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SUPPLEMENTAL ANALYSIS AND REVISED FINDING OF NO SIGNIFICANT IMPACT
TENNESSEE VALLEY AUTHORITY

ADDITIONAL STOCK PILE AREAS - COLBERT ASH POND 4 SEISMIC PROJECT (CANE CREEK RELOCATION & BUTTRESS PLACEMENT)
Colbert Fossil Plant, Colbert County, Alabama

On September 20, 2021, the Tennessee Valley Authority (TVA) issued a Finding of No Significant Impact (FONSI) related to its proposal to improve post-earthquake stability of the 500-foot-long portion of the east dike of the Ash Pond 4 facility at TVA's Colbert Fossil Plant (COF). The FONSI was based on TVA's environmental analysis in an environmental assessment (EA) also completed in September 2021. Since the completion of the EA and issuance of the FONSI, both incorporated herein by reference, TVA has identified the need for additional space for stock piling soils and materials on the COF reservation to support project activities. TVA has performed additional analysis of potential impacts to these stock pile areas and is issuing this revised FONSI.

I. Background

COF is located in northwestern Alabama, approximately 14 miles west of Muscle Shoals in Colbert County. TVA ceased all coal-fired power generation at COF on March 23, 2016. TVA manages coal combustion residuals (coal ash or CCR) in closed on-site units, including in Ash Pond 4, which is located on TVA property south of COF and north of U.S. Highway 72. Ash Pond 4 is approximately 52 acres in area and is enclosed by a perimeter dike system that is approximately 6,700 feet in total length. Ash Pond 4 was closed and capped in early 2018.

As described in Section 1.1 of the 2021 EA, the Ash Pond 4 facility has undergone multiple slope stability evaluations since 2009 and remediation efforts to improve safety factors in accordance with federal and state safety factor criteria. In 2014, TVA completed a liquefaction analysis and found that a section along the Cane Creek side of Ash Pond 4 was susceptible to liquefaction during a design earthquake with an approximate return period of 2,500 years (i.e., an earthquake with 2% probability of occurrence in 50 years).

A project was initiated to improve the soils by a deep mixing method (DMM; i.e., cement grout mixed with soil) where walls were installed in the subgrade soils to stabilize the east dike (on the Cane Creek side) for earthquake loading. During installation of the DMM walls, TVA identified an anomalous foundation condition where competent rock, on which to found the DMM walls, was deeper than previously estimated. The anomalous area is approximately 500 feet long, as measured along the alignment of the Ash Pond 4 perimeter dike, and is clay filled with large

boulders. TVA completed the remainder of the 3,200-foot DMM wall in 2016, and elected to discontinue the DMM wall installation in the 500-foot area and to observe the performance of the DMM wall during and subsequent to the Ash Pond 4 closure, particularly evaluating the reduction in pore pressures from imbedded instrumentation.

In 2018 and 2019, TVA evaluated the instrumentation and performed additional subsurface investigation to monitor the current closed condition and to evaluate whether the liquefaction potential in the anomalous area improved from the previous evaluation. TVA determined that the pore water pressures had dropped significantly but not enough to completely improve the safety factors in the liquefaction analysis.

TVA has evaluated and developed a constructible alternative to improve post-earthquake stability of the 500-foot-long portion of the east dike. The primary design constraint in developing a proposal has been the proximity of Cane Creek running along the toe of the east dike.

TVA's need derives from the condition of a portion of the ash pond dike. The primary objective of the proposed action is to improve stability of the dike and reduce the risk that a design earthquake (i.e., 2,500-year return period) could cause during or after the earthquake. Although the likelihood of a seismic event occurring at any given time is very low, TVA considers the probability of an earthquake-induced failure of the dike to be a concern that warrants upgrades to the 500-foot area of the dike. Completing the upgrades to the dike at this time would allow TVA to avoid potential significant environmental and economic impacts that may result from a potential earthquake.

II. Modified Proposed Action

TVA intends to implement the proposed activities addressed in the 2021 EA. Under the modified proposal, however, TVA would add two stock pile areas to support construction.

As addressed in the 2021 EA, TVA proposes to place a soil- and rock-fill buttress against the east dike of Ash Pond 4 within the anomaly area, which would require relocating approximately 1,700 linear feet of Cane Creek to the east of its present alignment. The construction is needed to address the potential seismic vulnerability of this portion of the east dike. TVA would excavate a new stream channel and realign the creek to allow for the installation of a buttress. The current channel of the creek that would be relocated would be filled and graded with soil and rock. This would allow TVA to construct the buttress against the east dike of the closed Ash Pond 4. After the channel is relocated and the buttress is installed, TVA would implement a planting and seeding plan to reclaim the disturbed areas and minimize erosion. The new creek channel (stream bed and banks) would be the same length of the current channel and would be designed to resemble and function as a natural stream with improved features.

In its 2021 EA, TVA stated that the stream realignment and buttress placement would disturb approximately 18 acres, including three acres of land excavated to create a new stream channel

and 2.6 acres of the old stream channel. TVA would clear 15.4 acres of vegetation within this 18-acre area in order to conduct construction activities. In addition, a laydown area for project office trailers, staff parking, etc. would be created near the project location on previously disturbed lands, affecting an additional seven acres. In total approximately 25 acres of disturbance was considered in the 2021 EA.

