

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): 01 May 2017

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Galveston District, SWG-2016-00402, FM1488 Corporation; 100-Acre Tract; Wetlands A1, A2, B, C, D, E, and F; Montgomery County, Texas

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: Texas County/Parish: Montgomery City: Magnolia
Center coordinates of site (lat/long in degree decimal format, NAD-83): Lat. 30.230877° N, Long. -95.711127° W;
Universal Transverse Mercator: UTM: 15N, 47478.4 N., 239077.1 E., NAD: 83
Name of nearest water body: Mill Creek
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Spring Creek
Name of watershed or Hydrologic Unit Code (HUC): Spring -- 12040102

- 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: 08 February 2017
 Field Determination. Date(s): 05 September 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):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: 12.4 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

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: 484385 acres
Drainage area: Unknown Pick List
Average annual rainfall: 47.04 inches
Average annual snowfall: 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 TNW⁵: The relevant reach of Mill Creek, an RPW, flows southeast approximately 12.1 river miles from the subject site to where it intersects Spring Creek, just south of Neidigk Lake. Spring Creek flows

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

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

east-southeast approximately 16.3 river miles to a point approximately 1.5 west of Interstate Highway 45, where Spring Creek becomes a TNW.

Tributary stream order, if known: Based upon the significant nexus stream order, the relevant reach is a 4th order stream.

(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: 35 feet

Average depth: 13 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: Stable

Presence of run/riffle/pool complexes. Explain: No

Tributary geometry: **Meandering**

Tributary gradient (approximate average slope): 0.12 %

(c) **Flow:**

Tributary provides for: **Pick List**

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

Describe flow regime: Perennial/Year-round stream from the normal pool elevation of Neidigk Lake upstream to the confluence of Hurricane Creek and Kickapoo Creek

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: Mill Creek is identified as Segment 1008A on the 2014 Texas Commission on Environmental Quality (TCEQ), Clean Water Act Section 303(d) Impaired Waters list. Segment 1008A is classified as Category

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.

5c water body, which means additional data or information will be collected and/or evaluated for one or more parameters before a management strategy is selected. The reason for listing is depressed dissolved oxygen. Identify specific pollutants, if known: Unknown

(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: Open water supports fish habitat and spawning.
 - 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: 12.4 acres

Wetland type. Explain: Palustrine forested wetlands

Wetland quality. Explain: High, relatively undisturbed forest within the watershed.

Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

Flow is: **Perennial flow**. Explain: Flowing water was observed during the 05 September 2016 site visit. In addition, surface water was observed in all Google Earth aerial photos where the creek channel is visible. Finally, the United States Geological Survey (USGS), National Hydrography Dataset identifies Mill Creek as a perennial stream, with year-round water flow.

Surface flow is: **Discrete**

Characteristics:

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

Dye (or other) test performed:

(c) Wetland Adjacency Determination with Non-TNW:

Directly abutting

Not directly abutting

Discrete wetland hydrologic connection. Explain:

Ecological connection. Explain:

Separated by berm/barrier. Explain: The wetlands are separated from Mill Creek by natural embankment.

(d) Proximity (Relationship) to TNW

Project wetlands are 25-30 river miles from TNW.

Project waters are 15-20 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: Water in those wetlands with water during first site visit was clear. Chemical characteristics are unknown.

Identify specific pollutants, if known: Unknown

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

- Riparian buffer. Characteristics (type, average width):
- Vegetation type/percent cover. Explain: Forested 60-100 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: **30 (or more)**

Approximately (204) 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>
Please see attached Table 2.			

Summarize overall biological, chemical and physical functions being performed: The relevant reach of Mill Creek for this significant nexus evaluation is an approximately 25.6-mile-long 4th order stream and is a relatively permanent water (RPW). The relevant reach intersects with and ends at Spring Creek, an RPW, which flows approximately 16.3 miles from this intersection point to where it becomes a traditional navigable water (TNW).

Both Mill Creek and Spring Creek, are identified on the 2014 Texas Commission on Environmental Quality (TCEQ), Clean Water Act Section 303(d) Impaired Waters list (Segment 1008A and 1008, respectively) for having depressed dissolved oxygen (DO). Both are classified as Category 5c water bodies, which means additional data or information will be collected and/or evaluated for one or more parameters before a management strategy is selected. Factors that affect DO include, but are not limited to higher than normal water temperature, elevated bacteria level, and excessive nutrient input (e.g. farm and lawn fertilizer runoff).

The subject site is approximately an approximately 100 acres of forested land containing seven (7) forested wetland depressions (Wetlands A1 - F), comprising a total of approximately 12.4 acres. Based upon the U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) and the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), along the relevant reach there are approximately 145 similarly situated adjacent wetlands with a total area of approximately 204.35 acres. The majority of these wetlands (78%) are forested. Of the 217.27 acres of wetlands being evaluated along this relevant reach, approximately 63.2 acres are abutting the relevant reach of Mill Creek, as well as approximately 153.97 acres that are neighboring the relevant reach. The wetlands are located between 17.3 to 17.5 aerial miles and from 28.4 to 28.7 river miles the point where Spring Creek becomes a TNW. The relevant reach of Mill Creek flows to Spring Creek, which becomes the nearest downstream TNW, which is used for recreation, and some municipal and industrial water supply. Based on our analysis, we determined that there are approximately 151 adjacent wetlands located within this relevant reach of Mill Creek. These wetlands abut or are neighboring Mill Creek and total approximately 217.27 acres.

