APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): January 23, 2015

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: JD Form 1 of 3; SAC 2001-40992-4E Johnsonville Commerce Center

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: South Carolina County/parish/borough: **Florence** City:
Center coordinates of site (lat/long in degree decimal format): Lat. **33.820010° N**, Long. **-79.432072° W**.
Universal Transverse Mercator:
Name of nearest waterbody: **Unnamed tributary of Lynches River**
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **The aquatic resources (Wetlands 3, 4, 5, 6, and 8) remain confined within the project boundary and do not flow into a TNW.**
Name of watershed or Hydrologic Unit Code (HUC): **03040202-07**
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☐ Office (Desk) Determination. Date:
☒ Field Determination. Date(s): **December 9, 2014**

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]
☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are no** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   ☐ TNWs, including territorial seas
   ☐ Wetlands adjacent to TNWs
   ☐ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   ☐ Non-RPWs that flow directly or indirectly into TNWs
   ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   ☐ Impoundments of jurisdictional waters
   ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: linear feet: width (ft) and/or acres.
   Wetlands: acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Pick List**, **Pick List**, **Pick List**
   Elevation of established OHWM (if known):**N/A.**

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   ☒ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: **Five (5) isolated wetlands (Wetlands 3, 4, 5, 6, and 8), totaling 10.33 acres, were assessed within the review area and determined to be non-jurisdictional wetlands. The topographic map depicts Wetlands 6 & 8 as depressional**

[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

wetlands within the project boundary. The remaining wetlands (Wetlands 3, 4, and 5) are depicted as forested uplands. On the topographic map, Wetland 3 has a blue line, which represents a tributary, exiting it that continues north/northeast off of the property. This feature is not depicted on the aerials and no potential linear features were observed in this area during the site visit. The NWIs depict Wetlands 3 & 4 as an isolated wetland and Wetlands 6 & 8 as an isolated wetland. Wetland 5 is also depicted on the NWIs as an isolated wetland. These forested freshwater wetlands were viewed during the site visit and determined to be completely surrounded by uplands. No linear features were observed during the site visit within or near these wetland boundaries. No surface or shallow subsurface connections from these 5 wetlands to any Waters of the US (WOUS) were viewed during the site visit. A review of a jurisdictional determination completed on this site (SAC 2001-40992, letter dated November 14, 2002) previously determined that these wetlands are isolated.

These depressional wetlands exhibited hydric soils, hydrophytic vegetation, and indicators of hydrology, which satisfied the criteria set forth in the 1987 Wetland Delineation Manual and the Atlantic and Gulf Coastal Plain Regional Supplement. All water located within or draining toward these wetlands had no discernible or traceable outfall or connection to any WOUS. Additionally, these five wetlands in the project area were found to be completely surrounded by forested uplands which further disrupts possible connections to any WOUS. Chemically, these wetlands do not affect any WOUS in the absorption/treatment of nutrients, runoff, or pollutants. Physically, the topographic location of these wetlands is such that water in these wetlands is retained and eventually percolates through the soil to groundwater only, at an unknown depth, providing little if any stormwater attenuation. Biologically, these wetlands are not essential in providing organic carbon in the form of their collective primary productivity to downstream waters, resulting in the nourishment of the downstream food web. Because of the lack of discernible outfall, topography grades and lack of evidence of chemical, physical, or biological connection, Wetlands 3, 4, 5, 6 & 8 were determined to be isolated, non-jurisdictional wetlands.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. **TNW**
   Identify TNW: .

   Summarize rationale supporting determination: .

2. **Wetland adjacent to TNW**
   Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. **Characteristics of non-TNWs that flow directly or indirectly into TNW**

   (i) **General Area Conditions:**
   Watershed size: **Pick List** ;
   Drainage area: **Pick List**
   Average annual rainfall: inches
   Average annual snowfall: inches

   (ii) **Physical Characteristics:**
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☐ Tributary flows through **Pick List** tributaries before entering TNW.

   Project waters are **Pick List** river miles from TNW.
   Project waters are **Pick List** river miles from RPW.
   Project waters are **Pick List** aerial (straight) miles from TNW.
   Project waters are **Pick List** aerial (straight) miles from RPW.
   Project waters cross or serve as state boundaries. Explain: **N/A.**

   Identify flow route to TNW[5]: .
   Tributary stream order, if known: .

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.
[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

(b) General Tributary Characteristics (check all that apply):

Tributary is: ☐ Natural
☐ Artificial (man-made). Explain: .
☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):
Average width: feet
Average depth: feet
Average side slopes: **Pick List.**

Primary tributary substrate composition (check all that apply):

☐ Silts	☐ Sands	☐ Concrete
☐ Cobbles	☐ Gravel	☐ Muck
☐ Bedrock	☐ Vegetation. Type/% cover:	
☐ Other. Explain: .		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: .
Presence of run/riffle/pool complexes. Explain: .
Tributary geometry: **Pick List.**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Pick List**
Estimate average number of flow events in review area/year: **Pick List**
Describe flow regime: .
Other information on duration and volume: .

Surface flow is: **Pick List.** Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☐ Bed and banks
☐ OHWM[6] (check all indicators that apply):

☐ clear, natural line impressed on the bank	☐ the presence of litter and debris
☐ changes in the character of soil	☐ destruction of terrestrial vegetation
☐ shelving	☐ the presence of wrack line
☐ vegetation matted down, bent, or absent	☐ sediment sorting
☐ leaf litter disturbed or washed away	☐ scour
☐ sediment deposition	☐ multiple observed or predicted flow events
☐ water staining	☐ abrupt change in plant community
☐ other (list):	

☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☐ High Tide Line indicated by:	☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects	☐ survey to available datum;
☐ fine shell or debris deposits (foreshore)	☐ physical markings;
☐ physical markings/characteristics	☐ vegetation lines/changes in vegetation types.
☐ tidal gauges	
☐ other (list):	

(iii) Chemical Characteristics:
Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain: .
Identify specific pollutants, if known: .