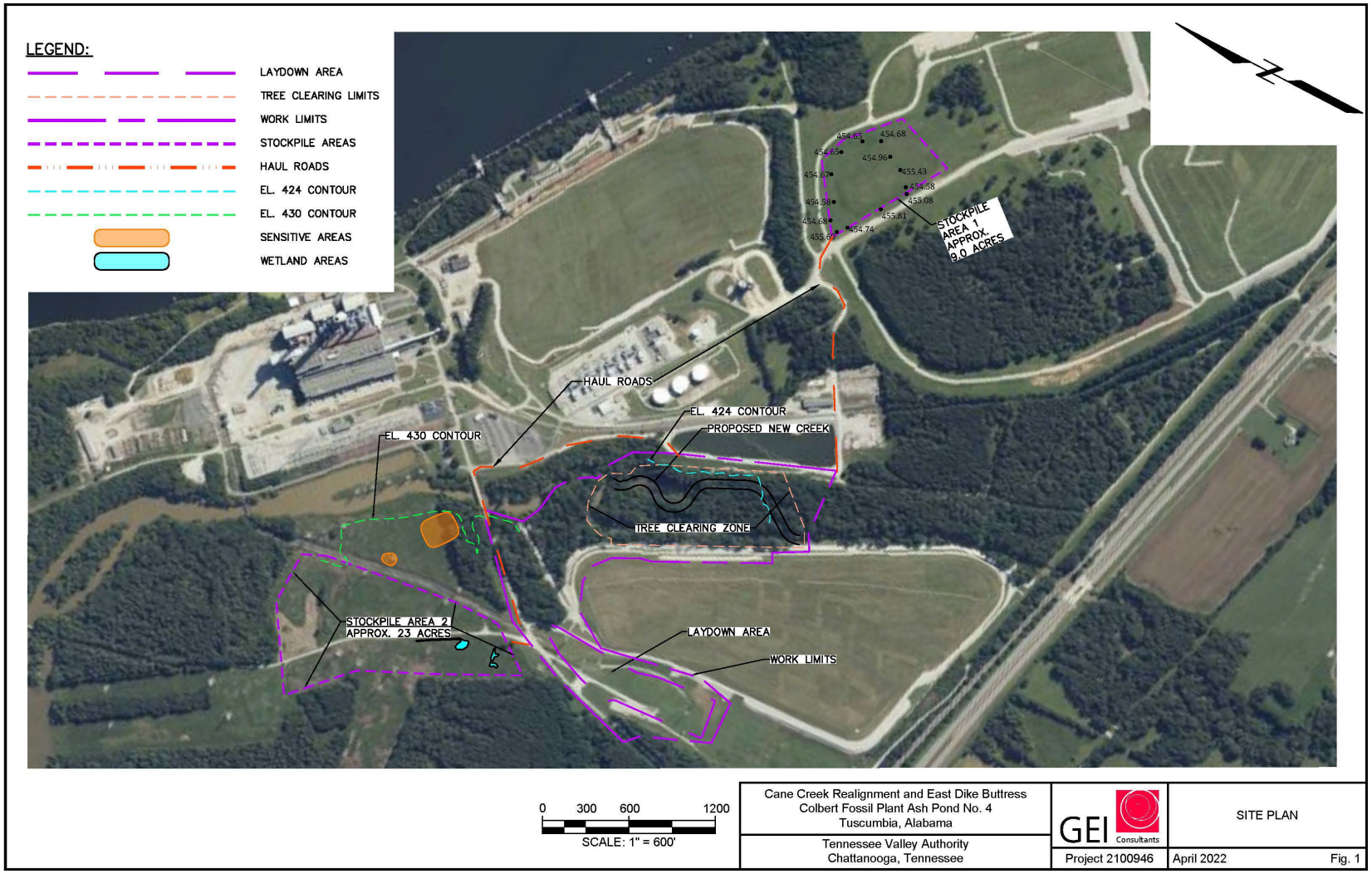
After the completion of the 2021 EA and FONSI, TVA estimated the amount of soils and rock that would be extracted from the buttress and stream channel area and determined that additional areas were needed to stock pile the soils and rock. TVA identified the need to use approximately 32 acres in two additional areas close to Ash Pond 4 on TVA's COF reservation for temporary and permanent storage of stock piled soils and rock that would be used for construction of the buttress and stream channel:

- Stock Pile Area #1 (South Area) would be located approximately 600 meters east of Ash Pond 4 and the project site. The area is currently an open, grassy area that has been previously disturbed and routinely mowed. The nine-acre area would be used to place soils, broken rock, and/or mulch/logs during construction of the new Cane Creek stream channel. An estimated 44,000 cubic yards of materials may be stock piled on the area, with most of it (35,000 cubic yards estimated) to remain in the area permanently. The materials would be hauled along a proposed haul route that would lie on the southern edge of the COF Coal Yard Runoff Pond facility. After construction activities, the materials permanently stock piled in the area would be spread and graded for drainage, and the area would be reseeded.

- Stock Pile Area #2 (North Area) would be located to the northwest of Ash Pond 4, across Colbert Steam Plant Road. The area is also an open, grassy area that has been previously disturbed. The area used would be 23 acres in size, with boundaries configured to avoid TVA transmission rights-of-way, two small wetlands, and cultural resources. An estimated 40,000 cubic yards of soils and rock materials may be stock piled in the area during construction activities. Most of the materials would be re-used at the project location, and an estimated 8,100 cubic yards would remain in the area permanently. Soils would be hauled along the same haul route already proposed to be used from the project lay down area to the buttress area (previously identified in the 2021 EA). The area and the associated haul route would be used primarily to support the construction of the buttress along the eastern edge of Ash Pond 4. After construction activities, these permanently stock piled materials would also be spread and graded for drainage, and the area would be reseeded.

