

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): 23 April 2018

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Galveston District, SWG-2018-00144, Resource Environmental Solutions, LLC, OW2, OW3, OW4, OW5, OW6, OW7

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: Texas County/Parish: Harris City: Houston
Center coordinates of site (lat/long in degree decimal format, NAD-83): Lat. See table° N, Long. ° W;
Universal Transverse Mercator: UTM: 15N, See table N., E.,NAD: 83

Name of nearest water body: Gum Gully

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

Name of watershed or Hydrologic Unit Code (HUC): 1204010407 Buffalo Bayou-San Jacinto River

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: 21 February 2018

Field Determination. Date(s): 1 March 2018

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

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

Waters subject to the ebb and flow of the tide.

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

Explain:

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

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

1. Waters of the U.S.

a. Indicate presence of waters of U.S. in review area (check all that apply):¹

- TNWs, including territorial seas
- Wetlands adjacent to TNWs
- Relatively permanent waters² (RPWs) that flow directly or indirectly into TNWs
- Non-RPWs that flow directly or indirectly into TNWs
- Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
- Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
- Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
- Impoundments of jurisdictional waters
- Isolated (interstate or intrastate) waters, including isolated wetlands

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

Non-wetland waters: linear feet: width (ft) and/or 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):³

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

Explain: Six non-tidal, upland man-made drainage ditches (OW2, OW3, OW4, OW5, OW6, OW7) and a swale were identified on the site. The six ditches are not reroutes of a tributary and do not extend the OHWM of Gum Gully. Therefore, they were

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

² For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

³ Supporting documentation is presented in Section III.F.

determined not to be waters of the United States. The swale did not have a defined bed and bank or OHWM. Therefore, it was determined not to be a water of the United States.

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 body⁴ 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:

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

Identify flow route to TNW⁵:
Tributary stream order, if known:

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

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

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

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

Primary tributary substrate composition (check all that apply):

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

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

Presence of run/riffle/pool complexes. Explain:

Tributary geometry: **Pick List**

Tributary gradient (approximate average slope): %

(c) Flow:

Tributary provides for: **Pick List**

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

Describe flow regime:

Other information on duration and volume:

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

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

Dye (or other) test performed:

Tributary has (check all that apply):

Bed and banks
 OHWM⁶ (check all indicators that apply):
 clear, natural line impressed on the bank the presence of litter and debris
 changes in the character of soil destruction of terrestrial vegetation
 shelving the presence of wrack line
 vegetation matted down, bent, or absent sediment sorting
 leaf litter disturbed or washed away scour
 sediment deposition multiple observed or predicted flow events
 water staining abrupt change in plant community
 other (list):
 Discontinuous OHWM.⁷ Explain:

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

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

(iii) **Chemical Characteristics:**

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

Explain:

Identify specific pollutants, if known:

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

⁶ A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the 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.

⁷Ibid.

(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-RPWs⁸ 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.⁹

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

- Demonstrate that impoundment was created from “waters of the U.S.,” or
- Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
- Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):¹⁰

- which are or could be used by interstate or foreign travelers for recreational or other purposes.
- from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
- which are or could be used for industrial purposes by industries in interstate commerce.
- Interstate isolated waters. Explain:
- Other factors. Explain:

Identify water body and summarize rationale supporting determination:

⁸See Footnote # 3.

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

¹⁰ Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA Memorandum Regarding CWA Act Jurisdiction Following Rapanos.

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): Six non-tidal, upland man-made drainage ditches and a swale were identified on the site.

The six ditches are not reroutes of a tributary and do not extend the OHWM of Gum Gully. Therefore, they were determined not to be waters of the United States. The swale did not have a defined bed and bank or OHWM. Therefore, it was determined not to be a water of the United States.

