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): 5/9/2022

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Fort Worth District, SWF-2021-00139 Hopkins Solar Project

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: **Texas** County: **Hopkins** City: **Dike**

1. Center coordinates of water feature (lat/long in degree decimal format): Lat. **33.212151 N**, Long. **-95.473883 W**. **Western Drainageway**

Universal Transverse Mercator (for overall project site, not primary water feature): **15 S 270568.95 m E 3678110.05 m N**

Name of nearest waterbody: **Unnamed tributary to North Caney Creek**

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Sulphur River**

Name of watershed or Hydrologic Unit Code (HUC): **11140303010 5**

☒ 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): **6/14/21, 6/16/21, 8/17/21, 8/26/21, 1/5/22, 2/10/22, 4/8/22**

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 tables):

Non-wetland waters: **10,632 linear feet (1.554 acres) of streams** and **8.327 acres of open water ponds**

Wetlands: **6.168 acres**.

c. Limits (boundaries) of jurisdiction based on: **1987 Delineation Manual w/ Great Plains and Atlantic and Gulf Coast Supplements and 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.

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

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: **1000+ acres**

Average annual rainfall: **46** inches

Average annual snowfall: -- inches

(ii) Physical Characteristics:

(a) Relationship with TNW:

☐ Tributary flows directly into TNW.

☒ Tributary flows through **2 or 3** tributaries before entering TNW.

Project waters are **30+** river miles from TNW.

Project waters are **1 or less** river miles from RPW.

Project waters are **30+** aerial (straight) miles from TNW.

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

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

Identify flow route to TNW[5]: **See Table 1 (attached) for RPWs that flow directly or indirectly into TNWs identified during field survey. Intermittent stream SC005 (RPW - main western drainage) flows 1.07 aerial miles offsite south/southeast into North Caney Creek which flows into and confluences 2.11 aerial miles southeast with White Oak Creek which flows east and confluences approximately 45.64 aerial miles with the Sulphur River (TNW). Two ponds (PC005 and PC012) are also RPWs and drain into SC005. See table 2 for non-RPWs that flow indirectly into TNWs. Ephemeral streams SC002, SC006, SC007, SC008, SC009, SC010, SC012, SC014, SC015a, SC015b and SX007 are non-RPW tributaries of SC005 (see Table 2 attached).**

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Tributary stream order, if known: **2nd order for SC005 and 1st order for all other tributaries.**

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

[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 is:

☒ Natural. Explain: **Many reaches of SC005 are considered to be natural as well as all tributaries to it. Manipulations also exist in certain areas as noted below.**

☐ Artificial (man-made). Explain:

☒ Manipulated (man-altered). Explain: **SC005 has multiple road culverts and several impoundments in its watershed. SC015a has an impoundment constructed on it. All tributaries are impacted by cattle activity.**

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

Average width: **SC005 averages 4 feet while tributaries vary from 2 to 7 feet**

Average depth: **SC005 averages 10 feet deep while others are less than 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: **For all tributaries, the banks are incised along portions of the channel and often exhibit exposed roots. Streams are used by cattle, and portions of the banks are trampled and eroded from cattle activity.**

Presence of run/riffle/pool complexes. Explain: **Some riffling/pooling was observed in SC005 but is infrequent.**

Tributary geometry: **All tributaries are meandering**

Tributary gradient (approximate average slope): **2.5% or less**

(c) Flow:

Tributary provides for: **Intermittent and ephemeral flow**

Estimate average number of flow events in review area/year: **Varies from 1 to more than 10 depending on wet season conditions as well as precipitation events.**

Describe flow regime: **Intermittent and ephemeral.**

Other information on duration and volume: **Flow class is based on New Mexico Hydrology Protocol indicators and consideration of proximity to contributing water features that delay and/or attenuate flow response from precipitation events are intermittent.**

Surface flow is: **Discrete and confined.** Characteristics: **Channels are incised in most places so flow is constrained and occurs during wet season as well as after precipitation events.**

Subsurface flow: **Unknown**. Explain findings: **Although there were mussel shells observed in one location along the channel of SC005, there was no flow, saturation, or iron deposits observed. However, iron reducing bacteria discharge was observed in wetland areas that drain into SC005.**

☐ 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
- ☒ changes in the character of soil
- ☐ shelving
- ☒ vegetation matted down, bent, or absent
- ☒ leaf litter disturbed or washed away
- ☐ sediment deposition
- ☐ water staining
- ☐ other (list):
- ☒ the presence of litter and debris
- ☐ destruction of terrestrial vegetation
- ☒ the presence of wrack line
- ☐ sediment sorting
- ☒ scour
- ☐ multiple observed or predicted flow events
- ☒ abrupt change in plant community

☐ 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:
- ☐ oil or scum line along shore objects
- ☐ fine shell/debris deposits (foreshore)
- ☐ physical markings/characteristics
- ☐ tidal gauges

☐ Mean High Water Mark indicated by:
- ☐ survey to available datum;
- ☐ physical markings;
- ☐ vegetation lines/changes in vegetation types.

[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.

☐ other (list):

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.). Explain: **Depending on time of year, drainage from wetlands and impoundments was generally clear. Iron reducing bacteria discharge observed in wetland areas that drain into SC005 as well. Other times there was no water observed in SC005 or tributaries to it. SC005 meanders south/southeastward, draining adjacent pasturelands and receives input from ephemeral stream reaches.**

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

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

☒ Riparian corridor. Characteristics (type, average width): **Forested and up to 140 feet.**

☒ Wetland fringe. Characteristics: **Contiguous wetlands exist in limited areas (WC042 with SC007, WB001 with SX007, WC033 and WC050 with SC005, and WC075 with SC015a).**

☒ Habitat for:

☐ Federally Listed species. Explain findings: .

☐ Fish/spawn areas. Explain findings: .

☐ Other environmentally-sensitive species. Explain findings:

☒ Aquatic/wildlife diversity. Explain findings: **Streams, associated riparian zones and input from contiguous wetlands provide habitat for aquatic dependent species. Riparian zones provide cover corridors for game and non-game species as well as neo-tropical migrant birds. Ponds can release fish during high flow events into the streams which provide habitat while flow is available and then migrate downstream to more permanent water features. Forested areas also provide shading to streams which assists in temperature regulation and cooling and woody debris and detritus for in-stream species use or contributions to downstream reaches which benefits species utilization.**

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: **6.168** acres

Wetland type. **Palustrine emergent** Explain: **Fringe wetland WC075 associated with pond PC012 as well as stream related wetlands are all dominated by emergent vegetative species and are either depressional or linear in nature.**

Wetland quality. **Average to below average for emergent wetlands** Explain: **Although the SWF conditional assessment tool TXRAM was not executed for the features, vegetation species composition, lack of development, and cattle utilization would support such an opinion for quality.**

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

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

Flow is: **Ephemeral to intermittent flow**. Explain: **The hydrology condition primarily is driven by precipitation events and flow moves from wetlands to SC005. Wetlands were observed having iron reducing bacteria discharge into SC005 which would allow for the conclusion that intermittent classification would be warranted due to flows that are delayed and drawn-out.**

Surface flow is**: Overland sheet flow**

Characteristics: .

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

☐ Dye (or other) test performed: .

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

☒ Directly abutting – **All wetlands (see Tables 3 and 4 attached) in the assessment area are directly connected with (abutting/contiguous) with streams and ponds.**

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

Project wetlands are **30 or more** river miles from TNW.

Project waters are **30 or more** aerial (straight) miles from TNW.

