

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): August 7, 2012

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: JD Form 5 of 8; SAC # 2007-01187-3JY_HCSWA_Debris_Site

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: South Carolina County/parish/borough: **Horry** City: **Conway**
Center coordinates of site (lat/long in degree decimal format): Lat. **33.803408° N**, Long. **-78.951964° W**.
Universal Transverse Mercator:

Name of nearest waterbody: **Sterritt Swamp**

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Waccamaw River

Name of watershed or Hydrologic Unit Code (HUC): **03040206-09 Waccamaw Basin**

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): **November 1, 2011**

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 waters² (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: **1440 (PRPW #5), 1510.0 (PRPW #6)** linear feet: **20** width (ft) and/or acres.

Wetlands: **145.21 (Wetlands Z & DD-UU)** see below acres.

c. Limits (boundaries) of jurisdiction based on: Established by OHWM, 1987 Delineation Manual, 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: .

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: .

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 waterbody⁴ 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: **136,317 acres** ;

Drainage area: **acres**

Average annual rainfall: **48 inches**

Average annual snowfall: **0-1 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 **5-10** river miles from TNW.

Project waters are **1 (or less)** river miles from RPW.

Project waters are **2-5** 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: .

Identify flow route to TNW⁵: **The tributary, South Prong of Sterrit Swamp, flows directly into the Waccamaw River.**

Tributary stream order, if known: **3**.

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: **20** feet
Average depth: **3** feet
Average side slopes: **3:1**.

Primary tributary substrate composition (check all that apply):

Silts Sands Concrete
 Cobbles Gravel Muck
 Bedrock Vegetation. Type/% cover: **60**
 Other. Explain:

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Stable, natural channel and banks.

Presence of run/riffle/pool complexes. Explain:

Tributary geometry: **Meandering. Natural meandering stream**

Tributary gradient (approximate average slope): **0-1** %

(c) Flow:

Tributary provides for: **Perennial flow**

Estimate average number of flow events in review area/year: **20 (or greater)**

Describe flow regime: **Named tributary (Sterritt Swamp) flows at least 90% of the year under normal climatic conditions and is represented by a solid blue line on USGS topographic maps .**

Other information on duration and volume:

Surface flow is: **Discrete and confined.** Characteristics: **Discrete and confined flow contained within bed and banks during normal rainfall events.**

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

Dye (or other) test performed:

Tributary has (check all that apply):

Bed and banks
 OHWM⁶ (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: **Water is clear during field observations. No known pollutants. However, the close proximity of the residential subdivisions provides potential for runoff such as oil, fertilizer, and other pollutants to enter the tributary.**

Identify specific pollutants, if known:

⁶A 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.

⁷Ibid.

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

Riparian corridor. Characteristics (type, average width): **The riparian corridor consists of forested uplands and wetlands on the eastern side and a municipal waste landfill on the west side.**

Wetland fringe. Characteristics: **Palustrine forested wetland.**

Habitat for:

Federally Listed species. Explain findings:

Fish/spawn areas. Explain findings:

Other environmentally-sensitive species. Explain findings:

Aquatic/wildlife diversity. Explain findings: **The tributary supports breeding grounds and shelter for aquatic dependent species such as fish and amphibians. Minnows were observed in the tributary during the site visit. In addition, evidence of foraging, nesting and travel within and around tributary of various upland wildlife species was observed to include Whitetailed deer and Neotropical Songbirds. Additionally, this tributary is documented by the SCDNR to serve as a travel corridor and important link to the Waccamaw River basin for the American Black Bear (Ursus americanus).**

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: **2.745** acres

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

Wetland quality. Explain: **Healthy and fully functioning in a undisturbed state.**

Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

Flow is: **No Flow**. Explain: **Wetlands LL, MM, NN, OO, PP, RR, SS, TT, & UU are adjacent to Sterritt Swamp due to their unique ecological connection.**

Surface flow is: **Overland sheetflow**

Characteristics: **Water fills the wetlands and spills over into the adjacent floodplain of Sterritt Swamp.**

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:

Ecological connection. Explain: **See description in B.3 summary below.**

Separated by berm/barrier. Explain: **Wetland Z is geomorphically separated by a small sand rim between a Carolina Bay and pocosin wetland ecosystem. These two wetland areas are ecologically interconnected by wildlife utilizing similar habitat and foraging areas.**

(d) Proximity (Relationship) to TNW

Project wetlands are **5-10** river miles from TNW.

