

**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): 26 February 2016**

**B. DISTRICT OFFICE, FILE NAME, AND NUMBER:** Galveston District, SWG-2010-00942, Dan O'Neal, Upland

**C. PROJECT LOCATION AND BACKGROUND INFORMATION:**

State: Texas County/Parish: Liberty City: northeast of Devers

Center coordinates of site (lat/long in degree decimal format, NAD-83): Lat. 30.058000 ° N, Long. 94.518180 ° W;

Universal Transverse Mercator: UTM: 15, 3326184 N., 353652 E., NAD: 83

Name of nearest water body: Willow Creek

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: None

Name of watershed or Hydrologic Unit Code (HUC): Pine Island Bayou -- 12020007

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: 13 February 2016

Field Determination. Date(s): 7 January 2014, 17 October 2014, 20 May 2015, 8 July 2015, 8 October 2015, 6 January 2016, 7 January 2016

**SECTION II: SUMMARY OF FINDINGS**

**A. RHA SECTION 10 DETERMINATION OF JURISDICTION.**

There **Are no** "navigable waters of the U.S." within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. **[Required]**

Waters subject to the ebb and flow of the tide.

Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.  
Explain:

**B. CWA SECTION 404 DETERMINATION OF JURISDICTION.**

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

**1. Waters of the U.S.**

**a. Indicate presence of waters of U.S. in review area (check all that apply):<sup>1</sup>**

- TNWs, including territorial seas
- Wetlands adjacent to TNWs
- Relatively permanent waters<sup>2</sup> (RPWs) that flow directly or indirectly into TNWs
- Non-RPWs that flow directly or indirectly into TNWs
- Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
- Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
- Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
- Impoundments of jurisdictional waters
- Isolated (interstate or intrastate) waters, including isolated wetlands

**b. Identify (estimate) size of waters of the U.S. in the review area:**

Non-wetland waters: linear feet: width (ft) and/or acres

Wetlands: acres

**c. Limits (boundaries) of jurisdiction based on: **Pick List****

Elevation of established OHWM (if known):

**2. Non-regulated waters/wetlands (check if applicable):<sup>3</sup>**

Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.  
Explain:

<sup>1</sup> Boxes checked below shall be supported by completing the appropriate sections in Section III below.

<sup>2</sup> 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).

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

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

**(i) General Area Conditions:**

Watershed size: **Pick List**  
Drainage area: **Pick List**  
Average annual rainfall: inches  
Average annual snowfall: inches

**(ii) Physical Characteristics:**

**(a) Relationship with TNW:**

- Tributary flows directly into TNW.
- Tributary flows through **Pick List** tributaries before entering TNW.

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

Identify flow route to TNW<sup>5</sup>:  
Tributary stream order, if known:

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

<sup>5</sup> Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

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

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

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

- Average width:       feet  
Average depth:       feet  
Average side slopes: **Pick List**

**Primary tributary substrate composition (check all that apply):**

- |  |  |                                   |
|--|--|-----------------------------------|
| <input type="checkbox"/> Silts           | <input 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:**

**Presence of run/riffle/pool complexes. Explain:**

**Tributary geometry: Pick List**

**Tributary gradient (approximate average slope):**       %

(c) Flow:

**Tributary provides for: Pick List**

**Estimate average number of flow events in review area/year: Pick List**

Describe flow regime:

**Other information on duration and volume:**

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

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

- Dye (or other) test performed:

**Tributary has (check all that apply):**

- |   |   |
|---|---|
| <input type="checkbox"/> Bed and banks  |   |
| <input type="checkbox"/> OHWM <sup>6</sup> (check all indicators that apply): |   |
| <input type="checkbox"/> clear, natural line impressed on the bank            | <input 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 type="checkbox"/> vegetation matted down, bent, or absent              | <input type="checkbox"/> sediment sorting                           |
| <input 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. <sup>7</sup> Explain:            |   |

**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:

Identify specific pollutants, if known:

<sup>6</sup>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 water body'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.

<sup>7</sup>Ibid.

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

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

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

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: \_\_\_\_\_ acres

Wetland type. Explain:

Wetland quality. Explain:

Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

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

Surface flow is: **Pick List**

Characteristics:

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

- Dye (or other) test performed:

(c) Wetland Adjacency Determination with Non-TNW:

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

(d) Proximity (Relationship) to TNW

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

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

Flow is from: **Pick List**.

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

(ii) **Chemical Characteristics:**

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

Identify specific pollutants, if known:

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

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

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

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

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

For each wetland, specify the following:

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

Summarize overall biological, chemical and physical functions being performed:

### C. SIGNIFICANT NEXUS DETERMINATION

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

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

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

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

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:
2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:
3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

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

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:  
 TNWs:      linear feet      width (ft), Or,      acres.  
 Wetlands adjacent to TNWs:      acres.
2. **RPWs that flow directly or indirectly into TNWs.**  
 Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:  
 Tributaries of TNW where tributaries have continuous flow “seasonally” (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

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

- Tributary waters: linear feet width (ft)
- Other non-wetland waters: acres

Identify type(s) of waters:

**3. Non-RPWs<sup>8</sup> that flow directly or indirectly into TNWs.**

- Water body 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.**

- 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.<sup>9</sup>**

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):<sup>10</sup>**

- 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:**

<sup>8</sup>See Footnote # 3.

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

<sup>10</sup> 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.

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

- Tributary waters: linear feet width (ft)
- Other non-wetland waters: acres
- Identify type(s) of waters:
- Wetlands: acres

**F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):**

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

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource:
- Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the “Significant Nexus” standard, where such a finding is required for jurisdiction (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource:
- Wetlands: acres.

**SECTION IV: DATA SOURCES.**

**A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):**

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: **H&Y Environmental**
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - Office concurs with data sheets/delineation report.
  - Office does not concur with data sheets/delineation report
- Data sheets prepared by the Corps: **7 January 2014, 17 October 2014, 20 May 2015, 8 October 2015**
- Corps navigable waters’ study:
- U.S. Geological Survey Hydrologic Atlas: **Pine Island Bayou -- 12020007**
  - USGS NHD data
  - USGS 8 and 12 digit HUC maps
- Galveston District’s Approved List of Navigable Waters
- U.S. Geological Survey map(s). Cite scale & quad name: **1984 Nome, Tex. and 1984 Devers, Tex. USGS Quadrangle Maps**
- USDA Natural Resources Conservation Service Soil Survey. Citation:
- National wetlands inventory map(s). Cite name: **NWI Mapper**
- State/Local wetland inventory map(s):
- FEMA/FIRM maps: **Liberty County, Texas Panels 500 and 525 of 675 dated 2 May 2008**
- 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- Photographs:  Aerial (Name & Date): **Google Earth 1995-2015**  
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:**

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

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**SECTION I: BACKGROUND INFORMATION**

**A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): 26 February 2016**

**B. DISTRICT OFFICE, FILE NAME, AND NUMBER:** Galveston District, SWG-2010-00942, Dan O'Neal, Batiste Creek Mitigation Bank, Wetlands 1B, 2A, 2B and 19A

**C. PROJECT LOCATION AND BACKGROUND INFORMATION:**

State: Texas County/Parish: Liberty City: northeast of Devers  
Center coordinates of site (lat/long in degree decimal format, NAD-83): Lat. see page 9 ° N, Long. see page 9 ° W;  
Universal Transverse Mercator: UTM: 15, see page 9 N., see page 9 E., NAD: 83  
Name of nearest water body: Batiste Creek  
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: None  
Name of watershed or Hydrologic Unit Code (HUC): Pine Island Bayou -- 12020007

- 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: 13 February 2016  
 Field Determination. Date(s): 7 January 2014, 17 October 2014, 20 May 2015, 8 July 2015, 8 October 2015, 6 January 2016, 7 January 2016

**SECTION II: SUMMARY OF FINDINGS**

**A. RHA SECTION 10 DETERMINATION OF JURISDICTION.**

There **Are no** "navigable waters of the U.S." within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. **[Required]**

- Waters subject to the ebb and flow of the tide.  
 Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.  
Explain:

**B. CWA SECTION 404 DETERMINATION OF JURISDICTION.**

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

**1. Waters of the U.S.**

**a. Indicate presence of waters of U.S. in review area (check all that apply):<sup>1</sup>**

- TNWs, including territorial seas  
 Wetlands adjacent to TNWs  
 Relatively permanent waters<sup>2</sup> (RPWs) that flow directly or indirectly into TNWs  
 Non-RPWs that flow directly or indirectly into TNWs  
 Wetlands directly abutting RPWs that flow directly or indirectly into TNWs  
 Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs  
 Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs  
 Impoundments of jurisdictional waters  
 Isolated (interstate or intrastate) waters, including isolated wetlands

**b. Identify (estimate) size of waters of the U.S. in the review area:**

Non-wetland waters: linear feet: width (ft) and/or acres  
Wetlands: acres

**c. Limits (boundaries) of jurisdiction based on: **Pick List****

Elevation of established OHWM (if known):

**2. Non-regulated waters/wetlands (check if applicable):<sup>3</sup>**

- Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.  
Explain: The nearest water of the United States is Batiste Creek, which is a perennial relatively permanent water. The nearest traditional navigable water is Pine Island Bayou, which is located approximately 16.5 river miles downstream and 7.85 aerial

<sup>1</sup> Boxes checked below shall be supported by completing the appropriate sections in Section III below.

<sup>2</sup> 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).

<sup>3</sup> Supporting documentation is presented in Section III.F.

miles east-northeast of the project site. Wetland 1B is a mosaic scrub-shrub wetland that is approximately 45% wetland. A large portion of Wetland 1B is within the 100-year floodplain of Batiste Creek and is adjacent to the creek. Due to the mosaic nature of the wetland with small wetland depressions dispersed in uplands, the entire wetland was not adjacent to Batiste Creek. Wetland 1B is located approximately 1,230 feet southwest of Batiste Creek. Wetland 2A is a mosaic scrub-shrub wetland that is approximately 45% wetland. A small portion of Wetland 2A is within the 100-year floodplain of Batiste Creek and is adjacent to the creek. Due to the mosaic nature of the wetland with small wetland depressions dispersed in uplands, the entire wetland was not adjacent to Batiste Creek. Wetland 2A is located approximately 800 feet southwest of Batiste Creek. Wetland 2B is a solid emergent wetland within the mosaic Wetland 2A. Wetland 2B is located approximately 1,115 feet southwest of Batiste Creek. Wetland 19A is an emergent wetland and is located approximately 555 feet south of Batiste Creek. There are no known hydrological connections between Wetlands 1B, 2A, 2B, and 19A and Batiste Creek or Pine Island Bayou. There are no confined hydrologic connections between Wetlands 1B, 2A, 2B, and 19A and any water of the United States. Wetlands 1B, 2A, 2B, and 19A are isolated and are not waters of the United States, as defined in 33 CFR 328.3(a). Wetlands 1B, 2A, 2B, and 19A are not currently used, or were used in the past, nor are susceptible to use for interstate or foreign commerce. Wetlands 1B, 2A, 2B, and 19A are not subject to the ebb and flow of the daily tide. Wetlands 1B, 2A, 2B, and 19A do not cross interstate or tribal boundaries. The destruction of Wetlands 1B, 2A, 2B, and 19A (intrastate wetlands) would not affect interstate or foreign travelers for recreational or other purposes, would not affect fish or shellfish that could be taken and sold in interstate or foreign commerce, and would not affect the current use or potential use for industrial purposes by industries in interstate commerce. Wetlands 1B, 2A, 2B, and 19A are not impoundments of a water of the United States. Wetlands 1B, 2A, 2B, and 19A are not part of a surface tributary system of any of the above. Wetlands 1B, 2A, 2B, and 19A are not part of the territorial seas. Wetlands 1B, 2A, 2B, and 19A are not adjacent to waters identified in any of the above. Wetlands 1B, 2A, 2B, and 19A have been determined by the Galveston District to NOT be adjacent, (bordering, contiguous, or neighboring) as defined by 33 CFR 328.3(c). Wetlands 1B, 2A, 2B, and 19A are located out of the 100-year floodplain of any water of the United States and do not have a confined hydrological surface connection to any water of the United States. Wetlands 1B, 2A, 2B, and 19A are isolated wetlands as defined in 33 CFR 330.2(e): those non-tidal waters of the United States that are not part of a surface tributary system to interstate or navigable waters of the United States, and are not adjacent to such tributary waterbodies. Wetlands 1B, 2A, 2B, and 19A have been determined not to be "ecologically adjacent", as defined in the Rapanos guidance as being "reasonably close" such that an ecologic interconnectivity is beyond speculation or insubstantial. There are no known species in this georegion that require both the subject wetlands and the nearest waterbody (a water of the United States other than an adjacent wetland) to fulfill spawning and/or life cycle requirements. The wetlands were identified using the Atlantic and Gulf Coastal Plain Region Supplement of the 1987 Corps of Engineers Wetland Delineation Manual which under normal circumstances exhibit a dominance of hydrophytic vegetation, wetland hydrology indicators and hydric soils.

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

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

**(i) General Area Conditions:**

Watershed size: **Pick List**

Drainage area: **Pick List**

Average annual rainfall: inches

Average annual snowfall: inches

**(ii) Physical Characteristics:**

**(a) Relationship with TNW:**

Tributary flows directly into TNW.

Tributary flows through **Pick List** tributaries before entering TNW.

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

Project waters are **Pick List** river miles from RPW.

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

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

Project waters cross or serve as state boundaries. Explain:

Identify flow route to TNW<sup>5</sup>:

Tributary stream order, if known:

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

<sup>5</sup> Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

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

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

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

- Average width:       feet  
Average depth:       feet  
Average side slopes: **Pick List**

Primary tributary substrate composition (check all that apply):

- |  |  |                                   |
|--|--|-----------------------------------|
| <input type="checkbox"/> Silts           | <input 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:

Presence of run/riffle/pool complexes. Explain:

Tributary geometry: **Pick List**

Tributary gradient (approximate average slope):        %

(c) Flow:

Tributary provides for: **Pick List**

Estimate average number of flow events in review area/year: **Pick List**

Describe flow regime:

Other information on duration and volume:

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

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

- Dye (or other) test performed:

Tributary has (check all that apply):

- |   |   |
|---|---|
| <input type="checkbox"/> Bed and banks  |   |
| <input type="checkbox"/> OHWM <sup>6</sup> (check all indicators that apply): |   |
| <input type="checkbox"/> clear, natural line impressed on the bank            | <input 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 type="checkbox"/> vegetation matted down, bent, or absent              | <input type="checkbox"/> sediment sorting                           |
| <input 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. <sup>7</sup> Explain:            |   |

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:

Identify specific pollutants, if known:

<sup>6</sup>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 water body'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.

<sup>7</sup>Ibid.

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

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

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

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: \_\_\_\_\_ acres

Wetland type. Explain:

Wetland quality. Explain:

Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

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

Surface flow is: **Pick List**

Characteristics:

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

- Dye (or other) test performed:

(c) Wetland Adjacency Determination with Non-TNW:

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

(d) Proximity (Relationship) to TNW

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

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

Flow is from: **Pick List**.

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

(ii) **Chemical Characteristics:**

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

Identify specific pollutants, if known:

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

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

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

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

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

For each wetland, specify the following:

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

Summarize overall biological, chemical and physical functions being performed:

### C. SIGNIFICANT NEXUS DETERMINATION

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

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

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

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

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:
2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:
3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

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

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:  
 TNWs:      linear feet      width (ft), Or,      acres.  
 Wetlands adjacent to TNWs:      acres.
2. **RPWs that flow directly or indirectly into TNWs.**  
 Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:  
 Tributaries of TNW where tributaries have continuous flow “seasonally” (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

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

- Tributary waters: linear feet width (ft)
- Other non-wetland waters: acres

Identify type(s) of waters:

**3. Non-RPWs<sup>8</sup> that flow directly or indirectly into TNWs.**

- Water body 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.**

- 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.<sup>9</sup>**

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):<sup>10</sup>**

- 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:**

<sup>8</sup>See Footnote # 3.

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

<sup>10</sup> 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.

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: **9.4** 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: **H&T Environmental**
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - Office concurs with data sheets/delineation report.
  - Office does not concur with data sheets/delineation report
- Data sheets prepared by the Corps: **7 January 2014, 17 October 2014, 20 May 2015, 8 October 2015**
- Corps navigable waters' study:
- U.S. Geological Survey Hydrologic Atlas: **Pine Island Bayou -- 12020007**
  - USGS NHD data
  - USGS 8 and 12 digit HUC maps
- Galveston District's Approved List of Navigable Waters
- U.S. Geological Survey map(s). Cite scale & quad name: **1984 Nome, Tex. USGS Quadrangle Map; 1984 Devers, Tex. USGS Quadrangle Map**
- USDA Natural Resources Conservation Service Soil Survey. Citation:
- National wetlands inventory map(s). Cite name: **Online USFWS NWI Mapper**
- State/Local wetland inventory map(s):
- FEMA/FIRM maps: **Liberty County, Texas Panels 500 and 525 of 675 datd 2 May 2008**
- 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- Photographs:  Aerial (Name & Date): **Google Earth 1995-2014**  
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:** The nearest water of the United States is Batiste Creek, which is a perennial relatively permanent water. The nearest traditional navigable water is Pine Island Bayou, which is located approximately 16.5 river miles downstream and 7.85 aerial miles east-northeast of the project site. Wetland 1B is a mosaic scrub-shrub wetland that is approximately 45% wetland. A large portion of Wetland 1B is within the 100-year floodplain of Batiste Creek and is adjacent to the creek. Due to the mosaic

nature of the wetland with small wetland depressions dispersed in uplands, the entire wetland was not adjacent to Batiste Creek. Wetland 1B is located approximately 1,230 feet southwest of Batiste Creek. Wetland 2A is a mosaic scrub-shrub wetland that is approximately 45% wetland. A small portion of Wetland 2A is within the 100-year floodplain of Batiste Creek and is adjacent to the creek. Due to the mosaic nature of the wetland with small wetland depressions dispersed in uplands, the entire wetland was not adjacent to Batiste Creek. Wetland 2A is located approximately 800 feet southwest of Batiste Creek. Wetland 2B is a solid emergent wetland within the mosaic Wetland 2A. Wetland 2B is located approximately 1,115 feet southwest of Batiste Creek. Wetland 19A is an emergent wetland and is located approximately 555 feet south of Batiste Creek. There are no known hydrological connections between Wetlands 1B, 2A, 2B, and 19A and Batiste Creek or Pine Island Bayou. There are no confined hydrologic connections between Wetlands 1B, 2A, 2B, and 19A and any water of the United States. Wetlands 1B, 2A, 2B, and 19A are isolated and are not waters of the United States, as defined in 33 CFR 328.3(a). Wetlands 1B, 2A, 2B, and 19A are not currently used, or were used in the past, nor are susceptible to use for interstate or foreign commerce. Wetlands 1B, 2A, 2B, and 19A are not subject to the ebb and flow of the daily tide. Wetlands 1B, 2A, 2B, and 19A do not cross interstate or tribal boundaries. The destruction of Wetlands 1B, 2A, 2B, and 19A (intrastate wetlands) would not affect interstate or foreign travelers for recreational or other purposes, would not affect fish or shellfish that could be taken and sold in interstate or foreign commerce, and would not affect the current use or potential use for industrial purposes by industries in interstate commerce. Wetlands 1B, 2A, 2B, and 19A are not impoundments of a water of the United States. Wetlands 1B, 2A, 2B, and 19A are not part of a surface tributary system of any of the above. Wetlands 1B, 2A, 2B, and 19A are not part of the territorial seas. Wetlands 1B, 2A, 2B, and 19A are not adjacent to waters identified in any of the above. Wetlands 1B, 2A, 2B, and 19A have been determined by the Galveston District to NOT be adjacent, (bordering, contiguous, or neighboring) as defined by 33 CFR 328.3(c). Wetlands 1B, 2A, 2B, and 19A are located out of the 100-year floodplain of any water of the United States and do not have a confined hydrological surface connection to any water of the United States. Wetlands 1B, 2A, 2B, and 19A are isolated wetlands as defined in 33 CFR 330.2(e): those non-tidal waters of the United States that are not part of a surface tributary system to interstate or navigable waters of the United States, and are not adjacent to such tributary waterbodies. Wetlands 1B, 2A, 2B, and 19A have been determined not to be "ecologically adjacent", as defined in the Rapanos guidance as being "reasonably close" such that an ecologic interconnectivity is beyond speculation or insubstantial. There are no known species in this georegion that require both the subject wetlands and the nearest waterbody (a water of the United States other than an adjacent wetland) to fulfill spawning and/or life cycle requirements. The wetlands were identified using the Atlantic and Gulf Coastal Plain Region Supplement of the 1987 Corps of Engineers Wetland Delineation Manual which under normal circumstances exhibit a dominance of hydrophytic vegetation, wetland hydrology indicators and hydric soils.

Wetland	Latitude	Longitude	UTM Zone	Easting	Northing	Acres
1B (Mosaic)	30.064921 N	94.539621 W	15	351595	3326978	0.53
2A (Mosaic)	30.060172 N	94.533827 W	15	352146	3326444	7.75
2B	30.059347 N	94.533128 W	15	352213	3326352	1.10
19A	30.059004 N	94.528721 W	15	352637	3326308	0.02

# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Isolated Wetlands 1B, 2A, 2B, and 19A

13 December 2015 Google Earth Aerial Photo

G-2010-00942 Wetland 1B isolated



SWG-2010-00942 Wetland 2A isolated



SWG-2010-00942 Wetland 2B



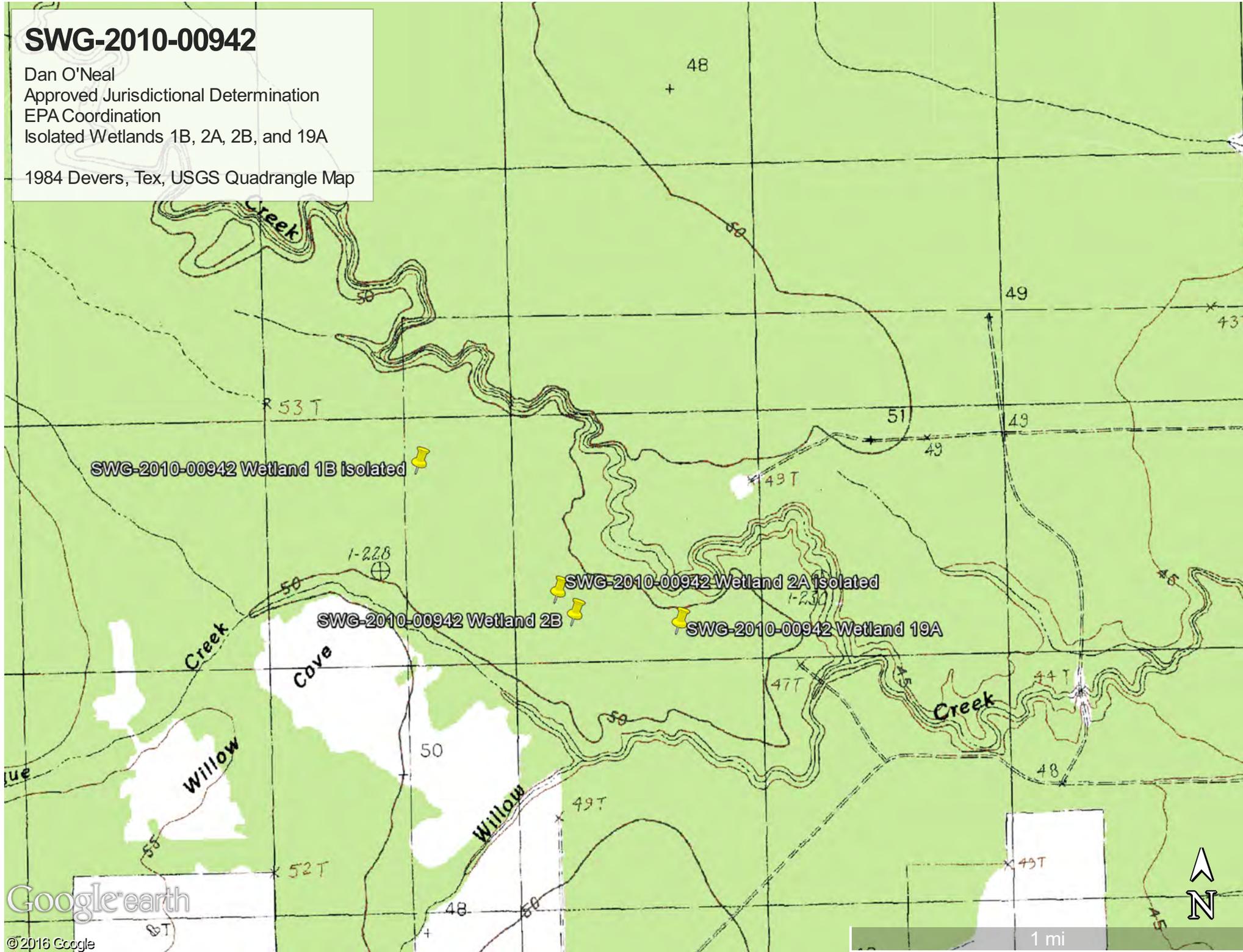
SWG-2010-00942 Wetland 19A



# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Isolated Wetlands 1B, 2A, 2B, and 19A

1984 Devers, Tex, USGS Quadrangle Map



**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): 15 February 2016**

**B. DISTRICT OFFICE, FILE NAME, AND NUMBER:** Galveston District, SWG-2010-00942, Dan O'Neal, Batiste Creek Mitigation Bank, Batiste Creek, Batiste Creek Bifurcation, Wetlands BB1, 17A, 1A, 1B, 1C, 2A, 14A, 15A, 20A

**C. PROJECT LOCATION AND BACKGROUND INFORMATION:**

State: Texas County/Parish: Liberty City: northeast of Devers  
Center coordinates of site (lat/long in degree decimal format, NAD-83): Lat. see page 10° N, Long. see page 10° W;  
Universal Transverse Mercator: UTM: 15, see page 10 N., see page 10 E., NAD: 83  
Name of nearest water body: Batiste Creek  
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Pine Island Bayou  
Name of watershed or Hydrologic Unit Code (HUC): Pine Island Bayou - - 12020007

- 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: 13 February 2016  
 Field Determination. Date(s): 7 January 2014, 17 October 2014, 20 May 2015, 8 July 2015, 8 October 2015, 6 January 2016, 7 January 2016

**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):<sup>1</sup>**

- TNWs, including territorial seas  
 Wetlands adjacent to TNWs  
 Relatively permanent waters<sup>2</sup> (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: **14,953** linear feet: width (ft) and/or **17.68** acres  
Wetlands: **44.67** 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):<sup>3</sup>**

- Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.  
Explain:

<sup>1</sup> Boxes checked below shall be supported by completing the appropriate sections in Section III below.

<sup>2</sup> 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).

<sup>3</sup> 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, fill out Section III.D.2 and 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 water body<sup>4</sup> is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the water body 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: 1,761.6 square miles

Drainage area: Pick List

Average annual rainfall: 61.5 inches

Average annual snowfall: 0.0 inches

(ii) **Physical Characteristics:**

(a) **Relationship with TNW:**

Tributary flows directly into TNW.

Tributary flows through 2 tributaries before entering TNW.

Project waters are 10-15 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 TNW<sup>5</sup>: **Batiste Creek flows into Willow Creek which flows into Pine Island Bayou, the nearest TNW.**

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

<sup>5</sup> 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.

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

(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: **50** feet

Average depth: **2** feet

Average side slopes: **3:1**

**Primary tributary substrate composition (check all that apply):**

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

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: **Fairly stable. Tributary has riparian buffer on both sides.**

Presence of run/riffle/pool complexes. Explain: **None**

Tributary geometry: **Meandering**

Tributary gradient (approximate average slope): **1-2 %**

(c) Flow:

Tributary provides for: **Seasonal flow**

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

Describe flow regime:

Other information on duration and volume: **Tributary is perennial**

Surface flow is: **Confined**. Characteristics:

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

Dye (or other) test performed:

Tributary has (check all that apply):

Bed and banks  
 OHWM<sup>6</sup> (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.<sup>7</sup> 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 color varies depending on storm water input. Very turbid at times and clear at times.**

Identify specific pollutants, if known: **Unknown, however, receiving water (Willow Creek) is an impaired water for dissolved oxygen.**

<sup>6</sup>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 water body'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.

<sup>7</sup>Ibid.

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

- Riparian corridor. Characteristics (type, average width): **200 feet**
- Wetland fringe. Characteristics: **Forested and emergent**
- Habitat for:
  - Federally Listed species. Explain findings:
  - Fish/spawn areas. Explain findings:
  - Other environmentally-sensitive species. Explain findings:
  - Aquatic/wildlife diversity. Explain findings:

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

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: **44.67** acres

Wetland type. Explain: **PFO and PEM**

Wetland quality. Explain: **medium to high**

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
- Not directly abutting
  - Discrete wetland hydrologic connection. Explain: **Connected by 100-year floodplain of Batiste Creek**
  - Ecological connection. Explain:
  - Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW

Project wetlands are **10-15** 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 **50 - 100-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: **During site visit, water in wetlands was fairly clear. Chemical characteristics are unknown.**

Identify specific pollutants, if known:

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

- Riparian buffer. Characteristics (type, average width):
- Vegetation type/percent cover. Explain: **forested, scrub shrub and emergent; 100 percent cover**
- 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: **6**

Approximately **(861.95)** 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>
No	6.57 PSS	Yes	410.9 PFO
Yes	20.3 PSS	No	27.7 PEM
Yes	6.5 PEM	Yes	390 PFO

Summarize overall biological, chemical and physical functions being performed: **Batiste Creek is a relatively permanent water and a third order stream within this relevant reach, which is approximately 10.9 miles long and flows into Willow Creek and then into Pine Island Bayou, the nearest traditional navigable water. The relevant reach starts where Mayhaw Creek enters Batiste Creek (approximately 8.4 river miles upstream of the project site) and ends where Batiste Creek enters Willow Creek (near the middle of the project site). The relevant reach is located within a rural area that is not developed and the majority of the area is managed for timber production.**

There are 6 offsite adjacent wetlands within this relevant reach that are located northwest and upstream of the tract. The wetlands total approximately 862 acres, based on the NWIs, FEMA FIRMs, and Google Earth aerial photos. Approximately 827.7 acres of these wetlands are abutting Batiste Creek. Of these abutting wetlands, approximately 800.9 acres are forested, 20.3 acres are scrub-shrub and 6.48 acres are emergent wetlands. Approximately 34.27 acres of these adjacent wetlands are not directly abutting Batiste Creek, of which approximately 27.7 acres are emergent and 6.57 acres are scrub-shrub wetlands. These wetlands range from approximately 17.8 to 26 river miles and from approximately 8.3 to 10.5 aerial miles from Pine Island Bayou, the nearest Traditional Navigable Water (TNW). Batiste Creek flows into Willow Creek, which flows into Pine Island Bayou, which flows into the Neches River, which flows into Sabine Lake which flows into the Gulf of Mexico. Nine wetlands (BB1, 17A, 1A, 1B, 20A, 14A, 15A, 2A, and 1C) on the tract totaling 44.67 acres are adjacent to this relevant reach of Batiste Creek. Approximately 31.45 acres of these wetlands are forested and abutting Batiste Creek and approximately 13.22 acres of these wetlands are forested/scrub-shrub and/or emergent and neighboring Batiste Creek. Based on our analysis, we determined that there are a total of 15 adjacent wetlands located within this relevant reach of Batiste Creek. These wetlands abut or are neighboring Batiste Creek and total approximately 907 acres.

The Corps did find evidence/data to support the statement that these waters (this relevant reach of Batiste Creek and all similarly situated adjacent wetlands within this relevant reach) provide more than a speculative or insubstantial effect upon the chemical integrity of the downstream TNW, which this relevant reach flows into. There is a direct surface hydrologic connection between this approximate 10.9-mile relevant reach of Batiste Creek and the nearest TNW, Pine Island Bayou. The approximate 907 acres of adjacent wetlands provide important filtration to aid in the reduction of bacteria, which will increase the dissolved oxygen concentrations in the downstream TNW because less oxygen will be consumed by the bacteria. The wetlands also serve to aid in the reduction of thermal and chemical pollutants as well as sediment from forestry activities flowing into Pine Island Bayou. Willow Creek and Pine Island Bayou are identified by the TCEQ as 303(d) impaired waters for dissolved oxygen; therefore the wetlands in this reach provide important properties associated with the production and maintenance of dissolved oxygen. The wetlands are situated in a rural area that is heavily managed for timber production. The aquatic resources within this relevant reach provide more than speculative or insubstantial effects that are inseparably bound to the chemical integrity of the downstream TNW.

Within this relevant reach of Batiste Creek, there are approximately 907 acres of similarly situated wetlands abutting or neighboring Batiste Creek. The TNW, Pine Island Bayou, is approximately 15.3 river miles downstream of this relevant reach. The retention of water and retardation of overbank flooding associated with adjacent wetlands is vital to maintain and protect the physical integrity of the downstream TNW. The effects of removing approximately 859 acres of abutting wetlands would increase the velocity and flow into Pine Island Bayou, the Neches River, and Sabine Lake, resulting in more than a speculative or insubstantial effect upon the physical attributes of the downstream TNWs. Increased flow will increase "out of bank" flooding and scouring, resulting in loss of property and the physical attributes of the TNW. Therefore, the aquatic resources within this reach provide more than speculative or insubstantial effects that are inseparably bound to maintain the physical integrity of the downstream TNW.

There are no known species found in this review area that require the aquatic resources of Batiste Creek and its adjacent wetlands and the waters of the TNW to fulfill their life cycle requirements. Batiste Creek is a RPW and flows into Willow Creek, another RPW and then flows into the TNW; as such, it is more likely to have aquatic organisms that require both features (TNW and waters in this reach). It is highly feasible that species of fishes and/or invertebrates utilize Batiste Creek for portions of their life cycles; but there is insufficient evidence to identify specific species that require both the aquatic resources within this relevant reach of Batiste Creek and the waters of the TNW to fulfill life cycle requirements. The abutting and neighboring wetlands aid in providing species habitat, shelter from predators, and detritus and nutrients as a food source. Therefore, it is the Corps' conclusion, that the aquatic resources within this relevant reach of Batiste Creek, although speculative, provide more than an important effect on the biological integrity of the downstream TNW.

In conclusion, we have determined that there is sufficient evidence to support the statement that the aquatic resources within this approximate 10.9-mile relevant reach of Batiste Creek and its 907 acres of adjacent wetlands provide a

significant nexus (more than speculative or insubstantial effect) to the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou). In conclusion, it is our opinion that this relevant reach of Batiste Creek and its adjacent wetlands are waters of the United States subject to Section 404 of the Clean Water Act.

### 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: **This relevant reach of Batiste Creek is a relatively permanent water and a third order stream that flows into the Willow Creek, also a RPW, and then into Pine Island Bayou, the downstream TNW. There are approximately 859 acres of abutting wetlands and 48 acres of neighboring wetlands. This relevant reach of Batiste Creek and its adjacent wetlands provide important filtration to aid in the reduction of bacteria which will increase the concentration of dissolved oxygen as well as reducing thermal and chemical pollutants. The system also retains flood waters and reduces overbank flooding downstream, thereby decreasing the velocity and amount of water flowing downstream into Pine Island Bayou, the Neches River and Sabine Lake. Retaining flood waters also reduces scouring and the loss of property as well as preserving the physical attributes of the downstream TNW. Batiste Creek and its adjacent wetlands also likely support aquatic organisms and the adjacent wetlands provide species habitat, shelter from predators and produce nutrients and detritus as a food source for downstream organisms. Based on this information, we determined that this relevant reach of Batiste Creek and its adjacent wetlands provide more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou).**

### 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: **Water was flowing in Batiste Creek during every site visit. Water is also visible in Batiste Creek**

**(on the project site) in every Google Earth aerial photo where the creek channel is visible. Therefore, Batiste Creek is a perennial relatively permanent water.**

- 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: 14,953 linear feet width (ft)  
 Other non-wetland waters: acres  
Identify type(s) of waters:

**3. Non-RPWs<sup>8</sup> that flow directly or indirectly into TNWs.**

- Water body 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: Wetland BB1 and 17A are contiguous with and bordering Batiste Creek, Therefore, the wetlands are abutting Batiste Creek.  
 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: 31.45 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: 13.22 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.<sup>9</sup>**

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):<sup>10</sup>**

<sup>8</sup>See Footnote # 3.

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

<sup>10</sup> 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.

- 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):**

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: **H & T Environmental**
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - Office concurs with data sheets/delineation report.
  - Office does not concur with data sheets/delineation report
- Data sheets prepared by the Corps: **7 January 2014, 17 October 2014, 20 May 2015, 8 October 2015**
- Corps navigable waters' study:
- U.S. Geological Survey Hydrologic Atlas: **Pine Island Bayou - - 12020007**
  - USGS NHD data
  - USGS 8 and 12 digit HUC maps
- Galveston District's Approved List of Navigable Waters
- U.S. Geological Survey map(s). Cite scale & quad name: **1984 Nome, Tex. USGS Quadrangle Map; 1984 Devers, Tex, USGS Quadrangle Map**
- USDA Natural Resources Conservation Service Soil Survey. Citation:
- National wetlands inventory map(s). Cite name: **Online USFWS NWI Mapper**
- State/Local wetland inventory map(s):
- FEMA/FIRM maps: **Liberty County, Texas Panels 500 and 525 of 675 dated 2 May 2008**
- 100-year Floodplain Elevation is:        (National Geodectic Vertical Datum of 1929)
- Photographs:  Aerial (Name & Date): **Google Earth 1995-2014**  
    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:**

Batiste Creek is a relatively permanent water and a third order stream within this relevant reach, which is approximately 10.9 miles long and flows into Willow Creek and then into Pine Island Bayou, the nearest traditional navigable water. The relevant reach starts where Mayhaw Creek enters Batiste Creek (approximately 8.4 river miles upstream of the project site) and ends where Batiste Creek enters Willow Creek (near the middle of the project site). The relevant reach is located within a rural area that is not developed and the majority of the area is managed for timber production.

There are 6 offsite adjacent wetlands within this relevant reach that are located northwest and upstream of the tract. The wetlands total approximately 862 acres, based on the NWIs, FEMA FIRMs, and Google Earth aerial photos. Approximately 827.7 acres of these wetlands are abutting Batiste Creek. Of these abutting wetlands, approximately 800.9 acres are forested, 20.3 acres are scrub-shrub and 6.48 acres are emergent wetlands. Approximately 34.27 acres of these adjacent wetlands are not directly abutting Batiste Creek, of which approximately 27.7 acres are emergent and 6.57 acres are scrub-shrub wetlands. These wetlands range from approximately 17.8 to 26 river miles and from approximately 8.3 to 10.5 aerial miles from Pine Island Bayou, the nearest Traditional Navigable Water (TNW). Batiste Creek flows into Willow Creek, which flows into Pine Island Bayou, which flows into the Neches River, which flows into Sabine Lake which flows into the Gulf of Mexico. Nine wetlands (BB1, 17A, 1A, 1B, 20A, 14A, 15A, 2A, and 1C) on the tract totaling 44.67 acres are adjacent to this relevant reach of Batiste Creek. Approximately 31.45 acres of these wetlands are forested and abutting Batiste Creek and approximately 13.22 acres of these wetlands are forested/scrub-shrub and/or emergent and neighboring Batiste Creek. Based on our analysis, we determined that there are a total of 15 adjacent wetlands located within this relevant reach of Batiste Creek. These wetlands abut or are neighboring Batiste Creek and total approximately 907 acres.

The Corps did find evidence/data to support the statement that these waters (this relevant reach of Batiste Creek and all similarly situated adjacent wetlands within this relevant reach) provide more than a speculative or insubstantial effect upon the chemical integrity of the downstream TNW, which this relevant reach flows into. There is a direct surface hydrologic connection between this approximate 10.9-mile relevant reach of Batiste Creek and the nearest TNW, Pine Island Bayou. The approximate 907 acres of adjacent wetlands provide important filtration to aid in the reduction of bacteria, which will increase the dissolved oxygen concentrations in the downstream TNW because less oxygen will be consumed by the bacteria. The wetlands also serve to aid in the reduction of thermal and chemical pollutants as well as sediment from forestry activities flowing into Pine Island Bayou. Willow Creek and Pine Island Bayou are identified by the TCEQ as 303(d) impaired waters for dissolved oxygen; therefore the wetlands in this reach provide important properties associated with the production and maintenance of dissolved oxygen. The wetlands are situated in a rural area that is heavily managed for timber production. The aquatic resources within this relevant reach provide more than speculative or insubstantial effects that are inseparably bound to the chemical integrity of the downstream TNW.

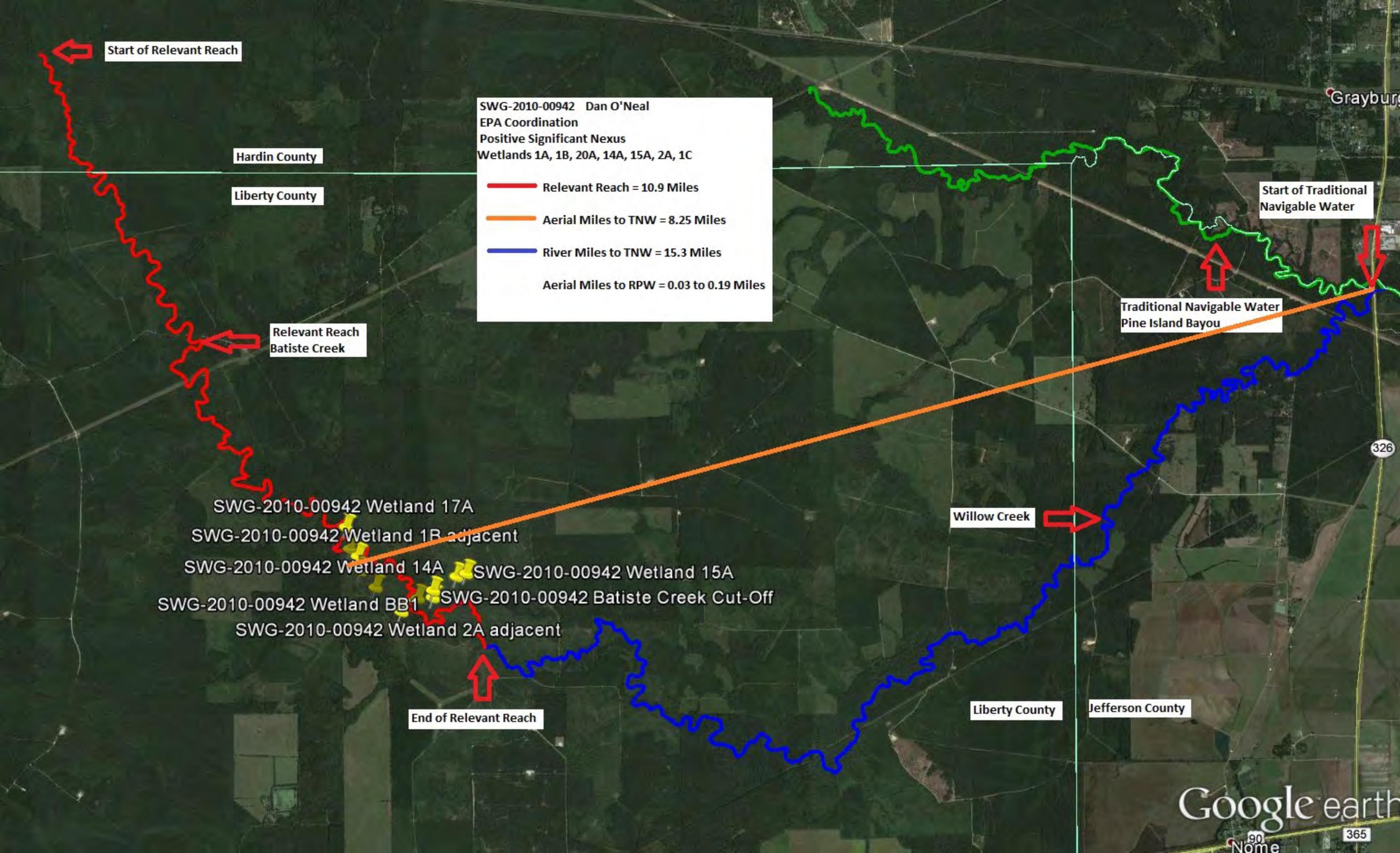
Within this relevant reach of Batiste Creek, there are approximately 907 acres of similarly situated wetlands abutting or neighboring Batiste Creek. The TNW, Pine Island Bayou, is approximately 15.3 river miles downstream of this relevant reach. The retention of water and retardation of overbank flooding associated with adjacent wetlands is vital to maintain and protect the physical integrity of the downstream TNW. The effects of removing approximately 859 acres of abutting wetlands would increase the velocity and flow into Pine Island Bayou, the Neches River, and Sabine Lake, resulting in more than a speculative or insubstantial effect upon the physical attributes of the downstream TNWs. Increased flow will increase "out of bank" flooding and scouring, resulting in loss of property and the physical attributes of the TNW. Therefore, the aquatic resources within this reach provide more than speculative or insubstantial effects that are inseparably bound to maintain the physical integrity of the downstream TNW.

There are no known species found in this review area that require the aquatic resources of Batiste Creek and its adjacent wetlands and the waters of the TNW to fulfill their life cycle requirements. Batiste Creek is a RPW and flows into Willow Creek, another RPW and then flows into the TNW; as such, it is more likely to have aquatic organisms that require both features (TNW and waters in this reach). It is highly feasible that species of fishes and/or invertebrates utilize Batiste Creek for portions of their life cycles; but there is insufficient evidence to identify specific species that require both the aquatic resources within this relevant reach of Batiste Creek and the waters of the TNW to fulfill life cycle requirements. The abutting and neighboring wetlands aid in providing species habitat, shelter from predators, and detritus and nutrients as a food source. Therefore, it is the Corps' conclusion, that the aquatic resources within this relevant reach of Batiste Creek, although speculative, provide more than an important effect on the biological integrity of the downstream TNW.

In conclusion, we have determined that there is sufficient evidence to support the statement that the aquatic resources within this approximate 10.9-mile relevant reach of Batiste Creek and its 907 acres of adjacent wetlands provide a significant nexus (more than speculative or insubstantial effect) to the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou). In conclusion, it is our opinion that this relevant reach of Batiste Creek and its adjacent wetlands are waters of the United States subject to Section 404 of the Clean Water Act.