The Corps finds evidence/data to support the statement that the approximately 25.6-mile-long relevant reach of Mill Creek, including all similarly situated adjacent wetlands associated with this relevant reach, provide more than a speculative or insubstantial effect upon the chemical integrity of the downstream TNW. There is a direct surface hydrologic connection between the relevant reach of Mill Creek and Spring Creek, the nearest downstream TNW. The approximate 217.27 acres of adjacent wetlands provide important filtration to aid in the elimination and treatment of bacteria in the downstream TNW; it also serves to aid in the reduction of thermal and chemical pollutants flowing into Spring Creek. The wetlands are situated in a mostly rural area with scattered residential development, agriculture and timber harvesting. The wetlands trap sediment and pollutants from timber and agricultural operations and prevent them from entering the TNW. 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 Mill Creek, there are approximately 217.27 acres of similarly situated (mostly forested) abutting or neighboring wetlands. The TNW, Spring Creek, is approximately 28.4 river miles downstream from the subject site and is used for recreation within the surrounding area. Spring Creek also provides recreation, and some municipal and industrial water for the surrounding area. 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 217.27 acres of abutting and neighboring forested wetlands would increase the water velocity and flow into Spring Creek, resulting in more than a speculative or insubstantial effect upon the physical condition of the downstream TNW which flows into Lake Houston. Higher water flow would increase "out of bank" flooding and scouring, resulting in loss of property along and the physical condition of the TNW flow channel. Therefore, the adjacent wetlands along this relevant reach are inseparably bound to, and provide more than speculative or insubstantial effects on maintaining the physical integrity (course, condition, capacity) of the downstream TNW.

There are no known protected species found in the subject site that rely wholly on the Mill Creek relevant reach adjacent wetlands, or the waters of the TNW to fulfill their life cycle requirements. Mill Creek is a RPW and has a direct hydrologic connection with the TNW; as such, it is more likely to have aquatic organisms that require both the Mill Creek relevant reach and the downstream TNW. It is highly probable that species of fishes and/or invertebrates utilize Mill Creek for portions of their life cycles; but there is insufficient data to identify specific species that require both the Mill Creek relevant reach adjacent wetlands and the waters of the TNW to fulfill their life cycle requirements.. The abutting and neighboring wetlands aid in providing species habitat (shelter, micro-climate, protection and food). Therefore, the Corps concludes that the Mill Creek relevant reach adjacent wetlands provide, although speculative, more than an insubstantial 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 estimated 217.27 acres of wetlands adjacent to this approximate 25.6-mile Mill Creek relevant reach have a significant nexus to, and therefore have more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of the downstream TNW. In conclusion, it is our opinion that this Mill Creek relevant reach and the 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: The Mill Creek relevant reach is a 4th order stream and is a relatively permanent water. Mill Creek flows into Spring Creek, which becomes the downstream TNW before it flows into Lake Houston. There are approximately 217.27 acres of abutting and neighboring wetlands, most of which are forested, within this relevant reach. The Mill Creek relevant reach and adjacent wetlands provide important filtration to aid in the elimination and treatment of bacteria as well as thermal and chemical pollutants. The watershed also retains flood waters and reduces overbank flooding downstream, thereby decreasing the water velocity and volume flowing downstream into Spring Creek, which provides recreation, and some municipal and industrial water supply for the surrounding area. Flood water retention also reduces scouring and the loss of property as well as preserving the physical characteristics (course, condition, and capacity) of the downstream TNW. Mill Creek likely also supports aquatic organisms while the adjacent wetlands provide species habitat (shelter, protection, micro-climate, and food). Based on this information, we determined that the Mill Creek relevant reach and adjacent wetlands provide more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of the downstream TNW.

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

1. **TNWs and Adjacent Wetlands. Check all that apply and provide size estimates in review area:**

TNWs: linear feet width (ft), Or, acres.
 Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**

Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: Flowing water was observed during the 05 September 2016 site visit. In addition, surface water was observed in all Google Earth aerial photos where the creek channel is visible. Finally, the United States Geological Survey (USGS), National Hydrography Dataset identifies Mill Creek as a perennial stream, with year-round water 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: 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: 12.4 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).

⁸See Footnote # 3.

