

APPROVED JURISDICTIONAL DETERMINATION FORM

U.S. Army Corps of Engineers

Form 2 of 7 Relevant Reach Timothy Creek 2

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): July 5, 2011

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Charleston, Mead Westvaco, SAC 2008-00860-2JY

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: South Carolina County/parish/borough: Berkeley City:
Center coordinates of site (lat/long in degree decimal format): Lat. 33.13409 °N, Long. -80.27079° E.
Universal Transverse Mercator:

Name of nearest waterbody: Timothy Creek

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

Name of watershed or Hydrologic Unit Code (HUC): 3050206

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): 4-7-2009, 11-30-2009, 1-19-2011, 1-26-2011, 1-28-2011, 5-6-2011, 5-19-2011

Chamberlain/Crosby/Darden/Green/Socha

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: 9,000 linear feet: 15 width (ft) and/or 2.9626 acres.

Wetlands: 996.6086 acres.

c. Limits (boundaries) of jurisdiction based on: **1987 Delineation Manual**

Elevation of established OHWM (if known):

2. Non-regulated waters/wetlands (check if applicable):³ **Including potentially jurisdictional features that upon assessment are NOT waters or wetlands**

Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: Isolated wetlands noted on the portion of the subject property are addressed on Jurisdictional Determination Sheet 7 of 7. Additionally, there are approximately 62,331 feet of upland-dug non-jurisdictional ditches found on this portion of the property. These features range from roadside ditches approximately 2 feet deep and three feet wide to surface drainage ditches

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.

4 feet deep and 10 feet wide. These upland cut ditches did not show active flow, evidence of recent flow or an ordinary high water mark and were therefore determined to be non-jurisdictional. Of the 24 non-jurisdictional ditches in this relevant reach, ten provide a hydrologic connection from a wetland to a tributary. These are from Wetland CCC to Tributary 1 – 150 feet long; from Wetland QQQQ to Tributary 1 – 500 feet long, from Wetland PPPP to Tributary 1 – 450 feet long, from Wetland EEEE to Tributary 1 – 300 feet long; from Wetland GGGG to Tributary 2 – 100 feet long, from Wetland OOOO to Tributary 2 – 900 feet long, from Wetland RRR to Tributary 2 – 800 feet long, from Wetland QQQ to Tributary 2 – 400 feet long, from Wetland XXX to Tributary 3 – 800 feet long, and from Wetland YYY to Tributary 3 – 200 feet long.

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: 78,723 acres

Drainage area: 2,001.14 acres Drainage areas were approximated for all tributaries that were evaluated as part of the Significant Nexus Determinations performed for this JD. These areas were drawn based on apparent flow pathways and drainage areas associated with the subject relevant reach using USGS quad mapping, aerial photography, and observations of connectivity and direction of flow made in the field. The intended value of the drainage area maps is to document the full collection of wetlands adjacent to the relevant reach, and not to assert that the mapping represents more than approximation with respect to actual area.

Average annual rainfall: 50 inches

Average annual snowfall: 0 inches

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

(ii) Physical Characteristics:

Timothy Creek Relevant Reach 2 Tributary 1 – 10,000 feet x 15 feet x 5 feet

Timothy Creek Relevant Reach 2 Tributary 2 – 13, 200 feet x 15 feet x 5 feet

Timothy Creek Relevant Reach 2 Tributary 3 – 17, 000 feet x 15 feet x 5 feet

(a) Relationship with TNW:

- Tributary flows directly into TNW.
 Tributary flows through 2 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 5-10 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: Timothy Creek (RPW) to Four Hole Swamp (RPW) to Edisto River (TNW).
Tributary stream order, if known:

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

Tributary is: Natural
 Artificial (man-made). Explain:
 Manipulated (man-altered). Explain: Timothy Creek on the subject property has been highly modified, ditched and straightened.

Tributary properties with respect to top of bank (estimate):

Average width: 15feet
Average depth: 5 feet
Average side slopes: 2:1.

