Coal Ash Disposal

Coal ash disposal presents risks to human health and the environment through multiple exposure pathways. The groundwater risks at Bull Run are clear from the evidence described above. Other pathways have not been examined at Bull Run specifically, but are likely to be present. The potential risks from these other pathways are laid out in the risk assessment for the RCRA coal ash rule.[44]

Coal ash that becomes airborne can present inhalation risks to human health. The risk assessment predicted significant risks from arsenic and fine particulate matter, or PM2.5, at landfills that are not adequately controlled.[45]

Airborne coal ash eventually settles, and after it settles it can present risks to human health or the environment through soil exposure or through the food chain. The risk assessment stated that "[u]nder the uncontrolled management scenario, thallium was found to pose human health risks for multiple pathways [exposure to contaminated soil, milk, and beef], while multiple constituents were found to pose ecological risks for soil and sediment."[46] The contaminants posing ecological risks include antimony, arsenic, boron, selenium, silver, and vanadium.[47]

The risk assessment predicted significant risks to ecological receptors exposed directly to water in coal ash impoundments. The contaminants posing risks include aluminum, arsenic, barium, beryllium, boron, cadmium, chloride, chromium, selenium, and vanadium.[48]

Finally, as contaminated groundwater migrates into surface water, the surface water and sediment become contaminated. The risk assessment found significant risks to ecological receptors from surface water contaminated in this way. Specifically, under certain conditions boron (from impoundments with FGD waste) and cadmium (from impoundments with ash and

[44] U.S. EPA, Human and Ecological Risk Assessment of Coal Combustion Residuals (Dec. 2014).
[45] *Id.* at 3-7, 3-24. EPA did not model this pathway in its full probabilistic model.
[46] *Id.* at 3-16, 3-24. Again, EPA did not model these pathways in its full probabilistic model.
[47] *Id.*
[48] *Id.* at 3-26.

coal refuse) both present significant risks.[49] At the screening level, EPA predicted ecological risks from many contaminants in both surface water and sediment.[50]

VI. Requirements of an Environmental Impact Analysis

At a minimum, TVA must fully characterize the existing coal ash deposits at the site and the groundwater, surface water, soil, sediment, and air contamination being caused by these deposits; model future contamination through each of the above-named exposure pathways under each alternative, including the no action alternative; and explain how it intends to remediate existing contamination, as required by federal law. Specifically, TVA must do the following:

1. **Groundwater quality data**. For each disposal area, including the bottom ash disposal area (Area 1), the gypsum disposal area (Area 2A), the impoundment area that includes a fly ash pond and a stilling pond (Area 2), the dry fly ash landfill, and the East/West dredge cell, TVA must fully characterize groundwater contamination using the now well-known indicators of coal ash pollution – boron, sulfate, Total Dissolved Solid (TDS), and the other pollutants listed in Appendix III of the RCRA coal ash rule.[51] For each of these pollutants, TVA must assess upgradient and downgradient groundwater quality and identify all downgradient exceedances. Downgradient wells must be located in locations and at depths appropriate for detecting likely groundwater migration pathways. Upgradient wells must be located sufficiently far away from coal ash disposal areas to be safely unaffected by coal ash. As discussed above, TVA has already generated much of this evidence, and to the extent that the data are sufficient and appropriate, TVA must use existing data in its analysis.

   As discussed above, the existing database already shows widespread coal ash contamination. Therefore, TVA must also assess upgradient and downgradient groundwater quality for all of the pollutants listed in Appendix IV of the RCRA rule. Again, to the extent that the data are appropriate, TVA must use existing data in its analysis.

[49] *Id.* at 5-8.
[50] *Id.* at 3-25.
[51] 40 CFR § 257 Appendix III.

2. **Fly ash impoundment closure**. TVA will be required by law to close the fly ash impoundment because it is built below the water table. This is a connected and cumulative action, and TVA must provide a detailed plan, including a timeline, for closure of that pond in the EIS. Since the ash in this fly ash pond is saturated with groundwater, the only environmentally safe way of closing the pond is to remove all of the ash. The EIS must specifically explain how and when this will happen and identify potential permanent storage options for the ash once it is removed.

