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): September 13, 2016

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Fort Worth District - Synergy Industrial Development - SWF-2016-00290

C. PROJECT LOCATION AND BACKGROUND INFORMATION: Synergy Industrial Development
State:Texas County/parish/borough: Tarrant City: Fort Worth
Center coordinates of site (lat/long in degree decimal format): Lat. 32.9350465° **N**, Long. -97.318332° **W**.
Universal Transverse Mercator: Zone 14
Name of nearest waterbody: BigBear Creek
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Trinity River
Name of watershed or Hydrologic Unit Code (HUC): Upper Sabine (HUC8: 12010001)
☒ 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: September 13, 2016
☒ Field Determination. Date(s): September 8, 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 waters[2] (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: 502 linear feet: ~4 width (ft) and/or 0.33 acres.
      Wetlands: 0.15 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Established by OHWM.**
      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: **Isolated waters including ponds and wetlands were identified as being isolated with no significant nexus to TNW**.

[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, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

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

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

(i) General Area Conditions:
Watershed size: 232**acres**
Drainage area: 232 **acres**
Average annual rainfall: 38.58 inches
Average annual snowfall: 0.50 inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☐ Tributary flows directly into TNW.
☒ Tributary flows through **2** tributaries before entering TNW.

Project waters are **30 (or more)** river miles from TNW.
Project waters are **2-5** river miles from RPW.
Project waters are **20-25** aerial (straight) miles from TNW.
Project waters are **2-5** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: .

Identify flow route to TNW[5]: Water from Ditch 1 (ephemeral stream) flows east, southeast out of the project site where it becomes Big Bear Creek downstream. Big Bear Creek eventually intersects the Trinity River.

[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.

Tributary stream order, if known: First Order.

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

Tributary is: ☐ Natural
☐ Artificial (man-made). Explain: .
☒ Manipulated (man-altered). Explain: The natural alignment extended to the south of the project site, but through past development, this channel was moved to the current location and resembles a ditch.

Tributary properties with respect to top of bank (estimate):
Average width: 4 feet
Average depth: 2 feet
Average side slopes: **2:1.**

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: .
Presence of run/riffle/pool complexes. Explain: .
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): 2-5 %

(c) Flow:
Tributary provides for: **Ephemeral flow**
Estimate average number of flow events in review area/year: **6-10**
Describe flow regime: Ephemeral flow through the channel occurs during and immediately following precipitation events.
Other information on duration and volume: .

Surface flow is: **Discrete and confined.** Characteristics: Flow is confined to the channel within the review areas.

Subsurface flow: **Unknown**. Explain findings: .
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☒ Bed and banks
☒ OHWM[6] (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: .

[6]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7]Ibid.

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

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

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

(i) Physical Characteristics:

(a) General Wetland Characteristics:

Properties:

Wetland size:0.15 acres

Wetland type. Explain: Herbaceous.

Wetland quality. Explain: Average clarity for silt/clay substrate.

Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:

Flow is: **Ephemeral flow**. Explain: .

Surface flow is**: Discrete and confined**

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: Wetland 3 is within 100 feet of the non-RPW, along the topographic drainage pattern.
  - ☐ Ecological connection. Explain: .
  - ☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW

Project wetlands are **25-30** river miles from TNW.

Project waters are **20-25** 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: Soils are saturated, infrequently inundated with average water clarity.

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:Herbaceous/spikerush - 50-75 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: **3**

Approximately (0.15) 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)
Wetland 3 (N)	0.09		
Wetland 4 (N)	0.04		
Wetland 5 (N)	0.02		