Primary tributary substrate composition (check all that apply):

- | | | |
|---|--|-----------------------------------|
| <input checked="" type="checkbox"/> Silts | <input checked="" type="checkbox"/> Sands | <input type="checkbox"/> Concrete |
| <input type="checkbox"/> Cobbles | <input type="checkbox"/> Gravel | <input type="checkbox"/> Muck |
| <input type="checkbox"/> Bedrock | <input type="checkbox"/> Vegetation. Type/% cover: | |
| <input type="checkbox"/> Other. Explain: | | |

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Banks appear to be stable.

Presence of run/riffle/pool complexes. Explain:

Tributary geometry: Relatively straight

Tributary gradient (approximate average slope): less than 1 %

(c) Flow:

Tributary provides for: Seasonal flow

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

Describe flow regime: Flow was minimal during field visits, but evidence suggest significant flow during times of storm stress.

Other information on duration and volume:

Surface flow is: Discrete and confined. Characteristics:

Subsurface flow: Unknown. Explain findings:

- Dye (or other) test performed:

Tributary has (check all that apply):

- | | |
|--|---|
| <input checked="" type="checkbox"/> Bed and banks | |
| <input checked="" type="checkbox"/> OHWM ⁶ (check all indicators that apply): | |
| <input checked="" type="checkbox"/> clear, natural line impressed on the bank | <input checked="" type="checkbox"/> the presence of litter and debris |
| <input type="checkbox"/> changes in the character of soil | <input type="checkbox"/> destruction of terrestrial vegetation |
| <input type="checkbox"/> shelving | <input type="checkbox"/> the presence of wrack line |
| <input checked="" type="checkbox"/> vegetation matted down, bent, or absent | <input type="checkbox"/> sediment sorting |
| <input checked="" type="checkbox"/> leaf litter disturbed or washed away | <input type="checkbox"/> scour |

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.

- sediment deposition
- water staining
- other (list):
- Discontinuous OHWM.⁷ Explain: .
- multiple observed or predicted flow events
- abrupt change in plant community

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

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

(iii) Chemical Characteristics:

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

Explain: Water appeared to be clear, but tributary has been highly altered with channelization and intensive silviculture adjacent to the tributary for over 50 years.

Identify specific pollutants, if known: .

(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: Wood Storks were observed foraging in the jurisdictional tributaries.
 - Fish/spawn areas. Explain findings: .
 - Other environmentally-sensitive species. Explain findings: .
 - Aquatic/wildlife diversity. Explain findings: Common Southeastern herptiles were noted .

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

Timothy Creek Relevant Reach 2 Tributary 1

Wetland GGG	32.0574 acres	Abutting	
Wetland III	48.2744 acres	Abutting	
Wetland MMM	31.1715 acres	Abutting	
Wetland CCC	1.0219 acres	Adjacent	150 feet from Tributary 1
Wetland FFF	0.8680 acres	Adjacent	connected to Wetland III by non-jurisdictional man-made conveyance 210 feet in length
Wetland PPPP	1.2525 acres	Adjacent	connected to Tributary 1 by non-jurisdictional man-made conveyance 700 feet in length
Wetland QQQQ	0.9332 acres	Adjacent	775 feet from Wetland GGG

Timothy Creek Relevant Reach 2 Tributary 2

Wetland AA	42.0696 acres	Abutting	
Wetland VVV	16.9238 acres	Abutting	
Wetland UUU	16.2602 acres	Abutting	
Wetland PPP	7.0588 acres	Abutting	
Wetland SSS	18.8864 acres	Abutting	
Wetland OOO	129.9436 acres	Abutting	
Wetland NNN	2.6806 acres	Abutting	
Wetland EEEE	173.4343 acres	Abutting	
Wetland FFFF	1.1200 acres	Abutting	
Wetland OOOO	1.2298 acres	Adjacent	220 feet from Wetland AA
Wetland TTT	6.5175 acres	Adjacent	100 feet to Tributary 2
Wetland RRR	0.4612 acres	Adjacent	connected to Wetland QQQ by non-jurisdictional man-made conveyance 600 feet in length
Wetland QQQ	0.8298 acres	Adjacent	connected to Wetland MMM by non-jurisdictional man-made conveyance 1,400 feet in length
Wetland GGGG	1.6150 acres	Adjacent	connected to Wetland EEEE by non-jurisdictional man-made conveyance 84 feet in length

⁷Ibid.