[6]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7]Ibid.

(iv) Biological Characteristics. Channel supports (check all that apply):

- ☐ Riparian corridor. Characteristics (type, average width): .
- ☐ Wetland fringe. Characteristics: .
- ☐ Habitat for:
  - ☐ Federally Listed species. Explain findings: .
  - ☐ Fish/spawn areas. Explain findings: .
  - ☐ Other environmentally-sensitive species. Explain findings: .
  - ☐ Aquatic/wildlife diversity. Explain findings: .

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:

Properties:

Wetland size: acres

Wetland type. Explain: .

Wetland quality. Explain: .

Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:

Flow is: **Pick List**. Explain: .

Surface flow is: **Pick List**

Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .

- ☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:

- ☐ Directly abutting
- ☐ Not directly abutting
  - ☐ Discrete wetland hydrologic connection. Explain: .
  - ☐ Ecological connection. Explain: .
  - ☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW

Project wetlands are **Pick List** river miles from TNW.

Project waters are **Pick List** aerial (straight) miles from TNW.

Flow is from: **Pick List.**

Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: .

Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

- ☐ Riparian buffer. Characteristics (type, average width): .
- ☐ Vegetation type/percent cover. Explain: .
- ☐ Habitat for:
  - ☐ Federally Listed species. Explain findings: .
  - ☐ Fish/spawn areas. Explain findings: .
  - ☐ Other environmentally-sensitive species. Explain findings: .
  - ☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **Pick List**

Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed: .

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

Documentation for the Record only: Significant nexus findings for seasonal RPWs and/or wetlands abutting seasonal RPWs:

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D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   - ☐ TNWs: linear feet width (ft), Or, acres.
   - ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   - ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .

☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.[9]**
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).
Explain:

E. **ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]**
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

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[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] **Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.***

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☒ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☒ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☒ Wetlands: **1.01 a. (Wetland 3) + 2.71 a. (Wetland 4) + 0.90 a. (Wetland 5) + 2.89 a. (Wetland 6) + 2.82 a. (Wetland 8) = 10.33** acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: **Report and drawings by The Brigman Co.**
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☒ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name: **Johnsonville; The topographic map depicts Wetlands 6 & 8 as depressional wetlands within the project boundary. The remaining wetlands (Wetlands 3, 4, and 5) are depicted as forested uplands. On the topographic map, Wetland 3 has a blue line, which represents a tributary, exiting it that continues north/northeast off of the property..**
☒ USDA Natural Resources Conservation Service Soil Survey. Citation: **Page 106; The soil survey maps the majority of the site as Chipley, Goldsboro, and Lynchburg, which are non-hydric soils that have hydric inclusions. The northern portion of the site is mapped Lakeland, which is non-hydric. A small section of the middle of the property is mapped Wehadkee-Johnston, which is hydric.**
☒ National wetlands inventory map(s). Cite name: **PFO1Bd; The NWIs depict Wetlands 3 & 4 as an isolated wetland and Wetlands 6 & 8 as an isolated wetland. Wetland 5 is also depicted on the NWIs as an isolated wetland..**
☐ State/Local wetland inventory map(s): .
☐ FEMA/FIRM maps: .
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date): **SCDNR 2006, 99:11223:11; The aerials depict the majority of this site as forested. The northwestern portion of the property consists of agricultural fields. A road constructed between 2002 and 2006, according to the aerials, intersects the property.**
or ☒ Other (Name & Date): **Site photos provided by The Brigman Co.**
☒ Previous determination(s). File no. and date of response letter: **SAC 2001-40992-4E; letter dated November 14, 2002.**

- [ ] Applicable/supporting case law: .
- [ ] Applicable/supporting scientific literature: .
- [ ] Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: Five (5) isolated wetlands, totaling 10.33 acres, were assessed within the review area and determined to be non-jurisdictional wetlands. These wetlands are depicted on the drawings as Wetlands 3, 4, 5, 6, and 8. The topographic map depicts Wetlands 6 & 8 as depressional wetlands within the project boundary. The remaining wetlands (Wetlands 3, 4, and 5) are depicted as forested uplands. On the topographic map, Wetland 3 has a blue line, which represents a tributary, exiting it that continues north/northeast off of the property. This feature is not depicted on the aerials and no potential linear features were observed in this area during the site visit. The NWIs depict Wetlands 3 & 4 as an isolated wetland and Wetlands 6 & 8 as an isolated wetland. Wetland 5 is also depicted on the NWIs as an isolated wetland. These forested freshwater wetlands were viewed during the site visit and determined to be completely surrounded by uplands. No linear features were observed during the site visit within or near these wetland boundaries. No surface or shallow subsurface connections from these 5 wetlands to any Waters of the US (WOUS) were viewed during the site visit. A review of a jurisdictional determination completed on this site (SAC 2001-40992, letter dated November 14, 2002) previously determined that these wetlands are isolated.

These depressional wetlands exhibited hydric soils, hydrophytic vegetation, and indicators of hydrology, which satisfied the criteria set forth in the 1987 Wetland Delineation Manual and the Atlantic and Gulf Coastal Plain Regional Supplement. All water located within or draining toward these wetlands had no discernible or traceable outfall or connection to any WOUS. Additionally, these five wetlands in the project area were found to be completely surrounded by forested uplands which further disrupts possible connections to any WOUS. Chemically, these wetlands do not affect any WOUS in the absorption/treatment of nutrients, runoff, or pollutants. Physically, the topographic location of these wetlands is such that water in these wetlands is retained and eventually percolates through the soil to groundwater only, at an unknown depth, providing little if any stormwater attenuation. Biologically, these wetlands are not essential in providing organic carbon in the form of their collective primary productivity to downstream waters, resulting in the nourishment of the downstream food web. Because of the lack of discernible outfall, topography grades and lack of evidence of chemical, physical, or biological connection, Wetlands 3, 4, 5, 6 & 8 were determined to be isolated, non-jurisdictional wetlands.