3. **Corrective action and closure of other coal ash disposal areas**. TVA will eventually be required to undertake corrective action at the bottom ash and gypsum storage areas and the dry fly ash landfill, due to these areas contribution to the contamination of local groundwater. Again, this corrective action should be viewed as a connected and cumulative action, and TVA must provide a detailed plan, including a timeline, for corrective action. Since the ash in the bottom ash and gypsum storage areas is saturated with groundwater, the only environmentally safe way of closing these areas is to remove all of the ash. The EIS must specifically explain how and when this will happen, and how and when TVA will properly close each area. The EIS must also provide a detailed explanation of how the corrective action plan will, as required by law, "restore affected areas to original conditions."[52]

4. **Hydrologic modeling**. There is no doubt that most of the contaminated groundwater at the Bull Run site is migrating into Bull Run Creek and the Clinch River through subsurface flow and through seeps.[53] This surface water pollution presents a public health threat: Less than half a mile downstream, the West Knox Utility District withdraws roughly 1 million gallons per day for use as the water supply for 48,120 people.[54] In addition, approximately 4.6 miles downstream of the ash pond outfall, the City of Oak Ridge withdraws 10.2 million gallons per day for use as the water supply for roughly

[52] 40 CFR § 257.96(a).
[53] The 2009 Stantec report cited above identified seeps at every Bull Run coal ash disposal area. Stantec Consulting Services, Inc., *Report of Phase 1 Facility Assessment, Tennessee, Bull Run Fossil Plant* (June 24, 2009).
[54] USGS Public Water Supply Systems and Associated Water Uses in Tennessee, 2005, http://pubs.usgs.gov/of/2010/1226/pdf/ofr2010-1226.pdf (showing water use at the West Knox Utility District to be 0.984 million gallons per day, serving 48,120 people); US Army Corps of Engineers, Tennessee River Navigation Charts, Chart 111, http://cdm16021.contentdm.oclc.org/cdm/ref/collection/p16021coll10/id/122 (Jan. 2013) (showing West Knox Utility District pump station at river mile 46).

30,000 people (among other uses).[55] The surface water pollution also presents an ecological threat.[56] TVA must provide long-term modeling of this pollution pathway in order to provide the public with a meaningful sense of how significant this pollution load is going to be over the coming decades.

5. **Surface water quality monitoring**. TVA must also monitor surface water in Bull Run Creek and the Clinch River, immediately upstream and downstream of the plant, using methods that are sufficiently sensitive to detect pollutants of concern.

6. **Sediment quality monitoring**. In addition, many of the metals that are being discharged into the two water bodies settle out into sediment, and risk assessments have demonstrated a clear risk to ecological receptors through sediment exposure.[57] Given this known exposure pathway and risk, TVA must sample the sediment along both shorelines, and compare sediment sampling results to appropriate risk-based thresholds for sediment quality.[58]

7. **Remediation**. To the extent that any of the above analyses show a risk to human health or ecological integrity, TVA must explain how it intends to restore the area to its original condition.

8. **Fugitive dust**. Several exposure pathways begin with fugitive dust. TVA must estimate these risks and explain how it will control fugitive dust under each Alternative.

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[55] Tennessee Department of Environment and Conservation, NPDES permit for the Bull Run Fossil Plant (Sep. 30, 2010) (locating Outfall 001 at Clinch River mile 46.3); US Army Corps of Engineers, Tennessee River Navigation Charts, Chart 110, http://cdm16021.contentdm.oclc.org/cdm/ref/collection/p16021coll10/id/122 (Jan. 2013) (showing an intake at the end of Pumphouse Road, close to river mile 41.7); City of Oak Ridge, Capital Improvements program for the Fiscal Years 2014-2019 (showing the Oak Ridge raw water intake at the end of Pumphouse Road); USGS Public Water Supply Systems and Associated Water Uses in Tennessee, 2005, http://pubs.usgs.gov/of/2010/1226/pdf/ofr2010-1226.pdf (showing water use at the Oak Ridge Department of Public Works to be 10.2 million gallons per day, serving 29,315 people).

[56] See, e.g., U.S. EPA, Human and Ecological Risk Assessment of Coal Combustion Residuals, Table 5-5 (Dec. 2014) (showing significant ecological risks from exposure to boron and cadmium in surface water certain types of coal ash impoundment).