With a 32-acre expansion to the previously reviewed 25-acre project area, a total of approximately 57 acres may be disturbed under the modified proposed action. The expanded project area, with the two proposed stock pile areas and haul routes, are shown in Figure 1. As the project is implemented, the extent of disturbance may differ from these acreage estimates to a minor extent. The actual volume of soils and rock to be stock piled at the two areas may differ from initial estimates to a minor extent as well.

Figure 1. Expanded project area with two stock pile areas and haul paths.



III. Environmental Assessment

In the 2021 EA, TVA analyzed two alternatives: an alternative in which TVA would take no action and the proposed action alternative under which a buttress would be placed against the dike and the channel of Cane Creek would be relocated. After dismissing numerous environmental resources from the review because they were not present in the project area, TVA reviewed terrestrial ecology (wildlife and botany), aquatic ecology, threatened and endangered species, surface water qualify, floodplains, socioeconomics, and transportation. In the 2021 FONSI, TVA found that impacts associated with the project would not be significant and an environmental impact statement was not required.

In the 2021 EA, TVA reviewed the potential impacts to a project area with disturbances affecting approximately 25 acres in total (including about 18 acres adjacent to Ash Pond 4 for the stream channel relocation and buttress placement and about seven acres for a laydown area between the ash pond and the Colbert Steam Plant Road). Under the modified proposed action, TVA's project area would include 32 additional acres of land: Stock Pile Area #1 would be approximately nine acres in size and Stock Pile Area #2 would be approximately 23 acres in size.

This supplemental analysis has been prepared to review expanding the project area to include activities at the two stock pile areas and associated haul routes. Because TVA determined that the expansion of the project area would not alter analyses in the 2021 EA relating to socioeconomics/environmental justice or transportation, these topics are not discussed below. The analysis below addresses whether the modified proposed action would affect terrestrial and aquatic ecology, threatened and endangered species, wetlands, surface water quality, floodplains, and cultural resources.

a. Terrestrial Ecology

Wildlife

Landscape features within and surrounding the expanded project footprint consist of a variety of fragmented forest habitat, early successional habitat (i.e., grassland), and developed or otherwise disturbed areas (i.e., transmission line rights-of-way and roads). These habitat types provide resources for an array of terrestrial animal species. Birds typical of this habitat include American robin, Carolina chickadee, downy and hairy woodpecker, eastern screech owl, mourning dove, northern mockingbird, red-tailed hawk, summer tanager, tufted titmouse, wood thrush, wild turkey, and yellow-billed cuckoo (National Geographic, 2002). This area also provides foraging and roosting habitat for several species of bat, particularly in areas where the forest understory is partially open.

The common bat species likely found within habitat in the expanded project boundary would include big brown bat, eastern red bat, evening bat, and silver-haired bat (Harvey 1992). Eastern chipmunk, eastern cottontail, eastern gray squirrel, red fox, and woodland vole are

other mammals likely to occur within this habitat (Kays and Wilson 2002). Eastern black kingsnake, eastern box turtle, gray ratsnake, and ring-necked snake are reptiles that can be found in deciduous and fragmented forests and fields in this region (Conant and Collins 1998, Dorcas and Gibbons 2005, Buhlman et al. 2008).

Review of the TVA Natural Heritage Database in January 2022 indicated the presence of fifteen caves within three miles of the project area, the nearest of which occurs approximately 780-feet from the area of potential effect. No other unique or important terrestrial habitats were identified within three miles of the project area.

One osprey nest has documented presence approximately 628-feet from the area of potential effect. No additional aggregations of migratory birds or wading bird colonies have been documented within three miles of the project area. Review of the US Fish and Wildlife Service's Information for Planning and Consultation (USFWS IPaC https://ecos.fws.gov/ipac/; January 2022) online database identified three avian species of conservation concern that have potential to occur in the project area: Le Conte's sparrow (*Ammodramus leconteii),* prairie warbler (*Setophaga discolor*), and red-headed woodpecker (*Melanerpes erythrocephalus*. Of these, the area of potential effect contains potentially suitable habitat for prairie warbler and red-headed woodpecker.

Under the proposal, TVA would perform all of the activities covered under the proposed alternative in the 2021 EA and would also utilize additional laydown areas for the project spoils. New activities associated with the stock pile areas include use of the area for placing and storing soils, transporting spoil materials to these areas using the haul road, grading spoil for drainage, and reseeding laydown yards upon project completion. These proposed actions would result in ground disturbance throughout the expanded project area.

Any wildlife (primarily common, habituated species) currently using these previously disturbed areas may be displaced by increased levels of disturbance during construction actions. Direct effects to some individuals that are immobile during the time of vegetation removal may occur, particularly if construction activities transpire during breeding/nesting seasons. Removal of brush could potentially remove foraging and future nesting sites for individuals utilizing the area. However, the actions are not likely to affect populations of species common to this location, as proposed impacts occur over a relatively small area and similar habitat exists in the surrounding landscape.

Proposed actions may permanently remove existing forested habitat for common, habituated wildlife; however, species adept at utilizing disturbed habitat are expected to return following the completion of proposed activities. For those that will not return, similarly suitable habitat is abundant through the adjacent landscape. Cumulative effects of the project on common wildlife species are expected to be negligible.

Botany

Stock Pile Area #1 is a grass-covered, previously-disturbed area within TVA's plant reservation. The area is regularly mowed by TVA. Stock Pile Area #2 consists of early successional habitat (i.e., grassland); because there are transmission lines that span across this area, the area has been previously disturbed and vegetation management practices are routinely employed.