Flow is from: **wetland to navigable waters.**
Estimate approximate location of wetland as within the **2 year or less** floodplain **of the various tributaries they abut. They are more than 40 miles from a TNW so consideration of their proximity to the TNW via floodplain is irrelevant.**

(ii) Chemical Characteristics:
Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: **As previously stated, iron reducing bacteria discharges were seen from wetlands contributing to SC005. Pond water is typically clear as well unless major precipitation event occurs bringing suspended solids into the features. Water was generally clear.**
Identify specific pollutants, if known: **E. coli from cattle.**

(iii) Biological Characteristics. Wetland supports (check all that apply):
☐ Riparian buffer. Characteristics (type, average width): .
☒ Vegetation type/percent cover. Explain: **Herbaceous wetlands are dominated by hydrophytic grasses and forbs with 100% coverage.**
☒ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☐ Other environmentally-sensitive species. Explain findings: .
☒ Aquatic/wildlife diversity. Explain findings: **Wetlands are contiguous with RPW and/or tributaries to RPW SC005. Same ecological principals and conditions exist for wetlands that are connected to RPWs which themselves connect eventually to TNWs. Providing primary production, detritus, and other materials for biochemical processes. Species utilization of wetlands supports wildlife utilization of streams in a contiguous corridor. More so than in fragmented habitats.**

3. Characteristics of all wetlands adjacent to the tributary (if any)
All wetland(s) being considered in the cumulative analysis: **8**
Approximately (**6.168**) 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)

See Table 3 (attached) for wetlands directly abutting a RPWs that flow directly or indirectly into TNWs and Table 4 (attached) for wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.

Summarize overall biological, chemical and physical functions being performed: **In addition to wildlife habitat benefits, wetlands provide primary productivity and maintain wetland plant communities which support downstream receiving waters in the form of water supply as well as improved water quality due to sediment modulation and nutrient transformation.**

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: **Streams SC002 and SC006 thru 12 have no adjacent wetlands but do have forested riparian zones. Streams and their associated riparian zones provide habitat for aquatic dependent and non-aquatic species. Riparian zones provide cover corridors for game and non-game species as well as neo-tropical migrant birds. Forested areas also provide shading to streams and pools which assists in temperature regulation and cooling as well as coarse woody debris and detritus for in-stream species use or contributions to downstream reaches which benefits species utilization and overall stream function. Considering the collective inputs of these similarly situated streams and given the limited amount of overall aquatic habitat in the watershed (less than 20 acres in the 1000+ acre watershed area assessed for the western drainage) demonstrates a lack of aquatic resources in the assessed area heightening the importance of their overall functions and contributions to the Sulphur River basin rises to a level of significance.**

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 with non-RPWs without adjacent wetlands, the function and contributions of these similarly situated streams that have adjacent wetlands is heightened due to the functions of those wetlands (see 33 CFR 320.4(b) and 40 CFR 230 relative to the importance and function of those features as well as the special protections afforded them). The value and significance of improved water quality, attenuated water quantity, and inputs of primary productivity to TNWs from these contributing and limited aquatic resources support the conclusion of significance relative to its contributions to the receiving 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: **Water flow through intermittent stream SC005 appears to be continuous for no greater than three months each year. Incised banks, old mussel shells, and other indicators are evident of intermittent flow.**

   Provide estimates for jurisdictional waters in the review area (check all that apply):
   - ☒ Tributary waters: **5,321** linear feet **10** width (ft).
   - ☒ Other non-wetland waters: **8.327** acres.

     Identify type(s) of waters: **Intermittent Stream (SC005) and Ponds (PC005 and PC012). Pond PC012 is an impoundment of jurisdictional stream SC014 & SC015a. See Table 1 (attached). PC005 is contiguous with SC005 via wetland WC033. Both ponds are RPWs and have water in the for most of the year.**

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: **5,311** linear feet **2-7 feet** width (ft).
   - ☐ Other non-wetland waters: acres.

[8] See Footnote # 3.

Identify type(s) of waters: **Ephemeral Streams (SC002, SC006, SC007, SC008, SC009, SC010, SC012, SC014, SC015a, SC015b and SX007). See Table 2 (attached).**

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: **All wetlands are contiguous with streams or ponds. Flow through intermittent stream SC005 is continuous for no greater than three months each year but adequate to be classified as intermittent. Incised banks and old mussel shells are evidence of this while indicators in the New Mexico Hydrology Protocol, which has been found to be useful in classifying streams as ephemeral or intermittent, are present in SC005 including iron reducing bacteria, hydrophytic vegetation along the bank, macroinvertebrates (including bivalves), and hydric soil indicators in the channel. Wetlands WC033 and WC050 abut the OHWM of SC005. Additionally, wetland WC068 abuts pond PC012 (RPW), which retains surface water greater than three months each year as evidenced in aerial imagery.**

   Provide acreage estimates for jurisdictional wetlands in the review area: **5.272** 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: **See Table 4; 0.896** 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.," **PC012 has an upstream and downstream channel of the pond. PC005 is constructed in a wetland area that has a contiguous connection to SC005**.
   - ☐ 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.

[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.***

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):

ISOLATED - 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.

FAILS SIGNIFICANT NEXUS - 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. **See below.**
  - ☒ Office does not concur with data sheets/delineation report. **See below.**
- ☐ 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: Dike, YTX 7.5 minute.
- ☒ USDA Natural Resources Conservation Service Soil Survey. Citation: .
- ☒ National wetlands inventory map(s). Cite name: Hopkins County.
- ☐ State/Local wetland inventory map(s): .
- ☒ FEMA/FIRM maps: Online viewer 48223C0250E.
- ☐ 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
- ☒ Photographs: ☒ Aerial (Name & Date): All Google Earth Imagery, Digital Globe, and Historical Aerials.com.
  or ☒ Other (Name & Date): Included with Enercon delineation report assumed April 2021.
- ☐ Previous determination(s). File no. and date of response letter: .
- ☐ Applicable/supporting case law: .
- ☐ Applicable/supporting scientific literature: .
- ☒ Other information (please specify): **This AJD is the culmination of 3 separate but overlapping efforts by the Applicant to have the site delineated to support an AJD. The original delineation was accomplished by Enercon in February and April 2021 but eventually withdrawn. Corps site visits of June 14 and 17 revealed that substantial errors exist wherein numerous wetlands were not identified or delineated as well as tributaries. The site is complicated due to the existence of mima mound topography, a shallow aquitard varying from 10 to 16 inches throughout large portions of the site, as well as recent clearing of woody vegetation and disturbance in the southeast portion of the site. Substantial precipitation occurred on the site in May 2021 (approximately 52% of the average annual total) which made interpreting indicators more difficult. Vegetation on the site was difficult given the preponderance of Bermuda grass intermixed with a variety of hydrophytic species. That, coupled with strong hydric soil indicators (10YR 4/1-2, 5/1-2 and 6/1-2 with numerous 10YR 5/8 concentrations) in many areas and occasional oxidized rhizospheres, gave conflicting information concerning the limits of wetlands and their distribution for similarly situated features. Similar vegetation areas also occurred in locations with 10YR 4/3 and 5/3 soil indicators. Aerial imagery interpretation revealed numerous wetland features that were saturated in normal conditions and/or ponded in wetter periods that were lacking from the delineation but concurred with the**

Corps' identification of non-delineated wetlands. Follow-on site visits with Enercon staff and the Applicant occurred in August 2021 (including several SWF PMs) wherein Enercon was not confident and disagreed with the Corps' assertion of wetland existence in many areas. Discussions had occurred with Enercon early on that the site may be classified as Prior Converted Cropland and that such an avenue could be pursued as an option for the overall AJD effort if so desired.

Due to project implementation schedule concerns by the Applicant, a reduced delineation effort was pursued that focused on an approximate 120-acre subsection in the general center of the overall tract involving access road alignment/improvements, a central staging area, and possible substation. This was accomplished with the intent of obtaining a no permit required determination for activities on that part of the site (This action was subsequently withdrawn). However, it was concluded in the field (not formally documented) that all features viewed were isolated and had no connection to tributaries nor would be classified as adjacent. (All evaluations and considerations to this point were under the Navigable Waters Protection Rule - NWPR). Additional review also occurred during the second August 2021 site visit relative to several of the stream features that drain offsite from the 1900+ acre tract for determinations of intermittent versus ephemeral since at that time all ephemeral streams were not jurisdictional under the NWPR. This would result in any wetlands that drained into such features as well as are not adjacent would be determined as non-jurisdictional. This effort was mooted by the return of the pre-2015 regime relative to waters of the US.