[57] *See, e.g., id* at Table 3-7(showing significant ecological risks from exposure to antimony, arsenic, silver, and vanadium in sediment under an "uncontrolled" coal ash disposal scenario). Note, however, that this risk assessment only looked at transport of pollutants by wind and overland runoff, and not the likely dominant pathway of subsurface transport. This risk assessment is therefore likely to be a substantial underestimate of the true ecological risk from sediment at coal plants.

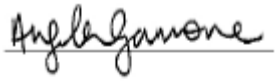
[58] *See, e.g., id*. at Table E-5.

9. **Complete environmental analysis for each alternative**. Finally, TVA must explain in detail how each of the alternatives that it evaluates will impact the baseline condition and the baseline risk, including groundwater quality and surface water quality.

In order to comply with the requirements of NEPA, TVA must consider the aforementioned environmental impacts analysis in its EIS for the Disposal of Coal Combustion Residuals from the Bull Run Fossil Plant. Given that the impacts analysis included in this EIS may encompass similar environmental impacts associated with future decisions related to disposal of coal combustion residuals at other coal plant facilities that TVA operates, it is important for TVA to include all direct, cumulative and connected environmental impacts in the Bull Run EIS.

Please feel free to contact us with any questions or concerns related to these comments.

Respectfully submitted,



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Boulware, Karen

To: Elzinga, William J
Subject: RE: TVA BRF EIS_Scoping

From: Masters, Anita E [mailto:aemasters@tva.gov]
Sent: Wednesday, July 01, 2015 9:49 AM
To: Elzinga, William J
Subject: FW: Bull Run Dry Ash Storage Expansion

fyi

From: Masters, Anita E
Sent: Monday, June 29, 2015 8:48 AM
To: 'luke'
Subject: RE: Bull Run Dry Ash Storage Expansion

Mr. Swartz,

Thank you again for your inquiries. So far, TVA has communicated about the proposal—its so-called Notice of Intent—via a publication in the Federal Register, a new release on TVA's website, and an article in both The Daily Times and Knoxville News Sentinel.

You are correct that the proposal has not yet been finalized. To the contrary, TVA is still in the early planning phases, and this is the first request for comment on the issues to be addressed as TVA considers its options. Eventually, TVA will publish a Draft EIS for public review after the completion of the alternative studies. That document will explain in detail the locations that have been considered and whether or not these meet the project purpose and need. Maps will also be provided in the Draft EIS. At that time, TVA will again solicit public and agency input on the proposal.

All of TVA's current NEPA documents are available at http://www.tva.com/environment/reports/index.htm. In addition, I have placed your name on my mailing list and will send you an email and link to the documents as soon as they are available. You can stay current with the Bull Run environmental review process on this web page. You can provide your comments on the website or via an email to me.

Sincerely,
Anita Masters

Anita E. Masters
Project Environmental Planning
1101 Market Street, BR 4A
Chattanooga, Tennessee 37402

(423) 751-8697

From: luke [mailto:lukeswartz7@hotmail.com]
Sent: Thursday, June 25, 2015 1:24 PM
To: Masters, Anita E
Subject: FW: Bull Run Dry Ash Storage Expansion

TVA External Message. Please use caution when opening.
Hello Anita,

I emailed you requesting clarification and additional information on 6/17/15 and have not heard back from you.

Please respond ass soon as possible since the deadline for comments is next week. If you cannot give me the info requested, please give me the contact info of someone who can.

Thank You,

Luke Swartz

From: lukeswartz7@hotmail.com
To: aemasters@tva.gov
Subject: RE: Bull Run Dry Ash Storage Expansion
Date: Wed, 17 Jun 2015 11:46:28 -0400

Hello Anita,

Thank you for getting back to me about this project. I understand final decisions have not yet been made, but from all reports that I have read and comments made by the TVA, some sort of communication was sent out to the community. I am here to say that statement is completely untrue. I have talked to a few of my neighboring property owners, and they have received no communication from the TVA either. It appears the only communications have been to those whose property has been purchased for the proposed site off of Old Edgemoor Rd.

