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): 2/18/2022

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Fort Worth District, SWF-2021-00517; Lantana Solar Project

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: Texas County: Wise City: Krum
Center coordinates of site (lat/long in degree decimal format): Lat. 33.306745 **N**, Long. -97.375101 **W**.
Universal Transverse Mercator:
Name of nearest waterbody: South Hickory Creek
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Trinity River
Name of watershed or Hydrologic Unit Code (HUC): 1203010605
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc.) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☐ Office (Desk) Determination. Date:
☒ Field Determination. Date(s): 1/13/2022

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.

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: linear feet: width (ft) and/or acres.
Wetlands: acres.

c. Limits (boundaries) of jurisdiction based on: **1987 Delineation Manular and/or OHWM indicators.**
Elevation of established OHWM (if known): Unknown.

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

[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.

☒ **There are 80 erosional features (EF01-EF80), 33 vegetated swales (VS01-VS33), 8 relic channels (RC01-RC08), 7 isolated wetlands (EW02, EW35, EW40, EW47, EW52, EW59, EW60), 4 upland stock tanks (UST01-UST04), 2 isolated open waters (OW02 and OW06), and 2 drainage ditches (DD01-DD02). All features are not waters of the US due to being isolated, preamble waters, not waters, or are otherwise administratively excluded. Characteristics of each are included in the attached table.**

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. **There are 10 relic channels (RC01-RC10) that have no continuous connection (OHWM) to waters of the US, 7 isolated wetlands areas (EW02, EW35, EW40, EW47, EW52, EW59, EW60) that are not adjacent to waters of the US, and 2 open water areas (OW02 and OW06) that are disconnected from any waters of the US. Acreage and linear feet of each feature are in the attached table**.

☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).

☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain:

☒ Other: (explain, if not covered above): **There are 80 erosional features (EF01-EF80), 33 vegetated (non-wetland) swales (VS01-VS33), 4 preamble upland stock tanks (UST01-UST04), and 2 drainage ditches (DD01-DD02) in the assessment area. Acreage and linear feet of each feature are in the attached table.**

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: .
☐ 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: .
☐ 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: .
☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
☐ National wetlands inventory map(s). Cite name: .
☐ State/Local wetland inventory map(s): .
☐ FEMA/FIRM maps: Online viewer.
☐ 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
☐ Photographs: ☐ Aerial (Name & Date): .
  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: .

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SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: SWF-2021-00517 Lantana Solar Project, CENTRAL PORTION ONLY

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: **Texas** County: **Denton** City: **Krum**
Center coordinates of site (lat/long in degree decimal format): Lat. 33.305853 **N**, Long.-97.367286 **W**.
Universal Transverse Mercator:
Name of nearest waterbody: **South Hickory Creek**
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Lewisville Lake**
Name of watershed or Hydrologic Unit Code (HUC): **12030106**
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc.) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☐ Office (Desk) Determination. Date:
☒ Field Determination. Date(s): **1/13/2022**

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.

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: **Perennial 5,111 feet; intermittent 1698 feet; ephemeral 3610 feet. See attached table**
      Wetlands: **2.539** acres.

   c. **Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manular and/or OHWM indicators.**
      Elevation of established OHWM (if known): Unknown.

[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).

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

☐ .

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 <u>non-TNWs tributaries</u> that flow directly or indirectly into TNW

(i) General Area Conditions:

Watershed size: **25250 acres**

Drainage area: **1428 acres**

Average annual rainfall: **39.1 inches**

Average annual snowfall: **0.4 inches**

(ii) Physical Characteristics:

(a) <u>Relationship with TNW:</u>

☐ Tributary flows directly into TNW.

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

Project waters are **20 river miles** from TNW.

Project waters are **less than 1 river mile** from RPW.

Project waters are **19 aerial (straight) miles** from TNW.

Project waters are **less than 1 aerial (straight) miles** from RPW.

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

Identify flow route to TNW[5]: **South Hickory Creek starts as an ephemeral channel that becomes intermittent which receives flow from a 2nd ephemeral channel. South hickory Creek becomes perennial (an RPW) shortly after that confluence and enters a large flood control impoundment and pool and leaves the site. South Hickory Creek flows into Hickory Creek which flows into Lewisville Lake (TNW).**

Tributary stream order, if known: **Ephemerals and intermittent are 1st order and perennial is 2nd order.**

(b) <u>General Tributary Characteristics (check all that apply):</u>

Tributary is: ☒ Natural. Explain: **No development in contributing watershed other than roads and 1 well pad.**

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[3] Supporting documentation is presented in Section III.F.

