APPENDIX D

JURISDICTIONAL DELINEATION TECHNICAL STUDY REPORT

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

May 27, 2015

Regulatory Division SPK-2015-00265

South Valley Water Banking Authority
Attn: Mr. Dan Vink
357 East Olive Avenue
Tipton, California 93272-9627

Dear Mr. Vink:

We are responding to your March 13, 2015, request for an approved jurisdictional determination for the Pixley Groundwater Bank site. The approximately 4,222-acre site is located approximately 4 miles southeast of the town of Pixley and bisected by Deer Creek, in Sections 7-11 and 14-18, Township 23 South, Range 26 East, Mount Diablo Meridian, Latitude 35.93420°, Longitude -119.19535°, Tulare County, California.

Based on available information, **we concur with the estimate of waters of the United States, as depicted on the enclosed revised, April, 2015, *Jurisdictional Delineation, Pixley Groundwater Bank, Tulare County, California*, drawing prepared by Gibson & Skordal, LLC Wetland Consultants**. Approximately 2.040 acres of waters of the United States are present within the survey area. These waters are regulated under Section 404 of the Clean Water Act, since they are relatively permanent waters that flow directly from traditionally navigable waters, into "navigable in-fact waters".

The 3.086-acres of waters identified as "Deer Creek", the 1.122-acres of waters identified as "Tail Water Pond/Ditch", and the 9.568-acres of waters identified as "Irrigation Holding Pond", on the provided drawing are intrastate isolated waters with no apparent interstate or foreign commerce connection. As such, these waters are not currently regulated by the Corps of Engineers. This disclaimer of jurisdiction is only for Section 404 of the Federal Clean Water Act. Other Federal, State, and local laws may apply to your activities. *In particular, you may need authorization from the California State Water Resources Control Board and/or the U.S. Fish and Wildlife Service.*

This determination is valid for five years from the date of this letter, unless new information warrants revision of the determination before the expiration date. If you object to this determination, you may request an administrative appeal under Corps regulations at 33 Code of Federal Regulations (CFR) Part 331.

A Notification of Appeal Process (NAP) and Request for Appeal (RFA) form is enclosed. If you request to appeal this determination you must submit a completed RFA form to the South Pacific Division Office at the following address: Administrative Appeal Review Officer, Army Corps of Engineers, South Pacific Division, CESPD-PDO, 1455 Market Street,

2052B, San Francisco, California 94103-1399, Telephone: 415-503-6574, FAX: 415-503-6646.

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR Part 331.5, and that it has been received by the Division Office within 60 days of the NAP. Should you decide to submit an RFA form, it must be received at the above address by 60 days from the date of this letter. It is not necessary to submit an RFA form to the Division Office if you do not object to the determination in this letter.

You should provide a copy of this letter and notice to all other affected parties, including any individual who has an identifiable and substantial legal interest in the property.

This determination has been conducted to identify the limits of Corps of Engineers' Clean Water Act jurisdiction for the particular site identified in this request. This determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are U.S. Department of Agriculture (USDA) program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service prior to starting work.

We appreciate your feedback. At your earliest convenience, please tell us how we are doing by completing the customer survey on our website under *Customer Service Survey*.

Please refer to identification number SPK-2015-00265 in any correspondence concerning this project. If you have any questions, please contact Evan Kreklow Carnes at our California South Regulatory Branch, 1325 J Street, Room 1350, Sacramento, California 95814-2922, by email at *Evan.G.Carnes@usace.army.mil*, or telephone at 916-557-7506. For more information regarding our program, please visit our website at *www.spk.usace.army.mil/Missions/Regulatory.aspx*.

Sincerely,

Michael G. Nepstad
Deputy Chief
Regulatory Division

Enclosures

cc: (w/o encls)
Ms. Leana Rosetti, U.S. Environmental Protection Agency, Region IX,
Rosetti.Leana@epa.gov
Ms. Elizabeth Lee, Central Valley Regional Water Quality Control Board,
EMLee@waterboards.ca.gov
Mr. James Gibson, Gibson and Skordal, LLC,
JGibson@gibsonandskordal.com

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: South Valley Water Banking Authority, Attn: Mr. Dan Vink	File No.: SPK-2015-00265	Date: May 27, 2015

Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
X	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at *http://www.usace.army.mil/cecw/pages/reg_materials.aspx* or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer (address on reverse). This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer (address on reverse). This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.

- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer (address on reverse). This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:

Evan G Carnes
Project Manager, CA South Branch
Regulatory Division
U.S. Army Corps of Engineers
1325 J Street, Room 1350
Sacramento, California 95814-2922
Phone: 916-557-7506, FAX 916-557-7803
Email: Evan.G.Carnes@usace.army.mil

If you only have questions regarding the appeal process you may also contact:

Thomas J. Cavanaugh
Administrative Appeal Review Officer
U.S. Army Corps of Engineers
South Pacific Division
1455 Market Street, 2052B
San Francisco, California 94103-1399
Phone: 415-503-6574, FAX 415-503-6646)
Email: Thomas.J.Cavanaugh@usace.army.mil

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

	Date:	Telephone number:
_____ Signature of appellant or agent.		

JURISDICTIONAL DELINEATION REPORT

PIXLEY GROUNDWATER BANK

Gibson & Skordal, LLC
WETLAND CONSULTANTS
2617 K Street, Suite 175
Sacramento, California 95816

JURISDICTIONAL DELINEATION REPORT

PIXLEY GROUNDWATER BANK

Tulare County, California

March 2015

Prepared For:

South Valley Water Banking Authority
357 East Olive Avenue
Tipton, California 93272

Prepared By:

Gibson & Skordal, LLC
WETLAND CONSULTANTS
2617 K Street, Suite 175
Sacramento, California 95816

INTRODUCTION

This report presents the results of a delineation of waters of the United States conducted within the Pixley Groundwater Bank study area.

LOCATION

The approximately 4,222-acre study area is located in Sections 12 and 13, Township 23 South, Range 25 East; Sections 7, 8, 9, 10, 11, 14, 15, 16, 17, and 18, Township 23 South, Range 26 East; MDB&M, Tulare County, California (UTM: 301,930 meters Easting/3,978,883 meters Northing). The study area is portrayed on the USGS Sausalito School, California 7.5- Minute Series Topographic Quadrangle. **Figure 1** is a vicinity map.

To access the site from Sacramento, drive south on CA-99 for approximately 227.7 miles before taking Exit 70A towards Avenue 96/Terra Bella. Merge onto Main Street and take the first right onto E. Terra Bella Avenue/County Highway J24 and continue for 1.8 miles. Turn right onto Road 140 and continue for 1 mile before turning left onto Avenue 88. Proceed on Avenue 88 for 1.5 miles; the study area is located to the south.