Given the transitional nature of the wetland features (marginal hydrology and confounding vegetation conditions) and the belief by the Corps that many features were on the cusp of meeting wetland criteria as well as the dispersed nature of many of the wetland polygons on the overall 1900+ acre tract, utilization of a remote sensing and interpretation effort was discussed and pursed. Enercon developed a proposed method that was reviewed and accepted by SWF with the contingency that acceptance was predicated upon 2 efforts of ground-truthing the transect delineation points as well as the output from the interpretation effort. A site visit was set for September 17, 2021 but was cancelled earlier that week by the Applicant. A second opinion was sought by the Applicant from another consulting firm, SWCA, concerning the site as well as the proposed remote sensing methodology. SWCA provided their assessment of the status of the site and delineation efforts to date in a technical memo received 9/22/2021 which made multiple observations and recommendations concerning the delineation of the site. The applicant chose to return to delineation of all water features on the site.

SWCA conducted an extensive effort (more than 800 data points) to assess the site and provided additional data in early November 2021, increasing the overall number of wetland/water polygons while reducing or eliminating other areas. After review of the provided new data (including executing the APT for a 30-year period and every date where aerial imagery was used, several reviews of all data sheets with identification of problem area data points, compilation of master vegetation list, consideration of other delineation supplements, etc.), a site visit was conducted with several Corps PMs, SWCA, and the Applicant. Feedback from the Corps concerning evaluation of the substantial additional data was provided relative to use of some hydrology indicators (geomorphic position and use of shallow aquitard as included in the Atlantic/Gulf Coast Delineation supplement which would change the determination of wetlands at multiple data points/locations. Given the complex and contradicting nature of the wetland indicators, and especially the tenuous status of hydrology on the site, additional data collection was needed to have a firmer understanding of the wetland status and limits on the site. Options were discussed relative to how the AJD could be completed that included: an intensive investigation of the site with focus on hydrology (which has substantial time and costs involved), obtaining a PCC determination from the NRCS, and modifying the limits of the AJD request. The latter option would involve focusing the AJD limits to areas that are highly likely to be jurisdictional (e.g., stream corridors, ponds, and bordering/abutting wetlands) while excluding areas of the tract that do not have surface feature connections to tributaries, those areas that are removed enough to not qualify as being classified as adjacent. (The streams onsite are primarily headwater features and mostly incised, limiting the area needed to assess for adjacent water features and determinations). Stream reaches that are clearly disconnected as well as Preamble water features could also be identified and excluded from the assessment area. The Applicant chose the latter 2 options (PCC and modified AJD boundary) and pursued them concurrently. No formal results were provided relative to the PCC effort, so it is not applicable.

A site visit was conducted 2/10/2022 to identify any preamble waters that may exist within a potentially revised AJD boundary as well as identification of any stream reaches that had clear breaks from tributaries that exited the site. An initial look at adjacency limitations was also conducted in a few areas. For confirmation of the limits of adjacency as well as gaining more on-site confirmation, the Corps wanted to view the site later in the wet season and growing season under typical/normal hydrologic conditions where adequate vegetation emergence for identification purposes could occur. Lack of precipitation resulted in a site visit not occurring until April 8, 2022. A 2-inch rain event occurred April 4-5, 2022, which allowed for a site visit to view the area in typical/normal

conditions in middle of the wet season (recognizing that a drought condition was still in effect). The majority of the boundaries surrounding stream reaches were driven, walked and viewed to determine if surface tributary connections existed outside the buffer limits identified as well as conclude if wetland areas existed within "buffer" areas that would be classified as adjacent. The small size of the streams and their incised nature greatly assisted in this confirmation effort. Additionally, sites previously reviewed that are outside the AJD boundary limits were visited to view hydrologic conditions. Ponding occurred in many of the areas identified by SWCA and other features that the Corps had concluded were wetlands. Other areas where the Corps concluded that wetlands existed were not ponded nor saturated but merely moist. This firms the belief that to accurately delineate all wetland features on the tract (regardless of jurisdictional status) requires a more intensive investigation of the site. Overall, the site visit resulted in confirmation that the boundaries in the revised AJD area accurately reflect all surface tributary features as well as on-channel ponds and abutting/contiguous as well as adjacent wetlands for assessment.

B. ADDITIONAL COMMENTS TO SUPPORT JD: .

Approved Jurisdictional Determination Form for the Hopkins Solar Project Western Drainageway

Table 1. RPWs that flow directly or indirectly into TNWs identified during field survey included within this Approved Jurisdictional Form.

Feature I.D.	Aquatic Resource Type	Estimated Amount of Aquatic Resource in Review Area (Acre)
Waterbodies		
PC005	Pond	1.156
PC012	Pond	7.171
SC005	Intermittent Stream	1.075
	Pond Subtotal	*8.327*
	Intermittent Stream Subtotal	*1.075*
	Waterbodies Total	***9.402***

Table 2. Non-RPWs that flow directly or indirectly into TNWs identified during field survey included within this Approved Jurisdictional Form.

Feature I.D.	Aquatic Resource Type	Estimated Amount of Aquatic Resource in Review Area (Acre)
Waterbodies		
SC002	Ephemeral Stream	0.011
SC006	Ephemeral Stream	0.176
SC007	Ephemeral Stream	0.025
SC008	Ephemeral Stream	0.006
SC009	Ephemeral Stream	0.004
SC010	Ephemeral Stream	0.004
SC012	Ephemeral Stream	0.080
SC014	Ephemeral Stream	0.022
SC015a	Ephemeral Stream	0.057
SC015b	Ephemeral Stream	0.003
SX007	Ephemeral Stream	0.091
	Waterbodies Total	***0.479***

Table 3. Wetlands directly abutting an RPW that flow directly or indirectly into TNWs identified during field survey included within this Approved Jurisdictional Form.

Feature I.D.	Aquatic Resource Type	Estimated Amount of Aquatic Resource in Review Area (Acre)
Wetlands		
WC033	PEM Wetland	4.079
WC050	PEM	0.021
WC068	PEM	1.172
	Wetlands Total	***5.272***

Table 4. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs identified during field survey included within this Approved Jurisdictional Form.

Feature I.D.	Aquatic Resource Type	Estimated Amount of Aquatic Resource in Review Area (Acre)
Wetlands		
WB001	PEM	0.475
WB003	PEM	0.056
WC042	PEM	0.296
WC069	PEM	0.028
WC075	PEM	0.041
	Wetlands Total	***0.896***

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): 5/9/2022

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Fort Worth District, SWF-2021-00139 Hopkins Solar Project

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: **Texas** County: **Hopkins** City: **Dike**

1. Center coordinates of water feature (lat/long in degree decimal format): Lat. **33.219277 N**, Long. **-95.458287 W**. **Central Drainageway**

Universal Transverse Mercator: (for overall project site, not primary water feature): **15 S 270568.95 m E 3678110.05 m N**

Name of nearest waterbody: **Unnamed tributary to White Oak Creek**

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Sulphur River**

Name of watershed or Hydrologic Unit Code (HUC): **111403030108**

☒ 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): **6/14/21, 6/16/21, 8/17/21, 8/26/21, 1/5/22, 2/10/22, 4/8/22**

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 tables):

Non-wetland waters: **19,076 linear feet (3.936 acres) of streams** and **7.602 acres of open water ponds**

Wetlands: **5.55 acres**.

c. Limits (boundaries) of jurisdiction based on: **1987 Delineation Manual w/ Great Plains and Atlantic and Gulf Coast Supplements and 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.

