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

## SECTION I: BACKGROUND INFORMATION

**A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):** 26-Jun-2014
**B. DISTRICT OFFICE, FILE NAME, AND NUMBER:** Tulsa District, SWT-2014-00303-JD1
**C. PROJECT LOCATION AND BACKGROUND INFORMATION:**

| | |
|---|---|
| **State :** | OK - Oklahoma |
| **County/parish/borough:** | Tulsa |
| **City:** | Broken Arrow |
| **Lat:** | 35.9844 |
| **Long:** | -95.8262 |
| **Universal Transverse Mercator** | Folder UTM List<br>*UTM list determined by folder location*<br>• NAD83 / UTM zone 15N<br>Waters UTM List<br>*UTM list determined by waters location*<br>• NAD83 / UTM zone 15N |
| **Name of nearest waterbody:** | Arkansas River |
| **Name of nearest Traditional Navigable Water (TNW):** | Arkansas River |
| **Name of watershed or Hydrologic Unit Code (HUC):** | 11110101 |

☐ 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 the action and are recorded on a different JD form.

**D. REVIEW PERFORMED FOR SITE EVALUATION:**
☑ Office Determination Date: 26-Jun-2014
☑ Field Determination Date(s): ☐ 25-Jun-2014

## SECTION II: SUMMARY OF FINDINGS

**A. RHA SECTION 10 DETERMINATION OF JURISDICTION**
**There** "navigable waters of the U.S." within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area.
☐ 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 "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:**[1]

| Water Name | Water Type(s) Present |
|---|---|
| SWT-2014-303_Ephemeral Stream | Non-RPWs that flow directly or indirectly into TNWs |
| SWT-2014-303_Adjacent Wetland | Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs |

**b. Identify (estimate) size of waters of the U.S. in the review area:**
**Area:** 0 (m²)
**Linear:** 0 (m)

**c. Limits (boundaries) of jurisdiction:**
**based on:** Established by OHWM.
**OHWM Elevation:** 708 (if known)

**2. Non-regulated waters/wetlands:**[3]
**Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain:**

## SECTION III: CWA ANALYSIS

**A. TNWs AND WETLANDS ADJACENT TO TNWs**

**1.TNW**
Not Applicable.

**2. Wetland Adjacent to TNW**
Not Applicable.

**B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):**

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

**(i) General Area Conditions:**
**Watershed size:** 3808 acres
**Drainage area:** 246 acres
**Average annual rainfall:** 41 inches
**Average annual snowfall:** 9.7 inches

**(ii) Physical Characteristics**
**(a) Relationship with TNW:**
☐ Tributary flows directly into TNW.
☑ Tributary flows through [ ] tributaries before entering TNW.
:Number of tributaries
**Project waters are** 30 (or more) river miles from TNW.
**Project waters are** 1-2 river miles from RPW.
**Project Waters are** 25-30 aerial (straight) miles from TNW.
**Project waters are** 1-2 aerial(straight) miles from RPW.
☐ Project waters cross or serve as state boundaries.
**Explain:**
The waters do not cross or serve as state boundaries.
**Identify flow route to TNW:**[5]
The waters meet two unnamed tributaries before reaching the Arkansas River. Once the waters meet RPW of the Arkansas River, it flows 37 miles to Section 10 boundary of Arkansas River, Webbers Falls Pool.

**Tributary Stream Order, if known:**

| Order | Tributary Name |
|---|---|
| 1 | SWT-2014-303_Ephemeral Stream |

**(b) General Tributary Characteristics:**
**Tributary is:**

| Tributary Name | Natural | Artificial | Explain | Manipulated | Explain |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| SWT-2014-303_Ephemeral Stream | - | - | - | X | Cement rubble and culverts have been placed on the south end of each pond for dreainage and erosion purposes. |

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

| Tributary Name | Width (ft) | Depth (ft) | Side Slopes |
|---|---|---|---|
| SWT-2014-303_Ephemeral Stream | 3 | 1 | 2:1 |

**Primary tributary substrate composition:**

| Tributary Name | Silt | Sands | Concrete | Cobble | Gravel | Muck | Bedrock | Vegetation | Other |
|---|---|---|---|---|---|---|---|---|---|
| SWT-2014-303_Ephemeral Stream | X | X | - | - | - | - | - | - | - |