Project waters are **2-5** aerial (straight) miles from TNW.

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

Estimate approximate location of wetland as within the **5 - 10-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: **Water is clear with no known pollutants.**

Identify specific pollutants, if known: **Unknown.**

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

Riparian buffer. Characteristics (type, average width): **Interconnection to the adjacent Sterritt Swamp wetlands.**

Vegetation type/percent cover. Explain: **Mixture of wetland and upland vegetation.**

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: **30 (or more)**

Approximately (**21,000**) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

<u>Directly abuts? (Y/N)</u>	<u>Size (in acres)</u>	<u>Directly abuts? (Y/N)</u>	<u>Size (in acres)</u>
Y	19600		
N	80		
Y	1682		
N	13.78		

Summarize overall biological, chemical and physical functions being performed: **All wetlands evaluated in this significant nexus determination (SND) which are similarly situated and adjacent (directly abutting, non-abutting, & reasonably close proximate) to the PRPW are collectively performing biological, chemical, and physical functions. The six wetlands in the review area are approximately 2-5 river miles from the nearest TNW. The wetlands evaluated in this SND provide the important collective functions of removal of excess nutrients which are contributed by runoff from the surrounding urban areas. The wetlands reduce nitrogen and phosphorus loading downstream, and effectively prevent oxygen depletion that can result from eutrophication. The wetlands also collectively perform flow maintenance functions, including retaining runoff inflow and storing flood water temporarily .**

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: **Wetlands DD, KK, Z, EE-JJ & LL-UU are adjacent to the east and south prongs of Sterritt Swamp due to their reasonably close proximity to these tributaries and other adjacent wetlands. Wetlands EE-JJ and LL-UU are surrounded on more than three sides by a larger wetland system, the confluence of two tributaries which form the primary run of Sterritt Swamp, and are very proximal at numerous points on the geomorphic landscape. Besides the obvious functions of stormwater attenuation, absorption, and overstory biomass input into the food web, these wetlands provide a uniquely important ecological interconnection to the adjacent wetlands. The normal movement of aquatic fauna, which is a criteria of the natural hydrologic condition, is expressively obvious in this geomorphic chokepoint of the upstream wetland systems that include the Lewis Ocean Bay HP, Socastte Swamp headwaters, Tilly Samp, Big Jones Swamp, etc. The**

confluence of the east and south prong create an ecological bottle-neck between the Lewis Ocean Bay HP and the Waccamaw River Basin. The temporarily flooded depressional wetlands provide critical habitat for herptiles, particularly amphibians which are in a state of decline as pressure is induced on their habitat from nearby development. Additionally, it is well documented that wetland and riparian zones are utilized by a host of species, which include the American Black Bear (*Ursus Americana*) as well as many game and non-game species. The Lewis Ocean Bay HP also hosts the federally-listed red-cockaded woodpecker as well as other rare and endangered plant species. This cluster of wetlands represents a sensitive and increasingly valuable ecosystem that are interdependent on there geomorphic position and the unique biological connectivity found in this bottleneck. These wetlands, in conjunction with the other adjacent wetlands have a critically significant nexus to the downstream Waccamaw River basin. .

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: .
- 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-RPWs⁸ 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 jurisdictional. 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.**

⁸See Footnote # 3.

- 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: _____

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):

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.

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: **Maps prepared by the agent, The Brigman Company / Plat provided by DDC Engineers dated January 18, 2012.**
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
 - Office concurs with data sheets/delineation report. Data sheets are considered to be representative of site conditions although exact position of the data point may vary.
 - 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: **USGS Topographic Map / Nixonville Quad.**
 - USDA Natural Resources Conservation Service Soil Survey. Citation: **Horry County Soil Survey / Pg 70 & 71 / see below.**
 - National wetlands inventory map(s). Cite name: **Horry County NWI / see below.**
 - State/Local wetland inventory map(s):
 - FEMA/FIRM maps:
 - 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
 - Photographs: Aerial (Name & Date): **2006 SCDNR infrared aerial photography / 89:1664-122, 89:1664-123, 94:7440:132, 11222:165**
 - or Other (Name & Date):
 - Previous determination(s). File no. and date of response letter:
 - Applicable/supporting case law:
 - Applicable/supporting scientific literature:
 - Other information (please specify):