I would like a couple things:
1. Please confirm your companies statements to the news outlets that this has been discussed with the adjacent property owners and not just those whose properties were bought.
2. Send me any mailings or communications that have been sent to others in the community concerning this proposal since discussions first started back in 2011 (or sooner if that is the case)

Also, it is my understanding that all comments need to be made by July 6th, 2015. How can I comment on a proposal that has not yet been finalized? If I do not know the full area of the proposed site, how can I comment regarding the scope and impact on me and my family? Information needs to be provided for me to be able to make an informed comment.

I am not necessarily opposed to what I've "heard" is being proposed, but that's the problem, it is ALL HEARSAY.

Once again, please provide me with any information you currently have, or give me the phone number of someone who can answer my questions in a timely fashion. With the deadline for comments quickly approaching, I do not want to get "the run-around" from anyone.

Please respond to my inquiries today. I apologize if this response seems a little harsh...that is not my intention. My intention is only to place the expediency on this issue that it deserves.

Thank you in advance,

Luke Swartz

From: aemasters@tva.gov
To: lukeswartz7@hotmail.com
Subject: RE: Bull Run Dry Ash Storage Expansion
Date: Wed, 17 Jun 2015 15:14:22 +0000

Mr. Swartz,

I wanted to let you know that I received your email. At this time TVA is in the process of scoping for the subject project and no decision has been made.

I have placed you on the mailing list to receive the scoping report, draft environmental impact statement (EIS), and final EIS. The scoping report will include a description of the need for the project, alternatives that are being considered to address the need (including maps), and a timeline for the environmental review of the project.

You can provide comments regarding the scope of the draft EIS for the Bull Run Fossil Plant Coal Combustion Residuals Disposal at http://www.tva.com/environment/reports/bullrun_ccr/index.htm.

Thanks,
Anita

Anita E. Masters
Project Environmental Planning
1101 Market Street, BR 4A
Chattanooga, Tennessee 37402

(423) 751-8697

From: lukeswartz7 [mailto:lukeswartz7@hotmail.com]
Sent: Sunday, June 14, 2015 7:30 PM
To: Masters, Anita E
Subject: Bull Run Dry Ash Storage Expansion

TVA External Message. Please use caution when opening.

Hello,

My name is Luke Swartz and I am a property owner adjacent to the proposed Bull Run Dry Ash Storage Expansion site. I have received no notifications concerning this proposal, I'm assuming because I lived out of state for the past several years. Please send me the proposed plan, including a map of the site, so that I can determine how me and my family will be impacted. Please get this information to me as soon as possible so I have time to voice any concerns prior to the July 6th deadline.

Thank You,
Luke Swartz

Appendix B

Agency Comments Submitted During the Scoping Period

(May 21, 2015 through July 6, 2015)

United States Department of the Interior

OFFICE OF THE SECRETARY

Office of Environmental Policy and Compliance
Richard B. Russell Federal Building
75 Spring Street, S.W., Suite 1144
Atlanta, Georgia 30303

ER 15/0307
9041.3

July 1, 2015

Anita E. Masters
Project Environmental Planning
NEPA Project Manager
Tennessee Valley Authority
1101 Market Street, Mail Stop BR 4A
Chattanooga, Tennessee 37402

Re: Comments on the Notice of Intent to Prepare an Environmental Impact Statement (EIS), Tennessee Valley Authority (TVA) for the Disposal of Coal Combustion Residuals from the Bull Rum Fossil Plant, Oak Ridge and Knoxville, Anderson County, TN

Dear Ms. Masters:

The U.S. Department of the Interior has reviewed the Notice of Intent to prepare an Environmental Impact Statement for the Tennessee Valley Authority's Disposal of Coal Combustion Residuals from the Bull Rum Fossil Plant. We have no comments at this time.

Thank you for the opportunity to provide comments on this project. If you have questions, I can be reached at (404) 331-4524 or via email at joyce_stanley@ios.doi.gov.

Sincerely,

Joyce Stanley, MPA
Regional Environmental Protection Specialist

cc:
Christine Willis – FWS
Gary Lecain - USGS
Anita Barnett – NPS
Robin Ferguson – OSMRE
OEPC – WASH