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): January 23, 2015

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: JD Form 2 of 3; SAC 2001-40992-4E Johnsonville Commerce Center

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: South Carolina County/parish/borough: **Florence** City:
Center coordinates of site (lat/long in degree decimal format): Lat. **33.820010° N**, Long. **-79.432072° W**.
Universal Transverse Mercator:
Name of nearest waterbody: **Unnamed tributary of Lynches River**
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Lynches River**
Name of watershed or Hydrologic Unit Code (HUC): **03040202-07**
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☐ Office (Desk) Determination. Date:
☒ Field Determination. Date(s): **December 9, 2014**

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]
☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   ☐ TNWs, including territorial seas
   ☐ Wetlands adjacent to TNWs
   ☐ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   ☐ Non-RPWs that flow directly or indirectly into TNWs
   ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   ☒ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   ☐ Impoundments of jurisdictional waters
   ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: linear feet: width (ft) and/or acres.
   Wetlands: **(Jurisdictional Wetland 1) 0.61 a. + (Jurisdictional Wetland 2) 0.02 a. = 0.63** acres.

   c. **Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual**, **Pick List**, **Pick List**
   Elevation of established OHWM (if known): .

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   ☒ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: **Three potentially jurisdictional ponds were assessed within the project area. These ponds were determined to be excavated out of uplands and therefore not considered to be an impoundment of waters of the US. These ponds were determined to be non-jurisdictional.**

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[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. **TNW**
   Identify TNW: **Lynches River.**

   Summarize rationale supporting determination: **According to the USACE Navigability Study Report No. 10, the limit of navigable waters on the Lynches River is located at River Mile (RM) 114. The 3rd order perennial RPW enters the Lynches River at RM 5.**

2. **Wetland adjacent to TNW**
   Summarize rationale supporting conclusion that wetland is "adjacent":

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. **Characteristics of non-TNWs that flow directly or indirectly into TNW**

   (i) **General Area Conditions:**
   Watershed size: **146,773 acres ; HUC 03040202-07**
   Drainage area: **60 acres**
   Average annual rainfall: **44.76** inches
   Average annual snowfall: **2.6** inches

   (ii) **Physical Characteristics:**
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☒ Tributary flows through **2** tributaries before entering TNW.

   Project waters are **1-2** river miles from TNW.
   Project waters are **1 (or less)** river miles from RPW.
   Project waters are **1-2** aerial (straight) miles from TNW.
   Project waters are **1 (or less)** aerial (straight) miles from RPW.
   Project waters cross or serve as state boundaries. Explain: **The project waters are confined within the property boundary and do not cross or serve as state boundaries.**

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

Identify flow route to TNW[5]: **The unnamed 1st order tributary flows into a 2nd order tributary, which then flows into a 3rd order tributary. This 3rd order tributary flows into the Lynches River, a TNW.**
Tributary stream order, if known: **The tributary is a 1st order stream.**

(b) General Tributary Characteristics (check all that apply):
Tributary is: ☒ Natural
☐ Artificial (man-made). Explain: .
☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):
Average width: **3** feet
Average depth: **2** feet
Average side slopes: **Vertical (1:1 or less).**

Primary tributary substrate composition (check all that apply):

☒ Silts	☒ Sands	☐ Concrete
☐ Cobbles	☐ Gravel	☐ Muck
☐ Bedrock	☐ Vegetation. Type/% cover:	
☐ Other. Explain: .		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: **The tributary was relatively stable with no erosion or sloughing banks observed.**
Presence of run/riffle/pool complexes. Explain: **No run/riffle/pool complexes were observed.**
Tributary geometry: **Relatively straight. According to the topographic map and aerials, the 1st order tributary follows a declining gradient and is surrounded by forested land.**
Tributary gradient (approximate average slope): **2 %**

(c) Flow:
Tributary provides for: **Perennial flow**
Estimate average number of flow events in review area/year: **20 (or greater)**
Describe flow regime: **The tributary was observed near its upstream end (at its intersection with Possum Fork Rd) and several flow indicators were noticed including the presence of an OHWM, a sinuous channel within bed and banks, wrack lines, water-stained leaf litter and debris in the bottom, and flowing water. The tributary is also depicted as a solid blue line on the topographic map, which usually indicates perennial flow, and as a shaded linear feature on the aerials..**
Other information on duration and volume: **This tributary is recharged by groundwater and also receives discrete and confined flow from the upstream wetlands.**

Surface flow is: **Discrete and confined.** Characteristics: **Under normal circumstances, surface flow is restricted between the bed and banks of the tribuary.**

Subsurface flow: **Unknown.** Explain findings: .
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☒ Bed and banks
☒ OHWM[6] (check all indicators that apply):

☒ clear, natural line impressed on the bank	☒ the presence of litter and debris
☐ changes in the character of soil	☒ destruction of terrestrial vegetation
☐ shelving	☒ the presence of wrack line
☒ vegetation matted down, bent, or absent	☐ sediment sorting
☒ leaf litter disturbed or washed away	☐ scour
☐ sediment deposition	☐ multiple observed or predicted flow events
☒ water staining	☐ abrupt change in plant community
☐ other (list):	

☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☐ High Tide Line indicated by:	☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects	☐ survey to available datum;
☐ fine shell or debris deposits (foreshore)	☐ physical markings;
☐ physical markings/characteristics	☐ vegetation lines/changes in vegetation types.