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: **Resource Environmental Solutions, LLC Wetland Delineation Report dated 8 December 2017**
- 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: **1 March 2018**
- Corps navigable waters' study:
- U.S. Geological Survey Hydrologic Atlas: **1204010407 Buffalo Bayou-San Jacinto River**
 - 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: **1932, 1954, 1982, and 2013 Crosby, Texas Quadrangles 1:24,000**
- USDA Natural Resources Conservation Service Soil Survey. Citation: **Soil Survey of Harris County, Texas**
- National wetlands inventory map(s). Cite name: **Houston, Texas**
- State/Local wetland inventory map(s):
- FEMA/FIRM maps: **Panel Number 48201C0530L, Effective 6/18/2007 & Panel 48291C0550C, Effective 5/2/2008**
- 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- Photographs: Aerial (Name & Date): **1943 - 2017 Google Earth Aerials**
or Other (Name & Date): **Site visit photographs included in RES's report**
Photographs taken during the Corps' 1 March 2018 site visit
- Previous determination(s). File no. and date of response letter:
- Applicable/supporting case law:
- Applicable/supporting scientific literature:

Other information (please specify): **EPA's WATERS Feature Layers**

B. ADDITIONAL COMMENTS TO SUPPORT JD: Six non-tidal, upland man-made drainage ditches (OW2, OW3, OW4, OW5, OW6, OW7) and a swale were identified on the site. The six ditches are not reroutes of a tributary and do not extend the OHWM of Gum Gully. Therefore, they were determined not to be waters of the United States. The swale did not have a defined bed and bank or OHWM. Therefore, it was determined not to be a water of the United States.

Table 1

Feature	Latitude	Longitude	Size (linear feet)
OW2	29.965289°	-95.076298°	476
OW3	29.964804°	-95.075582°	550
OW4	29.964215°	-95.081079°	239
OW5	29.963617°	-95.080825°	201
OW6	29.963692°	-95.080727°	81
OW7	29.965071°	-95.077288°	61
Swale	29.965557°	-95.081125°	580

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): 23 April 2018

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Galveston District, SWG-2018-00144, Resource Environmental Solutions, LLC, OW1 (Gum Gully), PEM01, PEM02, PEM03, PFO01, PFO02, & PFO03

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: Texas County/Parish: Harris City: Houston
Center coordinates of site (lat/long in degree decimal format, NAD-83): Lat. See table ° N, Long. ° W;
Universal Transverse Mercator: UTM: 15N, See table N., E., NAD: 83

Name of nearest water body: Gum Gully

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

Name of watershed or Hydrologic Unit Code (HUC): 1204010407 Buffalo Bayou-San Jacinto River

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: 21 February 2018

Field Determination. Date(s): 1 March 2018

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

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

Waters subject to the ebb and flow of the tide.

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

Explain:

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

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

1. Waters of the U.S.

a. Indicate presence of waters of U.S. in review area (check all that apply):¹

TNWs, including territorial seas

Wetlands adjacent to TNWs

Relatively permanent waters² (RPWs) that flow directly or indirectly into TNWs

Non-RPWs that flow directly or indirectly into TNWs

Wetlands directly abutting RPWs that flow directly or indirectly into TNWs

Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs

Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs

Impoundments of jurisdictional waters

Isolated (interstate or intrastate) waters, including isolated wetlands

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

Non-wetland waters: **2,530** linear feet: **14** width (ft) and/or **0.80** acres

Wetlands: **1.4** acres

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

Elevation of established OHWM (if known):

2. Non-regulated waters/wetlands (check if applicable):³

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

Explain:

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

² For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

³ Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

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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 body⁴ 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: 1117 square miles
Drainage area: 10.2 square miles
Average annual rainfall: 54 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 5-10 river miles from TNW.
Project waters are 1 (or less) river miles from RPW.
Project waters are 5-10 aerial (straight) miles from TNW.
Project waters are 1 (or less) aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: NA

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

Identify flow route to TNW⁵: **Gum Gully to Jackson Bayou**

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

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

Tributary is: Natural
 Artificial (man-made). Explain: **The northeasternmost portion of Gum Gully consists of a man-made channel.**
 Manipulated (man-altered). Explain: **Some culverts have been placed in the channel.**

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

Average width: **14** feet

Average depth: **3** feet

Average side slopes: **2:1**

Primary tributary substrate composition (check all that apply):

Silts Sands Concrete
 Cobbles Gravel Muck
 Bedrock Vegetation. Type/% cover: **5**
 Other. Explain:

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

Presence of run/riffle/pool complexes. Explain:

Tributary geometry: **Relatively straight**

Tributary gradient (approximate average slope): %

(c) Flow:

Tributary provides for: **Seasonal flow**

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

Describe flow regime:

Other information on duration and volume:

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

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

Dye (or other) test performed:

Tributary has (check all that apply):

Bed and banks
 OHWM⁶ (check all indicators that apply):
 clear, natural line impressed on the bank the presence of litter and debris
 changes in the character of soil destruction of terrestrial vegetation
 shelving the presence of wrack line
 vegetation matted down, bent, or absent sediment sorting
 leaf litter disturbed or washed away scour
 sediment deposition multiple observed or predicted flow events
 water staining abrupt change in plant community
 other (list):
 Discontinuous OHWM.⁷ Explain:

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

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

(iii) **Chemical Characteristics:**

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

Explain: **The water appeared to be discolored by suspended sediments. The water quality is unknown.**

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

⁶A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the 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.

⁷Ibid.

Identify specific pollutants, if known: **Unknown. Neither this reach of Gum Gully nor the downstream TNW (Jackson Bayou) have been identified as 303(d) listed waters by the Texas Commission on Environmental Quality who is the responsible agency for water quality matters within the state.**

(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: **Freshwater mussels were observed along the channel of Gum Gully. According to the U.S. Fish and Wildlife Service, the fresh-water mussel species present in Texas “require good water quality, stable stream channels and flowing water.”***

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: **1.4** acres

Wetland type. Explain: **Palustrine Emergent & Paulstrine Forested**

Wetland quality. Explain:

Project wetlands cross or serve as state boundaries. Explain: **No**

(b) General Flow Relationship with Non-TNW:

Flow is: **Ephemeral flow**. Explain: **No channelized entrance or egress was observed flowing between the six wetlands and Gum Gully. The six wetlands do not abut Gum Gully. However, they are within the 100-year floodplain of Gum Gully, and as such, demonstrate a known hydrological connection to Gum Gully.**

Surface flow is: **Overland sheetflow**

Characteristics: **The wetlands are located within the 100-year floodplain of Gum Gully.**

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: **The wetlands are located within the anticipated high flow of Gum Gully (i.e. the 100-year floodplain of Gum Gully).**

Ecological connection. Explain:

Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW

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

Project waters are **5-10** aerial (straight) miles from TNW.

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

Estimate approximate location of wetland as within the **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:

Identify specific pollutants, if known: **None known.**

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

Riparian buffer. Characteristics (type, average width):

Vegetation type/percent cover. Explain: **Emergent or Forested**

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: **3**

Approximately **(0.3)** 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>
Outside the project boundary:			
PUBF _x (N)	0.28		
PUBF _x (N)	0.01		
PUBF _x (N)	0.01		

Summarize overall biological, chemical and physical functions being performed: **Based on our analysis, we determined there are three wetlands adjacent to this 0.83-mile, first order reach of Gum Gully. All wetlands considered in this analysis are adjacent to, but not abutting, Gum Gully.**

The approximate 1.7 acres of adjacent wetlands are all within the 100-year floodplain of Gum Gully. Therefore, these adjacent wetlands provide for floodplain storage capacity and sediment load reduction.

C. SIGNIFICANT NEXUS DETERMINATION

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

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

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

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

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

reach of Gum Gully is approximately 0.83 mile long; 2,530 linear feet of which are within the project boundary. Gum Gully flows into Jackson Bayou. Jackson Bayou is a relatively permanent water (RPW) that becomes a traditional navigable water (TNW) before flowing into the San Jacinto River. The TNW portion of Jackson Bayou is located approximately 7.4 water miles and 5.2 aerial miles south of the end of the reach. Based on the 1 March 2018 site visit and off-site information, we have determined that Gum Gully within this reach has perennial flow.

Within the project boundary, six adjacent wetlands totaling approximately 1.4 acres were identified. These wetlands were identified using the Atlantic Gulf Coast Regional Supplement to the Corps' 1987 Wetland Delineation Manual; which requires, under normal conditions, wetland hydrology, hydrophytic vegetation, and hydric soils. Outside of the project boundary, the National Wetland Inventory Map identifies three wetlands totaling approximately 0.3 acres adjacent to this 0.83-mile reach of Gum Gully.