Wetlands on Project Site within this Relevant Reach

Wetland	Latitude	Longitude	UTM Zone	UTM Easting	UTM Northing	Acres
BB1 (Abut)	30.062316 N	94.528680 W	15	352646	3326675	31.42
17A (Abut)	30.070316 N	94.539980 W	15	351568	3327577	0.03
1A	30.067828 N	94.539466 W	15	351614	3327300	5.00
1B (mosaic)	30.066990 N	94.538443 W	15	351712	3327206	5.36
20A	30.065346 N	94.538098 W	15	351742	3327023	1.52
14A	30.064699 N	94.525604 W	15	352946	3326935	0.34
15A	30.065036 N	94.524351 W	15	353067	3326971	0.01
2A (Mosaic)	30.060720 N	94.532782 W	15	352248	3326504	0.71
1C	30.063470 N	94.536143 W	15	351928	3326813	0.28
Water						
Batiste Creek (RPW)	30.062231 N	94.530633 W	15	352457	3326668	16.8 13,144 LF
Batiste Creek Bifurcation (RPW)	30.063112 N	94.528641 W	15	352651	3326764	0.88 1,809 LF



# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Wetlands 1A, 1B, 20A, 14A, 15A, 2A, 1C

3 October 2014 Google Earth Aerial Photo

SWG-2010-00942 Wetland 1A

SWG-2010-00942 Wetland 1B adjacent

SWG-2010-00942 Wetland 20A

SWG-2010-00942 Wetland 15A

SWG-2010-00942 Wetland 14A

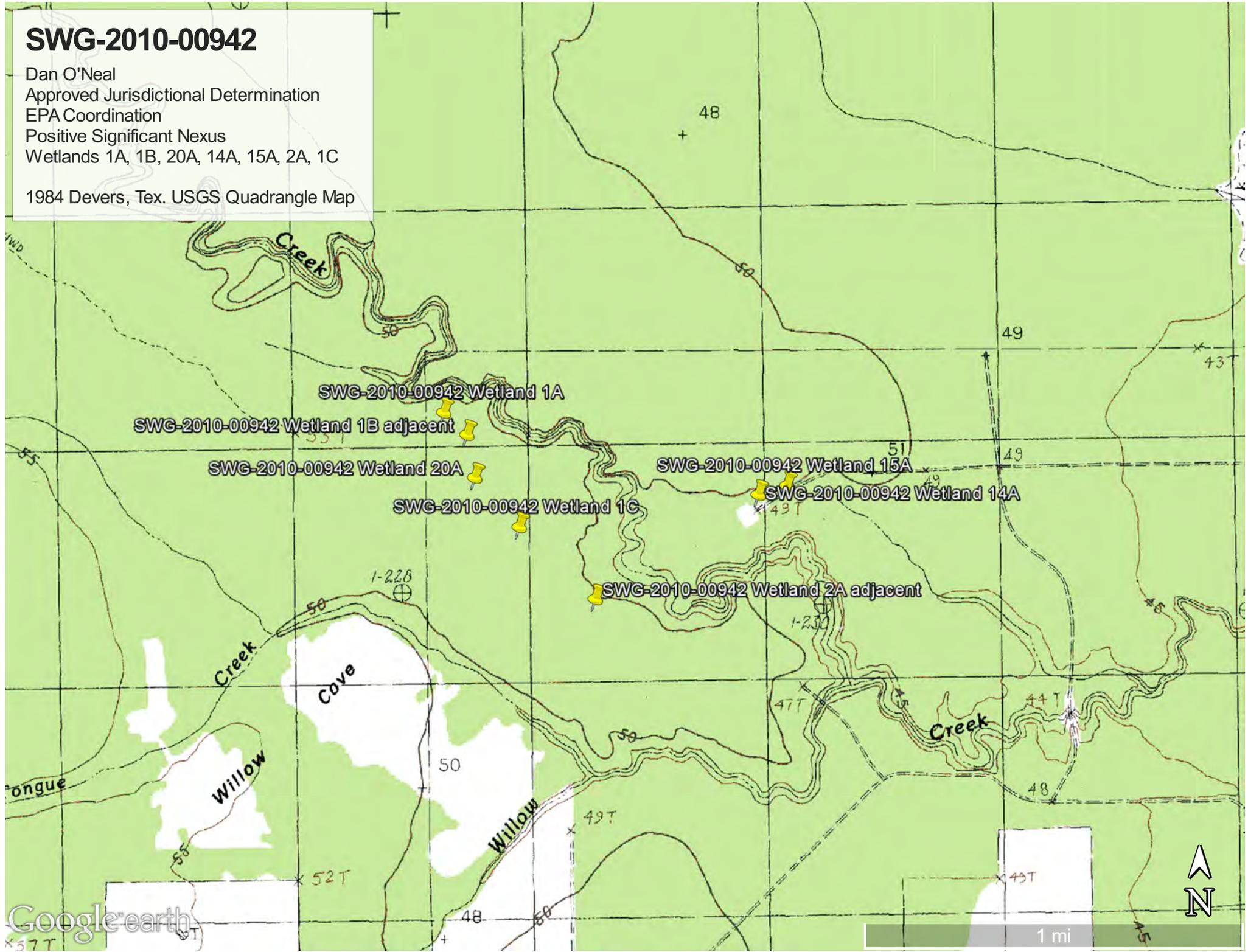
SWG-2010-00942 Wetland 1C

SWG-2010-00942 Wetland 2A adjacent



# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Wetlands 1A, 1B, 20A, 14A, 15A, 2A, 1C  
1984 Devers, Tex. USGS Quadrangle Map



**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): 25 February 2016**

**B. DISTRICT OFFICE, FILE NAME, AND NUMBER:** Galveston District, SWG-2010-00942, Dan O'Neal, Batiste Creek Mitigation Bank, Tributary BT1 and Tributary BT1 Wetland

**C. PROJECT LOCATION AND BACKGROUND INFORMATION:**

State: Texas County/Parish: Liberty City: northeast of Devers  
Center coordinates of site (lat/long in degree decimal format, NAD-83): Lat. see page 9° N, Long. see page 9° W;  
Universal Transverse Mercator: UTM: 15, see page 9 N., see page 9 E., NAD: 83  
Name of nearest water body: Tributary BT1  
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Pine Island Bayou  
Name of watershed or Hydrologic Unit Code (HUC): Pine Island Bayou - - 12020007

- 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: 13 February 2016  
 Field Determination. Date(s): 7 January 2014, 17 October 2014, 20 May 2015, 8 July 2015, 8 October 2015, 6 January 2016, 7 January 2016

**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):<sup>1</sup>**

- TNWs, including territorial seas  
 Wetlands adjacent to TNWs  
 Relatively permanent waters<sup>2</sup> (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: **183** linear feet: **2** width (ft) and/or **0.01** acres  
Wetlands: **0.1** 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):<sup>3</sup>**

- Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.  
Explain:

<sup>1</sup> Boxes checked below shall be supported by completing the appropriate sections in Section III below.

<sup>2</sup> 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).

<sup>3</sup> 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, fill out Section III.D.2 and 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 water body<sup>4</sup> is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the water body 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: 1,761.6 square miles

Drainage area: Pick List

Average annual rainfall: 61.5 inches

Average annual snowfall: 0.0 inches

(ii) Physical Characteristics:

(a) Relationship with TNW:

Tributary flows directly into TNW.

Tributary flows through 2 tributaries before entering TNW.

Project waters are 15-20 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 TNW<sup>5</sup>: Tributary BT1 flows into Batiste Creek, which flows into Willow Creek, which flows into Pine Island Bayou, the nearest TNW.

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

<sup>5</sup> 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.

Tributary stream order, if known: **1**

(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: **2** feet  
Average depth: **0.5** feet  
Average side slopes: **3:1**

**Primary tributary substrate composition (check all that apply):**

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

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: **Fairly stable. Tributary has riparian buffer on both sides.**

Presence of run/riffle/pool complexes. Explain: **None**

Tributary geometry: **Meandering**

Tributary gradient (approximate average slope): **1-2 %**

(c) Flow:

Tributary provides for: **Intermittent but not seasonal flow**

Estimate average number of flow events in review area/year: **11-20**

Describe flow regime:

Other information on duration and volume: **Tributary primarily flows after precipitation events. Water from Batiste Creek also backs up into Tributary BT1 during flood events.**

Surface flow is: **Confined**. Characteristics:

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

Dye (or other) test performed:

Tributary has (check all that apply):

Bed and banks  
 OHWM<sup>6</sup> (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.<sup>7</sup> 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 color varies depending on storm water input.**

Identify specific pollutants, if known: **Unknown, however, receiving waters (Willow Creek and Pine Island Bayou) are impaired waters for dissolved oxygen.**

<sup>6</sup>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 water body'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.

<sup>7</sup>Ibid.

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

- Riparian corridor. Characteristics (type, average width): **100 feet**
- Wetland fringe. Characteristics: **Forested**
- Habitat for:
  - Federally Listed species. Explain findings:
  - Fish/spawn areas. Explain findings:
  - Other environmentally-sensitive species. Explain findings:
  - Aquatic/wildlife diversity. Explain findings:

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

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: **0.1** acres

Wetland type. Explain: **PFO**

Wetland quality. Explain: **medium to high**

Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

Flow is: **Ephemeral 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
- Not directly abutting
  - Discrete wetland hydrologic connection. Explain:
  - Ecological connection. Explain:
  - Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW

Project wetlands are **15-20** 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 **50 - 100-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: **No water was in the wetland during the site visit. Chemical characteristics are unknown.**

Identify specific pollutants, if known:

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

- Riparian buffer. Characteristics (type, average width):
- Vegetation type/percent cover. Explain: **forested; 100 percent cover**
- 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: **1**

Approximately **(0.1)** 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>
Yes	0.1 PFO		

Summarize overall biological, chemical and physical functions being performed: **Tributary BT1 is not a relatively permanent water (RPW) and is a first order stream within this relevant reach, which is approximately 183 feet long and flows into Batiste Creek, a RPW. Batiste Creek flows into Willow Creek, another RPW, which flows into Pine Island Bayou, the nearest traditional navigable water (TNW). The relevant reach starts at the headwater of Tributary BT1 and ends where Tributary BT1 enters Batiste Creek (both on the project site). The relevant reach is located within a rural area that is not developed and the majority of the area is managed for timber production.**

There are no offsite adjacent wetlands within this relevant reach. Tributary BT1 flows into Batiste Creek, which flows into Willow Creek, which flows into Pine Island Bayou, which flows into the Neches River, which flows into Sabine Lake which flows into the Gulf of Mexico. One wetland (Tributary BT1 Wetland) on the tract totaling 0.1-acre is adjacent to this relevant reach of Tributary BT1. This wetland is forested and abutting Tributary BT1. Based on our analysis, we determined that there is 1 adjacent wetland located within this relevant reach of Tributary BT1. This wetland abuts Tributary BT1 and is 0.1-acre in size.

The Corps did find evidence/data to support the statement that these waters (this relevant reach of Tributary BT1 and its abutting riparian forested wetland) provide more than a speculative or insubstantial effect upon the chemical integrity of the downstream TNW, which this relevant reach flows into. There is a direct surface hydrologic connection between this approximate 183-foot relevant reach of Tributary BT1 and the nearest TNW, Pine Island Bayou. The approximate 0.1-acre of abutting riparian wetland provides important filtration to aid in the reduction of bacteria, which will increase the dissolved oxygen concentrations in the downstream TNW due to less oxygen consumption. The wetland also serves to aid in the reduction of thermal and chemical pollutants as well as sediment from forestry activities flowing into Pine Island Bayou. Willow Creek and Pine Island Bayou are identified by the TCEQ as 303(d) impaired waters for dissolved oxygen (DO); therefore the wetland in this reach provides important properties associated with the production and maintenance of DO. The tributary and wetland are situated in a rural area that is heavily managed for timber production. The tributary provides opportunity for increased DO to enter the water column and these aquatic resources within this relevant reach provide more than speculative or insubstantial effects that are inseparably bound to the chemical integrity of the downstream TNW.

Within this relevant reach of Tributary BT1, there is approximately 0.1-acre of similarly situated wetlands and 183 feet of intermittent tributary (BT1). The TNW, Pine Island Bayou, is approximately 16.8 river miles downstream of this relevant reach. The retention of water and retardation of overbank flooding associated with adjacent wetlands is vital to maintain and protect the physical integrity of the downstream TNW. The effects of removing these aquatic resources would affect the velocity and flow into Pine Island Bayou and then to the Neches River and Sabine Lake, resulting in more than a speculative or insubstantial effect upon the physical attributes of the downstream TNWs. Increased flow will increase "out of bank" flooding and scouring, resulting in loss of property and the physical attributes of the TNW. Additionally, the abutting riparian wetland intercepts sediment, nutrients, and pesticides from entering Tributary BT1 and ultimately the downstream TNW, Pine Island Bayou. Therefore, the aquatic resources within this reach provide more than speculative or insubstantial effects that maintain the physical integrity of the downstream TNW.

There are no known species found in this review area that require the aquatic resources of Tributary BT1 and its adjacent wetland and the waters of the TNW to fulfill their life cycle requirements. Tributary BT1 is not a RPW and flows into Batiste Creek, a RPW, which flows into Willow Creek, another RPW and then flows into the TNW; as such, it is possible to have aquatic organisms that require both features (TNW and waters in this reach). It is highly feasible that species of fishes and/or invertebrates utilize Tributary BT1 for portions of their life cycles; but there is insufficient evidence to identify specific species that require both the aquatic resources within this relevant reach of Tributary BT1 and the waters of the TNW to fulfill life cycle requirements. The abutting wetland aids in providing species habitat, shelter from predators, and detritus and nutrients as a food source. Therefore, it is the Corps' conclusion, that the aquatic resources within this relevant reach of Tributary BT1, although speculative, provide fundamental biotic support to maintain the biological integrity of the downstream TNW.

In conclusion, we have determined that there is sufficient evidence to support the statement that the aquatic resources within this approximate 183-foot relevant reach of the non-RPW Tributary BT1 and its 0.1-acre of abutting riparian forested wetland provide a significant nexus (more than speculative or insubstantial effect) to the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou). In conclusion, it is our opinion that this relevant reach of Tributary BT1 and its adjacent wetland are waters of the United States subject to Section 404 of the Clean Water Act.

### 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: **This relevant reach of Tributary BT1 is not a relatively permanent water and is a first order stream that flows into Batiste Creek, a RPW, which flows into Willow Creek, also a RPW, and then into Pine Island Bayou, the downstream TNW. There are approximately 0.1-acre of abutting riparian forested wetlands. This relevant reach of Tributary BT1 and its adjacent wetland provide important filtration to aid in the reduction of bacteria which will increase the concentration of dissolved oxygen as well as reducing thermal and chemical pollutants. The system also retains flood waters and reduces overbank flooding downstream, thereby decreasing the velocity and amount of water flowing downstream into Pine Island Bayou, the Neches River and Sabine Lake. Retaining flood waters also reduces scouring and the loss of property as well as preserving the physical attributes of the downstream TNW. Tributary BT1 and its abutting riparian forested wetland also likely support aquatic organisms and the adjacent wetland provides species habitat, shelter from predators and produces nutrients and detritus as a food source for downstream organisms. Based on this information, we determined that this relevant reach of Tributary BT1 and its adjacent wetland provide more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou).**

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

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
  - TNWs: linear feet width (ft), Or, acres.
  - Wetlands adjacent to TNWs: acres.
2. **RPWs that flow directly or indirectly into TNWs.**
  - Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:
  - Tributaries of TNW where tributaries have continuous flow “seasonally” (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

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

- Tributary waters:            linear feet            width (ft)
  - Other non-wetland waters:            acres
- Identify type(s) of waters:

**3. Non-RPWs<sup>8</sup> that flow directly or indirectly into TNWs.**

- Water body 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:    183    linear feet    2    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.**

- 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: 0.1    acres

**7. Impoundments of jurisdictional waters.<sup>9</sup>**

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):<sup>10</sup>**

- 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:**

<sup>8</sup>See Footnote # 3.

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

<sup>10</sup> 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.

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

- Tributary waters:        linear feet        width (ft)
- Other non-wetland waters:        acres
- Identify type(s) of waters:
- Wetlands:        acres

**F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):**

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

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- Non-wetland waters (i.e., rivers, streams):        linear feet        width (ft).
- Lakes/ponds:        acres.
- Other non-wetland waters:        acres. List type of aquatic resource:
- Wetlands:        acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

- Non-wetland waters (i.e., rivers, streams):        linear feet,        width (ft).
- Lakes/ponds:        acres.
- Other non-wetland waters:        acres. List type of aquatic resource:
- Wetlands:        acres.

**SECTION IV: DATA SOURCES.**

**A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):**

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: **H & T Environmental**
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - Office concurs with data sheets/delineation report.
  - Office does not concur with data sheets/delineation report
- Data sheets prepared by the Corps: **7 January 2014, 17 October 2014, 20 May 2015, 8 October 2015**
- Corps navigable waters' study:
- U.S. Geological Survey Hydrologic Atlas: **Pine Island Bayou -- 12020007**
  - USGS NHD data
  - USGS 8 and 12 digit HUC maps
- Galveston District's Approved List of Navigable Waters
- U.S. Geological Survey map(s). Cite scale & quad name: **1984 Nome, Tex. USGS Quadrangle Map; 1984 Devers, Tex. USGS Quadrangle Map**
- USDA Natural Resources Conservation Service Soil Survey. Citation:
- National wetlands inventory map(s). Cite name: **Online USFWS NWI Mapper**
- State/Local wetland inventory map(s):
- FEMA/FIRM maps: **Liberty County, Texas Panels 500 and 525 of 675 dated 2 May 2008**
- 100-year Floodplain Elevation is:        (National Geodectic Vertical Datum of 1929)
- Photographs:  Aerial (Name & Date): **Google Earth 1995-2014**
  - 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:**

Tributary BT1 is not a relatively permanent water (RPW) and is a first order stream within this relevant reach, which is approximately 183 feet long and flows into Batiste Creek, a RPW. Batiste Creek flows into Willow Creek, another RPW, which flows into Pine Island Bayou, the nearest traditional navigable water (TNW). The relevant reach starts at the headwater of Tributary BT1 and ends where Tributary BT1 enters Batiste Creek (both on the project site). The relevant reach is located within a rural area that is not developed and the majority of the area is managed for timber production.

There are no offsite adjacent wetlands within this relevant reach. Tributary BT1 flows into Batiste Creek, which flows into Willow Creek, which flows into Pine Island Bayou, which flows into the Neches River, which flows into Sabine Lake which flows into the Gulf of Mexico. One wetland (Tributary BT1 Wetland) on the tract totaling 0.1-acre is adjacent to this relevant reach of Tributary BT1. This wetland is forested and abutting Tributary BT1. Based on our analysis, we determined that there is 1 adjacent wetland located within this relevant reach of Tributary BT1. This wetland abuts Tributary BT1 and is 0.1-acre in size.

The Corps did find evidence/data to support the statement that these waters (this relevant reach of Tributary BT1 and its abutting riparian forested wetland) provide more than a speculative or insubstantial effect upon the chemical integrity of the downstream TNW, which this relevant reach flows into. There is a direct surface hydrologic connection between this approximate 183-foot relevant reach of Tributary BT1 and the nearest TNW, Pine Island Bayou. The approximate 0.1-acre of abutting riparian wetland provides important filtration to aid in the reduction of bacteria, which will increase the dissolved oxygen concentrations in the downstream TNW due to less oxygen consumption. The wetland also serves to aid in the reduction of thermal and chemical pollutants as well as sediment from forestry activities flowing into Pine Island Bayou. Willow Creek and Pine Island Bayou are identified by the TCEQ as 303(d) impaired waters for dissolved oxygen (DO); therefore the wetland in this reach provides important properties associated with the production and maintenance of DO. The tributary and wetland are situated in a rural area that is heavily managed for timber production. The tributary provides opportunity for increased DO to enter the water column and these aquatic resources within this relevant reach provide more than speculative or insubstantial effects that are inseparably bound to the chemical integrity of the downstream TNW.

Within this relevant reach of Tributary BT1, there is approximately 0.1-acre of similarly situated wetlands and 183 feet of intermittent tributary (BT1). The TNW, Pine Island Bayou, is approximately 16.8 river miles downstream of this relevant reach. The retention of water and retardation of overbank flooding associated with adjacent wetlands is vital to maintain and protect the physical integrity of the downstream TNW. The effects of removing these aquatic resources would affect the velocity and flow into Pine Island Bayou and then to the Neches River and Sabine Lake, resulting in more than a speculative or insubstantial effect upon the physical attributes of the downstream TNWs. Increased flow will increase "out of bank" flooding and scouring, resulting in loss of property and the physical attributes of the TNW. Additionally, the abutting riparian wetland intercepts sediment, nutrients, and pesticides from entering Tributary BT1 and ultimately the downstream TNW, Pine Island Bayou. Therefore, the aquatic resources within this reach provide more than speculative or insubstantial effects that maintain the physical integrity of the downstream TNW.

There are no known species found in this review area that require the aquatic resources of Tributary BT1 and its adjacent wetland and the waters of the TNW to fulfill their life cycle requirements. Tributary BT1 is not a RPW and flows into Batiste Creek, a RPW, which flows into Willow Creek, another RPW and then flows into the TNW; as such, it is possible to have aquatic organisms that require both features (TNW and waters in this reach). It is highly feasible that species of fishes and/or invertebrates utilize Tributary BT1 for portions of their life cycles; but there is insufficient evidence to identify specific species that require both the aquatic resources within this relevant reach of Tributary BT1 and the waters of the TNW to fulfill life cycle requirements. The abutting wetland aids in providing species habitat, shelter from predators, and detritus and nutrients as a food source. Therefore, it is the Corps' conclusion, that the aquatic resources within this relevant reach of Tributary BT1, although speculative, provide fundamental biotic support to maintain the biological integrity of the downstream TNW.

In conclusion, we have determined that there is sufficient evidence to support the statement that the aquatic resources within this approximate 183-foot relevant reach of the non-RPW Tributary BT1 and its 0.1-acre of abutting riparian forested wetland provide a significant nexus (more than speculative or insubstantial effect) to the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou). In conclusion, it is our opinion that this relevant reach of Tributary BT1 and its adjacent wetland are waters of the United States subject to Section 404 of the Clean Water Act.

Wetlands on Project Site within this Relevant Reach

Aquatic Resources	Latitude	Longitude	UTM Zone	UTM Easting	UTM Northing	Acres
Tributary BT1 Wetland	30.064719 N	94.530521 W	15	352472	3326944	0.1
Tributary BT1	30.064715 N	94.530424 W	15	352481	3326944	0.01

# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary BT1 and Tributary BT1 Wetland

13 December 2015 Google Earth Aerial Photo

SWG-2010-00942 Tributary BT1 Wetland      SWG-2010-00942 Tributary BT1      Start of Relevant Reach

End of Relevant Reach

Batiste Creek



# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary BT1 and Tributary BT1 Wetland

13 December 2015 Google Earth Aerial Photo

SWG-2010-00942 Tributary BT1

Start of Relevant Reach

End of Relevant Reach

Batiste Creek



Hardin County

Liberty County

SWG-2010-00942 Dan O'Neal  
 Approved Jurisdictional Determination  
 EPA Coordination  
 Positive Significant Nexus  
 Tributary BT1 and Tributary BT1 Wetland

- Relevant Reach = 183 feet
- River Distance to TNW = 16.8 miles
- Aerial Distance to TNW = 7.83 miles
- River Distance to RPW = 0 to 183 feet
- Aerial Distance to RPW = 0 to 162 feet

Start of Traditional Navigable Water

Pine Island Bayou Traditional Navigable Water

Relevant Reach Tributary BT1

SWG-2010-00942 Tributary BT1  
 Tributary BT1 Wetland  
 Start of Relevant Reach  
 End of Relevant Reach

End Batiste Creek/Start Willow Creek

Willow Creek

Batiste Creek

Liberty County

Jefferson County

326

365

Nome

# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary BT3 and Tributary BT3 Wetland

1983 Devers, Tex. USGS Quadrangle Map

SWG-2010-00942 Tributary BT1 Wetland

SWG-2010-00942 Tributary BT1

Start of Relevant Reach

End of Relevant Reach

Batiste Creek



# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary BT3 and Tributary BT3 Wetland

1983 Devers, Tex. USGS Quadrangle Map

SWG-2010-00942 Tributary BT1 Wetland  
Start of Relevant Reach

End of Relevant Reach

Batiste Creek



**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): 25 February 2016**

**B. DISTRICT OFFICE, FILE NAME, AND NUMBER:** Galveston District, SWG-2010-00942, Dan O'Neal, Batiste Creek Mitigation Bank, Tributary BT3 and Tributary BT3 Wetland

**C. PROJECT LOCATION AND BACKGROUND INFORMATION:**

State: Texas County/Parish: Liberty City: northeast of Devers  
Center coordinates of site (lat/long in degree decimal format, NAD-83): Lat. see page 9° N, Long. see page 9° W;  
Universal Transverse Mercator: UTM: 15, see page 9 N., see page 9 E., NAD: 83  
Name of nearest water body: Tributary BT3  
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Pine Island Bayou  
Name of watershed or Hydrologic Unit Code (HUC): Pine Island Bayou - - 12020007

- 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: 13 February 2016  
 Field Determination. Date(s): 7 January 2014, 17 October 2014, 20 May 2015, 8 July 2015, 8 October 2015, 6 January 2016, 7 January 2016

**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):<sup>1</sup>**

- TNWs, including territorial seas  
 Wetlands adjacent to TNWs  
 Relatively permanent waters<sup>2</sup> (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: **186** linear feet: **2** width (ft) and/or **0.01** acres  
Wetlands: **0.13** 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):<sup>3</sup>**

- Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.  
Explain:

<sup>1</sup> Boxes checked below shall be supported by completing the appropriate sections in Section III below.

<sup>2</sup> 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).

<sup>3</sup> 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, fill out Section III.D.2 and 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 water body<sup>4</sup> is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the water body 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: 1,761.6 square miles

Drainage area: Pick List

Average annual rainfall: 61.5 inches

Average annual snowfall: 0.0 inches

(ii) Physical Characteristics:

(a) Relationship with TNW:

Tributary flows directly into TNW.

Tributary flows through 2 tributaries before entering TNW.

Project waters are 15-20 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 TNW<sup>5</sup>: Tributary BT3 flows into Batiste Creek, which flows into Willow Creek, which flows into Pine Island Bayou, the nearest TNW.

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

<sup>5</sup> 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.

Tributary stream order, if known: **1**

(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: **2** feet  
Average depth: **0.5** feet  
Average side slopes: **3:1**

**Primary tributary substrate composition (check all that apply):**

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

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: **Fairly stable. Tributary has riparian buffer on both sides.**

Presence of run/riffle/pool complexes. Explain: **None**

Tributary geometry: **Meandering**

Tributary gradient (approximate average slope): **1-2 %**

(c) Flow:

Tributary provides for: **Intermittent but not seasonal flow**

Estimate average number of flow events in review area/year: **11-20**

Describe flow regime:

Other information on duration and volume: **Tributary primarily flows after precipitation events. Water from Batiste Creek also backs up into Tributary BT3 during flood events.**

Surface flow is: **Confined**. Characteristics:

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

Dye (or other) test performed:

Tributary has (check all that apply):

Bed and banks  
 OHWM<sup>6</sup> (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.<sup>7</sup> 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 color varies depending on storm water input.**

Identify specific pollutants, if known: **Unknown, however, receiving waters (Willow Creek and Pine Island Bayou) are impaired waters for dissolved oxygen.**

<sup>6</sup>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 water body'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.

<sup>7</sup>Ibid.

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

- Riparian corridor. Characteristics (type, average width): **100 feet**
- Wetland fringe. Characteristics: **Forested**
- Habitat for:
  - Federally Listed species. Explain findings:
  - Fish/spawn areas. Explain findings:
  - Other environmentally-sensitive species. Explain findings:
  - Aquatic/wildlife diversity. Explain findings:

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

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: **0.13** acres

Wetland type. Explain: **PFO**

Wetland quality. Explain: **medium to high**

Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

Flow is: **Ephemeral 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
- Not directly abutting
  - Discrete wetland hydrologic connection. Explain:
  - Ecological connection. Explain:
  - Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW

Project wetlands are **15-20** 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 **50 - 100-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: **No water was in the wetland during the site visit. Chemical characteristics are unknown.**

Identify specific pollutants, if known:

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

- Riparian buffer. Characteristics (type, average width):
- Vegetation type/percent cover. Explain: **forested; 100 percent cover**
- 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: **1**

Approximately (**0.13**) 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>
Yes	0.13 PFO		

Summarize overall biological, chemical and physical functions being performed: **Tributary BT3 is not a relatively permanent water (RPW) and is a first order stream within this relevant reach, which is approximately 186 feet long and flows into Batiste Creek, a RPW. Batiste Creek flows into Willow Creek, another RPW, which flows into Pine Island Bayou, the nearest traditional navigable water (TNW). The relevant reach starts at the headwater of Tributary BT3 and ends where Tributary BT3 enters Batiste Creek (both on the project site). The relevant reach is located within a rural area that is not developed and the majority of the area is managed for timber production.**

There are no offsite adjacent wetlands within this relevant reach. Tributary BT3 flows into Batiste Creek, which flows into Willow Creek, which flows into Pine Island Bayou, which flows into the Neches River, which flows into Sabine Lake which flows into the Gulf of Mexico. One wetland (Tributary BT3 Wetland) on the tract totaling 0.13-acre is adjacent to this relevant reach of Tributary BT3. This wetland is forested and abutting Tributary BT3. Based on our analysis, we determined that there is 1 adjacent wetland located within this relevant reach of Tributary BT3. This wetland abuts Tributary BT3 and is 0.13-acre in size.

The Corps did find evidence/data to support the statement that these waters (this relevant reach of Tributary BT3 and its abutting riparian forested wetland) provide more than a speculative or insubstantial effect upon the chemical integrity of the downstream TNW, which this relevant reach flows into. There is a direct surface hydrologic connection between this approximate 186-foot relevant reach of Tributary BT3 and the nearest TNW, Pine Island Bayou. The approximate 0.13-acre of abutting riparian wetland provides important filtration to aid in the reduction of bacteria, which will increase the dissolved oxygen concentrations in the downstream TNW due to less oxygen consumption. The wetland also serves to aid in the reduction of thermal and chemical pollutants as well as sediment from forestry activities flowing into Pine Island Bayou. Willow Creek and Pine Island Bayou are identified by the TCEQ as 303(d) impaired waters for dissolved oxygen (DO); therefore the wetland in this reach provides important properties associated with the production and maintenance of DO. The tributary and wetland are situated in a rural area that is heavily managed for timber production. The tributary provides opportunity for increased DO to enter the water column and these aquatic resources within this relevant reach provide more than speculative or insubstantial effects that are inseparably bound to the chemical integrity of the downstream TNW.

Within this relevant reach of Tributary BT3, there is approximately 0.13-acre of similarly situated wetlands and 186 feet of intermittent tributary (BT3). The TNW, Pine Island Bayou, is approximately 16.5 river miles downstream of this relevant reach. The retention of water and retardation of overbank flooding associated with adjacent wetlands is vital to maintain and protect the physical integrity of the downstream TNW. The effects of removing these aquatic resources would affect the velocity and flow into Pine Island Bayou and then to the Neches River and Sabine Lake, resulting in more than a speculative or insubstantial effect upon the physical attributes of the downstream TNWs. Increased flow will increase "out of bank" flooding and scouring, resulting in loss of property and the physical attributes of the TNW. Additionally, the abutting riparian wetland intercepts sediment, nutrients, and pesticides from entering Tributary BT3 and ultimately the downstream TNW, Pine Island Bayou. Therefore, the aquatic resources within this reach provide more than speculative or insubstantial effects that maintain the physical integrity of the downstream TNW.

There are no known species found in this review area that require the aquatic resources of Tributary BT3 and its adjacent wetland and the waters of the TNW to fulfill their life cycle requirements. Tributary BT3 is not a RPW and flows into Batiste Creek, a RPW, which flows into Willow Creek, another RPW and then flows into the TNW; as such, it is possible to have aquatic organisms that require both features (TNW and waters in this reach). It is highly feasible that species of fishes and/or invertebrates utilize Tributary BT3 for portions of their life cycles; but there is insufficient evidence to identify specific species that require both the aquatic resources within this relevant reach of Tributary BT3 and the waters of the TNW to fulfill life cycle requirements. The abutting wetland aids in providing species habitat, shelter from predators, and detritus and nutrients as a food source. Therefore, it is the Corps' conclusion, that the aquatic resources within this relevant reach of Tributary BT3, although speculative, provide fundamental biotic support to maintain the biological integrity of the downstream TNW.

In conclusion, we have determined that there is sufficient evidence to support the statement that the aquatic resources within this approximate 186-foot relevant reach of the non-RPW Tributary BT3 and its 0.13-acre of abutting riparian forested wetland provide a significant nexus (more than speculative or insubstantial effect) to the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou). In conclusion, it is our opinion that this relevant reach of Tributary BT3 and its adjacent wetland are waters of the United States subject to Section 404 of the Clean Water Act.

### 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: **This relevant reach of Tributary BT3 is not a relatively permanent water and is a first order stream that flows into Batiste Creek, a RPW, which flows into Willow Creek, also a RPW, and then into Pine Island Bayou, the downstream TNW. There are approximately 0.13-acre of abutting riparian forested wetlands. This relevant reach of Tributary BT3 and its adjacent wetland provide important filtration to aid in the reduction of bacteria which will increase the concentration of dissolved oxygen as well as reducing thermal and chemical pollutants. The system also retains flood waters and reduces overbank flooding downstream, thereby decreasing the velocity and amount of water flowing downstream into Pine Island Bayou, the Neches River and Sabine Lake. Retaining flood waters also reduces scouring and the loss of property as well as preserving the physical attributes of the downstream TNW. Tributary BT3 and its abutting riparian forested wetland also likely support aquatic organisms and the adjacent wetland provides species habitat, shelter from predators and produces nutrients and detritus as a food source for downstream organisms. Based on this information, we determined that this relevant reach of Tributary BT3 and its adjacent wetland provide more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou).**

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

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:  
 TNWs: linear feet width (ft), Or, acres.  
 Wetlands adjacent to TNWs: acres.
2. **RPWs that flow directly or indirectly into TNWs.**  
 Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:  
 Tributaries of TNW where tributaries have continuous flow “seasonally” (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

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

- Tributary waters:            linear feet            width (ft)  
 Other non-wetland waters:            acres

Identify type(s) of waters:

**3. Non-RPWs<sup>8</sup> that flow directly or indirectly into TNWs.**

- Water body 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:    186    linear feet    2    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.**

- 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: 0.13 acres

**7. Impoundments of jurisdictional waters.<sup>9</sup>**

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):<sup>10</sup>**

- 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:**

<sup>8</sup>See Footnote # 3.

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

<sup>10</sup> 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.

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

- Tributary waters:        linear feet        width (ft)
- Other non-wetland waters:        acres  
    Identify type(s) of waters:
- Wetlands:        acres

**F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):**

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

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- Non-wetland waters (i.e., rivers, streams):        linear feet        width (ft).
- Lakes/ponds:        acres.
- Other non-wetland waters:        acres. List type of aquatic resource:
- Wetlands:        acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

- Non-wetland waters (i.e., rivers, streams):        linear feet,        width (ft).
- Lakes/ponds:        acres.
- Other non-wetland waters:        acres. List type of aquatic resource:
- Wetlands:        acres.

**SECTION IV: DATA SOURCES.**

**A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):**

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: **H & T Environmental**
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - Office concurs with data sheets/delineation report.
  - Office does not concur with data sheets/delineation report
- Data sheets prepared by the Corps: **7 January 2014, 17 October 2014, 20 May 2015, 8 October 2015**
- Corps navigable waters' study:
- U.S. Geological Survey Hydrologic Atlas: **Pine Island Bayou - - 12020007**
  - USGS NHD data
  - USGS 8 and 12 digit HUC maps
- Galveston District's Approved List of Navigable Waters
- U.S. Geological Survey map(s). Cite scale & quad name: **1984 Nome, Tex. USGS Quadrangle Map; 1984 Devers, Tex. USGS Quadrangle Map**
- USDA Natural Resources Conservation Service Soil Survey. Citation:
- National wetlands inventory map(s). Cite name: **Online USFWS NWI Mapper**
- State/Local wetland inventory map(s):
- FEMA/FIRM maps: **Liberty County, Texas Panels 500 and 525 of 675 dated 2 May 2008**
- 100-year Floodplain Elevation is:        (National Geodetic Vertical Datum of 1929)
- Photographs:  Aerial (Name & Date): **Google Earth 1995-2014**
  - 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:**

Tributary BT3 is not a relatively permanent water (RPW) and is a first order stream within this relevant reach, which is approximately 186 feet long and flows into Batiste Creek, a RPW. Batiste Creek flows into Willow Creek, another RPW, which flows into Pine Island Bayou, the nearest traditional navigable water (TNW). The relevant reach starts at the headwater of Tributary BT3 and ends where Tributary BT3 enters Batiste Creek (both on the project site). The relevant reach is located within a rural area that is not developed and the majority of the area is managed for timber production.

There are no offsite adjacent wetlands within this relevant reach. Tributary BT3 flows into Batiste Creek, which flows into Willow Creek, which flows into Pine Island Bayou, which flows into the Neches River, which flows into Sabine Lake which flows into the Gulf of Mexico. One wetland (Tributary BT3 Wetland) on the tract totaling 0.13-acre is adjacent to this relevant reach of Tributary BT3. This wetland is forested and abutting Tributary BT3. Based on our analysis, we determined that there is 1 adjacent wetland located within this relevant reach of Tributary BT3. This wetland abuts Tributary BT3 and is 0.13-acre in size.

The Corps did find evidence/data to support the statement that these waters (this relevant reach of Tributary BT3 and its abutting riparian forested wetland) provide more than a speculative or insubstantial effect upon the chemical integrity of the downstream TNW, which this relevant reach flows into. There is a direct surface hydrologic connection between this approximate 186-foot relevant reach of Tributary BT3 and the nearest TNW, Pine Island Bayou. The approximate 0.13-acre of abutting riparian wetland provides important filtration to aid in the reduction of bacteria, which will increase the dissolved oxygen concentrations in the downstream TNW due to less oxygen consumption. The wetland also serves to aid in the reduction of thermal and chemical pollutants as well as sediment from forestry activities flowing into Pine Island Bayou. Willow Creek and Pine Island Bayou are identified by the TCEQ as 303(d) impaired waters for dissolved oxygen (DO); therefore the wetland in this reach provides important properties associated with the production and maintenance of DO. The tributary and wetland are situated in a rural area that is heavily managed for timber production. The tributary provides opportunity for increased DO to enter the water column and these aquatic resources within this relevant reach provide more than speculative or insubstantial effects that are inseparably bound to the chemical integrity of the downstream TNW.

Within this relevant reach of Tributary BT3, there is approximately 0.13-acre of similarly situated wetlands and 186 feet of intermittent tributary (BT3). The TNW, Pine Island Bayou, is approximately 16.5 river miles downstream of this relevant reach. The retention of water and retardation of overbank flooding associated with adjacent wetlands is vital to maintain and protect the physical integrity of the downstream TNW. The effects of removing these aquatic resources would affect the velocity and flow into Pine Island Bayou and then to the Neches River and Sabine Lake, resulting in more than a speculative or insubstantial effect upon the physical attributes of the downstream TNWs. Increased flow will increase "out of bank" flooding and scouring, resulting in loss of property and the physical attributes of the TNW. Additionally, the abutting riparian wetland intercepts sediment, nutrients, and pesticides from entering Tributary BT3 and ultimately the downstream TNW, Pine Island Bayou. Therefore, the aquatic resources within this reach provide more than speculative or insubstantial effects that maintain the physical integrity of the downstream TNW.

There are no known species found in this review area that require the aquatic resources of Tributary BT3 and its adjacent wetland and the waters of the TNW to fulfill their life cycle requirements. Tributary BT3 is not a RPW and flows into Batiste Creek, a RPW, which flows into Willow Creek, another RPW and then flows into the TNW; as such, it is possible to have aquatic organisms that require both features (TNW and waters in this reach). It is highly feasible that species of fishes and/or invertebrates utilize Tributary BT3 for portions of their life cycles; but there is insufficient evidence to identify specific species that require both the aquatic resources within this relevant reach of Tributary BT3 and the waters of the TNW to fulfill life cycle requirements. The abutting wetland aids in providing species habitat, shelter from predators, and detritus and nutrients as a food source. Therefore, it is the Corps' conclusion, that the aquatic resources within this relevant reach of Tributary BT3, although speculative, provide fundamental biotic support to maintain the biological integrity of the downstream TNW.

In conclusion, we have determined that there is sufficient evidence to support the statement that the aquatic resources within this approximate 186-foot relevant reach of the non-RPW Tributary BT3 and its 0.13-acre of abutting riparian forested wetland provide a significant nexus (more than speculative or insubstantial effect) to the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou). In conclusion, it is our opinion that this relevant reach of Tributary BT3 and its adjacent wetland are waters of the United States subject to Section 404 of the Clean Water Act.

#### Wetlands on Project Site within this Relevant Reach

Aquatic Resources	Latitude	Longitude	UTM Zone	UTM Easting	UTM Northing	Acres
Tributary BT3 Wetland	30.063045 N	94.531618 W	15	352364	3326760	0.13
Tributary BT3	30.063098 N	94.531726 W	15	352353	3326766	0.01

# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary BT3 and Tributary BT3 Wetland

13 December 2015 Google Earth Aerial Photo

Start of Relevant Reach

SWG-2010-00942 Tributary BT3

SWG-2010-00942 Tributary BT3 Wetland

End of Relevant Reach

Batiste Creek



# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary BT3 and Tributary BT3 Wetland

13 December 2015 Google Earth Aerial Photo

Start of Relevant Reach  
SWG-2010-00942 Tributary BT3  
SWG-2010-00942 Tributary BT3 Wetland  
End of Relevant Reach  
Batiste Creek



Hardin County

Liberty County

SWG-2010-00942 Dan O'Neal  
 Approved Jurisdictional Determination  
 EPA Coordination  
 Positive Significant Nexus  
 Tributary BT3 and Tributary BT3 Wetland

— Relevant Reach = 186 feet  
— River Distance to TNW = 16.56 miles  
— Aerial Distance to TNW = 7.93 miles  
 River Distance to RPW = 0 to 186 feet  
 Aerial Distance to RPW = 0 to 205 feet

Pine Island Bayou  
Traditional Navigable Water

Start of Traditional  
Navigable Water

Batiste Creek - RPW

Start of Relevant Reach

Relevant Reach SWG-2010-00942 Tributary BT3 Wetland

End Batiste Creek/Start Willow Creek

Willow Creek - RPW

Relevant Reach  
Tributary BT3

Liberty County

Jefferson County

326

365

90  
Nome

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Google earth

# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary BT3 and Tributary BT3 Wetland

1983 Devers, Tex. USGS Quadrangle Map

Start of Relevant Reach

SWG-2010-00942 Tributary BT3

SWG-2010-00942 Tributary BT3 Wetland

End of Relevant Reach

Batiste Creek



# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary BT3 and Tributary BT3 Wetland

1983 Devers, Tex. USGS Quadrangle Map

Start of Relevant Reach  
SWG-2010-00942 Tributary BT3  
SWG-2010-00942 Tributary BT3 Wetland  
End of Relevant Reach  
Batiste Creek



**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): 26 February 2016**

**B. DISTRICT OFFICE, FILE NAME, AND NUMBER:** Galveston District, SWG-2010-00942, Dan O'Neal, Batiste Creek Mitigation Bank, Tributary BT4 and Tributary BT4 Wetland

**C. PROJECT LOCATION AND BACKGROUND INFORMATION:**

State: Texas County/Parish: Liberty City: northeast of Devers  
Center coordinates of site (lat/long in degree decimal format, NAD-83): Lat. see page 9° N, Long. see page 9° W;  
Universal Transverse Mercator: UTM: 15, see page 9 N., see page 9 E., NAD: 83  
Name of nearest water body: Tributary BT4  
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Pine Island Bayou  
Name of watershed or Hydrologic Unit Code (HUC): Pine Island Bayou - - 12020007

- 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: 13 February 2016
- Field Determination. Date(s): 7 January 2014, 17 October 2014, 20 May 2015, 8 July 2015, 8 October 2015, 6 January 2016, 7 January 2016

**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):<sup>1</sup>**

- TNWs, including territorial seas
- Wetlands adjacent to TNWs
- Relatively permanent waters<sup>2</sup> (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: **475** linear feet: **2** width (ft) and/or **0.02** acres  
Wetlands: **0.37** 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):<sup>3</sup>**

- Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.  
Explain:

<sup>1</sup> Boxes checked below shall be supported by completing the appropriate sections in Section III below.

<sup>2</sup> 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).

<sup>3</sup> 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, fill out Section III.D.2 and 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 water body<sup>4</sup> is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the water body 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: 1,761.6 square miles

Drainage area: Pick List

Average annual rainfall: 61.5 inches

Average annual snowfall: 0.0 inches

(ii) Physical Characteristics:

(a) Relationship with TNW:

Tributary flows directly into TNW.

Tributary flows through 2 tributaries before entering TNW.

Project waters are 15-20 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 TNW<sup>5</sup>: Tributary BT4 flows into Batiste Creek, which flows into Willow Creek, which flows into Pine Island Bayou, the nearest TNW.

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

<sup>5</sup> 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.

Tributary stream order, if known: **1**

(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: **2** feet  
Average depth: **0.5** feet  
Average side slopes: **3:1**

**Primary tributary substrate composition (check all that apply):**

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

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: **Fairly stable. Tributary has riparian buffer on both sides.**

Presence of run/riffle/pool complexes. Explain: **None**

Tributary geometry: **Meandering**

Tributary gradient (approximate average slope): **1-2 %**

(c) Flow:

Tributary provides for: **Intermittent but not seasonal flow**

Estimate average number of flow events in review area/year: **11-20**

Describe flow regime:

Other information on duration and volume: **Tributary primarily flows after precipitation events. Water from Batiste Creek also backs up into Tributary BT4 during flood events.**

Surface flow is: **Confined**. Characteristics:

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

Dye (or other) test performed:

Tributary has (check all that apply):

Bed and banks  
 OHWM<sup>6</sup> (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.<sup>7</sup> 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 color varies depending on storm water input.**

Identify specific pollutants, if known: **Unknown, however, receiving waters (Willow Creek and Pine Island Bayou) are impaired waters for dissolved oxygen.**

<sup>6</sup>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 water body'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.

<sup>7</sup>Ibid.

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

- Riparian corridor. Characteristics (type, average width): **100 feet**
- Wetland fringe. Characteristics: **Forested**
- Habitat for:
  - Federally Listed species. Explain findings:
  - Fish/spawn areas. Explain findings:
  - Other environmentally-sensitive species. Explain findings:
  - Aquatic/wildlife diversity. Explain findings:

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

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: **0.37** acres

Wetland type. Explain: **PFO**

Wetland quality. Explain: **medium to high**

Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

Flow is: **Ephemeral 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
- Not directly abutting
  - Discrete wetland hydrologic connection. Explain:
  - Ecological connection. Explain:
  - Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW

Project wetlands are **15-20** 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 **50 - 100-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: **No water was in the wetland during the site visit. Chemical characteristics are unknown.**

Identify specific pollutants, if known:

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

- Riparian buffer. Characteristics (type, average width):
- Vegetation type/percent cover. Explain: **forested; 100 percent cover**
- 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: **1**

Approximately (**0.37**) 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>
Yes	0.37 PFO		

Summarize overall biological, chemical and physical functions being performed: **Tributary BT4 is not a relatively permanent water (RPW) and is a first order stream within this relevant reach, which is approximately 475 feet long and flows into Batiste Creek, a RPW. Batiste Creek flows into Willow Creek, another RPW, which flows into Pine Island Bayou, the nearest traditional navigable water (TNW). The relevant reach starts at the headwater of Tributary BT4 and ends where Tributary BT4 enters Batiste Creek (both on the project site). The relevant reach is located within a rural area that is not developed and the majority of the area is managed for timber production.**

There are no offsite adjacent wetlands within this relevant reach. Tributary BT4 flows into Batiste Creek, which flows into Willow Creek, which flows into Pine Island Bayou, which flows into the Neches River, which flows into Sabine Lake which flows into the Gulf of Mexico. One wetland (Tributary BT4 Wetland) on the tract totaling 0.37-acre is adjacent to this relevant reach of Tributary BT4. This wetland is forested and abutting Tributary BT4. Based on our analysis, we determined that there is 1 adjacent wetland located within this relevant reach of Tributary BT4. This wetland abuts Tributary BT4 and is 0.37-acre in size.

The Corps did find evidence/data to support the statement that these waters (this relevant reach of Tributary BT4 and its abutting riparian forested wetland) provide more than a speculative or insubstantial effect upon the chemical integrity of the downstream TNW, which this relevant reach flows into. There is a direct surface hydrologic connection between this approximate 475-foot relevant reach of Tributary BT4 and the nearest TNW, Pine Island Bayou. The approximate 0.37-acre of abutting riparian wetland provides important filtration to aid in the reduction of bacteria, which will increase the dissolved oxygen (DO) concentrations in the downstream TNW due to less oxygen consumption. The wetland also serves to aid in the reduction of thermal and chemical pollutants as well as sediment from forestry activities flowing into Pine Island Bayou. Willow Creek and Pine Island Bayou are identified by the TCEQ as 303(d) impaired waters for DO; therefore the wetland in this reach provides important properties associated with the production and maintenance of DO. The tributary and wetland are situated in a rural area that is heavily managed for timber production. The tributary provides opportunity for increased DO to enter the water column and these aquatic resources within this relevant reach provide more than speculative or insubstantial effects that are inseparably bound to the chemical integrity of the downstream TNW.

Within this relevant reach of Tributary BT4, there is approximately 0.37-acre of similarly situated wetlands and 475 feet of intermittent tributary (BT4). The TNW, Pine Island Bayou, is approximately 15.55 river miles downstream of this relevant reach. The retention of water and retardation of overbank flooding associated with adjacent wetlands is vital to maintain and protect the physical integrity of the downstream TNW. The effects of removing these aquatic resources would affect the velocity and flow into Pine Island Bayou and then to the Neches River and Sabine Lake, resulting in more than a speculative or insubstantial effect upon the physical attributes of the downstream TNWs. Increased flow will increase "out of bank" flooding and scouring, resulting in loss of property and the physical attributes of the TNW. Additionally, the abutting riparian wetland intercepts sediment, nutrients, and pesticides from entering Tributary BT4 and ultimately the downstream TNW, Pine Island Bayou. Therefore, the aquatic resources within this reach provide more than speculative or insubstantial effects that maintain the physical integrity of the downstream TNW.

There are no known species found in this review area that require the aquatic resources of Tributary BT4 and its adjacent wetland and the waters of the TNW to fulfill their life cycle requirements. Tributary BT4 is not a RPW and flows into Batiste Creek, a RPW, which flows into Willow Creek, another RPW and then flows into the TNW; as such, it is possible to have aquatic organisms that require both features (TNW and waters in this reach). It is highly feasible that species of fishes and/or invertebrates utilize Tributary BT4 for portions of their life cycles; but there is insufficient evidence to identify specific species that require both the aquatic resources within this relevant reach of Tributary BT4 and the waters of the TNW to fulfill life cycle requirements. The abutting wetland aids in providing species habitat, shelter from predators, and detritus and nutrients as a food source. Therefore, it is the Corps' conclusion, that the aquatic resources within this relevant reach of Tributary BT4, although speculative, provide fundamental biotic support to maintain the biological integrity of the downstream TNW.

In conclusion, we have determined that there is sufficient evidence to support the statement that the aquatic resources within this approximate 475-foot relevant reach of the non-RPW Tributary BT4 and its 0.37-acre of abutting riparian forested wetland provide a significant nexus (more than speculative or insubstantial effect) to the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou). In conclusion, it is our opinion that this relevant reach of Tributary BT4 and its adjacent wetland are waters of the United States subject to Section 404 of the Clean Water Act.