Timothy Creek Relevant Reach 2 Tributary 3

Wetland YYY	92.6882 acres	Abutting
Wetland HHHH	92.5716 acres	Abutting
Wetland LLLL	13.2609 acres	Abutting
Wetland HHH	15.8223 acres	Abutting
Wetland NNNN	175.7491 acres	Abutting
Wetland SSSS	0.3643 acres	Adjacent
Wetland RRRR	0.2923 acres	Adjacent
Wetland WWW	19.2065 acres	Adjacent
Wetland XXX	0.7319 acres	Adjacent
Wetland KKKK	6.6334 acres	Adjacent
Wetland JJJJ	0.3906 acres	Adjacent
Wetland IIII	48.2503 acres	Adjacent
Wetland AAAA	1.3906 acres	Adjacent

(i) Physical Characteristics:

(a) General Wetland Characteristics:

Properties:

Wetland size: 1,001.9615 acres (Trib 1 – 115.5789 acres, Trib 2 – 419.0306 acres, Trib 3 – 467.3520 acres)

Wetland type. Explain: Palustrine forested

Wetland quality. Explain: Cut over secondary growth

Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

Flow is: **Intermittent flow**. Explain: Seasonal flow.

Surface flow is: **Discrete**

Characteristics:

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

Dye (or other) test performed:

(c) Wetland Adjacency Determination with Non-TNW:

Directly abutting

Timothy Creek Relevant Reach 2 Tributary 1

Wetland GGG	32.0574 acres	Abutting
Wetland III	48.2744 acres	Abutting
Wetland MMM	31.1715 acres	Abutting

Timothy Creek Relevant Reach 2 Tributary 2

Wetland AA	42.0696 acres	Abutting
Wetland VVV	16.9238 acres	Abutting
Wetland UUU	16.2602 acres	Abutting
Wetland PPP	7.0588 acres	Abutting
Wetland SSS	18.8864 acres	Abutting
Wetland OOO	129.9436 acres	Abutting
Wetland NNN	2.6806 acres	Abutting
Wetland EEEE	173.4343 acres	Abutting
Wetland FFFF	1.1200 acres	Abutting

Timothy Creek Relevant Reach 2 Tributary 3

Wetland YYY	92.6882 acres	Abutting
Wetland HHHH	92.5716 acres	Abutting
Wetland LLLL	13.2609 acres	Abutting
Wetland HHH	15.8223 acres	Abutting
Wetland NNNN	175.7491 acres	Abutting

Not directly abutting

Discrete wetland hydrologic connection. Explain: Some are connected via man-made conveyances.

Timothy Creek Relevant Reach 2 Tributary 1

Wetland FFF length	0.8680 acres	Adjacent	connected to Wetland III by non-jurisdictional man-made conveyance 210 feet in
Wetland PPPP length	1.2525 acres	Adjacent	connected to Tributary 1 by non-jurisdictional man-made conveyance 700 feet in

Timothy Creek Relevant Reach 2 Tributary 2

Wetland RRR length	0.4612 acres	Adjacent	connected to Wetland QQQ by non-jurisdictional man-made conveyance 600 feet in
Wetland QQQ in length	0.8298 acres	Adjacent	connected to Wetland MMM by non-jurisdictional man-made conveyance 1,400 feet
Wetland GGGG length	1.6150 acres	Adjacent	connected to Wetland EEEE by non-jurisdictional man-made conveyance 84 feet in

Timothy Creek Relevant Reach 2 Tributary 3

Wetland RRRR in length	0.2923 acres	Adjacent	connected to Wetland WWW by non-jurisdictional man-made conveyance 305 feet
Wetland WWW length	19.2065 acres	Adjacent	connected to Wetland YYY by non-jurisdictional man-made conveyance 292 feet in
Wetland XXX length	0.7319 acres	Adjacent	connected to Tributary 3 by non-jurisdictional man-made conveyance 1,600 feet in
Wetland AAAA length	1.3906 acres	Adjacent	connected to Wetland YYY by non-jurisdictional man-made conveyance 50 feet in

Ecological connection. Explain: Proximity allows for easy ecological transfer between individual wetlands.