[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.
[6] A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7] Ibid.

☐ tidal gauges
☐ other (list):

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain: **The 1st order tributary is a blackwater system with clear flowing water present. No oily film or discoloration was observed within the tributary at its intersection with Possum Fork Road. Land use in this watershed is comprised of approximately 36% agricultural land, 30% forested wetlands, 25% forested land, and 5% urban land. The remaining land uses consist of scrub/shrub land, water, and nonforested wetlands(marsh). According to the SCDHEC website, there is a low potential for growth in this watershed..**

Identify specific pollutants, if known: **Because a large portion of the watershed is in agricultural production, the potential exists for herbicides and other pollutants used in agricultural practices to enter the off-site tributary. This land use requires regular manipulation of the soil, which creates an increase in suspended sediments within the downstream tributaries. Additionally, the upstream portion of this tributary flows through land recently clear-cut. Preparation of the soils (ie bedding) also requires manipulation of the soils and a potential for increases in suspended sediments. A review of the SCDHEC website revealed a downstream monitoring station located on the Great Pee Dee River (PD-060) (HUC 03040207-02) that found that aquatic life uses are not supported due to excess amounts of copper. Recreational uses are fully supported. A significant decreasing trend in five-day biochemical oxygen demand and increasing trends in dissolved oxygen concentrations suggest improving conditions at this site.**

(iv) Biological Characteristics. Channel supports (check all that apply):

☒ Riparian corridor. Characteristics (type, average width): **A review of the aerials determined that this tributary supports an approximately 100' wide riparian corridor. This riparian zone contributes to the overall health of the aquatic system by filtering out pollutants and preventing erosion.**

☐ Wetland fringe. Characteristics: .

☐ Habitat for:

☐ Federally Listed species. Explain findings: .

☐ Fish/spawn areas. Explain findings: .

☐ Other environmentally-sensitive species. Explain findings: .

☐ Aquatic/wildlife diversity. Explain findings: .

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:

Properties:

Wetland size: **(Jurisdictional Wetland 1) 0.61 a. + (Jurisdictional Wetland 2) 0.02 a. = 0.63** acres

Wetland type. Explain: **Palustrine forested.**

Wetland quality. Explain: **Fully functional.**

Project wetlands cross or serve as state boundaries. Explain: **The project wetlands are confined within the property boundary and do not cross or serve as state boundaries.**

(b) General Flow Relationship with Non-TNW:

Flow is: **Intermittent flow**. Explain: **A culvert located under Possum Fork Road connects the two wetlands to the downstream 1st order tributary. Flow through the culvert and into the 1st order stream is normally during wetter months and after rainfall events. During the site visit on 9 December 2014, water was observed flowing from the jurisdictional wetlands into the 1st order stream.**

Surface flow is: **Discrete and confined**

Characteristics: **Flow from the wetlands into the 1st order stream is through a culvert located under Possum Fork Road.**

Subsurface flow: **Unknown**. Explain findings: .

☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:

☐ Directly abutting

☒ Not directly abutting

☒ Discrete wetland hydrologic connection. Explain: **Jurisdictional Wetland 1 flows through Jurisdictional Wetland 2 via a culvert and through another culvert into the 1st order tributary.**

☐ Ecological connection. Explain: .

☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW

Project wetlands are **1-2** river miles from TNW.

Project waters are **1-2** aerial (straight) miles from TNW.

Flow is from: **Wetland to navigable waters.**

Estimate approximate location of wetland as within the **100 - 500-year** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: **Both Jurisdictional Wetland 1 and Jurisdictional Wetland 2 were inundated during the site visit. Water on the surface is typical of a blackwater system. No oily film or discoloration was observed within these wetlands. Land use in this watershed is comprised of approximately 36% agricultural land, 30% forested wetlands, 25% forested land, and 5% urban land. The remaining land uses consist of scrub/shrub land, water, and nonforested wetlands(marsh). According to the SCDHEC website, there is a low potential for growth in this watershed..**

Identify specific pollutants, if known: **Because a large portion of the watershed is in agricultural production, the potential exists for herbicides and other pollutants used in agricultural practices to enter the off-site tributary. This land use requires regular manipulation of the soil, which creates an increase in suspended sediments within the downstream tributaries. A review of the SCDHEC website revealed a downstream monitoring station located on the Great Pee Dee River (PD-060) (HUC 03040207-02) that found that aquatic life uses are not supported due to excess amounts of copper. Recreational uses are fully supported. A significant decreasing trend in five-day biochemical oxygen demand and increasing trends in dissolved oxygen concentrations suggest improving conditions at this site.**

(iii) Biological Characteristics. Wetland supports (check all that apply):

☐ Riparian buffer. Characteristics (type, average width): .

☒ Vegetation type/percent cover. Explain: **The dominant vegetation in this wetland is Facultative, Fac-Wet or Obligate and consists of Nyssa Biflora, Quercus phellos, Acer rubrum, Salix nigra, and Liquidambar styraciflua.**

☒ Habitat for:

- ☐ Federally Listed species. Explain findings: .
- ☐ Fish/spawn areas. Explain findings: .
- ☐ Other environmentally-sensitive species. Explain findings: .
- ☒ Aquatic/wildlife diversity. Explain findings: **This wetland system enhances wildlife diversity through timber type changes and the transition between upland and aquatic systems.**

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **3**

Approximately (**1.30**) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)
N	**0.61**		
N	**0.02**		
Y	**0.67**		