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

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: **893+ acres**
Average annual rainfall: **46** inches
Average annual snowfall: -- inches

(ii) Physical Characteristics:

(a) Relationship with TNW:

☐ Tributary flows directly into TNW.
☒ Tributary flows through **1** tributary before entering TNW.
Project waters are **Pick List** river miles from TNW.
Project waters are **Pick List** river miles from RPW.
Project waters are **46.48** aerial (straight) miles from TNW.
Project waters are **less than 1** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. **No** Explain: .
Identify flow route to TNW[5]: **See Table 1 (attached) for RPWs that flow directly or indirectly into TNWs. Intermittent stream SC021 (RPW – main central drainage) flows 1.58 miles offsite south and east to the confluence with White Oak Creek which confluences with the Sulphur River (TNW) 44.9 miles east. Five (5) other intermittent streams (SX008, SX014, SX017, SX032 and SX033 – all RPWs) contribute to SC021. Five (5) RPW ponds (PC013, PC014, PX001, PX013 and PX014) drain into SC021. Eleven (11) non-RPW ephemeral streams (see Table 2 attached) also contribute to SC021 onsite with the exception of SC001 which confluences with SC021 offsite.**
Tributary stream order, if known: **SC021 is 2nd order, and all other tributaries are 1st order.**

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

Tributary is: ☒ Natural. Explain: **All reaches are in an undeveloped agricultural land.**
☐ Artificial (man-made). Explain:

[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.

☒ Manipulated (man-altered). Explain: **Five impoundments exist modifying hydrology for SA001, SX014, SB001, and SD001. Minor culverting also occurs for ag roads across several of these tributaries. All streams are impacted by cattle activity.**

Tributary properties with respect to top of bank (estimate):
Average width: **5-12 feet for RPW streams and 1-12 feet for non-RPW streams**
Average depth: **4+ feet for RPWs and 2+ feet for non-RPWs**
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: **For all tributaries, the banks are incised along portions of the channel and often exhibit exposed roots. Streams are used by cattle, and portions of the banks are trampled and eroded from cattle activity.**

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

Tributary geometry: **All tributaries are meandering**

Tributary gradient (approximate average slope): **2.3% or less**

(c) Flow:

Tributary provides for: **Intermittent and ephemeral**

Estimate average number of flow events in review area/year: **Varies from 1 to more than 10 depending on wet season conditions as well as precipitation events.**

Describe flow regime: **Intermittent and ephemeral.**

Other information on duration and volume: **Flow class is based on New Mexico Hydrology Protocol indicators and consideration of proximity to contributing water features that delay and/or attenuate flow response from precipitation events are intermittent.**

Surface flow is: **Discrete and confined.** Characteristics: **Channels are incised in most places so flow is constrained and occurs during wet season as well as after precipitation events.**

. 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: **Depending on time of year, drainage from wetlands and impoundments was generally clear. Other times there was no water observed in SC021 or tributaries to it. SC021 meanders**

[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.

south/southeastward, draining adjacent pasturelands and receives input from other intermittent and ephemeral stream reaches.
Identify specific pollutants, if known: **E. coli from cattle.**

(iv) Biological Characteristics. Channel supports (check all that apply):
☒ Riparian corridor. Characteristics (type, average width): **Varies from no riparian woody vegetation to areas that exceed 150 feet.**
☒ Wetland fringe. Characteristics: **Majority of stream reaches have no wetland vegetation but some linear wetlands drain into SC021, SD001 and SX032.**
☒ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☐ Other environmentally-sensitive species. Explain findings: .
☒ Aquatic/wildlife diversity. Explain findings: **Streams and their associated riparian zones provide habitat for aquatic dependent species. Riparian zones provide cover corridors for game and non-game species as well as neo-tropical migrant birds. Ponds can release fish during high flow events into the streams which provide habitat while flow is available and then migrate downstream to more permanent water features. Forested areas also provide shading to streams which assists in temperature regulation and cooling and woody debris and detritus for in-stream species use or contributions to downstream reaches which benefits species utilization**

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: **5.55 acres**
Wetland type. Explain: **Palustrine emergent**
Wetland quality. **Average to below average for emergent wetlands** Explain: **Although the SWF conditional assessment tool TXRAM was not executed for the features, vegetation species composition, lack of development, and cattle utilization would support such an opinion for quality.**

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

(b) <u>General Flow Relationship with Non-TNW</u>:
Flow is: **Ephemeral to intermittent**. Explain: **The hydrology condition primarily is driven by precipitation events and flow moves from wetlands to SC021, SX014, SD001 and SX032.**
Surface flow is**: Overland sheet flow.**
Characteristics: .
Subsurface flow: **Pick List** Explain findings: .
☐ Dye (or other) test performed: .

(c) <u>Wetland Adjacency Determination with Non-TNW:</u>
☒ Directly abutting: **All wetlands (see Tables 3 and 4 attached) in the assessment area are directly connected with (abutting/contiguous) with streams and ponds.**
☐ 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) <u>Proximity (Relationship) to TNW</u>
Project wetlands are **30 or more** river miles from TNW.
Project waters are **30 or more aerial** (straight) miles from TNW.
Flow is from: **Wetlands to navigable waters.**
Estimate approximate location of wetland as within the **2 year or less floodplain of the various tributaries they abut. They are more than 40 miles from a TNW so consideration of their proximity to the TNW via floodplain is irrelevant.**

(ii) Chemical Characteristics:
Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: **Wetlands are typically saturated but those associated with**

ponds are inundated and saturated. Occasional ponding occurs and water is clear unless assocaited with ponds at when water is at elevated levels.
Identify specific pollutants, if known: **E. coli from cattle.**

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

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

☒ Vegetation type/percent cover. Explain: **Herbaceous wetlands are dominated by hydrophytic grasses and forbs with 100% coverage**.

☒ Habitat for:

☐ Federally Listed species. Explain findings: .

☐ Fish/spawn areas. Explain findings: .

☐ Other environmentally-sensitive species. Explain findings: .

☒ Aquatic/wildlife diversity. Explain findings: **Wetlands are contiguous with RPWs and/or tributaries to RPW SC021. Same ecological principals and conditions exist for wetlands that are connected to RPWs which themselves connect eventually to TNWs. Providing primary production, detritus, and other materials for biochemical processes. Species utilization of wetlands supports wildlife utilization of streams in a contiguous corridor. More so than in fragmented habitats.**

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

All wetland(s) being considered in the cumulative analysis: **18**

Approximately (**5.55**) 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)

See Table 3 (attached) for wetlands directly abutting an RPW that flows directly or indirectly into TNWs and Table 4 (attached) for wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.

Summarize overall biological, chemical and physical functions being performed: **In addition to wildlife habitat benefits, wetlands provide primary productivity and maintain wetland plant communities which support downstream receiving waters in the form of water supply as well as improved water quality due to sediment modulation and nutrient transformation.**

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: **SA001, SX008, SX012, SX015/16, SX033/34 have no adjacent/contiguous wetlands associated with them, but some have forested riparian zones. Streams and their associated riparian zones provide habitat for aquatic dependent and non-aquatic species. Riparian zones provide cover corridors for game and non-game species as well as neo-tropical migrant birds. Forested areas also provide shading to streams and pools which assists in temperature regulation and cooling as well as coarse woody debris and detritus for in-stream species use or contributions to downstream reaches which benefits species utilization and overall stream function.**

Considering the collective inputs of these similarly situated streams and given the limited amount of overall aquatic habitat in the watershed (slightly more than 17 acres in the 893+ acre watershed area assessed for the central drainage) demonstrates a lack of aquatic resources in the assessed area heightening the importance of their overall functions and contributions to the Sulphur River basin rises to a level of significance.

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 with non-RPWs without adjacent wetlands, the function and contribution of these similarly situated streams that have adjacent wetlands is heightened due to the functions of those wetlands (see 33 CFR 320.4(b) and 40 CFR 230 relative to the importance and function of those features as well as the special protections afforded them). The value and significance of improved water quality, attenuated water quantity, and inputs of primary productivity to TNWs from these contributing and limited aquatic resources support the conclusion of significance relative to its contributions to the receiving 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: **13,703** linear feet **5-12** width (ft).
     - ☒ Other non-wetland waters: **2.698** acres.

       Identify type(s) of waters: **Intermittent Streams (SC021, SX008, SX014, SX017, SX032, and SX033) and Ponds (PC013, PC014, PX001, PX013, and PX014). Ponds PX001 and PX014 are also impoundments of jurisdictional streams SB001 and SX014, respectively. See Table 1.**

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: **5,373** linear feet **1-12** width (ft).
   - ☐ Other non-wetland waters: acres.

