**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): July 21, 2015**

**B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Sacramento District, Clay Station Properties, LLC Investigation, SPK-2012-00116, Form 1 of 6.**

**C. PROJECT LOCATION AND BACKGROUND INFORMATION:**

State: **California** County/parish/borough: **Sacramento** City:
Center coordinates of site (lat/long in degree decimal format): Lat. **38.2679°**, Long. **-121.1636°**
Universal Transverse Mercator: **Zone 10 North, 660649 Easting, 4237134 Northing**
Name of nearest waterbody: **Dry Creek**
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Mokelumne River**
Name of watershed or Hydrologic Unit Code (HUC): **Upper Cosumnes, 18040013**
☒ 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: **This JD is divided into six forms (review areas) corresponding to the portion of each of the six drainage areas within the subject area. Form 1 covers aquatic resources SW01, SW02, SW03, SW04, SW14, SW15, SWS01, SWS02, VP01, VP30, VP31, P03 and D09. Form 2 covers aquatic resources D02, SWS04, SWS05, VP02, VP03, VP04, VP05, VP06, VP07, VP08, VP09, VP10, VP11, VP12, VP14, VP15, VP16, VP17, VP18, VP28, VP29 and VP32. Form 3 covers aquatic resources SW05, SW12, SWS11, SWS12, VP19, VP20, VP21, VP22, VP23 and VP24) Form 4 covers aquatic resources D01, D03, D04, D05, D06, D07, D08, P02, SW06, SW07, SW08, SW13, SW16, SWS06, and SWS07. Form 5 covers aquatic resources P01, SW09, SW10, SW11, SWS03, SWS09, SWS13, SWS14, VP26 and VP27. Form 6 covers aquatic resource SWS10.**

**D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):**

☒ Office (Desk) Determination. Date: **13 July 2015**
☒ Field Determination. Date(s): **2 April 2012**

**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 and are not** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

**1. Waters of the U.S.**

**a. Indicate presence of waters of U.S. in review area (check all that apply):** [1]

☐ TNWs, including territorial seas
☐ Wetlands adjacent to TNWs
☐ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
☒ Non-RPWs that flow directly or indirectly into TNWs
☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
☒ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
☐ Impoundments of jurisdictional waters
☒ Isolated (interstate or intrastate) waters, including isolated wetlands

**b. Identify (estimate) size of waters of the U.S. in the review area:**

Non-wetland waters: linear feet, wide, and/or **0** acres.

[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).

Wetlands: **2.05** acres.

**c. Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual**
Elevation of established OHWM (if known):

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

☒ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: **Approximately 0.47 acre of non-regulated aquatic resources sits within the Form 1 review area. Vernal pools VP30 (0.02 ac) and VP31 (0.01 ac) sit in terrain that has been altered prior to the incident under investigation here. The nearest aquatic resource to vernal pools VP30 and VP31 is pond P03 (0.29 ac). Vernal pools VP30 and VP31 are in close proximity to and are higher in elevation than pond P03. Pond P03 abuts and shares a surface water connection with a short segment of ditch D09 (0.15 ac). However, neither P03 nor D09 appear to be connected to any other waters. Therefore, we have determined that these aquatic resources are are isolated, intrastate waters with no interstate or foreign commerce connection and are not jurisdictional.**

## 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: **None in the review area**

Summarize rationale supporting determination: **N/A**

**2. Wetland adjacent to TNW**
Summarize rationale supporting conclusion that wetland is "adjacent": **None in the review area**

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

**This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.**

**The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.**

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

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

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

**(i) General Area Conditions:**
Watershed size: **56,000 acres**
Drainage area: **128 acres**

[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.

Average annual rainfall: **13.84-17.93** inches
Average annual snowfall: **N/A** inches

**(ii) Physical Characteristics:**

(a) Relationship with TNW:

☐ Tributary flows directly into TNW.
☒ Tributary flows through **2** tributaries before entering TNW.

Project waters are **15-20** river miles from TNW.
Project waters are **1 (or less)** river miles from RPW.
Project waters are **10-15** aerial (straight) miles from TNW.
Project waters are **1 (or less)** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: **Project waters do not cross or serve as state boundaries.**

Identify flow route to TNW[5]: **SWS02 is a non-relatively permanent tributary with characteristics of both stream and wetland. SWS02 receives water directly from the abutting VP01 and indirectly from SWS01, SW01, and SW04 through discrete surface and shallow surface flow. Flow continues from SWS02 west through SW04 then west out of the Subject Area and into the ditch running parallel to Clay Station Road. This Ditch flows approximately 1 mile south before discharging into Dry Creek, a relatively permanent water (RPW). From this point Dry Creek flows 15.4 miles to the Mokelumne River. The flow paths between SWS01, SW01, SW04 and the tributary SWS02 are clearly visible in the LiDAR data and 2009 NAIP image, however the area was completely altered when staff visited the location of these flow paths and they could not confirm if an OHWM or wetland characteristics existed in these flow paths. We have therefore determined that these visible flow paths between SWS01, SW01, SW04 and SWS02 are sufficient to establish a surface water connection between these waters but do not map aquatic resources in these areas. SW03 and SW15 flow through similar flow paths directly to the Clay Station Road ditch rather than to SWS02 first.**
Tributary stream order, if known: **1st Order.**

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

**Tributary** is: ☐ Natural
☐ Artificial (man-made). Explain:
☒ Manipulated (man-altered). Explain: **Portions of SWS02 and its tributaries, abutting and adjacent wetlands were affected by cultivation in the 2009 NAIP. The Clay Station Road ditch rerouted flow that once flowed westward, to the south and into Dry Creek.**

**Tributary** properties with respect to top of bank (estimate):
Average width: **15** feet
Average depth: **<1** feet
Average side slopes: **4:1 (or greater).**

Primary tributary substrate composition (check all that apply):

| | | |
|---|---|---|
| ☐ Silts | ☐ Sands | ☐ Concrete |
| ☐ Cobbles | ☐ Gravel | ☐ Muck |
| ☐ Bedrock | ☒ Vegetation. Type/% cover: **wetland vegetation** | |
| ☐ Other. Explain: | | |

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: **Exhibiting both stream and wetland characteristics.**
Presence of run/riffle/pool complexes. Explain: **None**
Tributary geometry: **Meandering**
Tributary gradient (approximate average slope): **<1** %

(c) Flow:

Tributary provides for: **Intermittent but not seasonal flow**
Estimate average number of flow events in review area/year: **2-5**
Describe flow regime: **SWS02 has both characteristics of stream and wetland. SWS02 and its abutting and adjacent wetlands are a closely associated vernal pool and swale complex. Under normal wet season precipitation as soils in the upland catchment areas around each vernal pool and seasonal wetland fill with water, that water hits the restrictive layer underlaying these soils and moves laterally. The depressions in the complex (vernal pools, seasonal wetlands and in-**

[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.

**swale pools) receive these lateral near surface flows, as well as direct precipitation, and store the water first in the soil pore space above the restrictive layer (i.e. perched water table), then as ponded water above the surface. Once the stored water in the complex's depressions reach an elevation above the restrictive layer they begin to contribute near surface flow to SWS02. SWS02 then responds in a similar fashion to the rest of the complex: first storing and filling with water and then contributing near suface flows to the Clay Station Road ditch and, once fully charged with water, contributing suface flows to the Clay Station Road ditch. During dry down, this process occurs in reverse: suface flows stop, then near surface flows stop, then depressions begin to dry down. This process may repeat several times during a normal wet season.**

Other information on duration and volume:

Surface flow is: **Discrete and confined.** Characteristics:

Subsurface flow: **Yes**. Explain findings: **Vernal pool and swale complex morphology and soils.**

☐ 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: **SWS02 exhibits characteristics of both wetland swale and stream.**

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 or debris deposits (foreshore)
- ☐ physical markings/characteristics
- ☐ tidal gauges
- ☐ other (list):

☐ Mean High Water Mark indicated by:

- ☐ survey to available datum;
- ☐ physical markings;
- ☐ vegetation lines/changes in vegetation types.

**(iii) Chemical Characteristics:**

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.). Explain: **SWS02 and the vernal pool and swale complex to which it belongs, along with other similarly situated waters within this watershed, collect, retain, filter and more slowly release runoff from surrounding roads, housing, rangeland, pastures, farms and other surrounding land uses. Collection of runoff into these wetlands and small streams on the site reduces chemicals and other pollutants normally found in runoff water (gas, oil, herbicides, pesticides, nutrients and human, animal and other waste material). Retention of these chemicals and other pollutants keeps them out of Dry Creek and the Mokelumne River helping to maintain downstream water quality. Dry Creek is a listed impaired water for E. coli, sediment toxicity and unknown toxicity (Final 2010 Integrated Report (CWA Section 303(d) List / 305(b) Report). The Mokelumne River is a 303(d) listed impaired water for chlorpyrifos, copper, mercury, dissolved oxygen, unknown toxicity, and zinc (Final 2010 Integrated Report (CWA Section 303(d) List / 305(b) Report). Dry Creek and the Mokelumne River are impaired in part due to losses of this type of wetlands in the immediate area and throughout the basin. Cumulative impacts from vernal pool losses are primarily due to similar conversions from grazing and other passive uses to more intensive management, including row crops and orchards.**

Identify specific pollutants, if known:

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

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

☒ Wetland fringe. Characteristics:

[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.

☒ Habitat for:

☒ Federally Listed species. Explain findings: **The Subject Area contains habitat suitable for the federally listed as endangered Lepidurus packardi (vernal pool tadpole shrimp) and the federally listed as threatened Branchinecta lynchi (vernal pool fairy shrimp). The California Natural Diversity Database indicates that both of these species occur in properties immediately abutting the Subject Area. Additionally the USFWS has designated critical habitat for these vernal pool species just three-quarters of a mile north of the Subject Area. The Mokelumne River at the Confluence with Dry Creek is listed critical habitat for the federally listed as threatened Delta Smelt (Hypomesus transpacificus) (50 CFR Part 17, 59 Fed. Reg. 65256-65279) and Central Valley California Steelhead.**

☐ Fish/spawn areas. Explain findings:

☒ Other environmentally-sensitive species. Explain findings: **Habitat for vernal pool endemic species of plants and animals, which is increasingly rare as habitat loss, occurs in the Central Valley, and is known to occur on sites directly abutting the Subject Area.**

☒ Aquatic/wildlife diversity. Explain findings: **SWS02 and the vernal pool and swale complex to which it belongs, along with other similarly situated waters within this watershed, provide habitat, food, breeding and life support for a diverse number of native plant and animal species, including invertebrates, birds, mammals, and downstream fish, some of which are federally listed threatened and/or endangered species and/or commercially important. These wetlands provide support functions to both species that are endemic to this habitat as well as highly mobile migratory species. These wetlands have the capacity to transfer nutrients and organic carbon that feed downstream food webs. They also provide habitat and lifecycle support functions for fish and wildlife species that are present in the Mokelumne River and its tributaries downstream of the subject site. The Mokelumne River at the Confluence with Dry Creek is listed critical habitat for the federally listed as threatened Delta Smelt (Hypomesus transpacificus) (50 CFR Part 17, 59 Fed. Reg. 65256-65279) and Central Valley California Steelhead.**

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

**(i) Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: **2.05** acres

Wetland type. Explain: **Vernal pool, vernal swale and seasonal wetland complex. Acreage of 2.05 includes approximately 0.9 acres for SWS02 which exhibits both stream and wetland characteristics.**

Wetland quality. Explain: **A review of the aerial photography and satellite imagery available through Google Earth indicates that the quality of these wetlands was likely degraded by agricultural activities prior to the Subject Activity. However, wetland signatures persist even after cultivation in 2009 until the Subject Activity in 2011. Linear signatures in 21 May 1993 USGS aerial photograph (Google Earth) indicate that these wetlands have persisted with periodic agricultural activities possibly including shallow plowing for wheat or hay production. The earth-moving activity in the location of the non-federally jurisdictional aquatic resources D09, P03, VP30 and VP31 is not apparent in the 1993 image but had commenced by 3 June 2003 (USDA image via Google Earth). With the exception of this earth moving activity in the location of the non-federally jurisdictional aquatic resources, the aerial photographs show the area used as rangeland (cattle grazing). New work is apparent in a narrow strip along the north boundary of the Subject Area in the 27 April 2006 aerial photograph (USDA image via Google Earth). This activity likely affected flow into the complex from off-site areas tonorth. By 31 May 2007 (USGS image via Google Earth) the northern boundary of the Form 1 study area is clearly affected by earthmoving activities. Based on the April 2012 site visit, this road along the northern boundary affects flow into the eastern portion of the complex. A new a north-south road has been graded which affects flow into the eastern portion of the complex. In the 31 May 2007 aerial photograph, grading is also apparent along Clay Station Road and through the southern portion of the Form 1 study area. The wetland signatures mapped here are still apparent during this time and persist through this activity. In the 31 January 2009 image (Digital Globe via Google Earth) linear signatures appear in a north-south orientation throughout the Form 1 study area (with the exception of the area around the non-federally jurisdictional aquatic resources and east of the north-south road previously observed in the 31 May 2007 aerial photograph). The area adjacent to Clay Station Road appears manipulated by earth moving, which, based on available information, resulted from the construction of the Freeport Water Project (SPK-2000-00025), which was authorized by the Corps in 2006. Wetland signatures persist with this activity. Much stronger north-south oriented linear signatures appear in the 24 May 2009 image. The lack of turn marks and the stacks of hay or straw in the 24 May 2009 aerial photograph (USDA via Google Earth) near D09 indicates that these strong north-south oriented linear signatures were likely the result of this hay or wheat harvest activity and not furrows associated with deep ripping. However, after this**

**event the wetland signatures, except for the deepest aquatic resources, are muted with less distinct boundaries indicating an effect on their integrity.**

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

(b) General Flow Relationship with Non-TNW:
Flow is: **Intermittent flow**. Explain: **SWS02 has both characteristics of stream and wetland. SWS02 and its abutting and adjacent wetlands are a closely associated vernal pool and swale complex. Under normal wet season precipitation as soils in the upland catchment areas around each vernal pool and seasonal wetland fill with water, that water hits the restrictive layer underlying these soils and moves laterally. The depressions in the complex (vernal pools, seasonal wetlands and in swale pools) receive these lateral near surface flows, as well as direct precipitation, and store the water first in the soil pore space above the restrictive layer (i.e. perched water table), then as ponded water above the surface. Once the stored water in the complex's depressions reach an elevation above the restrictive layer they begin to contribute near surface flow to SWS02. SWS02 then responds in a similar fashion to the rest of the complex: first storing and filling with water and then contributing near surface flows to the Clay Station Road ditch and, once fully charged with water, contributing surface flows to the Clay Station Road ditch. During dry down this process occurs in reverse: surface flows stop, then near surface flows stop, then depressions begin to dry down. This process may repeat several times during a normal wet season.**

Surface flow is**: Discrete and confined**
Characteristics: **Discernable on LiDAR and aerial photography**

Subsurface flow: **Yes**. Explain findings: **Subsurface flow occurs during the wet season above the restrictive layer and persists after rain events as discussed in b above.**
☐ Dye (or other) test performed:

(c) Wetland Adjacency Determination with Non-TNW:
☒ Directly abutting
☒ Not directly abutting
☒ Discrete wetland hydrologic connection. Explain: **SW14 directly abuts SWS02 and the Clay Station Road Ditch. VP01 is directly abutting SWS02. SW02 has a discrete hydrologic connection leading west out of the Subject Area and into the Clay Station Road ditch. SW03 and SW15 have a discrete hydrologic connection flowing west out of the Subject Area and into the Clay Station Road ditch. SWS01, SW01, SW04, and SW14 have discrete hydrologic connections to SWS02 which in turn flows west out of the Subject Area and into the Clay Station Road ditch.**
☒ Ecological connection. Explain: **Besides having a discrete hydrologic connection. aquatic resources in this landscape context are connected to each other through transport of organic carbon and nutrients downstream as well as movement of organisms in between the aquatic resources, between these aquatic resources and the receiving streams and between aquatic resources and the surrounding upland areas.**
☐ Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW
Project wetlands are **15-20** river miles from TNW.
Project waters are **10-15** aerial (straight) miles from TNW.
Flow is from: **Wetland to navigable waters.**
Estimate approximate location of wetland as within the **500-year or greater** floodplain.