It is the Corps opinion that there is sufficient evidence to support the statement that the aquatic resources within this reach (a 0.83-mile tributary and appx. 1.7 acres of abutting wetlands) provide a significant nexus (more than speculative or insubstantial) effect upon the chemical, physical and/or biological integrity of the downstream TNW located approximately 7.4 miles downstream. Therefore, these aquatic resources would be classified as "waters of the United States" subject to federal jurisdiction under Section 404 of the Clean Water Act.

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 observed flowing in Gum Gully on the 1 March 2018 site visit. Additionally, freshwater mussels were observed along the channel of Gum Gully. According to the U.S. Fish and Wildlife Service, the freshwater mussel species present in Texas "require good water quality, stable stream channels and flowing water."*** **Therefore, the presence of these freshwater mussels serves as evidence that Gum Gully has perennial flow.**
- 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: 2,530 linear feet 14 width (ft)
- Other non-wetland waters: acres

Identify type(s) of waters:

3. Non-RPWs⁸ 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.

⁸See Footnote # 3.

- 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: 1.4 acres

6. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.

- Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres

7. Impoundments of jurisdictional waters.⁹

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

- Demonstrate that impoundment was created from “waters of the U.S.,” or
 Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
 Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):¹⁰

- which are or could be used by interstate or foreign travelers for recreational or other purposes.
 from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
 which are or could be used for industrial purposes by industries in interstate commerce.
 Interstate isolated waters. Explain:
 Other factors. Explain:

Identify water body and summarize rationale supporting determination:

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

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

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

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

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

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

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

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

¹⁰ Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA Memorandum Regarding CWA Act Jurisdiction Following Rapanos.

- 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: **Resource Environmental Solutions, LLC**

Wetland Delineation Report dated 8 December 2017

- 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: **1 March 2018**

- Corps navigable waters' study:

- U.S. Geological Survey Hydrologic Atlas: **1204010407 Buffalo Bayou-San Jacinto River**

- 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: **1932, 1954, 1982, and 2013 Crosby, Texas Quadrangles 1:24,000**

- USDA Natural Resources Conservation Service Soil Survey. Citation: **Soil Survey of Harris County, Texas**

- National wetlands inventory map(s). Cite name: **Houston, Texas**

- State/Local wetland inventory map(s):

- FEMA/FIRM maps: **Panel Number 48201C0530L, Effective 6/18/2007 & Panel 48291C0550C, Effective 5/2/2008**

- 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)

- Photographs: Aerial (Name & Date): **1943 - 2017 Google Earth Aerials**

- or Other (Name & Date): **Site visit photographs included in RES's report**

Photographs taken during the Corps' 1 March 2018 site visit

- Previous determination(s). File no. and date of response letter:

- Applicable/supporting case law:

- Applicable/supporting scientific literature:

*https://www.fws.gov/southwest/es/.../5_central_Texas_mussels_fact_sheet_2011.pdf

- Other information (please specify): **EPA's WATERS Feature Layers**

B. ADDITIONAL COMMENTS TO SUPPORT JD: The relevant reach in this significant nexus examination includes a first order tributary: Gum Gully. This reach of Gum Gully is approximately 0.83 mile long; 2,530 linear feet of which are within the project boundary. Gum Gully flows into Jackson Bayou. Jackson Bayou is a relatively permanent water (RPW) that becomes a traditional navigable water (TNW) before flowing into the San Jacinto River. The TNW portion of Jackson Bayou is located approximately 7.4 water miles and 5.2 aerial miles south of the end of the reach. Based on the 1 March 2018 site visit and off-site information, we have determined that Gum Gully within this reach has perennial flow.

Within the project boundary, six adjacent wetlands totaling approximately 1.4 acres were identified. These wetlands were identified using the Atlantic Gulf Coast Regional Supplement to the Corps' 1987 Wetland Delineation Manual; which requires, under normal conditions, wetland hydrology, hydrophytic vegetation, and hydric soils. Outside of the project boundary, the National Wetland Inventory Map identifies three wetlands totaling approximately 0.3 acres adjacent to this 0.83-mile reach of Gum Gully.