Timothy Creek Relevant Reach 2 Tributary 1

Wetland CCC	1.0219 acres	Adjacent	150 feet from Tributary 1
Wetland QQQQ	0.9332 acres	Adjacent	775 feet from Wetland GGG

Timothy Creek Relevant Reach 2 Tributary 2

Wetland OOOO	1.2298 acres	Adjacent	220 feet from Wetland AA
Wetland TTT	6.5175 acres	Adjacent	100 feet to Tributary 2

Timothy Creek Relevant Reach 2 Tributary 3

Wetland IIII	48.2503 acres	Adjacent	situated 75 feet from Tributary 3
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Separated by berm/barrier. Explain: Entire property is criss-crossed with dirt roads that frequently separate similar wetlands.

Timothy Creek Relevant Reach 2 Tributary 3

Wetland SSSS	0.3643 acres	Adjacent	separated from Wetland RRRR by road
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Wetland JJJJ 0.3906 acres Adjacent separated from Wetland IIII by road
Wetland KKKK 6.6334 acres Adjacent separated from Wetland IIII by road

(d) Proximity (Relationship) to TNW
Project wetlands are **10-15** river miles from TNW.
Project waters are **10-15** 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: clear.
Identify specific pollutants, if known: unknown.

(iii) **Biological Characteristics. Wetland supports (check all that apply):** All of the wetlands and tributaries in this relevant reach provide habitat for the same species/diversity.

- Riparian buffer. Characteristics (type, average width): .
- Vegetation type/percent cover. Explain: .
- Habitat for:
 - Federally Listed species. Explain findings: Wood Stork noted foraging in ditches on this property .
 - Fish/spawn areas. Explain findings: .
 - Other environmentally-sensitive species. Explain findings: .
 - Aquatic/wildlife diversity. Explain findings: Common Southeastern herptiles.

3. **Characteristics of all wetlands adjacent to the tributary (if any)**
All wetland(s) being considered in the cumulative analysis: **30 (or more)**
Approximately 1,002.8709 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)

Timothy Creek Relevant Reach 2 Tributary 1

Wetland GGG	Y	32.0574	Wetland III	Y	48.2744
Wetland MMM	Y	31.1715	Wetland CCC	N	1.0219
Wetland FFF	N	0.8680	Wetland PPPP	N	1.2525
Wetland QQQQ	N	0.9332			

Timothy Creek Relevant Reach 2 Tributary 2

Wetland AA	Y	42.0696	Wetland VVV	Y	16.9238
Wetland UUU	Y	16.2602	Wetland PPP	Y	7.0588
Wetland SSS	Y	18.8864	Wetland OOO	Y	129.9436
Wetland NNN	Y	2.6806	Wetland EEEE	Y	173.4343
Wetland FFFF	Y	1.1200	Wetland OOOO	N	1.2298
Wetland TTT	N	6.5175	Wetland RRR	N	0.4612
Wetland QQQ	N	0.8298	Wetland GGGG	N	1.6150

Timothy Creek Relevant Reach 2 Tributary 3

Wetland YYY	Y	92.6882	Wetland HHHH	Y	92.5716
Wetland LLLL	Y	13.2609	Wetland HHH	Y	15.8223
Wetland NNNN	Y	175.7491	Wetland SSSS	N	0.3643
Wetland RRRR	N	0.2923	Wetland WWW	N	19.2065
Wetland XXX	N	0.7319	Wetland KKKK	N	6.6334
Wetland JJJJ	N	0.3906	Wetland IIII	N	48.2503
Wetland AAAA	N	1.3906	Offsite	Y	2.30

Summarize overall biological, chemical and physical functions being performed: The forested palustrine wetlands which are similarly situated and adjacent to the seasonal RPW are collectively performing functions consistent with the following: Biological – wetlands adjacent to the RPW include bottomland swamp wetlands. As such a broad variety of biological functions are being performed which include providing breeding grounds and shelter for aquatic herptile species, foraging areas for wetland dependent bird and mammal species, and important spawning areas for fish species that inhabit the main channel as adults. These wetlands are 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. Chemical - Wetlands in the review area are providing the important collective functions of removal of excess nutrients which are contributed by runoff from the surrounding uplands, reducing nitrogen and phosphorus loading downstream, and effectively preventing oxygen depletion that can result from eutrophication. Some of the wetlands in this review area have been ditched historically (silviculture) which likely has reduced the effectiveness of some of the wetlands' nutrient removal function. Physical – Wetlands in the review area are collectively performing flow maintenance functions including retaining runoff inflow and temporary flood water storage. Flow maintenance results in the reduction of downstream peak flows (discharge and volume), helping to maintain seasonal flow volumes .