[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.

☐ Artificial (man-made). Explain:
☒ Manipulated (man-altered). Explain: **Are subject to agricultural practices(terracing) and cattle grazing. All tributaries are captured in large flood control impoundment that was constructed on perennial stream (South Hickory Creek and 1 ephemeral channel which has perennial open water and releases downstream.**

Tributary properties with respect to top of bank (estimate):
Average width: **3-6 feet**
Average depth: **5 feet**
Average side slopes: **2:1.**

Primary tributary substrate composition (check all that apply):

☒ Silts	☒ Sands	☐ Concrete
☐ Cobbles	☒ Gravel (in lower reach)	☐ Muck
☐ Bedrock	☒ Vegetation. **Type -herbaceous/20% cover**	
☐ Other. Explain: .		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: **Moderate erosion in areas and stable in others. Cattle presence sloughs banks.**

. Presence of run/riffle/pool complexes. Explain: **N/A**.
Tributary geometry: **Meandering**
Tributary gradient (approximate average slope): **1-2** %

(c) Flow:

Tributary provides for: **There are 6 ephmeral reaches, 1 intermittent reach, and 1 perennial reach. Ephemerals flow due to precipitation events, intermittent is primarily diversion by ephmeral contributions and possibly groundwater, while the perennial reach flows year round and influenced seasonally.**
Estimate average number of flow events in review area/year: **Ephemerals 6+, intermittent 6+, perennial always with seasonal variation.**
Describe flow regime: **already described**
Other information on duration and volume: .
Surface flow is: **confined in steep sided channels.** Characteristics:.
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/debris deposits (foreshore)	☐ physical markings;
☐ physical markings/characteristics	☐ vegetation lines/changes in vegetation types.
☐ tidal gauges	
☐ other (list):	

[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.

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.). Explain: Water is clear during visit but expected to be turbid in upper reacehs given status of watershed during higher flow conditions. Flow below the dam is clear. All flow supports flows in lower reaches of South Hickory Creek. This includes supporting hydrology to perennial pools which support fish habitat in drier periods as well as supports flow conditions to allow for motile species to vacate areas into more permanent areas.

Identify specific pollutants, if known: Agricultural from livestock (e. coli).

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

☐ Riparian corridor. Characteristics (type, average width): .

☒ Wetland fringe. Characteristics: **Wetlands exist as a fringe on the flood control lake in some areas toward its tail, in reaches of channel in lieu of open water for the intermittent reach, and fringe for perennial sections.**

☒ Habitat for:

☐ Federally Listed species. Explain findings: .

☒ Fish/spawn areas. Explain findings: **The perennial condition of the lake supports a fish population that can use fringe vegetated areas for refugia and spawning areas. The perennial stream can also provide bank cover in vegetated areas. The intermittent reach has pool areas as well with vegetated & wetland fringe that can provide cover.**

☐ Other environmentally-sensitive species. Explain findings: .

☒ Aquatic/wildlife diversity. Explain findings: **Dam releases and spilling supports flows in lower reaches of perennial stream to TNW. Flows from ephemeral and intermittent stream support perennial nature of the lake and the stream as well as intermittent reaches where RPW reach beings. This includes supporting hydrology to perennial pools which support fish habitat in drier periods as well as supports flow conditions to allow for motile species to vacate areas into more permanent areas.**

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

(i) Physical Characteristics:

(a) <u>General Wetland Characteristics:</u>

Properties:

Wetland size: **2.539** acres

Wetland type. **Emergent** Explain: **See data sheets and vegetation cover data.**

Wetland quality. **Average** Explain: **Knowledge of TXRAM and its scoring regime would result in average scores due to cover types, channel conditions, and presence of livestock access to these areas.**

Project wetlands cross or serve as state boundaries. **N/A**

(b) <u>General Flow Relationship with Non-TNW</u>:

Flow is: **Bi-directional**. Explain: **Bankfull events charge fringe wetland systems and fringe wetlands release stored water back to the channel. Uni-directional flow also occurs in wetlands that exist in place of an open water channel where flows are captured in the wetland channel and continue through to areas where the channel becomes strictly open water or with a fringe.**

Surface flow is**: confined where banks are steep and out of channel where banks shallower and adjacent areas are not highly elevated which is where adjacent wetlands exist as old channel features. As with fringe wetlands this can be surficial bi-directional but also unidirectional where adjacent wetlands do not have clear surface connections. Such wetland features can also release water back to the channel through percolation through soil profiles and act as a delayed release. This is what may be occurring where the channel changes for intermittent to perennial.**

Characteristics: **The area has highly erodible soils with substantial amounts of sand which allow for reliable access between adjacent wetlands and the channel.**

Subsurface flow: **Unknown** Explain findings: **As described above this condition may exist where the channel changes from intermittent to perennial.**

☐ Dye (or other) test performed: .

(c) <u>Wetland Adjacency Determination with Non-TNW:</u>

☒ Directly abutting

☒ Not directly abutting

☒ Discrete wetland hydrologic connection. Explain: **See general flow relationship between wetlands the streams. Adjacent wetland features are in old meander scars in areas with low banks and sandy soils.**

☒ Ecological connection. Explain: **Wetlands are immediately adjacent to channel and also separate by uplands or within swale areas where OHWM does not exist or is reflected by wetland limits. Discontinuous interchange between channel and wetland exists forming a generally contiguous feature.**

☐ Separated by berm/barrier. Explain: There is an earthen berm east of the wetland.

(d) Proximity (Relationship) to TNW

Project wetlands are **more than 20 river miles** from TNW.
Project waters are **19 aerial (straight) miles** from TNW.
Flow is from: **wetland the TNW.**
Estimate approximate location of wetland as within the 10-year or greater 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: **See previous descriptions concerning watershed condition and water quality for reaches.**

Identify specific pollutants, if known: **E. coli from cattle presence.**

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

☐ Riparian buffer. Characteristics (type, average width): .

☒ Vegetation type/percent cover. **Herbaceous and generally 100 percent cover. Explain: See data sheets for specific information for wetlands.**

☒ Habitat for:

☐ Federally Listed species. Explain findings: .

☒ Fish/spawn areas. Explain findings: **Previously described for channels.**

☐ Other environmentally-sensitive species. Explain findings: .

☒ Aquatic/wildlife diversity. Explain findings: **Vegetation areas provide cover/refugia for various species and interface between uplands and open water areas. Water areas are water source for wildlife.**

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

All wetland(s) being considered in the cumulative analysis: 50
Approximately (**2.6**) acres in total are being considered in the cumulative analysis.
For each wetland, specify the following: **See attached table for break out**

Feature	Directly abuts (Y/N)?	Size (in acres)
EW3, 4, 11, 34, 50, 51, 53 & 56	No	0.538
EW2, 5-10, 12-33, 41-46, 48, 49, 54, 55, 57, 58, 70, 71	Yes	2.028

Summarize overall biological, chemical and physical functions being performed: **Given the limited amount of wetlands contained in the drainage area (2.6 acres out of 1400+ acres) and in light of the descriptions of the functions previously included in this form, biological, physical and chemical functions exist and are performed by the wetlands. TXRAM conditional assessment used by the Fort Worth District fully documents the suite of functions performed by wetlands in its AOR and estimated scores would be in the 50s (average). The exceptionally sparse amount of wetland in area furthers the importance of these small but critical areas.**

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: **Connectivity of the aquatic resources addressed in this form have a clear ecological connection to RPWs and TNWs locate downstream. The scarcity of aquatic resources heightens their importance and the functions they provide and contribute significantly to the downstream areas.**

2. **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: 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: **See the report and above** acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**

[8] See 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 jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: **See the report and above** 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, 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: **See the report and above** 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.," **The stream above the 27.2 acre flood control lake is perennial in nature.** 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 <u>WHICH COULD AFFECT INTERSTATE COMMERCE,</u> 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 <u>solely</u> 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 <u>sole</u> 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.