METHODOLOGY

This delineation was performed in accordance with the 1987 **"Corps of Engineers Wetlands Delineation Manual,"**[1] the **"Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0),"**[2] **"Final Map and Drawing Standards for the South Pacific Division Regulatory Program"** dated August 6, 2012, and Sacramento District's **"Minimum Standards for Acceptance of Preliminary Wetlands Delineations"** dated November 30, 2001. Corps' regulations (33 CFR 328) were used to determine the presence of waters of the United States other than wetlands. The **"U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook, May 30, 2007"**[3] was consulted in evaluating the jurisdictional status of the water features within the study

[1] Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station. Vicksburg, Miss.

[2] Wetlands Regulatory Assistance Program. September 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). U.S. Army Engineer Research and Development Center, Vicksburg, Miss.

[3] U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook. May 30, 2007. U.S. Army Corps of Engineers & U.S. Environmental Protection Agency.

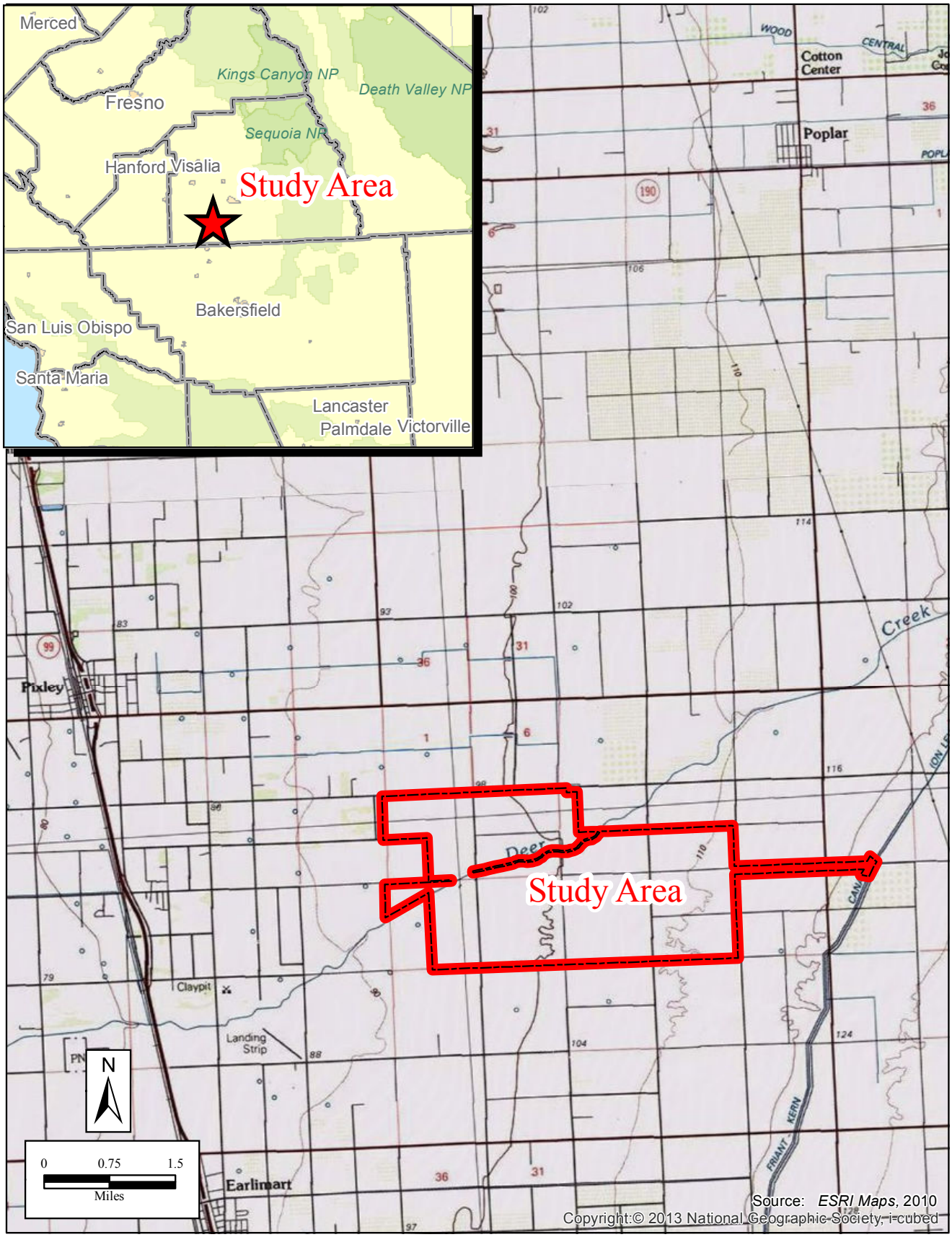

Figure 1
Vicinity Map

area. The **"The National Wetland Plant List"**[4] was used to determine the wetland indicator status of plants observed in the study area.

Field surveys were conducted on January 29, 2015, to delineate water features that are potentially regulated under Section 404 of the Federal Clean Water Act. Water features and data points were surveyed utilizing a Trimble GeoXT GPS receiver equipped with sub-meter accuracy. The delineation map was prepared in accordance with the August 6, 2012, "**Final Map and Drawing Standards for the South Pacific Division Regulatory Program.**" The GPS survey data was digitized and layered over ortho-rectified aerial photography with one meter resolution flown on June 21, 2009, for the National Agriculture Imagery Program. Detailed data on vegetation, soils, and hydrology were taken in the field. Data sheets documenting the basis for determining which areas are wetland or upland are provided in **Appendix A**. **Appendix B** is a list of plant species observed in the study area including their status as wetland indicator species. **Appendix C** contains photos of representative landscapes within the study area.

GENERAL SITE CONDITIONS AND HABITAT

Existing Field Conditions

The study area, which is located southeast of Pixley in southwestern Tulare County, is situated on level terrain at a median elevation of approximately 100 feet. The concrete-lined Friant-Kern Canal traverses the extreme eastern portion of the study area from north to south, and a small modified reach of Deer Creek is located in the western part of the site. The majority of the study area has been reclaimed for agricultural uses and is crisscrossed by a network of paved county roads. Most of the agricultural lands are irrigated and several ditches and holding ponds are scattered throughout the site.

Plant Communities

The majority of the study area supports agricultural lands. Current and recent crops include alfalfa (*Medicago sativa*), almond (*Prunus dulcis*), cotton (*Gossypium hirsutum*), corn (*Zea mays*), pistachio (*Pistacia vera*), sorghum (*Sorghum bicolor ssp. bicolor*), and grape (*Vitus vinifera*). At the time of field surveys, several of the agricultural fields were recently disked and devoid of vegetation.