     Identify type(s) of waters: **Ephemeral Streams (SA001, SB001, SC001, SC018, SD001, SD002, SX012, SX015, SX016, and SX034). See Table 2.**

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: **All wetlands are contiguous with identified streams or ponds. Indicators from the New Mexico Hydrology Protocol which have found to be useful in classifying streams as ephemeral or intermittent are present in SC021 and other intermittent stream reaches**

[8] See Footnote # 3.

including hydric soil indicators in the channel, increased sinuosity, and more reliable hydrologic inputs from impoundments and their seepage. Wetlands WC033 and WC050 abut the OHWM of SC005. Additionally, all wetlands associated with ponds PW013, PX014, PX001 and PC014 are features that retain surface water greater than three months each year as evidenced in aerial imagery. .

Provide acreage estimates for jurisdictional wetlands in the review area: **3.184** 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: **See table 4; 2.366** 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.," **All ponds are created in pre-existing stream reaches or wetlands associated with streams as evidenced by upstream and downstream reaches as well as aerial photographs. All ponds are contiguous with SC021 via continuous tributaries and wetland reaches.**
   - ☐ 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):

ISOLATED - 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.

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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.***

FAILS SIGNIFICANT NEXUS - 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. **See below.**
  - ☒ Office does not concur with data sheets/delineation report. **See below.**
- ☐ 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: Dike YTX 7.5 minute.
- ☒ USDA Natural Resources Conservation Service Soil Survey. Citation: .
- ☒ National wetlands inventory map(s). Cite name: Hopkins County.
- ☐ State/Local wetland inventory map(s): .
- ☒ FEMA/FIRM maps: Online viewer. 48223C0250E.
- ☐ 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
- ☒ Photographs: ☒ Aerial (Name & Date): All Google Earth Imagery, Digital Globe, and Historical Aerials.com. or ☒ Other (Name & Date): Included with Enercon delineation report assumed April 2021.
- ☐ Previous determination(s). File no. and date of response letter: .
- ☐ Applicable/supporting case law: .
- ☐ Applicable/supporting scientific literature: .
- ☐ Other information (please specify): **This AJD is the culmination of 3 separate but overlapping efforts by the Applicant to have the site delineated to support an AJD. The original delineation was accomplished by Enercon in February and April 2021 but eventually withdrawn. Corps site visits of June 14 and 17 revealed that substantial errors exist wherein numerous wetlands were not identified or delineated as well as tributaries. The site is complicated due to the existence of mima mound topography, a shallow aquitard varying from 10 to 16 inches throughout large portions of the site, as well as recent clearing of woody vegetation and disturbance in the southeast portion of the site. Substantial precipitation occurred on the site in May 2021 (approximately 52% of the average annual total) which made interpreting indicators more difficult. Vegetation on the site was difficult given the preponderance of Bermuda grass intermixed with a variety of hydrophytic species. That, coupled with strong hydric soil indicators (10YR 4/1-2, 5/1-2 and 6/1-2 with numerous 10YR 5/8 concentrations) in many areas and occasional oxidized rhizospheres, gave conflicting information concerning the limits of wetlands and their distribution for similarly situated features. Similar vegetation areas also occurred in locations with 10YR 4/3 and 5/3 soil indicators. Aerial imagery interpretation revealed numerous wetland features that were saturated in normal conditions and/or ponded in wetter periods that were lacking from the delineation but concurred with the Corps' identification of non-delineated wetlands. Follow-on site visits with Enercon staff and the Applicant occurred in August 2021 (including several SWF PMs) wherein Enercon was not confident and disagreed with the Corps' assertion of wetland existence in many areas. Discussions had occurred with Enercon early on that the site may be classified as Prior Converted Cropland and that such an avenue could be pursued as an option for the overall AJD effort if so desired.**

Due to project implementation schedule concerns by the Applicant, a reduced delineation effort was pursued that focused on an approximate 120-acre subsection in the general center of the overall tract involving access road alignment/improvements, a central staging area, and possible substation. This was accomplished with the intent of obtaining a no permit required determination for activities on that part of the site (This action was subsequently withdrawn). However, it was concluded in the field (not formally documented) that all features viewed were isolated and had no connection to tributaries nor would be classified as adjacent. (All evaluations and considerations to this point were under the Navigable Waters Protection Rule - NWPR). Additional review also occurred during the second August 2021 site visit relative to several of the stream features that drain offsite from the 1900+ acre tract for determinations of intermittent versus ephemeral since at that time all ephemeral streams

were not jurisdictional under the NWPR. This would result in any wetlands that drained into such features as well as are not adjacent would be determined as non-jurisdictional. This effort was mooted by the return of the pre-2015 regime relative to waters of the US.

Given the transitional nature of the wetland features (marginal hydrology and confounding vegetation conditions) and the belief by the Corps that many features were on the cusp of meeting wetland criteria as well as the dispersed nature of many of the wetland polygons on the overall 1900+ acre tract, utilization of a remote sensing and interpretation effort was discussed and pursed. Enercon developed a proposed method that was reviewed and accepted by SWF with the contingency that acceptance was predicated upon 2 efforts of ground-truthing the transect delineation points as well as the output from the interpretation effort. A site visit was set for September 17, 2021 but was cancelled earlier that week by the Applicant. A second opinion was sought by the Applicant from another consulting firm, SWCA, concerning the site as well as the proposed remote sensing methodology. SWCA provided their assessment of the status of the site and delineation efforts to date in a technical memo received 9/22/2021 which made multiple observations and recommendations concerning the delineation of the site. The applicant chose to return to delineation of all water features on the site.

SWCA conducted an extensive effort (more than 800 data points) to assess the site and provided additional data in early November 2021, increasing the overall number of wetland/water polygons while reducing or eliminating other areas. After review of the provided new data (including executing the APT for a 30-year period and every date where aerial imagery was used, several reviews of all data sheets with identification of problem area data points, compilation of master vegetation list, consideration of other delineation supplements, etc.), a site visit was conducted with several Corps PMs, SWCA, and the Applicant. Feedback from the Corps concerning evaluation of the substantial additional data was provided relative to use of some hydrology indicators (geomorphic position and use of shallow aquitard as included in the Atlantic/Gulf Coast Delineation supplement which would change the determination of wetlands at multiple data points/locations. Given the complex and contradicting nature of the wetland indicators, and especially the tenuous status of hydrology on the site, additional data collection was needed to have a firmer understanding of the wetland status and limits on the site. Options were discussed relative to how the AJD could be completed that included: an intensive investigation of the site with focus on hydrology (which has substantial time and costs involved), obtaining a PCC determination from the NRCS, and modifying the limits of the AJD request. The latter option would involve focusing the AJD limits to areas that are highly likely to be jurisdictional (e.g., stream corridors, ponds, and bordering/abutting wetlands) while excluding areas of the tract that do not have surface feature connections to tributaries, those areas that are removed enough to not qualify as being classified as adjacent. (The streams onsite are primarily headwater features and mostly incised, limiting the area needed to assess for adjacent water features and determinations). Stream reaches that are clearly disconnected as well as Preamble water features could also be identified and excluded from the assessment area. The Applicant chose the latter 2 options (PCC and modified AJD boundary) and pursued them concurrently. No formal results were provided relative to the PCC effort, so it is not applicable.