### 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: **This relevant reach of Tributary BT4 is not a relatively permanent water and is a first order stream that flows into Batiste Creek, a RPW, which flows into Willow Creek, also a RPW, and then into Pine Island Bayou, the downstream TNW. There are approximately 0.37-acre of abutting riparian forested wetlands. This relevant reach of Tributary BT4 and its adjacent wetland provide important filtration to aid in the reduction of bacteria which will increase the concentration of dissolved oxygen as well as reducing thermal and chemical pollutants. The system also retains flood waters and reduces overbank flooding downstream, thereby decreasing the velocity and amount of water flowing downstream into Pine Island Bayou, the Neches River and Sabine Lake. Retaining flood waters also reduces scouring and the loss of property as well as preserving the physical attributes of the downstream TNW. Tributary BT4 and its abutting riparian forested wetland also likely support aquatic organisms and the adjacent wetland provides species habitat, shelter from predators and produces nutrients and detritus as a food source for downstream organisms. Based on this information, we determined that this relevant reach of Tributary BT4 and its adjacent wetland provide more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou).**

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

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
  - TNWs: linear feet width (ft), Or, acres.
  - Wetlands adjacent to TNWs: acres.
2. **RPWs that flow directly or indirectly into TNWs.**
  - Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:
  - Tributaries of TNW where tributaries have continuous flow “seasonally” (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

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

- Tributary waters:            linear feet            width (ft)
  - Other non-wetland waters:            acres
- Identify type(s) of waters:

**3. Non-RPWs<sup>8</sup> that flow directly or indirectly into TNWs.**

- Water body 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:    475    linear feet    2    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.**

- 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: 0.37 acres

**7. Impoundments of jurisdictional waters.<sup>9</sup>**

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):<sup>10</sup>**

- 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:**

<sup>8</sup>See Footnote # 3.

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

<sup>10</sup> 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.

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

- Tributary waters:        linear feet        width (ft)
- Other non-wetland waters:        acres
- Identify type(s) of waters:
- Wetlands:        acres

**F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):**

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

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- Non-wetland waters (i.e., rivers, streams):        linear feet        width (ft).
- Lakes/ponds:        acres.
- Other non-wetland waters:        acres. List type of aquatic resource:
- Wetlands:        acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

- Non-wetland waters (i.e., rivers, streams):        linear feet,        width (ft).
- Lakes/ponds:        acres.
- Other non-wetland waters:        acres. List type of aquatic resource:
- Wetlands:        acres.

**SECTION IV: DATA SOURCES.**

**A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):**

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: **H & T Environmental**
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - Office concurs with data sheets/delineation report.
  - Office does not concur with data sheets/delineation report
- Data sheets prepared by the Corps: **7 January 2014, 17 October 2014, 20 May 2015, 8 October 2015**
- Corps navigable waters' study:
- U.S. Geological Survey Hydrologic Atlas: **Pine Island Bayou -- 12020007**
  - USGS NHD data
  - USGS 8 and 12 digit HUC maps
- Galveston District's Approved List of Navigable Waters
- U.S. Geological Survey map(s). Cite scale & quad name: **1984 Nome, Tex. USGS Quadrangle Map; 1984 Devers, Tex. USGS Quadrangle Map**
- USDA Natural Resources Conservation Service Soil Survey. Citation:
- National wetlands inventory map(s). Cite name: **Online USFWS NWI Mapper**
- State/Local wetland inventory map(s):
- FEMA/FIRM maps: **Liberty County, Texas Panels 500 and 525 of 675 dated 2 May 2008**
- 100-year Floodplain Elevation is:        (National Geodectic Vertical Datum of 1929)
- Photographs:  Aerial (Name & Date): **Google Earth 1995-2014**
  - 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:**

Tributary BT4 is not a relatively permanent water (RPW) and is a first order stream within this relevant reach, which is approximately 475 feet long and flows into Batiste Creek, a RPW. Batiste Creek flows into Willow Creek, another RPW, which flows into Pine Island Bayou, the nearest traditional navigable water (TNW). The relevant reach starts at the headwater of Tributary BT4 and ends where Tributary BT4 enters Batiste Creek (both on the project site). The relevant reach is located within a rural area that is not developed and the majority of the area is managed for timber production.

There are no offsite adjacent wetlands within this relevant reach. Tributary BT4 flows into Batiste Creek, which flows into Willow Creek, which flows into Pine Island Bayou, which flows into the Neches River, which flows into Sabine Lake which flows into the Gulf of Mexico. One wetland (Tributary BT4 Wetland) on the tract totaling 0.37-acre is adjacent to this relevant reach of Tributary BT4. This wetland is forested and abutting Tributary BT4. Based on our analysis, we determined that there is 1 adjacent wetland located within this relevant reach of Tributary BT4. This wetland abuts Tributary BT4 and is 0.37-acre in size.

The Corps did find evidence/data to support the statement that these waters (this relevant reach of Tributary BT4 and its abutting riparian forested wetland) provide more than a speculative or insubstantial effect upon the chemical integrity of the downstream TNW, which this relevant reach flows into. There is a direct surface hydrologic connection between this approximate 475-foot relevant reach of Tributary BT4 and the nearest TNW, Pine Island Bayou. The approximate 0.37-acre of abutting riparian wetland provides important filtration to aid in the reduction of bacteria, which will increase the dissolved oxygen (DO) concentrations in the downstream TNW due to less oxygen consumption. The wetland also serves to aid in the reduction of thermal and chemical pollutants as well as sediment from forestry activities flowing into Pine Island Bayou. Willow Creek and Pine Island Bayou are identified by the TCEQ as 303(d) impaired waters for DO; therefore the wetland in this reach provides important properties associated with the production and maintenance of DO. The tributary and wetland are situated in a rural area that is heavily managed for timber production. The tributary provides opportunity for increased DO to enter the water column and these aquatic resources within this relevant reach provide more than speculative or insubstantial effects that are inseparably bound to the chemical integrity of the downstream TNW.

Within this relevant reach of Tributary BT4, there is approximately 0.37-acre of similarly situated wetlands and 475 feet of intermittent tributary (BT4). The TNW, Pine Island Bayou, is approximately 15.55 river miles downstream of this relevant reach. The retention of water and retardation of overbank flooding associated with adjacent wetlands is vital to maintain and protect the physical integrity of the downstream TNW. The effects of removing these aquatic resources would affect the velocity and flow into Pine Island Bayou and then to the Neches River and Sabine Lake, resulting in more than a speculative or insubstantial effect upon the physical attributes of the downstream TNWs. Increased flow will increase "out of bank" flooding and scouring, resulting in loss of property and the physical attributes of the TNW. Additionally, the abutting riparian wetland intercepts sediment, nutrients, and pesticides from entering Tributary BT4 and ultimately the downstream TNW, Pine Island Bayou. Therefore, the aquatic resources within this reach provide more than speculative or insubstantial effects that maintain the physical integrity of the downstream TNW.

There are no known species found in this review area that require the aquatic resources of Tributary BT4 and its adjacent wetland and the waters of the TNW to fulfill their life cycle requirements. Tributary BT4 is not a RPW and flows into Batiste Creek, a RPW, which flows into Willow Creek, another RPW and then flows into the TNW; as such, it is possible to have aquatic organisms that require both features (TNW and waters in this reach). It is highly feasible that species of fishes and/or invertebrates utilize Tributary BT4 for portions of their life cycles; but there is insufficient evidence to identify specific species that require both the aquatic resources within this relevant reach of Tributary BT4 and the waters of the TNW to fulfill life cycle requirements. The abutting wetland aids in providing species habitat, shelter from predators, and detritus and nutrients as a food source. Therefore, it is the Corps' conclusion, that the aquatic resources within this relevant reach of Tributary BT4, although speculative, provide fundamental biotic support to maintain the biological integrity of the downstream TNW.

In conclusion, we have determined that there is sufficient evidence to support the statement that the aquatic resources within this approximate 475-foot relevant reach of the non-RPW Tributary BT4 and its 0.37-acre of abutting riparian forested wetland provide a significant nexus (more than speculative or insubstantial effect) to the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou). In conclusion, it is our opinion that this relevant reach of Tributary BT4 and its adjacent wetland are waters of the United States subject to Section 404 of the Clean Water Act.

Wetlands on Project Site within this Relevant Reach

Aquatic Resources	Latitude	Longitude	UTM Zone	UTM Easting	UTM Northing	Acres
Tributary BT4 Wetland	30.061006 N	94.523481 W	15	353145	3326523	0.37
Tributary BT4	30.061094 N	94.522865 W	15	353205	3326532	0.02

# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary BT4 and Tributary BT4 Wetland

13 December 2015 Google Earth Aerial Photo



# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary BT4 and Tributary BT4 Wetland

13 December 2015 Google Earth Aerial Photo

SWG-2010-00942 Tributary BT4  
Start of Relevant Reach  
SWG-2010-00942 Tributary BT4 Wetland  
End of Relevant Reach

Batiste Creek

End Batiste Creek/Start Willow Creek

Google earth

© 2016 Google

1000 ft



Hardin County

Liberty County

SWG-2010-00942 Dan O'Neal  
 Approved Jurisdictional Determination  
 EPA Coordination  
 Positive Significant Nexus  
 Tributary BT4 and Tributary BT4 Wetland

- Relevant Reach = 475 feet
- River Distance to TNW = 15.55 miles
- Aerial Distance to TNW = 7.44 miles
- River Distance to RPW = 0 to 475 feet
- Aerial Distance to RPW = 0 to 444 feet

Start of Traditional Navigable Water

Pine Island Bayou  
Traditional Navigable Water

Relevant Reach  
Tributary BT4

Start Reach SWG-2010-00942 Tributary BT4  
End of Relevant Reach

Batiste Creek (Start Willow Creek)

Batiste Creek - RPW

Willow Creek - RPW

Liberty County

Jefferson County

326

© 2016 Google

Google earth

90  
365

# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary BT4 and Tributary BT4 Wetland

1984 Devers, Tex. USGS Quadrangle Map

SWG-2010-00942 Tributary BT4

Start of Relevant Reach  
SWG-2010-00942 Tributary BT4 Wetland

End of Relevant Reach

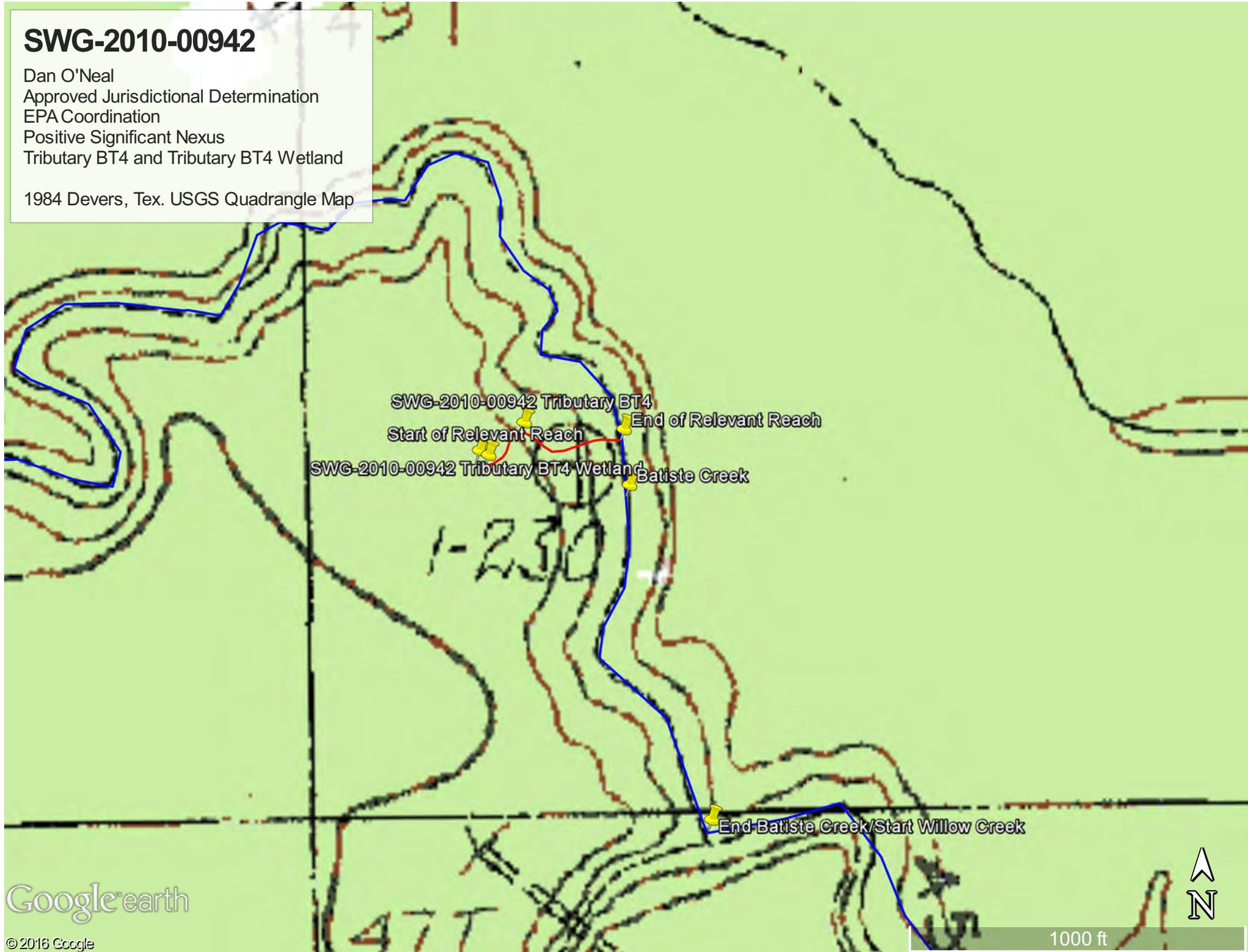
Batiste Creek



# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary BT4 and Tributary BT4 Wetland

1984 Devers, Tex. USGS Quadrangle Map



**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): 25 February 2016**

**B. DISTRICT OFFICE, FILE NAME, AND NUMBER:** Galveston District, SWG-2010-00942, Dan O'Neal, Batiste Creek Mitigation Bank, Willow Creek, Wetlands WB2, 8A, 9A, 4A, 6A, 7A, 10A, 21A, 11A, 12A, 16A, 13A, and 18A

**C. PROJECT LOCATION AND BACKGROUND INFORMATION:**

State: Texas County/Parish: Liberty City: northeast of Devers  
Center coordinates of site (lat/long in degree decimal format, NAD-83): Lat. see page 10° N, Long. see page 10° W;  
Universal Transverse Mercator: UTM: 15, see page 10 N., see page 10 E., NAD: 83  
Name of nearest water body: Willow Creek  
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Pine Island Bayou  
Name of watershed or Hydrologic Unit Code (HUC): Pine Island Bayou - - 12020007

- 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: 13 February 2016  
 Field Determination. Date(s): 7 January 2014, 17 October 2014, 20 May 2015, 8 July 2015, 8 October 2015, 6 January 2016, 7 January 2016

**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):<sup>1</sup>**

- TNWs, including territorial seas  
 Wetlands adjacent to TNWs  
 Relatively permanent waters<sup>2</sup> (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: **18,674** linear feet: width (ft) and/or **29.7** acres  
Wetlands: **117.34** 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):<sup>3</sup>**

- Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.  
Explain:

<sup>1</sup> Boxes checked below shall be supported by completing the appropriate sections in Section III below.

<sup>2</sup> 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).

<sup>3</sup> 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, fill out Section III.D.2 and 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 water body<sup>4</sup> is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the water body 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: 1,761.6 square miles

Drainage area: Pick List

Average annual rainfall: 61.5 inches

Average annual snowfall: 0.0 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 10-15 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 TNW<sup>5</sup>: Willow Creek flows into Pine Island Bayou, the nearest TNW.

Tributary stream order, if known: 4

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

<sup>5</sup> 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: **69** feet

Average depth: **2** feet

Average side slopes: **3:1**

Primary tributary substrate composition (check all that apply):

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

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: **Fairly stable. Tributary has riparian buffer on both sides.**

Presence of run/riffle/pool complexes. Explain: **None**

Tributary geometry: **Meandering**

Tributary gradient (approximate average slope): **1-2 %**

(c) Flow:

Tributary provides for: **Seasonal flow**

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

Describe flow regime:

Other information on duration and volume: **Tributary is perennial**

Surface flow is: **Confined**. Characteristics:

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

Dye (or other) test performed:

Tributary has (check all that apply):

Bed and banks  
 OHWM<sup>6</sup> (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.<sup>7</sup> 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 color varies depending on storm water input. Very turbid at times and clear at times.**

Identify specific pollutants, if known: **Impaired water for dissolved oxygen.**

<sup>6</sup>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 water body'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.

<sup>7</sup>Ibid.

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

- Riparian corridor. Characteristics (type, average width): **200 feet**
- Wetland fringe. Characteristics: **Forested and emergent**
- Habitat for:
  - Federally Listed species. Explain findings:
  - Fish/spawn areas. Explain findings:
  - Other environmentally-sensitive species. Explain findings:
  - Aquatic/wildlife diversity. Explain findings:

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

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: **117.34** acres

Wetland type. Explain: **PFO, PSS and PEM**

Wetland quality. Explain: **medium to high**

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

Not directly abutting

Discrete wetland hydrologic connection. Explain: **Connected by 100-year floodplain of Willow Creek**

Ecological connection. Explain:

Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW

Project wetlands are **10-15** 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 **50 - 100-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: **During site visit, water in wetlands was fairly clear. Chemical characteristics are unknown.**

Identify specific pollutants, if known:

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

- Riparian buffer. Characteristics (type, average width):
- Vegetation type/percent cover. Explain: **forested, scrub shrub and emergent; 100 percent cover**
- 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: **11**

Approximately (**1042.71**) 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>
No	0.82 PSS	No	0.99 PFO
Yes	58 PFO	Yes	4.1 PFO
Yes	147 PFO	No	6.79 PEM
Yes	30.6 PFO	No	4.47 PFO
Yes	542.5 PFO	No	26 PFO
Yes	221.44 PFO		

Summarize overall biological, chemical and physical functions being performed: Willow Creek is a relatively permanent water (RPW) and a fourth order stream within this relevant reach, which is approximately 15.3 miles long and flows into Pine Island Bayou, the nearest Traditional Navigable Water (TNW). The relevant reach starts where Batiste Creek enters Willow Creek (near the middle of the project site) and ends where Willow Creek enters Pine Island Bayou, the TNW. The relevant reach is located within a rural area that is not developed and the majority of the area is managed for timber production.

There are 11 offsite adjacent wetlands within this relevant reach that are located east and downstream of the tract. The wetlands total approximately 1,042.7 acres, based on the NWI, FEMA FIRMs, and Google Earth aerial photos. Approximately 1,003.5 acres of these wetlands are abutting Willow Creek. All of these abutting wetlands are forested. Approximately 39 acres of these adjacent wetlands are not directly abutting Willow Creek, of which approximately 0.82-acre is scrub-shrub, 6.79 acres are emergent, and 31.46 acres are forested wetlands. These wetlands range from approximately 0.1 to 11.8 river miles and from approximately 0.1 to 7.1 aerial miles from Pine Island Bayou, the nearest TNW. Willow Creek flows directly into Pine Island Bayou, which flows into the Neches River, which flows into Sabine Lake which flows into the Gulf of Mexico. Thirteen wetlands (WB2, 8A, 9A, 4A, 6A, 7A, 10A, 21A, 11A, 12A, 16A, 13A, and 18A) on the tract totaling 117.34 acres are adjacent to this relevant reach of Willow Creek. Approximately 47.79 acres of these wetlands are forested and abutting Willow Creek and approximately 69.55 acres of these wetlands are forested/scrub-shrub and/or emergent and neighboring Willow Creek. Based on our analysis, we determined that there are a total of 24 adjacent wetlands located within this relevant reach of Willow Creek. These wetlands abut or are neighboring Willow Creek and total approximately 1,160 acres.

The Corps did find evidence/data to support the statement that these waters (this relevant reach of Willow Creek and all similarly situated adjacent wetlands within this relevant reach) provide more than a speculative or insubstantial effect upon the chemical integrity of the downstream TNW which this relevant reach flows into. There is a direct surface hydrologic connection between this approximate 15.3-mile long relevant reach of Willow Creek and the nearest TNW, Pine Island Bayou. The approximate 1,160 acres of adjacent wetlands provide important filtration to aid in the reduction of bacteria, which will increase the dissolved oxygen concentrations in the downstream TNW because less oxygen will be consumed by the bacteria. The wetlands also serve to aid in the reduction of thermal and chemical pollutants as well as sediment from forestry activities flowing into Pine Island Bayou. Willow Creek and Pine Island Bayou are identified by the TCEQ as a 303(d) impaired waters for dissolved oxygen (DO); therefore the wetlands in this reach provide important properties associated with the production and maintenance of DO. The wetlands are situated in a rural area that is heavily managed for timber production. The aquatic resources within this relevant reach provide more than speculative or insubstantial effects that are inseparably bound to the chemical integrity of the downstream TNW.

Within this relevant reach of Willow Creek, there are approximately 1,160 acres of similarly situated wetlands abutting or neighboring Willow Creek. The TNW, Pine Island Bayou, is immediately downstream of this relevant reach. The retention of water and retardation of overbank flooding associated with adjacent wetlands is vital to maintain and protect the physical integrity of the downstream TNW. The effects of removing approximately 1,051 acres of abutting wetlands would increase the velocity and flow into Pine Island Bayou, the Neches River, and Sabine Lake, resulting in more than a speculative or insubstantial effect upon the physical attributes of the downstream TNWs. Increased flow will increase "out of bank" flooding and scouring, resulting in loss of property and the physical attributes of the TNW. Therefore, the aquatic resources within this reach provide more than speculative or insubstantial effects that are inseparably bound to maintain the physical integrity of the downstream TNW.

There are no known species found in this review area that require the aquatic resources of Willow Creek and it's adjacent wetlands and the waters of the TNW to fulfill their life cycle requirements. Willow Creek is a RPW and flows into the TNW; as such, it is more likely to have aquatic organisms that require both features (TNW and waters in this reach). It is highly feasible that species of fishes and/or invertebrates utilize Willow Creek for portions of their life cycles; but there is insufficient evidence to identify specific species that require both the aquatic resources within this relevant reach of Willow Creek and the waters of the TNW to fulfill life cycle requirements. The abutting and neighboring wetlands aid in providing species habitat, shelter from predators, and detritus and nutrients as a food source. Therefore, it is the Corps' conclusion, that the aquatic resources within this relevant reach of Willow Creek, although speculative, provide more than an important effect on the biological integrity of the downstream TNW.

In conclusion, we have determined that there is sufficient evidence to support the statement that the aquatic resources within this approximate 15.3-mile relevant reach of Willow Creek and its 1,160 acres of adjacent wetlands provide a significant nexus (more than speculative or insubstantial effect) to the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou). In conclusion, it is our opinion that this relevant reach of Willow Creek and its adjacent wetlands are waters of the United States subject to Section 404 of the Clean Water Act.

### 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: **This relevant reach of Willow Creek is a relatively permanent water and a fourth order stream that flows into Pine Island Bayou, the downstream TNW. There are approximately 1,051 acres of abutting wetlands and 109 acres of neighboring wetlands. This relevant reach of Willow Creek and its adjacent wetlands provide important filtration to aid in the reduction of bacteria which will increase the concentration of dissolved oxygen as well as reducing thermal and chemical pollutants. The system also retains flood waters and reduces overbank flooding downstream, thereby decreasing the velocity and amount of water flowing downstream into Pine Island Bayou, the Neches River and Sabine Lake. Retaining flood waters also reduces scouring and the loss of property as well as preserving the physical attributes of the downstream TNW. Willow Creek and its adjacent wetlands also likely support aquatic organisms and the adjacent wetlands provide species habitat, shelter from predators and produce nutrients and detritus as a food source for downstream organisms. Based on this information, we determined that this relevant reach of Willow Creek and its adjacent wetlands provide more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou).**

### 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: **Water was flowing in Willow Creek during every site visit. Water is also visible in Willow Creek in every Google Earth aerial photo where the creek channel is visible. Therefore, Willow Creek is a perennial relatively permanent water.**
- 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: 18,674 linear feet 69 width (ft)
  - Other non-wetland waters:        acres
- Identify type(s) of waters:

**3. Non-RPWs<sup>8</sup> that flow directly or indirectly into TNWs.**

- Water body 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 WB2, 8A and 9A are contiguous with and bordering Willow Creek, Therefore, the wetlands are abutting Willow Creek.
  - 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: 47.79 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: 69.55 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.<sup>9</sup>**

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):<sup>10</sup>**

<sup>8</sup>See Footnote # 3.

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

- 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):**

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: **H & T Environmental**
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - Office concurs with data sheets/delineation report.
  - Office does not concur with data sheets/delineation report
- Data sheets prepared by the Corps: **7 January 2014, 17 October 2014, 20 May 2015, 8 October 2015**
- Corps navigable waters’ study:
- U.S. Geological Survey Hydrologic Atlas: **Pine Island Bayou - - 12020007**
  - USGS NHD data
  - USGS 8 and 12 digit HUC maps
- Galveston District’s Approved List of Navigable Waters
- U.S. Geological Survey map(s). Cite scale & quad name: **1984 Nome, Tex. USGS Quadrangle Map; 1984 Devers, Tex, USGS Quadrangle Map**
- USDA Natural Resources Conservation Service Soil Survey. Citation:
- National wetlands inventory map(s). Cite name: **Online USFWS NWI Mapper**
- State/Local wetland inventory map(s):

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<sup>10</sup> 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.

- FEMA/FIRM maps: **Liberty County, Texas Panels 500 and 525 of 675 dated 2 May 2008**
- 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- Photographs:  Aerial (Name & Date): **Google Earth 1995-2014**  
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:**

Willow Creek is a relatively permanent water (RPW) and a fourth order stream within this relevant reach, which is approximately 15.3 miles long and flows into Pine Island Bayou, the nearest Traditional Navigable Water (TNW). The relevant reach starts where Batiste Creek enters Willow Creek (near the middle of the project site) and ends where Willow Creek enters Pine Island Bayou, the TNW. The relevant reach is located within a rural area that is not developed and the majority of the area is managed for timber production.

There are 11 offsite adjacent wetlands within this relevant reach that are located east and downstream of the tract. The wetlands total approximately 1,042.7 acres, based on the NWI, FEMA FIRMS, and Google Earth aerial photos. Approximately 1,003.5 acres of these wetlands are abutting Willow Creek. All of these abutting wetlands are forested. Approximately 39 acres of these adjacent wetlands are not directly abutting Willow Creek, of which approximately 0.82-acre is scrub-shrub, 6.79 acres are emergent, and 31.46 acres are forested wetlands. These wetlands range from approximately 0.1 to 11.8 river miles and from approximately 0.1 to 7.1 aerial miles from Pine Island Bayou, the nearest TNW. Willow Creek flows directly into Pine Island Bayou, which flows into the Neches River, which flows into Sabine Lake which flows into the Gulf of Mexico. Thirteen wetlands (WB2, 8A, 9A, 4A, 6A, 7A, 10A, 21A, 11A, 12A, 16A, 13A, and 18A) on the tract totaling 117.34 acres are adjacent to this relevant reach of Willow Creek. Approximately 47.79 acres of these wetlands are forested and abutting Willow Creek and approximately 69.55 acres of these wetlands are forested/scrub-shrub and/or emergent and neighboring Willow Creek. Based on our analysis, we determined that there are a total of 24 adjacent wetlands located within this relevant reach of Willow Creek. These wetlands abut or are neighboring Willow Creek and total approximately 1,160 acres.

The Corps did find evidence/data to support the statement that these waters (this relevant reach of Willow Creek and all similarly situated adjacent wetlands within this relevant reach) provide more than a speculative or insubstantial effect upon the chemical integrity of the downstream TNW which this relevant reach flows into. There is a direct surface hydrologic connection between this approximate 15.3-mile long relevant reach of Willow Creek and the nearest TNW, Pine Island Bayou. The approximate 1,160 acres of adjacent wetlands provide important filtration to aid in the reduction of bacteria, which will increase the dissolved oxygen concentrations in the downstream TNW because less oxygen will be consumed by the bacteria. The wetlands also serve to aid in the reduction of thermal and chemical pollutants as well as sediment from forestry activities flowing into Pine Island Bayou. Willow Creek and Pine Island Bayou are identified by the TCEQ as a 303(d) impaired waters for dissolved oxygen (DO); therefore the wetlands in this reach provide important properties associated with the production and maintenance of DO. The wetlands are situated in a rural area that is heavily managed for timber production. The aquatic resources within this relevant reach provide more than speculative or insubstantial effects that are inseparably bound to the chemical integrity of the downstream TNW.

Within this relevant reach of Willow Creek, there are approximately 1,160 acres of similarly situated wetlands abutting or neighboring Willow Creek. The TNW, Pine Island Bayou, is immediately downstream of this relevant reach. The retention of water and retardation of overbank flooding associated with adjacent wetlands is vital to maintain and protect the physical integrity of the downstream TNW. The effects of removing approximately 1,051 acres of abutting wetlands would increase the velocity and flow into Pine Island Bayou, the Neches River, and Sabine Lake, resulting in more than a speculative or insubstantial effect upon the physical attributes of the downstream TNWs. Increased flow will increase "out of bank" flooding and scouring, resulting in loss of property and the physical attributes of the TNW. Therefore, the aquatic resources within this reach provide more than speculative or insubstantial effects that are inseparably bound to maintain the physical integrity of the downstream TNW.

There are no known species found in this review area that require the aquatic resources of Willow Creek and it's adjacent wetlands and the waters of the TNW to fulfill their life cycle requirements. Willow Creek is a RPW and flows into the TNW; as such, it is more likely to have aquatic organisms that require both features (TNW and waters in this reach). It is highly feasible that species of fishes and/or invertebrates utilize Willow Creek for portions of their life cycles; but there is insufficient evidence to identify specific species that require both the aquatic resources within this relevant reach of Willow Creek and the waters of the TNW to fulfill life cycle requirements. The abutting and neighboring wetlands aid in providing species habitat, shelter from predators, and detritus and nutrients as a food source. Therefore, it is the Corps' conclusion, that the aquatic resources within this relevant reach of Willow Creek, although speculative, provide more than an important effect on the biological integrity of the downstream TNW.

In conclusion, we have determined that there is sufficient evidence to support the statement that the aquatic resources within this approximate 15.3-mile relevant reach of Willow Creek and its 1,160 acres of adjacent wetlands provide a significant nexus (more than speculative or insubstantial effect) to the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou). In conclusion, it is our opinion that this relevant reach of Willow Creek and its adjacent wetlands are waters of the United States subject to Section 404 of the Clean Water Act.

Wetlands on Project Site within this Relevant Reach

Wetland	Latitude	Longitude	UTM Zone	UTM Easting	UTM Northing	Acres	
WB2 (Abut)	30.055304 N	94.516010 W	15	353857	3325882	44.76	
8A (Abut)	30.055699 N	94.512270 W	15	354218	3325921	1.22	
9A (Abut)	30.056188 N	94.511127 W	15	354329	3325974	1.81	
4A (Mosaic)	30.056615 N	94.520683 W	15	353408	3326033	5.81	
6A	30.054274 N	94.518272 W	15	353637	3325771	0.30	
7A	30.058268 N	94.514677 W	15	353990	3326209	32.20	
10A (Mosaic)	30.059500 N	94.510204 W	15	354423	3326340	6.54	
21A	30.058924 N	94.507758 W	15	354658	3326273	0.14	
11A	30.057594 N	94.503315 W	15	355084	3326120	13.80	
12A (Mosaic)	30.052971 N	94.507048 W	15	354718	3325612	10.40	
16A	30.053215 N	94.504361 W	15	354977	3325636	0.02	
13A	30.052701 N	94.498610 W	15	355531	3325571	0.33	
18A	30.054801 N	94.503405 W	15	355072	3325810	0.01	
Water							
Willow Creek (RPW)	30.059957 N	94.504495 W	15	354974	3326383	29.7	18,674 LF

# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Wetlands 4A, 6A, 7A, 10A, 21A, 11A, 12A, 16A, 13A, and 18A

3 October 2014 Google Earth Aerial Photo

- SWG-2010-00942 Wetland 4A
- SWG-2010-00942 Wetland 6A
- SWG-2010-00942 Wetland 7A
- SWG-2010-00942 Wetland 10A
- SWG-2010-00942 Wetland 11A
- SWG-2010-00942 Wetland 12A
- SWG-2010-00942 Wetland 13A
- SWG-2010-00942 Wetland 16A
- SWG-2010-00942 Wetland 18A
- SWG-2010-00942 Wetland 21A

Hardin County

Liberty County

Traditional Navigable Water  
Pine Island Bayou

SWG-2010-00942 Dan O'Neal  
EPA Coordination  
Positive Significant Nexus  
Wetlands 4A, 6A, 7A, 10A, 21A, 11A, 12A, 16A, 13A, 18A

- Relevant Reach = 15.3 miles
- Aerial Miles to TNW = 6.39 to 7.45 miles
- River Miles to TNW = 11.8 to 15.3 miles
- Aerial Miles to RPW = 0.01 to 0.11-mile

End of Relevant Reach -  
Start of Traditional  
Navigable Water

Start of Relevant Reach

SWG-2010-00942 Wetland 21A

SWG-2010-00942 Wetland 15A

SWG-2010-00942 Wetland 11A

SWG-2010-00942 Wetland 18A

SWG-2010-00942 Wetland 6A

SWG-2010-00942 Wetland 16A

SWG-2010-00942 Wetland 13A

SWG-2010-00942 Wetland 12A

Relevant Reach  
Willow Creek

Liberty County

Jefferson County

Nome

90

365

326

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Dan O'Neal

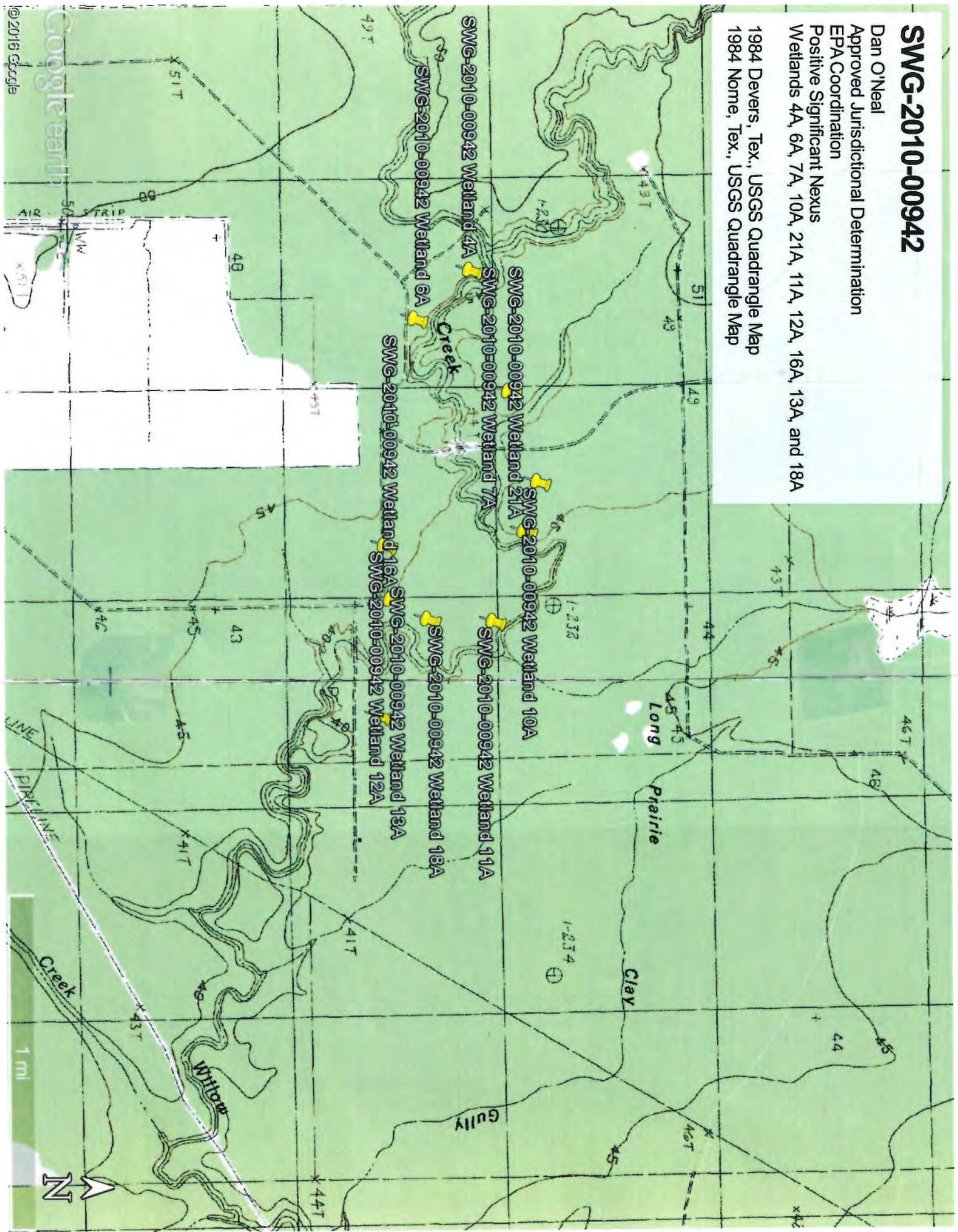
Approved Jurisdictional Determination

EPA Coordination

Positive Significant Nexus

Wetlands 4A, 6A, 7A, 10A, 21A, 11A, 12A, 16A, 13A, and 18A

1984 Devers, Tex., USGS Quadrangle Map  
1984 Nome, Tex., USGS Quadrangle Map



**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): 25 February 2016**

**B. DISTRICT OFFICE, FILE NAME, AND NUMBER:** Galveston District, SWG-2010-00942, Dan O'Neal, Batiste Creek Mitigation Bank, Willow Creek, Wetlands WB1, 3A, and 3B

**C. PROJECT LOCATION AND BACKGROUND INFORMATION:**

State: Texas County/Parish: Liberty City: northeast of Devers  
Center coordinates of site (lat/long in degree decimal format, NAD-83): Lat. see page 10° N, Long. see page 10° W;  
Universal Transverse Mercator: UTM: 15, see page 10 N., see page 10 E., NAD: 83  
Name of nearest water body: Willow Creek  
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Pine Island Bayou  
Name of watershed or Hydrologic Unit Code (HUC): Pine Island Bayou - - 12020007

- 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: 13 February 2016
- Field Determination. Date(s): 7 January 2014, 17 October 2014, 20 May 2015, 8 July 2015, 8 October 2015, 6 January 2016, 7 January 2016

**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):<sup>1</sup>**

- TNWs, including territorial seas
- Wetlands adjacent to TNWs
- Relatively permanent waters<sup>2</sup> (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: **2,240** linear feet: width (ft) and/or **3.8** acres  
Wetlands: **23.77** 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):<sup>3</sup>**

- Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.  
Explain:

<sup>1</sup> Boxes checked below shall be supported by completing the appropriate sections in Section III below.

<sup>2</sup> 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).

<sup>3</sup> 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, fill out Section III.D.2 and 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 water body<sup>4</sup> is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the water body 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: **1,761.6 square miles**

Drainage area: **Pick List**

Average annual rainfall: **61.5 inches**

Average annual snowfall: **0.0 inches**

(ii) **Physical Characteristics:**

(a) **Relationship with TNW:**

Tributary flows directly into TNW.

Tributary flows through **2** tributaries before entering TNW.

Project waters are **10-15** 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 TNW<sup>5</sup>: **Willow Creek flows into Pine Island Bayou, the nearest TNW.**

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

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

<sup>5</sup> 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: **74** feet

Average depth: **2** feet

Average side slopes: **3:1**

Primary tributary substrate composition (check all that apply):

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

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: **Fairly stable. Tributary has riparian buffer on both sides.**

Presence of run/riffle/pool complexes. Explain: **None**

Tributary geometry: **Meandering**

Tributary gradient (approximate average slope): **1-2 %**

(c) Flow:

Tributary provides for: **Seasonal flow**

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

Describe flow regime:

Other information on duration and volume: **Tributary is perennial**

Surface flow is: **Confined**. Characteristics:

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

Dye (or other) test performed:

Tributary has (check all that apply):

Bed and banks  
 OHWM<sup>6</sup> (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.<sup>7</sup> 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 color varies depending on storm water input. Very turbid at times and clear at times.**

Identify specific pollutants, if known: **Impaired water for dissolved oxygen.**

<sup>6</sup>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 water body'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.

<sup>7</sup>Ibid.

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

- Riparian corridor. Characteristics (type, average width): **200 feet**
- Wetland fringe. Characteristics: **Forested and emergent**
- Habitat for:
  - Federally Listed species. Explain findings:
  - Fish/spawn areas. Explain findings:
  - Other environmentally-sensitive species. Explain findings:
  - Aquatic/wildlife diversity. Explain findings:

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

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: **23.77** acres

Wetland type. Explain: **PFO and PSS**

Wetland quality. Explain: **medium to high**

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

Not directly abutting

Discrete wetland hydrologic connection. Explain: **Connected by 100-year floodplain of Willow Creek**

Ecological connection. Explain:

Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW

Project wetlands are **10-15** 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 **50 - 100-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: **During site visit, water in wetlands was fairly clear. Chemical characteristics are unknown.**

Identify specific pollutants, if known:

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

- Riparian buffer. Characteristics (type, average width):
- Vegetation type/percent cover. Explain: **forested, scrub shrub and emergent; 100 percent cover**
- 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: **12**

Approximately (**422.29**) 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>
Yes	197 PFO	Yes	38.7 PSS
No	3.4 PSS	Yes	21.7 PEM
Yes	139 PFO	No	0.67 PEM
No	6.7 PEM	No	3.9 PSS
No	7.6 PFO	No	1.9 PFO
No	1.0 PFO	No	1.1 PFO

Summarize overall biological, chemical and physical functions being performed: **Bull Tongue Creek and Willow Creek are relatively permanent waters (RPWs) and a third order stream within this relevant reach, which is approximately 5.78 miles long and flows into Pine Island Bayou, the nearest Traditional Navigable Water (TNW). The relevant reach starts near the headwaters of Bull Tongue Creek (approximately 2.12 mile north-northeast of Devers, Texas) and ends where Batiste Creek enters Willow Creek (near the middle of the project site). The relevant reach is located within a rural area that is not developed and the majority of the area is managed for timber production.**

There are 12 offsite adjacent wetlands within this relevant reach that are located west and upstream of the tract. The wetlands total approximately 422.3 acres, based on the NWIs, FEMA FIRMs, and Google Earth aerial photos. Approximately 396 acres of these wetlands are abutting Bull Tongue and/or Willow Creek. Of these abutting wetlands, approximately 335.6 acres are forested, 38.7 acres are scrub-shrub and 21.7 acres are emergent wetlands. Approximately 26.29 acres of these adjacent wetlands are not directly abutting Bull Tongue or Willow Creek, of which approximately 7.35 acres are emergent, 11.62 acres are forested, and 7.32 acres are scrub-shrub wetlands. These wetlands range from approximately 15.7 to 21.1 river miles and from approximately 7.4 to 11.8 aerial miles from Pine Island Bayou, the nearest TNW. Bull Tongue Creek flows into Willow Creek, which flows into Pine Island Bayou, which flows into the Neches River, which flows into Sabine Lake which flows into the Gulf of Mexico. Three wetlands (WB1, 3A, and 3B) on the tract totaling 23.77 acres are adjacent to this relevant reach of Bull Tongue and Willow Creeks. Approximately 19.05 acres of these wetlands are forested and abutting Willow Creek and approximately 4.27 acres of these wetlands are forested/scrub-shrub and/or emergent and neighboring Willow Creek. Based on our analysis, we determined that there are a total of 15 adjacent wetlands located within this relevant reach of Bull Tongue and Willow Creeks. These wetlands abut or are neighboring Bull Tongue and/or Willow Creek and total approximately 446 acres.

The Corps did find evidence/data to support the statement that these waters (this relevant reach of Bull Tongue and Willow Creeks and all similarly situated adjacent wetlands within this relevant reach) provide more than a speculative or insubstantial effect upon the chemical integrity of the downstream TNW, which this relevant reach flows into. There is a direct surface hydrologic connection between this approximate 5.78-mile relevant reach of Bull Tongue and Willow Creeks and the nearest TNW, Pine Island Bayou. The approximate 446 acres of adjacent wetlands provide important filtration to aid in the reduction of bacteria, which will increase the dissolved oxygen concentrations in the downstream TNW because less oxygen will be consumed by the bacteria. The wetlands also serve to aid in the reduction of thermal and chemical pollutants as well as sediment from forestry activities flowing into Pine Island Bayou. Willow Creek and Pine Island Bayou are identified by the TCEQ as 303(d) impaired waters for dissolved oxygen (DO); therefore the wetlands in this reach provide important properties associated with the production and maintenance of DO. The wetlands are situated in a rural area that is heavily managed for timber production. The aquatic resources within this relevant reach provide more than speculative or insubstantial effects that are inseparably bound to the chemical integrity of the downstream TNW.

Within this relevant reach of Bull Tongue and Willow Creeks, there are approximately 446 acres of similarly situated wetlands abutting or neighboring Bull Tongue and/or Willow Creek. The TNW, Pine Island Bayou, is approximately 15.3 river miles downstream of this relevant reach. The retention of water and retardation of overbank flooding associated with adjacent wetlands is vital to maintain and protect the physical integrity of the downstream TNW. The effects of removing approximately 415 acres of abutting wetlands would increase the velocity and flow into Pine Island Bayou, the Neches River, and Sabine Lake, resulting in more than a speculative or insubstantial effect upon the physical attributes of the downstream TNWs. Increased flow will increase "out of bank" flooding and scouring, resulting in loss of property and the physical attributes of the TNW. Therefore, the aquatic resources within this reach provide more than speculative or insubstantial effects that are inseparably bound to maintain the physical integrity of the downstream TNW.

There are no known species found in this review area that require the aquatic resources of Bull Tongue and/or Willow Creek and their adjacent wetlands and the waters of the TNW to fulfill their life cycle requirements. Bull Tongue and Willow Creeks are RPWs and flow into a downstream portion of Willow Creek, another RPW and then flow into the TNW; as such, it is more likely to have aquatic organisms that require both features (TNW and waters in this reach). It is highly feasible that species of fishes and/or invertebrates utilize Bull Tongue and/or Willow Creek for portions of their life cycles; but there is insufficient evidence to identify specific species that require both the aquatic resources within this relevant reach of Bull Tongue and Willow Creeks and the waters of the TNW to fulfill life cycle requirements. The abutting and neighboring wetlands aid in providing species habitat, shelter from predators, and detritus and nutrients as a food source.

Therefore, it is the Corps' conclusion, that the aquatic resources within this relevant reach of Bull Tongue and Willow Creeks, although speculative, provide more than an important effect on the biological integrity of the downstream TNW.

In conclusion, we have determined that there is sufficient evidence to support the statement that the aquatic resources within this approximate 5.78-mile relevant reach of Bull Tongue and Willow Creeks and its 446 acres of adjacent wetlands provide a significant nexus (more than speculative or insubstantial effect) to the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou). In conclusion, it is our opinion that this relevant reach of Bull Tongue and Willow Creeks and its adjacent wetlands are waters of the United States subject to Section 404 of the Clean Water Act.

### 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: **This relevant reach of Bull Tongue and Willow Creeks is a relatively permanent water and a third order stream that flows into the the downstream portion of Willow Creek, also a RPW, and then into Pine Island Bayou, the downstream TNW. There are approximately 415 acres of abutting wetlands and 31 acres of neighboring wetlands. This relevant reach of Bull Tongue and Willow Creeks and its adjacent wetlands provide important filtration to aid in the reduction of bacteria which will increase the concentration of dissolved oxygen as well as reducing thermal and chemical pollutants. The system also retains flood waters and reduces overbank flooding downstream, thereby decreasing the velocity and amount of water flowing downstream into Pine Island Bayou, the Neches River and Sabine Lake. Retaining flood waters also reduces scouring and the loss of property as well as preserving the physical attributes of the downstream TNW. Bull Tongue and Willow Creeks and their adjacent wetlands also likely support aquatic organisms and the adjacent wetlands provide species habitat, shelter from predators and produce nutrients and detritus as a food source for downstream organisms. Based on this information, we determined that this relevant reach of Bull Tongue and Willow Creeks and their adjacent wetlands provide more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou).**

### 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: **Water was flowing in Willow Creek during every site visit. Water is also visible in Bull Tongue and Willow Creeks in every Google Earth aerial photo where the creek channel is visible. Therefore, Bull Tongue and Willow Creeks are perennial relatively permanent waters.**
- 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: 2,240 linear feet width (ft)
  - Other non-wetland waters: acres
- Identify type(s) of waters:

3. **Non-RPWs<sup>8</sup> that flow directly or indirectly into TNWs.**

- Water body 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: Wetland WB1 is contiguous with and bordering Willow Creek, Therefore, the wetland is abutting Willow Creek.
  - 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: 19.05 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: 4.72 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.<sup>9</sup>**

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).

<sup>8</sup>See Footnote # 3.

<sup>9</sup> 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):<sup>10</sup>**

- 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):**

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: **H & T Environmental**
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - Office concurs with data sheets/delineation report.
  - Office does not concur with data sheets/delineation report
- Data sheets prepared by the Corps: **7 January 2014, 17 October 2014, 20 May 2015, 8 October 2015**
- Corps navigable waters’ study:
- U.S. Geological Survey Hydrologic Atlas: **Pine Island Bayou -- 12020007**
  - USGS NHD data
  - USGS 8 and 12 digit HUC maps
- Galveston District’s Approved List of Navigable Waters
- U.S. Geological Survey map(s). Cite scale & quad name: **1984 Nome. Tex. USGS Quadrangle Map; 1984 Devers, Tex, USGS Quadrangle Map**

<sup>10</sup> 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.