**(ii) Chemical Characteristics:**
Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: **SWS02 and the vernal pool and swale complex to which it belongs, along with other similarly situated waters within this watershed, collect, retain, filter and more slowly release runoff from surrounding roads, housing, rangeland, pastures, farms and other surrounding land uses. Collection of runoff into these wetlands and small streams on the site reduces chemicals and other pollutants normally found in runoff water (gas, oil, herbicides, pesticides, nutrients and human, animal and other waste material). Retention of these chemicals and other pollutants keeps them out of Dry Creek and the Mokelumne River helping to maintain downstream water quality. Dry Creek is a listed impaired water for E. coli, sediment toxicity and unknown toxicity (Final 2010 Integrated Report (CWA Section 303(d) List / 305(b) Report). The Mokelumne River is also a 303(d) listed impaired water for chlorpyrifos, copper, mercury, dissolved oxygen, unknown toxicity, and zinc (Final 2010 Integrated Report (CWA Section 303(d) List / 305(b) Report). The Mokelumne River and its tributaries are also major sources of irrigation and or drinking/municipal water. Dry Creek and Mokelumne River are impaired in part due to losses of wetlands in the immediate area and throughout the basin. Cumulative impacts from**

**wetland losses are primarily due to similar conversions from grazing and other passive uses to more intensive management, including row crops and orchards.**

Identify specific pollutants, if known: **Pollutants typical of agriculture including pesticides, fertilizers, animal waste, nitrogen compounds and sediments.**

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

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

☒ Vegetation type/percent cover. Explain:

☒ Habitat for:

☒ Federally Listed species. Explain findings: **The Subject Area contains habitat suitable for the federally listed as endangered Lepidurus packardi (vernal pool tadpole shrimp) and the federally listed as threatened Branchinecta lynchi (vernal pool fairy shrimp). The California Natural Diversity Database indicates that both of these species occur in properties immediately abutting the Subject Area. Additionally the USFWS has designated critical habitat for these vernal pool species just three-quarters of a mile north of the Subject Area. The Mokelumne River at the Confluence with Dry Creek is listed critical habitat for the federally listed as threatened Delta Smelt (Hypomesus transpacificus) (50 CFR Part 17, 59 Fed. Reg. 65256-65279) and Central Valley California Steelhead.**

☐ Fish/spawn areas. Explain findings:

☒ Other environmentally-sensitive species. Explain findings: **Habitat for vernal pool endemic species of plants and animals which is increasingly rare as habitat loss occurs in the Central Valley, and is known to occur on sites directly abutting the Subject Area.**

☒ Aquatic/wildlife diversity. Explain findings: **SWS02 and the vernal pool and swale complex to which it belongs, along with other similarly situated waters within this watershed, provide habitat, food, breeding and life support for a diverse number of native plant and animal species, including invertebrates, birds, mammals, downstream fish, some of which are federally listed threatened and/or endangered species and/or commercially important. These wetlands provide support functions to both species that are endemic to this habitat as well as highly mobile migratory species. These wetlands have the capacity to transfer nutrients and organic carbon that feed downstream food webs. They also provide habitat and lifecycle support functions for fish and wildlife species that are present in the Mokelumne River and its tributaries downstream of the subject site. The Mokelumne River at the Confluence with Dry Creek is listed critical habitat for the federally listed as threatened Delta Smelt (Hypomesus transpacificus) (50 CFR Part 17, 59 Fed. Reg. 65256-65279) and Central Valley California Steelhead.**

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

All wetland(s) being considered in the cumulative analysis: **9**

Approximately **2.05** 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) |
|---|---|---|---|
| SW01 (N) | 0.016 | SW15 (N) | 0.008 |
| SW02 (N) | 0.058 | SWS01 (N) | 0.032 |
| SW03 (N) | 0.024 | SWS02 (Y) | 0.913 |
| SW04 (N) | 0.02 | VP01 (Y) | 0.043 |
| SW14 (Y) | 0.934 | | |

Summarize overall biological, chemical and physical functions being performed: **SWS02 and its abutting and adjacent wetlands perform several functions important to the biological, chemical and physical integrity of Dry Creek and Mokelumne River. This nexus is neither speculative nor insubstantial. These wetlands, along with other similarly situated wetlands in the watershed, store precipitation and slowly deliver this water to SWS02 and the Clay Station Road ditch, thereby attenuating storm flows and maintaining base flow in Dry Creek and the Mokelumne River. By attenuating storm flows, these waters reduce the risk of flooding downstream and by slowly delivering this stored water to downstream waters, maintain the base flow needed to maintain the physical integrity of Dry Creek and the Mokelumne River as well as for downstream for fish and other wildlife. These wetlands, along with other similarly situated wetlands in the watershed, perform a critical denitrification function which removes nitrogen from the system. Nitrogen and phosphorous are the two nutrients responsible for eutrophication of California waterways and dissolved oxygen impairment. The Mokelumne River is a 303(d) listed impaired water for dissolved oxygen.**

**C. SIGNIFICANT NEXUS DETERMINATION**

**A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.**

**Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:**

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

**Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:**

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: **SWS02 exhibits characteristics of both stream and wetland. SWS02, in combination with its adjacent wetlands, has the capacity to carry pollutants and flood waters to the Mokelumne River and to reduce the amount of pollutants and flood waters reaching the Mokelumne River. SWS02, in combination with its adjacent wetlands, has the capacity to transfer nutrients and organic carbon that support downstream foodwebs. See Sections III.B.1 and III.B.2 for additional information on the functions performed by these waters.**

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, wide, Or acres.
   - ☐ Wetlands adjacent to TNWs: acres.

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

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

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

[8]See Footnote # 3.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☒ Tributary waters: **2034** linear feet, **15** wide.
☐ Other non-wetland waters: acres.
Identify type(s) of waters:

**4. Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:

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

**5. Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

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

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

Provide estimates for jurisdictional wetlands in the review area: **2.05** 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, wide.
☐ 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.

[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.***

☒ 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). **Approximately 0.47 acre of non-regulated aquatic resources sit within the Form 1 review area. Vernal pools VP30 (0.02 ac) and VP31 (0.01 ac) sit in terrain that has been altered prior to the incident under investigation here. The nearest aquatic resource to vernal pools VP30 and VP31 is pond P03 (0.29 ac). Vernal pools VP30 and VP31 are in close proximity to and are higher in elevation than pond P03. Pond P03 abuts and shares a surface water connection with a short segment of ditch D09 (0.15 ac). However, neither P03 nor D09 appear to be connected to any other waters.**
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain:
☐ Other: (explain, if not covered above):

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, wide.
☒ Lakes/ponds: **0.29** acres.
☒ Other non-wetland waters: **0.15** acres. List type of aquatic resource: **ditch remnant**
☐ Wetlands: **0.03** acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, wide.
☐ Lakes/ponds: **0.29** acres.
☐ Other non-wetland waters: **0.15** acres. List type of aquatic resource: **ditch remnant**
☐ Wetlands: **0.03** acres.

**SECTION IV: DATA SOURCES.**

**A. SUPPORTING DATA. Data reviewed for JD (check all that apply -** checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☐ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  ☐ Office concurs with data sheets/delineation report.
  ☒ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps:
☐ Corps navigable waters' study:
☒ U.S. Geological Survey Hydrologic Atlas:
  ☒ USGS NHD data.
  ☒ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name: **1:24K; CA-CLAY**
☒ USDA Natural Resources Conservation Service Soil Survey. Citation: **USDA Custom Soil Report**
☒ National wetlands inventory map(s). Cite name: **National Wetland Mapper**
☐ State/Local wetland inventory map(s):
☒ FEMA/FIRM maps: **FEMA map number 06067C0500H**
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date): **18MAR06 Digital Globe via Google Earth, 06APR10 source not specified via Google Earth, 18MAR11 Digital Globe via Google Earth, and 13JUN11 source not specified via Google Earth.**
  or ☒ Other (Name & Date): **Site inspection photographs 02APR12**
☒ Previous determination(s). File no. and date of response letter: **A portion of the Subject Area along Clay Station Road was delineated as a part of SPK-2000-00025 in a report by Jones & Stokes titled "Delineation of Waters of the United States, Including Wetlands, Freeport Regional Water Project" dated 15 February 2006. On 27 February 2006 this office issued an approved jurisdictional determination for SPK-2000-00025 (Freeport Regional Water Project, Folsom South Canal Connection). The June 2011 Vollmar delineation was not submitted to this office for verification.**
☐ Applicable/supporting case law:
☐ Applicable/supporting scientific literature:
☒ Other information (please specify): **California Environmental Quality Act Initial Study (control number: PLNP2010-PMR-00215) and a report titled "Appendix A Biological Resources Inventory at the 525+/- Acre 'Clay Station Road' Site, Sacramento County, California" dated 12 January 2011. The 12 January 2011 report was not a delineation but does include maps and descriptions of some of the clusters of aquatic resources on the site. California Department of Water Resources LiDAR. The Subject Area is approximately 22 miles from the Mather Field Weather Station (KMHR) and approximately 25 miles away from Sacramento Executive Airport weather station (NOAA station ID KSAC; USDA WETS Station CA232 ) and the Stockton Metro weather station (NOAA station ID KSCK; USDA WETS Station CA237) . The Sacramento Executive Airport weather station reports an average of 17.93 inches of annual precipitation . The Stockton Metro Airport reports an**

**average of 13.84 inches of annual precipitation . The Mather Field Weather Station is not included in the USDA's WETS Tables.**

**B. ADDITIONAL COMMENTS TO SUPPORT JD:**

**SWS02 exhibits characteristics of both stream and wetland. This is a common occurrence in the vernal pool landscape. In this analysis we have considered SWS02 a tributary. However, even if SWS02 were not considered a tributary, it and the other aquatic resources in this review area would be adjacent to the ditch running parallel to Clay Station Road. Since that ditch is outside of our Subject Area we have not specifically addressed it other than as a hydrologic connection to Dry Creek. However, this ditch is a NRPW tributary to Dry Creek.**

**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): July 21, 2015**

**B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Sacramento District, Clay Station Properties, LLC Investigation, SPK-2012-00116, Form 2 of 6.**

**C. PROJECT LOCATION AND BACKGROUND INFORMATION:**

State: **California** County/parish/borough: **Sacramento** City:
Center coordinates of site (lat/long in degree decimal format): Lat. **38.2679°**, Long. **-121.1636°**
Universal Transverse Mercator: **Zone 10 North, 660649 Easting, 4237134 Northing**
Name of nearest waterbody: **Dry Creek**
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Mokelumne River**
Name of watershed or Hydrologic Unit Code (HUC): **Upper Cosumnes, 18040013**
☒ 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: **This JD is divided into six forms (review areas) corresponding to the portion of each of the six drainage areas within the subject area. Form 1 covers aquatic resources SW01, SW02, SW03, SW04, SW14, SW15, SWS01, SWS02, VP01, VP30, VP31, P03 and D09. Form 2 covers aquatic resources D02, SWS04, SWS05, VP02, VP03, VP04, VP05, VP06, VP07, VP08, VP09, VP10, VP11, VP12, VP14, VP15, VP16, VP17, VP18, VP28, VP29 and VP32. Form 3 covers aquatic resources SW05, SW12, SWS11, SWS12, VP19, VP20, VP21, VP22, VP23 and VP24) Form 4 covers aquatic resources D01, D03, D04, D05, D06, D07, D08, P02, SW06, SW07, SW08, SW13, SW16, SWS06, and SWS07. Form 5 covers aquatic resources P01, SW09, SW10, SW11, SWS03, SWS09, SWS13, SWS14, VP26 and VP27. Form 6 covers aquatic resource SWS10.**

**D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):**

☒ Office (Desk) Determination. Date: **13 July 2015**
☒ Field Determination. Date(s): **2 April 2012**

**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 and are not** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

**1. Waters of the U.S.**

**a. Indicate presence of waters of U.S. in review area (check all that apply):** [1]

☐ TNWs, including territorial seas
☐ Wetlands adjacent to TNWs
☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
☒ Non-RPWs that flow directly or indirectly into TNWs
☒ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
☒ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
☐ Impoundments of jurisdictional waters
☒ Isolated (interstate or intrastate) waters, including isolated wetlands

**b. Identify (estimate) size of waters of the U.S. in the review area:**

Non-wetland waters: linear feet, wide, and/or **0.46** acres.
Wetlands: **2.81** acres.

[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).

**c. Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual**
Elevation of established OHWM (if known):

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

☒ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: **VP05 is an approximately 0.03 acre non-regulated aquatic resources within the Form 2 review area. While it is at the margin of the larger vernal pool complex to the west, we could find no discernible surface or subsurface connection. While a shallow subsurface connection may exist, we do not have sufficient evidence given the data currently available to us at this time. Therefore, we have determined that this aquatic resource is an isolated, intrastate water with no interstate or foreign commerce connect, and is not jurisdictional.**

## 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: **None in the review area**

Summarize rationale supporting determination: **N/A**

**2. Wetland adjacent to TNW**
Summarize rationale supporting conclusion that wetland is "adjacent": **None in the review area**

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

**This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.**

**The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.**

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

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

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

**(i) General Area Conditions:**
Watershed size: **56,000 acres**
Drainage area: **76 acres**
Average annual rainfall: **13.84-17.93** inches
Average annual snowfall: **N/A** inches

**(ii) Physical Characteristics:**

[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.

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

Project waters are **15-20** river miles from TNW.
Project waters are **1 (or less)** river miles from RPW.
Project waters are **10-15** aerial (straight) miles from TNW.
Project waters are **1 (or less)** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: **Project waters do not cross or serve as state boundaries.**

Identify flow route to TNW[5]: **SWS04 and SWS05 (form 2) are non-relatively permanent tributaries with characteristics of both stream and wetland. SWS04 receives water directly from the abutting VP17, VP18 and VP28 and indirectly from VP16 (which also flows directly to D02), VP02, VP03, VP04, VP06, VP07, VP08, VP09, VP10, VP11, VP12, VP14 and VP32. SW05 receives water from VP15, VP29, and VP14. There are discrete flow paths between SWS04 and SWS05 through VP14, VP15 and VP29 forming a crescent shaped vernal pool complex with two outlets to D02 to the south. D02 is a relatively permanent water that flows south into the ditch network in Form 4 (D06, D07, and P02) before flowing into Dry Creek (approximately 3000 feet). D02 also discharges south from its western extent into the ditch network through the irrigated fields in the Southern portion of the Subject Area then dischargs into Dry Creek (approximately 4200 feet). From this point Dry Creek flows 15.6 miles to the Mokelumne River.**
Tributary stream order, if known: **1st Order.**

(b) General Tributary Characteristics (check all that apply):
**Tributary** is: ☒ Natural
☐ Artificial (man-made). Explain:
☒ Manipulated (man-altered). Explain: **D02 and the irrigated fields to the south re-routed flow but the mapped portions of SWS04 and SWS05 that remain are in a natural state until the activities under investigation here.**

**Tributary** properties with respect to top of bank (estimate):
Average width: **15** feet
Average depth: **<1** feet
Average side slopes: **4:1 (or greater).**

Primary tributary substrate composition (check all that apply):
☐ Silts ☐ Sands ☐ Concrete
☐ Cobbles ☐ Gravel ☐ Muck
☐ Bedrock ☒ Vegetation. Type/% cover: **wetland vegetation**
☐ Other. Explain: **D02 has an unknown substrate. SWS04 and SWS05 are vegetated with wetland vegetation.**

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: **SWS04 and SWS05 exhibit both stream and wetland characteristics. D02 is a low velocity ditch.**
Presence of run/riffle/pool complexes. Explain: **None**
Tributary geometry: **Meandering**
Tributary gradient (approximate average slope): **<1** %

(c) Flow:
Tributary provides for: **Intermittent but not seasonal flow**
Estimate average number of flow events in review area/year: **2-5**
Describe flow regime: **SWS04 and SWS05 (form 2) are non-relatively permanent tributaries with characteristics of both stream and wetland. SWS04 and SWS05 and their abutting and adjacent wetlands are a closely associated vernal pool and swale complex. Under normal wet season precipitation as soils in the upland catchment areas around each vernal pool and seasonal wetland fill with water, that water hits the restrictive layer underlying these soils and moves laterally. The depressions in the complex (vernal pools, seasonal wetlands and in swale pools) receive these lateral near surface flows, as well as direct precipitation, and store the water first in the soil pore space above the restrictive layer (i.e. perched water table), then as ponded water above the surface. Once the stored water in the complex's depressions reach an elevation above the restrictive layer they begin to contribute near surface flow to SWS04 and SWS05. SWS04 and SWS05 then responds in a similar fashion to the rest of the complex: first storing**

[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.

**and filling with water and then contributing near surface flows to D02 and, once fully charged with water, contributing surface flows to D02. During dry down this process occurs in reverse: surface flows stop, then near surface flows stop, then depressions begin to dry down. This process may repeat several times during a normal wet season. A review of aerial photography available on Google Earth indicates that D02 has water in most wet season images (27 December 2003, 18 March 2006, 31 January 2009, 6 April 2010, 30 March 2011) and dry throughout the dry season images indicating that D03 flows seasonally.**

Other information on duration and volume:

Surface flow is: **Discrete and confined.** Characteristics:

Subsurface flow: **Yes**. Explain findings: **Vernal pool and swale complex morphology and soils.**

☐ 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: **SWS04 and SWS05 exhibit characteristics of both wetland swale and stream. D02 is a constructed channel that reroutes the course of water from SWS04 and SWS05 into the ditch system in Form 4.**

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 or debris deposits (foreshore)
- ☐ physical markings/characteristics
- ☐ tidal gauges
- ☐ other (list):

☐ Mean High Water Mark indicated by:

- ☐ survey to available datum;
- ☐ physical markings;
- ☐ vegetation lines/changes in vegetation types.

**(iii) Chemical Characteristics:**

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.). Explain: **SWS04 and SWS05 and the vernal pool and swale complex to which it belongs, along with other similarly situated waters within this watershed, collect, retain, filter and more slowly release runoff from surrounding roads, housing, rangeland, pastures, farms and other surrounding land uses. Collection of runoff into these wetlands and small streams on the site reduces chemicals and other pollutants normally found in runoff water (gas, oil, herbicides, pesticides, nutrients and human, animal and other waste material). Retention of these chemicals and other pollutants keeps them out of Dry Creek and the Mokelumne River helping to maintain downstream water quality. Dry Creek is a listed impaired water for E. coli, sediment toxicity and unknown toxicity (Final 2010 Integrated Report (CWA Section 303(d) List / 305(b) Report). The Mokelumne River is a 303(d) listed impaired water for chlorpyrifos, copper, mercury, dissolved oxygen, unknown toxicity, and zinc (Final 2010 Integrated Report (CWA Section 303(d) List / 305(b) Report). Dry Creek and the Mokelumne River are impaired in part due to wetland losses in the immediate area and throughout the basin. Cumulative impacts from wetland losses are primarily due to similar conversions from grazing and other passive uses to more intensive management, including row crops and orchards.**

Identify specific pollutants, if known:

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

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

☒ Wetland fringe. Characteristics:

☒ Habitat for:

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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.