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

- E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):¹⁰
- which are or could be used by interstate or foreign travelers for recreational or other purposes.
 - from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
 - which are or could be used for industrial purposes by industries in interstate commerce.
 - Interstate isolated waters. Explain:
 - Other factors. Explain:

Identify water body and summarize rationale supporting determination:

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

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

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

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

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: Wetland delineation report submitted by SMC Consulting, Inc.
- 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: 05 September 2016 site visit
- Corps navigable waters’ study:
- U.S. Geological Survey Hydrologic Atlas: Spring -- 12040102
 - 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: 1:24K, Magnolia East, Texas, 1962 (Photorevised 1979).
- USDA Natural Resources Conservation Service Soil Survey. Citation: National Cooperative Soil Survey (NCSS) Google Earth Layer (http://casoilresource.lawr.ucdavis.edu/soil_web/kml/mapunits.kml), accessed 05 September 2016.
- National wetlands inventory map(s). Cite name: FWS NWI Mapper Website (<https://www.fws.gov/wetlands/data/mapper.HTML>), accessed 05 September 2016

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*.

- State/Local wetland inventory map(s):
- FEMA/FIRM maps: Montgomery County, Texas and Incorporated Areas, Panel Number 48339C0480G (08/18/2014) - Flood Zone AE
- 100-year Floodplain Elevation is: 200 feet (National Geodetic Vertical Datum of 1929)
- Photographs: Aerial (Name & Date): 2015 Texas Orthoimagery Program (TOP), 0.5-meter Near Color (NC) / Color Infrared (CIR); 2014 and 2012 National Agriculture Imagery Program (NAIP), 1.0-meter NC/CIR; Google Earth Aerial Images (2010, 2011, 2012, 2014, 2015, and 2016); 19 November 2016, Digital Globe High Resolution Aerial Photography.
- 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 relevant reach of Mill Creek for this significant nexus evaluation is an approximately 25.6-mile-long 4th order stream and is a relatively permanent water (RPW). The relevant reach intersects with and ends at Spring Creek, an RPW, which flows approximately 16.3 miles from this intersection point to where it becomes a traditional navigable water (TNW).

Both Mill Creek and Spring Creek, are identified on the 2014 Texas Commission on Environmental Quality (TCEQ), Clean Water Act Section 303(d) Impaired Waters list (Segment 1008A and 1008, respectively) for having depressed dissolved oxygen (DO). Both are classified as Category 5c water bodies, which means additional data or information will be collected and/or evaluated for one or more parameters before a management strategy is selected. Factors that affect DO include, but are not limited to higher than normal water temperature, elevated bacteria level, and excessive nutrient input (e.g. farm and lawn fertilizer runoff).

The subject site is approximately an approximately 100 acres of forested land containing seven (7) forested wetland depressions (Wetlands A1 - F), comprising a total of approximately 12.4 acres. Based upon the U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) and the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), along the relevant reach there are approximately 145 similarly situated adjacent wetlands with a total area of approximately 204.35 acres. The majority of these wetlands (78%) are forested. Of the 217.27 acres of wetlands being evaluated along this relevant reach, approximately 63.2 acres are abutting the relevant reach of Mill Creek, as well as approximately 153.97 acres that are neighboring the relevant reach. The wetlands are located between 17.3 to 17.5 aerial miles and from 28.4 to 28.7 river miles the point where Spring Creek becomes a TNW. The relevant reach of Mill Creek flows to Spring Creek, which becomes the nearest downstream TNW, which is used for recreation, and some municipal and industrial water supply. Based on our analysis, we determined that there are approximately 151 adjacent wetlands located within this relevant reach of Mill Creek. These wetlands abut or are neighboring Mill Creek and total approximately 217.27 acres.

The Corps finds evidence/data to support the statement that the approximately 25.6-mile-long relevant reach of Mill Creek, including all similarly situated adjacent wetlands associated with this relevant reach, provide more than a speculative or insubstantial effect upon the chemical integrity of the downstream TNW. There is a direct surface hydrologic connection between the relevant reach of Mill Creek and Spring Creek, the nearest downstream TNW. The approximate 217.27 acres of adjacent wetlands provide important filtration to aid in the elimination and treatment of bacteria in the downstream TNW; it also serves to aid in the reduction of thermal and chemical pollutants flowing into Spring Creek. The wetlands are situated in a mostly rural area with scattered residential development, agriculture and timber harvesting. The wetlands trap sediment and pollutants from timber and agricultural operations and prevent them from entering the TNW. 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 Mill Creek, there are approximately 217.27 acres of similarly situated (mostly forested) abutting or neighboring wetlands. The TNW, Spring Creek, is approximately 28.4 river miles downstream from the subject site and is used for recreation within the surrounding area. Spring Creek also provides recreation, and some municipal and industrial water for the surrounding area. 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 217.27 acres of abutting and neighboring forested wetlands would increase the water velocity and flow into Spring Creek, resulting in more than a speculative or insubstantial effect upon the physical condition of the downstream TNW which flows into Lake Houston. Higher water flow would increase "out of bank" flooding and scouring, resulting in loss of property along and the physical condition of the TNW flow channel. Therefore, the adjacent wetlands along this relevant reach are inseparably bound to, and provide more than speculative or insubstantial effects on maintaining the physical integrity (course, condition, capacity) of the downstream TNW.