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[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.***

☐ 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: .
☒ 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: .
☒ U.S. Geological Survey Hydrologic Atlas: .
  ☐ USGS NHD data.
  ☒ USGS 8 and 12 digit HUC maps. – online maps
☒ U.S. Geological Survey map(s). Cite scale & quad name:.
☒ USDA Natural Resources Conservation Service Soil Survey. Citation: Denton County.
☒ National wetlands inventory map(s). Cite name: .
☐ State/Local wetland inventory map(s): .
☒ FEMA/FIRM maps: Online viewer.
☐ 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
☒ Photographs: ☐ Aerial (Name & Date): GoogleEarth and NAIP 2018.
  or ☐ Other (Name & Date): .
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☐ Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: .

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

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): 2/18/2022

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Fort Worth District, SWF-2021-00517 EASTERN PORTION ONLY

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: **Texas** County: **Denton** City: **Krum**
Center coordinates of site (lat/long in degree decimal format): Lat. 33.303768 **N**, Long. -97.350802 **W**.
Universal Transverse Mercator:
Name of nearest waterbody: **South Hickory Creek**
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Lewisville Lake**
Name of watershed or Hydrologic Unit Code (HUC): **12030106**
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc.) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☐ Office (Desk) Determination. Date:
☒ Field Determination. Date(s): **1/13/2022**

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.

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: See attached table for each feature and its size
Non-wetland waters: **ES11 and ES12 totaling 2413 and 325 linear feet each**: **OW01 totaling 2.195 acres**.
Wetlands: **0.047** acres.

c. Limits (boundaries) of jurisdiction based on: **1987 Delineation Manular for wetlands and OHWM indicators for streams.**
Elevation of established OHWM (if known): Unknown.

[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).

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

☐ .

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 tributaries that flow directly or indirectly into TNW

(i) General Area Conditions:

Watershed size: **acres**

Drainage area: 130 **acres**

Average annual rainfall: 39.1 inches

Average annual snowfall: 0.4 inches

(ii) Physical Characteristics:

(a) Relationship with TNW:

☐ Tributary flows directly into TNW.

☒ Tributaries **(ES11 & ES12)** flow through **2 other** tributaries before entering TNW.

Project waters are more than 20 river miles from TNW.

Project waters are approximately less than 1 river mile from RPW (South Hickory Creek).

Project waters are 19.5 aerial (straight) miles from TNW.

Project waters are less than less than 1 aerial (straight) miles from RPW.

Project waters cross or serve as state boundaries. Explain: N/A.

Identify flow route to TNW[5]: Unnamed tributary to South Hickory Creek (RPW) to Hickory Creek (RPW) to Lewisville Lake (TNW).

Tributary stream order, if known: 1st.

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

Tributary is: ☒ Natural. Explain: **No development in watershed upstream of features.**

☐ Artificial (man-made). Explain:

☒ Manipulated (man-altered). Explain: **Grazing and agricultural practices have altered the streams and an impoundment at lower end has been constructed on it. Road exists at lower end boundary.**

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

Average width: **2** feet

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[3] Supporting documentation is presented in Section III.F.

[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.

Average depth: **4** 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: **Area has highly erodible soils and channel lengths are growing due to erosion. Cattle grazing and trampling also assists in instability.**
. Presence of run/riffle/pool complexes. Explain: **N/A**.
Tributary geometry: **Meandering**
Tributary gradient (approximate average slope): **1-2** %

(c) Flow:
Tributary provides for: **Ephemeral flow**
Estimate average number of flow events in review area/year: **6-10**
Describe flow regime: Only when precipitation event occur and pond spills.
Other information on duration and volume: .
Surface flow is: **Discrete and confined.** Characteristics:.
Subsurface flow: **Unknown**. Explain findings: .
☐ Dye (or other) test performed: .
Tributary has (check all that apply):
☒ 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/debris deposits (foreshore)	☐ physical markings;
☐ physical markings/characteristics	☐ vegetation lines/changes in vegetation types.
☐ tidal gauges	
☐ other (list):	

(iii) Chemical Characteristics:
Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.). Explain: Water is clear during visit but expected to be turbid given status of watershed during higher flow conditions. Supports flows in lower reaches of ephemeral stream as well as intermittent reaches where RPW reach beings. This includes supporting hydrology to perennial pools which support fish habitat in drier periods as well as supports flow conditions to allow for motile species to vacate areas into more permanent areas.
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:

[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.

☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☐ Other environmentally-sensitive species. Explain findings: .
☒ Aquatic/wildlife diversity. Explain findings: **Supports flows in lower reaches of ephemeral stream as well as intermittent reaches where RPW reach beings. This includes supporting hydrology to perennial pools which support fish habitat in drier periods as well as supports flow conditions to allow for motile species to vacate areas into more permanent areas.**

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: **0.047** acres

Wetland type. Emergent Explain: See data sheet for specific emergent species

Wetland quality. Explain: Average. Typical condition for fringe wetlands on stock tanks.

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

(b) General Flow Relationship with Non-TNW:

Flow is: Ephmeral. Explain: Watershed is ephemeral in nature. Wetland is fringe on stock tank. When pond elevation raises wetland is inundated. When pond drops groundwater can flow from the wetland to the pond

Surface flow is**: Temporary as described above**

Characteristics: .

Subsurface flow: **Yes.** Explain findings: See description above.

☐ 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: There is an earthen berm east of the wetland.

(d) Proximity (Relationship) to TNW

Project wetlands are more than 20 river miles from TNW.

Project waters are less than 20 aerial (straight) miles from TNW.

Flow is from: wetland to navigable waters via non-RPW and RPWs**.**

Estimate approximate location of wetland as within the 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 discharging from the fringe wetland to the pond and downstream would range from turbid during high flow conditions and clear during drier periods of the year. Inundation/saturation and drying conditions in wetland supports higher levels of oxidation reduction reactions which contribute to water quality in the pond and downstream receiving reaches.

Identify specific pollutants, if known: Ag inputs from cattle which use stock tank as water supply and wetland vegetation for food.

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

☐ Riparian buffer. Characteristics (type, average width): .

☐ Vegetation type/percent cover. Emergent Explain:.

☒ Habitat for:

☐ Federally Listed species. Explain findings: .

☐ Fish/spawn areas. Explain findings: .

☐ Other environmentally-sensitive species. Explain findings: .

☒ Aquatic/wildlife diversity. Explain findings: Wetland fringe on pond can provide cover for water beetles and other invertebrates in the stock pond.

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

All wetland(s) being considered in the cumulative analysis: 1

Approximately (0.047) 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)
Y	0.047		

Summarize overall biological, chemical and physical functions being performed: Habitat cover, water quality and delayed hydrology releases for ephemeral and intermittent reaches.

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: As described above, the wetland performs habitat and water quality functions and would be classified as average. Given the small amount of stream and wetland habitat in the watershed, importance of such functions, including hydrologic support downstream, are critical to the full suite of ecological processes in Hickory Creek which contributes to the health and condition of Lewisville Lake.

2. **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: **ES11 and ES12 totaling 2413 and 325 linear feet each.**

☒ Other non-wetland waters: **OW01 totaling 2.195 acres.**

Identify type(s) of waters: **Stock tank.**

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, 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: **0.047** 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).

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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.

[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.*

☐ 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: .
☒ 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: .
☒ 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: Denton West 1974.
☒ USDA Natural Resources Conservation Service Soil Survey. Citation: Denton County Survey and Web Survey.
☒ National wetlands inventory map(s). Cite name: Denton West 1992.
☐ State/Local wetland inventory map(s): .
☒ FEMA/FIRM maps: Online viewer.
☐ 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date): NAIP 2018 and all Google Earth Imagery available.
  or ☐ Other (Name & Date): .
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☐ Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: .

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

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): 2/18/2022

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: SWF-2021-00517 Lantana Solar Project, WESTERN SECTION ONLY

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: **Texas** County: **Wise** City: **Krum**
Center coordinates of site (lat/long in degree decimal format): Lat. 33.299188 **N**, Long. -97.391715 **W**.
Universal Transverse Mercator:
Name of nearest waterbody: **Denton Creek**
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Grapevine Reservoir**
Name of watershed or Hydrologic Unit Code (HUC): **1203010605**
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc.) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☐ Office (Desk) Determination. Date:
☒ Field Determination. Date(s): **1/13/2022**

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.