**Tributary (conditions, stability, presence, geometry, gradient):**

| Tributary Name | Condition\Stability | Run\Riffle\Pool Complexes | Geometry | Gradient (%) |
|---|---|---|---|---|
| SWT-2014-303_Ephemeral Stream | Heavy rain events appear to be carving away at the sandy slopes of this tributary ephemeral stream. | There are two man-made ponds on this stream channel which are jurisdictional. There is a wetland adjacent to the west on the southern pond. No runs, pools, or riffles exist to the north of the ephemeral stream. Water begins to pool just south of the southern pond on the project area. | Meandering | 1 |

**(c) Flow:**

| Tributary Name | Provides for | Events Per Year | Flow Regime | Duration & Volume |
|---|---|---|---|---|
| SWT-2014-303_Ephemeral Stream | Ephemeral flow | 11-20 | Ephemeral drainage flows into two ponds before pooling up just south of the southern most pond. | N/A |

**Surface Flow is:**

| Tributary Name | Surface Flow | Characteristics |
|---|---|---|
| SWT-2014-303_Ephemeral Stream | Overland sheetflow | Rain events appear to be carving the sand and forming new drainage points. |

**Subsurface Flow:**

| Tributary Name | Subsurface Flow | Explain Findings | Dye (or other) Test |
|---|---|---|---|
| SWT-2014-303_Ephemeral Stream | No | N/A | - |

**Tributary has:**

| Tributary Name | Bed & Banks | OHWM | Discontinuous OHWM[7] | Explain |
|---|---|---|---|---|
| SWT-2014-303_Ephemeral Stream | - | X | - | - |

**Tributaries with OHWM[6] - (as indicated above)**

| Tributary Name | OHWM | Clear | Litter | Changes in Soil | Destruction Vegetation | Shelving | Wrack Line | Matted\Absent Vegetation | Sediment Sorting | Leaf Litter | Scour | Sediment Deposition | Flow Events | Water Staining | Changes Plant | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SWT-2014-303_Ephemeral Stream | X | - | - | - | - | X | - | X | - | - | - | - | - | - | - | - |

**If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction:**

**High Tide Line indicated by:**
Not Applicable.

**Mean High Water Mark indicated by:**

| Tributary Name | MHWM | Survey to Datum | Physical Markings | Vegetation Lines Change in Type |
|---|---|---|---|---|
| SWT-2014-303_Ephemeral Stream | - | - | - | X |

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

| Tributary Name | Explain | Identify specific pollutants, if known |
|---|---|---|
| SWT-2014-303_Ephemeral Stream | Ephemeral stream was dry with sandy bed. There appeared to be riparian zones on the northern end and southern end of the project area. | No known specific pollutants. |

**(iv) Biological Characteristics. Channel supports:**

| Tributary Name | Riparian Corridor | Characteristics | Wetland Fringe | Characteristics | Habitat |
|---|---|---|---|---|---|
| SWT-2014-303_Ephemeral Stream | X | Riparian width appears to be 325 ft. | - | - | - |

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

**(i) Physical Characteristics:**
**(a) General Wetland Characteristics:**
**Properties:**

| Wetland Name | Size (Acres) | Wetland Type | Wetland Quality | Cross or Serve as State Boundaries. Explain |
|---|---|---|---|---|
| SWT-2014-303_Adjacent Wetland | .08 | Wet meadow type. This wetland is emergent which filters sediment and nutrient loads to the southern pond that it adjoins. | - | Wetland does not cross or serve as state boundary or and other form of boundary. |

**(b) General Flow Relationship with Non-TNW:**
**Flow is:**

| Wetland Name | Flow | Explain |
|---|---|---|
| SWT-2014-303_Adjacent Wetland | Ephemeral flow. | - |

**Surface flow is:**

| Wetland Name | Flow | Characteristics |
|---|---|---|
| SWT-2014-303_Adjacent Wetland | Overland sheetflow | Low lying, depressional, previously disturbed area. |

**Subsurface flow:**

| Wetland Name | Subsurface Flow | Explain Findings | Dye (or other) Test |
|---|---|---|---|
| SWT-2014-303_Adjacent Wetland | Unknown | N/A | - |

**(c) Wetland Adjacency Determination with Non-TNW:**

| Wetland Name | Directly Abutting | Discrete Wetland Hydrologic Connection | Ecological Connection | Separated by Berm/Barrier |
|---|---|---|---|---|
| SWT-2014-303_Adjacent Wetland | No | X | - | - |

**(d) Proximity (Relationship) to TNW:**

| | River Miles | Aerial Miles | | |
|---|---|---|---|---|

| Wetland Name | From TNW | From TNW | Flow Direction | Within Floodplain |
|---|---|---|---|---|
| SWT-2014-303_Adjacent Wetland | 25-30 | 25-30 | Wetland to navigable waters | - |