There are no known protected species found in the subject site that rely wholly on the Mill Creek relevant reach adjacent wetlands, or the waters of the TNW to fulfill their life cycle requirements. Mill Creek is a RPW and has a direct hydrologic connection with the TNW; as such, it is more likely to have aquatic organisms that require both the Mill Creek relevant reach and the downstream TNW. It is highly probable that species of fishes and/or invertebrates utilize Mill Creek for portions of their life cycles; but there is insufficient data to identify specific species that require both the Mill Creek relevant reach adjacent wetlands and the waters of the TNW to fulfill their life cycle requirements.. The abutting and neighboring wetlands aid in providing species habitat (shelter, microclimate, protection and food). Therefore, the Corps concludes that the Mill Creek relevant reach adjacent wetlands provide, although speculative, more than an insubstantial 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 estimated 217.27 acres of wetlands adjacent to this approximate 25.6-mile Mill Creek relevant reach have a significant nexus to, and therefore have more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of the downstream TNW. In conclusion, it is our opinion that this Mill Creek relevant reach and the adjacent wetlands are waters of the United States subject to Section 404 of the Clean Water Act.

Table 1.							
Site	Latitude	Longitude	UTM Zone	UTM Easting	UTM Northing	Approximate Size (acres)	Approximate Distance to RPW (feet)
Wetland A1	30.229122	-95.709599	15N	239219.6	3347280.3	0.68	40
Wetland A2	30.231449	-95.70884	15N	239298.8	3347536.6	1.02	975
Wetland B	30.229632	-95.710021	15N	239180.3	3347337.8	0.3	325
Wetland C	30.232082	-95.710439	15N	239146.5	3347610.4	8.17	700
Wetland D	30.231696	-95.712456	15N	238951.3	3347572.3	1.35	760
Wetland E	30.229631	-95.713244	15N	238870	3347345.1	0.77	115
Wetland F	30.229603	-95.714637	15N	238735.8	3347345.2	0.12	30

Table 2.

SWG-2016-00402 Relevant Reach Adjacent Wetlands

Adjacent Wetland	Area (ac)	Abuts
1	0.10	N
2	2.81	N
3	6.06	Y
4	10.21	N
5	0.17	N
6	0.29	N
7	1.34	N
8	0.27	N
9	0.34	N
10	0.10	Y
11	0.58	N
12	1.68	N
13	0.05	N
14	0.07	N
15	0.05	N
16	0.07	N
17	0.10	N
18	0.51	N
19	0.47	N
20	0.32	Y
21	0.29	N
22	0.11	Y
23	0.05	Y
24	0.13	N
25	1.84	N
26	0.06	N
27	0.22	N

Adjacent Wetland	Area (ac)	Abuts
28	0.12	N
29	0.09	N
30	0.53	N
31	0.39	N
32	0.72	N
33	0.08	N
34	0.13	N
35	0.07	N
36	0.09	N
37	0.10	N
38	0.05	N
39	0.52	Y
40	0.31	N
41	0.28	Y
42	0.07	N
43	0.13	N
44	0.09	N
45	0.80	Y
46	0.46	N
47	0.48	N
48	7.29	N
49	0.22	N
50	0.07	N
51	1.50	N
52	0.82	N
53	0.24	N
54	0.90	N

Adjacent Wetland	Area (ac)	Abuts
55	0.29	N
56	0.24	N
57	0.51	Y
58	0.11	Y
59	0.33	N
60	0.51	Y
61	1.32	N
62	1.15	N
63	0.23	N
64	0.54	Y
65	0.63	N
66	3.93	Y
67	1.39	Y
68	1.48	N
69	0.27	N
70	0.27	Y
71	39.30	Y
72	0.42	N
73	5.50	N
74	4.19	N
75	4.49	Y
76	2.62	N
77	3.51	N
78	4.97	N
79	13.89	N
80	0.62	Y
81	1.72	Y

