

APPROVED JURISDICTIONAL DETERMINATION FORM

U.S. Army Corps of Engineers

Form 1 of 7 Relevant Reach Timothy Creek 1

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: linear feet: width (ft) and/or 4.2646 acres.
Wetlands: 1,187.8306 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 83,108 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. Of the 50 non-jurisdictional ditches in this relevant reach, 2 act as a connection between the wetlands and a tributary. These are: Wetland B to Tributary 1 – 2,250 feet long and Wetland I to Tributary 1 – 500 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: 2,847.76 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

(ii) Physical Characteristics:

Timothy Creek Relevant Reach 1 Tributary 1 – 18,250 feet x 15 feet x 5 feet

Timothy Creek Relevant Reach 1 Tributary 2 – 1,400 feet x 15 feet x 5 feet

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

(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: 15 feet
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 |
| <input type="checkbox"/> sediment deposition | <input type="checkbox"/> multiple observed or predicted flow events |
| <input type="checkbox"/> water staining | <input type="checkbox"/> abrupt change in plant community |
| <input type="checkbox"/> other (list): | |
| <input type="checkbox"/> Discontinuous OHWM. ⁷ Explain: . | |

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.

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.

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

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

(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 1 Tributary 1

| | | |
|-------------------|-----------------------|-----------------|
| Wetland U | 68.1329 acres | Abutting |
| Wetland V | 106.4217 acres | Abutting |
| Wetland TT | 1.1738 acres | Abutting |
| Wetland SS | 5.0171 acres | Abutting |
| Wetland L | 153.3962 acres | Abutting |
| Wetland QQ | 11.7879 acres | Abutting |
| Wetland PP | 42.3879 acres | Abutting |
| Wetland K | 8.6635 acres | Abutting |
| Wetland J | 6.0518 acres | Abutting |
| Wetland LL | 35.4477 acres | Abutting |
| Wetland JJ | 44.9053 acres | Abutting |
| Wetland G | 0.5132 acres | Abutting |
| Wetland F | 14.2932 acres | Abutting |
| Wetland E | 28.0947 acres | Abutting |
| Wetland HH | 21.9566 acres | Abutting |
| Wetland Y | 1.6947 acres | Adjacent |
| Wetland X | 0.8657 acres | Adjacent |
| Wetland W | 4.3548 acres | Adjacent |
| Wetland VV | 54.2743 acres | Adjacent |
| Wetland UU | 9.0833 acres | Adjacent |
| Wetland T | 0.8035 acres | Adjacent |
| Wetland S | 10.0388 acres | Adjacent |
| Wetland R | 1.0517 acres | Adjacent |
| Wetland I | 0.1454 acres | Adjacent |
| Wetland Q | 0.1924 acres | Adjacent |
| Wetland M | 62.0638 acres | Adjacent |
| Wetland N | 21.8248 acres | Adjacent |
| Wetland O | 0.1215 acres | Adjacent |
| Wetland P | 2.5017 acres | Adjacent |
| Wetland H | 0.7648 acres | Adjacent |
| Wetland C | 0.8155 acres | Adjacent |
| Wetland D | 0.5563 acres | Adjacent |
| Wetland B | 6.3472 acres | Adjacent |
| Wetland A | 2.0269 acres | Adjacent |
| Wetland BB | 10.6223 acres | Adjacent |
| Wetland CC | 7.0819 acres | Adjacent |
| Wetland DD | 4.1963 acres | Adjacent |
| Wetland EE | 1.2655 acres | Adjacent |

| | | |
|------------|---------------|----------|
| Wetland FF | 37.5594 acres | Adjacent |
| Wetland GG | 0.3770 acres | Adjacent |
| Wetland II | 0.4173 acres | Adjacent |

Timothy Creek Relevant Reach 1 Tributary 2

| | | |
|-------------|---------------|----------|
| Wetland DDD | 10.4622 acres | Abutting |
| Wetland MM | 59.4594 acres | Abutting |
| Wetland ZZ | 6.1721 acres | Abutting |
| Wetland BBB | 20.0746 acres | Adjacent |
| Wetland EEE | 37.1367 acres | Adjacent |
| Wetland OO | 61.6249 acres | Adjacent |
| Wetland RR | 76.1920 acres | Adjacent |
| Wetland JJJ | 61.1577 acres | Adjacent |
| Wetland KKK | 16.5714 acres | Adjacent |
| Wetland LLL | 49.6893 acres | Adjacent |