☒ Federally Listed species. Explain findings: **The Subject Area contains habitat suitable for the federally listed as endangered Lepidurus packardi (vernal pool tadpole shrimp) and the federally listed as threatened Branchinecta lynchi (vernal pool fairy shrimp). The California Natural Diversity Database indicates that both of these species occur in properties immediately abutting the Subject Area. Additionally the USFWS has designated critical habitat for these vernal pool species just three-quarters of a mile north of the Subject Area. The Mokelumne River at the confluence with Dry Creek is listed critical habitat for the federally listed as threatened Delta Smelt (Hypomesus transpacificus) (50 CFR Part 17, 59 Fed. Reg. 65256-65279) and Central Valley California Steelhead.**

☐ Fish/spawn areas. Explain findings:

☒ Other environmentally-sensitive species. Explain findings: **Habitat for vernal pool endemic species of plants and animals which is increasingly rare as habitat loss occurs in the Central Valley, and is known to occur on sites directly abutting the Subject Area.**

☒ Aquatic/wildlife diversity. Explain findings: **SWS04 and SWS05 and the vernal pool and swale complex to which it belongs along with other similarly situated waters within this watershed provide habitat, food, breeding and life support for a diverse number of native plant and animal species, including invertebrates, birds, mammals, and downstream fish, some of which are federally listed threatened and/or endangered and/or commercially important. These wetlands provide support functions to both species that are endemic to this habitat as well as highly mobile migratory species. These wetlands have the capacity to transfer nutrients and organic carbon that feed downstream food webs. They also provide habitat and lifecycle support functions for fish and wildlife species that are present in the Mokelumne River and its tributaries downstream of the subject site. The Mokelumne River at the confluence with Dry Creek is listed critical habitat for the federally listed as threatened Delta Smelt (Hypomesus transpacificus) (50 CFR Part 17, 59 Fed. Reg. 65256-65279) and Central Valley California Steelhead.**

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

**(i) Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: **2.81** acres

Wetland type. Explain: **Vernal pool, vernal swale, seasonal wetland complex. This 2.81 acres includes approximately SWS04 (1.73 acres) and SWS05 (0.14 acres) which exhibits both stream and wetland characteristics. It does not include the 0.47 acres for D02.**

Wetland quality. Explain: **A review of the aerial photography and satellite imagery available through Google Earth indicates that the quality of these wetlands was intact prior to the Subject Activity. In the 21 May 1993 image there are some light, indistinct linear signatures in an east west and north south orientation indicating mowing or plowing at some point in the past. These signatures are more distinct in the 9 August 2003 image but this is likely because of better resolution of this image as no new soil disturbing activity is apparent and the signatures appear in the same location and orientation consistently until the Subject Activity. The 18 March 2006 image is particularly useful as it shows water in the deeper pools and channels and reveals the interconnectedness of the complex. Earth moving activity affects the hill in the north portion of this review area in the 31 May 2007 aerial photograph. Farm roads appear to have been improved on that date as well and there is evidence of earth moving along the northern boundary of the Subject Area, which likely affected the quality of wetlands in the Form 1 review area. However none of this activity appears to have affected the wetlands identified in Form 2 substantially.**

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

(b) General Flow Relationship with Non-TNW:

Flow is: **Intermittent flow**. Explain: **SWS04 and SWS05 exhibit both characteristics of stream and wetland. SWS04 and SWS05 and their abutting and adjacent wetlands are a closely associated vernal pool and swale complex. Under normal wet season precipitation as soils in the upland catchment areas around each vernal pool and seasonal wetland fill with water, that water hits the restrictive layer underlying these soils and moves laterally. The depressions in the complex (vernal pools, seasonal wetlands and in swale pools) receive these lateral near surface flows, as well as direct precipitation, and store the water first in the soil pore space above the restrictive layer (i.e. perched water table), then as ponded water above the surface. Once the stored water in the complex's depressions reach an elevation above the restrictive layer they begin to contribute near surface flow to SWS04 and SWS05. SWS04 and SWS05 then responds in a similar fashion to the rest of the complex: first storing and filling with water and then contributing near surface flows to D02 and, once fully charged with water, contributing surface flows to D02. During dry down this process occurs in reverse: surface flows stop, then near surface flows stop, then depressions begin to dry down. This process may repeat several times during a normal wet season.**

Surface flow is**: Discrete and confined**
Characteristics: **Discernable on LiDAR and aerial photography**

Subsurface flow: **Yes**. Explain findings: **Subsurface flow occurs during the wet season above the restrictive layer and persists after rain events as discussed in b above.**
☐ Dye (or other) test performed:

(c) Wetland Adjacency Determination with Non-TNW:
☒ Directly abutting
☒ Not directly abutting
☒ Discrete wetland hydrologic connection. Explain: **VP17, VP18 and VP28 directly abut SWS04. VP16 (which also flows to SWS04) directly abuts D02. VP16 (which also flows direct to D02), VP02, VP03, VP04, VP06, VP07, VP08, VP09, VP10, VP11, VP12, VP14 and VP32 have discrete hydrologic connections to SWS04 visible in aerial photography and LiDAR. VP15, VP29, and VP14 have discrete connections to SWS05 visible in aerial photography and LiDAR. There are discrete flow paths between SWS04 and SWS05 through VP14, VP15 and VP29 forming a crescent shaped vernal pool complex with two discrete outlets to D02 to the south.**
☒ Ecological connection. Explain: **Besides having a discrete hydrologic connection, aquatic resources in this landscape context are connected to each other through transport of organic carbon and nutrients downstream as well as movement of organisms in between the aquatic resources, between these aquatic resources and the receiving streams and between aquatic resources and the surrounding upland areas.**
☐ Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW
Project wetlands are **15-20** river miles from TNW.
Project waters are **10-15** aerial (straight) miles from TNW.
Flow is from: **Wetland to navigable waters.**
Estimate approximate location of wetland as within the **500-year or greater** floodplain.

**(ii) Chemical Characteristics:**
Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: **SWS04 and SWS05 and the vernal pool and swale complex to which it belongs, along with other similarly situated waters within this watershed, collect, retain, filter and more slowly release runoff from surrounding roads, housing, rangeland, pastures, farms and other surrounding land uses. Collection of runoff into these wetlands and small streams on the site reduces chemicals and other pollutants normally found in runoff water (gas, oil, herbicides, pesticides, nutrients and human, animal and other waste material). Retention of these chemicals and other pollutants keeps them out of Dry Creek and the Mokelumne River helping to maintain downstream water quality. Dry Creek is a listed impaired water for E. coli, sediment toxicity and unknown toxicity (Final 2010 Integrated Report (CWA Section 303(d) List / 305(b) Report). The Mokelumne River is also a 303(d) listed impaired water for chlorpyrifos, copper, mercury, dissolved oxygen, unknown toxicity, and zinc (Final 2010 Integrated Report (CWA Section 303(d) List / 305(b) Report). The Mokelumne River and its tributaries are also major sources of irrigation and or drinking/municipal water. Dry Creek and the Mokelumne River are impaired in part due to wetland losses in the immediate area and throughout the basin. Cumulative impacts from wetland losses are primarily due to similar conversions from grazing and other passive uses to more intensive management, including row crops and orchards.**
Identify specific pollutants, if known: **Pollutants typical of agriculture including pesticides, fertilizers, animal waste, nitrogen compounds and sediments.**

**(iii) Biological Characteristics. Wetland supports (check all that apply):**
☐ Riparian buffer. Characteristics (type, average width):
☒ Vegetation type/percent cover. Explain:
☒ Habitat for:
☒ Federally Listed species. Explain findings: **The Subject Area contains habitat suitable for the federally listed as endangered Lepidurus packardi (vernal pool tadpole shrimp) and the federally listed as threatened Branchinecta lynchi (vernal pool fairy shrimp). The California Natural Diversity Database indicates that both of these species occur in properties immediately abutting the Subject Area. Additionally the USFWS has designated critical habitat for these vernal pool species just three-quarters of a mile north of the Subject Area. The Mokelumne River at the confluence with Dry Creek is listed critical habitat for the federally listed as threatened Delta Smelt (Hypomesus transpacificus) (50 CFR Part 17, 59 Fed. Reg. 65256-65279) and Central Valley California Steelhead.**
☐ Fish/spawn areas. Explain findings:

☒ Other environmentally-sensitive species. Explain findings: **Habitat for vernal pool endemic species of plants and animals which is increasingly rare as habitat loss occurs in the Central Valley, and is known to occur on sites directly abutting the Subject Area.**

☒ Aquatic/wildlife diversity. Explain findings: **SWS04 and SWS05 and the vernal pool and swale complex to which it belongs, along with other similarly situated waters within this watershed, provide habitat, food, breeding and life support for a diverse number of native plant and animal species, including invertebrates, birds, mammals, downstream fish, some of which are federally listed threatened and/or endangeredspecies and/or commercially important. These wetlands provide support functions to both species that are endemic to this habitat as well as highly mobile migratory species. These wetlands have the capacity to transfer nutrients and organic carbon that feed downstream food webs. They also provide habitat and lifecycle support functions for fish and wildlife species that are present in the Mokelumne River and its tributaries downstream of the subject site. The Mokelumne River at the confluence with Dry Creek is listed critical habitat for the federally listed as threatened Delta Smelt (Hypomesus transpacificus) (50 CFR Part 17, 59 Fed. Reg. 65256-65279) and Central Valley California Steelhead.**

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

All wetland(s) being considered in the cumulative analysis: **15-20**

Approximately **2.81** 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) |
|---|---|---|---|
| SWS04 (Y) | 1.734 | SWS05 (Y) | 0.139 |
| VP02 (N) | 0.019 | VP03 (N) | 0.008 |
| VP04 (N) | 0.02 | VP06 (N) | 0.015 |
| VP07 (N) | 0.022 | VP08 (N) | 0.043 |
| VP09 (N) | 0.058 | VP10 (N) | 0.027 |
| VP11 (N) | 0.011 | VP15 (N) | 0.024 |
| VP16 (Y) | 0.218 | VP17 (Y) | 0.09 |
| VP18 (N) | 0.302 | VP28 (N) | 0.022 |
| VP29 (N) | 0.019 | VP32 (N) | 0.01 |

Summarize overall biological, chemical and physical functions being performed: **SWS04 and SWS05 and its abutting and adjacent wetlands perform several functions important to the biological, chemical and physical integrity of Dry Creek and Mokelumne River. This nexus is neither speculative nor insubstantial. These wetlands, along with other similarly situated wetlands in the watershed, store precipitation and slowly deliver this water to SWS04, SWS05 and D02, thereby attenuating storm flows and maintaining base flow in Dry Creek and the Mokelumne River. By attenuating storm flows these waters reduce the risk of flooding downstream and by slowly delivering this stored water to downstream waters, maintain the base flow needed to maintain the physical integrity of Dry Creek and the Mokelumne River as well as for downstream for fish and other wildlife. These wetlands, along withother similarly situated wetlands in the watershed, perform a critical denitrification function which removes nitrogen from the system. Nitrogen and phosphorous are the two nutrients responsible for eutrophication of California waterways and dissolved oxygen impairment. The Mokelumne River is a 303(d) listed impaired water for dissolved oxygen.**

## C. SIGNIFICANT NEXUS DETERMINATION

**A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.**

**Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:**

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?

- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

**Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:**

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: **SWS04 and SWS05 exhibit characteristics of both stream and wetland. SWS04 and SWS05, their tributaries, abutting and adjacent wetlands, are a vernal pool and swale complex adjacent to and in some cases abutting D02, an RPW. The complex included on this form is hydrologically connected to the Mokelumne River via D02 and the ditch system in Form 4 and Dry Creek. These waters both have the capacity to carry pollutants and flood waters to the TNW and reduce the amount of pollutants and flood waters reaching the TNW. These waters provide habitat for federally listed aquatic species. These waters have the capacity to transfer nutrients and organic carbon that support downstream foodwebs. See Sections III.B.1 and III.B.2 for additional information on the functions performed by these waters.**

**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, wide, 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: **Aerial photography available via Google Earth shows water in D02 in most of the wet season images and no water in the dry season images indicating that D02 flows during the wet season.**

   Provide estimates for jurisdictional waters in the review area (check all that apply):
   - ☒ Tributary waters: **1226** linear feet **16** wide.
   - ☐ Other non-wetland waters: acres.
     Identify type(s) of waters:

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

   Provide estimates for jurisdictional waters within the review area (check all that apply):
   - ☒ Tributary waters: **4845** linear feet, **15** wide.
   - ☐ Other non-wetland waters: acres.
     Identify type(s) of waters: **SWS04 and SWS05 exhibit characteristics of both stream and wetlands.**

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:

[8]See Footnote # 3.

☒ 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: **SWS04 and SWS05 exhibit characheristics of both stream and wetland. SWS04, SWS05, VP16 and VP17 directly abut D02. D02 is an RPW.**

Provide acreage estimates for jurisdictional wetlands in the review area: **2.181** 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: **0.629** acres.

**6. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**

☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

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

**7. Impoundments of jurisdictional waters.[9]**

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

**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, wide.
☐ 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). **P05 is an approximately 0.03 acre non-regulated aquatic resources within the Form 2 review area. While it is at the margin of the larger vernal pool complex to the west, we could find no discernible surface or subsurface connection. While a shallow subsurface connection may exist, we do not have sufficient evidence given the data currently available to us at this time.**
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: **V**
☐ Other: (explain, if not covered above):

[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.***

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, wide.
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource:
☒ Wetlands: **0.03** acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, wide.
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource:
☐ Wetlands: acres.

**SECTION IV: DATA SOURCES.**

**A. SUPPORTING DATA. Data reviewed for JD (check all that apply -** checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
- ☐ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:
- ☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - ☐ Office concurs with data sheets/delineation report.
  - ☒ Office does not concur with data sheets/delineation report.
- ☐ Data sheets prepared by the Corps:
- ☐ Corps navigable waters' study:
- ☒ U.S. Geological Survey Hydrologic Atlas:
  - ☒ USGS NHD data.
  - ☒ USGS 8 and 12 digit HUC maps.
- ☒ U.S. Geological Survey map(s). Cite scale & quad name: **1:24K; CA-CLAY**
- ☒ USDA Natural Resources Conservation Service Soil Survey. Citation: **USDA Custom Soil Report**
- ☒ National wetlands inventory map(s). Cite name: **National Wetland Mapper**
- ☐ State/Local wetland inventory map(s):
- ☒ FEMA/FIRM maps: **FEMA map number 06067C0500H**
- ☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- ☒ Photographs: ☒ Aerial (Name & Date): **18MAR06 Digital Globe via Google Earth, 06APR10 source not specified via Google Earth, 18MAR11 Digital Globe via Google Earth, and 13JUN11 source not specified via Google Earth.**
  or ☒ Other (Name & Date): **Site inspection photographs 02APR12**
- ☒ Previous determination(s). File no. and date of response letter: **A portion of the Subject Area along Clay Station Road was delineated as a part of SPK-2000-00025 in a report by Jones & Stokes titled "Delineation of Waters of the United States, Including Wetlands, Freeport Regional Water Project" dated 15 February 2006. On 27 February 2006 this office issued an approved jurisdictional determination for SPK-2000-00025 (Freeport Regional Water Project, Folsom South Canal Connection). The June 2011 Vollmar delineation was not submitted to this office for verification.**
- ☐ Applicable/supporting case law:
- ☐ Applicable/supporting scientific literature:
- ☒ Other information (please specify): **California Environmental Quality Act Initial Study (control number: PLNP2010-PMR-00215) and a report titled "Appendix A Biological Resources Inventory at the 525+/- Acre 'Clay Station Road' Site, Sacramento County, California" dated 12 January 2011. The 12 January 2011 report was not a delineation but does include maps and descriptions of some of the clusters of aquatic resources on the site. California Department of Water Resources LiDAR. The Subject Area is approximately 22 miles from the Mather Field Weather Station (KMHR) and approximately 25 miles away from Sacramento Executive Airport weather station (NOAA station ID KSAC; USDA WETS Station CA232 ) and the Stockton Metro weather station (NOAA station ID KSCK; USDA WETS Station CA237) . The Sacramento Executive Airport weather station reports an average of 17.93 inches of annual precipitation . The Stockton Metro Airport reports an average of 13.84 inches of annual precipitation . The Mather Field Weather Station is not included in the USDA's WETS Tables.**

**B. ADDITIONAL COMMENTS TO SUPPORT JD:**

**SWS04 and SWS05 exhibit characteristics of both stream and wetland. This is a common occurrence in the vernal pool landscape. In this analysis we have considered SWS04 and SWS05 as tributaries. However, even if SWS04 and SWS05 were not considered tributaries, they and the other aquatic resources in this review area would be adjacent to D02, an RPW tributary to Dry Creek.**

**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): July 21, 2015**

**B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Sacramento District, Clay Station Properties, LLC Investigation, SPK-2012-00116, Form 3 of 6.**

**C. PROJECT LOCATION AND BACKGROUND INFORMATION:**

State: **California** County/parish/borough: **Sacramento** City:
Center coordinates of site (lat/long in degree decimal format): Lat. **38.2679°**, Long. **-121.1636°**
Universal Transverse Mercator: **Zone 10 North, 660649 Easting, 4237134 Northing**
Name of nearest waterbody: **Dry Creek**
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Mokelumne River**
Name of watershed or Hydrologic Unit Code (HUC): **Upper Cosumnes, 18040013**
☒ 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: **This JD is divided into six forms (review areas) corresponding to the portion of each of the six drainage areas within the subject area. Form 1 covers aquatic resources SW01, SW02, SW03, SW04, SW14, SW15, SWS01, SWS02, VP01, VP30, VP31, P03 and D09. Form 2 covers aquatic resources D02, SWS04, SWS05, VP02, VP03, VP04, VP05, VP06, VP07, VP08, VP09, VP10, VP11, VP12, VP14, VP15, VP16, VP17, VP18, VP28, VP29 and VP32. Form 3 covers aquatic resources SW05, SW12, SWS11, SWS12, VP19, VP20, VP21, VP22, VP23 and VP24) Form 4 covers aquatic resources D01, D03, D04, D05, D06, D07, D08, P02, SW06, SW07, SW08, SW13, SW16, SWS06, and SWS07. Form 5 covers aquatic resources P01, SW09, SW10, SW11, SWS03, SWS09, SWS13, SWS14, VP26 and VP27. Form 6 covers aquatic resource SWS10.**

**D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):**

☒ Office (Desk) Determination. Date: **13 July 2015**
☒ Field Determination. Date(s): **2 April 2012**

**SECTION II: SUMMARY OF FINDINGS**

**A. RHA SECTION 10 DETERMINATION OF JURISDICTION.**

There **Are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain:

**B. CWA SECTION 404 DETERMINATION OF JURISDICTION.**

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

**1. Waters of the U.S.**

**a. Indicate presence of waters of U.S. in review area (check all that apply):** [1]

☐ TNWs, including territorial seas
☐ Wetlands adjacent to TNWs
☐ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
☒ Non-RPWs that flow directly or indirectly into TNWs
☒ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
☒ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
☐ Impoundments of jurisdictional waters
☐ Isolated (interstate or intrastate) waters, including isolated wetlands

**b. Identify (estimate) size of waters of the U.S. in the review area:**

Non-wetland waters: linear feet, wide, and/or acres.
Wetlands: **0.90** acres.