Summarize overall biological, chemical and physical functions being performed: **The perennial RPW that is an unnamed tributary of the Lynches River, and its adjacent wetlands, are providing important biological, chemical, and physical functions within a predominately upland drainage area. According to the SCDHEC Watersheds website, this watershed consists of approximately 36% agricultural land, 30% forested wetlands, 25% forested land, and 5% urban land. The remaining land uses consist of scrub/shrub land, water, and nonforested wetlands(marsh). The watershed is predominately rural with a large portion of the land in agriculture production. The majority of the wetlands within the drainage area are depressional wetlands that are situated relatively low in the landscape and receive and store runoff from the surrounding uplands. This water storage prevents flood flows from high rainfall events from moving quickly downstream. The perennial RPW and its adjacent wetlands act as a catch basin to help filter out pollutants from the neighboring agricultural land and adjacent forestry practices. This wetland system enhances wildlife diversity, acts as catch basin filtering sediment and pollutants from surrounding croplands, supports the downstream food web, and provides nutrient fixation, flood attenuation and flow maintenance functions. See III.C.3. below for more details.**

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow

of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: **The tributary (RPW) and all similarly situated and adjacent freshwater wetlands are collectively performing functions consistent with following: Biological- wetlands adjacent to this RPW include depressional wetlands. As such, a variety of biological functions are being performed which include providing breeding grounds and shelter for aquatic species and foraging areas for wetland dependent species. These wetlands and tributary are essential in providing organic carbons in the form of their collective primary productivity to downstream waters, resulting in the nourishment of the downstream food web. Chemical- wetlands and tributary within the review area are providing the important collective functions of removal of excess nutrients into the downstream TNW. These pollutants, which are contributed by runoff from surounding uplands, are prevented from being discharged downstream due to suspended sediments and other pollutants being retained within the wetlands. The low velocity and gradient of the tributary also contributes to the removal of pollutants because the suspended pollutants have time to settle out of the water. This reduces nitrogen and phosphorus loading downstream and effectively prevents oxygen depletion that can result from eutrophication. Physical- Wetlands and tributary in the review area are collectively performing flow maintenance functions, including retaining runoff inflow and storing rain water temporarily. Flow maintenance results in the reduction of downstream peak flows (discharge and volumes), helping to maintain seasonal flow volumes and reducing the frequency of overbank events which flood adjacent properties. Increased water velocity also increases the rate of erosion downstream, which not only leads to a loss of land but also increases the amount of sediments and other pollutants in the TNW. Based on the collective functions described above and their importance to the biological, chemical, and physical integrity of the traditional navigable waters of the Lynches River, it has been determined that there is a significant nexus between the relevant reach of the tributary and all adjacent wetlands to the downstream TNW..**

Documentation for the Record only: Significant nexus findings for seasonal RPWs and/or wetlands abutting seasonal RPWs:

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D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   - ☐ TNWs: linear feet width (ft), Or, acres.
   - ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   - ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: **The off-site tributary was determined to have perennial flow based on a review of the topographic map, aerials, and information obtained during the site visit. The topographic map depicts this tributary as a solid blue line, which usually indicates perennial flow. The aerials depict this tributary as a shaded linear feature. Observations of the tributary during the site visit near its upstream end (intersection with Possum Fork Road) include the presence of an OHWM, wrack lines, sediment sorting, and flowing water. This tributary flows north into a 2nd order perennial RPW, which flows into a 3rd order perennial RPW. The 3rd order tributary flows into the Lynches River, a TNW.**

☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
☒ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: **(Jurisdictional Wetland 1) 0.61 a. + (Jurisdictional Wetland 2) 0.02 a. = 0.63** acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.[9]**
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).
Explain:

E. **ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]**
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

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[8]See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] **Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.***

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☒ Other: (explain, if not covered above): **Three potentially jurisdictional ponds were assessed within the project area. These ponds were determined to be excavated out of uplands and not considered to be an impoundment of waters of the US. These ponds were determined to be non-jurisdictional.**

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: **Report and drawings by The Brigman Co.**
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☒ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name: **Johnsonville; The topographic map depicts Wetlands 1& 2 as forested land within the project boundary. The off-site 1st order pRPW is depicted as a solid blue line, which usually indicates perennial flow.**
☒ USDA Natural Resources Conservation Service Soil Survey. Citation: **Page 106; The soil survey maps these two wetlands as Chipley, a non-hydric soil that has hydric inclusions.**
☒ National wetlands inventory map(s). Cite name: **U42P; The NWIs depict Wetlands 1 & 2 as upland planted pine forest.**
☐ State/Local wetland inventory map(s): .
☐ FEMA/FIRM maps: .
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date): **SCDNR 2006, 99:11223:11; The aerials depict the southwestern portion of this site as forested. The northwestern portion of the site consists of agricultural fields. A road constructed between 2002 and 2006, according to the aerials, intersects the property.**
or ☒ Other (Name & Date): **Site photos provided by The Brigman Co; Site photographs taken by USACE on December 9, 2014.**
☒ Previous determination(s). File no. and date of response letter: **SAC 2001-40992-4E; letter dated November 14, 2002.**
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .

☐ Other information (please specify):

B. ADDITIONAL COMMENTS TO SUPPORT JD: The off-site 1st order tributary was determined to have perennial flow based on a review of the topographic map, aerials, and information obtained during the site visit. The topographic map depicts this tributary as a solid blue line, which usually indicates perennial flow. The aerials depict this tributary as a shaded linear feature. Observations of the tributary during the site visit near its upstream end (intersection with Possum Fork Road) include the presence of an OHWM, wrack lines, sediment sorting, and flowing water. This tributary flows north into a 2nd order perennial RPW, which flows into a 3rd order perennial RPW. The 3rd order tributary flows into the Lynches River, a TNW.

Three potentially jurisdictional ponds were assessed within the project area. These ponds were determined to be excavated out of uplands and therefore not considered to be an impoundment of any waters of the US. These ponds were determined to be non-jurisdictional.