- USDA Natural Resources Conservation Service Soil Survey. Citation:
- National wetlands inventory map(s). Cite name: **Online USFWS NWI Mapper**
- State/Local wetland inventory map(s):
- FEMA/FIRM maps: **Liberty County, Texas Panels 500 and 525 of 675 dated 2 May 2008**
- 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- Photographs:  Aerial (Name & Date): **Google Earth 1995-2014**  
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:**

Bull Tongue Creek and Willow Creek are relatively permanent waters (RPWs) and a third order stream within this relevant reach, which is approximately 5.78 miles long and flows into Pine Island Bayou, the nearest Traditional Navigable Water (TNW). The relevant reach starts near the headwaters of Bull Tongue Creek (approximately 2.12 mile north-northeast of Devers, Texas) and ends where Batiste Creek enters Willow Creek (near the middle of the project site). The relevant reach is located within a rural area that is not developed and the majority of the area is managed for timber production.

There are 12 offsite adjacent wetlands within this relevant reach that are located west and upstream of the tract. The wetlands total approximately 422.3 acres, based on the NWIs, FEMA FIRMs, and Google Earth aerial photos. Approximately 396 acres of these wetlands are abutting Bull Tongue and/or Willow Creek. Of these abutting wetlands, approximately 335.6 acres are forested, 38.7 acres are scrub-shrub and 21.7 acres are emergent wetlands. Approximately 26.29 acres of these adjacent wetlands are not directly abutting Bull Tongue or Willow Creek, of which approximately 7.35 acres are emergent, 11.62 acres are forested, and 7.32 acres are scrub-shrub wetlands. These wetlands range from approximately 15.7 to 21.1 river miles and from approximately 7.4 to 11.8 aerial miles from Pine Island Bayou, the nearest TNW. Bull Tongue Creek flows into Willow Creek, which flows into Pine Island Bayou, which flows into the Neches River, which flows into Sabine Lake which flows into the Gulf of Mexico. Three wetlands (WB1, 3A, and 3B) on the tract totaling 23.77 acres are adjacent to this relevant reach of Bull Tongue and Willow Creeks. Approximately 19.05 acres of these wetlands are forested and abutting Willow Creek and approximately 4.27 acres of these wetlands are forested/scrub-shrub and/or emergent and neighboring Willow Creek. Based on our analysis, we determined that there are a total of 15 adjacent wetlands located within this relevant reach of Bull Tongue and Willow Creeks. These wetlands abut or are neighboring Bull Tongue and/or Willow Creek and total approximately 446 acres.

The Corps did find evidence/data to support the statement that these waters (this relevant reach of Bull Tongue and Willow Creeks and all similarly situated adjacent wetlands within this relevant reach) provide more than a speculative or insubstantial effect upon the chemical integrity of the downstream TNW, which this relevant reach flows into. There is a direct surface hydrologic connection between this approximate 5.78-mile relevant reach of Bull Tongue and Willow Creeks and the nearest TNW, Pine Island Bayou. The approximate 446 acres of adjacent wetlands provide important filtration to aid in the reduction of bacteria, which will increase the dissolved oxygen concentrations in the downstream TNW because less oxygen will be consumed by the bacteria. The wetlands also serve to aid in the reduction of thermal and chemical pollutants as well as sediment from forestry activities flowing into Pine Island Bayou. Willow Creek and Pine Island Bayou are identified by the TCEQ as 303(d) impaired waters for dissolved oxygen (DO); therefore the wetlands in this reach provide important properties associated with the production and maintenance of DO. The wetlands are situated in a rural area that is heavily managed for timber production. The aquatic resources within this relevant reach provide more than speculative or insubstantial effects that are inseparably bound to the chemical integrity of the downstream TNW.

Within this relevant reach of Bull Tongue and Willow Creeks, there are approximately 446 acres of similarly situated wetlands abutting or neighboring Bull Tongue and/or Willow Creek. The TNW, Pine Island Bayou, is approximately 15.3 river miles downstream of this relevant reach. The retention of water and retardation of overbank flooding associated with adjacent wetlands is vital to maintain and protect the physical integrity of the downstream TNW. The effects of removing approximately 415 acres of abutting wetlands would increase the velocity and flow into Pine Island Bayou, the Neches River, and Sabine Lake, resulting in more than a speculative or insubstantial effect upon the physical attributes of the downstream TNWs. Increased flow will increase "out of bank" flooding and scouring, resulting in loss of property and the physical attributes of the TNW. Therefore, the aquatic resources within this reach provide more than speculative or insubstantial effects that are inseparably bound to maintain the physical integrity of the downstream TNW.

There are no known species found in this review area that require the aquatic resources of Bull Tongue and/or Willow Creek and their adjacent wetlands and the waters of the TNW to fulfill their life cycle requirements. Bull Tongue and Willow Creeks are RPWs and flow into a downstream portion of Willow Creek, another RPW and then flow into the TNW; as such, it is more likely to have aquatic organisms that require both features (TNW and waters in this reach). It is highly feasible that species of fishes and/or invertebrates utilize Bull Tongue and/or Willow Creek for portions of their life cycles; but there is insufficient evidence to identify specific species that require both the aquatic resources within this relevant reach of Bull Tongue and Willow Creeks and the waters of the TNW to fulfill life cycle requirements. The abutting and neighboring wetlands aid in providing species habitat, shelter from predators, and detritus and nutrients as a food source. Therefore, it is the Corps' conclusion, that the aquatic resources within this relevant reach of Bull Tongue and Willow Creeks, although speculative, provide more than an important effect on the biological integrity of the downstream TNW.

In conclusion, we have determined that there is sufficient evidence to support the statement that the aquatic resources within this approximate 5.78-mile relevant reach of Bull Tongue and Willow Creeks and its 446 acres of adjacent wetlands provide a significant nexus (more than speculative or insubstantial effect) to the chemical, physical and/or biological integrity of the downstream TNW (Pine Island

Bayou). In conclusion, it is our opinion that this relevant reach of Bull Tongue and Willow Creeks and its adjacent wetlands are waters of the United States subject to Section 404 of the Clean Water Act.

Wetlands on Project Site within this Relevant Reach

Wetland	Latitude	Longitude	UTM Zone	UTM Easting	UTM Northing	Acres	
WB1 (Abut)	30.056155 N	94.523532 W	15	353133	3325986	19.05	
3A (Mosaic)	30.054664 N	94.521099 W	15	353365	3325818	4.03	
3B	30.055631 N	94.521545 W	15	353324	3325925	0.69	
Water							
Willow Creek (RPW)	30.056689 N	94.522865 W	15	353198	3326044	3.8	2,240 LF

# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Wetlands 3A and 3B

3 October 2014 Google Earth Aerial Photo

SWG-2010-00942 Wetland 3B

SWG-2010-00942 Wetland 3A



SWG-2010-00942 Dan O'Neal  
EPA Coordination  
Positive Significant Nexus  
Wetlands 3A and 3B

- Relevant Reach = 5.78 miles
- Aerial Miles to TNW = 7.51 miles
- River Miles to TNW = 15.3 miles
- Aerial Miles to RPW = 25 feet to 0.05-mile

Hardin County

Liberty County

105

Sour Lake

Grayburg

Start of Traditional Navigable Water

Traditional Navigable Water  
Pine Island Bayou



326

Willow Creek



Start of Relevant Reach

End of Relevant Reach

SWG-2010-00942 Wetland 3A  
SWG-2010-00942 Wetland 3B

Relevant Reach  
Bull Tongue and Willow Creeks

Liberty County

Jefferson County

365

Nome

61

Devers

90

1009

Hwy 365

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Google earth



**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): 26 February 2016**

**B. DISTRICT OFFICE, FILE NAME, AND NUMBER:** Galveston District, SWG-2010-00942, Dan O'Neal, Batiste Creek Mitigation Bank, Tributary WT1 and Tributary WT1 Wetland

**C. PROJECT LOCATION AND BACKGROUND INFORMATION:**

State: Texas County/Parish: Liberty City: northeast of Devers  
Center coordinates of site (lat/long in degree decimal format, NAD-83): Lat. see page 9° N, Long. see page 9° W;  
Universal Transverse Mercator: UTM: 15, see page 9 N., see page 9 E., NAD: 83  
Name of nearest water body: Tributary WT1  
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Pine Island Bayou  
Name of watershed or Hydrologic Unit Code (HUC): Pine Island Bayou - - 12020007

- 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: 13 February 2016  
 Field Determination. Date(s): 7 January 2014, 17 October 2014, 20 May 2015, 8 July 2015, 8 October 2015, 6 January 2016, 7 January 2016

**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):<sup>1</sup>**

- TNWs, including territorial seas  
 Wetlands adjacent to TNWs  
 Relatively permanent waters<sup>2</sup> (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: **248** linear feet: **2** width (ft) and/or **0.01** acres  
Wetlands: **0.29** 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):<sup>3</sup>**

- Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.  
Explain:

<sup>1</sup> Boxes checked below shall be supported by completing the appropriate sections in Section III below.

<sup>2</sup> 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).

<sup>3</sup> 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, fill out Section III.D.2 and 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 water body<sup>4</sup> is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the water body 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: 1,761.6 square miles

Drainage area: Pick List

Average annual rainfall: 61.5 inches

Average annual snowfall: 0.0 inches

(ii) **Physical Characteristics:**

(a) **Relationship with TNW:**

Tributary flows directly into TNW.

Tributary flows through 2 tributaries before entering TNW.

Project waters are 10-15 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 TNW<sup>5</sup>: Tributary WT1 flows into Willow Creek, which flows into Pine Island Bayou, the nearest TNW.

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

<sup>5</sup> 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.

Tributary stream order, if known: **1**

(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: **2** feet  
Average depth: **0.5** feet  
Average side slopes: **3:1**

**Primary tributary substrate composition (check all that apply):**

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

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: **Fairly stable. Tributary has riparian buffer on both sides.**

Presence of run/riffle/pool complexes. Explain: **None**

Tributary geometry: **Meandering**

Tributary gradient (approximate average slope): **1-2 %**

(c) Flow:

Tributary provides for: **Intermittent but not seasonal flow**

Estimate average number of flow events in review area/year: **11-20**

Describe flow regime:

Other information on duration and volume: **Tributary primarily flows after precipitation events. Water from Willow Creek also backs up into Tributary WT1 during flood events.**

Surface flow is: **Confined**. Characteristics:

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

Dye (or other) test performed:

Tributary has (check all that apply):

Bed and banks  
 OHWM<sup>6</sup> (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.<sup>7</sup> 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 color varies depending on storm water input.**

Identify specific pollutants, if known: **Unknown, however, receiving waters (Willow Creek and Pine Island Bayou) are impaired waters for dissolved oxygen.**

<sup>6</sup>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 water body'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.

<sup>7</sup>Ibid.

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

- Riparian corridor. Characteristics (type, average width): **100 feet**
- Wetland fringe. Characteristics: **Forested**
- Habitat for:
  - Federally Listed species. Explain findings:
  - Fish/spawn areas. Explain findings:
  - Other environmentally-sensitive species. Explain findings:
  - Aquatic/wildlife diversity. Explain findings:

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

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: **0.29** acres

Wetland type. Explain: **PFO**

Wetland quality. Explain: **medium to high**

Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

Flow is: **Ephemeral 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
- Not directly abutting
  - Discrete wetland hydrologic connection. Explain:
  - Ecological connection. Explain:
  - Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW

Project wetlands are **10-15** 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 **50 - 100-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: **No water was in the wetland during the site visit. Chemical characteristics are unknown.**

Identify specific pollutants, if known:

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

- Riparian buffer. Characteristics (type, average width):
- Vegetation type/percent cover. Explain: **forested; 100 percent cover**
- 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: **1**

Approximately (**0.29**) 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>
Yes	0.29 PFO		

Summarize overall biological, chemical and physical functions being performed: **Tributary WT1 is not a relatively permanent water (RPW) and is a first order stream within this relevant reach, which is approximately 248 feet long and flows into Willow Creek, a RPW, which flows into Pine Island Bayou, the nearest traditional navigable water (TNW). The relevant reach starts at the headwater of Tributary WT1 and ends where Tributary WT1 enters Willow Creek (both on the project site). The relevant reach is located within a rural area that is not developed and the majority of the area is managed for timber production.**

There are no offsite adjacent wetlands within this relevant reach. Tributary WT1 flows into Willow Creek, which flows into Pine Island Bayou, which flows into the Neches River, which flows into Sabine Lake which flows into the Gulf of Mexico. One wetland (Tributary WT1 Wetland) on the tract totaling 0.29-acre is adjacent to this relevant reach of Tributary WT1. This wetland is forested and abutting Tributary WT1. Based on our analysis, we determined that there is 1 adjacent wetland located within this relevant reach of Tributary WT1. This wetland abuts Tributary WT1 and is 0.29-acre in size.

The Corps did find evidence/data to support the statement that these waters (this relevant reach of Tributary WT1 and its abutting riparian forested wetland) provide more than a speculative or insubstantial effect upon the chemical integrity of the downstream TNW, which this relevant reach flows into. There is a direct surface hydrologic connection between this approximate 248-foot relevant reach of Tributary WT1 and the nearest TNW, Pine Island Bayou. The approximate 0.29-acre of abutting riparian wetland provides important filtration to aid in the reduction of bacteria, which will increase the dissolved oxygen (DO) concentrations in the downstream TNW due to less oxygen consumption. The wetland also serves to aid in the reduction of thermal and chemical pollutants as well as sediment from forestry activities flowing into Pine Island Bayou. Willow Creek and Pine Island Bayou are identified by the TCEQ as 303(d) impaired waters for DO; therefore the wetland in this reach provides important properties associated with the production and maintenance of DO. The tributary and wetland are situated in a rural area that is heavily managed for timber production. The tributary provides opportunity for increased DO to enter the water column and these aquatic resources within this relevant reach provide more than speculative or insubstantial effects that are inseparably bound to the chemical integrity of the downstream TNW.

Within this relevant reach of Tributary WT1, there is approximately 0.29-acre of similarly situated wetlands and 248 feet of intermittent tributary (WT1). The TNW, Pine Island Bayou, is approximately 14.42 river miles downstream of this relevant reach. The retention of water and retardation of overbank flooding associated with adjacent wetlands is vital to maintain and protect the physical integrity of the downstream TNW. The effects of removing these aquatic resources would affect the velocity and flow into Pine Island Bayou and then to the Neches River and Sabine Lake, resulting in more than a speculative or insubstantial effect upon the physical attributes of the downstream TNWs. Increased flow will increase "out of bank" flooding and scouring, resulting in loss of property and the physical attributes of the TNW. Additionally, the abutting riparian wetland intercepts sediment, nutrients, and pesticides from entering Tributary WT1 and ultimately the downstream TNW, Pine Island Bayou. Therefore, the aquatic resources within this reach provide more than speculative or insubstantial effects that maintain the physical integrity of the downstream TNW.

There are no known species found in this review area that require the aquatic resources of Tributary WT1 and its adjacent wetland and the waters of the TNW to fulfill their life cycle requirements. Tributary WT1 is not a RPW and flows into Willow Creek, a RPW and then flows into the TNW; as such, it is possible to have aquatic organisms that require both features (TNW and waters in this reach). It is highly feasible that species of fishes and/or invertebrates utilize Tributary WT1 for portions of their life cycles; but there is insufficient evidence to identify specific species that require both the aquatic resources within this relevant reach of Tributary WT1 and the waters of the TNW to fulfill life cycle requirements. The abutting wetland aids in providing species habitat, shelter from predators, and detritus and nutrients as a food source. Therefore, it is the Corps' conclusion, that the aquatic resources within this relevant reach of Tributary WT1, although speculative, provide fundamental biotic support to maintain the biological integrity of the downstream TNW.

In conclusion, we have determined that there is sufficient evidence to support the statement that the aquatic resources within this approximate 248-foot relevant reach of the non-RPW Tributary WT1 and its 0.29-acre of abutting riparian forested wetland provide a significant nexus (more than speculative or insubstantial effect) to the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou). In conclusion, it is our opinion that this relevant reach of Tributary WT1 and its adjacent wetland are waters of the United States subject to Section 404 of the Clean Water Act.

### 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: **This relevant reach of Tributary WT1 is not a relatively permanent water and is a first order stream that flows into Willow Creek, a RPW, and then into Pine Island Bayou, the downstream TNW. There are approximately 0.29-acre of abutting riparian forested wetlands. This relevant reach of Tributary WT1 and its adjacent wetland provide important filtration to aid in the reduction of bacteria which will increase the concentration of dissolved oxygen as well as reducing thermal and chemical pollutants. The system also retains flood waters and reduces overbank flooding downstream, thereby decreasing the velocity and amount of water flowing downstream into Pine Island Bayou, the Neches River and Sabine Lake. Retaining flood waters also reduces scouring and the loss of property as well as preserving the physical attributes of the downstream TNW. Tributary WT1 and its abutting riparian forested wetland also likely support aquatic organisms and the adjacent wetland provides species habitat, shelter from predators and produces nutrients and detritus as a food source for downstream organisms. Based on this information, we determined that this relevant reach of Tributary WT1 and its adjacent wetland provide more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou).**

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

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:  
 TNWs: linear feet width (ft), Or, acres.  
 Wetlands adjacent to TNWs: acres.
2. **RPWs that flow directly or indirectly into TNWs.**  
 Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:  
 Tributaries of TNW where tributaries have continuous flow “seasonally” (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

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

- Tributary waters:            linear feet            width (ft)
  - Other non-wetland waters:            acres
- Identify type(s) of waters:

**3. Non-RPWs<sup>8</sup> that flow directly or indirectly into TNWs.**

- Water body 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:    248    linear feet    2    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.**

- 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: 0.29 acres

**7. Impoundments of jurisdictional waters.<sup>9</sup>**

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):<sup>10</sup>**

- 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:**

<sup>8</sup>See Footnote # 3.

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

<sup>10</sup> 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.

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

- Tributary waters: linear feet width (ft)
- Other non-wetland waters: acres
- Identify type(s) of waters:
- Wetlands: acres

**F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):**

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

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource:
- Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource:
- Wetlands: acres.

**SECTION IV: DATA SOURCES.**

**A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):**

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: **H & T Environmental**
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - Office concurs with data sheets/delineation report.
  - Office does not concur with data sheets/delineation report
- Data sheets prepared by the Corps: **7 January 2014, 17 October 2014, 20 May 2015, 8 October 2015**
- Corps navigable waters' study:
- U.S. Geological Survey Hydrologic Atlas: **Pine Island Bayou - - 12020007**
  - USGS NHD data
  - USGS 8 and 12 digit HUC maps
- Galveston District's Approved List of Navigable Waters
- U.S. Geological Survey map(s). Cite scale & quad name: **1984 Nome, Tex. USGS Quadrangle Map; 1984 Devers, Tex. USGS Quadrangle Map**
- USDA Natural Resources Conservation Service Soil Survey. Citation:
- National wetlands inventory map(s). Cite name: **Online USFWS NWI Mapper**
- State/Local wetland inventory map(s):
- FEMA/FIRM maps: **Liberty County, Texas Panels 500 and 525 of 675 dated 2 May 2008**
- 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- Photographs:  Aerial (Name & Date): **Google Earth 1995-2014**
  - 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:**

Tributary WT1 is not a relatively permanent water (RPW) and is a first order stream within this relevant reach, which is approximately 248 feet long and flows into Willow Creek, a RPW, which flows into Pine Island Bayou, the nearest traditional navigable water (TNW). The

relevant reach starts at the headwater of Tributary WT1 and ends where Tributary WT1 enters Willow Creek (both on the project site). The relevant reach is located within a rural area that is not developed and the majority of the area is managed for timber production.

There are no offsite adjacent wetlands within this relevant reach. Tributary WT1 flows into Willow Creek, which flows into Pine Island Bayou, which flows into the Neches River, which flows into Sabine Lake which flows into the Gulf of Mexico. One wetland (Tributary WT1 Wetland) on the tract totaling 0.29-acre is adjacent to this relevant reach of Tributary WT1. This wetland is forested and abutting Tributary WT1. Based on our analysis, we determined that there is 1 adjacent wetland located within this relevant reach of Tributary WT1. This wetland abuts Tributary WT1 and is 0.29-acre in size.

The Corps did find evidence/data to support the statement that these waters (this relevant reach of Tributary WT1 and its abutting riparian forested wetland) provide more than a speculative or insubstantial effect upon the chemical integrity of the downstream TNW, which this relevant reach flows into. There is a direct surface hydrologic connection between this approximate 248-foot relevant reach of Tributary WT1 and the nearest TNW, Pine Island Bayou. The approximate 0.29-acre of abutting riparian wetland provides important filtration to aid in the reduction of bacteria, which will increase the dissolved oxygen (DO) concentrations in the downstream TNW due to less oxygen consumption. The wetland also serves to aid in the reduction of thermal and chemical pollutants as well as sediment from forestry activities flowing into Pine Island Bayou. Willow Creek and Pine Island Bayou are identified by the TCEQ as 303(d) impaired waters for DO; therefore the wetland in this reach provides important properties associated with the production and maintenance of DO. The tributary and wetland are situated in a rural area that is heavily managed for timber production. The tributary provides opportunity for increased DO to enter the water column and these aquatic resources within this relevant reach provide more than speculative or insubstantial effects that are inseparably bound to the chemical integrity of the downstream TNW.

Within this relevant reach of Tributary WT1, there is approximately 0.29-acre of similarly situated wetlands and 248 feet of intermittent tributary (WT1). The TNW, Pine Island Bayou, is approximately 14.42 river miles downstream of this relevant reach. The retention of water and retardation of overbank flooding associated with adjacent wetlands is vital to maintain and protect the physical integrity of the downstream TNW. The effects of removing these aquatic resources would affect the velocity and flow into Pine Island Bayou and then to the Neches River and Sabine Lake, resulting in more than a speculative or insubstantial effect upon the physical attributes of the downstream TNWs. Increased flow will increase "out of bank" flooding and scouring, resulting in loss of property and the physical attributes of the TNW. Additionally, the abutting riparian wetland intercepts sediment, nutrients, and pesticides from entering Tributary WT1 and ultimately the downstream TNW, Pine Island Bayou. Therefore, the aquatic resources within this reach provide more than speculative or insubstantial effects that maintain the physical integrity of the downstream TNW.

There are no known species found in this review area that require the aquatic resources of Tributary WT1 and its adjacent wetland and the waters of the TNW to fulfill their life cycle requirements. Tributary WT1 is not a RPW and flows into Willow Creek, a RPW and then flows into the TNW; as such, it is possible to have aquatic organisms that require both features (TNW and waters in this reach). It is highly feasible that species of fishes and/or invertebrates utilize Tributary WT1 for portions of their life cycles; but there is insufficient evidence to identify specific species that require both the aquatic resources within this relevant reach of Tributary WT1 and the waters of the TNW to fulfill life cycle requirements. The abutting wetland aids in providing species habitat, shelter from predators, and detritus and nutrients as a food source. Therefore, it is the Corps' conclusion, that the aquatic resources within this relevant reach of Tributary WT1, although speculative, provide fundamental biotic support to maintain the biological integrity of the downstream TNW.

In conclusion, we have determined that there is sufficient evidence to support the statement that the aquatic resources within this approximate 248-foot relevant reach of the non-RPW Tributary WT1 and its 0.29-acre of abutting riparian forested wetland provide a significant nexus (more than speculative or insubstantial effect) to the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou). In conclusion, it is our opinion that this relevant reach of Tributary WT1 and its adjacent wetland are waters of the United States subject to Section 404 of the Clean Water Act.

#### Wetlands on Project Site within this Relevant Reach

Aquatic Resources	Latitude	Longitude	UTM Zone	UTM Easting	UTM Northing	Acres
Tributary WT1 Wetland	30.057254 N	94.513276 W	15	354123	3326095	0.29
Tributary WT1	30.057165 N	94.513288 W	15	354122	3326085	0.01

# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary WT1 and Tributary WT1 Wetland

13 December 2015 Google Earth Aerial Photo

Start of Relevant Reach  
SWG-2010-00942 Tributary WT1 Wetland  
SWG-2010-00942 Tributary WT1

End of Relevant Reach

Willow Creek

Google earth

© 2016 Google

200 ft



# SWG-2010-00942

Dan O'Neal  
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EPA Coordination  
Positive Significant Nexus  
Tributary WT1 and Tributary WT1 Wetland

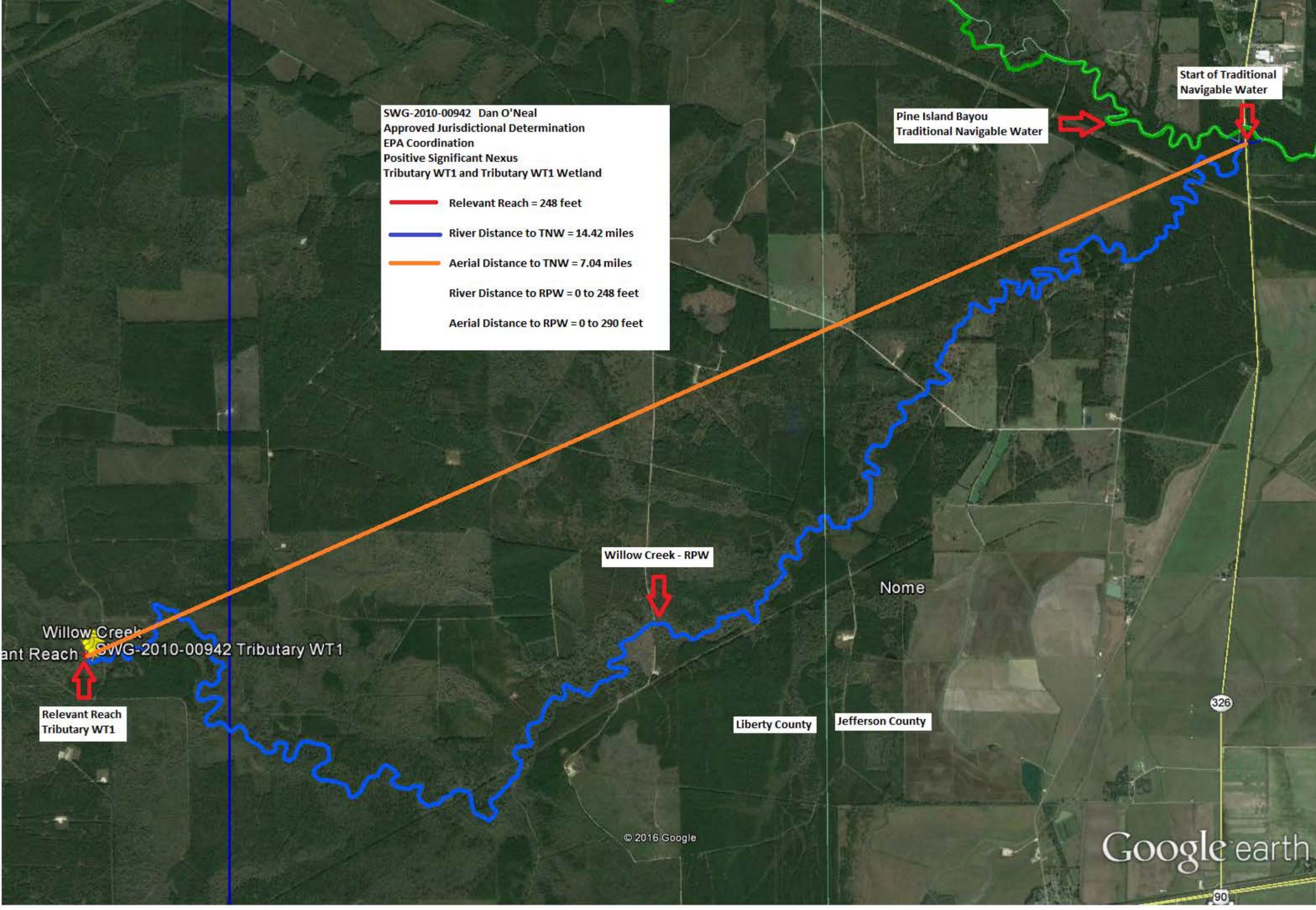
13 December 2015 Google Earth Aerial Photo

Start of Relevant Reach  
SWG-2010-00942 Tributary WT1  
SWG-2010-00942 Tributary WT1 Wetland  
End of Relevant Reach  
Willow Creek



SWG-2010-00942 Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary WT1 and Tributary WT1 Wetland

- Relevant Reach = 248 feet
- River Distance to TNW = 14.42 miles
- Aerial Distance to TNW = 7.04 miles
- River Distance to RPW = 0 to 248 feet
- Aerial Distance to RPW = 0 to 290 feet



Start of Traditional Navigable Water

Pine Island Bayou  
Traditional Navigable Water

Willow Creek - RPW

Nome

Liberty County

Jefferson County

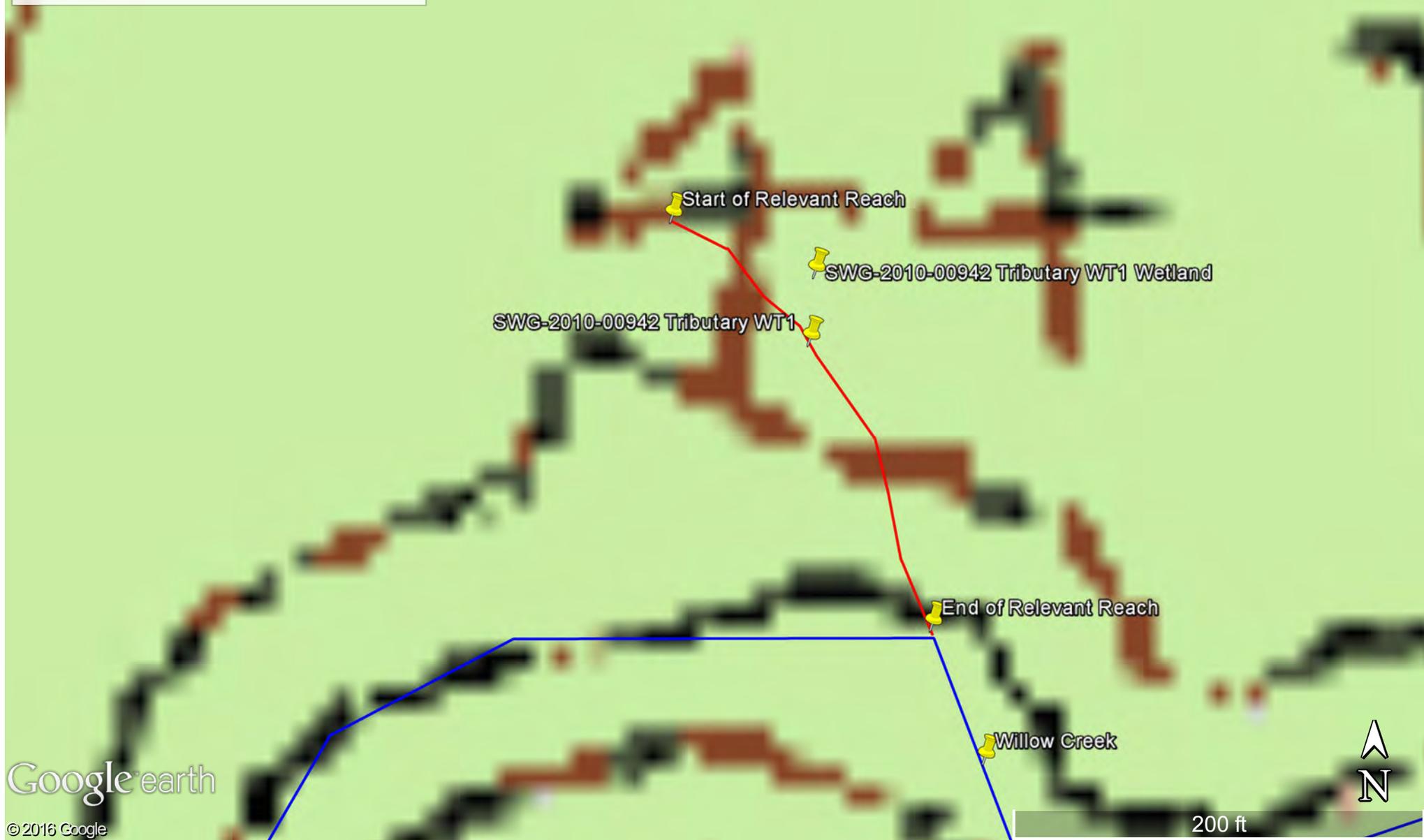
Relevant Reach  
Tributary WT1

Willow Creek  
Relevant Reach  
SWG-2010-00942 Tributary WT1

# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary WT1 and Tributary WT1 Wetland

1984 Devers, Tex. USGS Quadrangle Map



Google earth

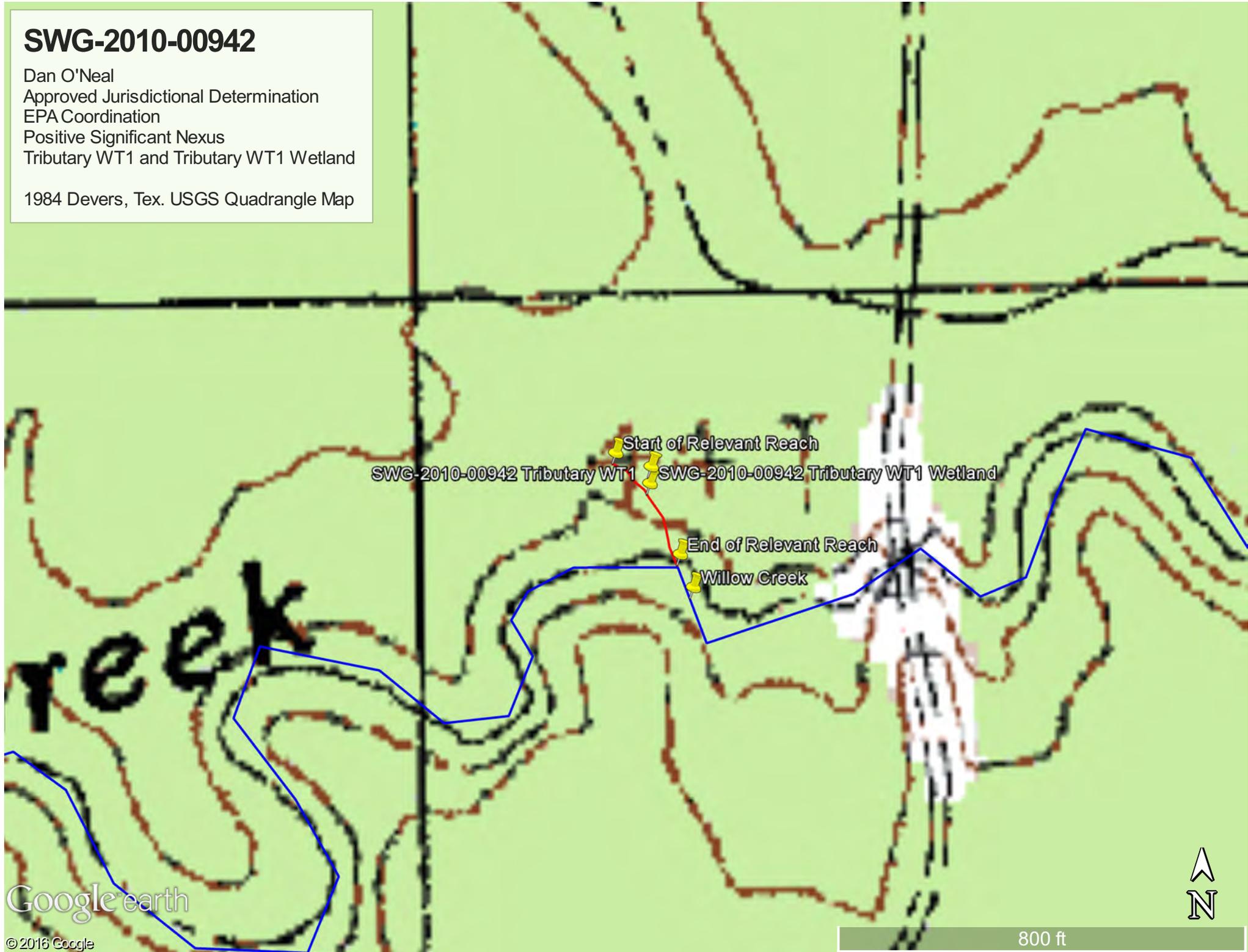
© 2016 Google

200 ft

# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary WT1 and Tributary WT1 Wetland

1984 Devers, Tex. USGS Quadrangle Map



Start of Relevant Reach  
SWG-2010-00942 Tributary WT1  
SWG-2010-00942 Tributary WT1 Wetland  
End of Relevant Reach  
Willow Creek

Google earth

© 2016 Google

800 ft



**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): 26 February 2016**

**B. DISTRICT OFFICE, FILE NAME, AND NUMBER:** Galveston District, SWG-2010-00942, Dan O'Neal, Batiste Creek Mitigation Bank, Tributary WT2 and Tributary WT2 Wetland

**C. PROJECT LOCATION AND BACKGROUND INFORMATION:**

State: Texas County/Parish: Liberty City: northeast of Devers  
Center coordinates of site (lat/long in degree decimal format, NAD-83): Lat. see page 9° N, Long. see page 9° W;  
Universal Transverse Mercator: UTM: 15, see page 9 N., see page 9 E., NAD: 83  
Name of nearest water body: Tributary WT2  
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Pine Island Bayou  
Name of watershed or Hydrologic Unit Code (HUC): Pine Island Bayou - - 12020007

- 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: 13 February 2016  
 Field Determination. Date(s): 7 January 2014, 17 October 2014, 20 May 2015, 8 July 2015, 8 October 2015, 6 January 2016, 7 January 2016

**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):<sup>1</sup>**

- TNWs, including territorial seas  
 Wetlands adjacent to TNWs  
 Relatively permanent waters<sup>2</sup> (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: **388** linear feet: **5** width (ft) and/or **0.04** acres  
Wetlands: **0.84** 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):<sup>3</sup>**

- Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.  
Explain:

<sup>1</sup> Boxes checked below shall be supported by completing the appropriate sections in Section III below.

<sup>2</sup> 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).

<sup>3</sup> 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, fill out Section III.D.2 and 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 water body<sup>4</sup> is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the water body 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: 1,761.6 square miles

Drainage area: Pick List

Average annual rainfall: 61.5 inches

Average annual snowfall: 0.0 inches

(ii) **Physical Characteristics:**

(a) **Relationship with TNW:**

Tributary flows directly into TNW.

Tributary flows through 2 tributaries before entering TNW.

Project waters are 10-15 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 TNW<sup>5</sup>: Tributary WT2 flows into Willow Creek, which flows into Pine Island Bayou, the nearest TNW.

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

<sup>5</sup> 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.

Tributary stream order, if known: **1**

(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: **5** feet  
Average depth: **0.5** feet  
Average side slopes: **3:1**

**Primary tributary substrate composition (check all that apply):**

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

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: **Fairly stable. Tributary has riparian buffer on both sides.**

Presence of run/riffle/pool complexes. Explain: **None**

Tributary geometry: **Meandering**

Tributary gradient (approximate average slope): **1-2 %**

(c) Flow:

Tributary provides for: **Intermittent but not seasonal flow**

Estimate average number of flow events in review area/year: **11-20**

Describe flow regime:

Other information on duration and volume: **Tributary primarily flows after precipitation events. Water from Willow Creek also backs up into Tributary WT2 during flood events.**

Surface flow is: **Confined**. Characteristics:

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

Dye (or other) test performed:

Tributary has (check all that apply):

Bed and banks  
 OHWM<sup>6</sup> (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.<sup>7</sup> 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 color varies depending on storm water input.**

Identify specific pollutants, if known: **Unknown, however, receiving waters (Willow Creek and Pine Island Bayou) are impaired waters for dissolved oxygen.**

<sup>6</sup>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 water body'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.

<sup>7</sup>Ibid.

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

- Riparian corridor. Characteristics (type, average width): **100 feet**
- Wetland fringe. Characteristics: **Forested**
- Habitat for:
  - Federally Listed species. Explain findings:
  - Fish/spawn areas. Explain findings:
  - Other environmentally-sensitive species. Explain findings:
  - Aquatic/wildlife diversity. Explain findings:

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

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: **0.84** acres

Wetland type. Explain: **PFO**

Wetland quality. Explain: **medium to high**

Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

Flow is: **Ephemeral 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
- Not directly abutting
  - Discrete wetland hydrologic connection. Explain:
  - Ecological connection. Explain:
  - Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW

Project wetlands are **10-15** 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 **50 - 100-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: **No water was in the wetland during the site visit. Chemical characteristics are unknown.**

Identify specific pollutants, if known:

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

- Riparian buffer. Characteristics (type, average width):
- Vegetation type/percent cover. Explain: **forested; 100 percent cover**
- 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: **1**

Approximately **(0.84)** 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>
Yes	0.84 PFO		

Summarize overall biological, chemical and physical functions being performed: **Tributary WT2 is not a relatively permanent water (RPW) and is a first order stream within this relevant reach, which is approximately 388 feet long and flows into Willow Creek, a RPW, which flows into Pine Island Bayou, the nearest traditional navigable water (TNW). The relevant reach starts at the headwater of Tributary WT2 and ends where Tributary WT2 enters Willow Creek (both on the project site). The relevant reach is located within a rural area that is not developed and the majority of the area is managed for timber production.**

There are no offsite adjacent wetlands within this relevant reach. Tributary WT2 flows into Willow Creek, which flows into Pine Island Bayou, which flows into the Neches River, which flows into Sabine Lake which flows into the Gulf of Mexico. One wetland (Tributary WT2 Wetland) on the tract totaling 0.84-acre is adjacent to this relevant reach of Tributary WT2. This wetland is forested and abutting Tributary WT2. Based on our analysis, we determined that there is 1 adjacent wetland located within this relevant reach of Tributary WT2. This wetland abuts Tributary WT2 and is 0.84-acre in size.

The Corps did find evidence/data to support the statement that these waters (this relevant reach of Tributary WT2 and its abutting riparian forested wetland) provide more than a speculative or insubstantial effect upon the chemical integrity of the downstream TNW, which this relevant reach flows into. There is a direct surface hydrologic connection between this approximate 388-foot relevant reach of Tributary WT2 and the nearest TNW, Pine Island Bayou. The approximate 0.84-acre of abutting riparian wetland provides important filtration to aid in the reduction of bacteria, which will increase the dissolved oxygen (DO) concentrations in the downstream TNW due to less oxygen consumption. The wetland also serves to aid in the reduction of thermal and chemical pollutants as well as sediment from forestry activities flowing into Pine Island Bayou. Willow Creek and Pine Island Bayou are identified by the TCEQ as 303(d) impaired waters for DO; therefore the wetland in this reach provides important properties associated with the production and maintenance of DO. The tributary and wetland are situated in a rural area that is heavily managed for timber production. The tributary provides opportunity for increased DO to enter the water column and these aquatic resources within this relevant reach provide more than speculative or insubstantial effects that are inseparably bound to the chemical integrity of the downstream TNW.

Within this relevant reach of Tributary WT2, there is approximately 0.84-acre of similarly situated wetlands and 388 feet of intermittent tributary (WT2). The TNW, Pine Island Bayou, is approximately 14.36 river miles downstream of this relevant reach. The retention of water and retardation of overbank flooding associated with adjacent wetlands is vital to maintain and protect the physical integrity of the downstream TNW. The effects of removing these aquatic resources would affect the velocity and flow into Pine Island Bayou and then to the Neches River and Sabine Lake, resulting in more than a speculative or insubstantial effect upon the physical attributes of the downstream TNWs. Increased flow will increase "out of bank" flooding and scouring, resulting in loss of property and the physical attributes of the TNW. Additionally, the abutting riparian wetland intercepts sediment, nutrients, and pesticides from entering Tributary WT2 and ultimately the downstream TNW, Pine Island Bayou. Therefore, the aquatic resources within this reach provide more than speculative or insubstantial effects that maintain the physical integrity of the downstream TNW.

There are no known species found in this review area that require the aquatic resources of Tributary WT2 and its adjacent wetland and the waters of the TNW to fulfill their life cycle requirements. Tributary WT2 is not a RPW and flows into Willow Creek, a RPW and then flows into the TNW; as such, it is possible to have aquatic organisms that require both features (TNW and waters in this reach). It is highly feasible that species of fishes and/or invertebrates utilize Tributary WT2 for portions of their life cycles; but there is insufficient evidence to identify specific species that require both the aquatic resources within this relevant reach of Tributary WT2 and the waters of the TNW to fulfill life cycle requirements. The abutting wetland aids in providing species habitat, shelter from predators, and detritus and nutrients as a food source. Therefore, it is the Corps' conclusion, that the aquatic resources within this relevant reach of Tributary WT2, although speculative, provide fundamental biotic support to maintain the biological integrity of the downstream TNW.

In conclusion, we have determined that there is sufficient evidence to support the statement that the aquatic resources within this approximate 388-foot relevant reach of the non-RPW Tributary WT2 and its 0.84-acre of abutting riparian forested wetland provide a significant nexus (more than speculative or insubstantial effect) to the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou). In conclusion, it is our opinion that this relevant reach of Tributary WT2 and its adjacent wetland are waters of the United States subject to Section 404 of the Clean Water Act.

### 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: **This relevant reach of Tributary WT2 is not a relatively permanent water and is a first order stream that flows into Willow Creek, a RPW, and then into Pine Island Bayou, the downstream TNW. There are approximately 0.84-acre of abutting riparian forested wetlands. This relevant reach of Tributary WT2 and its adjacent wetland provide important filtration to aid in the reduction of bacteria which will increase the concentration of dissolved oxygen as well as reducing thermal and chemical pollutants. The system also retains flood waters and reduces overbank flooding downstream, thereby decreasing the velocity and amount of water flowing downstream into Pine Island Bayou, the Neches River and Sabine Lake. Retaining flood waters also reduces scouring and the loss of property as well as preserving the physical attributes of the downstream TNW. Tributary WT2 and its abutting riparian forested wetland also likely support aquatic organisms and the adjacent wetland provides species habitat, shelter from predators and produces nutrients and detritus as a food source for downstream organisms. Based on this information, we determined that this relevant reach of Tributary WT2 and its adjacent wetland provide more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou).**

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

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:  
 TNWs: linear feet width (ft), Or, acres.  
 Wetlands adjacent to TNWs: acres.
2. **RPWs that flow directly or indirectly into TNWs.**  
 Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:  
 Tributaries of TNW where tributaries have continuous flow “seasonally” (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

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

- Tributary waters:            linear feet            width (ft)
  - Other non-wetland waters:            acres
- Identify type(s) of waters:

**3. Non-RPWs<sup>8</sup> that flow directly or indirectly into TNWs.**

- Water body 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:    388    linear feet    5    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.**

- 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: 0.84 acres

**7. Impoundments of jurisdictional waters.<sup>9</sup>**

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):<sup>10</sup>**

- 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:**

<sup>8</sup>See Footnote # 3.

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

<sup>10</sup> 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.

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

- Tributary waters: linear feet width (ft)
- Other non-wetland waters: acres
- Identify type(s) of waters:
- Wetlands: acres

**F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):**

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

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource:
- Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource:
- Wetlands: acres.

**SECTION IV: DATA SOURCES.**

**A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):**

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: **H & T Environmental**
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - Office concurs with data sheets/delineation report.
  - Office does not concur with data sheets/delineation report
- Data sheets prepared by the Corps: **7 January 2014, 17 October 2014, 20 May 2015, 8 October 2015**
- Corps navigable waters' study:
- U.S. Geological Survey Hydrologic Atlas: **Pine Island Bayou - - 12020007**
  - USGS NHD data
  - USGS 8 and 12 digit HUC maps
- Galveston District's Approved List of Navigable Waters
- U.S. Geological Survey map(s). Cite scale & quad name: **1984 Nome, Tex. USGS Quadrangle Map; 1984 Devers, Tex. USGS Quadrangle Map**
- USDA Natural Resources Conservation Service Soil Survey. Citation:
- National wetlands inventory map(s). Cite name: **Online USFWS NWI Mapper**
- State/Local wetland inventory map(s):
- FEMA/FIRM maps: **Liberty County, Texas Panels 500 and 525 of 675 dated 2 May 2008**
- 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- Photographs:  Aerial (Name & Date): **Google Earth 1995-2014**
  - 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:**

Tributary WT2 is not a relatively permanent water (RPW) and is a first order stream within this relevant reach, which is approximately 388 feet long and flows into Willow Creek, a RPW, which flows into Pine Island Bayou, the nearest traditional navigable water (TNW). The

relevant reach starts at the headwater of Tributary WT2 and ends where Tributary WT2 enters Willow Creek (both on the project site). The relevant reach is located within a rural area that is not developed and the majority of the area is managed for timber production.

There are no offsite adjacent wetlands within this relevant reach. Tributary WT2 flows into Willow Creek, which flows into Pine Island Bayou, which flows into the Neches River, which flows into Sabine Lake which flows into the Gulf of Mexico. One wetland (Tributary WT2 Wetland) on the tract totaling 0.84-acre is adjacent to this relevant reach of Tributary WT2. This wetland is forested and abutting Tributary WT2. Based on our analysis, we determined that there is 1 adjacent wetland located within this relevant reach of Tributary WT2. This wetland abuts Tributary WT2 and is 0.84-acre in size.

The Corps did find evidence/data to support the statement that these waters (this relevant reach of Tributary WT2 and its abutting riparian forested wetland) provide more than a speculative or insubstantial effect upon the chemical integrity of the downstream TNW, which this relevant reach flows into. There is a direct surface hydrologic connection between this approximate 388-foot relevant reach of Tributary WT2 and the nearest TNW, Pine Island Bayou. The approximate 0.84-acre of abutting riparian wetland provides important filtration to aid in the reduction of bacteria, which will increase the dissolved oxygen (DO) concentrations in the downstream TNW due to less oxygen consumption. The wetland also serves to aid in the reduction of thermal and chemical pollutants as well as sediment from forestry activities flowing into Pine Island Bayou. Willow Creek and Pine Island Bayou are identified by the TCEQ as 303(d) impaired waters for DO; therefore the wetland in this reach provides important properties associated with the production and maintenance of DO. The tributary and wetland are situated in a rural area that is heavily managed for timber production. The tributary provides opportunity for increased DO to enter the water column and these aquatic resources within this relevant reach provide more than speculative or insubstantial effects that are inseparably bound to the chemical integrity of the downstream TNW.