As analyzed in Section 3.3 of the EA, no uncommon plant communities have been previously reported from within or near the project area. Vegetation in the two proposed stock pile areas would be affected by the use of these areas for stock piling, but the two areas have been heavily disturbed in the past and are incapable of supporting plant communities with significant conservation value. Implementation of the proposed project would not potentially affect unique or important terrestrial plant habitat, nor would the proposed expansion of the project area contribute to the spread of exotic or invasive species because the stock pile areas already contain a sizeable proportion of non-native species.

b. Aquatic Ecology

TVA conducted a review of the identified areas and haul roads and found that there are no aquatic features located within the boundaries of these areas.

c. Threatened and Endangered (T&E) Species

T&E Animal Species

A review for potentially affected terrestrial animal species in the TVA Natural Heritage Database in January 2022 resulted in records for five state-listed species (a beetle, coal skink, a ground beetle, Rafinesque's big-eared bat, and white springtail) and one federally listed species (gray bat) within three miles of the project area. One federally protected species (bald eagle) and one additional federally listed species (red-cockaded woodpecker) have been recorded in Colbert County, Alabama. A review of the USFWS IPaC database identified two federally listed species (Indiana bat and northern long-eared bat) and a candidate species for federal listing (monarch butterfly) as potentially occurring within the project area.

Descriptions of habitat requirements and potential impacts to previously identified terrestrial animal species of concern (bald eagle, gray bat, Indiana bat, northern long-eared bat, osprey, and red-cockaded woodpecker) can be found in 2021 EA. For these species, the analysis in the 2021 EA adequately addresses potential impacts of activities that are proposed within the two stock pile areas. A beetle, a ground beetle, monarch butterfly, white springtail, and Rafinesque's big-eared bat, species not previously addressed in the 2021 EA, are addressed below.

Table 1 lists all terrestrial animal species of conservation concern addressed in the 2021 EA and this document that occur within three miles of the expanded project area (resulting from the

2020 and 2022 queries of the TVA Regional Natural Heritage Database and USFWS' IPaC online database.

Table 1. Federally listed terrestrial animal species reported from Colbert County, Alabama and other species of conservation concern documented within three miles of the expanded project area [1]

Common Name	Scientific Name	Status[2]	
		Federal	State (Rank[3])
Birds			
Bald eagle [4]	*Haliaeetus leucocephalus*	DM	SP(S4B)
Red-cockaded woodpecker	*Picoides borealis*	E, PT	SP(S2)
Invertebrates			
A beetle	*Batrisodes jonesi*	--	--(S2S3)
A ground beetle	*Rhadine caudata*	--	--(S2)
Monarch butterfly [6]	*Danaus plexippus*	C	--(S4)
White springtail	*Folsomia candida*	--	--(S1)
Mammals			
Gray bat	*Myotis grisescens*	E	SP(S2)
Indiana bat [5]	*Myotis sodalis*	E	SP(S1)
Northern long-eared bat [4]	*Myotis septentrionalis*	T	SP(S1S2)
Rafinesque's big-eared bat	*Corynorhinus rafinesquii*	--	SP(S3)
Reptiles			
Coal skink	*Plesiodon anthracinus*	--	SP(S3)

[1] Source: TVA Regional Natural Heritage Database, extracted 1/5/2022; USFWS IPaC resource list (https://ecos.fws.gov/ipac/), accessed 1/5/2022.

[2] Status Codes: C = Candidate for Federal Listing; DM = Delisted, Recovered, and Being Monitored; E = Endangered; PT = Proposed Threatened; SP = State Protected; T = Listed Threatened.

[3] State Ranks: S#B = Rank of Breeding Population; S1 = Critically Imperiled; S2 = Imperiled; S3 = Vulnerable; S4 = Apparently Secure.

[4] Federally protected/listed species known from Colbert County but not within three miles of the project footprint.

[5] Federally listed species whose known range includes Colbert County, but that has no known documented records from Colbert County to date.

[6] Candidate species for listing under the Endangered Species Act. Historically this species has not been tracked by state or federal heritage programs.

A beetle, a ground beetle, and white springtail are all cave obligate invertebrate species known from within three miles of the expanded project area (Natureserve 2022). A beetle was documented from a cave approximately 2.6 miles from the project area. A ground beetle and white springtail were both documented from a cave approximately 2.7 miles from the project area. As noted above, 15 caves are known within three miles of the project footprint, the nearest of which occurs approximately 780-feet from the expanded project area. No additional suitable habitat for these species is known within three miles of the expanded project area, and none was observed during field surveys of the area in August 2020. Because of the distance of suitable habitat from the project area, these three species would not be impacted by the proposed project activities.

Coal skinks are most often found along stream edges and often shelter under rocks, logs, or other cover. When disturbed, coal skinks often dive into water and hide beneath rocks or other aquatic debris. Coal skinks presumably prey on a wide variety of insects, spiders, and other invertebrates. Coal skinks usually mate in late spring/early summer and the young hatch in July or August. The nests are typically shallow cavities in damp soil under rocks that contain four to nine eggs. The females vigorously defend their nests until the eggs hatch (NatureServe 2022). One coal skink record was documented from a deep sinkhole approximately 1.8 miles from the expanded project area. Suitable habitat is present within the project footprint for this species around Cane Creek.

Actions occurring on the previously surveyed project area covered under 2021 EA have the potential to adversely impact coal skink. Coal skink could forage in and around and seek refuge within Cane Creek. Ground disturbing activities, particularly the relocation of Cane Creek, could adversely impact individuals that are present within the project footprint, especially if these activities take place during breeding season (approximately May through August). Any sedimentation associated with the relocation of Cane Creek would be localized and is expected to be short term. Additionally, an abundance of similarly suitable aquatic habitat is plentiful in the surrounding area. Given the temporary and localized nature of these activities, and the additional aquatic habitat surrounding the project footprint, proposed creek relocation activities under the proposed action are not expected to impact populations of coal skink.