[4] Lichvar, R.W., M. Butterwick, N.C. Melvin, and W.N. Kirchner. 2014. The National Wetland Plant List: 2014 Update of Wetland Ratings. Phytoneuron 2014-41: 1-42.

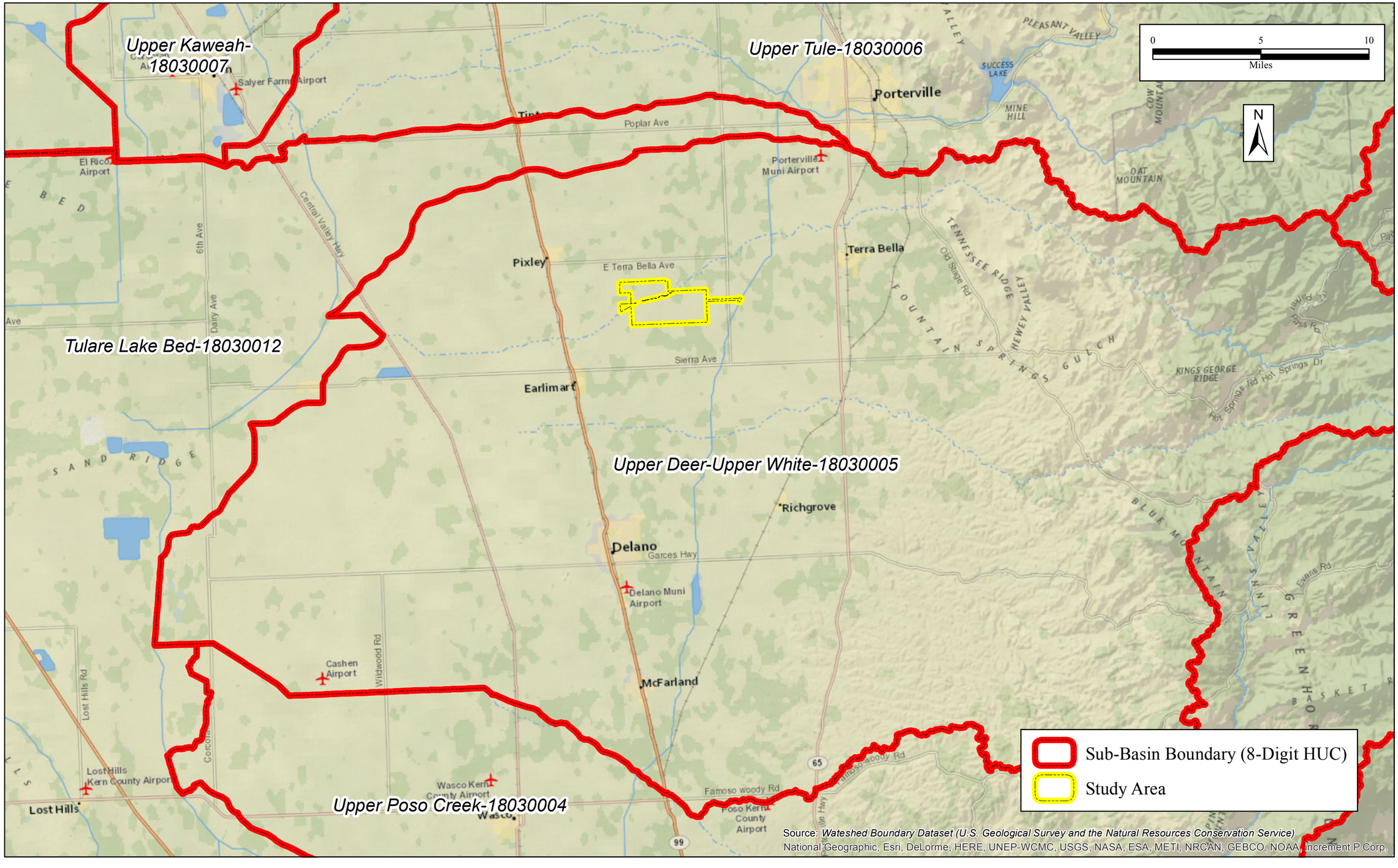

Figure 2
Watershed Exhibit

A highly disturbed reach of Deer Creek channel enters the study area from the east and exits to the west. This part of Deer Creek, which appears to have been straightened prior to 1994, is bracketed by levies and contains a diversion structure with wing walls. Most of the streambed lacked vegetation. Woody riparian species observed growing on the banks and levees include eastern cottonwood (*Populus deltoides*), narrow-leaf willow (*Salix exigua*), mule's fat (*Baccharis salicifolia*), Himalayan blackberry (*Rubus armeniacus*), and polished willow (*Salix laevigata*). The herb stratum consisted of stinging nettle (*Urtica dioica*), ripgut brome (*Bromus diandrus*), curly dock (*Rumex crispus*), Douglas' wormwood (*Artemisia douglasiana*), rough cockleburr (*Xanthium strumarium*), wall barley (*Hordeum murinum*), poison-hemlock (*Conium maculata*), and wetland and upland species.

Ruderal plant communities parallel most of the roads and uncultivated boundaries between agricultural fields. Common weedy species include Bermuda grass (*Cynodon dactylon*), Canadian horseweed (*Erigeron canadensis*), cut-leaf filaree (*Erodium cicutarium*), wall barley, Johnson grass (*Sorghum halepense*), mallow (*Malva* sp.), and other species.

Hydrology

Deer Creek flows through the study area from west to east. It contains a concrete dam that allows for the storage of irrigation water. Deer Creek flows into Homeland Canal approximately 15 miles downstream.

The Friant Kern Canal flows through the eastern edge of the study area. It originates at Millerton Dam on the San Joaquin River and terminates at the Kern River. It transports irrigation water for crops.

There are numerous irrigation holding ponds in the study area. Water is pumped into the holding ponds from water wells and then distributed into the farm fields for irrigation. Some farm fields have tail water return ponds where irrigation runoff is captured and re-circulated. These irrigation features do not receive or discharge water into any drainage or channel that could be considered a water of the United States.

The study area is set within the Upper Deer-Upper White Sub-Basin (Hydrologic Unit Code (18030005) and the Upper Deer Creek Watershed (1803000509). **Figure 2** is a sub-basin exhibit.

Soils

According to the April 1993, **Soil Survey of Tulare County, California, Western Part**," eleven soil map units, which are listed and described below, occur within the study area. **Figure 3** is a soils map.