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: 1,182.8306 acres

Wetland type. Explain: Palustrine forested

Wetland quality. Explain: Relatively high secondary growth

Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

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

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 1 Tributary 1

| | | |
|------------|----------------|----------|
| Wetland U | 68.1329 acres | Abutting |
| Wetland V | 106.4217 acres | Abutting |
| Wetland TT | 1.1738 acres | Abutting |
| Wetland SS | 5.0171 acres | Abutting |
| Wetland L | 153.3962 acres | Abutting |
| Wetland QQ | 11.7879 acres | Abutting |
| Wetland PP | 42.3879 acres | Abutting |
| Wetland K | 8.6635 acres | Abutting |
| Wetland J | 6.0518 acres | Abutting |
| Wetland LL | 35.4477 acres | Abutting |
| Wetland JJ | 44.9053 acres | Abutting |
| Wetland G | 0.5132 acres | Abutting |
| Wetland F | 14.2932 acres | Abutting |
| Wetland E | 28.0947 acres | Abutting |
| Wetland HH | 21.9566 acres | Abutting |

Timothy Creek Relevant Reach 1 Tributary 2

| | | |
|-------------|---------------|----------|
| Wetland DDD | 10.4622 acres | Abutting |
| Wetland MM | 59.4594 acres | Abutting |
| Wetland ZZ | 6.1721 acres | Abutting |

Not directly abutting

Discrete wetland hydrologic connection. Explain: The wetlands listed below are connected to other jurisdictional wetlands or jurisdictional tributary by upland dug non-jurisdictional conveyances.

Timothy Creek Relevant Reach 1 Tributary 1

| | | |
|-------------------|----------------------|-----------------|
| Wetland Y | 1.6947 acres | Adjacent |
| Wetland X | 0.8657 acres | Adjacent |
| Wetland W | 4.3548 acres | Adjacent |
| Wetland R | 1.0517 acres | Adjacent |
| Wetland I | 0.1454 acres | Adjacent |
| Wetland B | 6.3472 acres | Adjacent |
| Wetland A | 2.0269 acres | Adjacent |
| Wetland BB | 10.6223 acres | Adjacent |
| Wetland GG | 0.3770 acres | Adjacent |
| Wetland II | 0.4173 acres | Adjacent |

Ecological connection. Explain: The wetlands listed below are in close proximity to other jurisdictional wetlands and are assumed to have a biological connection.

Timothy Creek Relevant Reach 1 Tributary 1

| | | |
|-------------------|----------------------|---------------------------|
| Wetland VV | 54.2743 acres | 150' to Wetland UU |
| Wetland UU | 9.0833 acres | 150' to Wetland V |
| Wetland T | 0.8035 acres | 650' to Wetland L |
| Wetland C | 0.8155 acres | 158' to Wetland B |
| Wetland D | 0.5563 acres | 250' to Wetland E |
| Wetland EE | 1.2655 acres | 150' to Wetland FF |
| Wetland FF | 37.5594 acres | 60' to Tributary 1 |

Timothy Creek Relevant Reach 1 Tributary 2

| | | |
|--------------------|----------------------|----------------------------|
| Wetland BBB | 20.0746 acres | 150' to Wetland ZZ |
| Wetland LLL | 49.6893 acres | 160' to Wetland KKK |

Separated by berm/barrier. Explain: The wetlands listed below are part of a larger jurisdictional wetland but have been separated by a road.