Wetland 1 and Wetland 2 were determined to be jurisdictional based on a direct hydrological connection to the downstream 1st order perennial RPW. Wetland 1 was inundated during the site visit and water was observed flowing through a culvert and through Wetland 2. Both wetlands connect to the downstream 1st order stream via a culvert under Possum Fork Road. These wetlands and tributary were determined to have a significant nexus to the downstream TNW in Section IIIC above.

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): January 23, 2015

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: JD Form 3 of 3; SAC 2001-40992-4E Johnsonville Commerce Center

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: South Carolina County/parish/borough: **Florence** City:
Center coordinates of site (lat/long in degree decimal format): Lat. **33.820010°** N, Long. **-79.432072°** W.
Universal Transverse Mercator:
Name of nearest waterbody: **Unnamed tributary of Lynches River**
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Lynches River**
Name of watershed or Hydrologic Unit Code (HUC): **03040202-07**
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☐ Office (Desk) Determination. Date:
☒ Field Determination. Date(s): **December 9, 2014**

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]
☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   ☐ TNWs, including territorial seas
   ☐ Wetlands adjacent to TNWs
   ☐ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   ☐ Non-RPWs that flow directly or indirectly into TNWs
   ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   ☒ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   ☐ Impoundments of jurisdictional waters
   ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: linear feet: width (ft) and/or acres.
   Wetlands: **(Jurisdictional Wetland 7) 0.99 a. + (Jurisdictional Wetland 9) 1.75 a. = 2.74** acres.

   c. **Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual**, **Pick List**, **Pick List**
   Elevation of established OHWM (if known): .

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   ☒ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
   Explain: **Documented on basis forms 1 and 2 of 3.**

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[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. **TNW**
   Identify TNW: **Lynches River.**

   Summarize rationale supporting determination: **According to the USACE Navigability Study Report No. 10, the limit of navigable waters on the Lynches River is located at River Mile (RM) 114. The 3rd order perennial RPW enters the Lynches River at RM 5.**

2. **Wetland adjacent to TNW**
   Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. **Characteristics of non-TNWs that flow directly or indirectly into TNW**

   (i) **General Area Conditions:**
   Watershed size: **146,773 acres ; HUC 03040202-07**
   Drainage area: **66 acres**
   Average annual rainfall: **44.76** inches
   Average annual snowfall: **2.6** inches

   (ii) **Physical Characteristics:**
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☒ Tributary flows through **2** tributaries before entering TNW.

   Project waters are **1-2** river miles from TNW.
   Project waters are **1 (or less)** river miles from RPW.
   Project waters are **1-2** aerial (straight) miles from TNW.
   Project waters are **1 (or less)** aerial (straight) miles from RPW.
   Project waters cross or serve as state boundaries. Explain: **The project waters are confined within the property boundary and do not cross or serve as state boundaries.**

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

Identify flow route to TNW[5]: **The unnamed 1st order tributary flows into a 2nd order tributary, which then flows into a 3rd order tributary. This 3rd order tributary flows into the Lynches River, a TNW.**
Tributary stream order, if known: **The tributary is a 1st order stream.**

(b) General Tributary Characteristics (check all that apply):
Tributary is: ☒ Natural
☐ Artificial (man-made). Explain: .
☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):
Average width: **3** feet
Average depth: **2** feet
Average side slopes: **Vertical (1:1 or less).**

Primary tributary substrate composition (check all that apply):
☒ Silts ☒ Sands ☐ Concrete
☐ Cobbles ☐ Gravel ☐ Muck
☐ Bedrock ☐ Vegetation. Type/% cover:
☐ Other. Explain: .

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: **The tributary was relatively stable with no erosion or sloughing banks observed.**
Presence of run/riffle/pool complexes. Explain: **No run/riffle/pool complexes were observed.**
Tributary geometry: **Meandering. According to the topographic map and aerials, the 1st order tributary follows a declining gradient and is surrounded by forested land.**
Tributary gradient (approximate average slope): **2 %**

(c) Flow:
Tributary provides for: **Perennial flow**
Estimate average number of flow events in review area/year: **20 (or greater)**
Describe flow regime: **The tributary was observed near its upstream end (at its intersection with Possum Fork Rd) and several flow indicators were noticed including the presence of an OHWM, a sinuous channel within bed and banks, wrack lines, water-stained leaf litter and debris in the bottom, and flowing water. The tributary is also depicted as a solid blue line on the topographic map, which usually indicates perennial flow, and as a shaded linear feature on the aerials..**
Other information on duration and volume: **This tributary is recharged by groundwater and also receives discrete and confined flow from the upstream wetlands.**

Surface flow is: **Discrete and confined.** Characteristics: **Under normal circumstances, surface flow is restricted between the bed and banks of the tribuary.**

Subsurface flow: **Unknown.** Explain findings: .
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☒ Bed and banks
☒ OHWM[6] (check all indicators that apply):
☒ clear, natural line impressed on the bank ☒ the presence of litter and debris
☐ changes in the character of soil ☒ destruction of terrestrial vegetation
☐ shelving ☒ the presence of wrack line
☒ vegetation matted down, bent, or absent ☐ sediment sorting
☒ leaf litter disturbed or washed away ☐ scour
☐ sediment deposition ☐ multiple observed or predicted flow events
☒ water staining ☐ abrupt change in plant community
☐ other (list):
☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):
☐ High Tide Line indicated by: ☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects ☐ survey to available datum;
☐ fine shell or debris deposits (foreshore) ☐ physical markings;
☐ physical markings/characteristics ☐ vegetation lines/changes in vegetation types.

[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.
[6] A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7] Ibid.