Akers-Akers, saline-sodic, complex, 0-2% slopes (101)
This soil, which is situated on fan remnants, is associated with irrigated croplands that have leveled and reclaimed with soil amenders. The Akers portion is very deep and well drained with moderate permeability. The saline-sodic Akers component is very deep and well drained with moderately slow permeability. Flooding is very rare for both components. Contained in this unit are the following inclusions: Calgro soils, Tujunga soils, Colpien soils, Tagus, Grangeville soils, Yettem, and Hanford soils as well as unnamed soils with surface layers of sandy loam or loam.

Biggriz-Biggriz, saline-sodic, complex, 0-2% slopes (104)
This soil, which is situated on fan remnants, is associated with irrigated croplands that have been leveled and drained. Both components are very deep, somewhat poorly drained (and artificially drained) with moderately slow permeability. Both components are derived from alluvium from granitic rock, and both rarely flood. Contained in this unit are the following inclusions: Nord soils, Gambogy soils, Garces soils, Lethent soils, Colpien soils, Tujunga soils as well as two undescribed soils. One of which is associated with depressions that pond for more than two weeks. The other possesses a surface layer of clay loam or silt loam.

Calgro-Calgro, saline-sodic, complex, 0-2% slopes (105)
This soil, which is situated on fan remnants, is associated with irrigated croplands that have been leveled and drained. Both components are moderately deep, moderately well drained with moderate permeability above the duripan, which is situated approximately 24 to 25 inches below the surface. Both components are derived from alluvium from granitic rock, and both very rarely flood. Contained in this unit are the following inclusions: Colpien soils, Grandeville soils, Tujunga soils, Exeter soils as well as two undescribed soils. One of which is associated with depressions that pond for more than two weeks. The other possesses a surface layer of loam.

Centerville clay, 0-2% slopes (106)
This soil, which is situated on fan remnants, is associated with irrigated croplands that have been leveled and reclaimed with soil amenders. This unit is deep, well drained with slow permeability. It is derived from alluvium from granitic rock and very rarely floods. Contained in this unit are the following inclusions: Exeter soils and San Joaquin as well as two undescribed

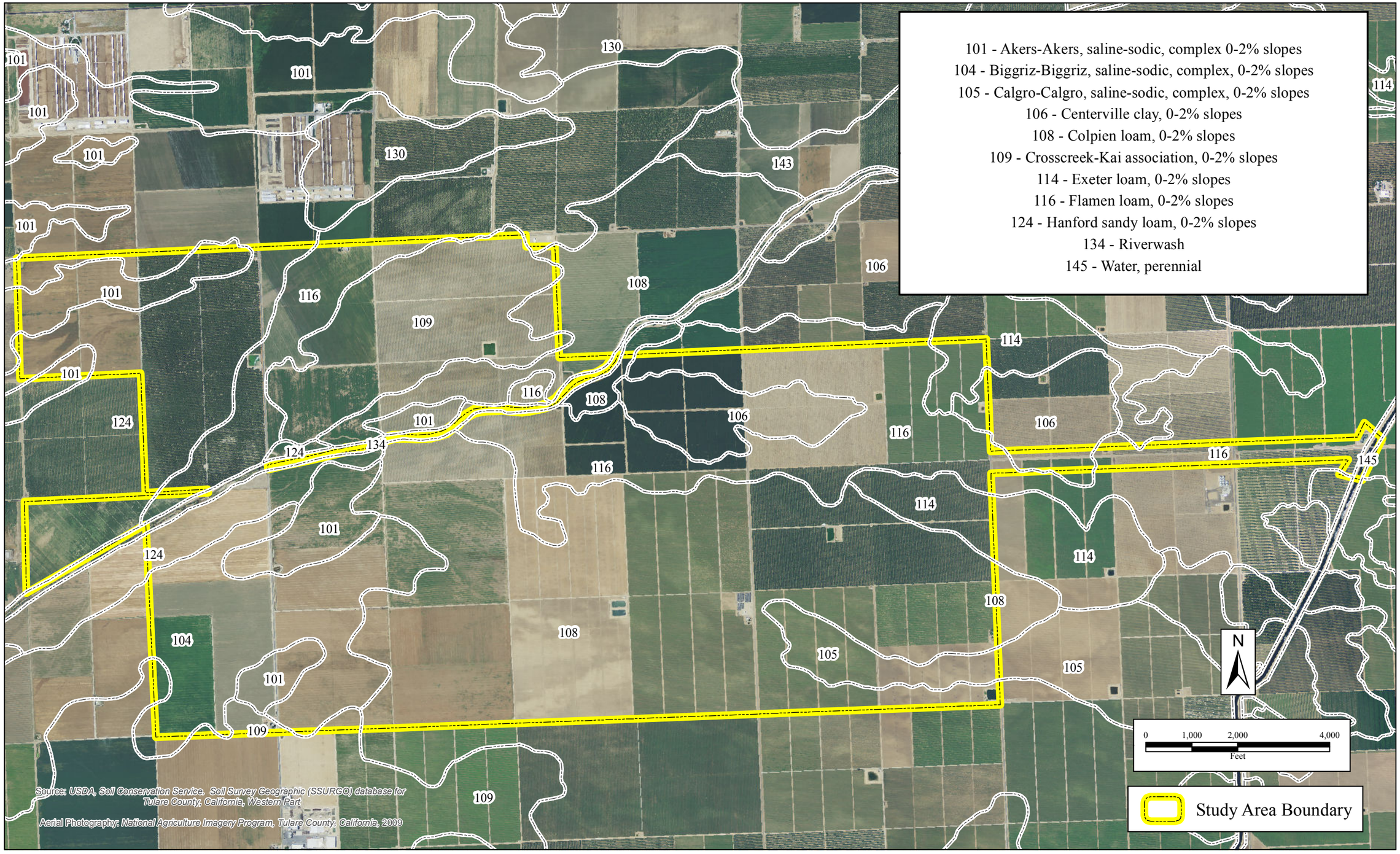

Figure 3
Soils Map

soils. One of which is associated with depressions that pond for more than two weeks, and the other possesses a surface layer of clay loam.

Colpien loam, 0-2% slopes (108)
This soil, which is situated on fan remnants, is associated with irrigated croplands that have been leveled and reclaimed with soil amenders. This unit is very deep, moderately well drained with moderately slow permeability. It is derived from alluvium from granitic rock and rarely floods. Contained in this unit are the following inclusions: Biggriz soils, Gambogy soils, Hanford soils, Akers soils, Nord soils, and Tujunga soil as well as unnamed soils that possess a surface layer of fine sandy loam, silt loam, sandy clay loam, or clay loam.