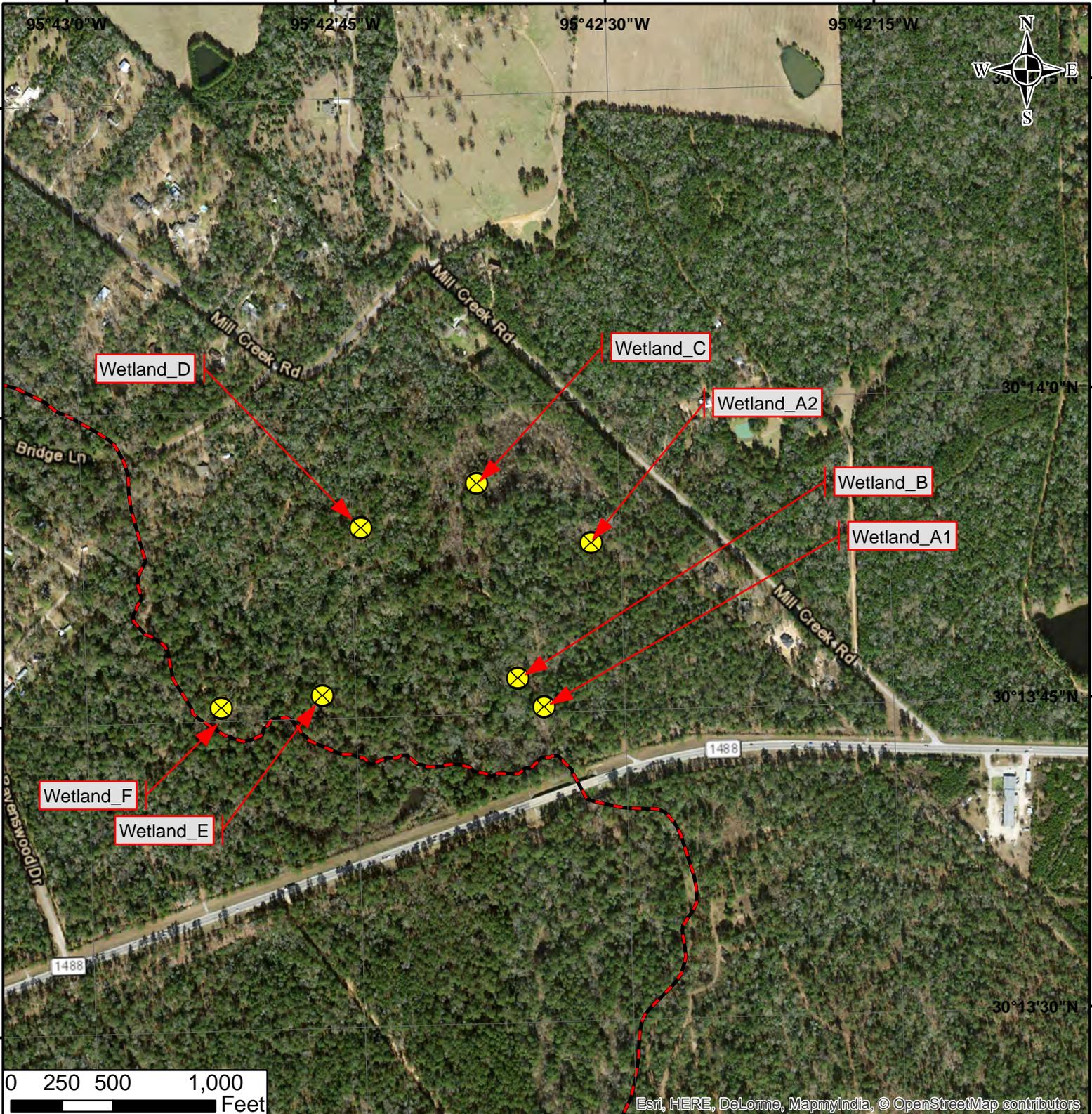
Table 2.

SWG-2016-00402 Relevant Reach Adjacent Wetlands

Adjacent Wetland	Area (ac)	Abuts
82	0.36	N
83	0.74	N
84	0.70	N
85	0.79	N
86	0.93	N
87	0.29	N
88	0.05	Y
89	1.05	N
90	0.24	Y
91	0.18	Y
92	0.39	N
93	1.47	N
94	0.41	N
95	0.25	N
96	1.02	N
97	0.34	N
98	1.04	N
99	0.45	N
100	0.18	N
101	1.11	N
102	0.72	Y
103	0.37	N
104	0.17	N
105	0.62	N
106	0.20	N
107	0.30	Y
108	0.59	N
109	0.21	Y

Adjacent Wetland	Area (ac)	Abuts
110	0.18	N
111	0.20	N
112	0.59	Y
113	0.49	Y
114	0.48	N
115	0.55	N
116	0.69	N
117	0.54	N
118	2.27	N
119	0.58	Y
120	1.15	N
121	0.92	N
122	0.62	N
123	0.28	N
124	0.32	N
125	0.30	N
126	0.46	N
127	0.36	N
128	0.55	Y
129	0.43	N
130	0.61	Y
131	1.36	N
132	0.32	N
133	2.15	N
134	1.81	N
135	1.87	N
136	3.92	N
137	2.45	N

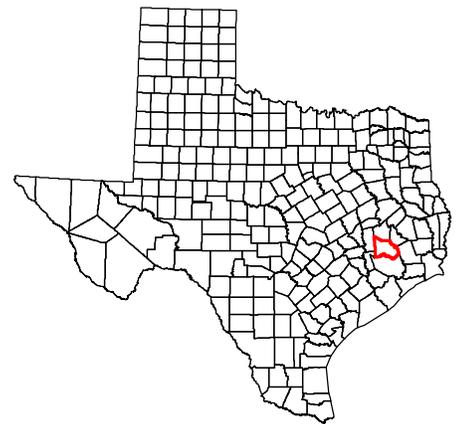
Adjacent Wetland	Area (ac)	Abuts
138	15.04	N
139	0.89	N
140	0.65	N
141	2.82	Y
142	0.34	N
143	0.42	N
144	0.79	N
145	2.46	Y
Total	204.35	