There are scientific studies that provide information that tributaries and adjacent wetlands provide for chemical sequestration in aquatic systems. However, the Corps did not find sufficient site specific evidence/data to support the statement that the waters within this reach provide more than a speculative or insubstantial effect upon the chemical integrity of the downstream TNW located approximately 7.4 miles downstream. Neither this reach of Gum Gully nor the downstream TNW (Jackson Bayou) have been identified as 303(d) listed waters by the Texas Commission on Environmental Quality who is the responsible agency for water quality matters within the state. Therefore, there is not data nor information that would support that the aquatic resources within this reach (a 0.83-mile tributary and appx. 1.7 acres of abutting wetlands) provide more than a speculative or insubstantial effect upon the chemical integrity of the downstream TNW located approximately 7.4 miles downstream

Wetlands and tributaries provide floodplain storage, bank stabilization, sediment load reduction, hydrologic velocity buffers, along with other physical attributes to a waterway in which they are hydrologically inseparably bound. The 0.83 mile of this reach of Gum Gully are all within either the mapped regulatory floodway or 100-year floodplain. Additionally, the approximate 1.7 acres of adjacent wetlands are all within either the mapped regulatory floodway or the 100-year floodplain. Therefore, this reach of Gum Gully and its adjacent wetlands provide a large amount of floodplain storage capacity and sediment load reduction. It is the Corps' opinion this is sufficient evidence that the aquatic resources within this review area provide more than a speculative or insubstantial effect upon the physical attributes of the downstream TNW located approximately 7.4 miles downstream.

There are no known species found in this review area that require the aquatic resources within this reach and the waters of the TNW (approximately 7.4 miles downstream) to fulfill their life cycle requirements. There is great speculation associated with stating that aquatic biotic species would require both, the TNW located approximately 7.4 miles downstream and the aquatic resources within this reach to fulfill their lifecycle requirements. As such, it is our conclusion that there is not sufficient information founded that supports that this reach provides more than a speculative or insubstantial effect upon the biological integrity of the downstream TNW, located approximately 7.4 miles away.

In conclusion, it is the Corps opinion that there is sufficient evidence to support the statement that the aquatic resources within this reach (a 0.83-mile tributary and appx. 1.7 acres of abutting wetlands) provide a significant nexus (more than speculative or insubstantial) effect upon the chemical, physical and/or biological integrity of the downstream TNW located approximately 7.4 miles downstream. Therefore, these aquatic resources would be classified as "waters of the United States" subject to federal jurisdiction under Section 404 of the Clean Water Act.

Table 1

Wetlands Within The Project Area:






Feature	Latitude, Longitude	Size (acres)
PEM01	29.964900°, -95.081828°	0.023
PEM02	29.964790°, -95.081561°	0.022
PEM03	29.966273°, -95.081167°	0.040
PFO01	29.965917°, -95.078458°	0.399
PFO02	29.965996°, -95.077569°	0.518
PFO03	29.96553°, -95.077403°	0.364.

SWG 2018-00144

RES
Jurisdictional Determination

EPA Coordination: Significant Nexus Analysis for OW1 (Gum Gully) and
Adjacent Wetlands (PEM01, PEM02, PEM03, PFO01, PFO02, & PFO03)

Legend

-  Adjacent wetlands (appx. 1.7 acres)
-  Aerial miles to TNW ~ 5.2
-  Jackson Bayou (TNW)
-  Relevant reach of Gum Gully (1st Order) ~ 0.83 mile
-  Water miles to TNW ~ 7.4