Crosscreek-Kai association, 0-2% slopes (109)
This soil, which is situated on fan remnants, is associated with irrigated croplands that have been ripped, leveled, and reclaimed with soil amenders. The Crosscreek soil has been formed through the alteration of Kai soils by mechanical and chemical means. The Crosscreek portion is deep and well drained with moderate permeability above the duripan, which is situated approximately 55 to 60 inches below the surface; it very rarely floods. The Kai associate is moderately deep and moderately well drained with moderate permeability in the layers above a duripan that is situated approximately 39 to 46 inches below the surface. Flooding is very rare. Contained in this unit are the following inclusions: Quonal soils, Exeter soils, Calgro soils and Hanford soils as well as two undescribed soils. One of which is associated with depressions that pond for more than two weeks. The other possesses a surface layer of sandy loam.

Exeter loam, 0-2% slopes (114)
This soil, which is situated on fan remnants, is associated with irrigated croplands that have been leveled. This unit is moderately deep to a duripan, moderately well drained with moderately slow permeability above the duripan, which is situated approximately 28 to 46 inches below the surface; it very rarely floods. Contained in this unit are the following inclusions: Hanford soils, Quonal soils, Colpien soils, Calgro soils as well as two unnamed soils. One of which is associated with depressions that pond for more than two weeks, and the other possesses a surface layer of sandy loam.

Flamen loam, 0-2% slopes (116)
This soil, which is situated on fan remnants, is associated with irrigated croplands that have been leveled. This unit is deep to a duripan, moderately well drained with moderate permeability above the duripan, which is situated approximately 43 to 72 inches below the surface; it very rarely floods. Contained in this unit are the following inclusions: Hanford soils, San Joaquin soils, Centerville soils, Colpien soils, Calgro soils as well as two unnamed soils. One of which is

associated with depressions that pond for more than two weeks, and the other possesses a surface layer of sandy loam.

Hanford sandy loam, 0-2% slopes (124)
This soil, which is situated on flood plains and alluvial fans, is associated with irrigated croplands that have been leveled and reclaimed with soil amendments. This unit is very deep, moderately well drained with moderately rapid permeability; it very rarely floods. Contained in this unit are the following inclusions: Tujunga soils, Exeter soils, Calgro, and Yettem soils as well as unnamed soils with a surface layer of loam or fine sandy loam.

Riverwash (134)
This soil, which is situated on flood plains, is found within stream and river channels that are dry most of the year. The surface consists of sand and gravel and supports very little vegetation.

Water, perennial (145)
These areas consist of year-round surface waters

FINDINGS

Potential Wetlands and Waters of the United States

A total of 5.126 acres of water features was mapped within the study area including 3.086 acres of Deer Creek channel and 2.040 acres of the Friant-Kern Canal. **Appendix D** is a jurisdictional delineation map of the study area.

Friant-Kern Canal

The cement-lined Friant Kern Canal passes through the eastern portion of the study area. The canal originates at the San Joaquin River where water is diverted for agricultural purposes. It terminates at the Kings River. This feature lacked a plant community within the study area.

Deer Creek

Approximately 3.086 acres of Deer Creek channel were mapped within the study area. These reaches possess a bed and bank with an ordinary high water mark and the destruction of terrestrial vegetation. Most of the bed supported little to no vegetation and consisted of sand or cobble; the exception was the area at the foot of the check structure, which included riprap,

chunks of concrete, and trash. No data points were taken due to the obvious break with the surrounding uplands.

JURISDICTIONAL DETERMINATION

Irrigation Holding Ponds and Tail Water Return Ponds

In the preamble to the Corps of Engineers' regulations (33CFR Parts 320 through 330, Regulatory Programs of the Corps of Engineers; Final Rule, November 13, 1986), it states that the Corps generally does not consider certain water features as waters of the United States. Specifically mentioned are artificial ponds created by excavating or diking dry land to collect and retain water and which is used exclusively for irrigation. It is our opinion that the irrigation holding ponds and tail water return ponds in the study area meet these criteria and are not waters of the United States. Even if these features were considered waters of the United States, they would not be regulated by the Corps of Engineers because they are intrastate isolated waters with no apparent interstate or foreign commerce connection.

Friant Kern Canal

The Friant Kern Canal passes through the eastern portion of the study area. The canal originates at the San Joaquin River where water is diverted for agricultural purposes. It terminates at the Kern River. Because the canal originates at a jurisdictional water and terminates at a jurisdictional water, it would be considered a jurisdictional water regulated by the Corps of Engineers.

Deer Creek

Deer Creek flows through the study area and currently terminates into the east bank of the Homeland Canal. During storm events when Deer Creek reaches its terminus at Homeland Canal, the canal bank is breached to allow flow into Homeland Canal. Homeland Canal is an irrigation channel which flows to the south and west from its juncture with Deer Creek. It terminates at Gates – Jones Canal.

The Corps of Engineers is not aware of making any jurisdictional determinations on Deer Creek (Zackery Simmons, personal communications). They have, however, made a jurisdictional determination on Poso Creek, to the south of Deer Creek. They determined this creek is an isolated intrastate water with no apparent interstate or foreign commerce connection, and not regulated by the Corps of Engineers (Letter dated November 17, 2014, SPK-2003-00265). Poso

Creek is very similar to Deer Creek in that it terminates into Goose Lake Canal which flows to the north toward Tulare Basin.

Based on the Corps' previous determination on Poso Creek, it is our opinion that Deer Creek is also an isolated intrastate water with no apparent interstate or foreign commerce connection.

In summary, it is our opinion that the irrigation holding ponds and tail water return ponds are not waters as defined under the Clean Water Act. The Friant Kern Canal is a jurisdictional water while Deer Creek is not.

APPENDIX A

DATA SHEETS

Gibson & Skordal, LLC
WETLAND CONSULTANTS

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Pixley Groundwater Bank City/County: Tulare Sampling Date: January 29, 2015
Applicant/Owner: South Water Banking Authority State: CA Sampling Point: 1
Investigator(s): Jim Gibson & Matt Hirkala Section, Township, Range: Section 13, Township 23 South, Range 25 East
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): <1
Subregion (LRR): Mediterranean California (LRR C) Lat: 35.931625 Long: -119.230173 Datum: NAD83
Soil Map Unit Name: 124 - Hanford sandy loam, 0-2% slopes NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation X, Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes x No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No	
Hydric Soil Present?	Yes	No	X
Wetland Hydrology Present?	Yes	No	X

Is the Sampled Area within a Wetland? **Yes** **No** X

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 4' x 4')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 =Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)
Total Number of Dominant Species Across All Strata: **0** (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: **N/A** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**0**	x1 =	**0**
FACW species	**0**	x2 =	**0**
FAC species	**0**	x3 =	**0**
FACU species	**0**	x4 =	**0**
UPL species	**0**	x5 =	**0**
Column Totals:	**0** (A)		**0** (B)

Prevalence Index = B/A = **N/A**

Hydrophytic Vegetation Indicators:
N/A Dominance Test is >50%
Prevalence Index is ≤3.0[1]
Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)
Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** **No**

Remarks: This area was recently disked. No vegetation was present.