Summarize overall biological, chemical and physical functions being performed: Water from within Wetland 3 empties into Pond 1, which empties into Wetland 4. Wetland 4 empties into Ditch 1.A; Ditch 1.A empties into Wetland 5; Wetland 5 empties into Ditch 1.B; which then empties into a roadside drainage. This roadside drainage ditch empties into a stormwater culvert system that is directly connected to Big Bear Creek. Big Bear Creek ultimately empties into the West Fork Trinity River, a tributary of The Trinity River, which is a TNW. This provides an indirect hydrologic connection for these tributaries and wetlands to a TNW. These water features provide biological functions as habitat for amphibians and invertebrates, as well as mammals. The vegetation detritus provides the basis of a food web that supports the wildlife community downstream. These functions provide an indirect biological connection to the TNW. These water features provide for the nutrient and chemical uptake of waters that enter the tributary and wetlands and the waters that percolate into the soils. This nutrient and chemical uptake provide for a reduced nutrient/chemical loading in the downstream water column. This provides an indirect chemical connection to a TNW.

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: Water from the channel flows east southeast out of the project site where it eventually becomes Big Bear Creek downstream. Big Bear Creek eventually empties into the Trinity River, a TNW. This provides an indirect hydrologic connection for the channels and wetlands, to a TNW. These water features provide biological functions as habitat for amphibians and invertebrates, as well as mammals. The vegetation detritus provides the basis of a food web that supports the wildlife community downstream. These functions provide an indirect biological connection to the TNW. The channels and wetlands provide for the nutrient and chemical uptake of waters that enter the stream and the waters that percolate into the soils. This nutrient and chemical uptake provides for a reduced nutrient/chemical loading in the downstream water column; providing an indirect chemical connection to a TNW. It is IES' professional opinion that Ditches 1.A and 1.B, Pond 1, and Wetlands 3, 4, and 5 would be considered waters of the United States as they provide an indirect biological, chemical, and hydrological connection to a TNW. Therefore, in IES' professional opinion, these water features would be regulated under Section 404 of the CWA.

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

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

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   - ☐ TNWs: linear feet width (ft), Or, acres.
   - ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   - ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .
   - ☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: .

   Provide estimates for jurisdictional waters in the review area (check all that apply):
   - ☐ Tributary waters: linear feet width (ft).
   - ☐ Other non-wetland waters: acres.
     Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
   - ☒ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

   Provide estimates for jurisdictional waters within the review area (check all that apply):
   - ☒ Tributary waters: **502** linear feet **4**width (ft).
   - ☒ Other non-wetland waters: **0.29** acres.
     Identify type(s) of waters: **Impoundment of Non-RPW tributary.**

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 jurisidictional. Data supporting this conclusion is provided at Section III.C.

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

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
   - ☒ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

   Provide estimates for jurisdictional wetlands in the review area: **0.15** acres.

7. **Impoundments of jurisdictional waters.[9]**
   As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

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[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

☒ 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: **Two ponds are located in the project review area that collect only upland sheet flow. Four wetlands are located in topographic low depressions that only have connection to the Non-RPW through upland swales.**
☐ 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: 2.63 acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☒ Wetlands: 0.08 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: .
☒ 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: .
☐ Corps navigable waters' study: .

[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.*

- ☐ U.S. Geological Survey Hydrologic Atlas: .
  - ☐ USGS NHD data.
  - ☐ USGS 8 and 12 digit HUC maps.
- ☒ U.S. Geological Survey map(s). Cite scale & quad name: Keller - 1982.
- ☐ USDA Natural Resources Conservation Service Soil Survey. Citation: 2007 USDA NRCS Digital Soils Database.
- ☒ National wetlands inventory map(s). Cite name: ORM2.
- ☐ State/Local wetland inventory map(s): .
- ☒ FEMA/FIRM maps:FEMA FIRM Map Panel 48439C0055K. Effective Date: 09/25/2009.
- ☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- ☒ Photographs: ☒ Aerial (Name & Date): Google Earth 2016 - EDR Historic Aerial Photographs.
  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: .