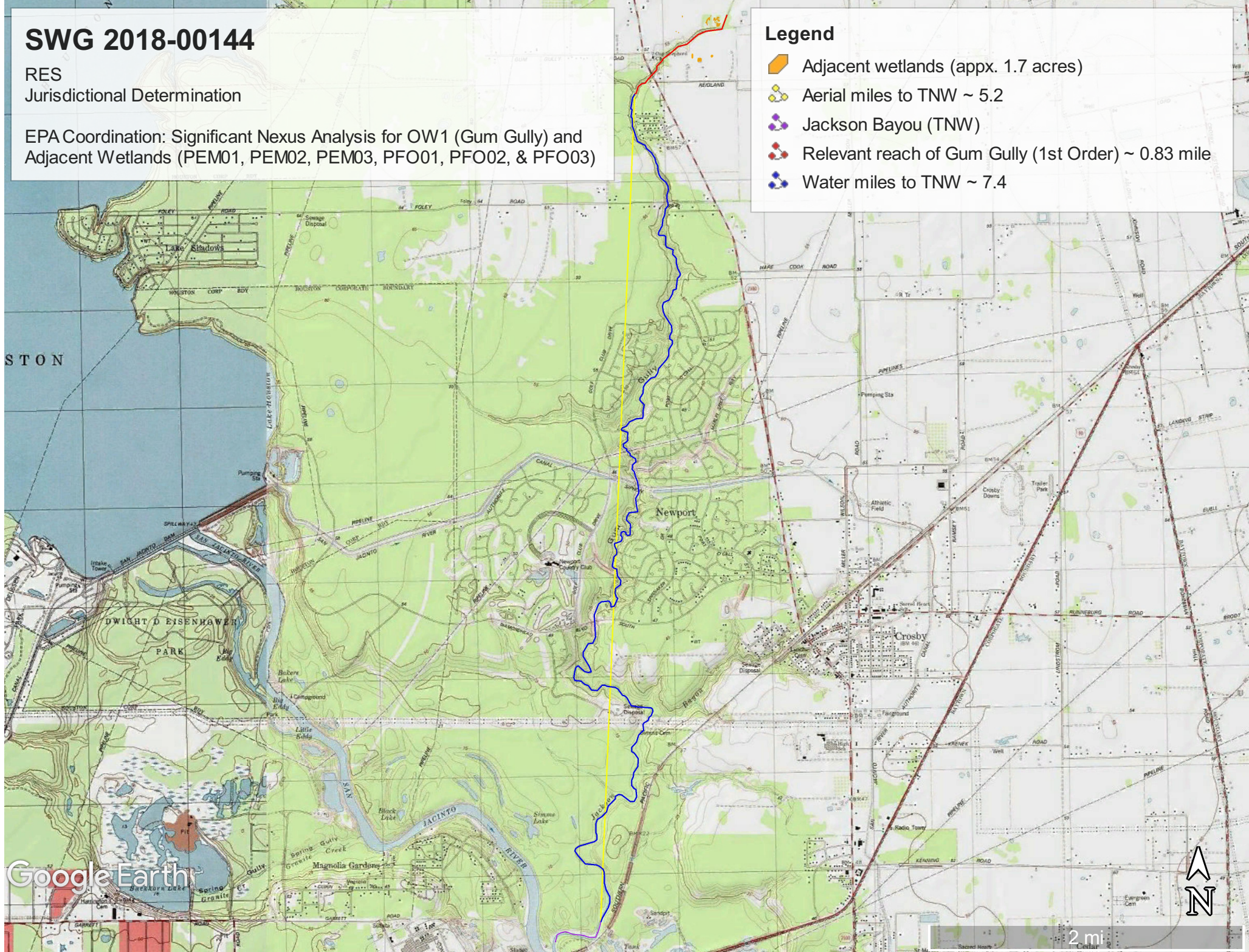
SWG 2018-00144

RES
Jurisdictional Determination

EPA Coordination: Significant Nexus Analysis for OW1 (Gum Gully) and
Adjacent Wetlands (PEM01, PEM02, PEM03, PFO01, PFO02, & PFO03)

Legend

-  Adjacent wetlands (appx. 1.7 acres)
-  Aerial miles to TNW ~ 5.2
-  Jackson Bayou (TNW)
-  Relevant reach of Gum Gully (1st Order) ~ 0.83 mile
-  Water miles to TNW ~ 7.4