Within this relevant reach of Tributary WT2, there is approximately 0.84-acre of similarly situated wetlands and 388 feet of intermittent tributary (WT2). The TNW, Pine Island Bayou, is approximately 14.36 river miles downstream of this relevant reach. The retention of water and retardation of overbank flooding associated with adjacent wetlands is vital to maintain and protect the physical integrity of the downstream TNW. The effects of removing these aquatic resources would affect the velocity and flow into Pine Island Bayou and then to the Neches River and Sabine Lake, resulting in more than a speculative or insubstantial effect upon the physical attributes of the downstream TNWs. Increased flow will increase "out of bank" flooding and scouring, resulting in loss of property and the physical attributes of the TNW. Additionally, the abutting riparian wetland intercepts sediment, nutrients, and pesticides from entering Tributary WT2 and ultimately the downstream TNW, Pine Island Bayou. Therefore, the aquatic resources within this reach provide more than speculative or insubstantial effects that maintain the physical integrity of the downstream TNW.

There are no known species found in this review area that require the aquatic resources of Tributary WT2 and its adjacent wetland and the waters of the TNW to fulfill their life cycle requirements. Tributary WT2 is not a RPW and flows into Willow Creek, a RPW and then flows into the TNW; as such, it is possible to have aquatic organisms that require both features (TNW and waters in this reach). It is highly feasible that species of fishes and/or invertebrates utilize Tributary WT2 for portions of their life cycles; but there is insufficient evidence to identify specific species that require both the aquatic resources within this relevant reach of Tributary WT2 and the waters of the TNW to fulfill life cycle requirements. The abutting wetland aids in providing species habitat, shelter from predators, and detritus and nutrients as a food source. Therefore, it is the Corps' conclusion, that the aquatic resources within this relevant reach of Tributary WT2, although speculative, provide fundamental biotic support to maintain the biological integrity of the downstream TNW.

In conclusion, we have determined that there is sufficient evidence to support the statement that the aquatic resources within this approximate 388-foot relevant reach of the non-RPW Tributary WT2 and its 0.84-acre of abutting riparian forested wetland provide a significant nexus (more than speculative or insubstantial effect) to the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou). In conclusion, it is our opinion that this relevant reach of Tributary WT2 and its adjacent wetland are waters of the United States subject to Section 404 of the Clean Water Act.

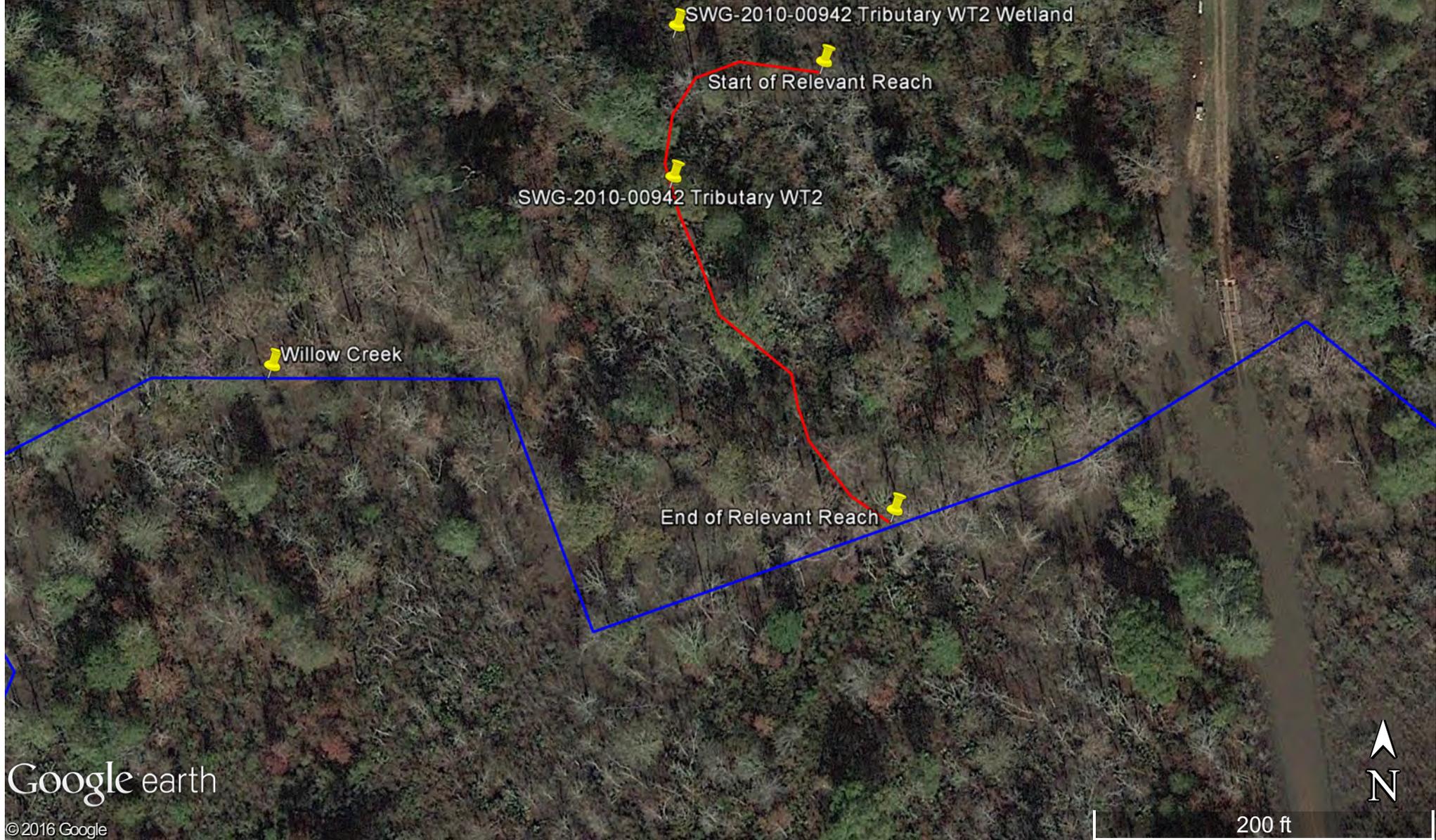
Wetlands on Project Site within this Relevant Reach

Aquatic Resources	Latitude	Longitude	UTM Zone	UTM Easting	UTM Northing	Acres
Tributary WT2 Wetland	30.057322 N	94.512767 W	15	354173	3326102	0.84
Tributary WT2	30.057081 N	94.512775 W	15	354171	3326075	0.04

# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary WT2 and Tributary WT2 Wetland

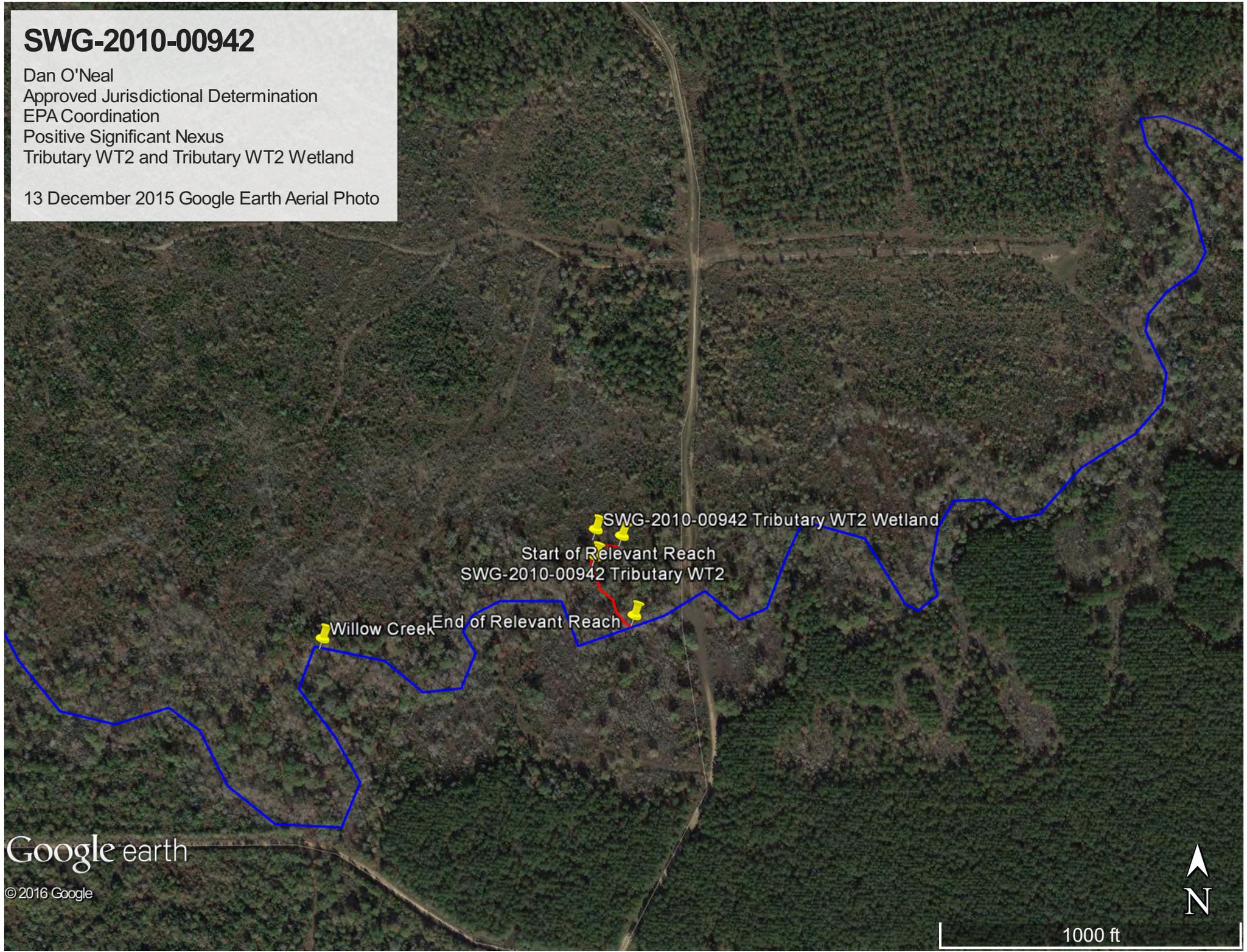
13 December 2015 Google Earth Aerial Photo



# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary WT2 and Tributary WT2 Wetland

13 December 2015 Google Earth Aerial Photo



Google earth

© 2016 Google



1000 ft

Hardin County

Liberty County

SWG-2010-00942 Dan O'Neal  
 Approved Jurisdictional Determination  
 EPA Coordination  
 Positive Significant Nexus  
 Tributary WT2 and Tributary WT2 Wetland

— Relevant Reach = 388 feet  
— River Distance to TNW = 14.36 miles  
— Aerial Distance to TNW = 7.02 miles  
 River Distance to RPW = 0 to 388 feet  
 Aerial Distance to RPW = 0 to 340 feet

Start of Traditional Navigable Water

Pine Island Bayou Traditional Navigable Water

Willow Creek - RPW

Nome

Relevant Reach  
 End of Relevant Reach  
 SWG-2010-00942 Tributary WT2

Relevant Reach Tributary WT2

Liberty County

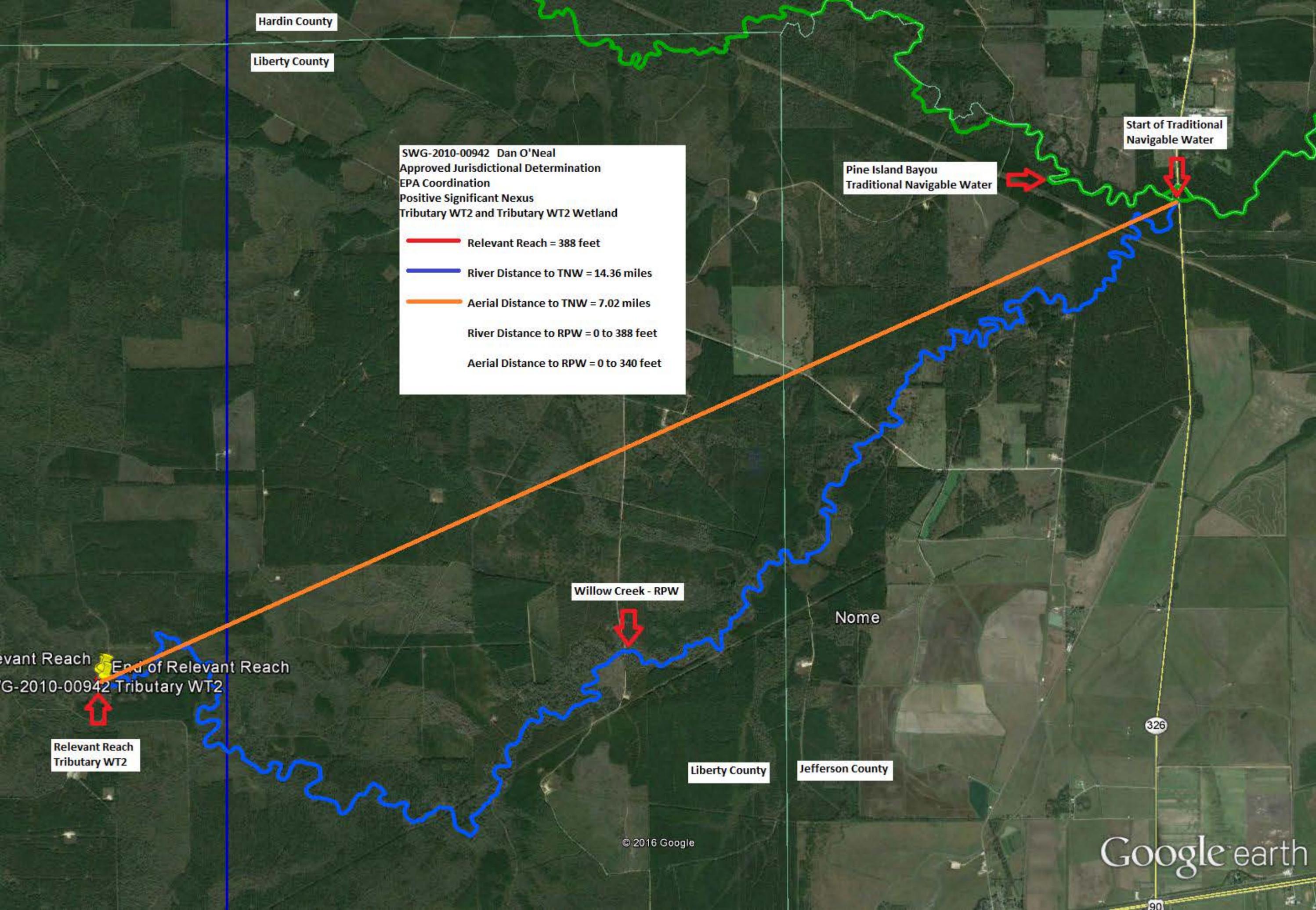
Jefferson County

326

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Google earth

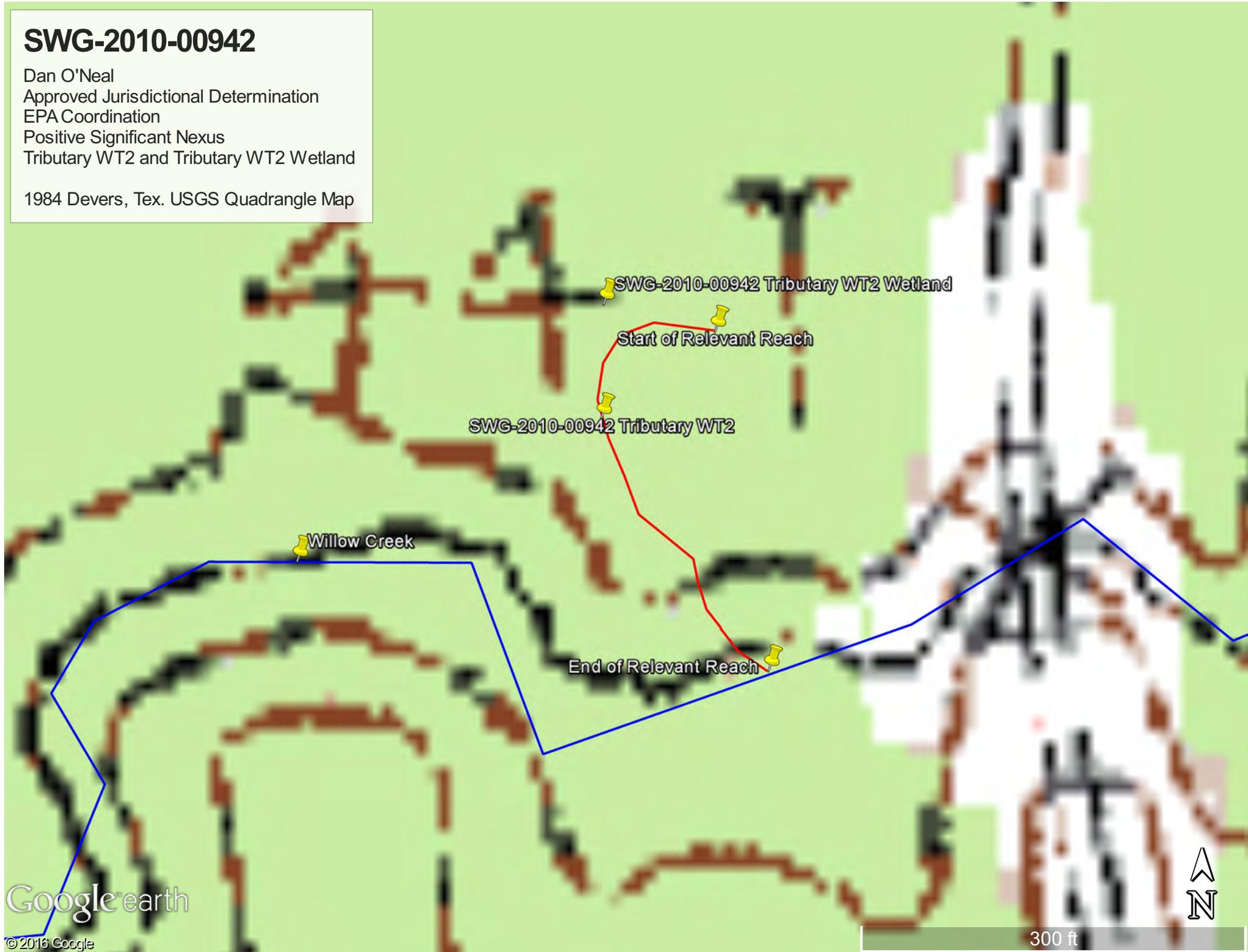
90



# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary WT2 and Tributary WT2 Wetland

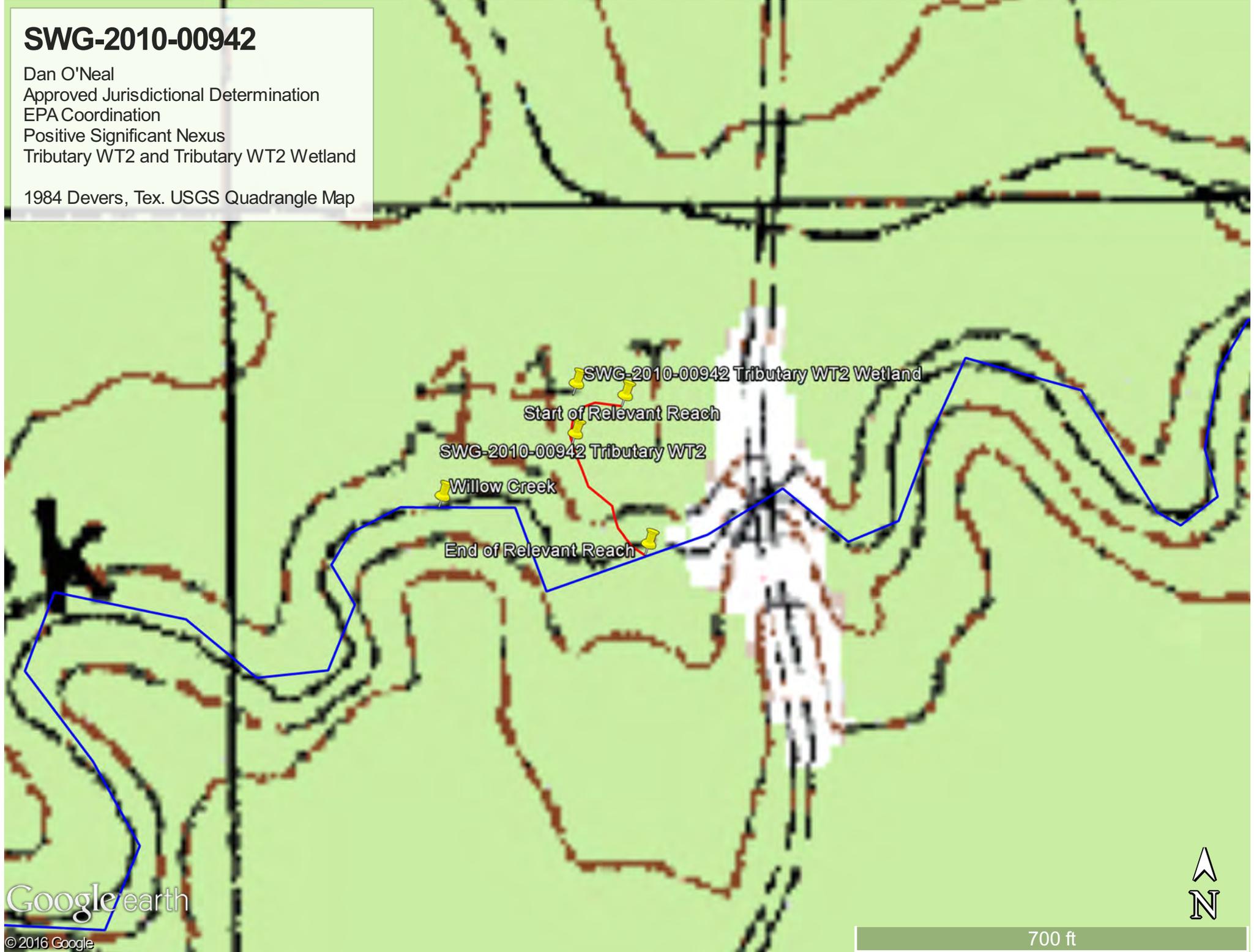
1984 Devers, Tex. USGS Quadrangle Map



# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary WT2 and Tributary WT2 Wetland

1984 Devers, Tex. USGS Quadrangle Map



Google earth

© 2016 Google

700 ft



**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): 26 February 2016**

**B. DISTRICT OFFICE, FILE NAME, AND NUMBER:** Galveston District, SWG-2010-00942, Dan O'Neal, Batiste Creek Mitigation Bank, Tributary WT3 and Tributary WT3 Wetland

**C. PROJECT LOCATION AND BACKGROUND INFORMATION:**

State: Texas County/Parish: Liberty City: northeast of Devers  
Center coordinates of site (lat/long in degree decimal format, NAD-83): Lat. see page 9° N, Long. see page 9° W;  
Universal Transverse Mercator: UTM: 15, see page 9 N., see page 9 E., NAD: 83  
Name of nearest water body: Tributary WT3  
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Pine Island Bayou  
Name of watershed or Hydrologic Unit Code (HUC): Pine Island Bayou - - 12020007

- 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: 13 February 2016
- Field Determination. Date(s): 7 January 2014, 17 October 2014, 20 May 2015, 8 July 2015, 8 October 2015, 6 January 2016, 7 January 2016

**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):<sup>1</sup>**

- TNWs, including territorial seas
- Wetlands adjacent to TNWs
- Relatively permanent waters<sup>2</sup> (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: **176** linear feet: **2** width (ft) and/or **0.01** acres  
Wetlands: **5.19** 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):<sup>3</sup>**

- Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.  
Explain:

<sup>1</sup> Boxes checked below shall be supported by completing the appropriate sections in Section III below.

<sup>2</sup> 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).

<sup>3</sup> 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, fill out Section III.D.2 and 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 water body<sup>4</sup> is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the water body 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: **1,761.6 square miles**

Drainage area: **Pick List**

Average annual rainfall: **61.5 inches**

Average annual snowfall: **0.0 inches**

(ii) **Physical Characteristics:**

(a) **Relationship with TNW:**

Tributary flows directly into TNW.

Tributary flows through **2** tributaries before entering TNW.

Project waters are **10-15** 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 TNW<sup>5</sup>: **Tributary WT3 flows into Willow Creek, which flows into Pine Island Bayou, the nearest TNW.**

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

<sup>5</sup> 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.

Tributary stream order, if known: **1**

(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: **2** feet  
Average depth: **0.5** feet  
Average side slopes: **3:1**

**Primary tributary substrate composition (check all that apply):**

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

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: **Fairly stable. Tributary has riparian buffer on both sides.**

Presence of run/riffle/pool complexes. Explain: **None**

Tributary geometry: **Meandering**

Tributary gradient (approximate average slope): **1-2 %**

(c) Flow:

Tributary provides for: **Intermittent but not seasonal flow**

Estimate average number of flow events in review area/year: **11-20**

Describe flow regime:

Other information on duration and volume: **Tributary primarily flows after precipitation events. Water from Willow Creek also backs up into Tributary WT3 during flood events.**

Surface flow is: **Confined**. Characteristics:

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

Dye (or other) test performed:

Tributary has (check all that apply):

Bed and banks  
 OHWM<sup>6</sup> (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.<sup>7</sup> 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 color varies depending on storm water input.**

Identify specific pollutants, if known: **Unknown, however, receiving waters (Willow Creek and Pine Island Bayou) are impaired waters for dissolved oxygen.**

<sup>6</sup>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 water body'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.

<sup>7</sup>Ibid.

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

- Riparian corridor. Characteristics (type, average width): **100 feet**
- Wetland fringe. Characteristics: **Forested**
- Habitat for:
  - Federally Listed species. Explain findings:
  - Fish/spawn areas. Explain findings:
  - Other environmentally-sensitive species. Explain findings:
  - Aquatic/wildlife diversity. Explain findings:

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

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: **5.19** acres

Wetland type. Explain: **PFO**

Wetland quality. Explain: **medium to high**

Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

Flow is: **Ephemeral 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
- Not directly abutting
  - Discrete wetland hydrologic connection. Explain:
  - Ecological connection. Explain:
  - Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW

Project wetlands are **10-15** 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 **50 - 100-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: **No water was in the wetland during the site visit. Chemical characteristics are unknown.**

Identify specific pollutants, if known:

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

- Riparian buffer. Characteristics (type, average width):
- Vegetation type/percent cover. Explain: **forested; 100 percent cover**
- 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: **1**

Approximately **(5.19)** 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>
Yes	5.19 PFO		

Summarize overall biological, chemical and physical functions being performed: **Tributary WT3 is not a relatively permanent water (RPW) and is a first order stream within this relevant reach, which is approximately 176 feet long and flows into Willow Creek, a RPW, which flows into Pine Island Bayou, the nearest traditional navigable water (TNW). The relevant reach starts at the headwater of Tributary WT3 and ends where Tributary WT3 enters Willow Creek (both on the project site). The relevant reach is located within a rural area that is not developed and the majority of the area is managed for timber production.**

There are no offsite adjacent wetlands within this relevant reach. Tributary WT3 flows into Willow Creek, which flows into Pine Island Bayou, which flows into the Neches River, which flows into Sabine Lake which flows into the Gulf of Mexico. One wetland (Tributary WT3 Wetland) on the tract totaling 5.19 acres is adjacent to this relevant reach of Tributary WT3. This wetland is forested and abutting Tributary WT3. Based on our analysis, we determined that there is 1 adjacent wetland located within this relevant reach of Tributary WT3. This wetland abuts Tributary WT3 and is 5.19 acres in size.

The Corps did find evidence/data to support the statement that these waters (this relevant reach of Tributary WT3 and its abutting riparian forested wetland) provide more than a speculative or insubstantial effect upon the chemical integrity of the downstream TNW, which this relevant reach flows into. There is a direct surface hydrologic connection between this approximate 176-foot relevant reach of Tributary WT3 and the nearest TNW, Pine Island Bayou. The approximate 5.19 acres of abutting riparian wetland provides important filtration to aid in the reduction of bacteria, which will increase the dissolved oxygen (DO) concentrations in the downstream TNW due to less oxygen consumption. The wetland also serves to aid in the reduction of thermal and chemical pollutants as well as sediment from forestry activities flowing into Pine Island Bayou. Willow Creek and Pine Island Bayou are identified by the TCEQ as 303(d) impaired waters for DO; therefore the wetland in this reach provides important properties associated with the production and maintenance of DO. The tributary and wetland are situated in a rural area that is heavily managed for timber production. The tributary provides opportunity for increased DO to enter the water column and these aquatic resources within this relevant reach provide more than speculative or insubstantial effects that are inseparably bound to the chemical integrity of the downstream TNW.

Within this relevant reach of Tributary WT3, there is approximately 5.19 acres of similarly situated wetlands and 176 feet of intermittent tributary (WT3). The TNW, Pine Island Bayou, is approximately 14.11 river miles downstream of this relevant reach. The retention of water and retardation of overbank flooding associated with adjacent wetlands is vital to maintain and protect the physical integrity of the downstream TNW. The effects of removing these aquatic resources would affect the velocity and flow into Pine Island Bayou and then to the Neches River and Sabine Lake, resulting in more than a speculative or insubstantial effect upon the physical attributes of the downstream TNWs. Increased flow will increase "out of bank" flooding and scouring, resulting in loss of property and the physical attributes of the TNW. Additionally, the abutting riparian wetland intercepts sediment, nutrients, and pesticides from entering Tributary WT3 and ultimately the downstream TNW, Pine Island Bayou. Therefore, the aquatic resources within this reach provide more than speculative or insubstantial effects that maintain the physical integrity of the downstream TNW.

There are no known species found in this review area that require the aquatic resources of Tributary WT3 and its adjacent wetland and the waters of the TNW to fulfill their life cycle requirements. Tributary WT3 is not a RPW and flows into Willow Creek, a RPW and then flows into the TNW; as such, it is possible to have aquatic organisms that require both features (TNW and waters in this reach). It is highly feasible that species of fishes and/or invertebrates utilize Tributary WT3 for portions of their life cycles; but there is insufficient evidence to identify specific species that require both the aquatic resources within this relevant reach of Tributary WT3 and the waters of the TNW to fulfill life cycle requirements. The abutting wetland aids in providing species habitat, shelter from predators, and detritus and nutrients as a food source. Therefore, it is the Corps' conclusion, that the aquatic resources within this relevant reach of Tributary WT3, although speculative, provide fundamental biotic support to maintain the biological integrity of the downstream TNW.

In conclusion, we have determined that there is sufficient evidence to support the statement that the aquatic resources within this approximate 176-foot relevant reach of the non-RPW Tributary WT3 and its 5.19 acres of abutting riparian forested wetland provide a significant nexus (more than speculative or insubstantial effect) to the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou). In conclusion, it is our opinion that this relevant reach of Tributary WT3 and its adjacent wetland are waters of the United States subject to Section 404 of the Clean Water Act.

### 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: **This relevant reach of Tributary WT3 is not a relatively permanent water and is a first order stream that flows into Willow Creek, a RPW, and then into Pine Island Bayou, the downstream TNW. There are approximately 5.19 acres of abutting riparian forested wetlands. This relevant reach of Tributary WT3 and its adjacent wetland provide important filtration to aid in the reduction of bacteria which will increase the concentration of dissolved oxygen as well as reducing thermal and chemical pollutants. The system also retains flood waters and reduces overbank flooding downstream, thereby decreasing the velocity and amount of water flowing downstream into Pine Island Bayou, the Neches River and Sabine Lake. Retaining flood waters also reduces scouring and the loss of property as well as preserving the physical attributes of the downstream TNW. Tributary WT3 and its abutting riparian forested wetland also likely support aquatic organisms and the adjacent wetland provides species habitat, shelter from predators and produces nutrients and detritus as a food source for downstream organisms. Based on this information, we determined that this relevant reach of Tributary WT3 and its adjacent wetland provide more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou).**

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

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:  
 TNWs: linear feet width (ft), Or, acres.  
 Wetlands adjacent to TNWs: acres.
2. **RPWs that flow directly or indirectly into TNWs.**  
 Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:  
 Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

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

- Tributary waters:            linear feet            width (ft)
  - Other non-wetland waters:            acres
- Identify type(s) of waters:

**3. Non-RPWs<sup>8</sup> that flow directly or indirectly into TNWs.**

- Water body 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:    176    linear feet    2    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.**

- 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: 5.19 acres

**7. Impoundments of jurisdictional waters.<sup>9</sup>**

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):<sup>10</sup>**

- 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:**

<sup>8</sup>See Footnote # 3.

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

<sup>10</sup> 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.

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

- Tributary waters: linear feet width (ft)
- Other non-wetland waters: acres
- Identify type(s) of waters:
- Wetlands: acres

**F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):**

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

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource:
- Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource:
- Wetlands: acres.

**SECTION IV: DATA SOURCES.**

**A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):**

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: **H & T Environmental**
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - Office concurs with data sheets/delineation report.
  - Office does not concur with data sheets/delineation report
- Data sheets prepared by the Corps: **7 January 2014, 17 October 2014, 20 May 2015, 8 October 2015**
- Corps navigable waters' study:
- U.S. Geological Survey Hydrologic Atlas: **Pine Island Bayou - - 12020007**
  - USGS NHD data
  - USGS 8 and 12 digit HUC maps
- Galveston District's Approved List of Navigable Waters
- U.S. Geological Survey map(s). Cite scale & quad name: **1984 Nome, Tex. USGS Quadrangle Map; 1984 Devers, Tex. USGS Quadrangle Map**
- USDA Natural Resources Conservation Service Soil Survey. Citation:
- National wetlands inventory map(s). Cite name: **Online USFWS NWI Mapper**
- State/Local wetland inventory map(s):
- FEMA/FIRM maps: **Liberty County, Texas Panels 500 and 525 of 675 dated 2 May 2008**
- 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- Photographs:  Aerial (Name & Date): **Google Earth 1995-2014**
  - 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:**

Tributary WT3 is not a relatively permanent water (RPW) and is a first order stream within this relevant reach, which is approximately 176 feet long and flows into Willow Creek, a RPW, which flows into Pine Island Bayou, the nearest traditional navigable water (TNW). The

relevant reach starts at the headwater of Tributary WT3 and ends where Tributary WT3 enters Willow Creek (both on the project site). The relevant reach is located within a rural area that is not developed and the majority of the area is managed for timber production.

There are no offsite adjacent wetlands within this relevant reach. Tributary WT3 flows into Willow Creek, which flows into Pine Island Bayou, which flows into the Neches River, which flows into Sabine Lake which flows into the Gulf of Mexico. One wetland (Tributary WT3 Wetland) on the tract totaling 5.19 acres is adjacent to this relevant reach of Tributary WT3. This wetland is forested and abutting Tributary WT3. Based on our analysis, we determined that there is 1 adjacent wetland located within this relevant reach of Tributary WT3. This wetland abuts Tributary WT3 and is 5.19 acres in size.

The Corps did find evidence/data to support the statement that these waters (this relevant reach of Tributary WT3 and its abutting riparian forested wetland) provide more than a speculative or insubstantial effect upon the chemical integrity of the downstream TNW, which this relevant reach flows into. There is a direct surface hydrologic connection between this approximate 176-foot relevant reach of Tributary WT3 and the nearest TNW, Pine Island Bayou. The approximate 5.19 acres of abutting riparian wetland provides important filtration to aid in the reduction of bacteria, which will increase the dissolved oxygen (DO) concentrations in the downstream TNW due to less oxygen consumption. The wetland also serves to aid in the reduction of thermal and chemical pollutants as well as sediment from forestry activities flowing into Pine Island Bayou. Willow Creek and Pine Island Bayou are identified by the TCEQ as 303(d) impaired waters for DO; therefore the wetland in this reach provides important properties associated with the production and maintenance of DO. The tributary and wetland are situated in a rural area that is heavily managed for timber production. The tributary provides opportunity for increased DO to enter the water column and these aquatic resources within this relevant reach provide more than speculative or insubstantial effects that are inseparably bound to the chemical integrity of the downstream TNW.

Within this relevant reach of Tributary WT3, there is approximately 5.19 acres of similarly situated wetlands and 176 feet of intermittent tributary (WT3). The TNW, Pine Island Bayou, is approximately 14.11 river miles downstream of this relevant reach. The retention of water and retardation of overbank flooding associated with adjacent wetlands is vital to maintain and protect the physical integrity of the downstream TNW. The effects of removing these aquatic resources would affect the velocity and flow into Pine Island Bayou and then to the Neches River and Sabine Lake, resulting in more than a speculative or insubstantial effect upon the physical attributes of the downstream TNWs. Increased flow will increase "out of bank" flooding and scouring, resulting in loss of property and the physical attributes of the TNW. Additionally, the abutting riparian wetland intercepts sediment, nutrients, and pesticides from entering Tributary WT3 and ultimately the downstream TNW, Pine Island Bayou. Therefore, the aquatic resources within this reach provide more than speculative or insubstantial effects that maintain the physical integrity of the downstream TNW.

There are no known species found in this review area that require the aquatic resources of Tributary WT3 and its adjacent wetland and the waters of the TNW to fulfill their life cycle requirements. Tributary WT3 is not a RPW and flows into Willow Creek, a RPW and then flows into the TNW; as such, it is possible to have aquatic organisms that require both features (TNW and waters in this reach). It is highly feasible that species of fishes and/or invertebrates utilize Tributary WT3 for portions of their life cycles; but there is insufficient evidence to identify specific species that require both the aquatic resources within this relevant reach of Tributary WT3 and the waters of the TNW to fulfill life cycle requirements. The abutting wetland aids in providing species habitat, shelter from predators, and detritus and nutrients as a food source. Therefore, it is the Corps' conclusion, that the aquatic resources within this relevant reach of Tributary WT3, although speculative, provide fundamental biotic support to maintain the biological integrity of the downstream TNW.

In conclusion, we have determined that there is sufficient evidence to support the statement that the aquatic resources within this approximate 176-foot relevant reach of the non-RPW Tributary WT3 and its 5.19 acres of abutting riparian forested wetland provide a significant nexus (more than speculative or insubstantial effect) to the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou). In conclusion, it is our opinion that this relevant reach of Tributary WT3 and its adjacent wetland are waters of the United States subject to Section 404 of the Clean Water Act.

Wetlands on Project Site within this Relevant Reach

Aquatic Resources	Latitude	Longitude	UTM Zone	UTM Easting	UTM Northing	Acres
Tributary WT3 Wetland	30.055475 N	94.509227 W	15	354511	3325892	5.19
Tributary WT3	30.056768 N	94.509110 W	15	354524	3326035	0.01

# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary WT3 and Tributary WT3 Wetland

13 December 2015 Google Earth Aerial Photo

Willow Creek

End of Relevant Reach

SWG-2010-00942 Tributary WT3

Start of Relevant Reach





SWG-2010-00942 Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary WT3 and Tributary WT3 Wetland

- Relevant Reach = 176 feet
- River Distance to TNW = 14.11 miles
- Aerial Distance to TNW = 6.82 miles
- River Distance to RPW = 0 to 176 feet
- Aerial Distance to RPW = 0 to 750 feet

Start of Traditional Navigable Water

Pine Island Bayou  
Traditional Navigable Water

Willow Creek - RPW

Relevant Reach  
Tributary WT3

End of Relevant Reach

Relevant Reach  
SWG-2010-00942 Tributary WT3  
SWG-2010-00942 Tributary WT3 Wetland

Liberty County

Jefferson County

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# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary WT3 and Tributary WT3 Wetland  
1984 Devers, Tex. USGS Quadrangle Map

Willow Creek

End of Relevant Reach

SWG-2010-00942 Tributary WT3

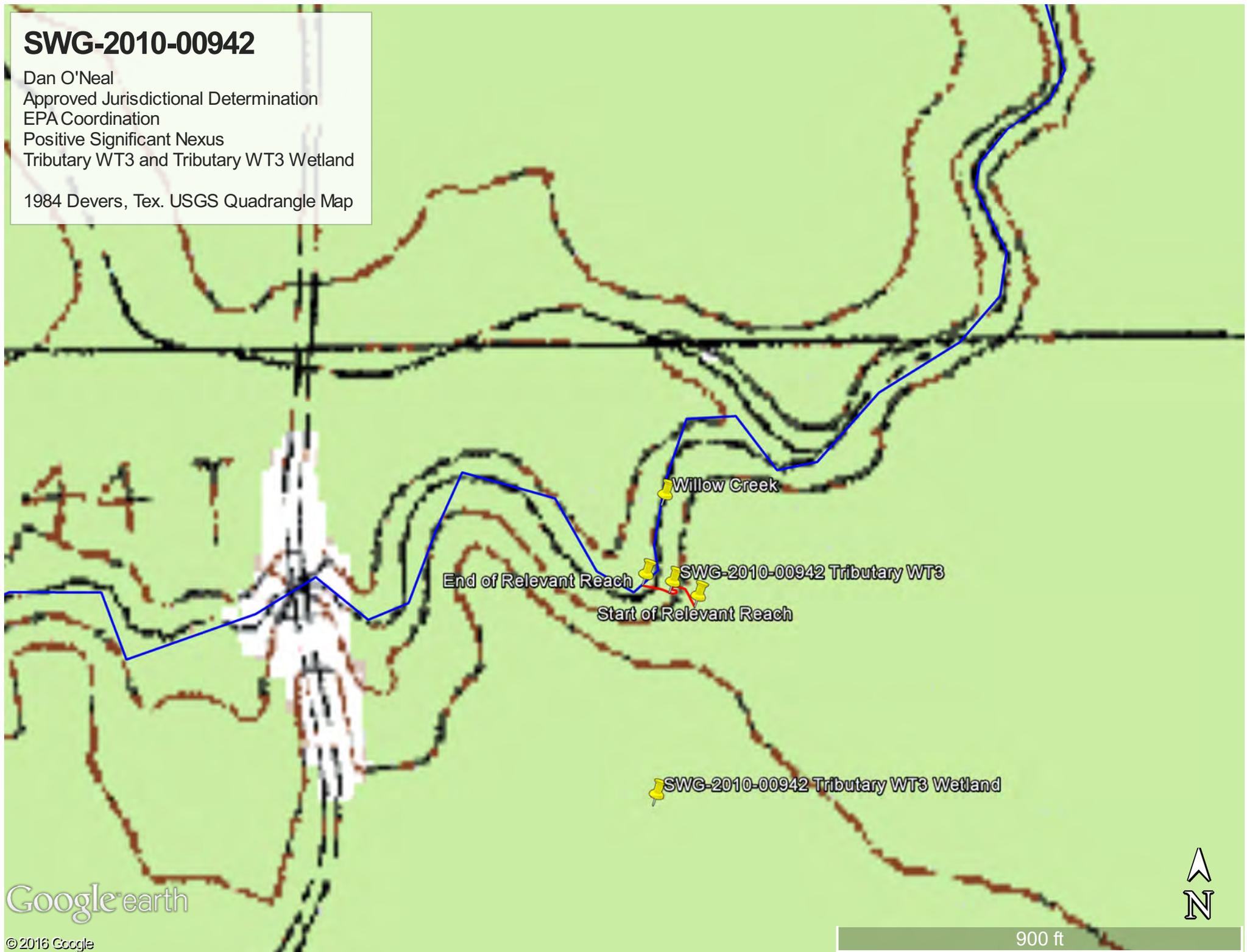
Start of Relevant Reach



# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary WT3 and Tributary WT3 Wetland

1984 Devers, Tex. USGS Quadrangle Map



**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): 26 February 2016**

**B. DISTRICT OFFICE, FILE NAME, AND NUMBER:** Galveston District, SWG-2010-00942, Dan O'Neal, Batiste Creek Mitigation Bank, Tributary WT4 and Tributary WT4 Wetland

**C. PROJECT LOCATION AND BACKGROUND INFORMATION:**

State: Texas County/Parish: Liberty City: northeast of Devers  
Center coordinates of site (lat/long in degree decimal format, NAD-83): Lat. see page 9° N, Long. see page 9° W;  
Universal Transverse Mercator: UTM: 15, see page 9 N., see page 9 E., NAD: 83  
Name of nearest water body: Tributary WT4  
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Pine Island Bayou  
Name of watershed or Hydrologic Unit Code (HUC): Pine Island Bayou - - 12020007

- 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: 13 February 2016  
 Field Determination. Date(s): 7 January 2014, 17 October 2014, 20 May 2015, 8 July 2015, 8 October 2015, 6 January 2016, 7 January 2016

**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):<sup>1</sup>**

- TNWs, including territorial seas  
 Wetlands adjacent to TNWs  
 Relatively permanent waters<sup>2</sup> (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: **542** linear feet: **4** width (ft) and/or **0.05** acres  
Wetlands: **0.63** 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):<sup>3</sup>**

- Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.  
Explain:

<sup>1</sup> Boxes checked below shall be supported by completing the appropriate sections in Section III below.

<sup>2</sup> 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).

<sup>3</sup> 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, fill out Section III.D.2 and 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 water body<sup>4</sup> is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the water body 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: 1,761.6 square miles

Drainage area: Pick List

Average annual rainfall: 61.5 inches

Average annual snowfall: 0.0 inches

(ii) **Physical Characteristics:**

(a) **Relationship with TNW:**

Tributary flows directly into TNW.

Tributary flows through 2 tributaries before entering TNW.

Project waters are 10-15 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 TNW<sup>5</sup>: Tributary WT4 flows into Willow Creek, which flows into Pine Island Bayou, the nearest TNW.

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

<sup>5</sup> 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.

Tributary stream order, if known: **1**

(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: **4** feet  
Average depth: **0.5** feet  
Average side slopes: **3:1**

**Primary tributary substrate composition (check all that apply):**

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

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: **Fairly stable. Tributary has riparian buffer on both sides.**

Presence of run/riffle/pool complexes. Explain: **None**

Tributary geometry: **Meandering**

Tributary gradient (approximate average slope): **1-2 %**

(c) Flow:

Tributary provides for: **Intermittent but not seasonal flow**

Estimate average number of flow events in review area/year: **11-20**

Describe flow regime:

Other information on duration and volume: **Tributary primarily flows after precipitation events. Water from Willow Creek also backs up into Tributary WT4 during flood events.**

Surface flow is: **Confined**. Characteristics:

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

Dye (or other) test performed:

Tributary has (check all that apply):

Bed and banks  
 OHWM<sup>6</sup> (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.<sup>7</sup> 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 color varies depending on storm water input.**

Identify specific pollutants, if known: **Unknown, however, receiving waters (Willow Creek and Pine Island Bayou) are impaired waters for dissolved oxygen.**

<sup>6</sup>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 water body'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.

<sup>7</sup>Ibid.

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

- Riparian corridor. Characteristics (type, average width): **100 feet**
- Wetland fringe. Characteristics: **Forested**
- Habitat for:
  - Federally Listed species. Explain findings:
  - Fish/spawn areas. Explain findings:
  - Other environmentally-sensitive species. Explain findings:
  - Aquatic/wildlife diversity. Explain findings:

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

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: **0.63** acres

Wetland type. Explain: **PFO**

Wetland quality. Explain: **medium to high**

Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

Flow is: **Ephemeral 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
- Not directly abutting
  - Discrete wetland hydrologic connection. Explain:
  - Ecological connection. Explain:
  - Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW

Project wetlands are **10-15** 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 **50 - 100-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: **No water was in the wetland during the site visit. Chemical characteristics are unknown.**

Identify specific pollutants, if known:

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

- Riparian buffer. Characteristics (type, average width):
- Vegetation type/percent cover. Explain: **forested; 100 percent cover**
- 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: **1**

Approximately (**0.63**) 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>
Yes	0.63 PFO		

Summarize overall biological, chemical and physical functions being performed: **Tributary WT4 is not a relatively permanent water (RPW) and is a first order stream within this relevant reach, which is approximately 542 feet long and flows into Willow Creek, a RPW, which flows into Pine Island Bayou, the nearest traditional navigable water (TNW). The relevant reach starts at the headwater of Tributary WT4 and ends where Tributary WT4 enters Willow Creek (both on the project site). The relevant reach is located within a rural area that is not developed and the majority of the area is managed for timber production.**

There are no offsite adjacent wetlands within this relevant reach. Tributary WT4 flows into Willow Creek, which flows into Pine Island Bayou, which flows into the Neches River, which flows into Sabine Lake which flows into the Gulf of Mexico. One wetland (Tributary WT4 Wetland) on the tract totaling 0.63-acre is adjacent to this relevant reach of Tributary WT4. This wetland is forested and abutting Tributary WT4. Based on our analysis, we determined that there is 1 adjacent wetland located within this relevant reach of Tributary WT4. This wetland abuts Tributary WT4 and is 0.63-acre in size.