Timothy Creek Relevant Reach 1 Tributary 1

| | | |
|-------------------|----------------------|---------------------------|
| Wetland S | 10.0388 acres | Part of Wetland L |
| Wetland Q | 0.1924 acres | Part of Wetland L |
| Wetland M | 62.0638 acres | Part of Wetland L |
| Wetland N | 21.8248 acres | Part of Wetland L |
| Wetland O | 0.1215 acres | Part of Wetland N |
| Wetland P | 2.5017 acres | Part of Wetland N |
| Wetland H | 0.7648 acres | Part of Wetland N |
| Wetland CC | 7.0819 acres | Part of Wetland BB |
| Wetland DD | 4.1963 acres | Part of Wetland BB |

Timothy Creek Relevant Reach 1 Tributary 2

| | | |
|--------------------|----------------------|---------------------------|
| Wetland EEE | 37.1367 acres | Part of Wetland OO |
| Wetland OO | 61.6249 acres | Part of Wetland MM |
| Wetland RR | 76.1920 acres | Part of Wetland OO |
| Wetland JJJ | 61.1577 acres | Part of Wetland RR |
| Wetland KKK | 16.5714 acres | Part of Wetland RR |

- (d) Proximity (Relationship) to TNW
 Project wetlands are **5-10** river miles from TNW.
 Project waters are **5-10** 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):**

- 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: 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 1248.6406 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 1 Tributary 1

| | | |
|------------|----------------|----------|
| Wetland U | 68.1329 acres | Abutting |
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| Wetland TT | 1.1738 acres | Abutting |
| Wetland SS | 5.0171 acres | Abutting |
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| Wetland VV | 54.2743 acres | Adjacent |
| Wetland UU | 9.0833 acres | Adjacent |
| Wetland T | 0.8035 acres | Adjacent |
| Wetland S | 10.0388 acres | Adjacent |
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| Wetland D | 0.5563 acres | Adjacent |
| Wetland B | 6.3472 acres | Adjacent |
| Wetland A | 2.0269 acres | Adjacent |
| Wetland BB | 10.6223 acres | Adjacent |

| | | |
|------------|---------------|----------|
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| Wetland DD | 4.1963 acres | Adjacent |
| Wetland EE | 1.2655 acres | Adjacent |
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Timothy Creek Relevant Reach 1 Tributary 2

| | | |
|-------------|---------------|----------|
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| Wetland JJJ | 61.1577 acres | Adjacent |
| Wetland KKK | 16.5714 acres | Adjacent |
| Wetland LLL | 49.6893 acres | Adjacent |

Offsite wetlands 65.81 Abutting

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 seasonal 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 or abut seasonal RPWs associated with 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 1,248 acres of wetlands draining into the Edisto River. These wetlands represent 95% of the wetlands in the 2,847.76 acre drainage area. The subject relevant reach is 9.6 miles from the receiving Edisto River, a TNW. 1,188.5794 acres of jurisdictional wetlands are addressed on this JD sheet. 45.7632 acres of jurisdictional wetlands in a different drainage area are addressed on JD sheet 2 and 69.0482 acres of isolated, non-jurisdictional wetlands are addressed on JD sheet 7. This JD sheet addresses wetlands A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, BB, CC, DD, EE, FF, GG, HH, II, JJ, KK, LL, MM, NN, OO, PP, QQ, RR, SS, TT, UU, VV, ZZ, AAA, BBB, DDD, EEE, JJJ, KKK, and LLL, 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 1.49 miles long and visible on aerial photos as both a line of trees along a ditch and a broad band of wetland vegetation in the lower segment, 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 perennial 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: Timothy Creek is shown as a named, blue line stream on the USGS Quad map. However, it has been channelized on the subject property and very little flow was noted during field visits. Evidence of seasonal flow was noted via debris lines and scour. Two 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. These features are 15 feet wide and 5 feet deep and are identified as Timothy Creek Relevant Reach 1 Tributary 1 and 2. Both are seasonal RPW’s.

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

- Tributary waters: **19,650** linear feet 15 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: The fifteen wetlands listed below border the RPWs. The man-made tributaries were excavated from these wetlands.