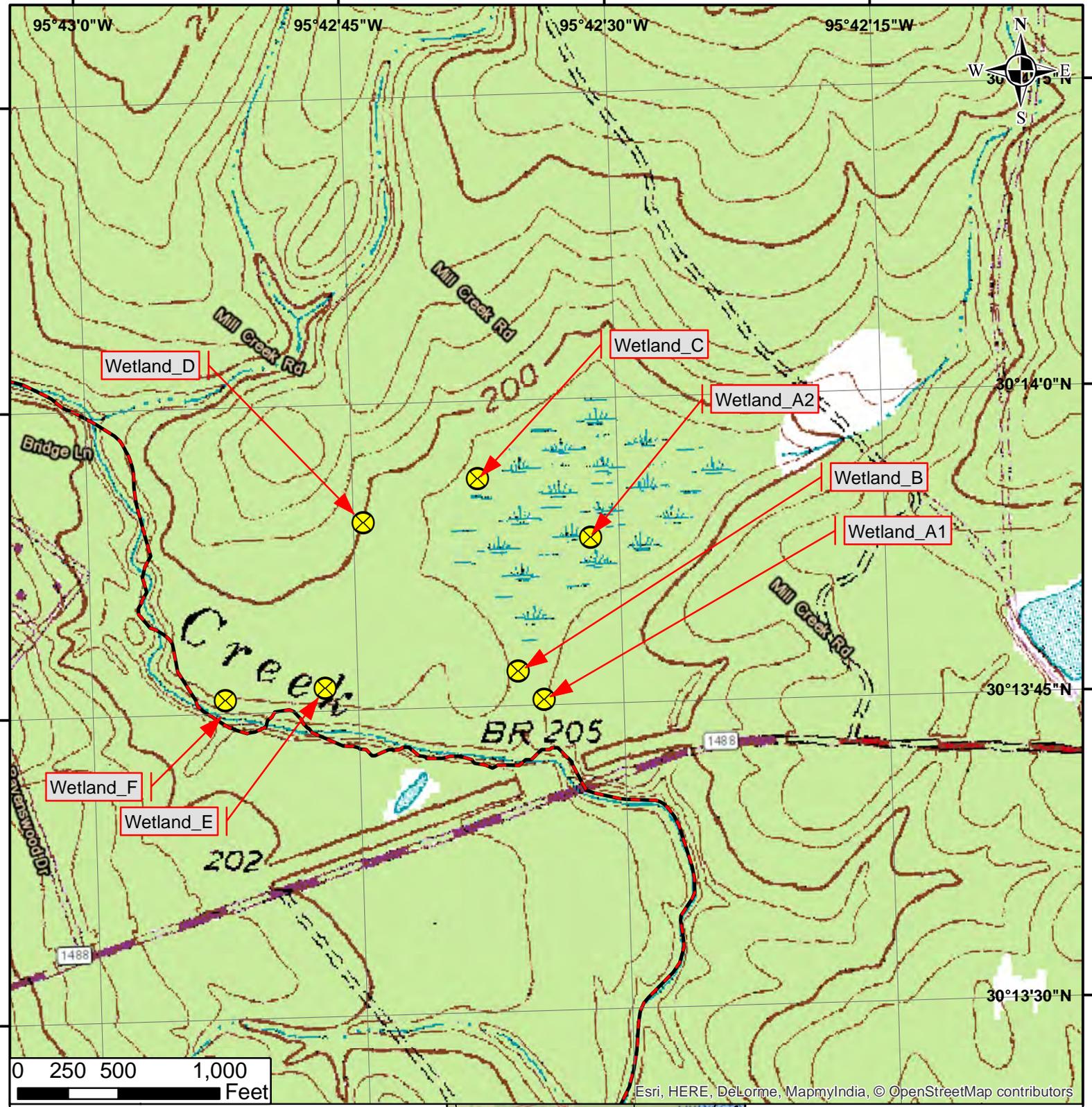


SWG-2016-00402
FM 1488 Corporation
100-Acre Undeveloped Tract
Approved Jurisdictional Determination
Magnolia, Montgomery County, Texas
Positive Significant Nexus
Aerial Photo Detail

— Mill_Creek_Relevant_Reach (RPW) ~ 25.59 mi

Image Source: 2015 Texas
 Orthoimagery Program (TOP),
 0.5-meter Near Color
 Note: Review Area reflects neither
 property boundary nor ownership