The Corps did find evidence/data to support the statement that these waters (this relevant reach of Tributary WT4 and its abutting riparian forested wetland) provide more than a speculative or insubstantial effect upon the chemical integrity of the downstream TNW, which this relevant reach flows into. There is a direct surface hydrologic connection between this approximate 542-foot relevant reach of Tributary WT4 and the nearest TNW, Pine Island Bayou. The approximate 0.63-acre of abutting riparian wetland provides important filtration to aid in the reduction of bacteria, which will increase the dissolved oxygen (DO) concentrations in the downstream TNW due to less oxygen consumption. The wetland also serves to aid in the reduction of thermal and chemical pollutants as well as sediment from forestry activities flowing into Pine Island Bayou. Willow Creek and Pine Island Bayou are identified by the TCEQ as 303(d) impaired waters for DO; therefore the wetland in this reach provides important properties associated with the production and maintenance of DO. The tributary and wetland are situated in a rural area that is heavily managed for timber production. The tributary provides opportunity for increased DO to enter the water column and these aquatic resources within this relevant reach provide more than speculative or insubstantial effects that are inseparably bound to the chemical integrity of the downstream TNW.

Within this relevant reach of Tributary WT4, there is approximately 0.63-acre of similarly situated wetlands and 542 feet of intermittent tributary (WT4). The TNW, Pine Island Bayou, is approximately 14 river miles downstream of this relevant reach. The retention of water and retardation of overbank flooding associated with adjacent wetlands is vital to maintain and protect the physical integrity of the downstream TNW. The effects of removing these aquatic resources would affect the velocity and flow into Pine Island Bayou and then to the Neches River and Sabine Lake, resulting in more than a speculative or insubstantial effect upon the physical attributes of the downstream TNWs. Increased flow will increase "out of bank" flooding and scouring, resulting in loss of property and the physical attributes of the TNW. Additionally, the abutting riparian wetland intercepts sediment, nutrients, and pesticides from entering Tributary WT4 and ultimately the downstream TNW, Pine Island Bayou. Therefore, the aquatic resources within this reach provide more than speculative or insubstantial effects that maintain the physical integrity of the downstream TNW.

There are no known species found in this review area that require the aquatic resources of Tributary WT4 and its adjacent wetland and the waters of the TNW to fulfill their life cycle requirements. Tributary WT4 is not a RPW and flows into Willow Creek, a RPW and then flows into the TNW; as such, it is possible to have aquatic organisms that require both features (TNW and waters in this reach). It is highly feasible that species of fishes and/or invertebrates utilize Tributary WT4 for portions of their life cycles; but there is insufficient evidence to identify specific species that require both the aquatic resources within this relevant reach of Tributary WT4 and the waters of the TNW to fulfill life cycle requirements. The abutting wetland aids in providing species habitat, shelter from predators, and detritus and nutrients as a food source. Therefore, it is the Corps' conclusion, that the aquatic resources within this relevant reach of Tributary WT4, although speculative, provide fundamental biotic support to maintain the biological integrity of the downstream TNW.

In conclusion, we have determined that there is sufficient evidence to support the statement that the aquatic resources within this approximate 542-foot relevant reach of the non-RPW Tributary WT4 and its 0.63-acre of abutting riparian forested wetland provide a significant nexus (more than speculative or insubstantial effect) to the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou). In conclusion, it is our opinion that this relevant reach of Tributary WT4 and its adjacent wetland are waters of the United States subject to Section 404 of the Clean Water Act.

### 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: **This relevant reach of Tributary WT4 is not a relatively permanent water and is a first order stream that flows into Willow Creek, a RPW, and then into Pine Island Bayou, the downstream TNW. There are approximately 0.63-acre of abutting riparian forested wetlands. This relevant reach of Tributary WT4 and its adjacent wetland provide important filtration to aid in the reduction of bacteria which will increase the concentration of dissolved oxygen as well as reducing thermal and chemical pollutants. The system also retains flood waters and reduces overbank flooding downstream, thereby decreasing the velocity and amount of water flowing downstream into Pine Island Bayou, the Neches River and Sabine Lake. Retaining flood waters also reduces scouring and the loss of property as well as preserving the physical attributes of the downstream TNW. Tributary WT4 and its abutting riparian forested wetland also likely support aquatic organisms and the adjacent wetland provides species habitat, shelter from predators and produces nutrients and detritus as a food source for downstream organisms. Based on this information, we determined that this relevant reach of Tributary WT4 and its adjacent wetland provide more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou).**

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

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:  
 TNWs: linear feet width (ft), Or, acres.  
 Wetlands adjacent to TNWs: acres.
2. **RPWs that flow directly or indirectly into TNWs.**  
 Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:  
 Tributaries of TNW where tributaries have continuous flow “seasonally” (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

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

- Tributary waters:            linear feet            width (ft)
  - Other non-wetland waters:            acres
- Identify type(s) of waters:

**3. Non-RPWs<sup>8</sup> that flow directly or indirectly into TNWs.**

- Water body 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:    542    linear feet    4    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.**

- 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: 0.63    acres

**7. Impoundments of jurisdictional waters.<sup>9</sup>**

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):<sup>10</sup>**

- 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:**

<sup>8</sup>See Footnote # 3.

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

<sup>10</sup> 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.

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

- Tributary waters: linear feet width (ft)
- Other non-wetland waters: acres
- Identify type(s) of waters:
- Wetlands: acres

**F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):**

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

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource:
- Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource:
- Wetlands: acres.

**SECTION IV: DATA SOURCES.**

**A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):**

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: **H & T Environmental**
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - Office concurs with data sheets/delineation report.
  - Office does not concur with data sheets/delineation report
- Data sheets prepared by the Corps: **7 January 2014, 17 October 2014, 20 May 2015, 8 October 2015**
- Corps navigable waters' study:
- U.S. Geological Survey Hydrologic Atlas: **Pine Island Bayou - - 12020007**
  - USGS NHD data
  - USGS 8 and 12 digit HUC maps
- Galveston District's Approved List of Navigable Waters
- U.S. Geological Survey map(s). Cite scale & quad name: **1984 Nome, Tex. USGS Quadrangle Map; 1984 Devers, Tex. USGS Quadrangle Map**
- USDA Natural Resources Conservation Service Soil Survey. Citation:
- National wetlands inventory map(s). Cite name: **Online USFWS NWI Mapper**
- State/Local wetland inventory map(s):
- FEMA/FIRM maps: **Liberty County, Texas Panels 500 and 525 of 675 dated 2 May 2008**
- 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- Photographs:  Aerial (Name & Date): **Google Earth 1995-2014**
  - 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:**

Tributary WT4 is not a relatively permanent water (RPW) and is a first order stream within this relevant reach, which is approximately 542 feet long and flows into Willow Creek, a RPW, which flows into Pine Island Bayou, the nearest traditional navigable water (TNW). The

relevant reach starts at the headwater of Tributary WT4 and ends where Tributary WT4 enters Willow Creek (both on the project site). The relevant reach is located within a rural area that is not developed and the majority of the area is managed for timber production.

There are no offsite adjacent wetlands within this relevant reach. Tributary WT4 flows into Willow Creek, which flows into Pine Island Bayou, which flows into the Neches River, which flows into Sabine Lake which flows into the Gulf of Mexico. One wetland (Tributary WT4 Wetland) on the tract totaling 0.63-acre is adjacent to this relevant reach of Tributary WT4. This wetland is forested and abutting Tributary WT4. Based on our analysis, we determined that there is 1 adjacent wetland located within this relevant reach of Tributary WT4. This wetland abuts Tributary WT4 and is 0.63-acre in size.

The Corps did find evidence/data to support the statement that these waters (this relevant reach of Tributary WT4 and its abutting riparian forested wetland) provide more than a speculative or insubstantial effect upon the chemical integrity of the downstream TNW, which this relevant reach flows into. There is a direct surface hydrologic connection between this approximate 542-foot relevant reach of Tributary WT4 and the nearest TNW, Pine Island Bayou. The approximate 0.63-acre of abutting riparian wetland provides important filtration to aid in the reduction of bacteria, which will increase the dissolved oxygen (DO) concentrations in the downstream TNW due to less oxygen consumption. The wetland also serves to aid in the reduction of thermal and chemical pollutants as well as sediment from forestry activities flowing into Pine Island Bayou. Willow Creek and Pine Island Bayou are identified by the TCEQ as 303(d) impaired waters for DO; therefore the wetland in this reach provides important properties associated with the production and maintenance of DO. The tributary and wetland are situated in a rural area that is heavily managed for timber production. The tributary provides opportunity for increased DO to enter the water column and these aquatic resources within this relevant reach provide more than speculative or insubstantial effects that are inseparably bound to the chemical integrity of the downstream TNW.

Within this relevant reach of Tributary WT4, there is approximately 0.63-acre of similarly situated wetlands and 542 feet of intermittent tributary (WT4). The TNW, Pine Island Bayou, is approximately 14 river miles downstream of this relevant reach. The retention of water and retardation of overbank flooding associated with adjacent wetlands is vital to maintain and protect the physical integrity of the downstream TNW. The effects of removing these aquatic resources would affect the velocity and flow into Pine Island Bayou and then to the Neches River and Sabine Lake, resulting in more than a speculative or insubstantial effect upon the physical attributes of the downstream TNWs. Increased flow will increase "out of bank" flooding and scouring, resulting in loss of property and the physical attributes of the TNW. Additionally, the abutting riparian wetland intercepts sediment, nutrients, and pesticides from entering Tributary WT4 and ultimately the downstream TNW, Pine Island Bayou. Therefore, the aquatic resources within this reach provide more than speculative or insubstantial effects that maintain the physical integrity of the downstream TNW.

There are no known species found in this review area that require the aquatic resources of Tributary WT4 and its adjacent wetland and the waters of the TNW to fulfill their life cycle requirements. Tributary WT4 is not a RPW and flows into Willow Creek, a RPW and then flows into the TNW; as such, it is possible to have aquatic organisms that require both features (TNW and waters in this reach). It is highly feasible that species of fishes and/or invertebrates utilize Tributary WT4 for portions of their life cycles; but there is insufficient evidence to identify specific species that require both the aquatic resources within this relevant reach of Tributary WT4 and the waters of the TNW to fulfill life cycle requirements. The abutting wetland aids in providing species habitat, shelter from predators, and detritus and nutrients as a food source. Therefore, it is the Corps' conclusion, that the aquatic resources within this relevant reach of Tributary WT4, although speculative, provide fundamental biotic support to maintain the biological integrity of the downstream TNW.

In conclusion, we have determined that there is sufficient evidence to support the statement that the aquatic resources within this approximate 542-foot relevant reach of the non-RPW Tributary WT4 and its 0.63-acre of abutting riparian forested wetland provide a significant nexus (more than speculative or insubstantial effect) to the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou). In conclusion, it is our opinion that this relevant reach of Tributary WT4 and its adjacent wetland are waters of the United States subject to Section 404 of the Clean Water Act.

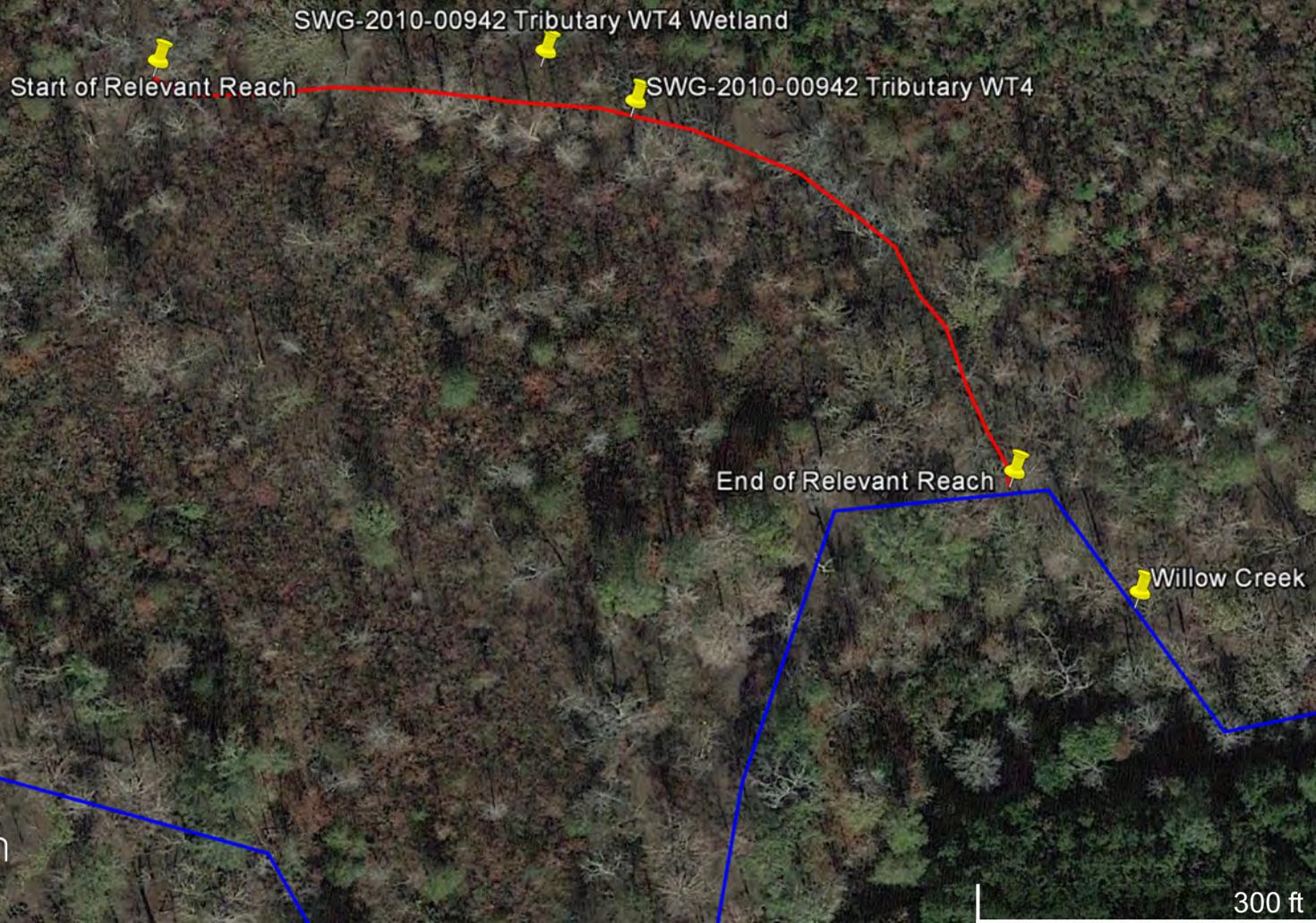
Wetlands on Project Site within this Relevant Reach

Aquatic Resources	Latitude	Longitude	UTM Zone	UTM Easting	UTM Northing	Acres
Tributary WT4 Wetland	30.058451 N	94.509464 W	15	354493	3326222	0.63
Tributary WT4	30.058380 N	94.509317 W	15	354507	3326214	0.05

# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary WT4 and Tributary WT4 Wetland

13 December 2015 Google Earth Aerial Photo



# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary WT4 and Tributary WT4 Wetland

13 December 2015 Google Earth Aerial Photo

SWG-2010-00942 Tributary WT4 Wetland  
SWG-2010-00942 Tributary WT4  
Start of Relevant Reach

End of Relevant Reach  
Willow Creek



SWG-2010-00942 Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary WT4 and Tributary WT4 Wetland

- Relevant Reach = 542 feet
- River Distance to TNW = 14.01 miles
- Aerial Distance to TNW = 6.77 miles
- River Distance to RPW = 0 to 542 feet
- Aerial Distance to RPW = 0 to 510 feet

Start of Traditional Navigable Water

Pine Island Bayou Traditional Navigable Water

Willow Creek - RPW

Nome

Liberty County

Jefferson County

326

90

Relevant Reach SWG 2010-00942 Tributary WT4  
Start of Relevant Reach

Relevant Reach Tributary WT4

# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary WT4 and Tributary WT4 Wetland

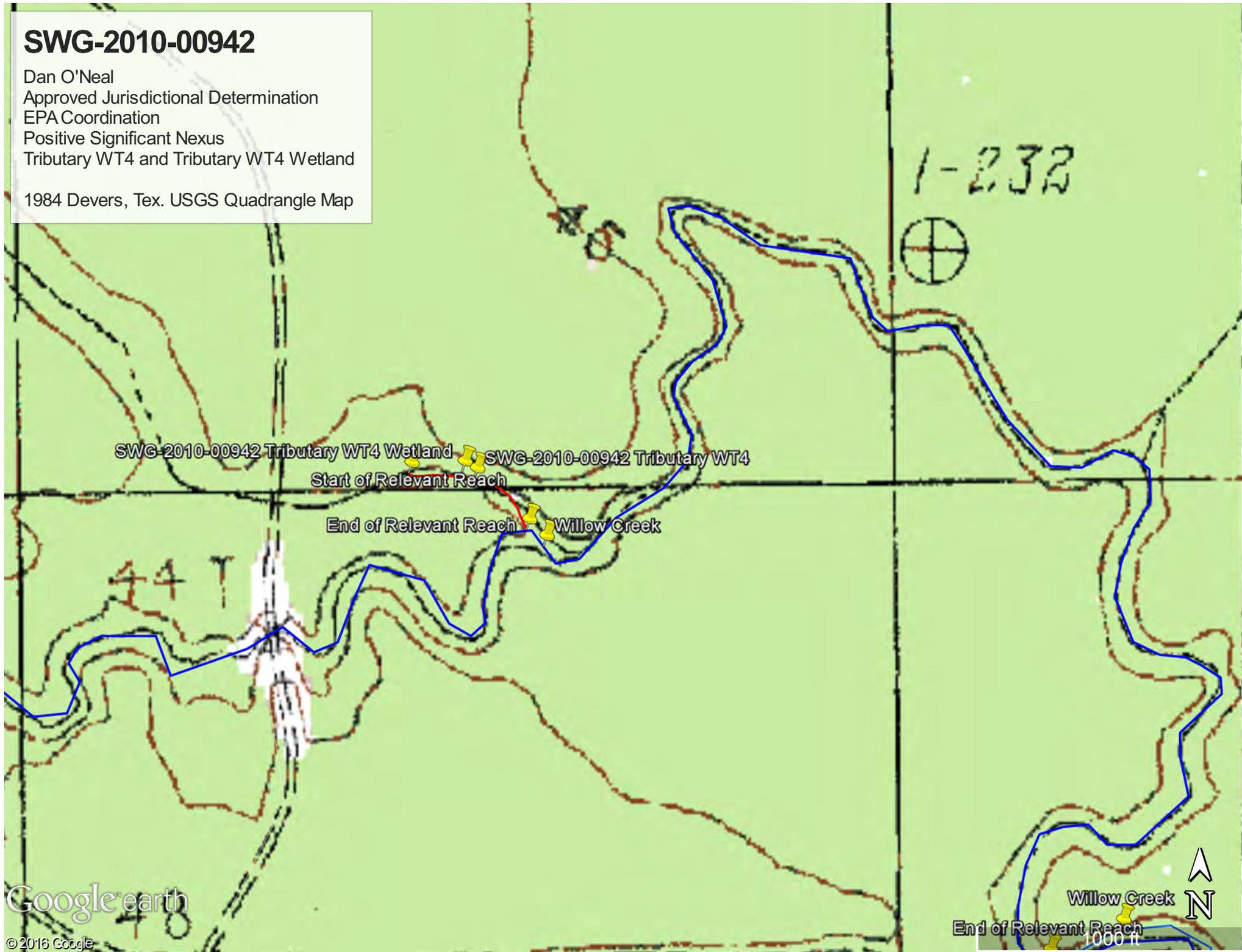
1984 Devers, Tex. USGS Quadrangle Map



# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary WT4 and Tributary WT4 Wetland

1984 Devers, Tex. USGS Quadrangle Map



1-232



SWG-2010-00942 Tributary WT4 Wetland  
SWG-2010-00942 Tributary WT4  
Start of Relevant Reach  
End of Relevant Reach  
Willow Creek

44 T

40

Willow Creek  
End of Relevant Reach  
1000 ft

**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): 26 February 2016**

**B. DISTRICT OFFICE, FILE NAME, AND NUMBER:** Galveston District, SWG-2010-00942, Dan O'Neal, Batiste Creek Mitigation Bank, Tributary WT5 and Tributary WT5 Wetland

**C. PROJECT LOCATION AND BACKGROUND INFORMATION:**

State: Texas County/Parish: Liberty City: northeast of Devers  
Center coordinates of site (lat/long in degree decimal format, NAD-83): Lat. see page 9° N, Long. see page 9° W;  
Universal Transverse Mercator: UTM: 15, see page 9 N., see page 9 E., NAD: 83  
Name of nearest water body: Tributary WT5  
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Pine Island Bayou  
Name of watershed or Hydrologic Unit Code (HUC): Pine Island Bayou - - 12020007

- 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: 13 February 2016  
 Field Determination. Date(s): 7 January 2014, 17 October 2014, 20 May 2015, 8 July 2015, 8 October 2015, 6 January 2016, 7 January 2016

**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):<sup>1</sup>**

- TNWs, including territorial seas  
 Wetlands adjacent to TNWs  
 Relatively permanent waters<sup>2</sup> (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: **139** linear feet: **2** width (ft) and/or **0.01** acres  
Wetlands: **0.12** 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):<sup>3</sup>**

- Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.  
Explain:

<sup>1</sup> Boxes checked below shall be supported by completing the appropriate sections in Section III below.

<sup>2</sup> 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).

<sup>3</sup> 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, fill out Section III.D.2 and 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 water body<sup>4</sup> is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the water body 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: 1,761.6 square miles

Drainage area: Pick List

Average annual rainfall: 61.5 inches

Average annual snowfall: 0.0 inches

(ii) **Physical Characteristics:**

(a) **Relationship with TNW:**

Tributary flows directly into TNW.

Tributary flows through 2 tributaries before entering TNW.

Project waters are 10-15 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 TNW<sup>5</sup>: Tributary WT5 flows into Willow Creek, which flows into Pine Island Bayou, the nearest TNW.

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

<sup>5</sup> 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.

Tributary stream order, if known: **1**

(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: **2** feet  
Average depth: **0.5** feet  
Average side slopes: **3:1**

**Primary tributary substrate composition (check all that apply):**

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

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: **Fairly stable. Tributary has riparian buffer on both sides.**

Presence of run/riffle/pool complexes. Explain: **None**

Tributary geometry: **Meandering**

Tributary gradient (approximate average slope): **1-2 %**

(c) Flow:

Tributary provides for: **Intermittent but not seasonal flow**

Estimate average number of flow events in review area/year: **11-20**

Describe flow regime:

Other information on duration and volume: **Tributary primarily flows after precipitation events. Water from Willow Creek also backs up into Tributary WT5 during flood events.**

Surface flow is: **Confined**. Characteristics:

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

Dye (or other) test performed:

Tributary has (check all that apply):

Bed and banks  
 OHWM<sup>6</sup> (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.<sup>7</sup> 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 color varies depending on storm water input.**

Identify specific pollutants, if known: **Unknown, however, receiving waters (Willow Creek and Pine Island Bayou) are impaired waters for dissolved oxygen.**

<sup>6</sup>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 water body'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.

<sup>7</sup>Ibid.

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

- Riparian corridor. Characteristics (type, average width): **100 feet**
- Wetland fringe. Characteristics: **Forested**
- Habitat for:
  - Federally Listed species. Explain findings:
  - Fish/spawn areas. Explain findings:
  - Other environmentally-sensitive species. Explain findings:
  - Aquatic/wildlife diversity. Explain findings:

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

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: **0.12** acres

Wetland type. Explain: **PFO**

Wetland quality. Explain: **medium to high**

Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

Flow is: **Ephemeral 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
- Not directly abutting
  - Discrete wetland hydrologic connection. Explain:
  - Ecological connection. Explain:
  - Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW

Project wetlands are **10-15** 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 **50 - 100-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: **No water was in the wetland during the site visit. Chemical characteristics are unknown.**

Identify specific pollutants, if known:

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

- Riparian buffer. Characteristics (type, average width):
- Vegetation type/percent cover. Explain: **forested; 100 percent cover**
- 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: **1**

Approximately (**0.12**) 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>
Yes	0.12 PFO		

Summarize overall biological, chemical and physical functions being performed: **Tributary WT5 is not a relatively permanent water (RPW) and is a first order stream within this relevant reach, which is approximately 139 feet long and flows into Willow Creek, a RPW, which flows into Pine Island Bayou, the nearest traditional navigable water (TNW). The relevant reach starts at the headwater of Tributary WT5 and ends where Tributary WT5 enters Willow Creek (both on the project site). The relevant reach is located within a rural area that is not developed and the majority of the area is managed for timber production.**

There are no offsite adjacent wetlands within this relevant reach. Tributary WT5 flows into Willow Creek, which flows into Pine Island Bayou, which flows into the Neches River, which flows into Sabine Lake which flows into the Gulf of Mexico. One wetland (Tributary WT5 Wetland) on the tract totaling 0.12-acre is adjacent to this relevant reach of Tributary WT5. This wetland is forested and abutting Tributary WT5. Based on our analysis, we determined that there is 1 adjacent wetland located within this relevant reach of Tributary WT5. This wetland abuts Tributary WT5 and is 0.12-acre in size.

The Corps did find evidence/data to support the statement that these waters (this relevant reach of Tributary WT5 and its abutting riparian forested wetland) provide more than a speculative or insubstantial effect upon the chemical integrity of the downstream TNW, which this relevant reach flows into. There is a direct surface hydrologic connection between this approximate 139-foot relevant reach of Tributary WT5 and the nearest TNW, Pine Island Bayou. The approximate 0.12-acre of abutting riparian wetland provides important filtration to aid in the reduction of bacteria, which will increase the dissolved oxygen (DO) concentrations in the downstream TNW due to less oxygen consumption. The wetland also serves to aid in the reduction of thermal and chemical pollutants as well as sediment from forestry activities flowing into Pine Island Bayou. Willow Creek and Pine Island Bayou are identified by the TCEQ as 303(d) impaired waters for DO; therefore the wetland in this reach provides important properties associated with the production and maintenance of DO. The tributary and wetland are situated in a rural area that is heavily managed for timber production. The tributary provides opportunity for increased DO to enter the water column and these aquatic resources within this relevant reach provide more than speculative or insubstantial effects that are inseparably bound to the chemical integrity of the downstream TNW.

Within this relevant reach of Tributary WT5, there is approximately 0.12-acre of similarly situated wetlands and 139 feet of intermittent tributary (WT5). The TNW, Pine Island Bayou, is approximately 12.77 river miles downstream of this relevant reach. The retention of water and retardation of overbank flooding associated with adjacent wetlands is vital to maintain and protect the physical integrity of the downstream TNW. The effects of removing these aquatic resources would affect the velocity and flow into Pine Island Bayou and then to the Neches River and Sabine Lake, resulting in more than a speculative or insubstantial effect upon the physical attributes of the downstream TNWs. Increased flow will increase "out of bank" flooding and scouring, resulting in loss of property and the physical attributes of the TNW. Additionally, the abutting riparian wetland intercepts sediment, nutrients, and pesticides from entering Tributary WT5 and ultimately the downstream TNW, Pine Island Bayou. Therefore, the aquatic resources within this reach provide more than speculative or insubstantial effects that maintain the physical integrity of the downstream TNW.

There are no known species found in this review area that require the aquatic resources of Tributary WT5 and its adjacent wetland and the waters of the TNW to fulfill their life cycle requirements. Tributary WT5 is not a RPW and flows into Willow Creek, a RPW and then flows into the TNW; as such, it is possible to have aquatic organisms that require both features (TNW and waters in this reach). It is highly feasible that species of fishes and/or invertebrates utilize Tributary WT5 for portions of their life cycles; but there is insufficient evidence to identify specific species that require both the aquatic resources within this relevant reach of Tributary WT5 and the waters of the TNW to fulfill life cycle requirements. The abutting wetland aids in providing species habitat, shelter from predators, and detritus and nutrients as a food source. Therefore, it is the Corps' conclusion, that the aquatic resources within this relevant reach of Tributary WT5, although speculative, provide fundamental biotic support to maintain the biological integrity of the downstream TNW.

In conclusion, we have determined that there is sufficient evidence to support the statement that the aquatic resources within this approximate 139-foot relevant reach of the non-RPW Tributary WT5 and its 0.12-acre of abutting riparian forested wetland provide a significant nexus (more than speculative or insubstantial effect) to the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou). In conclusion, it is our opinion that this relevant reach of Tributary WT5 and its adjacent wetland are waters of the United States subject to Section 404 of the Clean Water Act.

### 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: **This relevant reach of Tributary WT5 is not a relatively permanent water and is a first order stream that flows into Willow Creek, a RPW, and then into Pine Island Bayou, the downstream TNW. There are approximately 0.12-acre of abutting riparian forested wetlands. This relevant reach of Tributary WT5 and its adjacent wetland provide important filtration to aid in the reduction of bacteria which will increase the concentration of dissolved oxygen as well as reducing thermal and chemical pollutants. The system also retains flood waters and reduces overbank flooding downstream, thereby decreasing the velocity and amount of water flowing downstream into Pine Island Bayou, the Neches River and Sabine Lake. Retaining flood waters also reduces scouring and the loss of property as well as preserving the physical attributes of the downstream TNW. Tributary WT5 and its abutting riparian forested wetland also likely support aquatic organisms and the adjacent wetland provides species habitat, shelter from predators and produces nutrients and detritus as a food source for downstream organisms. Based on this information, we determined that this relevant reach of Tributary WT5 and its adjacent wetland provide more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou).**

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

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
  - TNWs: linear feet width (ft), Or, acres.
  - Wetlands adjacent to TNWs: acres.
2. **RPWs that flow directly or indirectly into TNWs.**
  - Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:
  - Tributaries of TNW where tributaries have continuous flow “seasonally” (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

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

- Tributary waters:            linear feet            width (ft)
  - Other non-wetland waters:            acres
- Identify type(s) of waters:

**3. Non-RPWs<sup>8</sup> that flow directly or indirectly into TNWs.**

- Water body 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:    139    linear feet    2    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.**

- 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: 0.12    acres

**7. Impoundments of jurisdictional waters.<sup>9</sup>**

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):<sup>10</sup>**

- 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:**

<sup>8</sup>See Footnote # 3.

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

<sup>10</sup> 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.

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

- Tributary waters: linear feet width (ft)
- Other non-wetland waters: acres
- Identify type(s) of waters:
- Wetlands: acres

**F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):**

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

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource:
- Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource:
- Wetlands: acres.

**SECTION IV: DATA SOURCES.**

**A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):**

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: **H & T Environmental**
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - Office concurs with data sheets/delineation report.
  - Office does not concur with data sheets/delineation report
- Data sheets prepared by the Corps: **7 January 2014, 17 October 2014, 20 May 2015, 8 October 2015**
- Corps navigable waters' study:
- U.S. Geological Survey Hydrologic Atlas: **Pine Island Bayou - - 12020007**
  - USGS NHD data
  - USGS 8 and 12 digit HUC maps
- Galveston District's Approved List of Navigable Waters
- U.S. Geological Survey map(s). Cite scale & quad name: **1984 Nome, Tex. USGS Quadrangle Map; 1984 Devers, Tex. USGS Quadrangle Map**
- USDA Natural Resources Conservation Service Soil Survey. Citation:
- National wetlands inventory map(s). Cite name: **Online USFWS NWI Mapper**
- State/Local wetland inventory map(s):
- FEMA/FIRM maps: **Liberty County, Texas Panels 500 and 525 of 675 dated 2 May 2008**
- 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- Photographs:  Aerial (Name & Date): **Google Earth 1995-2014**
  - 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:**

Tributary WT5 is not a relatively permanent water (RPW) and is a first order stream within this relevant reach, which is approximately 139 feet long and flows into Willow Creek, a RPW, which flows into Pine Island Bayou, the nearest traditional navigable water (TNW). The

relevant reach starts at the headwater of Tributary WT5 and ends where Tributary WT5 enters Willow Creek (both on the project site). The relevant reach is located within a rural area that is not developed and the majority of the area is managed for timber production.

There are no offsite adjacent wetlands within this relevant reach. Tributary WT5 flows into Willow Creek, which flows into Pine Island Bayou, which flows into the Neches River, which flows into Sabine Lake which flows into the Gulf of Mexico. One wetland (Tributary WT5 Wetland) on the tract totaling 0.12-acre is adjacent to this relevant reach of Tributary WT5. This wetland is forested and abutting Tributary WT5. Based on our analysis, we determined that there is 1 adjacent wetland located within this relevant reach of Tributary WT5. This wetland abuts Tributary WT5 and is 0.12-acre in size.

The Corps did find evidence/data to support the statement that these waters (this relevant reach of Tributary WT5 and its abutting riparian forested wetland) provide more than a speculative or insubstantial effect upon the chemical integrity of the downstream TNW, which this relevant reach flows into. There is a direct surface hydrologic connection between this approximate 139-foot relevant reach of Tributary WT5 and the nearest TNW, Pine Island Bayou. The approximate 0.12-acre of abutting riparian wetland provides important filtration to aid in the reduction of bacteria, which will increase the dissolved oxygen (DO) concentrations in the downstream TNW due to less oxygen consumption. The wetland also serves to aid in the reduction of thermal and chemical pollutants as well as sediment from forestry activities flowing into Pine Island Bayou. Willow Creek and Pine Island Bayou are identified by the TCEQ as 303(d) impaired waters for DO; therefore the wetland in this reach provides important properties associated with the production and maintenance of DO. The tributary and wetland are situated in a rural area that is heavily managed for timber production. The tributary provides opportunity for increased DO to enter the water column and these aquatic resources within this relevant reach provide more than speculative or insubstantial effects that are inseparably bound to the chemical integrity of the downstream TNW.

Within this relevant reach of Tributary WT5, there is approximately 0.12-acre of similarly situated wetlands and 139 feet of intermittent tributary (WT5). The TNW, Pine Island Bayou, is approximately 12.77 river miles downstream of this relevant reach. The retention of water and retardation of overbank flooding associated with adjacent wetlands is vital to maintain and protect the physical integrity of the downstream TNW. The effects of removing these aquatic resources would affect the velocity and flow into Pine Island Bayou and then to the Neches River and Sabine Lake, resulting in more than a speculative or insubstantial effect upon the physical attributes of the downstream TNWs. Increased flow will increase "out of bank" flooding and scouring, resulting in loss of property and the physical attributes of the TNW. Additionally, the abutting riparian wetland intercepts sediment, nutrients, and pesticides from entering Tributary WT5 and ultimately the downstream TNW, Pine Island Bayou. Therefore, the aquatic resources within this reach provide more than speculative or insubstantial effects that maintain the physical integrity of the downstream TNW.

There are no known species found in this review area that require the aquatic resources of Tributary WT5 and its adjacent wetland and the waters of the TNW to fulfill their life cycle requirements. Tributary WT5 is not a RPW and flows into Willow Creek, a RPW and then flows into the TNW; as such, it is possible to have aquatic organisms that require both features (TNW and waters in this reach). It is highly feasible that species of fishes and/or invertebrates utilize Tributary WT5 for portions of their life cycles; but there is insufficient evidence to identify specific species that require both the aquatic resources within this relevant reach of Tributary WT5 and the waters of the TNW to fulfill life cycle requirements. The abutting wetland aids in providing species habitat, shelter from predators, and detritus and nutrients as a food source. Therefore, it is the Corps' conclusion, that the aquatic resources within this relevant reach of Tributary WT5, although speculative, provide fundamental biotic support to maintain the biological integrity of the downstream TNW.

In conclusion, we have determined that there is sufficient evidence to support the statement that the aquatic resources within this approximate 139-foot relevant reach of the non-RPW Tributary WT5 and its 0.12-acre of abutting riparian forested wetland provide a significant nexus (more than speculative or insubstantial effect) to the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou). In conclusion, it is our opinion that this relevant reach of Tributary WT5 and its adjacent wetland are waters of the United States subject to Section 404 of the Clean Water Act.

Wetlands on Project Site within this Relevant Reach

Aquatic Resources	Latitude	Longitude	UTM Zone	UTM Easting	UTM Northing	Acres
Tributary WT5 Wetland	30.053548 N	94.503023 W	15	355106	3325671	0.12
Tributary WT5	30.053489 N	94.502989 W	15	355110	3325664	0.01

# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary WT5 and Tributary WT5 Wetland

13 December 2015 Google Earth Aerial Photo

SWG-2010-00942 Tributary WT5 Wetland

End of Relevant Reach

Start of Relevant Reach

SWG-2010-00942 Tributary WT5

Willow Creek



# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary WT5 and Tributary WT5 Wetland

13 December 2015 Google Earth Aerial Photo

SWG-2010-00942 Tributary WT5 Wetland  
End of Relevant Reach  
Start of Relevant Reach  
SWG-2010-00942 Tributary WT5  
Willow Creek



SWG-2010-00942 Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary WT5 and Tributary WT5 Wetland

- Relevant Reach = 139 feet
- River Distance to TNW = 12.77 miles
- Aerial Distance to TNW = 6.57 miles
- River Distance to RPW = 0 to 139 feet
- Aerial Distance to RPW = 0 to 145 feet

Start of Traditional  
Navigable Water

Pine Island Bayou  
Traditional Navigable Water

Willow Creek - RPW

Relevant Reach SWG-2010-00942 Tributary WT5  
End of Relevant Reach

Liberty County

Jefferson County

326

Relevant Reach  
Tributary WT5

# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary WT5 and Tributary WT5 Wetland

1984 Devers, Tex. USGS Quadrangle Map

SWG-2010-00942 Tributary WT5 Wetland

End of Relevant Reach

Start of Relevant Reach

SWG-2010-00942 Tributary WT5

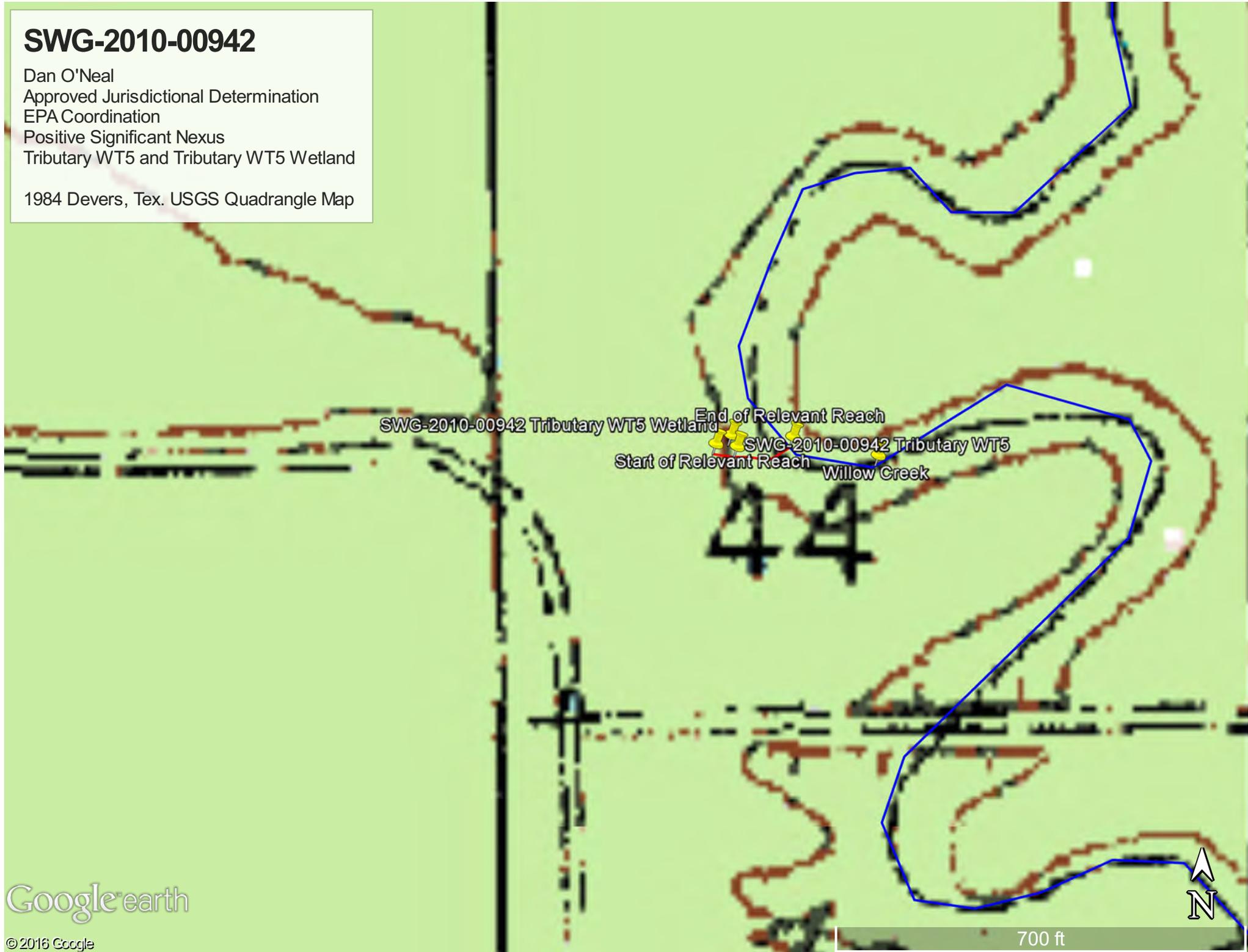
Willow Creek



# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary WT5 and Tributary WT5 Wetland

1984 Devers, Tex. USGS Quadrangle Map



**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): 26 February 2016**

**B. DISTRICT OFFICE, FILE NAME, AND NUMBER:** Galveston District, SWG-2010-00942, Dan O'Neal, Batiste Creek Mitigation Bank, Tributary WT6 and Tributary WT6 Wetland

**C. PROJECT LOCATION AND BACKGROUND INFORMATION:**

State: Texas County/Parish: Liberty City: northeast of Devers  
Center coordinates of site (lat/long in degree decimal format, NAD-83): Lat. see page 9° N, Long. see page 9° W;  
Universal Transverse Mercator: UTM: 15, see page 9 N., see page 9 E., NAD: 83  
Name of nearest water body: Tributary WT6  
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Pine Island Bayou  
Name of watershed or Hydrologic Unit Code (HUC): Pine Island Bayou - - 12020007

- 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: 13 February 2016  
 Field Determination. Date(s): 7 January 2014, 17 October 2014, 20 May 2015, 8 July 2015, 8 October 2015, 6 January 2016, 7 January 2016

**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):<sup>1</sup>**

- TNWs, including territorial seas  
 Wetlands adjacent to TNWs  
 Relatively permanent waters<sup>2</sup> (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: **416** linear feet: **5** width (ft) and/or **0.05** acres  
Wetlands: **0.9** 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):<sup>3</sup>**

- Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.  
Explain:

<sup>1</sup> Boxes checked below shall be supported by completing the appropriate sections in Section III below.

<sup>2</sup> 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).

<sup>3</sup> 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, fill out Section III.D.2 and 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 water body<sup>4</sup> is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the water body 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: 1,761.6 square miles

Drainage area: Pick List

Average annual rainfall: 61.5 inches

Average annual snowfall: 0.0 inches

(ii) **Physical Characteristics:**

(a) **Relationship with TNW:**

Tributary flows directly into TNW.

Tributary flows through 2 tributaries before entering TNW.

Project waters are 10-15 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 TNW<sup>5</sup>: Tributary WT6 flows into Willow Creek, which flows into Pine Island Bayou, the nearest TNW.

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

<sup>5</sup> 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.

Tributary stream order, if known: **1**

(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: **5** feet  
Average depth: **0.5** feet  
Average side slopes: **3:1**

**Primary tributary substrate composition (check all that apply):**

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

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: **Fairly stable. Tributary has riparian buffer on both sides.**

Presence of run/riffle/pool complexes. Explain: **None**

Tributary geometry: **Meandering**

Tributary gradient (approximate average slope): **1-2 %**

(c) Flow:

Tributary provides for: **Intermittent but not seasonal flow**

Estimate average number of flow events in review area/year: **11-20**

Describe flow regime:

Other information on duration and volume: **Tributary primarily flows after precipitation events. Water from Willow Creek also backs up into Tributary WT6 during flood events.**

Surface flow is: **Confined**. Characteristics:

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

Dye (or other) test performed:

Tributary has (check all that apply):

Bed and banks  
 OHWM<sup>6</sup> (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.<sup>7</sup> 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 color varies depending on storm water input.**

Identify specific pollutants, if known: **Unknown, however, receiving waters (Willow Creek and Pine Island Bayou) are impaired waters for dissolved oxygen.**

<sup>6</sup>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 water body'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.

<sup>7</sup>Ibid.

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

- Riparian corridor. Characteristics (type, average width): **100 feet**
- Wetland fringe. Characteristics: **Forested**
- Habitat for:
  - Federally Listed species. Explain findings:
  - Fish/spawn areas. Explain findings:
  - Other environmentally-sensitive species. Explain findings:
  - Aquatic/wildlife diversity. Explain findings:

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

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: **0.9** acres

Wetland type. Explain: **PFO**

Wetland quality. Explain: **medium to high**

Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

Flow is: **Ephemeral 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
- Not directly abutting
  - Discrete wetland hydrologic connection. Explain:
  - Ecological connection. Explain:
  - Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW

Project wetlands are **10-15** 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 **50 - 100-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: **No water was in the wetland during the site visit. Chemical characteristics are unknown.**

Identify specific pollutants, if known:

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

- Riparian buffer. Characteristics (type, average width):
- Vegetation type/percent cover. Explain: **forested; 100 percent cover**
- 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: **1**

Approximately (**0.9**) 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>
Yes	0.9 PFO		

Summarize overall biological, chemical and physical functions being performed: **Tributary WT6 is not a relatively permanent water (RPW) and is a first order stream within this relevant reach, which is approximately 416 feet long and flows into Willow Creek, a RPW, which flows into Pine Island Bayou, the nearest traditional navigable water (TNW). The relevant reach starts at the headwater of Tributary WT6 and ends where Tributary WT6 enters Willow Creek (both on the project site). The relevant reach is located within a rural area that is not developed and the majority of the area is managed for timber production.**

There are no offsite adjacent wetlands within this relevant reach. Tributary WT6 flows into Willow Creek, which flows into Pine Island Bayou, which flows into the Neches River, which flows into Sabine Lake which flows into the Gulf of Mexico. One wetland (Tributary WT6 Wetland) on the tract totaling 0.9-acre is adjacent to this relevant reach of Tributary WT6. This wetland is forested and abutting Tributary WT6. Based on our analysis, we determined that there is 1 adjacent wetland located within this relevant reach of Tributary WT6. This wetland abuts Tributary WT6 and is 0.9-acre in size.

The Corps did find evidence/data to support the statement that these waters (this relevant reach of Tributary WT6 and its abutting riparian forested wetland) provide more than a speculative or insubstantial effect upon the chemical integrity of the downstream TNW, which this relevant reach flows into. There is a direct surface hydrologic connection between this approximate 416-foot relevant reach of Tributary WT6 and the nearest TNW, Pine Island Bayou. The approximate 0.9-acre of abutting riparian wetland provides important filtration to aid in the reduction of bacteria, which will increase the dissolved oxygen (DO) concentrations in the downstream TNW due to less oxygen consumption. The wetland also serves to aid in the reduction of thermal and chemical pollutants as well as sediment from forestry activities flowing into Pine Island Bayou. Willow Creek and Pine Island Bayou are identified by the TCEQ as 303(d) impaired waters for DO; therefore the wetland in this reach provides important properties associated with the production and maintenance of DO. The tributary and wetland are situated in a rural area that is heavily managed for timber production. The tributary provides opportunity for increased DO to enter the water column and these aquatic resources within this relevant reach provide more than speculative or insubstantial effects that are inseparably bound to the chemical integrity of the downstream TNW.

Within this relevant reach of Tributary WT6, there is approximately 0.9-acre of similarly situated wetlands and 416 feet of intermittent tributary (WT6). The TNW, Pine Island Bayou, is approximately 12.76 river miles downstream of this relevant reach. The retention of water and retardation of overbank flooding associated with adjacent wetlands is vital to maintain and protect the physical integrity of the downstream TNW. The effects of removing these aquatic resources would affect the velocity and flow into Pine Island Bayou and then to the Neches River and Sabine Lake, resulting in more than a speculative or insubstantial effect upon the physical attributes of the downstream TNWs. Increased flow will increase "out of bank" flooding and scouring, resulting in loss of property and the physical attributes of the TNW. Additionally, the abutting riparian wetland intercepts sediment, nutrients, and pesticides from entering Tributary WT6 and ultimately the downstream TNW, Pine Island Bayou. Therefore, the aquatic resources within this reach provide more than speculative or insubstantial effects that maintain the physical integrity of the downstream TNW.

There are no known species found in this review area that require the aquatic resources of Tributary WT6 and its adjacent wetland and the waters of the TNW to fulfill their life cycle requirements. Tributary WT6 is not a RPW and flows into Willow Creek, a RPW and then flows into the TNW; as such, it is possible to have aquatic organisms that require both features (TNW and waters in this reach). It is highly feasible that species of fishes and/or invertebrates utilize Tributary WT6 for portions of their life cycles; but there is insufficient evidence to identify specific species that require both the aquatic resources within this relevant reach of Tributary WT6 and the waters of the TNW to fulfill life cycle requirements. The abutting wetland aids in providing species habitat, shelter from predators, and detritus and nutrients as a food source. Therefore, it is the Corps' conclusion, that the aquatic resources within this relevant reach of Tributary WT6, although speculative, provide fundamental biotic support to maintain the biological integrity of the downstream TNW.

In conclusion, we have determined that there is sufficient evidence to support the statement that the aquatic resources within this approximate 416-foot relevant reach of the non-RPW Tributary WT6 and its 0.9-acre of abutting riparian forested wetland provide a significant nexus (more than speculative or insubstantial effect) to the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou). In conclusion, it is our opinion that this relevant reach of Tributary WT6 and its adjacent wetland are waters of the United States subject to Section 404 of the Clean Water Act.