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

| Wetland Name | Explain | Identify specific pollutants, if known |
|---|---|---|
| SWT-2014-303_Adjacent Wetland | - | No specific pollutants known. |

**(iii) Biological Characteristics. Wetland supports:**

| Wetland Name | Riparian Buffer | Characteristics | Vegetation | Explain |
|---|---|---|---|---|
| SWT-2014-303_Adjacent Wetland | - | - | X | Hydrophitic vegetation was observed at time of site inspection. |

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

**All wetlands being considered in the cumulative analysis:**
Not Applicable.

**Summarize overall biological, chemical and physical functions being performed:**
Not Applicable.

## 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.**

**Findings for: SWT-2014-303_Ephemeral Stream, SWT-2014-303_Adjacent Wetland**
The unnamed tributary has the potential to transfer nutrients and organic carbons to downstream food web during rain events to the TNW. This stream segment, along with two man made jurisdictional ponds within this stream channel, collects and transports water and sediments, and provides nutrient cycling, sediment retention, and filtration, all of which improves water quality of the TNW.
Therefore, the unnamed tributary has more than a speculative or insubstantial effect on the chemical, physical, and biological integrity of the downstream TNW due to their integral ecological relationship.

## D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE:

**1. TNWs and Adjacent Wetlands:**
Not Applicable.

**2. RPWs that flow directly or indirectly into TNWs:**
Not Applicable.

**Provide estimates for jurisdictional waters in the review area:**
Not Applicable.

**3. Non-RPWs that flow directly or indirectly into TNWs:**[8]
Not Applicable.

**Provide estimates for jurisdictional waters in the review area:**

| Tributary Name | Type | Size (Linear) (m) | Size (Area) (m²) |
|---|---|---|---|
| SWT-2014-303_Ephemeral Stream | Non-RPWs that flow directly or indirectly into TNWs | 576.072 | - |
| **Total:** | | **576.072** | **0** |

**4. Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
Not Applicable.

**Provide acreage estimates for jurisdictional wetlands in the review area:**
Not Applicable.

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

**Provide acreage estimates for jurisdictional wetlands in the review area:**
Not Applicable.

**6. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs:**
Not Applicable.

**Provide estimates for jurisdictional wetlands in the review area:**

| Wetland Name | Type | Size (Linear) (m) | Size (Area) (m²) |
|---|---|---|---|
| SWT-2014-303_Adjacent Wetland | Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs | - | 323.74848 |
| **Total:** | | **0** | **323.74848** |

**7. Impoundments of jurisdictional waters:**[9]
Not Applicable.

**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:**[10]
Not Applicable.

**Identify water body and summarize rationale supporting determination:**
Not Applicable.

**Provide estimates for jurisdictional waters in the review area:**
Not Applicable.

**F. NON-JURISDICTIONAL WATERS. INCLUDING WETLANDS**

- ☐ 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 soley 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):

**Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (ie., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment:**
Not Applicable.

**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.**
Not Applicable.

## SECTION IV: DATA SOURCES.

**A. SUPPORTING DATA. Data reviewed for JD**
(listed items shall be included in case file and, where checked and requested, appropriately reference below):

| Data Reviewed | Source Label | Source Description |
|---|---|---|
| --Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant | Delineation of Potential Section 404 Issues | Proposed Double Eagle Development Project in Tulsa County, Oklahoma. Prepared by Enercon (Rebecca Carrol and reviewed by David X Williams, Ph.D) |
| --Data sheets prepared/submitted by or on behalf of the applicant/consultant | Delineation of Potential Section 404 Issues | Proposed Double Eagle Development Project in Tulsa County, Oklahoma. Prepared by Enercon (Rebecca Carroll and reviewed by David X. Williams, Ph.D.) Booklet was prepared for: Tanner Consulting, LLC 5323 South Lewis Avenue Tulsa, Oklahoma 74105 |
| --U.S. Geological Survey map(s). | - | - |
| --Photographs | - | - |
| ----Aerial | Google Earth Images | I used Google Earth aerial imagary and tools for portions of this AJD report. |
| --Applicable/supporting scientific literature | www.currentresults.com | http://www.currentresults.com/Weather/Oklahoma/annual-snowfall.php This is the website I used for determining the average snowfall for the Tulsa County, Oklahoma. |

**B. ADDITIONAL COMMENTS TO SUPPORT JD:**
Not Applicable.

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[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.

[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.

[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.

[8]-See Footnote #3.

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

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