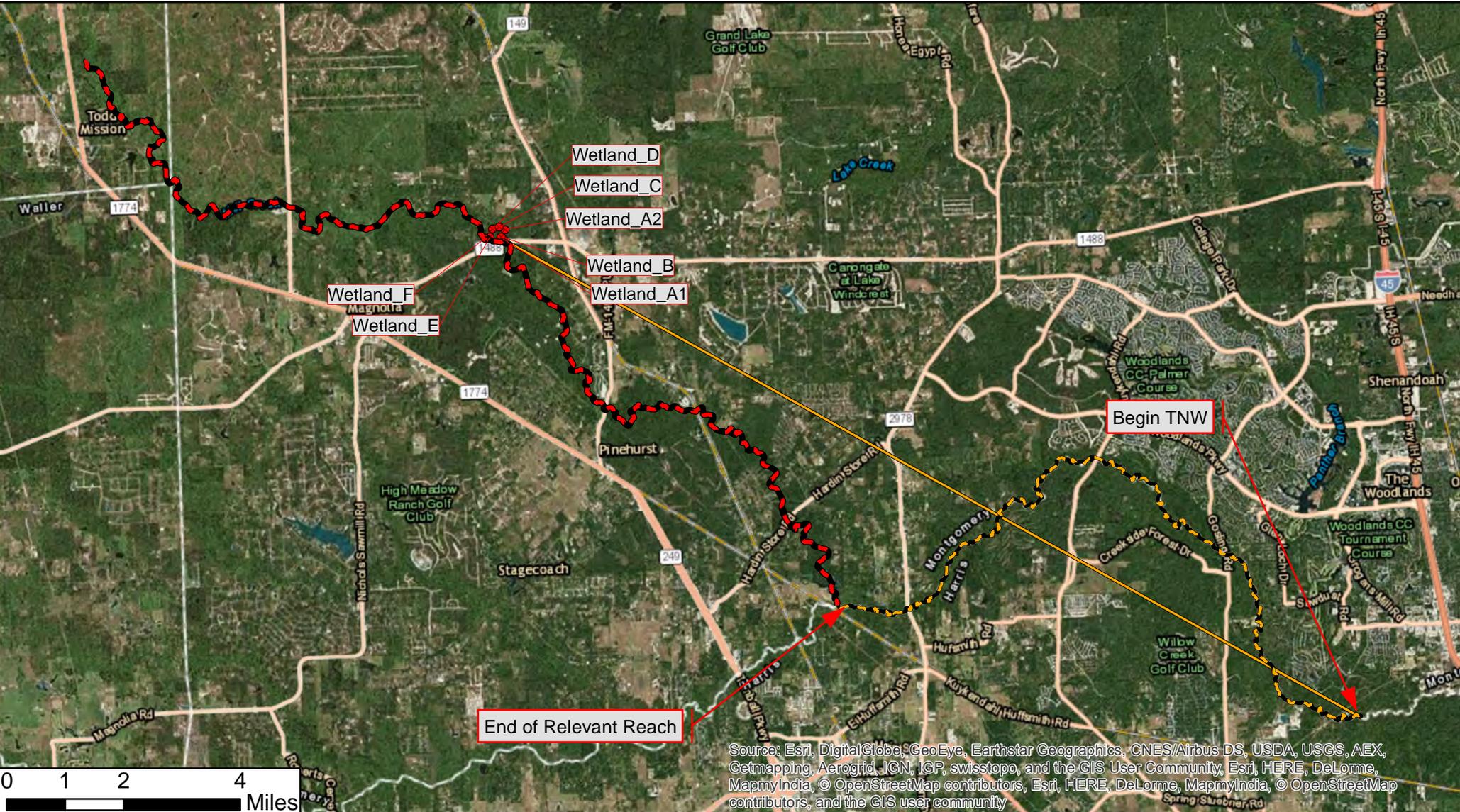


SWG-2016-00402
FM 1488 Corporation
100-Acre Undeveloped Tract
Approved Jurisdictional Determination
Magnolia, Montgomery County, Texas
Positive Significant Nexus
Topographic Detail

— Mill_Creek_Relevant_Reach (RPW) ~ 25.59 mi

Map Source: USGS Topographic Quadrangle
 Map Title: Magnolia East, Texas. 1962
 Photorevised 1979.
 Note: Review Area reflects neither property
 boundary nor ownership





SWG-2016-00402
FM 1488 Corporation
100-Acre Undeveloped Tract
Approved Jurisdictional Determination
Magnolia, Montgomery County, Texas
Positive Significant Nexus

- Mill_Creek_Relevant_Reach (RPW) ~ 25.59 mi
- River_Miles_to_TNW
- Aerial_Miles_to_TNW ~ 16.9