A site visit was conducted 2/10/2022 to identify any preamble waters that may exist within a potentially revised AJD boundary as well as identification of any stream reaches that had clear breaks from tributaries that exited the site. An initial look at adjacency limitations was also conducted in a few areas. For confirmation of the limits of adjacency as well as gaining more on-site confirmation, the Corps wanted to view the site later in the wet season and growing season under typical/normal hydrologic conditions where adequate vegetation emergence for identification purposes could occur. Lack of precipitation resulted in a site visit not occurring until April 8, 2022. A 2-inch rain event occurred April 4-5, 2022, which allowed for a site visit to view the area in typical/normal conditions in middle of the wet season (recognizing that a drought condition was still in effect). The majority of the boundaries surrounding stream reaches were driven, walked and viewed to determine if surface tributary connections existed outside the buffer limits identified as well as conclude if wetland areas existed within "buffer" areas that would be classified as adjacent. The small size of the streams and their incised nature greatly assisted in this confirmation effort. Additionally, sites previously reviewed that are outside the AJD boundary limits were visited to view hydrologic conditions. Ponding occurred in many of the areas identified by SWCA and other features that the Corps had concluded were wetlands. Other areas where the Corps concluded that wetlands existed were not ponded nor saturated but merely moist. This firms the belief that to accurately delineate all wetland features on the tract (regardless of jurisdictional status) requires a more intensive investigation of the site. Overall, the site visit resulted in confirmation that the boundaries in the revised AJD area accurately reflect all surface tributary features as well as on-channel ponds and abutting/contiguous as well as adjacent wetlands for assessment..

B. ADDITIONAL COMMENTS TO SUPPORT JD: .

Approved Jurisdictional Determination Form for the Hopkins Solar Project Central Drainageway

Table 1. RPWs that flow directly or indirectly into TNWs identified during field survey included within this Approved Jurisdictional Form.

Feature I.D.	Aquatic Resource Type	Estimated Amount of Aquatic Resource in Review Area (Acre)
Waterbodies		
PC013	Pond	0.441
PC014	Pond	0.494
PX001	Pond	1.023
PX013	Pond	1.763
PX014	Pond	3.881
SC021	Intermittent Stream	2.646
SX008	Intermittent Stream	0.190
SX014	Intermittent Stream	0.121
SX017	Intermittent Stream	0.002
SX032	Intermittent Stream	0.158
SX033	Intermittent Stream	0.023
	Pond Subtotal	*7.602*
	Intermittent Stream Subtotal	*3.140*
	Waterbodies Total	***10.742***

Table 2. Non-RPWs that flow directly or indirectly into TNWs identified during field survey included within this Approved Jurisdictional Form.

Feature I.D.	Aquatic Resource Type	Estimated Amount of Aquatic Resource in Review Area (Acre)
Waterbodies		
SA001	Ephemeral Stream	0.300
SB001	Ephemeral Stream	0.199
SC001	Ephemeral Stream	0.181
SC018	Ephemeral Stream	0.018
SD001	Ephemeral Stream	0.070
SD002	Ephemeral Stream	0.011
SX012	Ephemeral Stream	0.007
SX015	Ephemeral Stream	0.007
SX016	Ephemeral Stream	0.001
SX034	Ephemeral Stream	0.002
	Waterbodies Total	***0.796***

Table 3. Wetlands directly abutting an RPW that flow directly or indirectly into TNWs identified during field survey included within this Approved Jurisdictional Form.

Feature I.D.	Aquatic Resource Type	Estimated Amount of Aquatic Resource in Review Area (Acre)
Wetlands		
WA007a	PEM	0.099
WA007b	PEM	0.017
WA007c	PEM	0.060
WA007d	PEM	0.211
WA007e	PEM	0.072
WA007f	PEM	0.191
WC078	PEM	0.110
WC090	PEM	0.457
WD035	PEM	0.193
WD047a	PEM	0.327
WD047b	PEM	0.038
WD049	PEM	0.042
WD051	PEM	0.121
WX004	PEM	1.246
	Wetlands Total	***3.184***

Table 4. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs identified during field survey included within this Approved Jurisdictional Form.

Feature I.D.	Aquatic Resource Type	Estimated Amount of Aquatic Resource in Review Area (Acre)
Wetlands		
WA010	PEM	1.770
WC009	PEM	0.289
WD043	PEM	0.260
WX001	PEM	0.047
	Wetlands Total	***2.366***

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): 5/9/2022

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Fort Worth District, SWF-2021-00139 Hopkins Solar Project

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: **Texas** County: **Hopkins** City: **Dike**

1. Center coordinates of water feature (lat/long in degree decimal format): Lat. **33.214163 N**, Long. **-95.441939 W**. **Eastern Drainageway**

Universal Transverse Mercator: (for overall project site, not primary water feature): **15 S 270568.95 m E 3678110.05 m N**

Name of nearest waterbody: **Unnamed tributary to White Oak Creek**

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Sulphur River**

Name of watershed or Hydrologic Unit Code (HUC): **111403030108**

☒ 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): **6/14/21, 6/16/21, 8/17/21, 8/26/21, 1/5/22, 2/10/22, 4/8/22**

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 tables 1 thru 4):

Non-wetland waters: **5,675 linear feet (0.86 acres) of streams** and **1.650 acres of open water ponds**

Wetlands: **13.801 acres**

c. Limits (boundaries) of jurisdiction based on: **1987 Delineation Manular w/ Great Plains and Atlantic and Gulf Coast Supplements and 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.

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

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: **460 acres**
Average annual rainfall: **46** inches
Average annual snowfall: -- inches

(ii) Physical Characteristics:

(a) Relationship with TNW:

☐ Tributary flows directly into TNW.
☒ Tributary flows through **1** tributary before entering TNW.
Project waters are **Pick List** river miles from TNW.
Project waters are **Pick List** river miles from RPW.
Project waters are **45.86** aerial (straight) miles from TNW.
Project waters are **less than 1** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. **No** Explain: .
Identify flow route to TNW[5]: **Primary tributary SX023 and 2 other tributaries (SX022 and SC020) confluence 0.13 miles east of the project boundary which confluences with White Oak Creek 1.18 miles east/southeast which confluences with the Sulphur River (TNW) 44.68 miles east.**
Tributary stream order, if known: **All streams are 1st order.**

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

Tributary is: ☒ Natural. Explain: **All channels are in undeveloped agricultural land.**
☐ Artificial (man-made). Explain:
☒ Manipulated (man-altered). Explain: **Each tributary has at least 1 impoundment on it modifying stream hydrology. All streams are impacted by cattle.**

Tributary properties with respect to top of bank (estimate):
Average width: **3-10 feet for RPWs and 2-4 feet for non-RPWs**
Average depth: **4 feet for RPWs and 1-2 feet for non-RPWs**

[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 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: **For all tributaries, the banks are incised along portions of the channel and often exhibit exposed roots. The streams are also used by cattle, and portions of banks are trampled and eroded from cattle activity.**

Presence of run/riffle/pool complexes. Explain: **Some riffling/pooling was observed, but is infrequent.**

Tributary geometry: **Meandering**

Tributary gradient (approximate average slope): **2-3% or less**

(c) Flow:

Tributary provides for: **Intermittent (not seasonal) and Ephemeral**

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

Describe flow regime: **Intermittent (not seasonal) and Ephemeral**

Other information on duration and volume: **Flow class is based on New Mexico Hydrology Protocol indicators and consideration of proximity to contributing water features that delay and/or attenuate flow response from precipitation events are intermittent. Features SX021 and 022 are classified as such contrary to the status listed in table 2.**

Surface flow is: **Discrete and confined.** Characteristics: **Channels are incised in most places so flow is constrained and occurs during wet season as well as after precipitation events.**

Subsurface flow: **Discrete and confined.** 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: **Channels have water in them or are dry depending on recent preciptation events. Water is usually clear in channels and ponds but can have suspended sediments if precipitation is heavy. All 3 primary tributaries meander south, east and/or southeast draining adjacent pastures.**

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

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

☒ Riparian corridor. Characteristics (type, average width): **Varies from no riparian woody vegetation to areas of woody vegetation that exceed 150 feet.**

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[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.

☒ Wetland fringe. Characteristics: **Majority of stream reaches have no wetland vegetation. However, larger areas upstream and contiguous with streams as well as immediately adjacent to ponds and below ponds are herbaceous emergent wetlands. Some minor areas of scrub shrub exist. Reaches of wetlands that are swales with channel features contained within them (e.g., WD003) also feed into areas that are only streams.**

☒ Habitat for:

☐ Federally Listed species. Explain findings: .

☐ Fish/spawn areas. Explain findings: .