**c. Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual**

[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).

Elevation of established OHWM (if known):

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

**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: **None in the review area**

   Summarize rationale supporting determination: **N/A**

2. **Wetland adjacent to TNW**
   Summarize rationale supporting conclusion that wetland is "adjacent": **None in the review area**

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

**This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.**

**The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.**

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

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

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

   **(i) General Area Conditions:**
   Watershed size: **56,000 acres**
   Drainage area: **36 acres**
   Average annual rainfall: **13.84-17.93** inches
   Average annual snowfall: **N/A** inches

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

   Project waters are **15-20** river miles from TNW.
   Project waters are **1 (or less)** river miles from RPW.

[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.

Project waters are **10-15** aerial (straight) miles from TNW.
Project waters are **1 (or less)** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: **Project waters do not cross or serve as state boundaries.**

Identify flow route to TNW[5]: **SWS11 and SWS12 (form 3) are non-relatively permanent tributaries with characteristics of both stream and wetland. SWS11 and SWS12 are separated by a road but discrete and confined flow clearly continues south of the road from SWS11 to SWS12. SWS12 receives water through a discrete and confined flow path from SW05. SWS11 receives water through discrete and confined flow paths from VP19, VP20, VP21, VP22, VP23 and VP24. SWS11/SWS12 then flows south into the relatively permanent P02 ditch system (addressed in Form 4), and are directly abutting P02, which thenflows to Dry Creek (approximately 980 feet). From this point Dry Creek flows 16.4 miles to the Mokelumne River.**
Tributary stream order, if known: **1st Order.**

(b) General Tributary Characteristics (check all that apply):
**Tributary** is: ☒ Natural
☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain: **Tributary is natural within this review area, but is intercepted and re-routed when it leaves this review area (see Form 4).**

**Tributary** properties with respect to top of bank (estimate):
Average width: **15** feet
Average depth: **<1** feet
Average side slopes: **4:1 (or greater).**

Primary tributary substrate composition (check all that apply):
☐ Silts ☐ Sands ☐ Concrete
☐ Cobbles ☐ Gravel ☐ Muck
☐ Bedrock ☒ Vegetation. Type/% cover: **wetland vegetation**
☐ Other. Explain: **SWS11 and SWS12 are vegetated with wetland vegetation.**

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: **SWS11 and SWS12 exhibit both stream and wetland characteristics.**
Presence of run/riffle/pool complexes. Explain: **None**
Tributary geometry: **Meandering**
Tributary gradient (approximate average slope): **<1** %

(c) Flow:
Tributary provides for: **Intermittent but not seasonal flow**
Estimate average number of flow events in review area/year: **2-5**
Describe flow regime: **SWS11 and SWS12 (form 3) are non-relatively permanent tributaries with characteristics of both stream and wetland. SWS11 and SWS12 and their adjacent wetlands are a closely associated vernal pool and swale complex. Under normal wet season precipitation as soils in the upland catchment areas around each vernal pool and seasonal wetland fill with water, that water hits the restrictive layer underlying these soils and moves laterally. The depressions in the complex (vernal pools, seasonal wetlands and in swale pools) receive these lateral near surface flows, as well as direct precipitation, and store the water first in the soil pore space above the restrictive layer (i.e. perched water table), then as ponded water above the surface. Once the stored water in the complex's depressions reach an elevation above the restrictive layer they begin to contribute near surface flow to SWS11 and SWS12. SWS11 and SWS12 then responds in a similar fashion to the rest of the complex: first storing and filling with water and then contributing near surface flows to the ditch system in Form 4 and, once fully charged with water, contributing surface flows to the ditch system in Form 4. During dry down this process occurs in reverse: surface flows stop, then near surface flows stop, then depressions begin to dry down. This process may repeat several times during a normal wet season.**
Other information on duration and volume:

Surface flow is: **Discrete and confined.** Characteristics: **Discernable in LiDAR and aerial photography**

Subsurface flow: **Yes**. Explain findings: **Vernal pool and swale complex morphology and soils.**
☐ Dye (or other) test performed:

[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 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: **SWS11 and SWS12 exhibit characteristics of both wetland swale and stream.**

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☐ High Tide Line indicated by: ☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects ☐ survey to available datum;
☐ fine shell or debris deposits (foreshore) ☐ physical markings;
☐ physical markings/characteristics ☐ vegetation lines/changes in vegetation types.
☐ tidal gauges
☐ other (list):

**(iii) Chemical Characteristics:**

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.). Explain: **SWS11 and SWS12 and the vernal pool and swale complex to which they belong, along with other similarly-situated waters within this watershed, collect, retain, filter and more slowly release runoff from surrounding roads, housing, rangeland, pastures, farms and other surrounding land uses. Collection of runoff into these wetlands and small streams on the site reduces chemicals and other pollutants normally found in runoff water (gas, oil, herbicides, pesticides, nutrients and human, animal and other waste material). Retention of these chemicals and other pollutants keeps them out of Dry Creek and the Mokelumne River helping to maintain downstream water quality. Dry Creek is a listed impaired water for E. coli, sediment toxicity and unknown toxicity (Final 2010 Integrated Report (CWA Section 303(d) List / 305(b) Report). The Mokelumne River is a 303(d) listed impaired water for chlorpyrifos, copper, mercury, dissolved oxygen, unknown toxicity, and zinc (Final 2010 Integrated Report (CWA Section 303(d) List / 305(b) Report). Dry Creek and the Mokelumne River are impaired in part due to wetland losses in the immediate area and throughout the basin. Cumulative impacts from wetland losses are primarily due to similar conversions from grazing and other passive uses to more intensive management, including row crops and orchards.**

Identify specific pollutants, if known:

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

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

☒ Wetland fringe. Characteristics:

☒ Habitat for:

☒ Federally Listed species. Explain findings: **The Subject Area contains habitat suitable for the federally listed as endangered Lepidurus packardi (vernal pool tadpole shrimp) and the federally listed as threatened Branchinecta lynchi (vernal pool fairy shrimp). The California Natural Diversity Database indicates that both of these species occur in properties immediately abutting the Subject Area. Additionally the USFWS has designated critical habitat for these vernal pool species just three-quarters of a mile north of the Subject Area. The Mokelumne River at the Confluence with Dry Creek is listed critical habitat for the federally listed as threatened Delta Smelt (Hypomesus transpacificus) (50 CFR Part 17, 59 Fed. Reg. 65256-65279) and Central Valley California Steelhead.**

☐ Fish/spawn areas. Explain findings:

☒ Other environmentally-sensitive species. Explain findings: **Habitat for vernal pool endemic species of plants and animals which is increasingly rare as habitat loss occurs in the Central Valley, and is known to occur on sites directly abutting the Subject Area.**

☒ Aquatic/wildlife diversity. Explain findings: **SWS11 and SWS12 and the vernal pool and swale complex to which they belong along with other similarly-situated waters within this watershed provide**

[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.

**habitat, food, breeding and life support for a diverse number of native plant and animal species, including invertebrates, birds, mammals, and downstream fish, some of which are federally-listed threatened and/or endangered species and/or commercially-important. These wetlands provide support functions to both species that are endemic to this habitat as well as highly mobile migratory species. These wetlands have the capacity to transfer nutrients and organic carbon that feed downstream food webs. They also provide habitat and lifecycle support functions for fish and wildlife species that are present in the Mokelumne River and its tributaries downstream of the subject site. The Mokelumne River at the Confluence with Dry Creek is listed critical habitat for the federally listed as threatened Delta Smelt (Hypomesus transpacificus) (50 CFR Part 17, 59 Fed. Reg. 65256-65279) and Central Valley California Steelhead.**

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

**(i) Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: **0.9** acres

Wetland type. Explain: **Vernal pool, vernal swale, seasonal wetland complex. This 0.9 acres includes SWS11 (0.64 acre) and SWS12 (0.05 acre) which exhibits both stream and wetland characteristics.**

Wetland quality. Explain: **A review of the aerial photography and satellite imagery available through Google Earth indicates that the quality of SWS12 and SW05 was likely degraded prior to the Subject Activity. In the 21 May 1993 image there are some light, indistinct linear signatures in an east-west and north-south orientation indicating mowing or plowing at some point in the past. These signatures are more distinct in the 20 November 2003 image but this is likely because of better resolution of this image as no new soil disturbing activity is apparent and the signatures appear in the same location and orientation consistently until 30 June 2004. At this time, a light signature is visible south and east of the road that divides SWS11 from SW12. This signature may be consistent with hay harvest, wheat harvest, plowing or other disturbance and appears to haveaffected SWS12 and SW05. The resolution of this image is too coarse to differentiate the cause of this signature. However, this activity appears to have had a lasting effect, as the area south of the farm road appears lighter with less variablity in textures in subsequent images. This suggests that the activity observed in the 30 June 2004 image affected the soil and was likely not just mowing. However, the effects of this 30 June 2004 event are confined to SWS12 and SW05 in this review area (Form 3) and both of these waters persist after the activity. The 18 March 2006 image is particularly useful as it shows water in the deeper pools and channels and reveals the interconnectedness of the complex. However none of this activity appears to have affected the wetlands in question here substantially.**

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

(b) General Flow Relationship with Non-TNW:

Flow is: **Intermittent flow**. Explain: S**WS11 and SWS12 exhibit characteristics of stream and wetland. SWS11 and SWS12 and their adjacent wetlands are a closely associated vernal pool and swale complex. Under normal wet season precipitation as soils in the upland catchment areas around each vernal pool and seasonal wetland fill with water, that water hits the restrictive layer underlying these soils and moves laterally. The depressions in the complex (vernal pools, seasonal wetlands and in swale pools) receive these lateral near surface flows, as well as direct precipitation, and store the water first in the soil pore space above the restrictive layer (i.e. perched water table), then as ponded water above the surface. Once the stored water in the complex's depressions reach an elevation above the restrictive layer they begin to contribute near surface flow to SWS11 and SWS12. SWS11 and SWS12 then responds in a similar fashion to the rest of the complex: first storing and filling with water and then contributing near surface flows to the ditch network in the Form 4 review area and, once fully charged with water, contributing surface flows to the ditch network. During dry down this process occurs in reverse: surface flows stop, then near surface flows stop, then depressions begin to dry down. This process may repeat several times during a normal wet season.**

Surface flow is**: Discrete and confined**

Characteristics: **Discernable on LiDAR and aerial photography**

Subsurface flow: **Yes**. Explain findings: **Subsurface flow occurs during the wet season above the restrictive layer and persists after rain events as discussed in b above.**

☐ Dye (or other) test performed:

(c) Wetland Adjacency Determination with Non-TNW:

☒ Directly abutting

☒ Not directly abutting
☒ Discrete wetland hydrologic connection. Explain: **SW05 has a discrete hydrologic connection to SWS12 and appears to be the connection point between SWS11 and SWS12. SWS11 is directly connected to SWS12 under the farm road. SWS12 has a discrete connection to the ditch system in the Form 4 review area. VP19, VP20, VP21, VP22, VP23 and VP24 are all connected to SWS11 via discrete hydrologic connections visible in aerial photography and LiDAR.**
☒ Ecological connection. Explain: **Besides having a discrete hydrologic connection, aquatic resources in this landscape context are connected to each other through transport of organic carbon and nutrients down stream as well as movement of organizims in between the aquatic resources, between these aquatic resources and the receiving streams and between aquatic resources and the surounding upland areas.**
☐ Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW
Project wetlands are **15-20** river miles from TNW.
Project waters are **10-15** aerial (straight) miles from TNW.
Flow is from: **Wetland to navigable waters.**
Estimate approximate location of wetland as within the **50 - 100-year** floodplain. **SWS12, SW05, SW12 and the lower portions of SWS11 are within the 100 year flood plain.**

**(ii) Chemical Characteristics:**
Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: **SWS11 and SWS12 and the vernal pool and swale complex to which it belongs, along with other similarly-situated waters within this watershed, collect, retain, filter and more slowly release runoff from surrounding roads, housing, rangeland, pastures, farms and other surrounding land uses. Collection of runoff into these wetlands and small streams on the site reduces chemicals and other pollutants normally found in runoff water (gas, oil, herbicides, pesticides, nutrients and human, animal and other waste material). Retention of these chemicals and other pollutants keeps them out of Dry Creek and the Mokelumne River helping to maintain downstream water quality. Dry Creek is a listed impaired water for E. coli, sediment toxicity and unknown toxicity (Final 2010 Integrated Report (CWA Section 303(d) List / 305(b) Report). The Mokelumne River is also a 303(d) listed impaired water for chlorpyrifos, copper, mercury, dissolved oxygen, unknown toxicity, and zinc (Final 2010 Integrated Report (CWA Section 303(d) List / 305(b) Report). The Mokelumne River and its tributaries are also major sources of irrigation and or drinking/municipal water. Dry Creek and the Mokelumne River are impaired in part due to losses of wetlands in the immediate area and throughout the basin. Cumulative impacts from wetland losses are primarily due to similar conversions from grazing and other passive uses to more intensive management, including row crops and orchards.**
Identify specific pollutants, if known: **Pollutants typical of agriculture including pesticides, fertilizers, animal waste, nitrogen compounds and sediments.**

**(iii) Biological Characteristics. Wetland supports (check all that apply):**
☐ Riparian buffer. Characteristics (type, average width):
☒ Vegetation type/percent cover. Explain:
☒ Habitat for:
☒ Federally Listed species. Explain findings: **The Subject Area contains habitat suitable for the federally listed as endangered Lepidurus packardi (vernal pool tadpole shrimp) and the federally listed as threatened Branchinecta lynchi (vernal pool fairy shrimp). The California Natural Diversity Database indicates that both of these species occur in properties immediately abutting the Subject Area. Additionally the USFWS has designated critical habitat for these vernal pool species just three-quarters of a mile north of the Subject Area. The Mokelumne River at the Confluence with Dry Creek is listed critical habitat for the federally listed as threatened Delta Smelt (Hypomesus transpacificus) (50 CFR Part 17, 59 Fed. Reg. 65256-65279) and Central Valley California Steelhead.**
☐ Fish/spawn areas. Explain findings:
☒ Other environmentally-sensitive species. Explain findings: **Habitat for vernal pool endemic species of plants and animals which is increasingly rare as habitat loss occurs in the Central Valley, and is known to occur on sites directly abutting the Subject Area.**
☒ Aquatic/wildlife diversity. Explain findings: **SWS11 and SWS12 and the vernal pool and swale complex to which it belongs along with other similarly situated waters within this watershed provide habitat, food, breeding and life support for a diverse number of native plant and animal species, including invertebrates, birds, mammals, downstream fish, some of which are federally listed threatened and/or endangered species and/or commercially important. These wetlands provide support functions to both species that are endemic to this habitat as well as highly mobile migratory species. These wetlands have the capacity to transfer nutrients and organic carbon that feed downstream food webs. They also provide habitat and lifecycle support functions for**

**fish and wildlife species that are present in the Mokelumne River and its tributaries downstream of the subject site. The Mokelumne River at the Confluence with Dry Creek is listed critical habitat for the federally listed as threatened Delta Smelt (Hypomesus transpacificus) (50 CFR Part 17, 59 Fed. Reg. 65256-65279) and Central Valley California Steelhead.**

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

All wetland(s) being considered in the cumulative analysis: **10**
Approximately **0.9** 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) |
|---|---|---|---|
| SWS11 (N) | 0.642 | SWS12 (N) | 0.053 |
| SW05 (N) | 0.034 | SW12 (N) | 0.013 |
| VP19 (N) | 0.021 | VP20 (N) | 0.009 |
| VP21 (N) | 0.020 | VP22 (N) | 0.050 |
| VP23 (N) | 0.025 | VP24 (N) | 0.033 |

Summarize overall biological, chemical and physical functions being performed: **SWS11 and SWS12 and its abutting and adjacent wetlands perform several functions important to the biological, chemical and physical integrity of Dry Creek and Mokelumne River. This nexus is neither speculative nor insubstantial. These wetlands, along with other similarly situated wetlands in the watershed store precipitation and slowly deliver this water to SWS11, SWS12 and the ditch network in the Form 4 review area, thereby attenuating storm flows and maintaining base flow in Dry Creek and the Mokelumne River. By attenuating storm flows these waters reduce the risk of flooding downstream and by slowly delivering this stored water to downstream waters, maintain the base flow needed to maintain the physical integrity of Dry Creek and the Mokelumne River as well as for downstream fish and other wildlife. These wetlands, along with other similarly situated wetlands in the watershed perform a critical denitrification function which removes nitrogen from the system. Nitrogen and phosphorous are the two nutrients responsible for eutrophication of California waterways and dissolved oxygen impairment. The Mokelumne River is a 303(d) listed impaired water for dissolved oxygen.**

## C. SIGNIFICANT NEXUS DETERMINATION

**A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.**

**Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:**

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

**Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:**

**1. Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: **SWS11 and SWS12 exhibit characteristics of both stream and wetland. SWS11 and SWS12, their tributaries, abutting and adjacent wetlands is a vernal pool and swale complex adjacent to and connected via a discrete flow path to the ditch network in review area for Form 4, an RPW. The complex included on this form is hydrologically connected to the Mokelumne River via the ditch system in Form 4 and Dry Creek. These waters both have the capacity to carry pollutants and flood waters to the TNW and reduce the amount of pollutants and flood waters reaching the TNW. These waters provide habitat for federally listed aquatic species. These waters have the capacity to transfer nutrients and organic carbon that support downstream foodwebs.**

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: **SWS05 is directly adjacent to the ditch system in Form 4, an RPW. While SWS11 and SWS12 are identified as separate features for mapping purposes, they are in reality a single tributary connected by a culvert under a farm road. SW12 appears to be the plunge-pool from that culvert. While SWS11 and SWS12 are identified as NRPWs here, they are also wetlands adjacent to an RPW, the ditch system in the Form 4 review area. SWS12, SW05, SW12, and the lower portions of SWS11 are all in close enough proximity to be flooded by Dry Creek in the 100-year flood event and are in very close proximity to the ditch network discussed in the Form 4 review area. The farm road crossing between SWS11 and SWS12 is approximately 400 feet from the ditch system in the Form 4 review area, an RPW. SWS05, SWS11, SWS12, and SW12 have the capacity to carry pollutants and flood waters to the TNW and reduce the amount of pollutants and flood waters reaching the TNW. SWS05, SWS11, SWS12 and SW12 have the capacity to transfer nutrients and organic carbon that support downstream foodwebs. These waters provide habitat for federally listed aquatic species. See Sections III.B.1 and III.B.2 for additional information on the functions performed by these waters.**

**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, wide, Or acres.
   - ☐ Wetlands adjacent to TNWs: acres.

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

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

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

   Provide estimates for jurisdictional waters within the review area (check all that apply):
   - ☒ Tributary waters: **2655** linear feet, **15** wide.
   - ☐ Other non-wetland waters: acres.
     Identify type(s) of waters: **SWS11 and SWS12 exhibit characteristics of both stream and wetlands.**

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:

[8]See Footnote # 3.