### 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: **This relevant reach of Tributary WT6 is not a relatively permanent water and is a first order stream that flows into Willow Creek, a RPW, and then into Pine Island Bayou, the downstream TNW. There are approximately 0.9-acre of abutting riparian forested wetlands. This relevant reach of Tributary WT6 and its adjacent wetland provide important filtration to aid in the reduction of bacteria which will increase the concentration of dissolved oxygen as well as reducing thermal and chemical pollutants. The system also retains flood waters and reduces overbank flooding downstream, thereby decreasing the velocity and amount of water flowing downstream into Pine Island Bayou, the Neches River and Sabine Lake. Retaining flood waters also reduces scouring and the loss of property as well as preserving the physical attributes of the downstream TNW. Tributary WT6 and its abutting riparian forested wetland also likely support aquatic organisms and the adjacent wetland provides species habitat, shelter from predators and produces nutrients and detritus as a food source for downstream organisms. Based on this information, we determined that this relevant reach of Tributary WT6 and its adjacent wetland provide more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou).**

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

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:  
 TNWs: linear feet width (ft), Or, acres.  
 Wetlands adjacent to TNWs: acres.
2. **RPWs that flow directly or indirectly into TNWs.**  
 Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:  
 Tributaries of TNW where tributaries have continuous flow “seasonally” (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

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

- Tributary waters:            linear feet            width (ft)
  - Other non-wetland waters:            acres
- Identify type(s) of waters:

**3. Non-RPWs<sup>8</sup> that flow directly or indirectly into TNWs.**

- Water body 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:    416    linear feet    5    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.**

- 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: 0.9    acres

**7. Impoundments of jurisdictional waters.<sup>9</sup>**

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):<sup>10</sup>**

- 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:**

<sup>8</sup>See Footnote # 3.

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

<sup>10</sup> 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.

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

- Tributary waters: linear feet width (ft)
- Other non-wetland waters: acres
- Identify type(s) of waters:
- Wetlands: acres

**F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):**

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

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource:
- Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource:
- Wetlands: acres.

**SECTION IV: DATA SOURCES.**

**A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):**

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: **H & T Environmental**
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - Office concurs with data sheets/delineation report.
  - Office does not concur with data sheets/delineation report
- Data sheets prepared by the Corps: **7 January 2014, 17 October 2014, 20 May 2015, 8 October 2015**
- Corps navigable waters' study:
- U.S. Geological Survey Hydrologic Atlas: **Pine Island Bayou - - 12020007**
  - USGS NHD data
  - USGS 8 and 12 digit HUC maps
- Galveston District's Approved List of Navigable Waters
- U.S. Geological Survey map(s). Cite scale & quad name: **1984 Nome, Tex. USGS Quadrangle Map; 1984 Devers, Tex. USGS Quadrangle Map**
- USDA Natural Resources Conservation Service Soil Survey. Citation:
- National wetlands inventory map(s). Cite name: **Online USFWS NWI Mapper**
- State/Local wetland inventory map(s):
- FEMA/FIRM maps: **Liberty County, Texas Panels 500 and 525 of 675 dated 2 May 2008**
- 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- Photographs:  Aerial (Name & Date): **Google Earth 1995-2014**
  - 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:**

Tributary WT6 is not a relatively permanent water (RPW) and is a first order stream within this relevant reach, which is approximately 416 feet long and flows into Willow Creek, a RPW, which flows into Pine Island Bayou, the nearest traditional navigable water (TNW). The

relevant reach starts at the headwater of Tributary WT6 and ends where Tributary WT6 enters Willow Creek (both on the project site). The relevant reach is located within a rural area that is not developed and the majority of the area is managed for timber production.

There are no offsite adjacent wetlands within this relevant reach. Tributary WT6 flows into Willow Creek, which flows into Pine Island Bayou, which flows into the Neches River, which flows into Sabine Lake which flows into the Gulf of Mexico. One wetland (Tributary WT6 Wetland) on the tract totaling 0.9-acre is adjacent to this relevant reach of Tributary WT6. This wetland is forested and abutting Tributary WT6. Based on our analysis, we determined that there is 1 adjacent wetland located within this relevant reach of Tributary WT6. This wetland abuts Tributary WT6 and is 0.9-acre in size.

The Corps did find evidence/data to support the statement that these waters (this relevant reach of Tributary WT6 and its abutting riparian forested wetland) provide more than a speculative or insubstantial effect upon the chemical integrity of the downstream TNW, which this relevant reach flows into. There is a direct surface hydrologic connection between this approximate 416-foot relevant reach of Tributary WT6 and the nearest TNW, Pine Island Bayou. The approximate 0.9-acre of abutting riparian wetland provides important filtration to aid in the reduction of bacteria, which will increase the dissolved oxygen (DO) concentrations in the downstream TNW due to less oxygen consumption. The wetland also serves to aid in the reduction of thermal and chemical pollutants as well as sediment from forestry activities flowing into Pine Island Bayou. Willow Creek and Pine Island Bayou are identified by the TCEQ as 303(d) impaired waters for DO; therefore the wetland in this reach provides important properties associated with the production and maintenance of DO. The tributary and wetland are situated in a rural area that is heavily managed for timber production. The tributary provides opportunity for increased DO to enter the water column and these aquatic resources within this relevant reach provide more than speculative or insubstantial effects that are inseparably bound to the chemical integrity of the downstream TNW.

Within this relevant reach of Tributary WT6, there is approximately 0.9-acre of similarly situated wetlands and 416 feet of intermittent tributary (WT6). The TNW, Pine Island Bayou, is approximately 12.76 river miles downstream of this relevant reach. The retention of water and retardation of overbank flooding associated with adjacent wetlands is vital to maintain and protect the physical integrity of the downstream TNW. The effects of removing these aquatic resources would affect the velocity and flow into Pine Island Bayou and then to the Neches River and Sabine Lake, resulting in more than a speculative or insubstantial effect upon the physical attributes of the downstream TNWs. Increased flow will increase "out of bank" flooding and scouring, resulting in loss of property and the physical attributes of the TNW. Additionally, the abutting riparian wetland intercepts sediment, nutrients, and pesticides from entering Tributary WT6 and ultimately the downstream TNW, Pine Island Bayou. Therefore, the aquatic resources within this reach provide more than speculative or insubstantial effects that maintain the physical integrity of the downstream TNW.

There are no known species found in this review area that require the aquatic resources of Tributary WT6 and its adjacent wetland and the waters of the TNW to fulfill their life cycle requirements. Tributary WT6 is not a RPW and flows into Willow Creek, a RPW and then flows into the TNW; as such, it is possible to have aquatic organisms that require both features (TNW and waters in this reach). It is highly feasible that species of fishes and/or invertebrates utilize Tributary WT6 for portions of their life cycles; but there is insufficient evidence to identify specific species that require both the aquatic resources within this relevant reach of Tributary WT6 and the waters of the TNW to fulfill life cycle requirements. The abutting wetland aids in providing species habitat, shelter from predators, and detritus and nutrients as a food source. Therefore, it is the Corps' conclusion, that the aquatic resources within this relevant reach of Tributary WT6, although speculative, provide fundamental biotic support to maintain the biological integrity of the downstream TNW.

In conclusion, we have determined that there is sufficient evidence to support the statement that the aquatic resources within this approximate 416-foot relevant reach of the non-RPW Tributary WT6 and its 0.9-acre of abutting riparian forested wetland provide a significant nexus (more than speculative or insubstantial effect) to the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou). In conclusion, it is our opinion that this relevant reach of Tributary WT6 and its adjacent wetland are waters of the United States subject to Section 404 of the Clean Water Act.

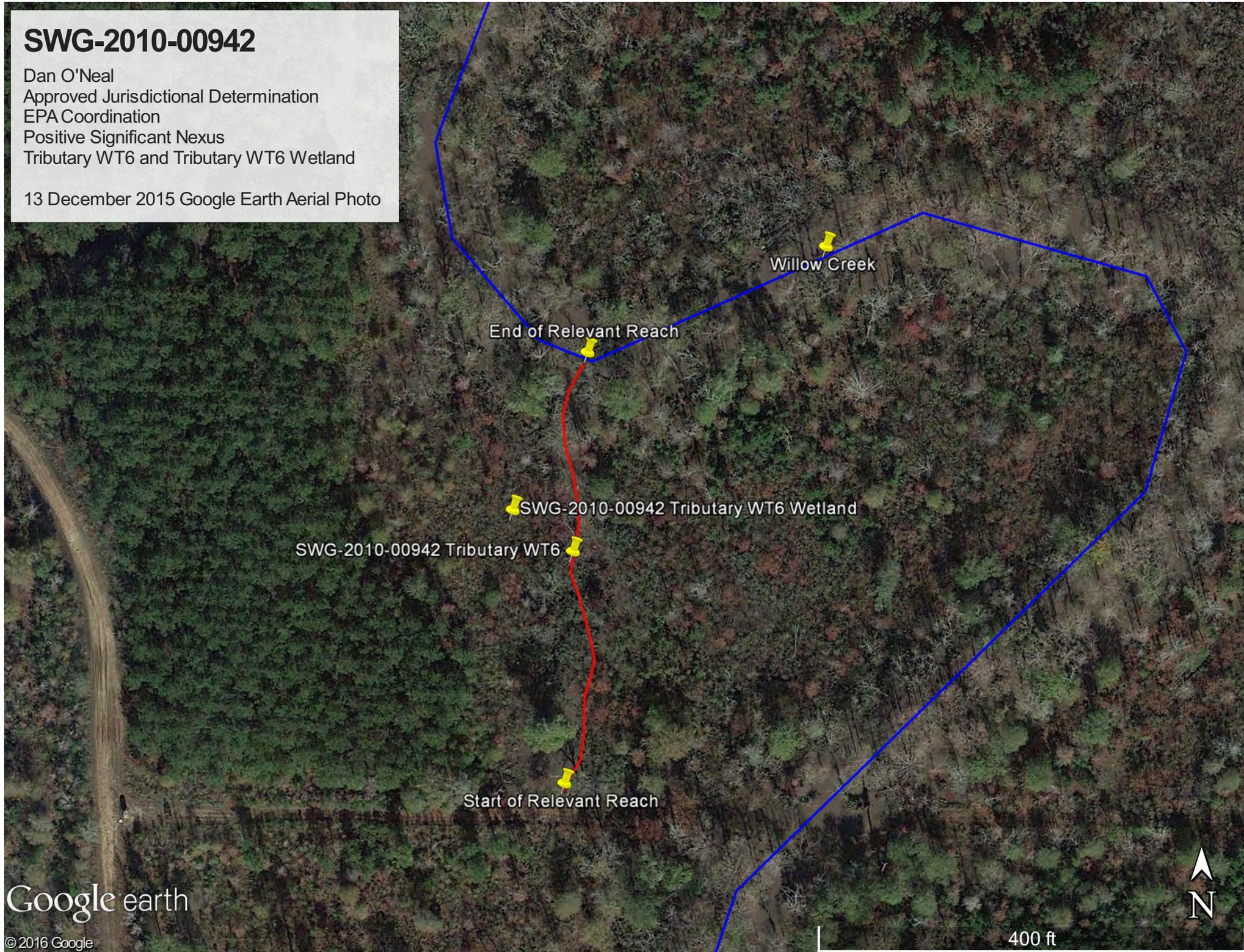
Wetlands on Project Site within this Relevant Reach

Aquatic Resources	Latitude	Longitude	UTM Zone	UTM Easting	UTM Northing	Acres
Tributary WT6 Wetland	30.053047 N	94.502746 W	15	355132	3325615	0.9
Tributary WT6	30.052940 N	94.502563 W	15	355150	3325603	0.05

# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary WT6 and Tributary WT6 Wetland

13 December 2015 Google Earth Aerial Photo



# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary WT6 and Tributary WT6 Wetland

13 December 2015 Google Earth Aerial Photo

Willow Creek  
End of Relevant Reach

SWG-2010-00942 Tributary WT6

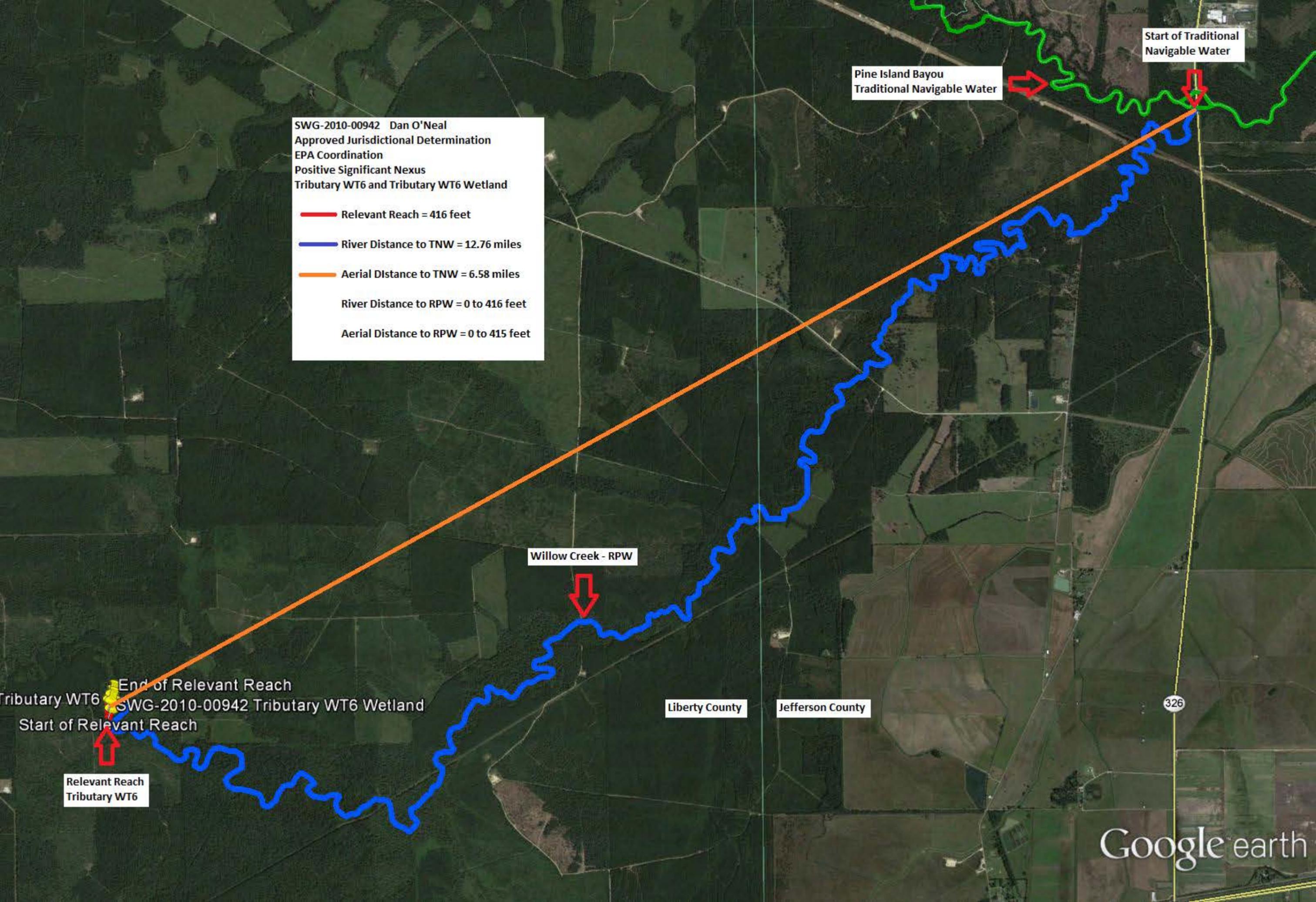
SWG-2010-00942 Tributary WT6 Wetland

Start of Relevant Reach



SWG-2010-00942 Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary WT6 and Tributary WT6 Wetland

- Relevant Reach = 416 feet
- River Distance to TNW = 12.76 miles
- Aerial Distance to TNW = 6.58 miles
- River Distance to RPW = 0 to 416 feet
- Aerial Distance to RPW = 0 to 415 feet



Start of Traditional Navigable Water

Pine Island Bayou  
Traditional Navigable Water

Willow Creek - RPW

Liberty County

Jefferson County

326

Google earth

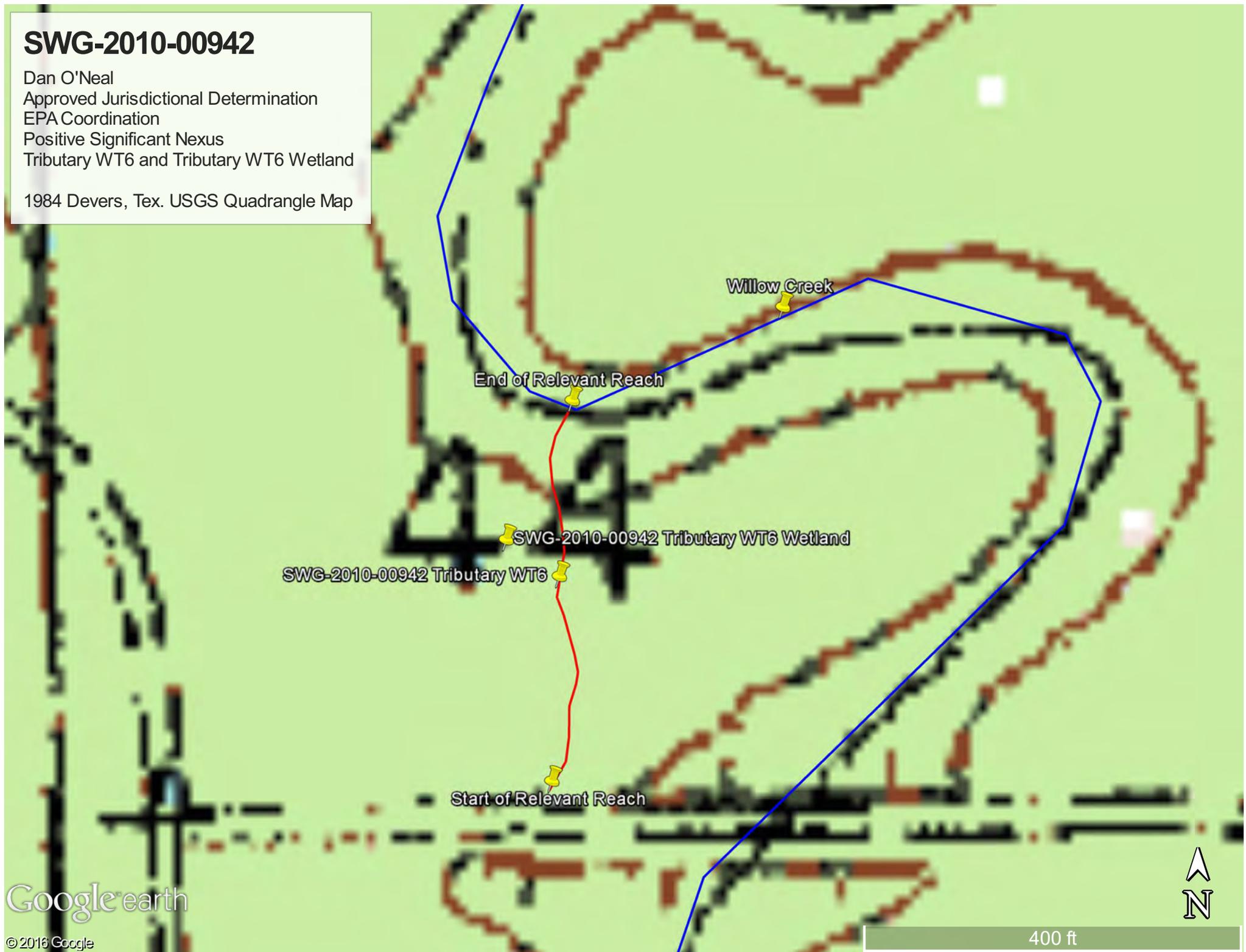
End of Relevant Reach  
Tributary WT6 SWG-2010-00942 Tributary WT6 Wetland  
Start of Relevant Reach

Relevant Reach  
Tributary WT6

# SWG-2010-00942

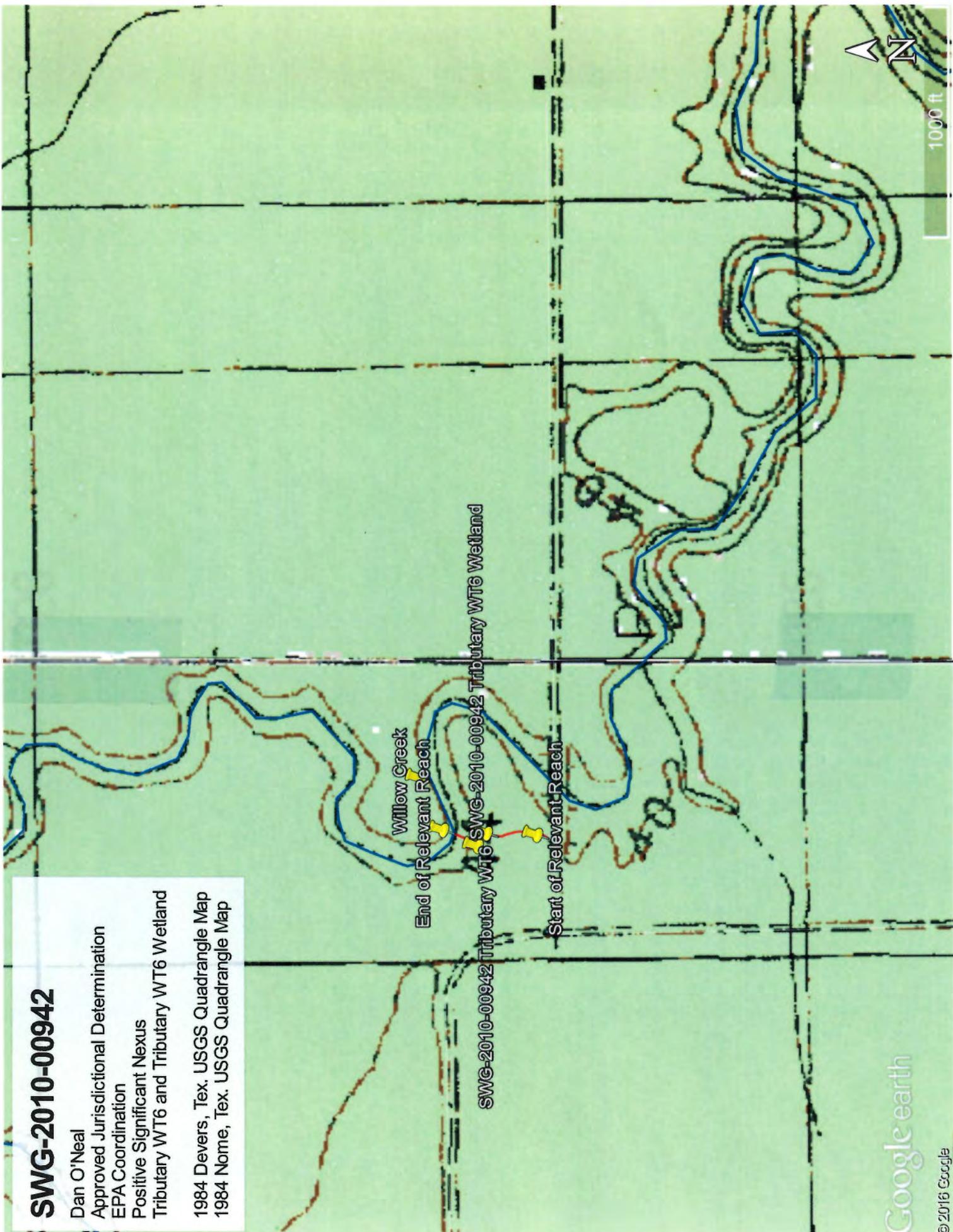
Dan O'Neal  
Approved Jurisdictional Determination  
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Positive Significant Nexus  
Tributary WT6 and Tributary WT6 Wetland

1984 Devers, Tex. USGS Quadrangle Map



# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary WT6 and Tributary WT6 Wetland  
1984 Devers, Tex. USGS Quadrangle Map  
1984 Nome, Tex. USGS Quadrangle Map



**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): 26 February 2016**

**B. DISTRICT OFFICE, FILE NAME, AND NUMBER:** Galveston District, SWG-2010-00942, Dan O'Neal, Batiste Creek Mitigation Bank, Tributary WT7 and Tributary WT7 Wetland

**C. PROJECT LOCATION AND BACKGROUND INFORMATION:**

State: Texas County/Parish: Liberty City: northeast of Devers  
Center coordinates of site (lat/long in degree decimal format, NAD-83): Lat. see page 9° N, Long. see page 9° W;  
Universal Transverse Mercator: UTM: 15, see page 9 N., see page 9 E., NAD: 83  
Name of nearest water body: Tributary WT7  
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Pine Island Bayou  
Name of watershed or Hydrologic Unit Code (HUC): Pine Island Bayou - - 12020007

- 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: 13 February 2016  
 Field Determination. Date(s): 7 January 2014, 17 October 2014, 20 May 2015, 8 July 2015, 8 October 2015, 6 January 2016, 7 January 2016

**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):<sup>1</sup>**

- TNWs, including territorial seas  
 Wetlands adjacent to TNWs  
 Relatively permanent waters<sup>2</sup> (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: **358** linear feet: **2** width (ft) and/or **0.03** acres  
Wetlands: **3.83** 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):<sup>3</sup>**

- Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.  
Explain:

<sup>1</sup> Boxes checked below shall be supported by completing the appropriate sections in Section III below.

<sup>2</sup> 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).

<sup>3</sup> 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, fill out Section III.D.2 and 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 water body<sup>4</sup> is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the water body 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: 1,761.6 square miles

Drainage area: Pick List

Average annual rainfall: 61.5 inches

Average annual snowfall: 0.0 inches

(ii) **Physical Characteristics:**

(a) **Relationship with TNW:**

Tributary flows directly into TNW.

Tributary flows through 2 tributaries before entering TNW.

Project waters are 10-15 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 TNW<sup>5</sup>: Tributary WT7 flows into Willow Creek, which flows into Pine Island Bayou, the nearest TNW.

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

<sup>5</sup> 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.

Tributary stream order, if known: **1**

(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: **2** feet  
Average depth: **0.5** feet  
Average side slopes: **3:1**

**Primary tributary substrate composition (check all that apply):**

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

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: **Fairly stable. Tributary has riparian buffer on both sides.**

Presence of run/riffle/pool complexes. Explain: **None**

Tributary geometry: **Meandering**

Tributary gradient (approximate average slope): **1-2 %**

(c) Flow:

Tributary provides for: **Intermittent but not seasonal flow**

Estimate average number of flow events in review area/year: **11-20**

Describe flow regime:

Other information on duration and volume: **Tributary primarily flows after precipitation events. Water from Willow Creek also backs up into Tributary WT7 during flood events.**

Surface flow is: **Confined**. Characteristics:

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

Dye (or other) test performed:

Tributary has (check all that apply):

Bed and banks  
 OHWM<sup>6</sup> (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.<sup>7</sup> 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 color varies depending on storm water input.**

Identify specific pollutants, if known: **Unknown, however, receiving waters (Willow Creek and Pine Island Bayou) are impaired waters for dissolved oxygen.**

<sup>6</sup>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 water body'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.

<sup>7</sup>Ibid.

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

- Riparian corridor. Characteristics (type, average width): **100 feet**
- Wetland fringe. Characteristics: **Forested**
- Habitat for:
  - Federally Listed species. Explain findings:
  - Fish/spawn areas. Explain findings:
  - Other environmentally-sensitive species. Explain findings:
  - Aquatic/wildlife diversity. Explain findings:

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

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: **3.83** acres

Wetland type. Explain: **PFO**

Wetland quality. Explain: **medium to high**

Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

Flow is: **Ephemeral 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
- Not directly abutting
  - Discrete wetland hydrologic connection. Explain:
  - Ecological connection. Explain:
  - Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW

Project wetlands are **10-15** 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 **50 - 100-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: **No water was in the wetland during the site visit. Chemical characteristics are unknown.**

Identify specific pollutants, if known:

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

- Riparian buffer. Characteristics (type, average width):
- Vegetation type/percent cover. Explain: **forested; 100 percent cover**
- 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: **1**

Approximately (**3.83**) 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>
Yes	3.83 PFO		

Summarize overall biological, chemical and physical functions being performed: **Tributary WT7 is not a relatively permanent water (RPW) and is a first order stream within this relevant reach, which is approximately 358 feet long and flows into Willow Creek, a RPW, which flows into Pine Island Bayou, the nearest traditional navigable water (TNW). The relevant reach starts at the headwater of Tributary WT7 and ends where Tributary WT7 enters Willow Creek (both on the project site). The relevant reach is located within a rural area that is not developed and the majority of the area is managed for timber production.**

There are no offsite adjacent wetlands within this relevant reach. Tributary WT7 flows into Willow Creek, which flows into Pine Island Bayou, which flows into the Neches River, which flows into Sabine Lake which flows into the Gulf of Mexico. One wetland (Tributary WT7 Wetland) on the tract totaling 3.83 acres is adjacent to this relevant reach of Tributary WT7. This wetland is forested and abutting Tributary WT7. Based on our analysis, we determined that there is 1 adjacent wetland located within this relevant reach of Tributary WT7. This wetland abuts Tributary WT7 and is 3.83 acres in size.

The Corps did find evidence/data to support the statement that these waters (this relevant reach of Tributary WT7 and its abutting riparian forested wetland) provide more than a speculative or insubstantial effect upon the chemical integrity of the downstream TNW, which this relevant reach flows into. There is a direct surface hydrologic connection between this approximate 358-foot relevant reach of Tributary WT7 and the nearest TNW, Pine Island Bayou. The approximate 3.83 acres of abutting riparian wetland provides important filtration to aid in the reduction of bacteria, which will increase the dissolved oxygen (DO) concentrations in the downstream TNW due to less oxygen consumption. The wetland also serves to aid in the reduction of thermal and chemical pollutants as well as sediment from forestry activities flowing into Pine Island Bayou. Willow Creek and Pine Island Bayou are identified by the TCEQ as 303(d) impaired waters for DO; therefore the wetland in this reach provides important properties associated with the production and maintenance of DO. The tributary and wetland are situated in a rural area that is heavily managed for timber production. The tributary provides opportunity for increased DO to enter the water column and these aquatic resources within this relevant reach provide more than speculative or insubstantial effects that are inseparably bound to the chemical integrity of the downstream TNW.

Within this relevant reach of Tributary WT7, there is approximately 3.83 acres of similarly situated wetlands and 358 feet of intermittent tributary (WT7). The TNW, Pine Island Bayou, is approximately 12.6 river miles downstream of this relevant reach. The retention of water and retardation of overbank flooding associated with adjacent wetlands is vital to maintain and protect the physical integrity of the downstream TNW. The effects of removing these aquatic resources would affect the velocity and flow into Pine Island Bayou and then to the Neches River and Sabine Lake, resulting in more than a speculative or insubstantial effect upon the physical attributes of the downstream TNWs. Increased flow will increase "out of bank" flooding and scouring, resulting in loss of property and the physical attributes of the TNW. Additionally, the abutting riparian wetland intercepts sediment, nutrients, and pesticides from entering Tributary WT7 and ultimately the downstream TNW, Pine Island Bayou. Therefore, the aquatic resources within this reach provide more than speculative or insubstantial effects that maintain the physical integrity of the downstream TNW.

There are no known species found in this review area that require the aquatic resources of Tributary WT7 and its adjacent wetland and the waters of the TNW to fulfill their life cycle requirements. Tributary WT7 is not a RPW and flows into Willow Creek, a RPW and then flows into the TNW; as such, it is possible to have aquatic organisms that require both features (TNW and waters in this reach). It is highly feasible that species of fishes and/or invertebrates utilize Tributary WT7 for portions of their life cycles; but there is insufficient evidence to identify specific species that require both the aquatic resources within this relevant reach of Tributary WT7 and the waters of the TNW to fulfill life cycle requirements. The abutting wetland aids in providing species habitat, shelter from predators, and detritus and nutrients as a food source. Therefore, it is the Corps' conclusion, that the aquatic resources within this relevant reach of Tributary WT7, although speculative, provide fundamental biotic support to maintain the biological integrity of the downstream TNW.

In conclusion, we have determined that there is sufficient evidence to support the statement that the aquatic resources within this approximate 358-foot relevant reach of the non-RPW Tributary WT7 and its 3.83 acres of abutting riparian forested wetland provide a significant nexus (more than speculative or insubstantial effect) to the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou). In conclusion, it is our opinion that this relevant reach of Tributary WT7 and its adjacent wetland are waters of the United States subject to Section 404 of the Clean Water Act.

### 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: **This relevant reach of Tributary WT7 is not a relatively permanent water and is a first order stream that flows into Willow Creek, a RPW, and then into Pine Island Bayou, the downstream TNW. There are approximately 3.83 acres of abutting riparian forested wetlands. This relevant reach of Tributary WT7 and its adjacent wetland provide important filtration to aid in the reduction of bacteria which will increase the concentration of dissolved oxygen as well as reducing thermal and chemical pollutants. The system also retains flood waters and reduces overbank flooding downstream, thereby decreasing the velocity and amount of water flowing downstream into Pine Island Bayou, the Neches River and Sabine Lake. Retaining flood waters also reduces scouring and the loss of property as well as preserving the physical attributes of the downstream TNW. Tributary WT7 and its abutting riparian forested wetland also likely support aquatic organisms and the adjacent wetland provides species habitat, shelter from predators and produces nutrients and detritus as a food source for downstream organisms. Based on this information, we determined that this relevant reach of Tributary WT7 and its adjacent wetland provide more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou).**

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

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:  
 TNWs: linear feet width (ft), Or, acres.  
 Wetlands adjacent to TNWs: acres.
2. **RPWs that flow directly or indirectly into TNWs.**  
 Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:  
 Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

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

- Tributary waters:            linear feet            width (ft)
  - Other non-wetland waters:            acres
- Identify type(s) of waters:

**3. Non-RPWs<sup>8</sup> that flow directly or indirectly into TNWs.**

- Water body 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:    358    linear feet    2    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.**

- 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: 3.83    acres

**7. Impoundments of jurisdictional waters.<sup>9</sup>**

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):<sup>10</sup>**

- 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:**

<sup>8</sup>See Footnote # 3.

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

<sup>10</sup> 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.

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

- Tributary waters: linear feet width (ft)
- Other non-wetland waters: acres
- Identify type(s) of waters:
- Wetlands: acres

**F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):**

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

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource:
- Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource:
- Wetlands: acres.

**SECTION IV: DATA SOURCES.**

**A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):**

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: **H & T Environmental**
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - Office concurs with data sheets/delineation report.
  - Office does not concur with data sheets/delineation report
- Data sheets prepared by the Corps: **7 January 2014, 17 October 2014, 20 May 2015, 8 October 2015**
- Corps navigable waters' study:
- U.S. Geological Survey Hydrologic Atlas: **Pine Island Bayou - - 12020007**
  - USGS NHD data
  - USGS 8 and 12 digit HUC maps
- Galveston District's Approved List of Navigable Waters
- U.S. Geological Survey map(s). Cite scale & quad name: **1984 Nome, Tex. USGS Quadrangle Map; 1984 Devers, Tex. USGS Quadrangle Map**
- USDA Natural Resources Conservation Service Soil Survey. Citation:
- National wetlands inventory map(s). Cite name: **Online USFWS NWI Mapper**
- State/Local wetland inventory map(s):
- FEMA/FIRM maps: **Liberty County, Texas Panels 500 and 525 of 675 dated 2 May 2008**
- 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- Photographs:  Aerial (Name & Date): **Google Earth 1995-2014**
  - 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:**

Tributary WT7 is not a relatively permanent water (RPW) and is a first order stream within this relevant reach, which is approximately 358 feet long and flows into Willow Creek, a RPW, which flows into Pine Island Bayou, the nearest traditional navigable water (TNW). The

relevant reach starts at the headwater of Tributary WT7 and ends where Tributary WT7 enters Willow Creek (both on the project site). The relevant reach is located within a rural area that is not developed and the majority of the area is managed for timber production.

There are no offsite adjacent wetlands within this relevant reach. Tributary WT7 flows into Willow Creek, which flows into Pine Island Bayou, which flows into the Neches River, which flows into Sabine Lake which flows into the Gulf of Mexico. One wetland (Tributary WT7 Wetland) on the tract totaling 3.83 acres is adjacent to this relevant reach of Tributary WT7. This wetland is forested and abutting Tributary WT7. Based on our analysis, we determined that there is 1 adjacent wetland located within this relevant reach of Tributary WT7. This wetland abuts Tributary WT7 and is 3.83 acres in size.

The Corps did find evidence/data to support the statement that these waters (this relevant reach of Tributary WT7 and its abutting riparian forested wetland) provide more than a speculative or insubstantial effect upon the chemical integrity of the downstream TNW, which this relevant reach flows into. There is a direct surface hydrologic connection between this approximate 358-foot relevant reach of Tributary WT7 and the nearest TNW, Pine Island Bayou. The approximate 3.83 acres of abutting riparian wetland provides important filtration to aid in the reduction of bacteria, which will increase the dissolved oxygen (DO) concentrations in the downstream TNW due to less oxygen consumption. The wetland also serves to aid in the reduction of thermal and chemical pollutants as well as sediment from forestry activities flowing into Pine Island Bayou. Willow Creek and Pine Island Bayou are identified by the TCEQ as 303(d) impaired waters for DO; therefore the wetland in this reach provides important properties associated with the production and maintenance of DO. The tributary and wetland are situated in a rural area that is heavily managed for timber production. The tributary provides opportunity for increased DO to enter the water column and these aquatic resources within this relevant reach provide more than speculative or insubstantial effects that are inseparably bound to the chemical integrity of the downstream TNW.

Within this relevant reach of Tributary WT7, there is approximately 3.83 acres of similarly situated wetlands and 358 feet of intermittent tributary (WT7). The TNW, Pine Island Bayou, is approximately 12.6 river miles downstream of this relevant reach. The retention of water and retardation of overbank flooding associated with adjacent wetlands is vital to maintain and protect the physical integrity of the downstream TNW. The effects of removing these aquatic resources would affect the velocity and flow into Pine Island Bayou and then to the Neches River and Sabine Lake, resulting in more than a speculative or insubstantial effect upon the physical attributes of the downstream TNWs. Increased flow will increase "out of bank" flooding and scouring, resulting in loss of property and the physical attributes of the TNW. Additionally, the abutting riparian wetland intercepts sediment, nutrients, and pesticides from entering Tributary WT7 and ultimately the downstream TNW, Pine Island Bayou. Therefore, the aquatic resources within this reach provide more than speculative or insubstantial effects that maintain the physical integrity of the downstream TNW.

There are no known species found in this review area that require the aquatic resources of Tributary WT7 and its adjacent wetland and the waters of the TNW to fulfill their life cycle requirements. Tributary WT7 is not a RPW and flows into Willow Creek, a RPW and then flows into the TNW; as such, it is possible to have aquatic organisms that require both features (TNW and waters in this reach). It is highly feasible that species of fishes and/or invertebrates utilize Tributary WT7 for portions of their life cycles; but there is insufficient evidence to identify specific species that require both the aquatic resources within this relevant reach of Tributary WT7 and the waters of the TNW to fulfill life cycle requirements. The abutting wetland aids in providing species habitat, shelter from predators, and detritus and nutrients as a food source. Therefore, it is the Corps' conclusion, that the aquatic resources within this relevant reach of Tributary WT7, although speculative, provide fundamental biotic support to maintain the biological integrity of the downstream TNW.

In conclusion, we have determined that there is sufficient evidence to support the statement that the aquatic resources within this approximate 358-foot relevant reach of the non-RPW Tributary WT7 and its 3.83 acres of abutting riparian forested wetland provide a significant nexus (more than speculative or insubstantial effect) to the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou). In conclusion, it is our opinion that this relevant reach of Tributary WT7 and its adjacent wetland are waters of the United States subject to Section 404 of the Clean Water Act

Wetlands on Project Site within this Relevant Reach

Aquatic Resources	Latitude	Longitude	UTM Zone	UTM Easting	UTM Northing	Acres
Tributary WT7 Wetland	30.053107 N	94.500035 W	15	355394	3325618	3.83
Tributary WT7	30.052815 N	94.500409 W	15	355357	3325586	0.03

# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary WT7 and Tributary WT7 Wetland

13 December 2015 Google Earth Aerial Photo

Willow Creek

End of Relevant Reach

SWG-2010-00942 Tributary WT7 Wetland

SWG-2010-00942 Tributary WT7

Start of Relevant Reach



# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary WT7 and Tributary WT7 Wetland

13 December 2015 Google Earth Aerial Photo

End of Relevant Reach  
SWG-2010-00942 Tributary WT7 Wetland  
SWG-2010-00942 Tributary WT7  
Willow Creek  
Start of Relevant Reach



SWG-2010-00942 Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary WT7 and Tributary WT7 Wetland

- Relevant Reach = 358 feet
- River Distance to TNW = 12.6 miles
- Aerial Distance to TNW = 6.48 miles
- River Distance to RPW = 0 to 358 feet
- Aerial Distance to RPW = 0 to 615 feet

Pine Island Bayou  
Traditional Navigable Water

Start of Traditional  
Navigable Water

Willow Creek - RPW

Liberty County

Jefferson County

326

Relevant Reach  
Tributary WT7

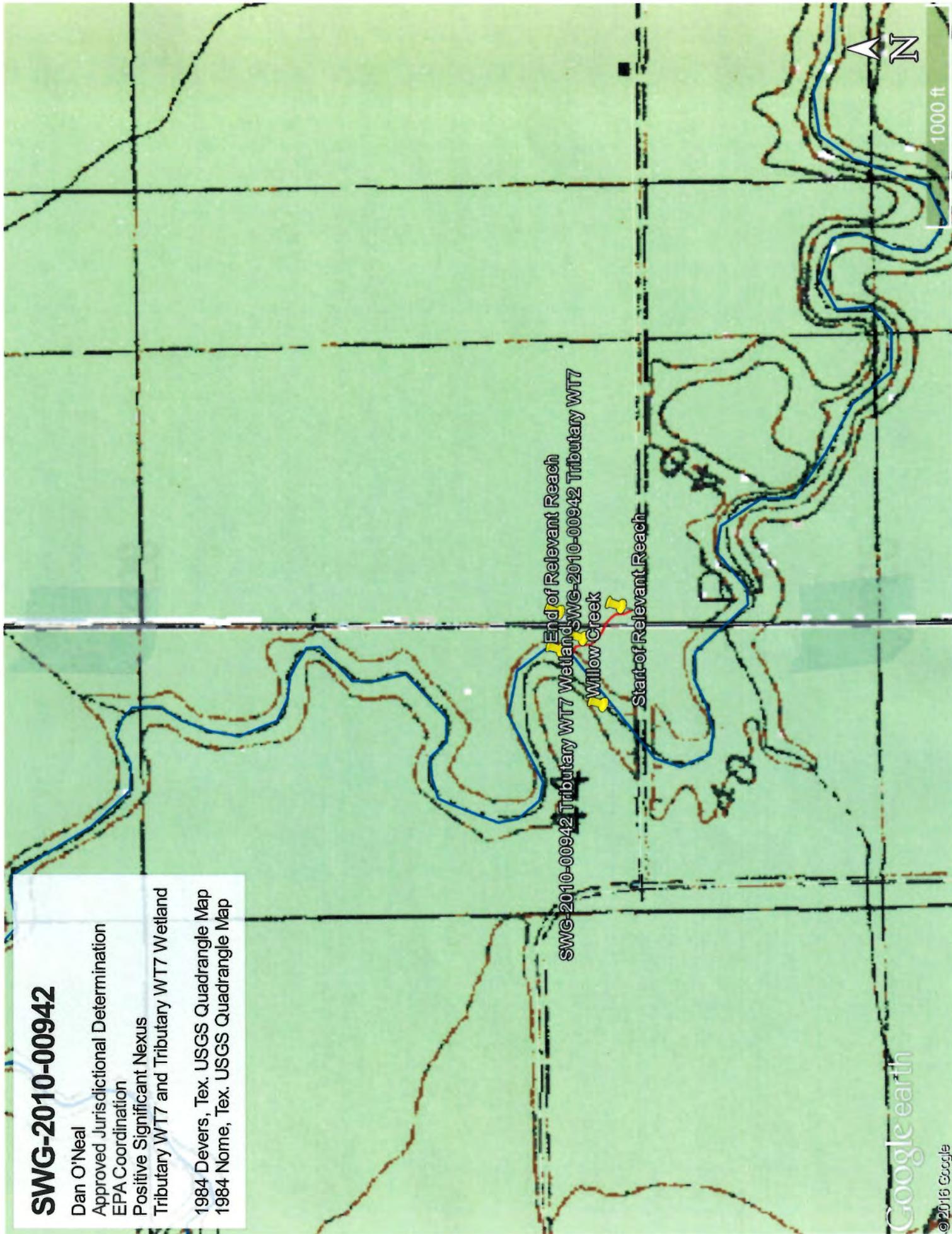
SWG-2010-00942 Tributary WT7

y WT7 Wetland

# SWG-2010-00942

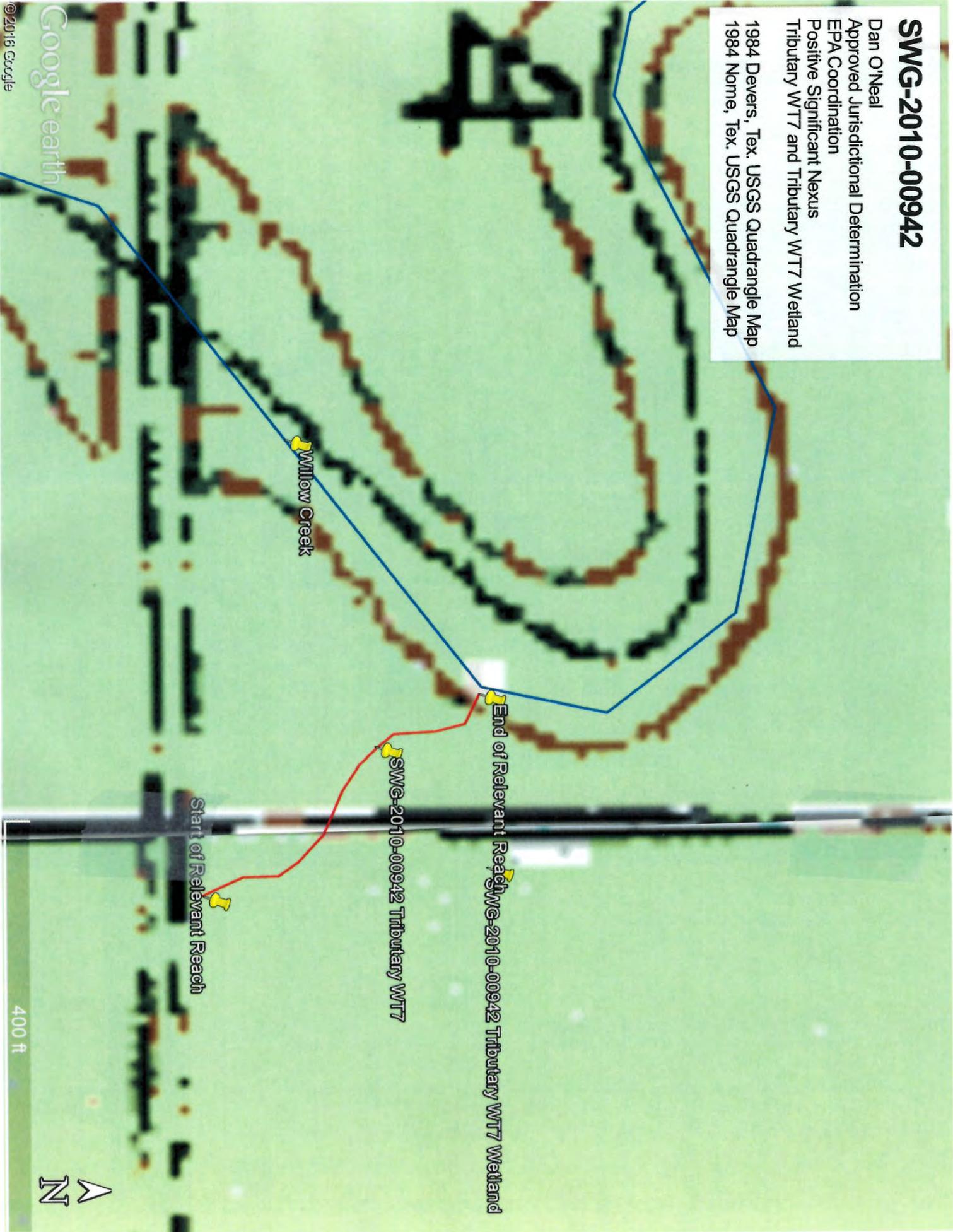
Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary WT7 and Tributary WT7 Wetland

1984 Devers, Tex. USGS Quadrangle Map  
1984 Nome, Tex. USGS Quadrangle Map



# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary WTT and Tributary WTT Wetland  
1984 Devers, Tex. USGS Quadrangle Map  
1984 Nome, Tex. USGS Quadrangle Map



Google earth

© 2016 Google

400 ft



**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): 26 February 2016**

**B. DISTRICT OFFICE, FILE NAME, AND NUMBER:** Galveston District, SWG-2010-00942, Dan O'Neal, Batiste Creek Mitigation Bank, Tributary WT8 and Tributary WT8 Wetland

**C. PROJECT LOCATION AND BACKGROUND INFORMATION:**

State: Texas County/Parish: Liberty City: northeast of Devers  
Center coordinates of site (lat/long in degree decimal format, NAD-83): Lat. see page 9° N, Long. see page 9° W;  
Universal Transverse Mercator: UTM: 15, see page 9 N., see page 9 E., NAD: 83  
Name of nearest water body: Tributary WT8  
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Pine Island Bayou  
Name of watershed or Hydrologic Unit Code (HUC): Pine Island Bayou - - 12020007

- 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: 13 February 2016  
 Field Determination. Date(s): 7 January 2014, 17 October 2014, 20 May 2015, 8 July 2015, 8 October 2015, 6 January 2016, 7 January 2016

**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):<sup>1</sup>**

- TNWs, including territorial seas  
 Wetlands adjacent to TNWs  
 Relatively permanent waters<sup>2</sup> (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: **581** linear feet: **2** width (ft) and/or **0.04** acres  
Wetlands: **0.45** 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):<sup>3</sup>**

- Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.  
Explain:

<sup>1</sup> Boxes checked below shall be supported by completing the appropriate sections in Section III below.