☐ Other environmentally-sensitive species. Explain findings: .

☒ Aquatic/wildlife diversity. Explain findings: **Streams and their associated riparian zones provide habitat for aquatic dependent species. Riparian zones provide cover corridors for game and non-game species as well as neo-tropical migrant birds. Ponds can release fish during high flow events into the streams which provide habitat while flow is available and then migrate downstream to more permanent water features. Forested areas also provide shading to streams which assists in temperature regulation and cooling and woody debris and detritus for in-stream species use or contributions to downstream reaches which benefits species utilization.**

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: **13.801** acres

Wetland type. Explain: **Palustrine emergent and minor scrub shrub areas.**

Wetland quality. **Average to below average for emergent wetlands** Explain: **Although the SWF conditional assessment tool TXRAM was not executed for the features, vegetation species composition, lack of development, and cattle utilization would support such an opinion for quality both for herbaceous as well as scrub shrub.**

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

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

Flow is: **Ephemeral to intermittent**. Explain: **The hydrology condition primarily is driven by precipitation events and flow moves from wetlands to the 3 primary tributaries.**

Surface flow is**: Overland sheet flow and discrete and confined in those areas where wetland swales (e.g., WD016, WD003 and WD013a/b) exist with occasional channels reaches.**

Characteristics: .

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

☐ Dye (or other) test performed: .

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

☒ Directly abutting: **All wetlands (see Tables 3 and 4 attached) in the assessment area are directly connected with (abutting/contiguous) with streams and ponds.**

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

Project wetlands are **30 or more** river miles from TNW.

Project waters are **30 or more aerial** (straight) miles from TNW.

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

Estimate approximate location of wetland as within the **2 year or less floodplain of the various tributaries they abut. They are more than 40 miles from a TNW so consideration of their proximity to the TNW via floodplain is irrelevant.**

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: **Wetlands are typically saturated but those associated with ponds are inundated and saturated. Occasional ponding occurs and water is clear unless assocaited with ponds at when water is at elevated levels.**

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

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

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

☒ Vegetation type/percent cover. Explain: **Herbaceous wetlands are dominated by hydrophytic grasses and forbs and scrub shruh have shrubs, both with 100% coverage.**

☒ Habitat for:

☐ Federally Listed species. Explain findings: .

☐ Fish/spawn areas. Explain findings: .

☐ Other environmentally-sensitive species. Explain findings: .

☒ Aquatic/wildlife diversity. Explain findings: **Wetlands are contiguous with RPWs and/or tributaries. Same ecological principals and conditions exist for wetlands that are connected to RPWs which themselves connect eventually to TNWs. Providing primary production, detritus, and other materials for biochemical processes. Species utilization of wetlands supports wildlife utilization of streams in a contiguous corridor. More so than in fragmented habitats.**

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

All wetland(s) being considered in the cumulative analysis: **14**

Approximately (**13.801**) 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)

See Table 3 (attached) for wetlands directly abutting a RPWs that flow directly or indirectly into TNWs and Table 4 (attached) for wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.

Summarize overall biological, chemical and physical functions being performed: **In addition to wildlife habitat benefits, wetlands provide primary productivity and maintain wetland plant communities which support downstream receiving waters in the form of water supply as well as improved water quality due to sediment modulation and nutrient transformation.**

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: **SX030 is the only features that does not have any adjacent wetlands associated with but does have some woody riparian vegetation on the west bank. Streams and their associated riparian zones provide habitat for aquatic dependent and non-aquatic species. Riparian zones provide cover corridors for game and non-game species as well as neo-tropical migrant birds. Forested areas also provide shading to streams and pools which assists in temperature regulation and cooling as well as coarse woody debris and detritus for in-stream species use or contributions to downstream reaches which benefits species utilization and overall stream function. Considering the collective inputs of these similarly situated streams and given the limited amount of overall aquatic habitat in the watershed (slightly more than 15 acres in the 460+ acre watershed area assessed for the**

eastern drainage) demonstrates a lack of aquatic resources in the assessed area heightening the importance of their overall functions and contributions to the Sulphur River basin rises to a level of significance.

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 with non-RPWs without adjacent wetlands, the function and contributions of these similarly situated streams that have adjacent wetlands is heightened due to the functions of those wetlands (see 33 CFR 320.4(b) and 40 CFR 230 relative to the importance and function of those features as well as the special protections afforded them). The value and significance of improved water quality, attenuated water quantity, and inputs of primary productivity to TNWs from these contributing and limited aquatic resources support the conclusion of significance relative to its contributions to the receiving 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: **Water flow through the 2 primary RPW tributaries (SW023 and SX001) that are intermittent appears to be continuous for no greater than three months each year. Other intermittent stream reaches are the same but with less flow unless reach is close to impoundments. NM Hydrology Protocol indicators as well as incised banks are evident of intermittent flow.**

     Provide estimates for jurisdictional waters in the review area (check all that apply):
     - ☒ Tributary waters: **0.782 acres.**
     - ☒ Other non-wetland waters: **1.650 acres of open water ponds.**

       Identify type(s) of waters: **See Table 1 but add SX021 and SX022 from table 2**.

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: **0.078 acres**.
   - ☐ Other non-wetland waters: acres.

     Identify type(s) of waters: **See table 2 but exclude SX021 and SX022.**

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: **Water flow through the intermittent stream SX023 and other intermittent streams is continuous for no greater than three months each year. Incised banks are evident of intermittent flow.**

   Provide acreage estimates for jurisdictional wetlands in the review area: **4.547 (see table 3)** acres.

[8] See Footnote # 3.

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: **9.256 (see table 4)** acres.

7. **Impoundments of jurisdictional waters.**[9]
   As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
   ☐ Demonstrate that impoundment was created from "waters of the U.S.," or
   ☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
   ☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

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

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

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

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

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

ISOLATED - 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.

FAILS SIGNIFICANT NEXUS - 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.

[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.***

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. **See below.**
  - ☒ Office does not concur with data sheets/delineation report. **See below.**
- ☐ 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: Dike, YTX 7.5 minute.
- ☒ USDA Natural Resources Conservation Service Soil Survey. Citation: Hopkins County.
- ☒ National wetlands inventory map(s). Cite name: Hopkins County.
- ☐ State/Local wetland inventory map(s): .
- ☒ FEMA/FIRM maps: Online viewer. 48223C0250E.
- ☐ 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
- ☒ Photographs: ☒ Aerial (Name & Date): All Google Earth Imagery, Digital Globe, and Historical Aerials.com.
  or ☒ Other (Name & Date): Included with Enercon delineation report assumed April 2021.
- ☐ Previous determination(s). File no. and date of response letter: .
- ☐ Applicable/supporting case law: .
- ☐ Applicable/supporting scientific literature: .
- ☒ Other information (please specify): **This AJD is the culmination of 3 separate but overlapping efforts by the Applicant to have the site delineated to support an AJD. The original delineation was accomplished by Enercon in February and April 2021 but eventually withdrawn. Corps site visits of June 14 and 17 revealed that substantial errors exist wherein numerous wetlands were not identified or delineated as well as tributaries. The site is complicated due to the existence of mima mound topography, a shallow aquitard varying from 10 to 16 inches throughout large portions of the site, as well as recent clearing of woody vegetation and disturbance in the southeast portion of the site. Substantial precipitation occurred on the site in May 2021 (approximately 52% of the average annual total) which made interpreting indicators more difficult. Vegetation on the site was difficult given the preponderance of Bermuda grass intermixed with a variety of hydrophytic species. That, coupled with strong hydric soil indicators (10YR 4/1-2, 5/1-2 and 6/1-2 with numerous 10YR 5/8 concentrations) in many areas and occasional oxidized rhizospheres, gave conflicting information concerning the limits of wetlands and their distribution for similarly situated features. Similar vegetation areas also occurred in locations with 10YR 4/3 and 5/3 soil indicators. Aerial imagery interpretation revealed numerous wetland features that were saturated in normal conditions and/or ponded in wetter periods that were lacking from the delineation but concurred with the Corps' identification of non-delineated wetlands. Follow-on site visits with Enercon staff and the Applicant occurred in August 2021 (including several SWF PMs) wherein Enercon was not confident and disagreed with the Corps' assertion of wetland existence in many areas. Discussions had occurred with Enercon early on that the site may be classified as Prior Converted Cropland and that such an avenue could be pursued as an option for the overall AJD effort if so desired.**