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

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
   ☒ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: **SWS05 (0.034 ac) is adjacent to the ditch system in Form 4, an RPW. While SWS11 and SWS12 are identified as separate features for mapping purposes, they are in reality a single water connected by a culvert under a farm road. SW12 appears to be the plunge-pool from that culvert. While SWS11 and SWS12 are identified as NRPWs here, they are also wetlands adjacent to an RPW, the ditch system in the Form 4 review area. SWS12, SW12, SW05 and the lower portions of SWS11 are all in close enough proximity to be flooded by Dry Creek in the 100-year flood event and are in very close proximity to the ditch network discussed in the Form 4 review area (approximately 400 feet).** acres.

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

Provide estimates for jurisdictional wetlands in the review area: **0.866** 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, wide.
☐ Other non-wetland waters: acres.
Identify type(s) of waters:
☐ Wetlands: acres.

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

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

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

[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.***

☐ Non-wetland waters (i.e., rivers, streams): linear feet, wide.
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource:
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, wide.
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource:
☐ Wetlands: acres.

**SECTION IV: DATA SOURCES.**

**A. SUPPORTING DATA. Data reviewed for JD (check all that apply -** checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☐ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  ☐ Office concurs with data sheets/delineation report.
  ☒ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps:
☐ Corps navigable waters' study:
☒ U.S. Geological Survey Hydrologic Atlas:
  ☒ USGS NHD data.
  ☒ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name: **1:24K; CA-CLAY**
☒ USDA Natural Resources Conservation Service Soil Survey. Citation: **USDA Custom Soil Report**
☒ National wetlands inventory map(s). Cite name: **National Wetland Mapper**
☐ State/Local wetland inventory map(s):
☒ FEMA/FIRM maps: **FEMA map number 06067C0500H**
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date): **18MAR06 Digital Globe via Google Earth, 06APR10 source not specified via Google Earth, 18MAR11 Digital Globe via Google Earth, and 13JUN11 source not specified via Google Earth.**
  or ☒ Other (Name & Date): **Site inspection photographs 02APR12**
☒ Previous determination(s). File no. and date of response letter: **A portion of the Subject Area along Clay Station Road was delineated as a part of SPK-2000-00025 in a report by Jones & Stokes titled "Delineation of Waters of the United States, Including Wetlands, Freeport Regional Water Project" dated 15 February 2006. On 27 February 2006 this office issued an approved jurisdictional determination for SPK-2000-00025 (Freeport Regional Water Project, Folsom South Canal Connection). The June 2011 Vollmar delineation was not submitted to this office for verification.**
☐ Applicable/supporting case law:
☐ Applicable/supporting scientific literature:
☒ Other information (please specify): **California Environmental Quality Act Initial Study (control number: PLNP2010-PMR-00215) and a report titled "Appendix A Biological Resources Inventory at the 525+/- Acre 'Clay Station Road' Site, Sacramento County, California" dated 12 January 2011. The 12 January 2011 report was not a delineation but does include maps and descriptions of some of the clusters of aquatic resources on the site. California Department of Water Resources LiDAR. The Subject Area is approximately 22 miles from the Mather Field Weather Station (KMHR) and approximately 25 miles away from Sacramento Executive Airport weather station (NOAA station ID KSAC; USDA WETS Station CA232 ) and the Stockton Metro weather station (NOAA station ID KSCK; USDA WETS Station CA237) . The Sacramento Executive Airport weather station reports an average of 17.93 inches of annual precipitation . The Stockton Metro Airport reports an average of 13.84 inches of annual precipitation. The Mather Field Weather Station is not included in the USDA's WETS Tables.**

**B. ADDITIONAL COMMENTS TO SUPPORT JD:**

**SWS11, SWS12 and SW12 are a single tributary mapped separately for convenience but functionally one water body. SWS11/SWS12/SW12 exhibits characteristics of both stream and wetland. In this analysis we have considered SWS11/SWS12/SW12 a tributary. However, even if SWS11/SWS12/SW12 were not considered a tributary, it would be adjacent to the ditch system in Form 4, an RPW.**

**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): July 21, 2015**

**B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Sacramento District, Clay Station Properties, LLC Investigation, SPK-2012-00116, Form 4 of 6.**

**C. PROJECT LOCATION AND BACKGROUND INFORMATION:**

State: **California** County/parish/borough: **Sacramento** City:
Center coordinates of site (lat/long in degree decimal format): Lat. **38.2679°**, Long. **-121.1636°**
Universal Transverse Mercator: **Zone 10 North, 660649 Easting, 4237134 Northing**
Name of nearest waterbody: **Dry Creek**
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Mokelumne River**
Name of watershed or Hydrologic Unit Code (HUC): **Upper Cosumnes, 18040013**
☒ 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: **This JD is divided into six forms (review areas) corresponding to the portion of each of the six drainage areas within the subject area. Form 1 covers aquatic resources SW01, SW02, SW03, SW04, SW14, SW15, SWS01, SWS02, VP01, VP30, VP31, P03 and D09. Form 2 covers aquatic resources D02, SWS04, SWS05, VP02, VP03, VP04, VP05, VP06, VP07, VP08, VP09, VP10, VP11, VP12, VP14, VP15, VP16, VP17, VP18, VP28, VP29 and VP32. Form 3 covers aquatic resources SW05, SW12, SWS11, SWS12, VP19, VP20, VP21, VP22, VP23 and VP24) Form 4 covers aquatic resources D01, D03, D04, D05, D06, D07, D08, P02, SW06, SW07, SW08, SW13, SW16, SWS06, and SWS07. Form 5 covers aquatic resources P01, SW09, SW10, SW11, SWS03, SWS09, SWS13, SWS14, VP26 and VP27. Form 6 covers aquatic resource SWS10.**

**D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):**

☒ Office (Desk) Determination. Date: **13 July 2015**
☒ Field Determination. Date(s): **2 April 2012**

**SECTION II: SUMMARY OF FINDINGS**

**A. RHA SECTION 10 DETERMINATION OF JURISDICTION.**

There **Are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain:

**B. CWA SECTION 404 DETERMINATION OF JURISDICTION.**

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

**1. Waters of the U.S.**

**a. Indicate presence of waters of U.S. in review area (check all that apply):** [1]

☐ TNWs, including territorial seas
☐ Wetlands adjacent to TNWs
☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
☐ Non-RPWs that flow directly or indirectly into TNWs
☒ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
☒ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
☐ Impoundments of jurisdictional waters
☐ Isolated (interstate or intrastate) waters, including isolated wetlands

**b. Identify (estimate) size of waters of the U.S. in the review area:**

Non-wetland waters: linear feet, wide, and/or **1.54** acres.
Wetlands: **1.616** acres.

[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).

**c. Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual**
Elevation of established OHWM (if known):

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

**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: **None in the review area**

Summarize rationale supporting determination: **N/A**

**2. Wetland adjacent to TNW**
Summarize rationale supporting conclusion that wetland is "adjacent": **None in the review area**

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

**This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.**

**The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.**

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

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

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

**(i) General Area Conditions:**
Watershed size: **56,000 acres**
Drainage area: **39 acres**
Average annual rainfall: **13.84-17.93** inches
Average annual snowfall: **N/A** inches

**(ii) Physical Characteristics:**
(a) Relationship with TNW:
☐ Tributary flows directly into TNW.
☒ Tributary flows through **1** tributaries before entering TNW.

Project waters are **15-20** river miles from TNW.

[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.

Project waters are **1 (or less)** river miles from RPW.
Project waters are **10-15** aerial (straight) miles from TNW.
Project waters are **1 (or less)** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: **Project waters do not cross or serve as state boundaries.**

Identify flow route to TNW[5]: **The ditch system composed of D01, D03, D04, D05, D06, D07, D08, and P02 discharges directly to Dry Creek at the boundary of the Subject Area. SW06 directly abuts and discharges to D01. SW06 also discharges to the south into a discrete flow path into the ditch system at P02. The ditch system also receives flows from SWS11/SWS12 (form 3) and D02 (form 2). SW07, SW08, SW13, SW16, SWS06, and SWS07 are an interconnected complex of wetland swales and depressions adjacent to Dry Creek and the ditch system described above. LiDAR data for this area indicates multiple flow paths from this complex south and west into the ditch system and to Dry Creek. These flow paths are diffuse, multi-path and indistinct. From the point where the ditch system discharges into Dry Creek, Dry Creek flows 16.4 miles to the Mokelumne River.**
Tributary stream order, if known: **2nd Order.**

(b) General Tributary Characteristics (check all that apply):
**Tributary** is: ☐ Natural
☐ Artificial (man-made). Explain:
☒ Manipulated (man-altered). Explain: **The ditch system composed of D01, D03, D04, D05, D06, D07, D08, and P02 intercepts and re-routes? tributary streams to Dry Creek.**

**Tributary** properties with respect to top of bank (estimate):
Average width: **15** feet
Average depth: **unknown** feet
Average side slopes: **3:1 .**

Primary tributary substrate composition (check all that apply):
☐ Silts ☐ Sands ☐ Concrete
☐ Cobbles ☐ Gravel ☐ Muck
☐ Bedrock ☐ Vegetation. Type/% cover:
☒ Other. Explain: **ditch system substrate unknown**

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: **low gradient ditch**
Presence of run/riffle/pool complexes. Explain: **None**
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): **<1** %

(c) Flow:
Tributary provides for: **Perennial**
Estimate average number of flow events in review area/year: **20 (or greater)**
Describe flow regime: **Aerial photo review via Google Earth shows water in some part of the the ditch system in all years.**
Other information on duration and volume:

Surface flow is: **Discrete and confined.** Characteristics: **Discernable in LiDAR and aerial photography**

Subsurface flow: **Yes**. Explain findings: **Intercepts subsurface flows from the Form 2 and Form 3 review areas.**
☐ 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

[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.

☐ leaf litter disturbed or washed away ☐ scour
☐ sediment deposition ☐ multiple observed or predicted flow events
☐ water staining ☒ abrupt change in plant community
☒ other (list): **the ditch system is composed of constructed channels that re-routes the course of flow to Dry Creek.**
☐ Discontinuous OHWM.[7] Explain:

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☐ High Tide Line indicated by: ☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects ☐ survey to available datum;
☐ fine shell or debris deposits (foreshore) ☐ physical markings;
☐ physical markings/characteristics ☐ vegetation lines/changes in vegetation types.
☐ tidal gauges
☐ other (list):

**(iii) Chemical Characteristics:**

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.). Explain: **The ditch system delivers water from the complexes in the Form 2 and Form 3 review areas, providing the flow-path through which these functions affect Dry Creek and the Mokelumne River. These vernal pool and swale complexes along with other similarly-situated waters within this watershed collect, retain, filter and more slowly release runoff from surrounding roads, housing, rangeland, pastures, farms and other surrounding land uses. Collection of runoff into these wetlands and small streams on the site reduces chemicals and other pollutants normally found in runoff water (gas, oil, herbicides, pesticides, nutrients and human, animal and other waste material). Retention of these chemicals and other pollutants keeps them out of Dry Creek and the Mokelumne River helping to maintain downstream water quality. Dry Creek is a listed impaired water for E. coli, sediment toxicity and unknown toxicity (Final 2010 Integrated Report (CWA Section 303(d) List / 305(b) Report). The Mokelumne River is a 303(d) listed impaired water for chlorpyrifos, copper, mercury, dissolved oxygen, unknown toxicity, and zinc (Final 2010 Integrated Report (CWA Section 303(d) List / 305(b) Report). Dry Creek and the Mokelumne River are impaired in part due to wetland losses in the immediate area and throughout the basin. Cumulative impacts from wetland losses are primarily due to similar conversions from grazing and other passive uses to more intensive management, including row crops and orchards.**

Identify specific pollutants, if known:

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

☐ Riparian corridor. Characteristics (type, average width):
☒ Wetland fringe. Characteristics:
☒ Habitat for:
☒ Federally Listed species. Explain findings: **The Subject Area contains habitat suitable for the federally listed as endangered Lepidurus packardi (vernal pool tadpole shrimp) and the federally listed as threatened Branchinecta lynchi (vernal pool fairy shrimp). The California Natural Diversity Database indicates that both of these species occur in properties immediately abutting the Subject Area. Additionally the USFWS has designated critical habitat for these vernal pool species just three-quarters of a mile north of the Subject Area. The Mokelumne River at the Confluence with Dry Creek is listed critical habitat for the federally listed as threatened Delta Smelt (Hypomesus transpacificus) (50 CFR Part 17, 59 Fed. Reg. 65256-65279) and Central Valley California Steelhead.**
☐ Fish/spawn areas. Explain findings:
☒ Other environmentally-sensitive species. Explain findings: **Habitat for vernal pool endemic species of plants and animals which is increasingly rare as habitat loss occurs in the Central Valley, and is known to occur on sites directly abutting the Subject Area.**
☒ Aquatic/wildlife diversity. Explain findings: **The seasonal wetland and wetland swale complex in the Subject Area, along with other similarly situated waters within this watershed provide habitat, food, breeding and life support for a diverse number of native plant and animal species, including invertebrates, birds, mammals, and downstream fish, some of which are federally listed threatened and/or endangered species and/or commercially important. These wetlands provide support functions to both species that are endemic to this habitat as well as highly mobile migratory species. These wetlands have the capacity to transfer nutrients and organic carbon that feed downstream food webs. They also provide habitat and lifecycle support functions for fish and wildlife species that are present in the Mokelumne River and its tributaries downstream of the subject site. The Mokelumne River at the Confluence with Dry Creek is listed critical habitat for the federally listed as threatened Delta Smelt (Hypomesus transpacificus) (50 CFR Part 17, 59 Fed. Reg. 65256-65279) and Central Valley California Steelhead.**

[7] Ibid.

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

**(i) Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: **1.616** acres

Wetland type. Explain: **Seasonal wetland depressions and swales .**

Wetland quality. Explain: **A review of the aerial photography and satellite imagery available through Google Earth indicates that the quality of these wetlands was likely degraded prior to the Subject Activity. In the 30 June 2004 image, a light signature is visible from south and east of the road that divides SWS from SW12 (as identified in Form 3), throughout the north portion of the Form 4 review area. This signature may be consistent with hay harvest, wheat harvest, plowing or other disturbance. The resolution of this image is too coarse to differentiate the cause of this signature. However, this activity appears to have had a lasting effect, as the area south of the farm road appears lighter with less variablity in textures in subsequent images. This suggests that the activity observed in the 30 June 2004 image affected the soil and was likely not just mowing. The activity depicted in this 30 June 2004 image affected all of the wetlands addressed in this review area. Only wetlands that persisted after that activity are mapped here. The 18 March 2006 image is particularly useful as it shows water in the deeper pools and channels and reveals the interconnectedness of the complex with the ditch system and Dry Creek.**

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

(b) General Flow Relationship with Non-TNW:

Flow is: **Intermittent flow**. Explain: **SWS06, SWS07, SW13 and SW16 function similarly to wetlands in the vernal pool complexes discussed in Forms 1, 2 and 3 as they are perched on a restrictive layer. Under normal wet season precipitation as soils in the upland catchment areas around each vernal pool and seasonal wetland fill with water, that water hits the restrictive layer underlying these soils and moves laterally. The depressions in the complex (vernal pools, seasonal wetlands and in-swale pools) receive these lateral near surface flows, as well as direct precipitation, and store the water first in the soil pore space above the restrictive layer (i.e. perched water table), then as ponded water above the surface. Once the stored water in the complex's depressions reach an elevation above the restrictive layer they begin to contribute near surface flow to SWS06, D01 or the flow paths leading south and west to Dry Creek and P02. SWS06 is at the edge of the restrictive layer. All of these waters are within the FEMA mapped 100-year flood plain. Portions of SWS06 are also mapped as occasionally flooded soils (meaning 5-50 percent probability of flooding in a given year). LiDAR data shows SWS06 sitting in channel remnants left by the meandering of Dry Creek within a low flat terrace. This, combined with the NRCS soil map, and FEMA flood maps indicate that these wetlands receive flood flows from Dry Creek at least occasionally.**

Surface flow is**: Discrete and confined**

Characteristics: **Discernable on LiDAR and aerial photography**

Subsurface flow: **Yes**. Explain findings: **Subsurface flow occurs during the wet season above the restrictive layer and persists after rain events as discussed in b above.**

☐ Dye (or other) test performed:

(c) Wetland Adjacency Determination with Non-TNW:

☒ Directly abutting **SWS06 directly abuts the ditch system at D01**

☒ Not directly abutting

☒ Discrete wetland hydrologic connection. Explain: **LiDAR data and the 18 March 2006 DigitalGlobe image via Google Earth shows discrete hydrologic connections from SW07 south to Dry Creek, from SWS06 and SW13 west to the ditch system at P02.**

☒ Ecological connection. Explain: **Besides having a discrete hydrologic connection, aquatic resources in this landscape context are connected to each other through transport of organic carbon and nutrients downstream as well as movement of organisms in between the aquatic resources, between these aquatic resources and the receiving streams and between aquatic resources and the surrounding upland areas.**

☐ Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW

Project wetlands are **15-20** river miles from TNW.

Project waters are **10-15** aerial (straight) miles from TNW.