☐ tidal gauges
☐ other (list):

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain: **The 1st order tributary is a blackwater system with clear flowing water present. No oily film or discoloration was observed within the tributary at its intersection with Possum Fork Road. Land use in this watershed is comprised of approximately 36% agricultural land, 30% forested wetlands, 25% forested land, and 5% urban land. The remaining land uses consist of scrub/shrub land, water, and nonforested wetlands(marsh). According to the SCDHEC website, there is a low potential for growth in this watershed..**

Identify specific pollutants, if known: **Because a large portion of the watershed is in agricultural production, the potential exists for herbicides and other pollutants used in agricultural practices to enter the off-site tributary. This land use requires regular manipulation of the soil, which creates an increase in suspended sediments within the downstream tributaries. Additionally, the upstream portion of this tributary flows through land recently clear-cut. Preparation of the soils (ie bedding) also requires manipulation of the soils and a potential for increases in suspended sediments. A review of the SCDHEC website revealed a downstream monitoring station located on the Great Pee Dee River (PD-060) (HUC 03040207-02) that found that aquatic life uses are not supported due to excess amounts of copper. Recreational uses are fully supported. A significant decreasing trend in five-day biochemical oxygen demand and increasing trends in dissolved oxygen concentrations suggest improving conditions at this site.**

(iv) Biological Characteristics. Channel supports (check all that apply):

☒ Riparian corridor. Characteristics (type, average width): **A review of the aerials determined that this tributary supports an approximately 150' wide riparian corridor. This riparian zone contributes to the overall health of the aquatic system by filtering out pollutants and preventing erosion.**

☐ Wetland fringe. Characteristics: .

☐ Habitat for:

☐ Federally Listed species. Explain findings: .

☐ Fish/spawn areas. Explain findings: .

☐ Other environmentally-sensitive species. Explain findings: .

☐ Aquatic/wildlife diversity. Explain findings: .

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:

Properties:

Wetland size: **(Jurisdictional Wetland 7) 0.99 a. + (Jurisdictional Wetland 9) 1.75 a. = 2.74** acres

Wetland type. Explain: **Palustrine forested.**

Wetland quality. Explain: **Fully functional.**

Project wetlands cross or serve as state boundaries. Explain: **The project wetlands are confined within the property boundary and do not cross or serve as state boundaries.**

(b) General Flow Relationship with Non-TNW:

Flow is: **Intermittent flow**. Explain: **A culvert located under Possum Fork Road connects the two wetlands to the downstream 1st order tributary. Flow through the culvert and into the 1st order stream is normally during wetter months and after rainfall events. During the site visit on 9 December 2014, water was observed flowing from the jurisdictional wetlands into the 1st order stream.**

Surface flow is: **Discrete and confined**

Characteristics: **Flow from the wetlands into the 1st order stream is through a culvert located under Possum Fork Road.**

Subsurface flow: **Unknown**. Explain findings: .

☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:

☐ Directly abutting

☒ Not directly abutting

☒ Discrete wetland hydrologic connection. Explain: **Jurisdictional Wetland 7 flows through a roadside non-jurisdictional ditch and through an upland excavated pond before flowing into Wetland 9. Water from Wetland 9 then flows through a culvert located under Possum Fork Road and into the 1st order tributary.**

☐ Ecological connection. Explain: .

☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW

Project wetlands are **1-2** river miles from TNW.

Project waters are **1-2** aerial (straight) miles from TNW.

Flow is from: **Wetland to navigable waters.**
Estimate approximate location of wetland as within the **100 - 500-year** floodplain.

(ii) Chemical Characteristics:
Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: **Both Jurisdictional Wetland 7 and Jurisdictional Wetland 9 were inundated during the site visit. Water on the surface is typical of a blackwater system. No oily film or discoloration was observed within these wetlands. Land use in this watershed is comprised of approximately 36% agricultural land, 30% forested wetlands, 25% forested land, and 5% urban land. The remaining land uses consist of scrub/shrub land, water, and nonforested wetlands(marsh). According to the SCDHEC website, there is a low potential for growth in this watershed..**

Identify specific pollutants, if known: **Because a large portion of the watershed is in agricultural production, the potential exists for herbicides and other pollutants used in agricultural practices to enter the off-site tributary. This land use requires regular manipulation of the soil, which creates an increase in suspended sediments within the downstream tributaries. A review of the SCDHEC website revealed a downstream monitoring station located on the Great Pee Dee River (PD-060) (HUC 03040207-02) that found that aquatic life uses are not supported due to excess amounts of copper. Recreational uses are fully supported. A significant decreasing trend in five-day biochemical oxygen demand and increasing trends in dissolved oxygen concentrations suggest improving conditions at this site.**

(iii) Biological Characteristics. Wetland supports (check all that apply):
☐ Riparian buffer. Characteristics (type, average width): .
☒ Vegetation type/percent cover. Explain: **The dominant vegetation in this wetland is Facultative or Fac-Wet and consists of Quercus phellos, Acer rubrum, Salix nigra, and Liquidambar styraciflua.**
☒ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☐ Other environmentally-sensitive species. Explain findings: .
☒ Aquatic/wildlife diversity. Explain findings: **This wetland system enhances wildlife diversity through timber type changes and the transition between upland and aquatic systems.**

3. Characteristics of all wetlands adjacent to the tributary (if any)
All wetland(s) being considered in the cumulative analysis: **2**
Approximately (**2.74**) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)
N	**0.99**		
N	**1.75**		

Summarize overall biological, chemical and physical functions being performed: **The perennial RPW that is an unnamed tributary of the Lynches River, and its adjacent wetlands, are providing important biological, chemical, and physical functions within a predominately upland drainage area. According to the SCDHEC Watersheds website, this watershed consists of approximately 36% agricultural land, 30% forested wetlands, 25% forested land, and 5% urban land. The remaining land uses consist of scrub/shrub land, water, and nonforested wetlands(marsh). The watershed is predominately rural with a large portion of the land in agriculture production. The majority of the wetlands within the drainage area are depressional wetlands that are situated relatively low in the landscape and receive and store runoff from the surrounding uplands. This water storage prevents flood flows from high rainfall events from moving quickly downstream. The perennial RPW and its adjacent wetlands act as a catch basin to help filter out pollutants from the neighboring agricultural land and adjacent forestry practices. This wetland system enhances wildlife diversity, acts as catch basin filtering sediment and pollutants from surrounding croplands, supports the downstream food web, and provides nutrient fixation, flood attenuation and flow maintenance functions. See III.C.3. below for more details.**

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW.

Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: **The tributary (RPW) and all similarly situated and adjacent freshwater wetlands are collectively performing functions consistent with following: Biological- wetlands adjacent to this RPW include depressional wetlands. As such, a variety of biological functions are being performed which include providing breeding grounds and shelter for aquatic species and foraging areas for wetland dependent species. These wetlands and tributary are essential in providing organic carbons in the form of their collective primary productivity to downstream waters, resulting in the nourishment of the downstream food web. Chemical- wetlands and tributary within the review area are providing the important collective functions of removal of excess nutrients into the downstream TNW. These pollutants, which are contributed by runoff from surounding uplands, are prevented from being discharged downstream due to suspended sediments and other pollutants being retained within the wetlands. The low velocity and gradient of the tributary also contributes to the removal of pollutants because the suspended pollutants have time to settle out of the water. This reduces nitrogen and phosphorus loading downstream and effectively prevents oxygen depletion that can result from eutrophication. Physical- Wetlands and tributary in the review area are collectively performing flow maintenance functions, including retaining runoff inflow and storing rain water temporarily. Flow maintenance results in the reduction of downstream peak flows (discharge and volumes), helping to maintain seasonal flow volumes and reducing the frequency of overbank events which flood adjacent properties. Increased water velocity also increases the rate of erosion downstream, which not only leads to a loss of land but also increases the amount of sediments and other pollutants in the TNW. Based on the collective functions described above and their importance to the biological, chemical, and physical integrity of the traditional navigable waters of the Lynches River, it has been determined that there is a significant nexus between the relevant reach of the tributary and all adjacent wetlands to the downstream TNW..**

Documentation for the Record only: Significant nexus findings for seasonal RPWs and/or wetlands abutting seasonal RPWs:

.

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   ☐ TNWs: linear feet width (ft), Or, acres.
   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: **The off-site tributary was determined to have perennial flow based on a review of the topographic map, aerials, and information obtained during the site visit. The topographic map depicts this tributary as a solid blue line, which usually indicates perennial flow. The aerials depict this tributary as a shaded linear feature. Observations of the tributary during the site visit near its upstream end (intersection with Possum Fork Road) include the presence of an OHWM, wrack lines, sediment sorting, and flowing water. This tributary flows north into a 2nd order perennial RPW, which flows into a 3rd order perennial RPW. The 3rd order tributary flows into the Lynches River, a TNW.**

☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
☒ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: **(Jurisdictional Wetland 7) 0.99 a. + (Jurisdictional Wetland 9) 1.75 a. = 2.74** acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.[9]**
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).
Explain:

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .

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[8]See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] **Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.***

☐ Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: **Report and drawings by The Brigman Co.**
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☒ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name: **Johnsonville; The topographic map depicts Wetlands 7 as forested uplands and Wetland 9 as forested wetlands within the project boundary. The off-site 1st order pRPW is depicted as a solid blue line, which usually indicates perennial flow. This blue line originates on site and travels through Wetland 9 according to the topographic map; however, the site visit determined that the on-site portion of this tributary does not exist.**
☒ USDA Natural Resources Conservation Service Soil Survey. Citation: **Page 106; The soil survey maps these two wetlands as Lakeland, a non-hydric soil that has hydric inclusions.**
☒ National wetlands inventory map(s). Cite name: **U42P; The NWIs depict Wetlands 7 & 9 as upland planted pine forest.**
☐ State/Local wetland inventory map(s): .
☐ FEMA/FIRM maps: .
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date): **SCDNR 2006, 99:11223:11; The aerials depict the northern portion of this site as forested. The northwestern portion of the site consists of agricultural fields. A road constructed between 2002 and 2006, according to the aerials, intersects the property.**
or ☒ Other (Name & Date): **Site photos provided by The Brigman Co; Site photographs taken by USACE on December 9, 2014.**
☒ Previous determination(s). File no. and date of response letter: **SAC 2001-40992-4E; letter dated November 14, 2002.**
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .

☐ Other information (please specify):

B. ADDITIONAL COMMENTS TO SUPPORT JD: The off-site 1st order tributary was determined to have perennial flow based on a review of the topographic map, aerials, and information obtained during the site visit. The topographic map depicts this tributary as a solid blue line, which usually indicates perennial flow. The aerials depict this tributary as a shaded linear feature. Observations of the tributary during the site visit near its upstream end (intersection with Possum Fork Road) include the presence of an OHWM, wrack lines, sediment sorting, and flowing water. This tributary flows north into a 2nd order perennial RPW, which flows into a 3rd order perennial RPW. The 3rd order tributary flows into the Lynches River, a TNW.

Wetland 7 and Wetland 9 were determined to be jurisdictional based on a direct hydrological connection to the downstream 1st order perennial RPW. Both wetlands were inundated during the site visit and water was observed flowing out of Wetland 7 into a roadside non-jurisdictional ditch (located off-site) before it flows into an upland excavated pond and then into Wetland 9. Water within Wetland 9 connects to the downstream 1st order stream via a culvert under Possum Fork Road. These wetlands and offsite tributary were determined to have a significant nexus to the downstream TNW in Section IIIC above.