Monarch butterfly are a highly migratory species, with eastern United States (US) populations overwintering in Mexico. Summer breeding habitat in the US requires milkweed plant species, on which adults exclusively lay eggs for larvae to develop and feed on. Adults will drink nectar from other blooming wildflowers when milkweeds are not in bloom. No records of the monarch butterfly are known from Colbert County, Alabama; however, the USFWS has determined that this species has the ability to occur within the project area. This species is currently listed under the Endangered Species Act (ESA) as a candidate species and is not subject to Section 7 consultation under the ESA. Field surveys in August 2020 and additional supplemental review of aerial imagery from the project footprint indicated a lack of suitable habitat within the project footprint for this species. Although monarch butterflies have the ability to occur within the vicinity of the proposed project area, no suitable habitat for monarch butterflies exists within the proposed stock pile areas. Therefore, the Monarch butterfly would not be impacted by the proposed actions.

Rafinesque's big-eared bats (RBEB) hibernate in caves and mines in mountainous and karst portions of the species' range. However, these hibernacula are largely absent in the southern portion of their range where RBEB have been documented hibernating in trees, wells, and cisterns. This species roosts in hollow trees, abandoned buildings, under bridges, or in culverts, in or near wooded areas in summer. Maternity colonies are formed in caves and mines. Males are usually solitary during summer, roosting in buildings or hollow trees. This species is believed to be non-migratory, moving short distances between summer and winter roosting sites. Different parts of chosen roosts are often used all year. Rafinesque's big-eared bats emerge late in the evening to forage in mature forest in both upland and lowland areas, along

permanent water bodies, especially rivers. One RBEB has been documented approximately 2.7 miles from the expanded project area. As noted above, 15 caves have been documented within three miles of the project area, the nearest of which occurs approximately 780-feet from the expanded project footprint. Suitable habitat is present within the project footprint for Rafinesque's big-eared bats.

Rafinesque's big-eared bat also has the potential to utilize the project area to varying degrees. Actions occurring on the previously surveyed areas covered under the 2021 EA could impact Rafinesque's big-eared bat, particularly tree removal and creek relocation activities. Cane Creek could provide potentially suitable foraging habitat for Rafinesque's big-eared bat, and relocating the creek has the potential to impact foraging bats; however, an abundance of similarly suitable alternative aquatic foraging habitat is plentiful in the surrounding area. Again, any sedimentation associated with the relocation of Cane Creek would be localized and is expected to be temporary. Additional foraging habitat is present for Rafinesque's big-eared bat over and around forested habitat within the expanded project area.

TVA's construction activities would remove approximately five acres of vegetative foraging habitat; this area occurs within the original project area addressed in the 2021 EA, not the two proposed stock pile areas. An abundance of similarly suitable vegetative foraging habitat occurs across the adjacent landscape such that the removal of this vegetation is not expected to significantly impact foraging bats. Field surveys of the project area in 2020 determined the availability of suitable summer roosting habitat based on the number of trees with exfoliating bark (snags and live trees) and their proximity to water sources. A proposed five acres of potentially suitable summer roosting habitat for Rafinesque's big-eared bat would be removed in association with the proposed actions.

Tree removal activities were covered under the 2021 EA, at which time the project committed to removing suitable summer roosting habitat during the winter clearing window (October 15 through March 31). These seasonal tree-clearing conservation measures would benefit Rafinesque's big-eared bat. As mentioned previously, the nearest cave occurs approximately 780-feet from the project footprint and would not be impacted by the proposed project activities. No additional Rafinesque's big-eared bat winter roosting habitat would be impacted by the proposed project activities. Based on the abundance of similarly suitable aquatic and forested foraging habitat, lack of impacts to winter roosting habitat, and implementation of seasonal tree removal restrictions for summer roosting habitat, actions under the proposed actions are not expected to significantly impact Rafinesque's big-eared bat.

USFWS' IPaC online database and review of aerial imagery and photographs of the project footprint indicated the presence of potentially suitable habitat for prairie warbler and red-headed woodpecker, two migratory species of conservation concern. Prairie warbler nests in young second growth scrub and densely overgrown fields. Nest cups are built between one and 45 feet off of the ground in trees. Red-headed woodpecker are active in semi-open country in small colonies, roosting in cavities of dead trees. Suitable foraging habitat is likely present for both migratory species of conservation concern. Nesting habitat is likely present within the

fragmented forest within the expanded project area for both species. Potential impacts to both species were reviewed in the 2021 EA, which provides an adequate analysis for activities that would occur within the expanded project area.

T&E Plant Species

In TVA's 2021 EA, TVA identified six state-listed plant species of conservation concern that have been recorded within five miles of the project area: leafy prairie-clover, dutchman's breeches, false rue-anemone, Alabama glade-cress, lyre-leaf bladderpod, and prairie-dock. TVA's review identified no federally listed plant species known to occur in Colbert County, Alabama.

A February 2022 query of the TVA Regional Natural Heritage Database indicates that the presence of four state-listed plant species and no federal listed species have been previously reported within five miles of the proposed project. However, four federally listed plant species are known from Colbert County: leafy-prairie clover, lyrate bladderspod, Tennessee yellow-eyed grass, and white fringeless orchid. These four species are also state-listed species. Only the Tennessee yellow-eyed grass and white fringeless orchid were not listed in TVA's 2021 EA. See Table 2 below.