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

Estimate approximate location of wetland as within the **50 - 100-year** floodplain. **All aquatic resources in this review area are within the FEMA 100-year flood plain excepting a portion of SWS07 at the northern most extent.**

**The NRCS soils description for soils in the southern portion of the review area describe them as occasionally flooded meaning between 5% and 50% probability per year.**

**(ii) Chemical Characteristics:**

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: **These waters along with other similarly situated waters within this watershed collect, retain, filter and more slowly release runoff from surrounding roads, housing, rangeland, pastures, farms and other surrounding land uses. Collection of runoff into these wetlands and small streams on the site reduces chemicals and other pollutants normally found in runoff water (gas, oil, herbicides, pesticides, nutrients and human, animal and other waste material). Retention of these chemicals and other pollutants keeps them out of Dry Creek and the Mokelumne River helping to maintain downstream water quality. Dry Creek is a listed impaired water for E. coli, sediment toxicity and unknown toxicity (Final 2010 Integrated Report (CWA Section 303(d) List / 305(b) Report). The Mokelumne River is also a 303(d) listed impaired water for chlorpyrifos, copper, mercury, dissolved oxygen, unknown toxicity, and zinc (Final 2010 Integrated Report (CWA Section 303(d) List / 305(b) Report). The Mokelumne River and its tributaries are also major sources of irrigation and or drinking/municipal water. Dry Creek and the Mokelumne River are impaired in part due to wetland losses in the immediate area and throughout the basin. Cumulative impacts from wetland losses are primarily due to similar conversions from grazing and other passive uses to more intensive management, including row crops and orchards.**

Identify specific pollutants, if known: **Pollutants typical of agriculture including pesticides, fertilizers, animal waste, nitrogen compounds and sediments.**

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

☒ Riparian buffer. Characteristics (type, average width): **These wetlands serve as the remnants of the riparian buffer that existed before historic conversion to agriculture.**

☒ Vegetation type/percent cover. Explain:

☒ Habitat for:

☒ Federally Listed species. Explain findings: **The Subject Area contains habitat suitable for the federally listed as endangered Lepidurus packardi (vernal pool tadpole shrimp) and the federally listed as threatened Branchinecta lynchi (vernal pool fairy shrimp). The California Natural Diversity Database indicates that both of these species occur in properties immediately abutting the Subject Area. Additionally the USFWS has designated critical habitat for these vernal pool species just three-quarters of a mile north of the Subject Area. The Mokelumne River at the Confluence with Dry Creek is listed critical habitat for the federally listed as threatened Delta Smelt (Hypomesus transpacificus) (50 CFR Part 17, 59 Fed. Reg. 65256-65279) and Central Valley California Steelhead.**

☐ Fish/spawn areas. Explain findings:

☒ Other environmentally-sensitive species. Explain findings: **Habitat for vernal pool endemic species of plants and animals which is increasingly rare as habitat loss occurs in the Central Valley, and is known to occur on sites directly abutting the Subject Area.**

☒ Aquatic/wildlife diversity. Explain findings: **These waters along with other similarly situated waters within this watershed provide habitat, food, breeding and life support for a diverse number of native plant and animal species, including invertebrates, birds, mammals, downstream fish, some of which are federally listed special threatened and/or endangered and/or commercially important. These wetlands have the capacity to transfer nutrients and organic carbon that feed downstream food webs. They also provide habitat and lifecycle support functions for fish and wildlife species that are present in the Mokelumne River and its tributaries downstream of the subject site. The Mokelumne River at the Confluence with Dry Creek is listed critical habitat for the federally listed as threatened Delta Smelt (Hypomesus transpacificus) (50 CFR Part 17, 59 Fed. Reg. 65256-65279) and Central Valley California Steelhead.**

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

All wetland(s) being considered in the cumulative analysis: **7**

Approximately **0.9** 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) |
|---|---|---|---|
| SWS06 (N) | 0.659 | SWS07 (N) | 0.148 |
| SW06 (Y) | 0.535 | SW07 (N) | 0.098 |
| SW08 (N) | 0.008 | SW13 (N) | 0.150 |
| SW16 (N) | 0.659 | | |

Summarize overall biological, chemical and physical functions being performed: **These wetlands perform several functions important to the biological, chemical and physical integrity of Dry Creek and Mokelumne River. This nexus is neither speculative nor insubstantial. These wetlands are in an optimal position to receive and store flood waters reducing the risk of flooding downstream. These wetlands, along with other similarly situated wetlands in the watershed store precipitation and slowly deliver this water to Dry Creek, thereby attenuating storm flows and maintaining base flow in Dry Creek and the Mokelumne River. By attenuating storm flows these waters reduce the risk of flooding downstream and by slowly delivering this stored water to downstream waters, maintain the base flow needed to maintain the physical integrity of Dry Creek and the Mokelumne River as well as for downstream fish and other wildlife. These wetlands, along with other similarly situated wetlands in the watershed perform a critical denitrification function which removes nitrogen from the system. Nitrogen and phosphorous are the two nutrients responsible for eutrophication of California waterways and dissolved oxygen impairment. The Mokelumne River is a 303(d) listed impaired water for dissolved oxygen.**

## C. SIGNIFICANT NEXUS DETERMINATION

**A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.**

**Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:**

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

**Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:**

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: **The wetlands in this review area are all adjacent to Dry Creek and the RPW ditch system tributary to Dry Creek. SW06 also directly abuts the ditch system at D01. Dry Creek and the ditch system in combination with their adjacent wetlands have the capacity to carry pollutants and flood waters to TNWs and reduce the amount of pollutants or flood waters reaching the TNW. Dry Creek and the ditch system in combination with their adjacent wetlands, 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. Dry Creek and the ditch system in combination with their adjacent wetlands, have the capacity to transfer nutrients and organic carbon that support downstream foodwebs. See Sections III.B.1 and III.B.2 for additional information on the functions performed by these waters.**

## 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, wide, 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: **Dry Creek contains water in most dates of aerial photography available via Google Earth including some dates during the dry season. The Ditch System has water in some part of the ditch system in all images available via Google Earth, though in the driest images that water is found only in the deepest portions of P02.**

Provide estimates for jurisdictional waters in the review area (check all that apply):
☒ Tributary waters: **3050** linear feet **10'-70'** wide.
☐ Other non-wetland waters: acres.
Identify type(s) of waters:

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

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

**4. Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
☒ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:

☒ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:

Provide acreage estimates for jurisdictional wetlands in the review area: **0.535** 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: **1.081** acres.

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

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

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

**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]**

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

☐ 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, wide.
☐ Other non-wetland waters: acres.
Identify type(s) of waters:
☐ Wetlands: acres.

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

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, wide.
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource:
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, wide.
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource:
☐ Wetlands: acres.

## SECTION IV: DATA SOURCES.

**A. SUPPORTING DATA. Data reviewed for JD (check all that apply -** checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☐ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Office concurs with data sheets/delineation report.
☒ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps:
☐ Corps navigable waters' study:
☒ U.S. Geological Survey Hydrologic Atlas:
☒ USGS NHD data.
☒ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name: **1:24K; CA-CLAY**
☒ USDA Natural Resources Conservation Service Soil Survey. Citation: **USDA Custom Soil Report**
☒ National wetlands inventory map(s). Cite name: **National Wetland Mapper**
☐ State/Local wetland inventory map(s):
☒ FEMA/FIRM maps: **FEMA map number 06067C0500H**
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date): **18MAR06 Digital Globe via Google Earth, 06APR10 source not specified via Google Earth, 18MAR11 Digital Globe via Google Earth, and 13JUN11 source not specified via Google Earth.**

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[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.***

or ☒ Other (Name & Date): **Site inspection photographs 02APR12**

☒ Previous determination(s). File no. and date of response letter: **A portion of the Subject Area along Clay Station Road was delineated as a part of SPK-2000-00025 in a report by Jones & Stokes titled "Delineation of Waters of the United States, Including Wetlands, Freeport Regional Water Project" dated 15 February 2006. On 27 February 2006 this office issued an approved jurisdictional determination for SPK-2000-00025 (Freeport Regional Water Project, Folsom South Canal Connection). The June 2011 Vollmar delineation was not submitted to this office for verification.**

☐ Applicable/supporting case law:

☐ Applicable/supporting scientific literature:

☒ Other information (please specify): **California Environmental Quality Act Initial Study (control number: PLNP2010-PMR-00215) and a report titled "Appendix A Biological Resources Inventory at the 525+/- Acre 'Clay Station Road' Site, Sacramento County, California" dated 12 January 2011. The 12 January 2011 report was not a delineation but does include maps and descriptions of some of the clusters of aquatic resources on the site. California Department of Water Resources LiDAR. The Subject Area is approximately 22 miles from the Mather Field Weather Station (KMHR) and approximately 25 miles away from Sacramento Executive Airport weather station (NOAA station ID KSAC; USDA WETS Station CA232 ) and the Stockton Metro weather station (NOAA station ID KSCK; USDA WETS Station CA237) . The Sacramento Executive Airport weather station reports an average of 17.93 inches of annual precipitation . The Stockton Metro Airport reports an average of 13.84 inches of annual precipitation. The Mather Field Weather Station is not included in the USDA's WETS Tables.**

**B. ADDITIONAL COMMENTS TO SUPPORT JD:**

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

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

**SECTION I: BACKGROUND INFORMATION**

**A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): July 21, 2015**

**B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Sacramento District, Clay Station Properties, LLC Investigation, SPK-2012-00116, Form 5 of 6.**

**C. PROJECT LOCATION AND BACKGROUND INFORMATION:**

State: **California** County/parish/borough: **Sacramento** City:
Center coordinates of site (lat/long in degree decimal format): Lat. **38.2679°**, Long. **-121.1636°**
Universal Transverse Mercator: **Zone 10 North, 660649 Easting, 4237134 Northing**
Name of nearest waterbody: **Dry Creek**
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Mokelumne River**
Name of watershed or Hydrologic Unit Code (HUC): **Upper Cosumnes, 18040013**
☒ 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: **This JD is divided into six forms (review areas) corresponding to the portion of each of the six drainage areas within the subject area. Form 1 covers aquatic resources SW01, SW02, SW03, SW04, SW14, SW15, SWS01, SWS02, VP01, VP30, VP31, P03 and D09. Form 2 covers aquatic resources D02, SWS04, SWS05, VP02, VP03, VP04, VP05, VP06, VP07, VP08, VP09, VP10, VP11, VP12, VP14, VP15, VP16, VP17, VP18, VP28, VP29 and VP32. Form 3 covers aquatic resources SW05, SW12, SWS11, SWS12, VP19, VP20, VP21, VP22, VP23 and VP24) Form 4 covers aquatic resources D01, D03, D04, D05, D06, D07, D08, P02, SW06, SW07, SW08, SW13, SW16, SWS06, and SWS07. Form 5 covers aquatic resources P01, SW09, SW10, SW11, SWS03, SWS09, SWS13, SWS14, VP26 and VP27. Form 6 covers aquatic resource SWS10.**

**D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):**

☒ Office (Desk) Determination. Date: **13 July 2015**
☒ Field Determination. Date(s): **2 April 2012**

**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 and are not** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

**1. Waters of the U.S.**

**a. Indicate presence of waters of U.S. in review area (check all that apply):** [1]

☐ TNWs, including territorial seas
☐ Wetlands adjacent to TNWs
☐ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
☒ Non-RPWs that flow directly or indirectly into TNWs
☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
☒ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
☒ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
☒ Impoundments of jurisdictional waters
☒ Isolated (interstate or intrastate) waters, including isolated wetlands

**b. Identify (estimate) size of waters of the U.S. in the review area:**

Non-wetland waters: linear feet, wide, and/or **2.201** acres.

[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).

Wetlands: **1.997** acres.

**c. Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual**
Elevation of established OHWM (if known):

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

☒ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: **VP27 (0.017 ac) is not federally jurisdictional. While it is up-slope from SWS09 and the rest of the interconnected network of waters in this review area, we can find no discrete or discernible hydrologic connections between VP27 and SWS09 in LiDAR or aerial photography. Therefore, we have determined that this aquatic resource is an isolated, intrastate water with no interstate or foreign commerce connect, and is not jurisdictional. …**

## 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: **None in the review area**

Summarize rationale supporting determination: **N/A**

**2. Wetland adjacent to TNW**
Summarize rationale supporting conclusion that wetland is "adjacent": **None in the review area**

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

**This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.**

**The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.**

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

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

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

**(i) General Area Conditions:**
Watershed size: **56,000 acres**
Drainage area: **68 acres**
Average annual rainfall: **13.84-17.93** inches
Average annual snowfall: **N/A** inches

[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.

**(ii) Physical Characteristics:**

(a) Relationship with TNW:

☐ Tributary flows directly into TNW.

☒ Tributary flows through **1** tributaries before entering TNW.

Project waters are **15-20** river miles from TNW.
Project waters are **1 (or less)** river miles from RPW.
Project waters are **10-15** aerial (straight) miles from TNW.
Project waters are **1 (or less)** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: **Project waters do not cross or serve as state boundaries.**

Identify flow route to TNW[5]: **This tributary to Dry Creek was impounded between 1967 and 1982. For mapping purposes, the impounded area is called P01. Upstream of the impoundment we identified the tributary as SWS09 and downstream of the impoundment we identified the tributary as SWS08, however it is important to note that while mapped as separate polygons these are the same aquatic resource. VP26 flows into SWS09 through two discrete flow paths discernible using LiDAR and aerial photography. SW09, SW10, and SW11 flow into SWS08 just before its confluence with Dry Creek. SWS03 discharges into Dry Creek a short distance downstream of SWS08. From the point where SWS08 discharges into Dry Creek, Dry Creek flows 16.8 miles to the Mokelumne River.**
Tributary stream order, if known: **1st Order.**

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

**Tributary** is: ☐ Natural
☐ Artificial (man-made). Explain:
☒ Manipulated (man-altered). Explain: **This tributary has been impounded and the flow out of the impoundment routed into an eastern branch at a point prior to the activity under investigation, and then re-routed back to the original main channel as a part of the activity under investigation.**

**Tributary** properties with respect to top of bank (estimate):
Average width: **15** feet
Average depth: **< 1** feet
Average side slopes: **4:1 (or greater).**

Primary tributary substrate composition (check all that apply):

| | | |
|---|---|---|
| ☒ Silts | ☐ Sands | ☐ Concrete |
| ☐ Cobbles | ☐ Gravel | ☐ Muck |
| ☐ Bedrock | ☒ Vegetation. Type/% cover: | |

☒ Other. Explain: **P01 is likely silt. SWS09 and SWS08 are vegetated and exhibit both attributes of wetland and stream.**

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: **SWS08 and SWS09 exhibit both stream and wetland characteristics.**
Presence of run/riffle/pool complexes. Explain: **None**
Tributary geometry: **Meandering**
Tributary gradient (approximate average slope): **<1** %

(c) Flow:

Tributary provides for: **Intermittent but not seasonal flow**
Estimate average number of flow events in review area/year: **2-5**
Describe flow regime: **SWS08/SWS09/P01 (Form 5) is a non-relatively permanent tributary with characteristics of both stream and wetland. Although not a part of a vernal pool complex, these waters and the adjacent upland areas behave in a similar fashion due to shallow restrictive layers in the soil. Under normal wet season precipitation as soils in the upland catchment areas around each vernal pool and seasonal wetland fill with water, that water hits the restrictive layer underlying these soils and moves laterally. The depressions in the system (vernal pools, seasonal wetlands and in swale pools) receive these lateral near surface flows, as well as direct precipitation, and store the water first in the soil pore space above the restrictive layer (i.e. perched water table), then as ponded water above the surface. Once the stored water in the depressions reach an elevation above the restrictive layer they begin to contribute near surface flow to SWS08/SWS09/P01. SWS08 and SWS09 responds in a similar fashion: first storing and filling with water and then contributing near surface flows to Dry Creek and, once fully charged**

[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.