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:
4. **Documentation for the Record only: Significant nexus findings for seasonal RPWs and/or wetlands abutting seasonal RPWs:** A significant nexus was conducted on this portion of the subject property since the wetlands are adjacent to, but do not abut Timothy Creek (RPW) that flows away from the project boundary. The subject property is part of the Edisto River Basin which encompasses 30 watersheds and 2 million acres. The Edisto River watershed which includes this portion of the subject property is 78,723 acres in size. The area around the subject property is largely rural, the population is increasing gradually in response to more rapid growth associated with the Charleston metropolitan area. Water quality is generally good, but not pristine since the area is, and has been, subject to intensive silviculture since the 1930's. The Edisto River Basin includes twelve counties, but the general watershed including the subject property is located in Berkeley County. The Berkeley County soil survey, USGS quad maps, and aerial infra-red photos were reviewed to determine how the subject property fits into the context of its relevant

reach, Timothy Creek and the Edisto River. The relevant reach for this portion of the property includes approximately 998,9006 acres of wetlands draining into the Edisto River. These wetlands represent 99% of the wetlands in the 2,001.14 acre drainage area. The subject relevant reach is 9.6 miles from the receiving Edisto River, a TNW. Jurisdictional wetlands on site total 2,415.8758 acres, 1,001.9615 acres are addressed on this JD sheet. 69.0482 acres of isolated, non-jurisdictional wetlands are addressed on JD sheet 7. This JD sheet addresses wetlands GGG, III, MMM, CCC, FFF, PPPP, QQQQ, AA, VVV, UUU, PPP, SSS, OOO, NNN, EEEE, FFFF, OOOO, TTT, RRR, QQQ, GGGG, YYY, HHHH, LLLL, HHH, NNNN,SSSS, RRRR, WWW, XXX, KKKK, JJJ, AAAA, and IIII, which are adjacent to and drain to Timothy Creek, a named tributary to the Edisto River. The Timothy Creek is shown as named blue line stream on the USGS quad map. This feature is approximately 5,000 feet long and visible on aerial photos as line of trees along a ditch, flow was noted on multiple occasions and therefore the tributary was considered to be a RPW. Timothy Creek flows southwest to Four Hole Swamp (RPW) then south to the Edisto River, a TNW which drains into St. Helena Sound and the Atlantic Ocean. Impacts to this relevant reach have been primarily limited to scattered residential homes and intensive long term silvicultural activities in the surrounding uplands. Since the subject property has been subjected to constant silviculture activities, including extensive ditching, vegetation removal, top soil removal, road construction, planting, and harvesting, the water quality and biological integrity have been reduced in comparison to an undisturbed forest. The forested palustrine wetlands which are similarly situated and adjacent to the seasonal RPW are collectively performing functions consistent with the following: Biological – wetlands adjacent to the RPW include bottomland swamp and depressional wetlands. As such a broad variety of biological functions are being performed which include providing breeding grounds and shelter for aquatic species, foraging areas for wetland dependent species, and important spawning areas for fish species that inhabit the main channel as adults. These wetlands are 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. Chemical - Wetlands in the review area are providing the important collective functions of removal of excess nutrients which are contributed by runoff from the surrounding uplands, reducing nitrogen and phosphorus loading downstream, and effectively preventing oxygen depletion that can result from eutrophication. Some of the adjacent wetlands in this review area have been ditched which likely has reduced the effectiveness of some of the wetlands' nutrient removal function. Physical – Wetlands in the review area are collectively performing flow maintenance functions including retaining runoff inflow and temporary flood water storage. Flow maintenance results in the reduction of downstream peak flows (discharge and volume), helping to maintain seasonal flow volumes. Based on the collective functions described above and their importance to the biological, chemical, and physical integrity of the traditional navigable waters of the Edisto River, this office has determined that there is a Significant Nexus between the review area Relevant Reach and its adjacent wetlands and the downstream TNW .