Timothy Creek Relevant Reach 1 Tributary 1

| | | |
|-------------------|-----------------------|-----------------|
| Wetland U | 68.1329 acres | Abutting |
| Wetland V | 106.4217 acres | Abutting |
| Wetland TT | 1.1738 acres | Abutting |
| Wetland SS | 5.0171 acres | Abutting |
| Wetland L | 153.3962 acres | Abutting |
| Wetland QQ | 11.7879 acres | Abutting |
| Wetland PP | 42.3879 acres | Abutting |
| Wetland K | 8.6635 acres | Abutting |
| Wetland J | 6.0518 acres | Abutting |
| Wetland LL | 35.4477 acres | Abutting |
| Wetland JJ | 44.9053 acres | Abutting |
| Wetland G | 0.5132 acres | Abutting |
| Wetland F | 14.2932 acres | Abutting |
| Wetland E | 28.0947 acres | Abutting |
| Wetland HH | 21.9566 acres | Abutting |

Timothy Creek Relevant Reach 1 Tributary 2

| | | |
|--------------------|----------------------|-----------------|
| Wetland DDD | 10.4622 acres | Abutting |
| Wetland MM | 59.4594 acres | Abutting |
| Wetland ZZ | 6.1721 acres | Abutting |

Provide acreage estimates for jurisdictional wetlands in the review area: **624.3372** acres.

⁸See Footnote # 3.

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.

Timothy Creek Relevant Reach 1 Tributary 1

| | | |
|------------|---------------|----------|
| Wetland Y | 1.6947 acres | Adjacent |
| Wetland X | 0.8657 acres | Adjacent |
| Wetland W | 4.3548 acres | Adjacent |
| Wetland VV | 54.2743 acres | Adjacent |
| Wetland UU | 9.0833 acres | Adjacent |
| Wetland T | 0.8035 acres | Adjacent |
| Wetland S | 10.0388 acres | Adjacent |
| Wetland R | 1.0517 acres | Adjacent |
| Wetland I | 0.1454 acres | Adjacent |
| Wetland Q | 0.1924 acres | Adjacent |
| Wetland M | 62.0638 acres | Adjacent |
| Wetland N | 21.8248 acres | Adjacent |
| Wetland O | 0.1215 acres | Adjacent |
| Wetland P | 2.5017 acres | Adjacent |
| Wetland H | 0.7648 acres | Adjacent |
| Wetland C | 0.8155 acres | Adjacent |
| Wetland D | 0.5563 acres | Adjacent |
| Wetland B | 6.3472 acres | Adjacent |
| Wetland A | 2.0269 acres | Adjacent |
| Wetland BB | 10.6223 acres | Adjacent |
| Wetland CC | 7.0819 acres | Adjacent |
| Wetland DD | 4.1963 acres | Adjacent |
| Wetland EE | 1.2655 acres | Adjacent |
| Wetland FF | 37.5594 acres | Adjacent |
| Wetland GG | 0.3770 acres | Adjacent |
| Wetland II | 0.4173 acres | Adjacent |

Timothy Creek Relevant Reach 1 Tributary 2

| | | |
|-------------|---------------|----------|
| Wetland BBB | 20.0746 acres | Adjacent |
| Wetland EEE | 37.1367 acres | Adjacent |
| Wetland OO | 61.6249 acres | Adjacent |
| Wetland RR | 76.1920 acres | Adjacent |
| Wetland JJJ | 61.1577 acres | Adjacent |
| Wetland KKK | 16.5714 acres | Adjacent |
| Wetland LLL | 49.6893 acres | Adjacent |

Provide acreage estimates for jurisdictional wetlands in the review area: **558.4934** 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).

⁹ To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

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 83,108 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. Since these ditches did not display flow, evidence of recent flow or an ordinary high water mark, they 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: 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.

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.

- 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 Geodetic 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 1,187.8306 acres of wetlands on the subject property as well as 65.81 acres off site. Additionally, two 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 include Timothy Creek Relevant Reach 1 tributary 1 which is 18,250 feet in length and Timothy Creek Relevant Reach 1 tributary 2 which is 1,400 feet in length. These features 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. 558.4934 acres of the jurisdictional wetlands are non-abutting seasonal RPWs, 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. Fifty-seven isolated, depressionial wetlands were noted on the portion of the subject property associated with the Timothy Creek drainage. These non-jurisdictional features are addressed on Jurisdictional Determination Sheet 7 of 7.**