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 12	10YR4/4	100					loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks:
No soil sample taken due to compacted gravel.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): _____

Water Table Present? Yes ___ No x Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No x Depth (inches): _____

Wetland Hydrology Present? **Yes** ___ **No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Pixley Groundwater Bank City/County: Tulare Sampling Date: January 29, 2015
Applicant/Owner: South Water Banking Authority State: CA Sampling Point: 2
Investigator(s): Jim Gibson & Matt Hirkala Section, Township, Range: Section 12, Township 23 South, Range 25 East
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): <1
Subregion (LRR): Mediterranean California (LRR C) Lat: 35.945619 Long: -119.228545 Datum: NAD83
Soil Map Unit Name: 124 - Hanford sandy loam, 0-2% slopes NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes x No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No **X**	**Is the Sampled Area within a Wetland?**	**Yes** _____ **No** **X**
Hydric Soil Present?	Yes _____ No **X**		
Wetland Hydrology Present?	Yes _____ No **X**		

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 4' x 4')			
1. *Immature Forage Grass*	100	Yes	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)
Total Number of Dominant Species Across All Strata: **1** (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: **0%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:
OBL species	**0**	x1 = **0**
FACW species	**0**	x2 = **0**
FAC species	**0**	x3 = **0**
FACU species	**0**	x4 = **0**
UPL species	**100**	x5 = **500**
Column Totals:	**100** (A)	**500** (B)

Prevalence Index = B/A = **5.0**

Hydrophytic Vegetation Indicators:
_____ Dominance Test is >50%
_____ Prevalence Index is ≤3.0[1]
_____ Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)
_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** _____ **No** **X**

Remarks: This area was in cotton last year; at the time of field surveys it was in upland forage grass.

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 12	10YR4/4	100					loamy sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** **X**

Remarks:
No soil sample taken due to compacted gravel.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): ___

Water Table Present? Yes ___ No x Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No x Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Pixley Groundwater Bank City/County: Tulare Sampling Date: January 29, 2015
Applicant/Owner: South Water Banking Authority State: CA Sampling Point: 3
Investigator(s): Jim Gibson & Matt Hirkala Section, Township, Range: Section 7, Township 23 South, Range 26 East
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): <1
Subregion (LRR): Mediterranean California (LRR C) Lat: 35.938344 Long: -119.208185 Datum: NAD83
Soil Map Unit Name: 108 - Colpien loam, 0-2% slopes NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes x No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No **X**	**Is the Sampled Area within a Wetland?** **Yes** **No** **X**
Hydric Soil Present?	Yes	No **X**	
Wetland Hydrology Present?	Yes	No **X**	

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 4' x 4')			
1. *Immature Forage Grass*	40	Yes	UPL
2. *Sisymbrium altissimum*	20	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
	60 =Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	=Total Cover		
% Bare Ground in Herb Stratum 40	% Cover of Biotic Crust 0		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)
Total Number of Dominant Species Across All Strata: **2** (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: **0%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:
OBL species	**0**	x1 = **0**
FACW species	**0**	x2 = **0**
FAC species	**0**	x3 = **0**
FACU species	**0**	x4 = **0**
UPL species	**100**	x5 = **500**
Column Totals:	**100** (A)	**500** (B)

Prevalence Index = B/A = **5.0**

Hydrophytic Vegetation Indicators:
Dominance Test is >50%
Prevalence Index is ≤3.0[1]
Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)
Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** **No** **X**

Remarks:

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 12	10YR4/4	100					loamy sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** **X**

Remarks:
No soil sample taken due to compacted gravel.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): ___

Water Table Present? Yes ___ No x Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No x Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Pixley Groundwater Bank City/County: Tulare Sampling Date: January 29, 2015
Applicant/Owner: South Water Banking Authority State: CA Sampling Point: 4
Investigator(s): Jim Gibson & Matt Hirkala Section, Township, Range: Section 5, Township 23 South, Range 26 East
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): <1
Subregion (LRR): Mediterranean California (LRR C) Lat: 35.935138 Long: 119.198900 Datum: NAD83
Soil Map Unit Name: 108 - Colpien loam, 0-2% slopes NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation X, Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes x No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No	
Hydric Soil Present?	Yes	No	X
Wetland Hydrology Present?	Yes	No	X

Is the Sampled Area within a Wetland? **Yes** **No** **X**

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 4' x 4')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 =Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)
Total Number of Dominant Species Across All Strata: **0** (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: **N/A** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**0**	x1 =	**0**
FACW species	**0**	x2 =	**0**
FAC species	**0**	x3 =	**0**
FACU species	**0**	x4 =	**0**
UPL species	**0**	x5 =	**0**
Column Totals:	**0** (A)		**0** (B)

Prevalence Index = B/A = **N/A**

Hydrophytic Vegetation Indicators:
N/A Dominance Test is >50%
Prevalence Index is ≤3.0[1]
Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)
Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** **No**

Remarks: This area was recently disked. No vegetation was present.

SOIL

Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 12	10YR4/4	100					loamy sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** **X**

Remarks:
No soil sample taken due to compacted gravel.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): ___

Water Table Present? Yes ___ No x Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No x Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Pixley Groundwater Bank City/County: Tulare Sampling Date: January 29, 2015
Applicant/Owner: South Water Banking Authority State: CA Sampling Point: 5
Investigator(s): Jim Gibson & Matt Hirkala Section, Township, Range: Section 18, Township 23 South, Range 26 East
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): <1
Subregion (LRR): Mediterranean California (LRR C) Lat: 35.931661 Long: -119.206065 Datum: NAD83
Soil Map Unit Name: 104 - Biggriz-Biggriz, saline-sodic, complex, 0-2% slopes NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation X, Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes x No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No	
Hydric Soil Present?	Yes	No	X
Wetland Hydrology Present?	Yes	No	X
Is the Sampled Area within a Wetland?	**Yes**	**No**	**X**

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 4' x 4')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 =Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)
Total Number of Dominant Species Across All Strata: **0** (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: **N/A** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**0**	x1 =	**0**
FACW species	**0**	x2 =	**0**
FAC species	**0**	x3 =	**0**
FACU species	**0**	x4 =	**0**
UPL species	**0**	x5 =	**0**
Column Totals:	**0** (A)		**0** (B)

Prevalence Index = B/A = **N/A**

Hydrophytic Vegetation Indicators:
N/A Dominance Test is >50%
Prevalence Index is ≤3.0[1]
Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)
Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No

Remarks: This area was recently disked. No vegetation was present.