B. ADDITIONAL COMMENTS TO SUPPORT JD: Wetland boundaries established by the 1987 Wetland Delineation Manual.

Wetlands EE-JJ 11.03 acre total: EE(0.13), FF(0.02), GG(0.04), HH(0.08), II(10.68), JJ(0.08) and LL-UU 2.754 acre total LL(0.27), MM(0.004), NN(0.02), OO(0.05), PP(0.42), QQ(0.48), R(0.3), SS(0.09), TT(0.13), UU(0.99). Wetlands EE-JJ & LL-UU are adjacent to the east and south prongs of Sterritt Swamp due to their reasonably close proximity to these tributaries and other adjacent wetlands. Wetlands EE-JJ and LL-UU are surrounded on more than three sides by a larger wetland system, the confluence of two tributaries which form the primary run of Sterritt Swamp, and are very proximal at numerous points on the geomorphic landscape. Besides the normal functions of stormwater attenuation, absorption, and overstory biomass input into the food web, these wetlands provide a uniquely important ecological interconnection to the adjacent wetlands. The normal movement of aquatic fauna, which is a criteria of the natural hydrologic condition, is expressively obvious in this geomorphic chokepoint of the upstream wetland systems that include the Lewis Ocean Bay HP, Socastte Swamp headwaters, Tilly Samp, Big Jones Swamp, etc. The confluence of the east and south prong create an ecological bottle-neck between these wetland systems and the downstream Waccamaw River Basin. The temporarily flooded depressional wetlands provide critical habitat for herptiles, particularly amphibians which are in a state of decline as pressure is induced on their habitat from nearby development. Additionally, it is well documented that wetland and riparian zones are utilized by the American Black Bear (*Ursus Americana*) and other game and non-game species. The Lewis Ocean Bay HP also hosts the federally-listed red-cockaded woodpecker as well as other rare and endangered plant species that make up a substantial component of this ecosystem. This cluster of wetlands represent a sensitive and increasingly valuable ecosystem that are interdependent on there geomorphic position and the unique biological connectivity found in this bottleneck. These wetlands, in conjunction with the other adjacent wetlands have a significant nexus to the downstream Waccmaw River basin.

Wetlands KK(54.87) & DD(32.06) acres: These wetlands directly abutt the OHWM of East Prong of Sterritt Swamp and South Prong of Sterritt Swamp. A small silvicultural road was constructed between Wetland KK and DD but does not sever the hydrologic or biological connection as these two wetlands collectively function as one.

Wetland Z 44.5 acres: Wetland Z is a naturally occuring Carolina Bay with a significant nexus to the proximate wetlands DD & KK as well as the other wetlands onsite.

Flow of onsite named tributaries PRPW #5 (South Prong of Sterritt Swamp) and PRPW #6 (East Prong of Sterrit Swamp) was determined to be at least 90% of the year under normal climatic conditions. Stream geomorphic indicators of perennial flow were channel within bed and banks had a firm sandy bottom clear of vegetation and debris, sediment bars located adjacent to the channel which is evidence of perennial flow as well as hydrologic indicators observed within the channel of leaves being continuously washed downstream and water flowing after 48 hours from a rainfall event. In addition, the tributary had a pronounced OWHM and contained aquatic fauna (minnows, tadpoles, etc). Both tributaries are naturally meandering with sinuosity commonly found in a natural, unaltered state.

The site was comprised of the following soil series:
 Soils mapped as hydric throughout the mapped component: Blanton, Johnston, Leon, Lynn Haven
 Soils where 2% of the mapped component is considered hydric: Centenary, Echaw, Witherbee

The site was comprised of the following NWI classifications:

Wetlands designated as: PFO(various forested palustrine wetland SEE ATTACHED MAPS), PUBHh (flooded palustrine wetlands), PEM1C (seasonally flooded emergent palustrine wetlands)

Upland designated as: U11, U14, U42P

Basis form 5 of 8