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: See attached table for each feature and its size
Non-wetland waters: **IS02, ES04, ES05, ES09 & ES10, total 315, 235, 50, 2507, and 508** linear feet each: and **OW03 and OW04 are 1.258 and 0.09** acres each.
Wetlands: **13 separate wetlands totaling 1.865** acres.

c. Limits (boundaries) of jurisdiction based on: **1987 Delineation Manular for wetlands and OHWM indicators for streams.**
Elevation of established OHWM (if known): Unknown.

[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).

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

☐ .

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 tributaries that flow directly or indirectly into TNW

(i) General Area Conditions:

Watershed size: 21,527 **acres**

Drainage area: 361.4 **acres**

Average annual rainfall: 37 inches

Average annual snowfall: 2 inches

(ii) Physical Characteristics:

(a) Relationship with TNW:

☐ Tributary flows directly into TNW.

☒ Tributaries (**IS02, ES04, ES05, ES09 & ES10**) flow through **1 other** tributary before entering TNW.

Project waters are 30 or more river miles from TNW.

Project waters are 2 river miles from RPW.

Project waters are 20 aerial (straight) miles from TNW.

Project waters are less than 2 aerial (straight) miles from RPW.

Project waters cross or serve as state boundaries. Explain: N/A.

Identify flow route to TNW[5]: All 5 unnamed tributaries contribute to Denton Creek (RPW) to Grapevine Lake (TNW).

Tributary stream order, if known: 1st order for all 5 tributaries.

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

Tributary is:

☒ Natural. Explain:

☐ Artificial (man-made). Explain:

☒ Manipulated (man-altered). Explain: Grazing and agricultural practices have altered the streams in the western extent of the project area. In addition, an impoundment is present within the drainage for ES04 and IS02.

---

[3] Supporting documentation is presented in Section III.F.

[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 properties with respect to top of bank (estimate):
Average width: 3 feet
Average depth: 1 to 3 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: **Generally stable but some areas unstable due to cattle grazing and trampling.**

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

Tributary geometry: **Meandering**

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

(c) Flow:

Tributary provides for: Intermittent and ephemeral flows

Estimate average number of flow events in review area/year: **20 or more for depending on weather for ephemeral and less for intermittent**

Describe flow regime: **When the impoundment on the western intermittent drainage overtops the outfall the volume of flow is likely high but duration is relatively short. The eastern drainage likely experiences flow during the wet season in response to precipitation events.**

Other information on duration and volume: .

Surface flow is: confined**.** Characteristics: **limited to channel.**

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/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.). **Ag lands with cattle grazing. Water quality likely has some suspended sediment during flow events. Intermittent stream reach has clear water from seepage from impoundment.**
Explain:.

Identify specific pollutants, if known: **Cattle inputs and sediment from erosional areas**.

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

[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.

☒ Riparian corridor. Characteristics (type, average width): The eastern drainage contains fencing around the stream corridor that was built to exclude cattle. This fencing was put in place by the Texas Comission on Environmental Quality as a wetland mitigation area. This fencing generally provides a 130 foot buffer around this drainage.

☐ 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: Stream areas provide water source for wildlife utilization. Intermittent stream has structure that can allow for temporary fish habitat including dispersal of fish from upstream stock tank when that waterbody spills. In conjunction with indirect hydrologic connections, location of adjacent riparian zones that have contiguous areas with streams allow wildlife (e.g., mice, skunk, deer) to access water supply and food sources in the channel. Riparian zones provide general wildlife corridors and cover for bedding of larger wildlife since the areas are not subject to agricultural perturbances. Trees provide shading for stream reaches which contributes to cooler water temperatures and woody debris and detritus for in-stream species use or contributions to downstream reaches.

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

(i) Physical Characteristics:

(a) <u>General Wetland Characteristics:</u>

Properties:

Wetland size: **1.865** acres

Wetland type. **Emergent** Explain: **The western drainage (int) contains wetlands that have been disturbed by cattle. The eastern drainage contains wetlands that have likely been formed by rock check dams as well as in channel depressions. The majority of the wetlands are are linear and/or fringe.**

Wetland quality. Explain: Average. **No conditional assessment run but due to limited plant species diversity, cattle present, and emergent condition average TXRAM scored would occur.**

Project wetlands cross or serve as state boundaries. Explain: **N/A**.

(b) <u>General Flow Relationship with Non-TNW</u>:

Flow is: Intermittent and ephemeral. Explain: Based on channel characteristics and hydrologic supply.