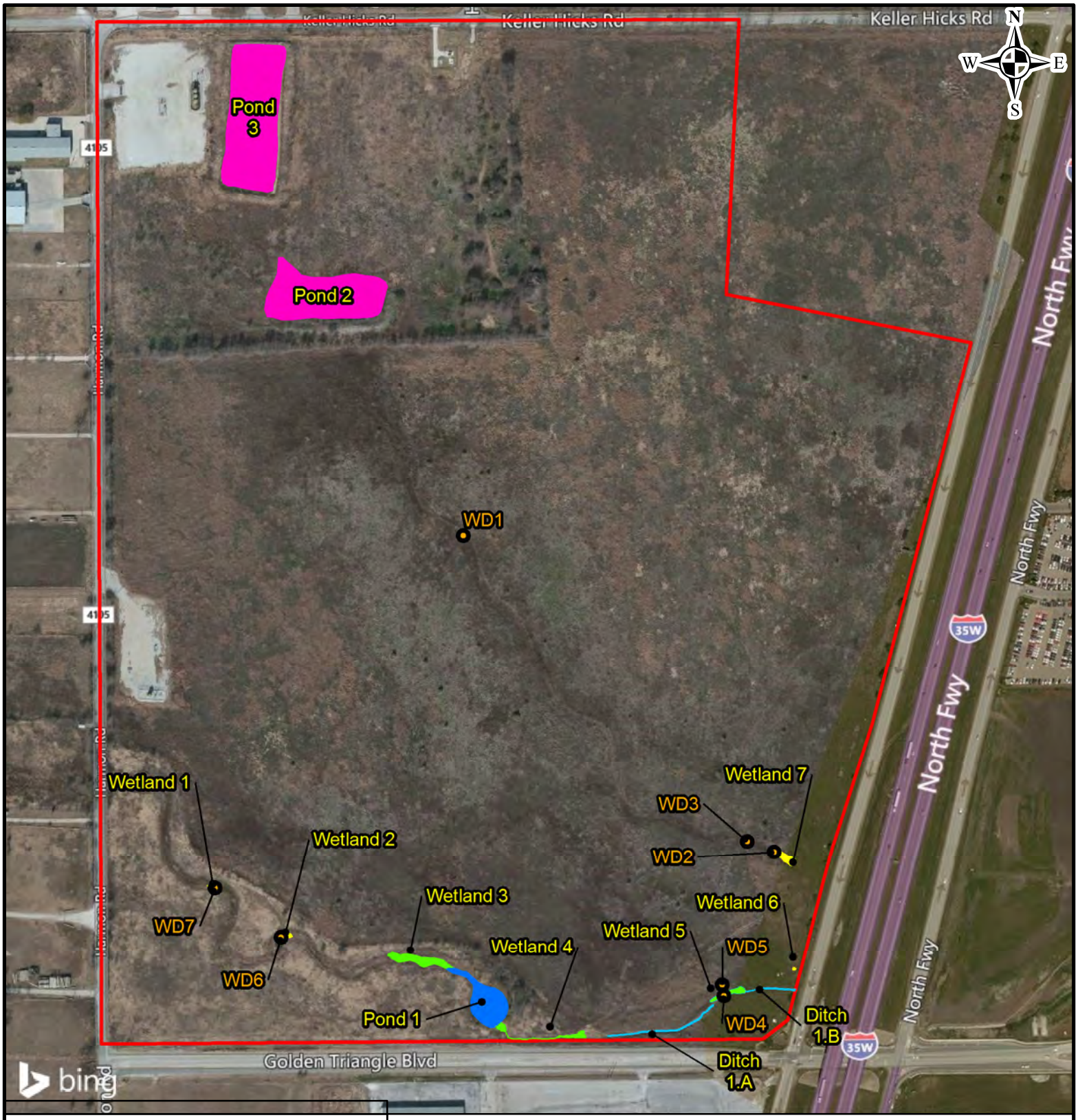

Figure 5
Water Features Identified Within the Project Site

County: Tarrant
State: Texas
Date map created: 07/20/2016
Source: (c) 2010 Microsoft Corporation and its data suppliers