SOIL

Sampling Point: 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 12	10YR3/4	100					clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks:
No soil sample taken due to compacted gravel.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): _____

Water Table Present? Yes ___ No x Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No x Depth (inches): _____

Wetland Hydrology Present? **Yes** ___ **No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Pixley Groundwater Bank City/County: Tulare Sampling Date: January 29, 2015
Applicant/Owner: South Water Banking Authority State: CA Sampling Point: 6
Investigator(s): Jim Gibson & Matt Hirkala Section, Township, Range: Section 17, Township 23 South, Range 26 East
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): <1
Subregion (LRR): Mediterranean California (LRR C) Lat: 35.924455 Long: -119.197093 Datum: NAD83
Soil Map Unit Name: 108 - Colpien loam, 0-2% slopes NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation X, Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes x No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No	
Hydric Soil Present?	Yes	No	X
Wetland Hydrology Present?	Yes	No	X

Is the Sampled Area within a Wetland? **Yes** **No** **X**

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 4' x 4')			
1. *Hordeum murinum*	25	Yes	FACU
2. *Urtica dioica*	10	Yes	FAC
3. *Sisymbrium altissimum*	10	Yes	FACU
4. *Vicia* sp.	10	Yes	
5. *Lathyrus* sp.	10	Yes	
6.			
7.			
8.			
	65 =Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	=Total Cover		
% Bare Ground in Herb Stratum 35	% Cover of Biotic Crust 0		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: **N/A** (A)
Total Number of Dominant Species Across All Strata: **N/A** (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: **N/A** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:
OBL species	**0**	x1 = **0**
FACW species	**0**	x2 = **0**
FAC species	**0**	x3 = **0**
FACU species	**0**	x4 = **0**
UPL species	**0**	x5 = **0**
Column Totals:	**0** (A)	**0** (B)

Prevalence Index = B/A = **N/A**

Hydrophytic Vegetation Indicators:
N/A Dominance Test is >50%
N/A Prevalence Index is ≤3.0[1]
Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)
Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** **No**

Remarks:

SOIL

Sampling Point: 6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 12	7.5YR3/3	100					loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks:
No soil sample taken due to compacted gravel.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): _____

Water Table Present? Yes ___ No x Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No x Depth (inches): _____

Wetland Hydrology Present? **Yes** ___ **No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Pixley Groundwater Bank City/County: Tulare Sampling Date: January 29, 2015
Applicant/Owner: South Water Banking Authority State: CA Sampling Point: 7
Investigator(s): Jim Gibson & Matt Hirkala Section, Township, Range: Section 16, Township 23 South, Range 26 East
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): <1
Subregion (LRR): Mediterranean California (LRR C) Lat: 35.927522 Long: -119.177631 Datum: NAD83
Soil Map Unit Name: 105 - Calgro-Calgro, saline-sodic, complex, 0-2% slopes NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation X, Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes x No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No	
Hydric Soil Present?	Yes	No	**X**
Wetland Hydrology Present?	Yes	No	**X**

Is the Sampled Area within a Wetland? **Yes** **No** **X**

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		

Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		

Herb Stratum (Plot size: 4' x 4')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 =Total Cover		

Woody Vine Stratum (Plot size:)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)
Total Number of Dominant Species Across All Strata: **0** (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: **N/A** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**0**	x1 =	**0**
FACW species	**0**	x2 =	**0**
FAC species	**0**	x3 =	**0**
FACU species	**0**	x4 =	**0**
UPL species	**0**	x5 =	**0**
Column Totals:	**0** (A)		**0** (B)

Prevalence Index = B/A = **N/A**

Hydrophytic Vegetation Indicators:
N/A Dominance Test is >50%
Prevalence Index is ≤3.0[1]
Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)
Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** **No**

Remarks: This area was recently disked. No vegetation was present.

SOIL

Sampling Point: 7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 12	10YR3/4	100					loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** **X**

Remarks:
No soil sample taken due to compacted gravel.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No x Depth (inches): ____

Water Table Present? Yes ____ No x Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No x Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

APPENDIX B

PLANT LIST

Gibson & Skordal, LLC
WETLAND CONSULTANTS

LIST OF PLANTS OBSERVED WITHIN
PIXLEY GOUNDWATER BANK STUDY AREA
AND THEIR STATUS AS WETLAND INDICATOR SPECIES

Scientific Name	Common Name	Status [1]&[2]
Ambrosia psilostachya	Western Ragweed	FACU
Artemesia douglasiana	Mugwort	FAC
Baccharis salicifolia	Mule's Fat	FAC
Baccharis pilularis	Coyote Brush	UPL
Bromus diandrus *(Bromus rigidus)*	Rip-gut Brome	UPL
Brassica nigra	Black Mustard	UPL
Bromus hordeaceus	Soft Chess	FACU
Bromus madritensis	Red Brome	UPL
Cynodon dactylon	Bermuda Grass	FACU
Conium maculatum	Poison Hemlock	FCW
Cyperus eragrostis	Umbrella Sedge	FACW
Digitaria sanguinalis	Hairy Crab Grass	FACU
Echinochloa crus-galli	Barnyard Grass	FACW
Eucalyptus globulus	Blue Gum Eucalyptus	UPL
Epilobium brachycarpum	Willow Herb	UPL
Erigeron canadensis	Canada Horseweed	FACU
Erodium cicutarium	Redstem Filaree	UPL
Helianthus annuus	Common Sunflower	FACU
Helminthotheca echioides *(Picris echioides)*	Akan Asante	FACU
Hordeum murinum (Hordeum leporinum)	Wall Barley	FACU
Juncus effusus	Lamp Rush	FACW
Leptochloa fusca ssp. *univerva*	Bearded Sprangletop	FACW
Poa annua	Annual Bluegrass	FACU
Polypogon monspelienses	Rabbit's-foot Grass	FACW
Portulaca oleracea	Common Purslane	FAC
Persicaria maculosa	Lady's Thumb	OBL
Polygonum aviculare	Prostrate Knotweed	FACW
Rumex crispus	Curly Dock	FAC
Sorghum bicolor	Cultivated Sorghum	FACU
Sorghum halepense	Johnson Grass	FACU
Lactuca serriola	Prickly Lettuce	FACU
Malva sp.	Mallow	--

[1] Lichvar, R.W., M. Butterwick, N.C. Melvin, and W.N. Kirchner. 2014. The National Wetland Plant List: 2014 Update of Wetland Ratings. Phytoneuron 2014-41: 1-42.