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: Three seasonal tributaries (man-made) connecting wetlands to Timothy Creek and displaying active flow, recent evidence of active flow and an ordinary high water mark were determined to be jurisdictional. These features are 15 feet wide and 5 feet deep and are identified on the survey as a series of sections independently identified.

Provide estimates for jurisdictional waters in the review area (check all that apply):

- Tributary waters: **40,200** linear feet 15 width (ft). (Tributary 1 – 10,000 ft., Tributary 2 – 13, 200 ft., Tributary 3 – 17,000 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: .

⁸See Footnote # 3.

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: Abutting wetlands either directly border the seasonal tributary or in some cases the seasonal tributary is cutting directly through the wetland.

Provide acreage estimates for jurisdictional wetlands in the review area: **908.8527** acres.

Timothy Creek Relevant Reach 2 Tributary 1

Wetland GGG	32.0574	Wetland III	48.2744
Wetland MMM	31.1715		

Timothy Creek Relevant Reach 2 Tributary 2

Wetland AA	42.0696	Wetland VVV	16.9238
Wetland UUU	16.2602	Wetland PPP	7.0588
Wetland SSS	18.8864	Wetland OOO	129.9436
Wetland NNN	2.6806	Wetland EEEE	173.4343
Wetland FFFF	1.1200		

Timothy Creek Relevant Reach 2 Tributary 3

Wetland YYY	92.6882	Wetland HHHH	92.5716
Wetland LLL	13.2609	Wetland HHH	15.8223
Wetland NNNN	175.7491		

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: **91.9888** acres.

Timothy Creek Relevant Reach 2 Tributary 1

Wetland CCC	1.0219	Wetland FFF	0.8680
Wetland PPPP	1.2525	Wetland QQQQ	0.9332

Timothy Creek Relevant Reach 2 Tributary 2

Wetland OOOO	1.2298	Wetland RRR	0.4612
Wetland TTT	6.5175	Wetland GGGG	1.6150
Wetland QQQ	0.8298		

Timothy Creek Relevant Reach 2 Tributary 3

Wetland SSSS	0.3643	Wetland AAAA	1.3906
Wetland RRRR	0.2923	Wetland WWW	19.2065
Wetland XXX	0.7319	Wetland KKKK	6.6334
Wetland JJJJ	0.3906	Wetland IIII	48.2503

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).

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): There are approximately 62,331 feet of upland-dug non-jurisdictional ditches found on this portion of the property. These features range from roadside ditches approximately 2 feet deep and three feet wide to surface drainage ditches 4 feet deep and 10 feet wide. These upland cut ditches did not show active flow, evidence of recent flow or an ordinary high water mark and were therefore 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.

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.

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: Adam Bradshaw/Newkirk Environmental, Inc.
- Data sheets prepared/submitted by or on behalf of the applicant/consultant. Adam Bradshaw/Newkirk Environmental, Inc.
 - 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: Pringletown.
- USDA Natural Resources Conservation Service Soil Survey. Citation: Berkeley County Soil Survey, pages 51, 52, 62.
- National wetlands inventory map(s). Cite name: Pringletown 11204:27 .
- State/Local wetland inventory map(s): .
- FEMA/FIRM maps: .
- 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- Photographs: Aerial (Name & Date): 99:11204:27.
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: This JD form documents the jurisdictional status of 1,001.9615 acres of wetlands on the subject property as well as 2.30 acres off site. Additionally, three man-made conveyances connecting wetlands to Timothy Creek and displaying active flow, recent evidence of active flow and an ordinary high water mark were determined to be jurisdictional tributaries. These tributaries are 15 feet wide and 5 feet deep. Non-jurisdictional freshwater wetlands (69.0482 acres) are discussed on Form 7 of 7. The jurisdictional wetlands drain to Timothy Creek (RPW) southwest to Four Hole Swamp (RPW) and then south to the Edisto River, a TNW. The three tributaries are seasonal, therefore a Significant Nexus Determination was performed. This SND includes wetlands on site as well as those associated more closely with Timothy Creek drain to the Edisto River drainage outside of the project boundary. Based on the documentation provided in Section III, C of this form, the nexus between the unnamed tributary and adjacent wetlands and the Edisto River, the downstream TNW, is a Significant Nexus and on this basis all wetlands documented on this form are within the jurisdiction of the Clean Water Act.