**with water, contributing surface flows to Dry Creek. The impoundment P01 behaves similarly but storing much more water above the surface. During dry down this process occurs in reverse: surface flows stop, then near surface flows stop, then depressions begin to dry down. This process may repeat several times during a normal wet season. The impoundment at P01 likely reduces the number of discharge events below the dam but may also prolong the flow after rain events. The persistence of wetlands below the dam indicates that P01 contributes to near-surface hydrology.**

Other information on duration and volume:

Surface flow is: **Discrete and confined**. Characteristics: **Discernable in LiDAR and aerial photography**

Subsurface flow: **Yes**. Explain findings: **Morphology is similar to that of the vernal pool complexes discussed in Forms 1 and 2 with a restrictive layer that results in shallow subsurface lateral flow. The persistence of wetlands in the old main channel below the dam is also persuasive that subsurface flow continues from P01 south.**

☐ 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): **P01 has a clear OHWM impressed on the shoreline. SWS08 and SWS09 exhibit characteristics of both wetland swale and stream.**
- ☐ 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 or debris deposits (foreshore)
- ☐ physical markings/characteristics
- ☐ tidal gauges
- ☐ other (list):

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

**(iii) Chemical Characteristics:**

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.). Explain: **SWS08/SWS09/P01 and their adjacent vernal pools and seasonal wetlands, along with other similarly situated waters within this watershed collect, retain, filter and more slowly release runoff from surrounding roads, housing, rangeland, pastures, farms and other surrounding land uses. Collection of runoff into these wetlands and small streams on the site reduces chemicals and other pollutants normally found in runoff water (gas, oil, herbicides, pesticides, nutrients and human, animal and other waste material). Retention of these chemicals and other pollutants keeps them out of Dry Creek and the Mokelumne River helping to maintain downstream water quality. Dry Creek is a listed impaired water for E. coli, sediment toxicity and unknown toxicity (Final 2010 Integrated Report (CWA Section 303(d) List / 305(b) Report). The Mokelumne River is a 303(d) listed impaired water for chlorpyrifos, copper, mercury, dissolved oxygen, unknown toxicity, and zinc (Final 2010 Integrated Report (CWA Section 303(d) List / 305(b) Report). Dry Creek and the Mokelumne River are impaired in part due to wetland losses in the immediate area and throughout the basin. Cumulative impacts from wetland losses are primarily due to similar conversions from grazing and other passive uses to more intensive management, including row crops and orchards.**

Identify specific pollutants, if known:

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

☒ Riparian corridor. Characteristics (type, average width): **SWS03, SWS08, SW09, SW10 and SW11 are the remnants of the riparian corridor that existed in this area prior to conversion to agriculture.**

[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:
☒ Habitat for:
☒ Federally Listed species. Explain findings: **The Subject Area contains habitat suitable for the federally listed as endangered Lepidurus packardi (vernal pool tadpole shrimp) and the federally listed as threatened Branchinecta lynchi (vernal pool fairy shrimp). The California Natural Diversity Database indicates that both of these species occur in properties immediately abutting the Subject Area. Additionally the USFWS has designated critical habitat for these vernal pool species just three-quarters of a mile north of the Subject Area. The Mokelumne River at the Confluence with Dry Creek is listed critical habitat for the federally listed as threatened Delta Smelt (Hypomesus transpacificus) (50 CFR Part 17, 59 Fed. Reg. 65256-65279) and Central Valley California Steelhead.**
☐ Fish/spawn areas. Explain findings:
☒ Other environmentally-sensitive species. Explain findings: **Habitat for vernal pool endemic species of plants and animals which is increasingly rare as habitat loss occurs in the Central Valley, and is known to occur on sites directly abutting the Subject Area..**
☒ Aquatic/wildlife diversity. Explain findings: **The vernal pool and seasonal wetland and wetland swale complexes in the Subject Area, along with other similarly situated waters within this watershed provide habitat, food, breeding and life support for a diverse number of native plant and animal species, including invertebrates, birds, mammals, and downstream fish, some of which are federally listed threatened and/or endangered species and/or commercially important. These wetlands provide support functions to both species that are endemic to this habitat as well as highly mobile migratory species. These wetlands have the capacity to transfer nutrients and organic carbon that feed downstream food webs. They also provide habitat and lifecycle support functions for fish and wildlife species that are present in the Mokelumne River and its tributaries downstream of the subject site. The Mokelumne River at the Confluence with Dry Creek is listed critical habitat for the federally listed as threatened Delta Smelt (Hypomesus transpacificus) (50 CFR Part 17, 59 Fed. Reg. 65256-65279) and Central Valley California Steelhead.**

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

**(i) Physical Characteristics:**
(a) General Wetland Characteristics:
Properties:
Wetland size: **1.997** acres
Wetland type. Explain: **Vernal pool, seasonal wetland depressions and swales. This 1.997 acres includes SWS08 (1.299 ac) and SWS09 (0.387 ac) which exhibit attributes of both wetland and stream.**
Wetland quality. Explain: **A review of the aerial photography and satellite imagery available through Google Earth indicates that the quality of these wetlands was likely degraded prior to the Subject Activity. In 30 June 2004 a light signature is evident south of the farm road running along the P01 dam. This signature may be consistent with hay harvest, wheat harvest, plowing or other disturbance. The resolution of this image is too coarse to differentiate the cause of this signature. However, whatever the activity was it had a lasting effect as the signatures on this side of the farm road which appear lighter and with less texture variablity in subsequent images. This suggests that the activity observed in the 30 June 2004 image affected the soil and was likely not just mowing. The activity depicted in this 30 June 2004 image affected all of the wetlands addressed in this review area. Only wetlands that persisted after that activity are mapped here. The 18 March 2006 image is particularly useful as it shows water in the deeper pools and channels and reveals the interconnectedness of the complex with the ditch system and Dry Creek.**
Project wetlands cross or serve as state boundaries. Explain: **No**

(b) General Flow Relationship with Non-TNW:
Flow is: **Intermittent flow**. Explain: **The tributary north of the P01 functions similarly to wetlands in the vernal pool complexes discussed in Forms 1, 2 and 3 as they are perched on a restrictive layer. Under normal wet season precipitation as soils in the upland catchment areas around each vernal pool and seasonal wetland fill with water, that water hits the restrictive layer underlying these soils and moves laterally. The depressions in the complex (vernal pools, seasonal wetlands and in-swale pools) receive these lateral near surface flows, as well as direct precipitation, and store the water first in the soil pore space above the restrictive layer (i.e. perched water table), then as ponded water above the surface. Once the stored water in the complex's depressions reach an elevation above the restrictive layer they begin to contribute near surface flow to SWS08. The wetlands south of P01 are within the FEMA mapped 100-year flood plain. Portions of SWS08 are also mapped as occasionally flooded soils (meaning 5-50 percent probability of flooding in a given year). LiDAR data shows SWS03, SW09, SW10, and SW11 sitting in channel remnants left by the meandering of Dry**

**Creek within a low flat terrace. This, combined with the NRCS soil map, and FEMA flood maps indicate that these wetlands receive flood flows from Dry Creek at least occasionally.**

Surface flow is**: Discrete and confined**
Characteristics: **Discernable on LiDAR and aerial photography**

Subsurface flow: **Yes**. Explain findings: **Subsurface flow occurs during the wet season above the restrictive layer and persists after rain events as discussed in b above.**
☐ Dye (or other) test performed:

(c) Wetland Adjacency Determination with Non-TNW:
☐ Directly abutting
☒ Not directly abutting
☒ Discrete wetland hydrologic connection. Explain: **LiDAR data and the 18 March 2006 DigitalGlobe image via Google Earth shows discrete hydrologic connections from VP26 to SWS09 and between SW09, SW10, and SW11 and SWS08. SWS03 has a visible discrete hydrologic connection directly to Dry Creek.**
☒ Ecological connection. Explain: **Besides having a discrete hydrologic connection, wateraquatic resources in this landscape context are connected to each other through transport of organic carbon and nutrients downstream as well as movement of organisms in between the aquatic resources, between these aquatic resources and the receiving streams and between aquatic resources and the surrounding upland areas.**
☐ Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW
Project wetlands are **15-20** river miles from TNW.
Project waters are **10-15** aerial (straight) miles from TNW.
Flow is from: **Wetland to navigable waters.**
Estimate approximate location of wetland as within the **50 - 100-year** floodplain. A**quatic resources from P01 south are within the FEMA 100-year flood plain.**

**(ii) Chemical Characteristics:**
Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: **These waters along with other similarly situated waters within this watershed collect, retain, filter and more slowly release runoff from surrounding roads, housing, rangeland, pastures, farms and other surrounding land uses. Collection of runoff into these wetlands and small streams on the site reduces chemicals and other pollutants normally found in runoff water (gas, oil, herbicides, pesticides, nutrients and human, animal and other waste material). Retention of these chemicals and other pollutants keeps them out of Dry Creek and the Mokelumne River helping to maintain downstream water quality. Dry Creek is a listed impaired water for E. coli, sediment toxicity and unknown toxicity (Final 2010 Integrated Report (CWA Section 303(d) List / 305(b) Report). The Mokelumne River is also a 303(d) listed impaired water for chlorpyrifos, copper, mercury, dissolved oxygen, unknown toxicity, and zinc (Final 2010 Integrated Report (CWA Section 303(d) List / 305(b) Report). The Mokelumne River and its tributaries are also major sources of irrigation and or drinking/municipal water. Dry Creek and the Mokelumne River are impaired in part due to wetland losses in the immediate area and throughout the basin. Cumulative impacts from wetland losses are primarily due to similar conversions from grazing and other passive uses to more intensive management, including row crops and orchards.**
Identify specific pollutants, if known: **Pollutants typical of agriculture including pesticides, fertilizers, animal waste, nitrogen compounds and sediments.**

**(iii) Biological Characteristics. Wetland supports (check all that apply):**
☒ Riparian buffer. Characteristics (type, average width): **SWS03, SW09, SW10, SW11 and SWS08 are the remnants of the riparian buffer that existed before historic conversion to agriculture.**
☒ Vegetation type/percent cover. Explain:
☒ Habitat for:
☒ Federally Listed species. Explain findings: **The Subject Area contains habitat suitable for the federally listed as endangered Lepidurus packardi (vernal pool tadpole shrimp) and the federally listed as threatened Branchinecta lynchi (vernal pool fairy shrimp). The California Natural Diversity Database indicates that both of these species occur in properties immediately abutting the Subject Area. Additionally the USFWS has designated critical habitat for these vernal pool species just three-quarters of a mile north of the Subject Area. The Mokelumne River at the Confluence with Dry Creek is listed critical habitat for the federally listed as threatened Delta Smelt (Hypomesus transpacificus) (50 CFR Part 17, 59 Fed. Reg. 65256-65279) and Central Valley California Steelhead.**
☐ Fish/spawn areas. Explain findings:

☒ Other environmentally-sensitive species. Explain findings: **Habitat for vernal pool endemic species of plants and animals which is increasingly rare as habitat loss occurs in the Central Valley, and is known to occur on sites directly abutting the Subject Area.**

☒ Aquatic/wildlife diversity. Explain findings: **These waters along with other similarly situated waters within this watershed provide habitat, food, breeding and life support for a diverse number of native plant and animal species, including invertebrates, birds, mammals, downstream fish, some of which are federally listed threatened and/or endangered species and/or commercially important. These wetlands have the capacity to transfer nutrients and organic carbon that feed downstream food webs. They also provide habitat and lifecycle support functions for fish and wildlife species that are present in the Mokelumne River and its tributaries downstream of the subject site. The Mokelumne River at the confluence with Dry Creek is listed critical habitat for the federally listed as threatened Delta Smelt (Hypomesus transpacificus) (50 CFR Part 17, 59 Fed. Reg. 65256-65279) and Central Valley California Steelhead.**

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

All wetland(s) being considered in the cumulative analysis: **9**

Approximately **1.997** 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) |
|---|---|---|---|
| SW09 (N) | 0.054 | SW10 (N) | 0.038 |
| SW11 (N) | 0.122 | SWS03 (N) | 0.073 |
| SWS08 (Y) | 1.299 | SWS09 (N) | 0.387 |
| SWS13 (N) | 0.009 | SWS14 (N) | 0.007 |
| VP26 (N) | 0.008 | | |

Summarize overall biological, chemical and physical functions being performed: **These wetlands perform several functions important to the biological, chemical and physical integrity of Dry Creek and Mokelumne River. This nexus is neither speculative nor insubstantial. These wetlands are in an optimal position to receive and store flood waters reducing the risk of flooding downstream. These wetlands, along with other similarly situated wetlands in the watershed store precipitation and slowly deliver this water to Dry Creek, thereby attenuating storm flows and maintaining base flow in Dry Creek and the Mokelumne River. By attenuating storm flows these waters reduce the risk of flooding downstream and by slowly delivering this stored water to downstream waters, maintain the base flow needed to maintain the physical integrity of Dry Creek and the Mokelumne River as well as for downstream fish and other wildlife. These wetlands, along with other similarly situated wetlands in the watershed perform a critical denitrification function which removes nitrogen from the system. Nitrogen and phosphorous are the two nutrients responsible for eutrophication of California waterways and dissolved oxygen impairment. The Mokelumne River is a 303(d) listed impaired water for dissolved oxygen.**

## C. SIGNIFICANT NEXUS DETERMINATION

**A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.**

**Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:**

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

**Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:**

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: **SWS08/SWS09/P01 is a non-relatively permanent water tributary to Dry Creek. SWS08 and SWS09 exhibit characteristics of both stream and wetland. P01 is an impoundment of this tributary. This tributary, in combination with its adjacent wetlands, has the capacity to carry pollutants and flood waters to TNWs and reduce the amount of pollutants or flood waters reaching the TNW. This tributary, in combination with its adjacent wetlands, 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. This tributary, in combination with its adjacent wetlands, have the capacity to transfer nutrients and organic carbon that support downstream foodwebs.**

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: **SWS03, SW09, SW10, SW11 and SWS08 are adjacent to Dry Creek, an RPW. Dry Creek, in combination with its adjacent wetlands, have the capacity to carry pollutants and flood waters to TNWs and reduce the amount of pollutants or flood waters reaching the TNW. Dry Creek, in combination with its adjacent wetlands, provides 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. Dry Creek, in combination with its adjacent wetlands, have the capacity to transfer nutrients and organic carbon that support downstream foodwebs.**

**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, wide, 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: **Dry Creek is outside of the review area.**

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

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

   Provide estimates for jurisdictional waters within the review area (check all that apply):
   - ☒ Tributary waters: **4935** linear feet, **10' to 400'** wide.
   - ☐ Other non-wetland waters: acres.
     Identify type(s) of waters: **SWS08 (1.299 ac) and SWS09 (0.387 ac) exhibit characteristics of wetland swale and stream. P01 (2.201 ac) is an impoundment of this tributary.**

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
   - ☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
     - ☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:

[8]See Footnote # 3.

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:

Provide acreage estimates for jurisdictional wetlands in the review area: **0.535** 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: **1.586** acres.

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

Provide estimates for jurisdictional wetlands in the review area: **0.01** 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, wide.
☐ 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: **VP27 has no discernable hydrologic connection to the tributary.**
☐ Other: (explain, if not covered above):

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, wide.
☐ Lakes/ponds: 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.***

☐ Other non-wetland waters: acres. List type of aquatic resource:
☒ Wetlands: **0.02** acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, wide.
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource:
☐ Wetlands: acres.

**SECTION IV: DATA SOURCES.**

**A. SUPPORTING DATA. Data reviewed for JD (check all that apply -** checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
- ☐ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:
- ☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - ☐ Office concurs with data sheets/delineation report.
  - ☒ Office does not concur with data sheets/delineation report.
- ☐ Data sheets prepared by the Corps:
- ☐ Corps navigable waters' study:
- ☒ U.S. Geological Survey Hydrologic Atlas:
  - ☒ USGS NHD data.
  - ☒ USGS 8 and 12 digit HUC maps.
- ☒ U.S. Geological Survey map(s). Cite scale & quad name: **1:24K; CA-CLAY**
- ☒ USDA Natural Resources Conservation Service Soil Survey. Citation: **USDA Custom Soil Report**
- ☒ National wetlands inventory map(s). Cite name: **National Wetland Mapper**
- ☐ State/Local wetland inventory map(s):
- ☒ FEMA/FIRM maps: **FEMA map number 06067C0500H**
- ☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- ☒ Photographs: ☒ Aerial (Name & Date): **18MAR06 Digital Globe via Google Earth, 06APR10 source not specified via Google Earth, 18MAR11 Digital Globe via Google Earth, and 13JUN11 source not specified via Google Earth.**
  or ☒ Other (Name & Date): **Site inspection photographs 02APR12**
- ☒ Previous determination(s). File no. and date of response letter: **A portion of the Subject Area along Clay Station Road was delineated as a part of SPK-2000-00025 in a report by Jones & Stokes titled "Delineation of Waters of the United States, Including Wetlands, Freeport Regional Water Project" dated 15 February 2006. On 27 February 2006 this office issued an approved jurisdictional determination for SPK-2000-00025 (Freeport Regional Water Project, Folsom South Canal Connection). The June 2011 Vollmar delineation was not submitted to this office for verification.**
- ☐ Applicable/supporting case law:
- ☐ Applicable/supporting scientific literature:
- ☒ Other information (please specify): **California Environmental Quality Act Initial Study (control number: PLNP2010-PMR-00215) and a report titled "Appendix A Biological Resources Inventory at the 525+/- Acre 'Clay Station Road' Site, Sacramento County, California" dated 12 January 2011. The 12 January 2011 report was not a delineation but does include maps and descriptions of some of the clusters of aquatic resources on the site. California Department of Water Resources LiDAR. The Subject Area is approximately 22 miles from the Mather Field Weather Station (KMHR) and approximately 25 miles away from Sacramento Executive Airport weather station (NOAA station ID KSAC; USDA WETS Station CA232 ) and the Stockton Metro weather station (NOAA station ID KSCK; USDA WETS Station CA237) . The Sacramento Executive Airport weather station reports an average of 17.93 inches of annual precipitation . The Stockton Metro Airport reports an average of 13.84 inches of annual precipitation. The Mather Field Weather Station is not included in the USDA's WETS Tables.**

**B. ADDITIONAL COMMENTS TO SUPPORT JD:**

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

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

**SECTION I: BACKGROUND INFORMATION**

**A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): July 21, 2015**

**B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Sacramento District, Clay Station Properties, LLC Investigation, SPK-2012-00116, Form 6 of 6.**

**C. PROJECT LOCATION AND BACKGROUND INFORMATION:**

State: **California** County/parish/borough: **Sacramento** City:
Center coordinates of site (lat/long in degree decimal format): Lat. **38.2679°**, Long. **-121.1636°**
Universal Transverse Mercator: **Zone 10 North, 660649 Easting, 4237134 Northing**
Name of nearest waterbody: **Dry Creek**
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Mokelumne River**
Name of watershed or Hydrologic Unit Code (HUC): **Upper Cosumnes, 18040013**
☒ 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: **This JD is divided into six forms (review areas) corresponding to the portion of each of the six drainage areas within the subject area. Form 1 covers aquatic resources SW01, SW02, SW03, SW04, SW14, SW15, SWS01, SWS02, VP01, VP30, VP31, P03 and D09. Form 2 covers aquatic resources D02, SWS04, SWS05, VP02, VP03, VP04, VP05, VP06, VP07, VP08, VP09, VP10, VP11, VP12, VP14, VP15, VP16, VP17, VP18, VP28, VP29 and VP32. Form 3 covers aquatic resources SW05, SW12, SWS11, SWS12, VP19, VP20, VP21, VP22, VP23 and VP24) Form 4 covers aquatic resources D01, D03, D04, D05, D06, D07, D08, P02, SW06, SW07, SW08, SW13, SW16, SWS06, and SWS07. Form 5 covers aquatic resources P01, SW09, SW10, SW11, SWS03, SWS09, SWS13, SWS14, VP26 and VP27. Form 6 covers aquatic resource SWS10.**

**D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):**

☒ Office (Desk) Determination. Date: **13 July 2015**
☒ Field Determination. Date(s): **2 April 2012**

**SECTION II: SUMMARY OF FINDINGS**

**A. RHA SECTION 10 DETERMINATION OF JURISDICTION.**

There **Are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain:

**B. CWA SECTION 404 DETERMINATION OF JURISDICTION.**

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

**1. Waters of the U.S.**

**a. Indicate presence of waters of U.S. in review area (check all that apply):** [1]

☐ TNWs, including territorial seas
☐ Wetlands adjacent to TNWs
☐ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
☒ Non-RPWs that flow directly or indirectly into TNWs
☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
☐ Impoundments of jurisdictional waters
☐ Isolated (interstate or intrastate) waters, including isolated wetlands

**b. Identify (estimate) size of waters of the U.S. in the review area:**

Non-wetland waters: linear feet, wide, and/or acres.
Wetlands: **0.138** acres.