Surface flow is**: Discrete and confined**

Characteristics: .

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

☐ Dye (or other) test performed: .

(c) <u>Wetland Adjacency Determination with Non-TNW:</u>

☒ Directly abutting

☒ Not directly abutting

☒ Discrete wetland hydrologic connection. Explain: **Short stretches of wetland swales exist rather than open water channels and maintain connectivity between the channel and wetlands. Small reaches of upland swales exist but flow indicators and presence of wetlands allow for continuity in hydrology.**

☒ Ecological connection. Explain: **Wetlands are immediately adjacent to channel and also separate by uplands or within swale areas where OHWM does not exist or is reflected by wetland limits. Discontinuous interchange between channel and wetland exists forming a generally contiguous feature.**

☐ Separated by berm/barrier. Explain: There is an earthen berm east of the wetland.

(d) <u>Proximity (Relationship) to TNW</u>

Project wetlands are **more than 20** river miles from TNW.

Project waters are **less than 20** aerial (straight) miles from TNW.

Flow is from: **wetland to tributary to RPW to TNW**.

Estimate approximate location of wetland as within the **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:.

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

☒ Riparian buffer. Characteristics (type, average width): **The eastern drainage contains fencing around the stream corridor that was built to exclude cattle. This fencing was put in place by the Texas Comission on Environmental Quality as a wetland mitigation area. This fencing generally provides a 130 foot buffer around this drainage.**

☒ Vegetation type/percent cover. **Emergent and 100 percent in most areas with some OW areas**. Explain:.

☒ Habitat for:

☐ Federally Listed species. Explain findings: .

☐ Fish/spawn areas. Explain findings: .

☐ Other environmentally-sensitive species. Explain findings: .

☒ Aquatic/wildlife diversity. Explain findings: **Non-game and game species can occupy areas and use streams for water supply.**

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

All wetland(s) being considered in the cumulative analysis: 13

Approximately (**1.865**) 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)
EW36 Y	**0.425**	**EW64 Y**	**0.017**
EW37 Y	**0.252**	**EW65 Y**	**0.019**
EW38 Y	**0.054**	**EW66 Y**	**0.006**
EW39 Y	**0.226**	**EW67 Y**	**0.046**
EW61 Y	**0.388**	**EW68 Y**	**0.028**
EW62 Y	**0.035**	**EW69 Y**	**0.352**
EW63 Y	**0.017**		

Summarize overall biological, chemical and physical functions being performed: **EW36-EW39 and EW63-EW69 are all emergent wetlands that exists on channel or directly abut a regulated water feature. EW61 and EW62 exist in the headwaters of the eastern drainage and are located adjacent to an ephemeral stream. See previous descriptions concerning biological and physical functions 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: **All stream reaches have some acreage of**

wetlands abutting or adjacent wetlands associated with them which adds to the increased level of functionality of the streams evaluated. This is clearly recognized and laid out in the 404b1 guidelines and numerous historic Corps and EPA policy and guidance documents. Each stream reach connects these functions to the receiving TNW in Grapevine Lake. The wetlands perform habitat and wetland vegetative maintenance functions. Given the limited amount of adjacent wetlands in the watershed, as evidenced by the exceptionally small acreage on site supports the importance of their function even thought they would score as average in light of TXRAM conditional assessment. Water quality functions of wetland vegetation are well documented and benefit water quality conditions that contribute to the TNW.

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: **IS02, ES04, ES05, ES09 & ES10, total 315, 235, 50, 2507, and 508 linear feet each.**
   - ☐ Other non-wetland waters: **OW03 and OW04 are 1.258 and 0.09 acres each**.

     Identify type(s) of waters: **Open water ponds on channel.**

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, a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

   Provide estimates for jurisdictional wetlands in the review area: **1.865** acres.

[8] See Footnote # 3.

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):
☐ 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: .
☒ 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: .
☒ 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: Slidell
☒ USDA Natural Resources Conservation Service Soil Survey. Citation: Wise County Web Soil Survey.
☒ National wetlands inventory map(s). Cite name: Slidell.
☐ State/Local wetland inventory map(s):.

[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.***

☒ FEMA/FIRM maps: Online viewer
☐ 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date): NAIP 2018 and all Google Earth Imagery available.
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: .