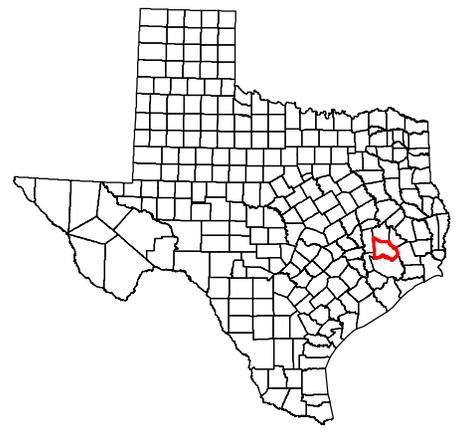
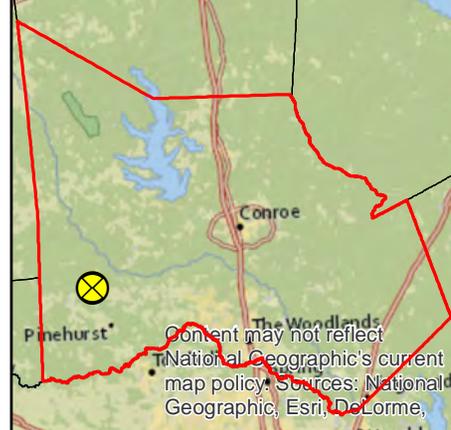
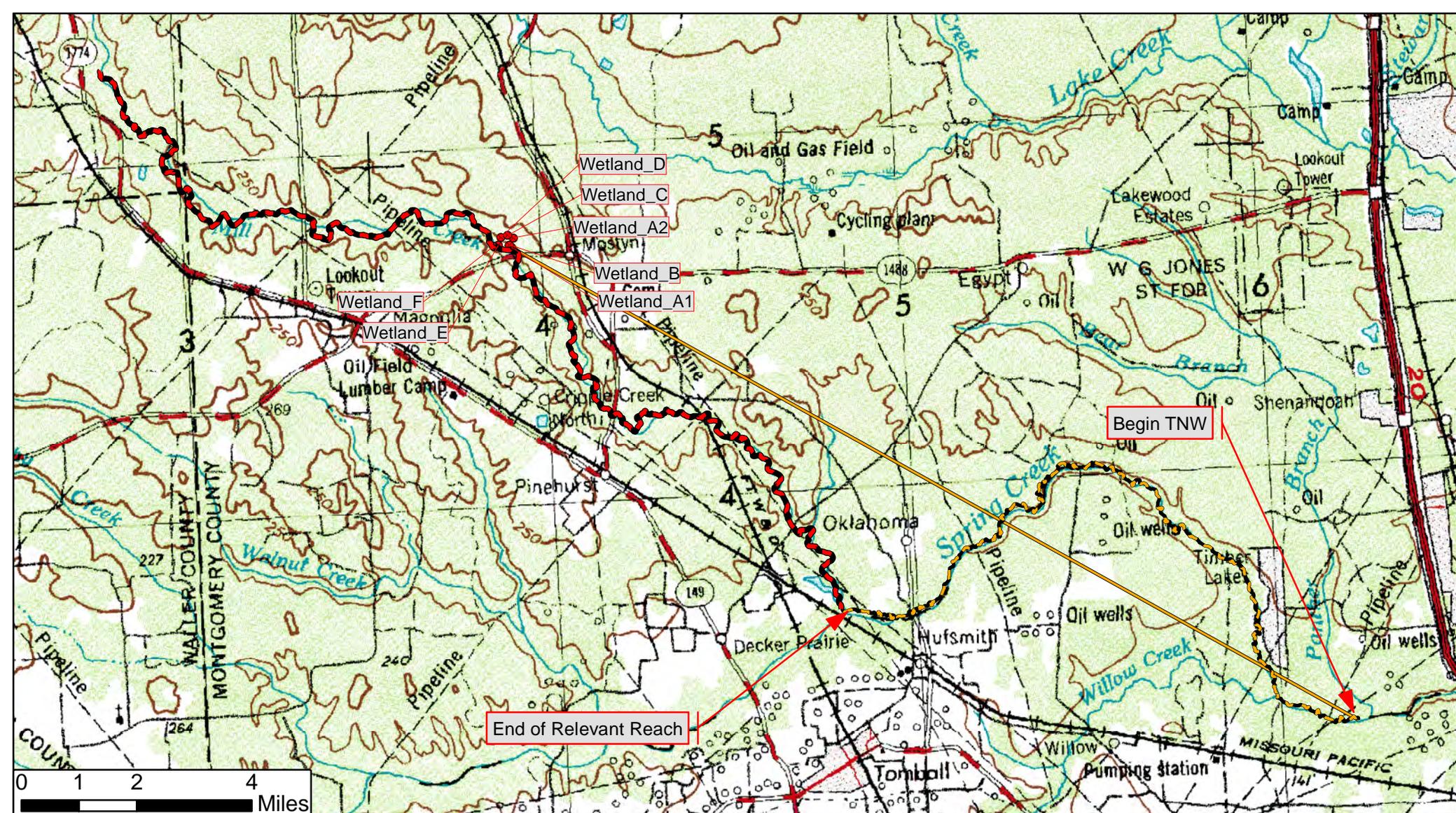
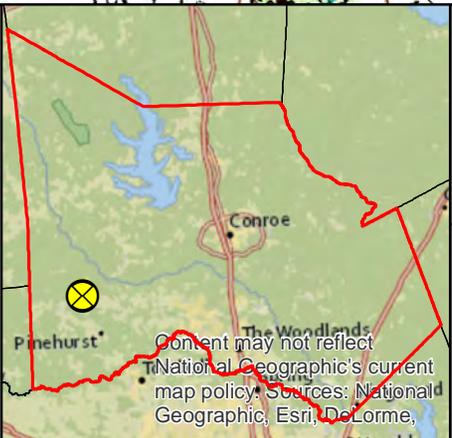


Image Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, etc.
 Note: Review Area reflects neither property boundary nor ownership



SWG-2016-00402
FM 1488 Corporation
100-Acre Undeveloped Tract
Approved Jurisdictional Determination
Magnolia, Montgomery County, Texas
Positive Significant Nexus

- Mill_Creek_Relevant_Reach (RPW) ~ 25.59 mi
- River_Miles_to_TNW
- Aerial_Miles_to_TNW ~ 16.9



Map Source: USGS Topographic Quadrangle
 Map Title: 1:250K Beaumont, Texas, 1978
 Note: Review Area reflects neither property boundary nor ownership

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