[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).

**c. Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual**
Elevation of established OHWM (if known):

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

**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: **None in the review area**

Summarize rationale supporting determination: **N/A**

**2. Wetland adjacent to TNW**
Summarize rationale supporting conclusion that wetland is "adjacent": **None in the review area**

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

**This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.**

**The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.**

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

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

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

**(i) General Area Conditions:**
Watershed size: **56,000 acres**
Drainage area: **136 acres**
Average annual rainfall: **13.84-17.93** inches
Average annual snowfall: **N/A** inches

**(ii) Physical Characteristics:**
(a) Relationship with TNW:
☐ Tributary flows directly into TNW.
☒ Tributary flows through **1** tributaries before entering TNW.

[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.

Project waters are **15-20** river miles from TNW.
Project waters are **1 (or less)** river miles from RPW.
Project waters are **10-15** aerial (straight) miles from TNW.
Project waters are **1 (or less)** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: **Project waters do not cross or serve as state boundaries.**

Identify flow route to TNW[5]: **SWS10 is a tributary to Dry Creek. It runs from north of the Subject Area, crossing the northeast corner and then continuing south-east outside of the subject area. Sometime between 1967 and 1982 it was re-routed into ditches around agricultural fields (located east of the Subject Area), and now flows through these ditches west and south, into Dry Creek. From the point where it discharges into Dry Creek, Dry Creek flows approximately 17 miles to the Mokelumne River.**
Tributary stream order, if known: **1st Order.**

(b) General Tributary Characteristics (check all that apply):
**Tributary** is: ☒ Natural
☐ Artificial (man-made). Explain:
☒ Manipulated (man-altered). Explain: **A portion of this tributary, down stream of this review area, has been re-routed.**

**Tributary** properties with respect to top of bank (estimate):
Average width: **15** feet
Average depth: **< 1** feet
Average side slopes: **4:1 (or greater).**

Primary tributary substrate composition (check all that apply):
☒ Silts ☐ Sands ☐ Concrete
☐ Cobbles ☐ Gravel ☐ Muck
☐ Bedrock ☒ Vegetation. Type/% cover:
☒ Other. Explain: **SWS10 is vegetated and exhibits both attributes of wetland and stream.**

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: **SWS10 exhibits both stream and wetland characteristics.**
Presence of run/riffle/pool complexes. Explain: **None**
Tributary geometry: **Meandering**
Tributary gradient (approximate average slope): **<1** %

(c) Flow:
Tributary provides for: **Intermittent but not seasonal flow**
Estimate average number of flow events in review area/year: **2-5**
Describe flow regime: **SWS10 (Form 6) is a non-relatively permanent tributary with characteristics of both stream and wetland. Although not a part of a vernal pool complex, these waters and the adjacent upland areas behave in a similar fashion due to shallow restrictive layers in the soil. Under normal wet season precipitation as soils in the upland catchment areas around each vernal pool and seasonal wetland fill with water, that water hits the restrictive layer underlying these soils and moves laterally. The depressions in the system (vernal pools, seasonal wetlands and in swale pools) receive these lateral near surface flows, as well as direct precipitation, and store the water first in the soil pore space above the restrictive layer (i.e. perched water table), then as ponded water above the surface. Once the stored water in the depressions reach an elevation above the restrictive layer they begin to contribute near surface flow to SWS10. SWS10 responds in a similar fashion: first storing and filling with water and then contributing near surface flows to Dry Creek, once fully charged with water, contributing surface flows to Dry Creek. During dry down this process occurs in reverse: surface flows stop, then near surface flows stop, then depressions begin to dry down. This process may repeat several times during a normal wet season.**
Other information on duration and volume:

Surface flow is: **Discrete and confined.** Characteristics: **Discernable in LiDAR and aerial photography**

Subsurface flow: **Yes**. Explain findings: **Morphology is similar to that of the vernal pool complexes discussed in Forms 1 and 2 with a restrictive layer that results in shallow subsurface lateral flow.**
☐ Dye (or other) test performed:

[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 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
  - ☐ 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
  - ☒ other (list): **SWS10 exhibit characteristics of both wetland swale and stream.**
- ☐ 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 or debris deposits (foreshore)
  - ☐ physical markings/characteristics
  - ☐ tidal gauges
  - ☐ other (list):
- ☐ Mean High Water Mark indicated by:
  - ☐ survey to available datum;
  - ☐ physical markings;
  - ☐ vegetation lines/changes in vegetation types.

**(iii) Chemical Characteristics:**

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.). Explain: **SWS10, along with other similarly-situated waters within this watershed collect, retain, filter and more slowly release runoff from surrounding roads, housing, rangeland, pastures, farms and other surrounding land uses. Collection of runoff into these wetlands and small streams on the site reduces chemicals and other pollutants normally found in runoff water (gas, oil, herbicides, pesticides, nutrients and human, animal and other waste material). Retention of these chemicals and other pollutants keeps them out of Dry Creek and the Mokelumne River helping to maintain downstream water quality. Dry Creek is a listed impaired water for E. coli, sediment toxicity and unknown toxicity (Final 2010 Integrated Report (CWA Section 303(d) List / 305(b) Report). The Mokelumne River is a 303(d) listed impaired water for chlorpyrifos, copper, mercury, dissolved oxygen, unknown toxicity, and zinc (Final 2010 Integrated Report (CWA Section 303(d) List / 305(b) Report). Dry Creek and the Mokelumne River are impaired in part due to losses of this type of aquatic resource in the immediate area and throughout the basin. Cumulative impacts from wetland losses are primarily due to similar conversions from grazing and other passive uses to more intensive management, including row crops and orchards.**

Identify specific pollutants, if known:

**(iv) Biological Characteristics. Channel supports (check all that apply):**
- ☐ Riparian corridor. Characteristics (type, average width):
- ☒ Wetland fringe. Characteristics:
- ☒ Habitat for:
  - ☒ Federally Listed species. Explain findings: **The Subject Area contains habitat suitable for the federally listed as endangered Lepidurus packardi (vernal pool tadpole shrimp) and the federally listed as threatened Branchinecta lynchi (vernal pool fairy shrimp). The California Natural Diversity Database indicates that both of these species occur in properties immediately abutting the Subject Area. Additionally the USFWS has designated critical habitat for these vernal pool species just three-quarters of a mile north of the Subject Area. The Mokelumne River at the confluence with Dry Creek is listed critical habitat for the federally listed as threatened Delta Smelt (Hypomesus transpacificus) (50 CFR Part 17, 59 Fed. Reg. 65256-65279) and Central Valley California Steelhead.**
  - ☐ Fish/spawn areas. Explain findings:
  - ☒ Other environmentally-sensitive species. Explain findings: **Habitat for vernal pool endemic species of plants and animals which is increasingly rare as habitat loss occurs in the Central Valley.**
  - ☒ Aquatic/wildlife diversity. Explain findings: **The vernal pool and seasonal wetland and wetland swale complexes in the Subject Area, along with other similarly situated waters within this watershed provide habitat, food, breeding and life support for a diverse number of native plant and animal species, including invertebrates, birds, mammals, downstream fish, some of which are federally**

[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.

**listed special status species and/or commercially important. These wetlands provide support functions to both species that are endemic to this habitat as well as highly mobile migratory species. These wetlands have the capacity to transfer nutrients and organic carbon that feed downstream food webs. They also provide habitat and lifecycle support functions for fish and wildlife species that are present in the Mokelumne River and its tributaries downstream of the subject site. The Mokelumne River at the confluence with Dry Creek is listed critical habitat for the federally listed as threatened Delta Smelt (Hypomesus transpacificus) (50 CFR Part 17, 59 Fed. Reg. 65256-65279) and Central Valley California Steelhead.**

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

**(i) Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: **0.138** acres

Wetland type. Explain: **Seasonal wetland swale with characteristics of stream.**

Wetland quality. Explain: **No signs of alternation or degradation visible in aerial photography within the review area.**

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

(b) General Flow Relationship with Non-TNW:

Flow is: **Intermittent flow**. Explain: **SWS10 functions similarly to wetlands in the vernal pool complexes discussed in Forms 1, 2 and 3 (but not 4 and 5?)as it is perched on a restrictive layer. Under normal wet season precipitation as soils in the upland catchment areas around each vernal pool and seasonal wetland fill with water, that water hits the restrictive layer underlying these soils and moves laterally. The depressions in the complex (vernal pools, seasonal wetlands and in-swale pools) receive these lateral near surface flows, as well as direct precipitation, and store the water first in the soil pore space above the restrictive layer (i.e. perched water table), then as ponded water above the surface. Once the stored water in the complex's depressions reach an elevation above the restrictive layer they begin to contribute near surface flow to SWS10.**

Surface flow is**: Discrete and confined**

Characteristics:

Subsurface flow: **Yes**. Explain findings: **Subsurface flow occurs during the wet season above the restrictive layer and persists after rain events as discussed in b above.**

☐ Dye (or other) test performed:

(c) Wetland Adjacency Determination with Non-TNW:

☐ Directly abutting

☐ Not directly abutting

☐ Discrete wetland hydrologic connection. Explain:

☐ Ecological connection. Explain:

☐ Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW

Project wetlands are **15-20** river miles from TNW.

Project waters are **10-15** aerial (straight) miles from TNW.

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

Estimate approximate location of wetland as within the **500-year or greater** floodplain.

**(ii) Chemical Characteristics:**

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: **These waters along with other similarly-situated waters within this watershed collect, retain, filter and more slowly release runoff from surrounding roads, housing, rangeland, pastures, farms and other surrounding land uses. Collection of runoff into these wetlands and small streams on the site reduces chemicals and other pollutants normally found in runoff water (gas, oil, herbicides, pesticides, nutrients and human, animal and other waste material). Retention of these chemicals and other pollutants keeps them out of Dry Creek and the Mokelumne River helping to maintain downstream water quality. Dry Creek is a listed impaired water for E. coli, sediment toxicity and unknown toxicity (Final 2010 Integrated Report (CWA Section 303(d) List / 305(b) Report). The Mokelumne River is also a 303(d) listed impaired water for chlorpyrifos, copper, mercury, dissolved oxygen, unknown toxicity, and zinc (Final 2010 Integrated Report (CWA Section 303(d) List / 305(b) Report). The Mokelumne River and its tributaries are also major sources of irrigation and or drinking/municipal water. Dry Creek and the Mokelumne River are impaired in part due to losses, degradation and alteration of this type of aquatic in the immediate area and throughout the basin.**

**Cumulative impacts from wetland losses are primarily due to similar conversions from grazing and other passive uses to more intensive management, including row crops and orchards.**

Identify specific pollutants, if known: **Pollutants typical of agriculture including pesticides, fertilizers, animal waste, nitrogen compounds and sediments.**

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

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

☒ Vegetation type/percent cover. Explain:

☒ Habitat for:

☒ Federally Listed species. Explain findings: **The Subject Area contains habitat suitable for the federally listed as endangered Lepidurus packardi (vernal pool tadpole shrimp) and the federally listed as threatened Branchinecta lynchi (vernal pool fairy shrimp). The California Natural Diversity Database indicates that both of these species occur in properties immediately abutting the Subject Area. Additionally the USFWS has designated critical habitat for these vernal pool species just three-quarters of a mile north of the Subject Area. The Mokelumne River at the confluence with Dry Creek is listed critical habitat for the federally listed as threatened Delta Smelt (Hypomesus transpacificus) (50 CFR Part 17, 59 Fed. Reg. 65256-65279) and Central Valley California Steelhead.**

☐ Fish/spawn areas. Explain findings:

☒ Other environmentally-sensitive species. Explain findings: **Habitat for vernal pool endemic species of plants and animals which is increasingly rare as habitat loss occurs in the Central Valley.**

☒ Aquatic/wildlife diversity. Explain findings: **These waters along with other similarly situated waters within this watershed provide habitat, food, breeding and life support for a diverse number of native plant and animal species, including invertebrates, birds, mammals, downstream fish, some of which are federally listed special status species and/or commercially important. These wetlands have the capacity to transfer nutrients and organic carbon that feed downstream food webs. They also provide habitat and lifecycle support functions for fish and wildlife species that are present in the Mokelumne River and its tributaries downstream of the subject site. The Mokelumne River at the confluence with Dry Creek is listed critical habitat for the federally listed as threatened Delta Smelt (Hypomesus transpacificus) (50 CFR Part 17, 59 Fed. Reg. 65256-65279) and Central Valley California Steelhead.**

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

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

Approximately 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) |
|---|---|---|---|

Summarize overall biological, chemical and physical functions being performed: **SWS10 exhibits characteristics of both stream and wetland. Although re-routed historically, it connects to Dry Creek just outside of the Subject Area. SWS10, and similarly situated waters, perform several functions important to the biological, chemical and physical integrity of Dry Creek and Mokelumne River. This nexus is neither speculative nor insubstantial. These waters as well as other similarly situated wetlands in the watershed store precipitation and slowly deliver this water to Dry Creek, thereby attenuating storm flows and maintaining base flow in Dry Creek and the Mokelumne River. By attenuating storm flows these waters reduce the risk of flooding downstream and by slowly delivering this stored water to downstream waters, maintain the base flow needed to maintain the physical integrity of Dry Creek and the Mokelumne River as well as for downstream fish and other wildlife. These wetlands as well as other similarly situated wetlands in the watershed perform a critical denitrification function which removes nitrogen from the system. Nitrogen and phosphorous are the two nutrients responsible for eutrophication of California waterways and dissolved oxygen impairment. The Mokelumne River is a 303(d) listed impaired water for dissolved oxygen.**

## 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: **SWS10 exhibits characteristics of both stream and wetland and is a non-relatively permanent water that is tributary to Dry Creek. This tributary has the capacity to carry pollutants and flood waters to TNWs and reduce the amount of pollutants or flood waters reaching the TNW. This tributary provides 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. This tributary has the capacity to transfer nutrients and organic carbon that support downstream foodwebs.**

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

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

**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, wide, 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: **Dry Creek is outside of the review area.**

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

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

   Provide estimates for jurisdictional waters within the review area (check all that apply):
   - ☒ Tributary waters: **900** linear feet, **10'** wide.
   - ☐ Other non-wetland waters: acres.
     Identify type(s) of waters: **SWS10 exhibits characteristics of wetland swale and stream.**

[8]See Footnote # 3.

**4. Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**

☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.

☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:

Provide acreage estimates for jurisdictional wetlands in the review area: **0.535** 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: **1.586** acres.

**6. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**

☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: **0.008** 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, wide.

☐ 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):

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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.***

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, wide.
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource:
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, wide.
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource:
☐ Wetlands: acres.

**SECTION IV: DATA SOURCES.**

**A. SUPPORTING DATA. Data reviewed for JD (check all that apply -** checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
- ☐ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:
- ☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - ☐ Office concurs with data sheets/delineation report.
  - ☒ Office does not concur with data sheets/delineation report.
- ☐ Data sheets prepared by the Corps:
- ☐ Corps navigable waters' study:
- ☒ U.S. Geological Survey Hydrologic Atlas:
  - ☒ USGS NHD data.
  - ☒ USGS 8 and 12 digit HUC maps.
- ☒ U.S. Geological Survey map(s). Cite scale & quad name: **1:24K; CA-CLAY**
- ☒ USDA Natural Resources Conservation Service Soil Survey. Citation: **USDA Custom Soil Report**
- ☒ National wetlands inventory map(s). Cite name: **National Wetland Mapper**
- ☐ State/Local wetland inventory map(s):
- ☒ FEMA/FIRM maps: **FEMA map number 06067C0500H**
- ☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- ☒ Photographs: ☒ Aerial (Name & Date): **18MAR06 Digital Globe via Google Earth, 06APR10 source not specified via Google Earth, 18MAR11 Digital Globe via Google Earth, and 13JUN11 source not specified via Google Earth.**
  or ☒ Other (Name & Date): **Site inspection photographs 02APR12**
- ☒ Previous determination(s). File no. and date of response letter: **A portion of the Subject Area along Clay Station Road was delineated as a part of SPK-2000-00025 in a report by Jones & Stokes titled "Delineation of Waters of the United States, Including Wetlands, Freeport Regional Water Project" dated 15 February 2006. On 27 February 2006 this office issued an approved jurisdictional determination for SPK-2000-00025 (Freeport Regional Water Project, Folsom South Canal Connection). The June 2011 Vollmar delineation was not submitted to this office for verification.**
- ☐ Applicable/supporting case law:
- ☐ Applicable/supporting scientific literature:
- ☒ Other information (please specify): **California Environmental Quality Act Initial Study (control number: PLNP2010-PMR-00215) and a report titled "Appendix A Biological Resources Inventory at the 525+/- Acre 'Clay Station Road' Site, Sacramento County, California" dated 12 January 2011. The 12 January 2011 report was not a delineation but does include maps and descriptions of some of the clusters of aquatic resources on the site. California Department of Water Resources LiDAR. The Subject Area is approximately 22 miles from the Mather Field Weather Station (KMHR) and approximately 25 miles away from Sacramento Executive Airport weather station (NOAA station ID KSAC; USDA WETS Station CA232 ) and the Stockton Metro weather station (NOAA station ID KSCK; USDA WETS Station CA237) . The Sacramento Executive Airport weather station reports an average of 17.93 inches of annual precipitation . The Stockton Metro Airport reports an average of 13.84 inches of annual precipitation. The Mather Field Weather Station is not included in the USDA's WETS Tables.**

**B. ADDITIONAL COMMENTS TO SUPPORT JD:**

**For this analysis we have considered SWS10 to be an NRPW tributary to Dry Creek. Since it exhibits characteristics of both stream and wetland, if it were not considered an NRPW tributary to Dry Creek it would be a wetland adjacent at the point outside of the subject area where this aquatic resource becomes a tributary or to Dry Creek itself since SWS10 is part of a continuous aquatic resource that stretches from north of the subject area to Dry Creek.**