Table 2. Plant species of conservation concern known from within five miles of the expanded project area and federally listed plants in Colbert County, Alabama.[1]

Common Name	*Scientific Name*	Federal Status	State Status	State Rank
Plants				
Alabama Glade-cress	*Leavenworthia alabamica*	-	SNLS	S2
Dutchman's Breeches	*Dicentra cucullaria*	-	SNLS	S2
False Rue-anemone	*Enemion biternatum*	-	SNLS	S2
Leafy-Prairie Clover	*Dalea foliosa*	E	SNLS	S1
Lyrate Bladderpod	*Lesquerella lyrata*	T	SNLS	S1
Prairie-dock	*Silphium pinnatifidum*	-	SNLS	S2
Tennessee Yellow-eyed Grass	*Xyris tennesseensis*	E	SNLS	S1
White Fringeless Orchid	*Platanthera integrilabia*	T	SNLS	S2

[1] Source: TVA Natural Heritage Database, queried 2/22/2022.
[3] Status Codes: E = Endangered; T = Listed Threatened; SNLS = State Listed No Status
[4] State Ranks: S1 = Critically Imperiled; S2 = Threatened

Review of maps, aerial photography, a field survey and knowledge of rare plants known from the region suggest that the proposed expansion of the project area and the use of two areas for

stock piling soil materials would not impact habitat for rare plant species and would have no effect on federally listed plants.

T&E Aquatic Species

No impacts to aquatic communities or sensitive aquatic species would occur; there is no habitat for aquatic species in these areas. As noted in Section 3.5.3 of the 2021 EA, there would be no impacts to these species under the proposed activities because there is no suitable habitat for state or federally listed species in the project area.

d. Wetlands

A field survey was conducted on February 1, 2022, to identify wetland resources within the two additional stock pile areas. Two wetland features were delineated within the project footprint, both occurring within the proposed Stock Pile Area #2.

Activities in wetlands are regulated by state and federal agencies to ensure no net loss of wetland resources. Under Clean Water Act §404, activities resulting in the discharge of dredge or fill material to waters of the U.S., including wetlands, must be authorized by the U.S. Army Corps of Engineers (USACE) through a Nationwide, Regional, or Individual Permit to ensure no more than minimal impacts to the aquatic environment. Section §401 of the Clean Water Act requires state water quality certification for projects in need of USACE approval. In Alabama, the Department of Environmental Management (ADEM) is responsible for issuance of water quality certifications pursuant to Section 401. In addition, Executive Order 11990 requires federal agencies to avoid construction in wetlands and minimize wetland degradation to the extent practicable. Wetland determinations were performed according to the USACE standards, which require documentation of hydrophytic (wet-site) vegetation, hydric soil, and wetland hydrology (Environmental Laboratory 1987; Lichvar et al. 2018; USACE 2010).

Using a TVA-developed modification of the Ohio Rapid Assessment Method (Mack 2001) specific to the TVA region (TVA Rapid Assessment Method or “TVARAM“), wetlands were evaluated by their functions and classified into three categories: low quality, moderate quality, and superior quality:

- Low quality wetlands are degraded aquatic resources which may exhibit low species diversity, minimal hydrologic input and connectivity, recent or on-going disturbance regimes, and/or predominance of non-native species. Such wetlands provide low functionality and are considered of low value.
- Moderate quality wetlands provide functions at a greater value due to a lesser degree of degradation and/or due to their habitat, landscape position, or hydrologic input. Moderate quality wetlands are considered healthy water resources of value. Disturbance to hydrology, substrate and/or vegetation may be present to a degree at which valuable functional capacity is sustained and there is reasonable potential for restoration.

- High quality wetlands include those wetlands offering superior functions and values within a watershed or are of regional/statewide concern. High quality wetlands may exhibit little, if any, recent disturbance, provide essential and/or large-scale stormwater storage, sediment retention, and toxin absorption, contain mature vegetation communities, and/or offer habitat to rare species. Conditions found in high quality wetlands often represent restoration goals for wetlands functioning at a lower capacity.

TVA identified two wetlands within the proposed Stock Pile Area #2, with a total size of 0.22 acres (see Table 3 and Figure 2). No wetlands were identified in Stock Pile Area #1.