<sup>2</sup> 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).

<sup>3</sup> 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, fill out Section III.D.2 and 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 water body<sup>4</sup> is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the water body 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: **1,761.6 square miles**

Drainage area: **Pick List**

Average annual rainfall: **61.5 inches**

Average annual snowfall: **0.0 inches**

(ii) **Physical Characteristics:**

(a) **Relationship with TNW:**

Tributary flows directly into TNW.

Tributary flows through **2** tributaries before entering TNW.

Project waters are **10-15** 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 TNW<sup>5</sup>: **Tributary WT8 flows into Willow Creek, which flows into Pine Island Bayou, the nearest TNW.**

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

<sup>5</sup> 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.

Tributary stream order, if known: **1**

(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: **2** feet  
Average depth: **0.5** feet  
Average side slopes: **3:1**

**Primary tributary substrate composition (check all that apply):**

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

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: **Fairly stable. Tributary has riparian buffer on both sides.**

Presence of run/riffle/pool complexes. Explain: **None**

Tributary geometry: **Meandering**

Tributary gradient (approximate average slope): **1-2 %**

(c) Flow:

Tributary provides for: **Intermittent but not seasonal flow**

Estimate average number of flow events in review area/year: **11-20**

Describe flow regime:

Other information on duration and volume: **Tributary primarily flows after precipitation events. Water from Willow Creek also backs up into Tributary WT8 during flood events.**

Surface flow is: **Confined**. Characteristics:

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

Dye (or other) test performed:

Tributary has (check all that apply):

Bed and banks  
 OHWM<sup>6</sup> (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.<sup>7</sup> 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 color varies depending on storm water input.**

Identify specific pollutants, if known: **Unknown, however, receiving waters (Willow Creek and Pine Island Bayou) are impaired waters for dissolved oxygen.**

<sup>6</sup>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 water body'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.

<sup>7</sup>Ibid.

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

- Riparian corridor. Characteristics (type, average width): **100 feet**
- Wetland fringe. Characteristics: **Forested**
- Habitat for:
  - Federally Listed species. Explain findings:
  - Fish/spawn areas. Explain findings:
  - Other environmentally-sensitive species. Explain findings:
  - Aquatic/wildlife diversity. Explain findings:

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

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: **0.45** acres

Wetland type. Explain: **PFO**

Wetland quality. Explain: **medium to high**

Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

Flow is: **Ephemeral 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
- Not directly abutting
  - Discrete wetland hydrologic connection. Explain:
  - Ecological connection. Explain:
  - Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW

Project wetlands are **10-15** 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 **50 - 100-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: **No water was in the wetland during the site visit. Chemical characteristics are unknown.**

Identify specific pollutants, if known:

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

- Riparian buffer. Characteristics (type, average width):
- Vegetation type/percent cover. Explain: **forested; 100 percent cover**
- 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: **1**

Approximately (**0.45**) 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>
Yes	0.45 PFO		

Summarize overall biological, chemical and physical functions being performed: **Tributary WT8 is not a relatively permanent water (RPW) and is a first order stream within this relevant reach, which is approximately 581 feet long and flows into Willow Creek, a RPW, which flows into Pine Island Bayou, the nearest traditional navigable water (TNW). The relevant reach starts at the headwater of Tributary WT8 and ends where Tributary WT8 enters Willow Creek (both on the project site). The relevant reach is located within a rural area that is not developed and the majority of the area is managed for timber production.**

There are no offsite adjacent wetlands within this relevant reach. Tributary WT8 flows into Willow Creek, which flows into Pine Island Bayou, which flows into the Neches River, which flows into Sabine Lake which flows into the Gulf of Mexico. One wetland (Tributary WT8 Wetland) on the tract totaling 0.45-acre is adjacent to this relevant reach of Tributary WT8. This wetland is forested and abutting Tributary WT8. Based on our analysis, we determined that there is 1 adjacent wetland located within this relevant reach of Tributary WT8. This wetland abuts Tributary WT8 and is 0.45-acre in size.

The Corps did find evidence/data to support the statement that these waters (this relevant reach of Tributary WT8 and its abutting riparian forested wetland) provide more than a speculative or insubstantial effect upon the chemical integrity of the downstream TNW, which this relevant reach flows into. There is a direct surface hydrologic connection between this approximate 581-foot relevant reach of Tributary WT8 and the nearest TNW, Pine Island Bayou. The approximate 0.45-acre of abutting riparian wetland provides important filtration to aid in the reduction of bacteria, which will increase the dissolved oxygen (DO) concentrations in the downstream TNW due to less oxygen consumption. The wetland also serves to aid in the reduction of thermal and chemical pollutants as well as sediment from forestry activities flowing into Pine Island Bayou. Willow Creek and Pine Island Bayou are identified by the TCEQ as 303(d) impaired waters for DO; therefore the wetland in this reach provides important properties associated with the production and maintenance of DO. The tributary and wetland are situated in a rural area that is heavily managed for timber production. The tributary provides opportunity for increased DO to enter the water column and these aquatic resources within this relevant reach provide more than speculative or insubstantial effects that are inseparably bound to the chemical integrity of the downstream TNW.

Within this relevant reach of Tributary WT8, there is approximately 0.45-acre of similarly situated wetlands and 581 feet of intermittent tributary (WT8). The TNW, Pine Island Bayou, is approximately 12.45 river miles downstream of this relevant reach. The retention of water and retardation of overbank flooding associated with adjacent wetlands is vital to maintain and protect the physical integrity of the downstream TNW. The effects of removing these aquatic resources would affect the velocity and flow into Pine Island Bayou and then to the Neches River and Sabine Lake, resulting in more than a speculative or insubstantial effect upon the physical attributes of the downstream TNWs. Increased flow will increase "out of bank" flooding and scouring, resulting in loss of property and the physical attributes of the TNW. Additionally, the abutting riparian wetland intercepts sediment, nutrients, and pesticides from entering Tributary WT8 and ultimately the downstream TNW, Pine Island Bayou. Therefore, the aquatic resources within this reach provide more than speculative or insubstantial effects that maintain the physical integrity of the downstream TNW.

There are no known species found in this review area that require the aquatic resources of Tributary WT8 and its adjacent wetland and the waters of the TNW to fulfill their life cycle requirements. Tributary WT8 is not a RPW and flows into Willow Creek, a RPW and then flows into the TNW; as such, it is possible to have aquatic organisms that require both features (TNW and waters in this reach). It is highly feasible that species of fishes and/or invertebrates utilize Tributary WT8 for portions of their life cycles; but there is insufficient evidence to identify specific species that require both the aquatic resources within this relevant reach of Tributary WT8 and the waters of the TNW to fulfill life cycle requirements. The abutting wetland aids in providing species habitat, shelter from predators, and detritus and nutrients as a food source. Therefore, it is the Corps' conclusion, that the aquatic resources within this relevant reach of Tributary WT8, although speculative, provide fundamental biotic support to maintain the biological integrity of the downstream TNW.

In conclusion, we have determined that there is sufficient evidence to support the statement that the aquatic resources within this approximate 581-foot relevant reach of the non-RPW Tributary WT8 and its 0.45-acre of abutting riparian forested wetland provide a significant nexus (more than speculative or insubstantial effect) to the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou). In conclusion, it is our opinion that this relevant reach of Tributary WT8 and its adjacent wetland are waters of the United States subject to Section 404 of the Clean Water Act.

### 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: **This relevant reach of Tributary WT8 is not a relatively permanent water and is a first order stream that flows into Willow Creek, a RPW, and then into Pine Island Bayou, the downstream TNW. There are approximately 0.45-acre of abutting riparian forested wetlands. This relevant reach of Tributary WT8 and its adjacent wetland provide important filtration to aid in the reduction of bacteria which will increase the concentration of dissolved oxygen as well as reducing thermal and chemical pollutants. The system also retains flood waters and reduces overbank flooding downstream, thereby decreasing the velocity and amount of water flowing downstream into Pine Island Bayou, the Neches River and Sabine Lake. Retaining flood waters also reduces scouring and the loss of property as well as preserving the physical attributes of the downstream TNW. Tributary WT8 and its abutting riparian forested wetland also likely support aquatic organisms and the adjacent wetland provides species habitat, shelter from predators and produces nutrients and detritus as a food source for downstream organisms. Based on this information, we determined that this relevant reach of Tributary WT8 and its adjacent wetland provide more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou).**

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

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:  
 TNWs: linear feet width (ft), Or, acres.  
 Wetlands adjacent to TNWs: acres.
2. **RPWs that flow directly or indirectly into TNWs.**  
 Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:  
 Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

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

- Tributary waters:            linear feet            width (ft)
  - Other non-wetland waters:            acres
- Identify type(s) of waters:

**3. Non-RPWs<sup>8</sup> that flow directly or indirectly into TNWs.**

- Water body 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:    581    linear feet    2    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.**

- 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: 0.45    acres

**7. Impoundments of jurisdictional waters.<sup>9</sup>**

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):<sup>10</sup>**

- 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:**

<sup>8</sup>See Footnote # 3.

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

<sup>10</sup> 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.

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

- Tributary waters: linear feet width (ft)
- Other non-wetland waters: acres
- Identify type(s) of waters:
- Wetlands: acres

**F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):**

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

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource:
- Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource:
- Wetlands: acres.

**SECTION IV: DATA SOURCES.**

**A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):**

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: **H & T Environmental**
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - Office concurs with data sheets/delineation report.
  - Office does not concur with data sheets/delineation report
- Data sheets prepared by the Corps: **7 January 2014, 17 October 2014, 20 May 2015, 8 October 2015**
- Corps navigable waters' study:
- U.S. Geological Survey Hydrologic Atlas: **Pine Island Bayou - - 12020007**
  - USGS NHD data
  - USGS 8 and 12 digit HUC maps
- Galveston District's Approved List of Navigable Waters
- U.S. Geological Survey map(s). Cite scale & quad name: **1984 Nome, Tex. USGS Quadrangle Map; 1984 Devers, Tex. USGS Quadrangle Map**
- USDA Natural Resources Conservation Service Soil Survey. Citation:
- National wetlands inventory map(s). Cite name: **Online USFWS NWI Mapper**
- State/Local wetland inventory map(s):
- FEMA/FIRM maps: **Liberty County, Texas Panels 500 and 525 of 675 dated 2 May 2008**
- 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- Photographs:  Aerial (Name & Date): **Google Earth 1995-2014**
  - 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:**

Tributary WT8 is not a relatively permanent water (RPW) and is a first order stream within this relevant reach, which is approximately 581 feet long and flows into Willow Creek, a RPW, which flows into Pine Island Bayou, the nearest traditional navigable water (TNW). The

relevant reach starts at the headwater of Tributary WT8 and ends where Tributary WT8 enters Willow Creek (both on the project site). The relevant reach is located within a rural area that is not developed and the majority of the area is managed for timber production.

There are no offsite adjacent wetlands within this relevant reach. Tributary WT8 flows into Willow Creek, which flows into Pine Island Bayou, which flows into the Neches River, which flows into Sabine Lake which flows into the Gulf of Mexico. One wetland (Tributary WT8 Wetland) on the tract totaling 0.45-acre is adjacent to this relevant reach of Tributary WT8. This wetland is forested and abutting Tributary WT8. Based on our analysis, we determined that there is 1 adjacent wetland located within this relevant reach of Tributary WT8. This wetland abuts Tributary WT8 and is 0.45-acre in size.

The Corps did find evidence/data to support the statement that these waters (this relevant reach of Tributary WT8 and its abutting riparian forested wetland) provide more than a speculative or insubstantial effect upon the chemical integrity of the downstream TNW, which this relevant reach flows into. There is a direct surface hydrologic connection between this approximate 581-foot relevant reach of Tributary WT8 and the nearest TNW, Pine Island Bayou. The approximate 0.45-acre of abutting riparian wetland provides important filtration to aid in the reduction of bacteria, which will increase the dissolved oxygen (DO) concentrations in the downstream TNW due to less oxygen consumption. The wetland also serves to aid in the reduction of thermal and chemical pollutants as well as sediment from forestry activities flowing into Pine Island Bayou. Willow Creek and Pine Island Bayou are identified by the TCEQ as 303(d) impaired waters for DO; therefore the wetland in this reach provides important properties associated with the production and maintenance of DO. The tributary and wetland are situated in a rural area that is heavily managed for timber production. The tributary provides opportunity for increased DO to enter the water column and these aquatic resources within this relevant reach provide more than speculative or insubstantial effects that are inseparably bound to the chemical integrity of the downstream TNW.

Within this relevant reach of Tributary WT8, there is approximately 0.45-acre of similarly situated wetlands and 581 feet of intermittent tributary (WT8). The TNW, Pine Island Bayou, is approximately 12.45 river miles downstream of this relevant reach. The retention of water and retardation of overbank flooding associated with adjacent wetlands is vital to maintain and protect the physical integrity of the downstream TNW. The effects of removing these aquatic resources would affect the velocity and flow into Pine Island Bayou and then to the Neches River and Sabine Lake, resulting in more than a speculative or insubstantial effect upon the physical attributes of the downstream TNWs. Increased flow will increase "out of bank" flooding and scouring, resulting in loss of property and the physical attributes of the TNW. Additionally, the abutting riparian wetland intercepts sediment, nutrients, and pesticides from entering Tributary WT8 and ultimately the downstream TNW, Pine Island Bayou. Therefore, the aquatic resources within this reach provide more than speculative or insubstantial effects that maintain the physical integrity of the downstream TNW.

There are no known species found in this review area that require the aquatic resources of Tributary WT8 and its adjacent wetland and the waters of the TNW to fulfill their life cycle requirements. Tributary WT8 is not a RPW and flows into Willow Creek, a RPW and then flows into the TNW; as such, it is possible to have aquatic organisms that require both features (TNW and waters in this reach). It is highly feasible that species of fishes and/or invertebrates utilize Tributary WT8 for portions of their life cycles; but there is insufficient evidence to identify specific species that require both the aquatic resources within this relevant reach of Tributary WT8 and the waters of the TNW to fulfill life cycle requirements. The abutting wetland aids in providing species habitat, shelter from predators, and detritus and nutrients as a food source. Therefore, it is the Corps' conclusion, that the aquatic resources within this relevant reach of Tributary WT8, although speculative, provide fundamental biotic support to maintain the biological integrity of the downstream TNW.

In conclusion, we have determined that there is sufficient evidence to support the statement that the aquatic resources within this approximate 581-foot relevant reach of the non-RPW Tributary WT8 and its 0.45-acre of abutting riparian forested wetland provide a significant nexus (more than speculative or insubstantial effect) to the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou). In conclusion, it is our opinion that this relevant reach of Tributary WT8 and its adjacent wetland are waters of the United States subject to Section 404 of the Clean Water Act.

Wetlands on Project Site within this Relevant Reach

Aquatic Resources	Latitude	Longitude	UTM Zone	UTM Easting	UTM Northing	Acres
Tributary WT8 Wetland	30.051658 N	94.503183 W	15	355088	3325462	0.45
Tributary WT8	30.051599 N	94.502769 W	15	355128	3325455	0.04

# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary WT8 and Tributary WT8 Wetland

13 December 2015 Google Earth Aerial Photo

Start of Relevant Reach

SWG-2010-00942 Tributary WT8 Wetland

SWG-2010-00942 Tributary WT8

End of Relevant Reach

Google earth

© 2016 Google

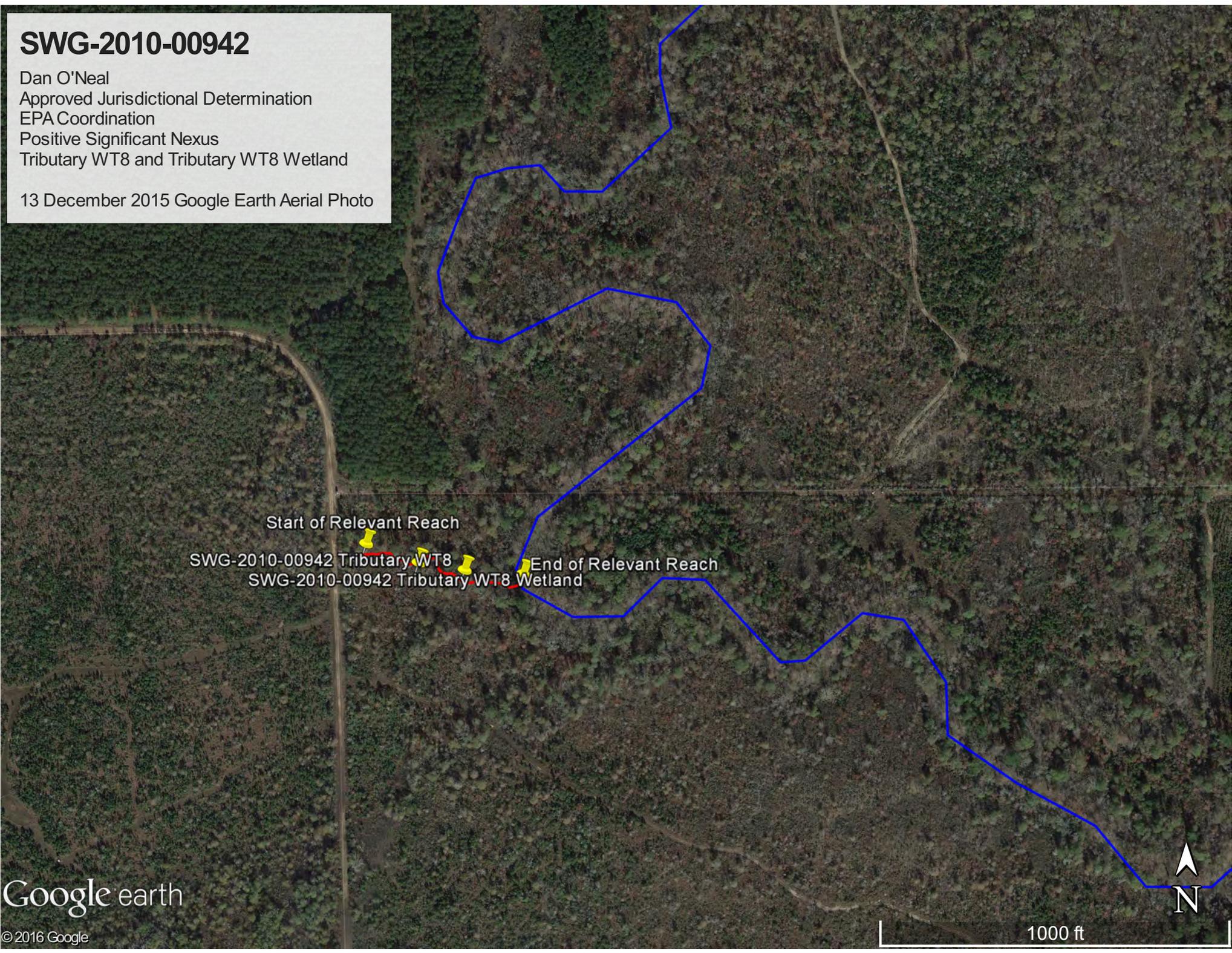


300 ft

# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary WT8 and Tributary WT8 Wetland

13 December 2015 Google Earth Aerial Photo



Start of Relevant Reach

SWG-2010-00942 Tributary WT8  
SWG-2010-00942 Tributary WT8 Wetland

End of Relevant Reach



SWG-2010-00942 Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary WT8 and Tributary WT8 Wetland

- Relevant Reach = 581 feet
- River Distance to TNW = 12.45 miles
- Aerial Distance to TNW = 6.62 miles
- River Distance to RPW = 0 to 581 feet
- Aerial Distance to RPW = 0 to 480 feet

Pine Island Bayou  
Traditional Navigable Water

Start of Traditional  
Navigable Water

Willow Creek - RPW

Liberty County

Jefferson County

326

0-00942 Tributary WT8 Wetland  
Relevant Reach SWG-2010-00942 Tributary WT8

Relevant Reach  
Tributary WT8

# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary WT8 and Tributary WT8 Wetland

1984 Devers, Tex. USGS Quadrangle Map

Start of Relevant Reach

SWG-2010-00942 Tributary WT8 Wetland

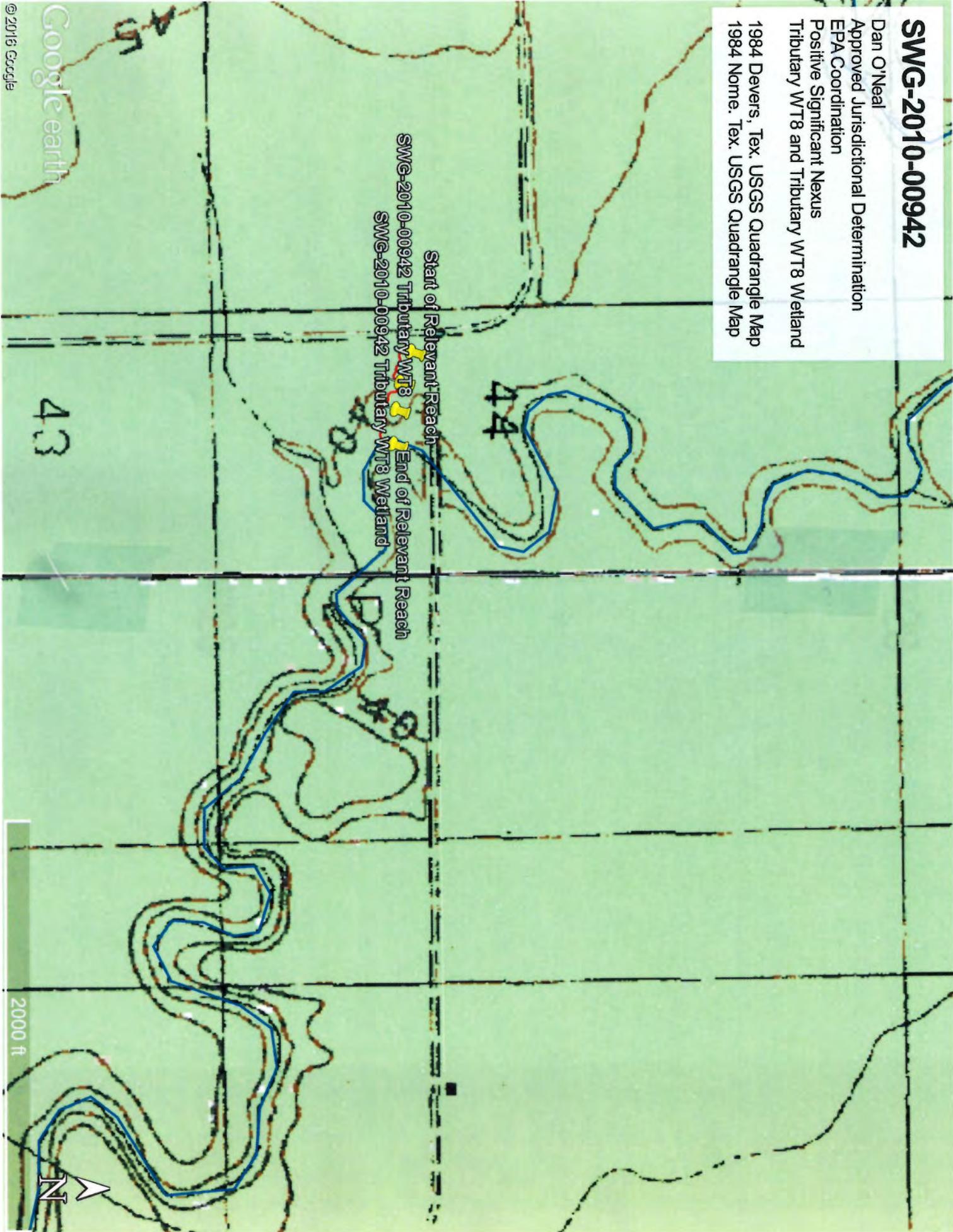
SWG-2010-00942 Tributary WT8

End of Relevant Reach



# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary WT8 and Tributary WT8 Wetland  
1984 Devers, Tex. USGS Quadrangle Map  
1984 Nome, Tex. USGS Quadrangle Map



**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): 26 February 2016**

**B. DISTRICT OFFICE, FILE NAME, AND NUMBER:** Galveston District, SWG-2010-00942, Dan O'Neal, Batiste Creek Mitigation Bank, Tributary WT9 and Tributary WT9 Wetland

**C. PROJECT LOCATION AND BACKGROUND INFORMATION:**

State: Texas County/Parish: Liberty City: northeast of Devers  
Center coordinates of site (lat/long in degree decimal format, NAD-83): Lat. see page 9° N, Long. see page 9° W;  
Universal Transverse Mercator: UTM: 15, see page 9 N., see page 9 E., NAD: 83  
Name of nearest water body: Tributary WT9  
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Pine Island Bayou  
Name of watershed or Hydrologic Unit Code (HUC): Pine Island Bayou - - 12020007

- 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: 13 February 2016  
 Field Determination. Date(s): 7 January 2014, 17 October 2014, 20 May 2015, 8 July 2015, 8 October 2015, 6 January 2016, 7 January 2016

**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):<sup>1</sup>**

- TNWs, including territorial seas  
 Wetlands adjacent to TNWs  
 Relatively permanent waters<sup>2</sup> (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: **1,046** linear feet: **2** width (ft) and/or **0.07** acres  
Wetlands: **1.89** 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):<sup>3</sup>**

- Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.  
Explain:

<sup>1</sup> Boxes checked below shall be supported by completing the appropriate sections in Section III below.

<sup>2</sup> 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).

<sup>3</sup> 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, fill out Section III.D.2 and 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 water body<sup>4</sup> is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the water body 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: 1,761.6 square miles

Drainage area: Pick List

Average annual rainfall: 61.5 inches

Average annual snowfall: 0.0 inches

(ii) **Physical Characteristics:**

(a) **Relationship with TNW:**

Tributary flows directly into TNW.

Tributary flows through 2 tributaries before entering TNW.

Project waters are 10-15 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 TNW<sup>5</sup>: Tributary WT9 flows into Willow Creek, which flows into Pine Island Bayou, the nearest TNW.

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

<sup>5</sup> 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.

Tributary stream order, if known: **1**

(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: **2** feet  
Average depth: **0.5** feet  
Average side slopes: **3:1**

**Primary tributary substrate composition (check all that apply):**

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

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: **Fairly stable. Tributary has riparian buffer on both sides.**

Presence of run/riffle/pool complexes. Explain: **None**

Tributary geometry: **Meandering**

Tributary gradient (approximate average slope): **1-2 %**

(c) Flow:

Tributary provides for: **Intermittent but not seasonal flow**

Estimate average number of flow events in review area/year: **11-20**

Describe flow regime:

Other information on duration and volume: **Tributary primarily flows after precipitation events. Water from Willow Creek also backs up into Tributary WT9 during flood events.**

Surface flow is: **Confined**. Characteristics:

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

Dye (or other) test performed:

Tributary has (check all that apply):

Bed and banks  
 OHWM<sup>6</sup> (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.<sup>7</sup> 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 color varies depending on storm water input.**

Identify specific pollutants, if known: **Unknown, however, receiving waters (Willow Creek and Pine Island Bayou) are impaired waters for dissolved oxygen.**

<sup>6</sup>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 water body'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.

<sup>7</sup>Ibid.

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

- Riparian corridor. Characteristics (type, average width): **100 feet**
- Wetland fringe. Characteristics: **Forested**
- Habitat for:
  - Federally Listed species. Explain findings:
  - Fish/spawn areas. Explain findings:
  - Other environmentally-sensitive species. Explain findings:
  - Aquatic/wildlife diversity. Explain findings:

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

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: **1.89** acres

Wetland type. Explain: **PFO**

Wetland quality. Explain: **medium to high**

Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

Flow is: **Ephemeral 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
- Not directly abutting
  - Discrete wetland hydrologic connection. Explain:
  - Ecological connection. Explain:
  - Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW

Project wetlands are **10-15** 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 **50 - 100-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: **No water was in the wetland during the site visit. Chemical characteristics are unknown.**

Identify specific pollutants, if known:

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

- Riparian buffer. Characteristics (type, average width):
- Vegetation type/percent cover. Explain: **forested; 100 percent cover**
- 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: **1**

Approximately (**1.89**) 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>
Yes	1.89 PFO		

Summarize overall biological, chemical and physical functions being performed: **Tributary WT9 is not a relatively permanent water (RPW) and is a first order stream within this relevant reach, which is approximately 1,046 feet long and flows into Willow Creek, a RPW, which flows into Pine Island Bayou, the nearest traditional navigable water (TNW). The relevant reach starts at the headwater of Tributary WT9 and ends where Tributary WT9 enters Willow Creek (both on the project site). The relevant reach is located within a rural area that is not developed and the majority of the area is managed for timber production.**

There are no offsite adjacent wetlands within this relevant reach. Tributary WT9 flows into Willow Creek, which flows into Pine Island Bayou, which flows into the Neches River, which flows into Sabine Lake which flows into the Gulf of Mexico. One wetland (Tributary WT9 Wetland) on the tract totaling 1.89 acres is adjacent to this relevant reach of Tributary WT9. This wetland is forested and abutting Tributary WT9. Based on our analysis, we determined that there is 1 adjacent wetland located within this relevant reach of Tributary WT9. This wetland abuts Tributary WT9 and is 1.89 acres in size.

The Corps did find evidence/data to support the statement that these waters (this relevant reach of Tributary WT9 and its abutting riparian forested wetland) provide more than a speculative or insubstantial effect upon the chemical integrity of the downstream TNW, which this relevant reach flows into. There is a direct surface hydrologic connection between this approximate 1,046-foot relevant reach of Tributary WT9 and the nearest TNW, Pine Island Bayou. The approximate 1.89 acres of abutting riparian wetland provides important filtration to aid in the reduction of bacteria, which will increase the dissolved oxygen (DO) concentrations in the downstream TNW due to less oxygen consumption. The wetland also serves to aid in the reduction of thermal and chemical pollutants as well as sediment from forestry activities flowing into Pine Island Bayou. Willow Creek and Pine Island Bayou are identified by the TCEQ as 303(d) impaired waters for DO; therefore the wetland in this reach provides important properties associated with the production and maintenance of DO. The tributary and wetland are situated in a rural area that is heavily managed for timber production. The tributary provides opportunity for increased DO to enter the water column and these aquatic resources within this relevant reach provide more than speculative or insubstantial effects that are inseparably bound to the chemical integrity of the downstream TNW.

Within this relevant reach of Tributary WT9, there is approximately 1.89 acres of similarly situated wetlands and 1,046-foot of intermittent tributary (WT9). The TNW, Pine Island Bayou, is approximately 12.31 river miles downstream of this relevant reach. The retention of water and retardation of overbank flooding associated with adjacent wetlands is vital to maintain and protect the physical integrity of the downstream TNW. The effects of removing these aquatic resources would affect the velocity and flow into Pine Island Bayou and then to the Neches River and Sabine Lake, resulting in more than a speculative or insubstantial effect upon the physical attributes of the downstream TNWs. Increased flow will increase "out of bank" flooding and scouring, resulting in loss of property and the physical attributes of the TNW. Additionally, the abutting riparian wetland intercepts sediment, nutrients, and pesticides from entering Tributary WT9 and ultimately the downstream TNW, Pine Island Bayou. Therefore, the aquatic resources within this reach provide more than speculative or insubstantial effects that maintain the physical integrity of the downstream TNW.

There are no known species found in this review area that require the aquatic resources of Tributary WT9 and its adjacent wetland and the waters of the TNW to fulfill their life cycle requirements. Tributary WT9 is not a RPW and flows into Willow Creek, a RPW and then flows into the TNW; as such, it is possible to have aquatic organisms that require both features (TNW and waters in this reach). It is highly feasible that species of fishes and/or invertebrates utilize Tributary WT9 for portions of their life cycles; but there is insufficient evidence to identify specific species that require both the aquatic resources within this relevant reach of Tributary WT9 and the waters of the TNW to fulfill life cycle requirements. The abutting wetland aids in providing species habitat, shelter from predators, and detritus and nutrients as a food source. Therefore, it is the Corps' conclusion, that the aquatic resources within this relevant reach of Tributary WT9, although speculative, provide fundamental biotic support to maintain the biological integrity of the downstream TNW.

In conclusion, we have determined that there is sufficient evidence to support the statement that the aquatic resources within this approximate 1,046-foot relevant reach of the non-RPW Tributary WT9 and its 1.89 acres of abutting riparian forested wetland provide a significant nexus (more than speculative or insubstantial effect) to the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou). In conclusion, it is our opinion that this relevant reach of Tributary WT9 and its adjacent wetland are waters of the United States subject to Section 404 of the Clean Water Act.

### 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: **This relevant reach of Tributary WT9 is not a relatively permanent water and is a first order stream that flows into Willow Creek, a RPW, and then into Pine Island Bayou, the downstream TNW. There are approximately 1.89 acres of abutting riparian forested wetlands. This relevant reach of Tributary WT9 and its adjacent wetland provide important filtration to aid in the reduction of bacteria which will increase the concentration of dissolved oxygen as well as reducing thermal and chemical pollutants. The system also retains flood waters and reduces overbank flooding downstream, thereby decreasing the velocity and amount of water flowing downstream into Pine Island Bayou, the Neches River and Sabine Lake. Retaining flood waters also reduces scouring and the loss of property as well as preserving the physical attributes of the downstream TNW. Tributary WT9 and its abutting riparian forested wetland also likely support aquatic organisms and the adjacent wetland provides species habitat, shelter from predators and produces nutrients and detritus as a food source for downstream organisms. Based on this information, we determined that this relevant reach of Tributary WT9 and its adjacent wetland provide more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou).**

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

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
  - TNWs: linear feet width (ft), Or, acres.
  - Wetlands adjacent to TNWs: acres.
2. **RPWs that flow directly or indirectly into TNWs.**
  - Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:
  - Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

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

- Tributary waters:            linear feet            width (ft)
  - Other non-wetland waters:            acres
- Identify type(s) of waters:

**3. Non-RPWs<sup>8</sup> that flow directly or indirectly into TNWs.**

- Water body 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: 1,046 linear feet 2 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.**

- 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: 1.89 acres

**7. Impoundments of jurisdictional waters.<sup>9</sup>**

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):<sup>10</sup>**

- 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:**

<sup>8</sup>See Footnote # 3.

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

<sup>10</sup> 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.

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

- Tributary waters: linear feet width (ft)
- Other non-wetland waters: acres
- Identify type(s) of waters:
- Wetlands: acres

**F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):**

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

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource:
- Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource:
- Wetlands: acres.

**SECTION IV: DATA SOURCES.**

**A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):**

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: **H & T Environmental**
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - Office concurs with data sheets/delineation report.
  - Office does not concur with data sheets/delineation report
- Data sheets prepared by the Corps: **7 January 2014, 17 October 2014, 20 May 2015, 8 October 2015**
- Corps navigable waters' study:
- U.S. Geological Survey Hydrologic Atlas: **Pine Island Bayou - - 12020007**
  - USGS NHD data
  - USGS 8 and 12 digit HUC maps
- Galveston District's Approved List of Navigable Waters
- U.S. Geological Survey map(s). Cite scale & quad name: **1984 Nome, Tex. USGS Quadrangle Map; 1984 Devers, Tex. USGS Quadrangle Map**
- USDA Natural Resources Conservation Service Soil Survey. Citation:
- National wetlands inventory map(s). Cite name: **Online USFWS NWI Mapper**
- State/Local wetland inventory map(s):
- FEMA/FIRM maps: **Liberty County, Texas Panels 500 and 525 of 675 dated 2 May 2008**
- 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- Photographs:  Aerial (Name & Date): **Google Earth 1995-2014**
  - 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:**

Tributary WT9 is not a relatively permanent water (RPW) and is a first order stream within this relevant reach, which is approximately 1,046 feet long and flows into Willow Creek, a RPW, which flows into Pine Island Bayou, the nearest traditional navigable water (TNW). The

relevant reach starts at the headwater of Tributary WT9 and ends where Tributary WT9 enters Willow Creek (both on the project site). The relevant reach is located within a rural area that is not developed and the majority of the area is managed for timber production.

There are no offsite adjacent wetlands within this relevant reach. Tributary WT9 flows into Willow Creek, which flows into Pine Island Bayou, which flows into the Neches River, which flows into Sabine Lake which flows into the Gulf of Mexico. One wetland (Tributary WT9 Wetland) on the tract totaling 1.89 acres is adjacent to this relevant reach of Tributary WT9. This wetland is forested and abutting Tributary WT9. Based on our analysis, we determined that there is 1 adjacent wetland located within this relevant reach of Tributary WT9. This wetland abuts Tributary WT9 and is 1.89 acres in size.

The Corps did find evidence/data to support the statement that these waters (this relevant reach of Tributary WT9 and its abutting riparian forested wetland) provide more than a speculative or insubstantial effect upon the chemical integrity of the downstream TNW, which this relevant reach flows into. There is a direct surface hydrologic connection between this approximate 1,046-foot relevant reach of Tributary WT9 and the nearest TNW, Pine Island Bayou. The approximate 1.89 acres of abutting riparian wetland provides important filtration to aid in the reduction of bacteria, which will increase the dissolved oxygen (DO) concentrations in the downstream TNW due to less oxygen consumption. The wetland also serves to aid in the reduction of thermal and chemical pollutants as well as sediment from forestry activities flowing into Pine Island Bayou. Willow Creek and Pine Island Bayou are identified by the TCEQ as 303(d) impaired waters for DO; therefore the wetland in this reach provides important properties associated with the production and maintenance of DO. The tributary and wetland are situated in a rural area that is heavily managed for timber production. The tributary provides opportunity for increased DO to enter the water column and these aquatic resources within this relevant reach provide more than speculative or insubstantial effects that are inseparably bound to the chemical integrity of the downstream TNW.

Within this relevant reach of Tributary WT9, there is approximately 1.89 acres of similarly situated wetlands and 1,046-foot of intermittent tributary (WT9). The TNW, Pine Island Bayou, is approximately 12.31 river miles downstream of this relevant reach. The retention of water and retardation of overbank flooding associated with adjacent wetlands is vital to maintain and protect the physical integrity of the downstream TNW. The effects of removing these aquatic resources would affect the velocity and flow into Pine Island Bayou and then to the Neches River and Sabine Lake, resulting in more than a speculative or insubstantial effect upon the physical attributes of the downstream TNWs. Increased flow will increase "out of bank" flooding and scouring, resulting in loss of property and the physical attributes of the TNW. Additionally, the abutting riparian wetland intercepts sediment, nutrients, and pesticides from entering Tributary WT9 and ultimately the downstream TNW, Pine Island Bayou. Therefore, the aquatic resources within this reach provide more than speculative or insubstantial effects that maintain the physical integrity of the downstream TNW.

There are no known species found in this review area that require the aquatic resources of Tributary WT9 and its adjacent wetland and the waters of the TNW to fulfill their life cycle requirements. Tributary WT9 is not a RPW and flows into Willow Creek, a RPW and then flows into the TNW; as such, it is possible to have aquatic organisms that require both features (TNW and waters in this reach). It is highly feasible that species of fishes and/or invertebrates utilize Tributary WT9 for portions of their life cycles; but there is insufficient evidence to identify specific species that require both the aquatic resources within this relevant reach of Tributary WT9 and the waters of the TNW to fulfill life cycle requirements. The abutting wetland aids in providing species habitat, shelter from predators, and detritus and nutrients as a food source. Therefore, it is the Corps' conclusion, that the aquatic resources within this relevant reach of Tributary WT9, although speculative, provide fundamental biotic support to maintain the biological integrity of the downstream TNW.

In conclusion, we have determined that there is sufficient evidence to support the statement that the aquatic resources within this approximate 1,046-foot relevant reach of the non-RPW Tributary WT9 and its 1.89 acres of abutting riparian forested wetland provide a significant nexus (more than speculative or insubstantial effect) to the chemical, physical and/or biological integrity of the downstream TNW (Pine Island Bayou). In conclusion, it is our opinion that this relevant reach of Tributary WT9 and its adjacent wetland are waters of the United States subject to Section 404 of the Clean Water Act.

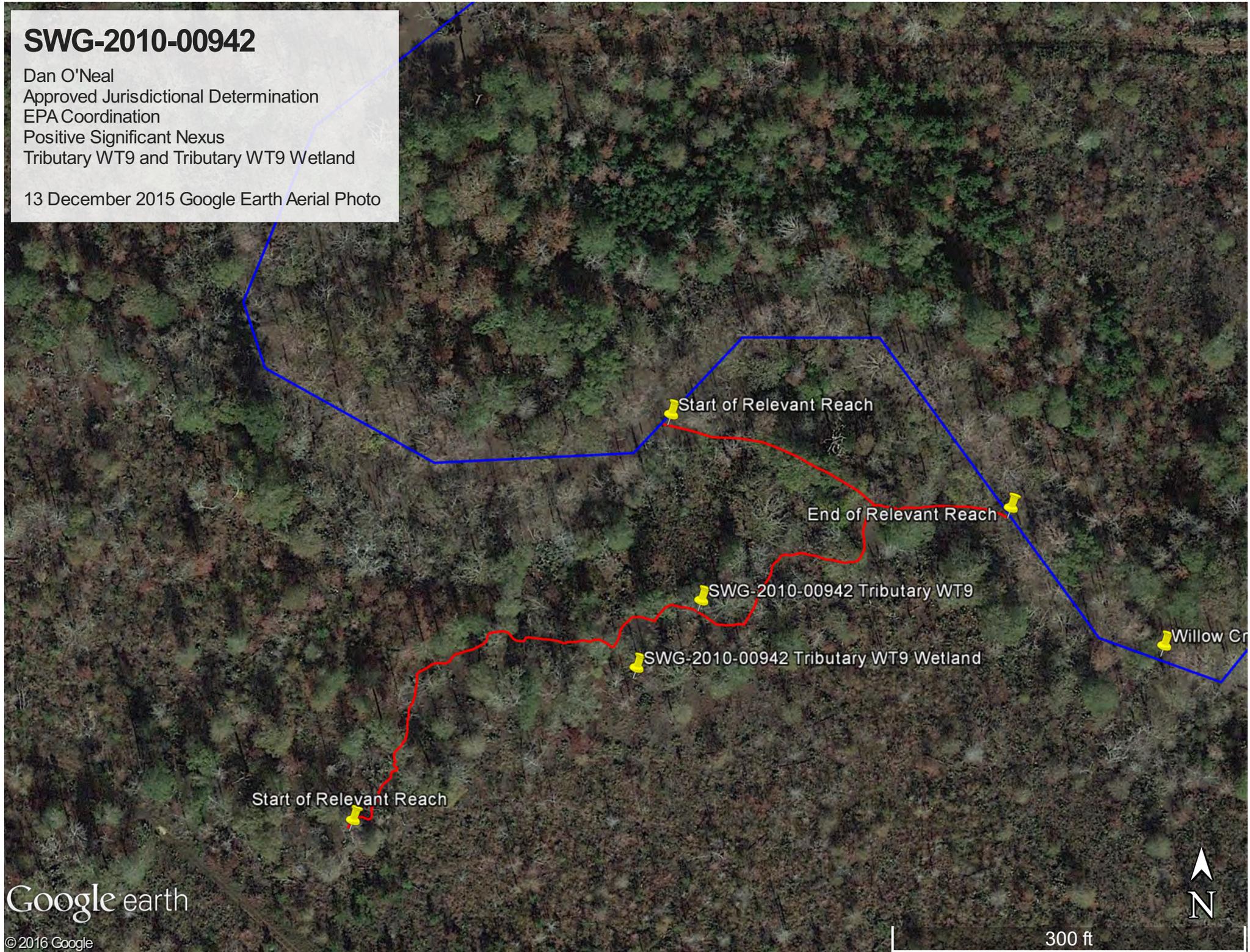
Wetlands on Project Site within this Relevant Reach

Aquatic Resources	Latitude	Longitude	UTM Zone	UTM Easting	UTM Northing	Acres
Tributary WT9 Wetland	30.050814 N	94.501229 W	15	355275	3325366	1.89
Tributary WT9	30.050965 N	94.501057 W	15	355292	3325382	0.07

# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary WT9 and Tributary WT9 Wetland

13 December 2015 Google Earth Aerial Photo



# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary WT9 and Tributary WT9 Wetland

13 December 2015 Google Earth Aerial Photo

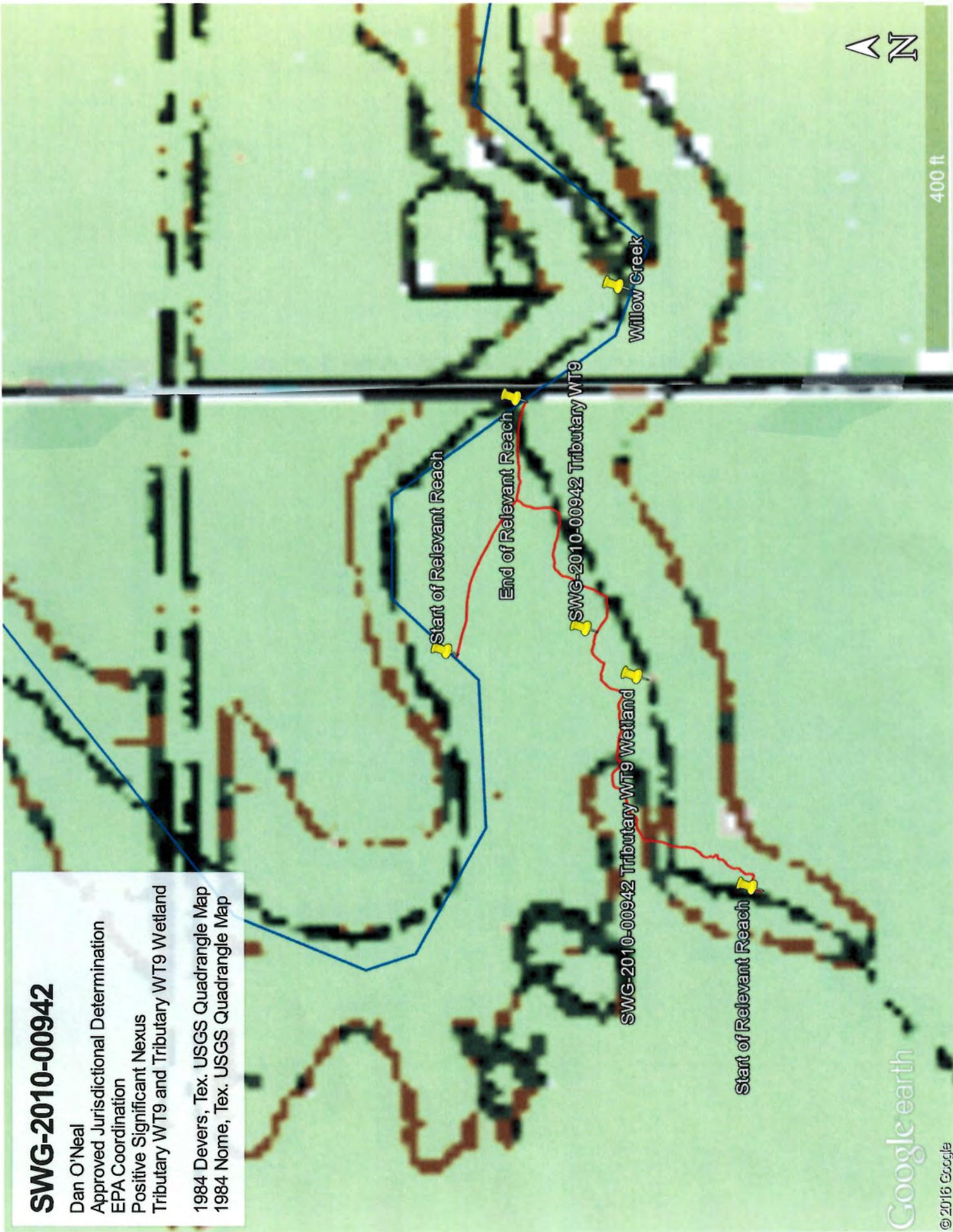
Start of Relevant Reach  
End of Relevant Reach  
SWG-2010-00942 Tributary WT9 Wetland  
SWG-2010-00942 Tributary WT9  
Start of Relevant Reach  
Willow Creek





# SWG-2010-00942

Dan O'Neal  
Approved Jurisdictional Determination  
EPA Coordination  
Positive Significant Nexus  
Tributary WT9 and Tributary WT9 Wetland  
1984 Devers, Tex. USGS Quadrangle Map  
1984 Nome, Tex. USGS Quadrangle Map



# SWG-2010-00942

Dan O'Neal

Approved Jurisdictional Determination

EPA Coordination

Positive Significant Nexus

Tributary WT9 and Tributary WT9 Wetland

1984 Devers, Tex. USGS Quadrangle Map

1984 Nome, Tex. USGS Quadrangle Map