Project Area

Features that meet a definition of a waters of the United States

- Ditch
- Pond
- Wetland

Features that do not meet a definition of a waters of the United States

- Wetland
- Pond

1 inch = 400 feet

0 400 800 Feet

Table 1. Water Features Delineated within the Project Site

Water Identification	Post-*Rapanos* Water Feature Classification	Water of the United States	Hydrologic Characteristics	Length (Linear Feet)	Area (Acre)
Ditch 1 (1.A and 1.B)	Non-RPW	Yes	Ephemeral	502	0.04
Pond 1	Impoundment of a Non-RPW	Yes	Inundated	N/A	0.29
Pond 2	Isolated Waters	No	Inundated	N/A	1.08
Pond 3	Isolated Waters	No	Inundated	N/A	1.55
Wetland 1	Isolated Waters	No	Seasonally Saturated	N/A	0.01
Wetland 2	Isolated Waters	No	Seasonally Saturated	N/A	0.02
Wetland 3	Wetland Adjacent to Non-RPW	Yes	Seasonally Saturated	N/A	0.09
Wetland 4	Wetland Adjacent to Non-RPW	Yes	Seasonally Saturated	N/A	0.04
Wetland 5	Wetland Adjacent to Non-RPW	Yes	Seasonally Saturated	N/A	0.02
Wetland 6	Isolated Waters	No	Seasonally Saturated	N/A	0.01
Wetland 7	Isolated Waters	No	Seasonally Saturated	N/A	0.04
			Jurisdictional Total	**502**	**0.48**

Waters of the United States

Pond 1 was identified in the field as a small, round stock pond, constructed between the years of 1950 and 1968. The pond appears to have been constructed by placing an earthen embankment across a remnant channel. Pond 1 was delineated at the OHWM identified by the waterline, associated wetland fringe and a natural line impressed into the landscape. Evidence of flow from the pond to the downstream channel was identified in the field. As an impoundment of a non-RPW a significant nexus test would be required to determine the jurisdictional nature of Pond 1 under Section 404 of the CWA.

Ditches 1.A and **1.B** were located along the southern boundary of the project site, flowing from west to east. These ditches were identified as the scours within a channel, which was illustrated on the USGS topographic map as the headwaters Big Bear Creek. Previous land use and development of the surrounding areas has resulted in an alteration of hydrology supplying this channel. As such, the channel has transitioned into a mixture of vegetated swale, depressional wetlands, and discontinuous scours. Ditch 1.A was identified as a shallow discontinuous scour, while Ditch 1.B was a deeply incised, possibly man-made ditch, which terminates at the eastern property boundary. Review of historic aerial photographs (2012 through 1942, **Attachment D**) identifies a defined bed and bank within the channel in the 1942 and 1950 aerial photographs; however, no other aerial photograph displays any evidence of a bed and bank within the channel. A portion of the drainage appeared to have been channelized along Golden Triangle Boulevard within the earliest available photograph in 1942. Between the years of 1990 to 1995, this roadside drainage appeared to have been altered and redirected north of its original course, to the current location. No water was observed within the limits of the ditch at the time of survey. Ditches 1.A and 1.B lacked a continuous bed and bank or OHWM, as such these features would not meet a definition of a tributary. However, as these ditches were the result of a relocation of a roadside drainage, it is IES' professional opinion that Ditches 1.A and 1.B would be considered ephemeral ditches which replace or relocate a water of the United States. As a replacement of a non-RPW, a significant nexus test is required to determine the jurisdictional nature of the water feature under Section 404 of the CWA.

Wetlands 3, 4, and **5** were identified as herbaceous depressional wetlands within the limits of the relocated channel of Ditch 1. Wetland 3 appeared as an extension of the wetland fringe of Pond 1, likely inundated for short durations when the pond is at, or exceeding, its holding capacity. Wetland 4 extended from a low point along the embankment of Pond 1, along a narrow depressional "rut" caused by vehicle traffic. Wetland 5 was a small herbaceous wetland located between the scours of Ditch 1.A and Ditch 1.B. The dominant hydric vegetation was common spike rush (*Eleocharis palustris*), frogfruit (*Lippia nodiflora*), and Britton's sedge (*Carex tetrastachya*).