[2] OBL = obligate; FACW = facultative wetland; FAC = facultative; FACU = facultative upland; UPL = upland

Scientific Name	**Common Name**	**Status** [1]&[2]
Opuntia sp.	Beavertail Cactus	UPL
Pistacia vera	Pistachio	UPL
Prunus dulcis	Almond	UPL
Populus deltoides	Eastern Cottonwood	FAC
Raphanus sativa	Wild Radish	UPL
Rubus armeniacus *(Rubus procerus)*	Himalayan blackberry	FACU
Rumex crispus	Curly Dock	FAC
Salix exigua *(Salix hindsiana)*	Narrow-leaf Willow	FACW
Salix laevigata	Polished Willow	FACW
Salsola tragus	Russian Thistle	FACU
Silybum marianum	Milk Thistle	UPL
Sisymbrium altissimum	Tumbling Mustard	FACU
Trifolium sp.	Clover	--
Typha angustifolia	Narrow-leaf Cat-tail	OBL
Urtica dioica	Stinging Nettle	FAC
Xanthium strumarium	Rough Cockleburr	FAC

[1] Lichvar, R.W., M. Butterwick, N.C. Melvin, and W.N. Kirchner. 2014. The National Wetland Plant List: 2014 Update of Wetland Ratings. Phytoneuron 2014-41: 1-42.

[2] OBL = obligate; FACW = facultative wetland; FAC = facultative; FACU = facultative upland; UPL = upland

APPENDIX C

PHOTOGRAPHS

Gibson & Skordal, LLC
WETLAND CONSULTANTS

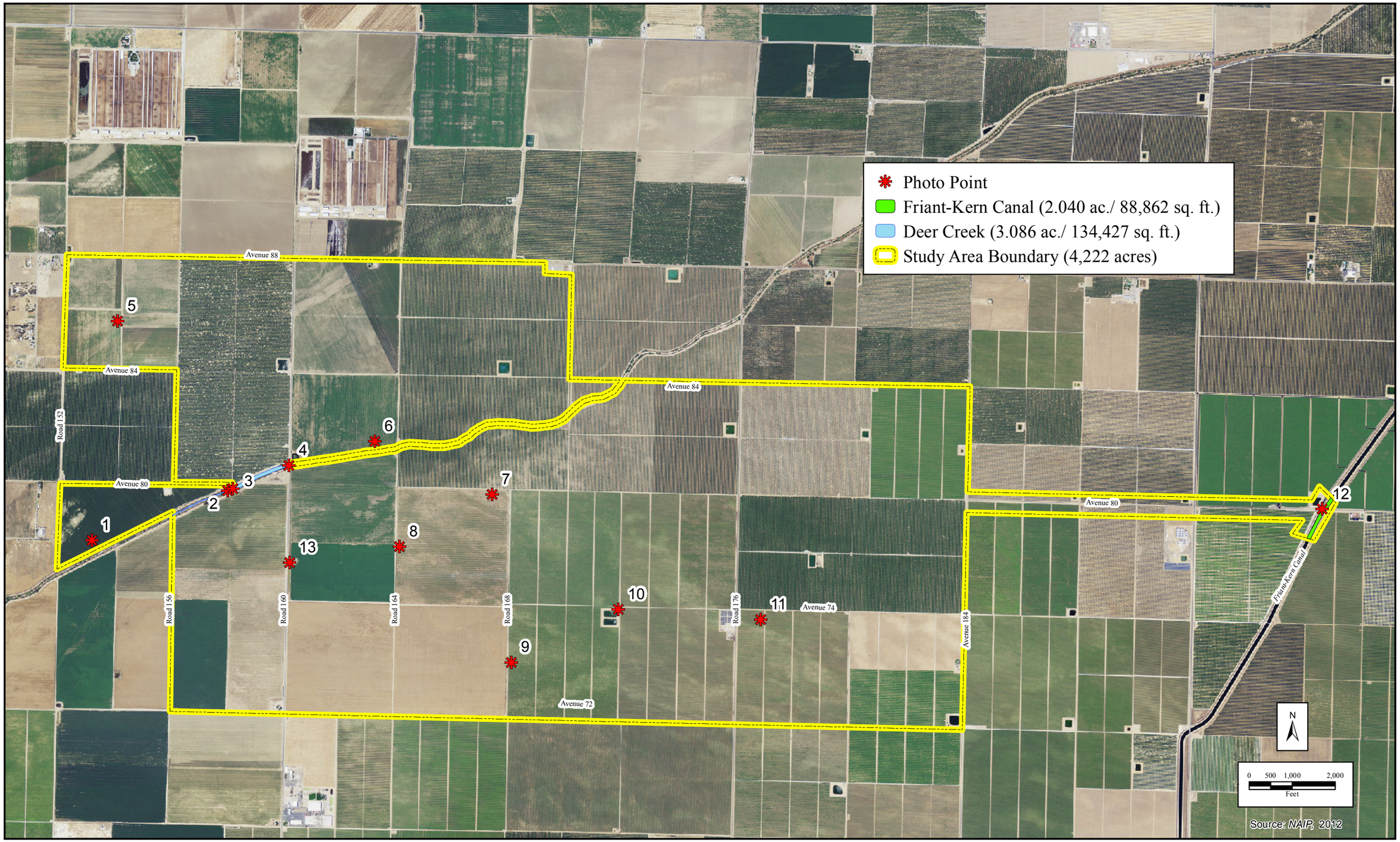
Photo Point
Friant-Kern Canal (2.040 ac./ 88,862 sq. ft.)
Deer Creek (3.086 ac./ 134,427 sq. ft.)
Study Area Boundary (4,222 acres)
Avenue 88
Avenue 84
Avenue 80
Avenue 72
Avenue 74
Avenue 184
Road 152
Road 156
Road 160
Road 164
Road 168
Road 176
Friant-Kern Canal
1
2
3
4
5
6
7
8
9
10
11
12
13
N
0 500 1,000 2,000
Feet
Source: NAIP, 2012

Photo Index

Photo Point 1 – Data Point 1 Facing North

Photo Point 2 – Facing Up (Northeast) Deer Creek

Photo Point 2 – Facing Down (Southwest) Deer Creek

Photo Point 3 – Facing Up (Northeast) Deer Creek

Photo Point 3 – Facing Down (Southwest) Deer Creek

Photo Point 4 – Facing Down (Southwest) Deer Creek