Google Earth

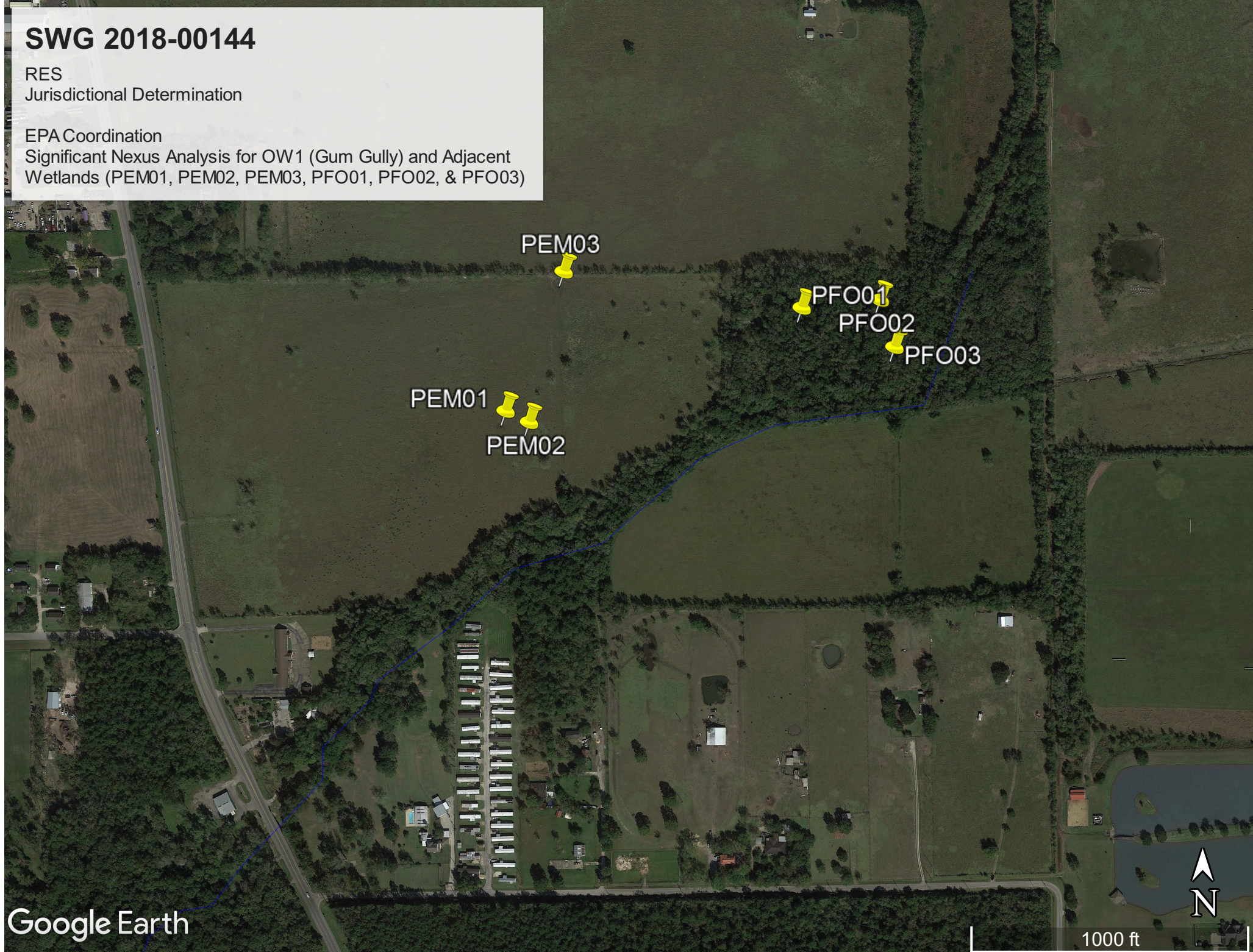
2 mi
Central



SWG 2018-00144

RES
Jurisdictional Determination

EPA Coordination
Significant Nexus Analysis for OW1 (Gum Gully) and Adjacent
Wetlands (PEM01, PEM02, PEM03, PFO01, PFO02, & PFO03)



SWG 2018-00144

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Jurisdictional Determination

EPA Coordination: Significant Nexus Analysis for OW1 (Gum Gully) and Adjacent Wetlands (PEM01, PEM02, PEM03, PFO01, PFO02, & PFO03)

1982 USGS Crosby, Texas Quadrangle