Due to project implementation schedule concerns by the Applicant, a reduced delineation effort was pursued that focused on an approximate 120-acre subsection in the general center of the overall tract involving access road alignment/improvements, a central staging area, and possible substation. This was accomplished with the intent of obtaining a no permit required determination for activities on that part of the site (This action was subsequently withdrawn). However, it was concluded in the field (not formally documented) that all features viewed were isolated and had no connection to tributaries nor would be classified as adjacent. (All evaluations and considerations to this point were under the Navigable Waters Protection Rule - NWPR). Additional review also occurred during the second August 2021 site visit relative to several of the stream features that drain offsite from the 1900+ acre tract for determinations of intermittent versus ephemeral since at that time all ephemeral streams were not jurisdictional under the NWPR. This would result in any wetlands that drained into such features as well as are not adjacent would be determined as non-jurisdictional. This effort was mooted by the return of the pre-2015 regime relative to waters of the US.

Given the transitional nature of the wetland features (marginal hydrology and confounding vegetation conditions) and the belief by the Corps that many features were on the cusp of meeting wetland criteria as well as the dispersed nature of many of the wetland polygons on the overall 1900+ acre tract, utilization of a remote sensing and

interpretation effort was discussed and pursed. Enercon developed a proposed method that was reviewed and accepted by SWF with the contingency that acceptance was predicated upon 2 efforts of ground-truthing the transect delineation points as well as the output from the interpretation effort. A site visit was set for September 17, 2021 but was cancelled earlier that week by the Applicant. A second opinion was sought by the Applicant from another consulting firm, SWCA, concerning the site as well as the proposed remote sensing methodology. SWCA provided their assessment of the status of the site and delineation efforts to date in a technical memo received 9/22/2021 which made multiple observations and recommendations concerning the delineation of the site. The applicant chose to return to delineation of all water features on the site.

SWCA conducted an extensive effort (more than 800 data points) to assess the site and provided additional data in early November 2021, increasing the overall number of wetland/water polygons while reducing or eliminating other areas. After review of the provided new data (including executing the APT for a 30-year period and every date where aerial imagery was used, several reviews of all data sheets with identification of problem area data points, compilation of master vegetation list, consideration of other delineation supplements, etc.), a site visit was conducted with several Corps PMs, SWCA, and the Applicant. Feedback from the Corps concerning evaluation of the substantial additional data was provided relative to use of some hydrology indicators (geomorphic position and use of shallow aquitard as included in the Atlantic/Gulf Coast Delineation supplement which would change the determination of wetlands at multiple data points/locations. Given the complex and contradicting nature of the wetland indicators, and especially the tenuous status of hydrology on the site, additional data collection was needed to have a firmer understanding of the wetland status and limits on the site. Options were discussed relative to how the AJD could be completed that included: an intensive investigation of the site with focus on hydrology (which has substantial time and costs involved), obtaining a PCC determination from the NRCS, and modifying the limits of the AJD request. The latter option would involve focusing the AJD limits to areas that are highly likely to be jurisdictional (e.g., stream corridors, ponds, and bordering/abutting wetlands) while excluding areas of the tract that do not have surface feature connections to tributaries, those areas that are removed enough to not qualify as being classified as adjacent. (The streams onsite are primarily headwater features and mostly incised, limiting the area needed to assess for adjacent water features and determinations). Stream reaches that are clearly disconnected as well as Preamble water features could also be identified and excluded from the assessment area. The Applicant chose the latter 2 options (PCC and modified AJD boundary) and pursued them concurrently. No formal results were provided relative to the PCC effort, so it is not applicable.

A site visit was conducted 2/10/2022 to identify any preamble waters that may exist within a potentially revised AJD boundary as well as identification of any stream reaches that had clear breaks from tributaries that exited the site. An initial look at adjacency limitations was also conducted in a few areas. For confirmation of the limits of adjacency as well as gaining more on-site confirmation, the Corps wanted to view the site later in the wet season and growing season under typical/normal hydrologic conditions where adequate vegetation emergence for identification purposes could occur. Lack of precipitation resulted in a site visit not occurring until April 8, 2022. A 2-inch rain event occurred April 4-5, 2022, which allowed for a site visit to view the area in typical/normal conditions in middle of the wet season (recognizing that a drought condition was still in effect). The majority of the boundaries surrounding stream reaches were driven, walked and viewed to determine if surface tributary connections existed outside the buffer limits identified as well as conclude if wetland areas existed within "buffer" areas that would be classified as adjacent. The small size of the streams and their incised nature greatly assisted in this confirmation effort. Additionally, sites previously reviewed that are outside the AJD boundary limits were visited to view hydrologic conditions. Ponding occurred in many of the areas identified by SWCA and other features that the Corps had concluded were wetlands. Other areas where the Corps concluded that wetlands existed were not ponded nor saturated but merely moist. This firms the belief that to accurately delineate all wetland features on the tract (regardless of jurisdictional status) requires a more intensive investigation of the site. Overall, the site visit resulted in confirmation that the boundaries in the revised AJD area accurately reflect all surface tributary features as well as on-channel ponds and abutting/contiguous as well as adjacent wetlands for assessment.

B. ADDITIONAL COMMENTS TO SUPPORT JD: .

Approved Jurisdictional Determination Form for the Hopkins Solar Project Eastern Drainageway

Table 1. RPWs that flow directly or indirectly into TNWs identified during field survey included within this Approved Jurisdictional Form.

Feature I.D.	Aquatic Resource Type	Estimated Amount of Aquatic Resource in Review Area (Acre)
Waterbodies		
PC020	Pond	0.400
PX008	Pond	0.571
PX010	Pond	0.325
PX017	Pond	0.312
PX022	Pond	0.042
SX001	Intermittent Stream	0.037
SX019	Intermittent Stream	0.035
SX020	Intermittent Stream	0.016
SX023	Intermittent Stream	0.569
SX025	Intermittent Stream	0.001
SX026	Intermittent Stream	0.005
SX030	Intermittent Stream	0.092
SX031	Intermittent Stream	0.019
	Pond Subtotal	*1.650*
	Intermittent Stream Subtotal	*0.774*
	Waterbodies Total	***2.424***

Table 2. Non-RPWs that flow directly or indirectly into TNWs identified during field survey included within this Approved Jurisdictional Form.

Feature I.D.	Aquatic Resource Type	Estimated Amount of Aquatic Resource in Review Area (Acre)
Waterbodies		
SC020	Ephemeral Stream	0.062
SX018	Ephemeral Stream	0.012
SX021	Ephemeral Stream	0.005
SX022	Ephemeral Stream	0.003
SX024	Ephemeral Stream	0.002
SX027	Ephemeral Stream	0.002
	Waterbodies Total	***0.086***

Table 3. Wetlands directly abutting an RPW that flow directly or indirectly into TNWs identified during field survey included within this Approved Jurisdictional Form.

Feature I.D.	Aquatic Resource Type	Estimated Amount of Aquatic Resource in Review Area (Acre)
Wetlands		
WC104	PEM	0.947
WC109	PEM	0.133
WD003	PEM	0.290
WD008	PEM	0.053
WD009	PEM	0.041
WD013a	PEM	0.060
WD013b	PEM	0.509
WD016	PEM	2.508
WX003	PEM	0.006
	Wetlands Total	***4.547***

Table 4. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs identified during field survey included within this Approved Jurisdictional Form.

Feature I.D.	Aquatic Resource Type	Estimated Amount of Aquatic Resource in Review Area (Acre)
Wetlands		
WC094	PEM	0.211
WC105	PEM	8.842
WD010a	PEM	0.089
WD010b	PEM	0.027
WD015	PEM	0.085
	Wetlands Total	***9.254***