Table 3. Wetlands within the Project Footprint

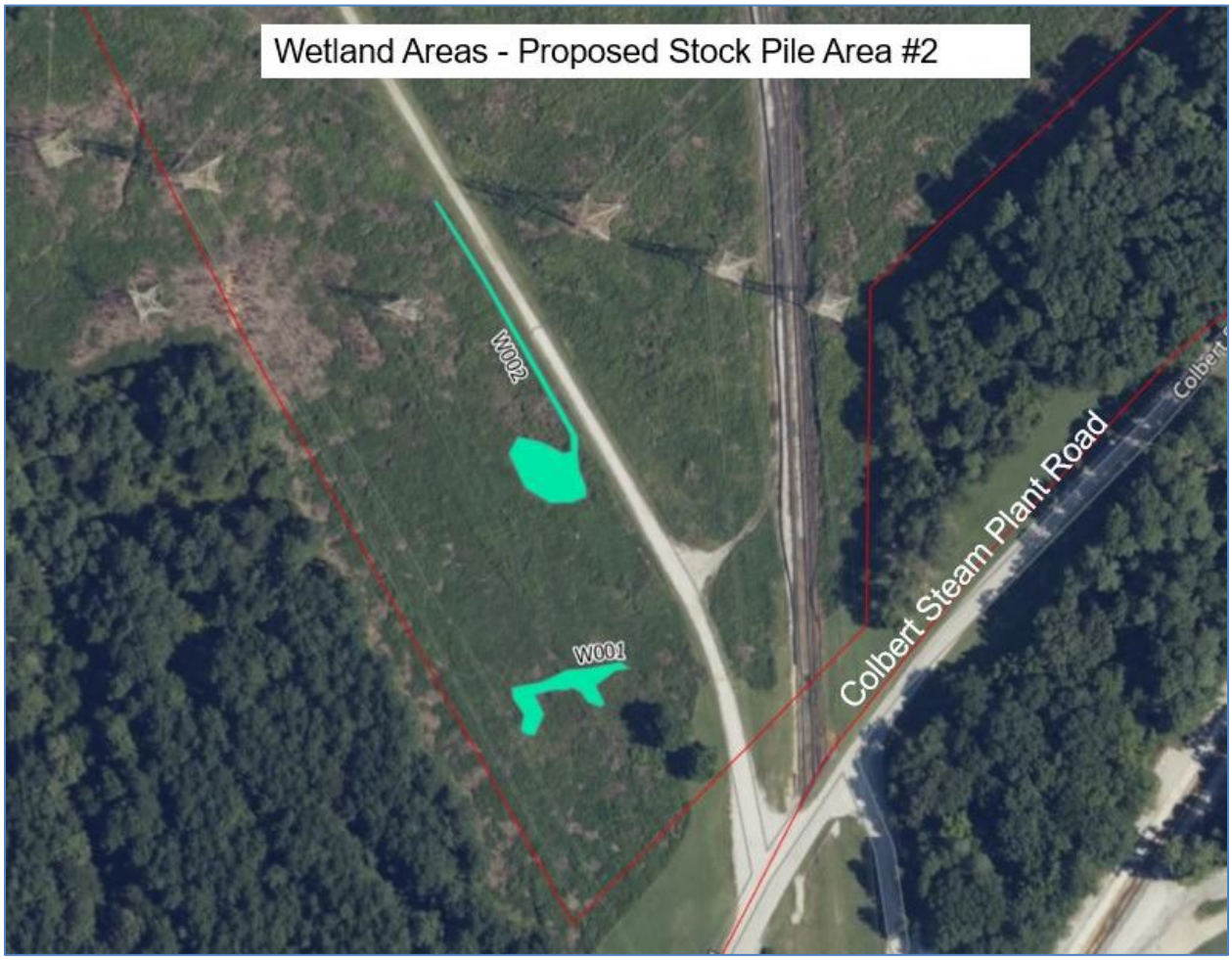
Wetland ID	Type[1]	TRAM Category (score)	Location	Wetland Acreage in Review Area
W001	PEM1A	Low (16)	Proposed Stock Pile Area #2; NW of Colbert Steam Plant Rd	0.08
W002	PEM1A	Low (16)	Proposed Stock Pile Area #2; NW of Colbert Steam Plant Rd	0.14
				Total = 0.22 acres

[1]Classification codes as defined in Cowardin et al. (1979): P=Palustrine; EM1=Emergent persistent vegetation

W001 in Stock Pile Area #2 is an emergent wetland within the existing transmission powerline right-of-way northwest of Colbert Steam Plant Road. This wetland appears isolated and consists of a series of low-lying linear swales. Soil conditions have resulted in profile coloration that is grey and mottled, indicative of hydric conditions. Dominant vegetation consisted of *Lespedeza* and *Carex* spp. Due to small size and disturbances, this wetland exhibited poor wetland functions, per TVARAM score.

W002 is also an emergent wetland near W001 and within the existing transmission powerline right-of-way northwest of Colbert Steam Plant Road. W002 appears isolated and originates to the north abutting the gravel access road within the ROW. The wetland extends southeast along the access road to a bowl-shaped depression at the bottom of the slope. Saturated conditions have resulted in soil profile coloration that is grey and mottled, indicative of hydric conditions. Dominant wetland vegetation consisted of *Carex* sp. and wool grass. Like W001, this wetland scored as low quality using TVARAM, indicating poor provision of wetland functions.

Figure 2. Location of Wetlands – Proposed Stock Pile Area #2



TVA would have operational flexibility working in Stock Pile Area #2 such that the two wetlands would be avoided. Consistent with TVA best management practices (BMPs) for working near or adjacent to wetlands (TVA 2017), TVA would apply a 50-foot buffer around each wetland, wherein no activities would occur. BMPs would include the use of silt fence and erosion control techniques wherever there is potential for sedimentation to enter wetlands as a result of project activities. By avoiding such wetlands and applying compliance mechanisms and BMPs, no significant wetland impacts are anticipated from the proposed project activities.

e. Surface Water Quality

TVA addresses impacts to surface water quality in Section 3.6 of the 2021 EA. There are no surface water features occurring within the two proposed stock pile areas or associated haul routes.

TVA would be required to update the ADEM construction stormwater permit and Construction Best Management Practices Plan (CBMPP) to consider the expansion of the project area. TVA's

adherence to the updated CBMPP would ensure no significant impacts to surface waters result due to sediment controls for soil erosion.

Although stock piling soils in the two areas would consist of discharging dredged material, the discharge is not proposed within a jurisdictional aquatic resource. Silt fences, sediment basins and/or other sediment and erosion control measures would be installed, inspected, and maintained for the duration of the project as needed to avoid impacts to any surface water adjacent to the project area. After the project has been completed, TVA would continue to implement the same measures to address potential erosion of soils stored permanently at the two stock pile areas. Permanently stored soils would be spread across the areas, sloped to drain, and the areas would be seeded to ensure they are revegetated. Silt fences or other sediment barriers would be installed as necessary.

TVA's temporary and permanent storage and management of soils in these two areas would comply with best management practices and erosion control measures identified in *Erosion Control, Sediment Control and Stormwater Management on Construction Sites and Urban Areas* (Alabama 2018a) and the topsoiling guidelines in the *Field Guide for Erosion and Sediment Control on Construction Sites in Alabama* (Alabama 2018b).

All proposed project activities would be conducted in a manner to ensure that soils, rocks, and/or mulch materials are contained, and the introduction of any pollutants to the receiving waters would be minimized. Surface water could be potentially impacted due to increased silt loading resulting from runoff during soil disturbing activities at the stock pile areas or along the haul route. However, best management practices in accordance with the updated CBMPP under ADEM's construction stormwater permit would ensure that erosion controls sufficiently prevent siltation in runoff and that the stock pile areas would be properly graded and reseeded at the end of the project.

f. Floodplains

Two new stock pile areas are proposed. Stock Pile Area #1 is shown to be outside of the 100-year floodplain. The lowest elevation on Area 1 is well above the 100-year flood elevation, and therefore proposed activities at the location would be conducted consistent with Executive Order (EO) 11988.

Stock Pile Area #2 is located outside of the 100- and 500-year floodplains. As shown in Figure 1 above, the 430-foot elevation is adjacent to the project area, indicating the 500-year floodplain (at 423.6 feet) is outside of the area. To ensure that floodplains and their natural and beneficial values are avoided, TVA would avoid activity or disturbances to the areas adjacent to Area 2 that are below the 500-year flood elevation of 423.6 feet. With the commitment to avoid work activities below the 500-year flood elevation, TVA's modified proposal and use of the laydown area would be consistent with EO 11988, and there would be no significant impacts to floodplains and their natural and beneficial values.

g. Cultural Resources

As explained in Section 1.4 of the 2021 EA, TVA previously consulted under Section 106 of the National Historic Preservation Act (NHPA) with the Alabama Historical Commission (AHC) and federally recognized Indian tribes regarding two sites that were located within the area of potential effect during a survey of the area conducted in 2016 associated with the COF Decommissioning Project. The AHC agreed with TVA's determination that the two sites are ineligible for inclusion on the National Register of Historic Places (NRHP). Based on this prior survey and consultation, TVA found that the area of potential effect contains no NRHP-listed or -eligible archaeological sites and that there would be no effects on historic properties. Given the previous consultations, TVA did not consult with the AHC or tribes regarding the proposed action considered in the 2021 EA.

The modified proposed action considers an expanded project area. TVA determined that no cultural or archaeological sites are located within the two stock pile areas. TVA located two archaeological sites that are located in the vicinity of one of the proposed stock pile areas. Both sites are potentially eligible for the NRHP, based on TVA's previous consultation with the Alabama SHPO. In order to avoid potential adverse effects on these two sites, TVA modified plans for soil disposal.

Under the modified proposed action, TVA would avoid using or disturbing these two sites and would establish a 30-meter (98-foot) buffer around them to ensure that the areas would not be disturbed during construction activities. Prior to activities taking place at the stock pile area near these sites, TVA would demarcate the boundary of the project area between it and the two sites with fencing or high-visibility flagging to ensure that there would be no ground disturbance near or within the site buffers. The proposed action therefore would not affect any properties listed in or eligible for listing in the NRHP, and TVA would not need to consult with the SHPO or tribes, as the entire area has been included in prior surveys, archaeological sites have been identified, consultation has been completed with the agreement of all parties, and the two sites would be avoided and outside of the undertaking's area of potential effects.

Permitting and Consultation

Permit and consultation requirements are described in the 2021 EA and FONSI. As noted above, TVA would request a modification of the construction stormwater permit and associated CBMPP from ADEM to address the expansion of the project area to include the stock pile areas and haul roads. There would be no additional consultation requirements associated with impacts to cultural resources due to the avoidance of the two archaeological sites.

Mitigation Measures and Environmental Commitments

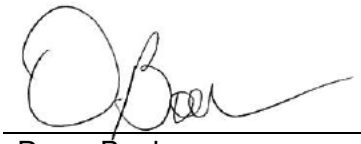
TVA will continue to employ all measures described in the 2021 EA and FONSI to mitigate adverse impacts that may occur during project activities and would implement various BMPs to avoid or minimize potential adverse environmental effects resulting from proposed activities.

TVA would continue to comply with requirements of necessary permits and would implement the various BMPs to avoid or minimize potential adverse environmental effects resulting from the proposed activities. Construction-related BMPs would be critical to ensuring that environmental resources are not adversely affected. BMPs include the appropriate measures to control erosion, stabilize disturbed areas, minimize storm water impacts, and reduce sedimentation. BMPs also ensure that any construction-related waste materials are properly contained so that environmental impacts are avoided. All construction waste materials would be managed in accordance with applicable waste management laws and regulations.

As noted in the analysis above, TVA would avoid sensitive resources within the expanded project area. TVA would avoid two wetlands within proposed Stock Pile Area #2. The project area does not include the floodplain or two cultural sites that occur in the vicinity of one stock pile area. Avoiding these resources would ensure that no adverse effects would result.

Conclusion and Findings

Based on the findings of the 2021 EA and additional analysis addressed herein, TVA concludes that the modified proposed action, including the use of two stock pile areas for soil handling and storage and the associated haul roads to these areas, would not result in significant environmental impacts. Therefore, consistent with TVA's 2021 finding, the modified proposed action would not be a major federal action significantly affecting the environment and, accordingly, an environmental impact statement is not required. This finding is contingent upon the adherence to all applicable regulatory and permitting requirements and to TVA's implementation of the measures and BMPs identified above and in the 2021 FONSI that minimize or avoid potential impacts to the environment.



05/09/2022

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Date

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