APPENDIX H

Wetland Delineation

Wetland Delineation

For

Sutter Pointe Specific Plan

Sutter County, California

10 September 2007

Prepared for:
Measure M Group

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

CONTENTS

Wetland Delineation

Sutter Pointe Specific Plan

LIST OF FIGURES

LIST OF TABLES

LIST OF ATTACHMENTS

INTRODUCTION

On behalf of the Measure M Group, ECORP Consulting, Inc. (ECORP) has conducted a wetland delineation of the 7,500 ±-acre Sutter Pointe Specific Plan Area (Plan Area) (Figure 1. *Project Site and Vicinity*). The Plan Area is located east of Power Line Road, south of Howsley Road, and west of Natomas Road in southern Sutter County. State Highway 99/70 divides the site into two unequal portions. The Sutter/Sacramento County line parallels the southernmost portion of the Plan Area. The Plan Area corresponds to portions of Sections 21-23, 26-28, and 31-35 of Township 11 North, Range 4 East (MDBM) and portions of Sections 1-5, and 8-12 of Township 10 North, Range 4 East (MDBM) of the "Pleasant Grove, California," "Verona, California," "Taylor Monument, California," and "Rio Linda, California" 7.5-minute topographic quadrangles (U.S. Department of the Interior, Geological Survey [USGS] 1981, 1978, 1980, and 1992, respectively). The Plan Area is located within the Lower Sacramento River Watershed (#18020109, U.S. Department of Interior, Geological Survey 1978).

This report describes potential waters of the United States, including wetlands, identified within the Plan Area that may be regulated by the U.S. Army Corps of Engineers (USACOE) pursuant to Section 404 of the Clean Water Act. The information presented in this report provides data required by the U.S. Army Corps of Engineers Sacramento District's *Minimum Standards for Acceptance of Preliminary Wetland Delineations* (USACOE 2001). Additional data are provided pursuant to U.S. Army Corps of Engineers Sacramento District's guidance on irrigated wetlands [CESPK-CO-R (1145)], Regulatory Branch memorandum, dated March 13, 2007 and per guidance interpreting the United States Supreme Court's decisions in *Rapanos v. United States* and *Carabell v. United States Army Corps of Engineers*.

APPLICANT:

Attn: Mr. George Carpenter
Attorney at Law
141 Morella Court
Roseville, California 95747
Phone: (916) 343-2401
Fax: (916) 434-6661

AGENT:

Attn: Mr. Peter Balfour
ECORP Consulting, Inc.
2525 Warren Drive
Rocklin, California 95677
Phone: (916) 782-9100
Fax: (916) 782-9134

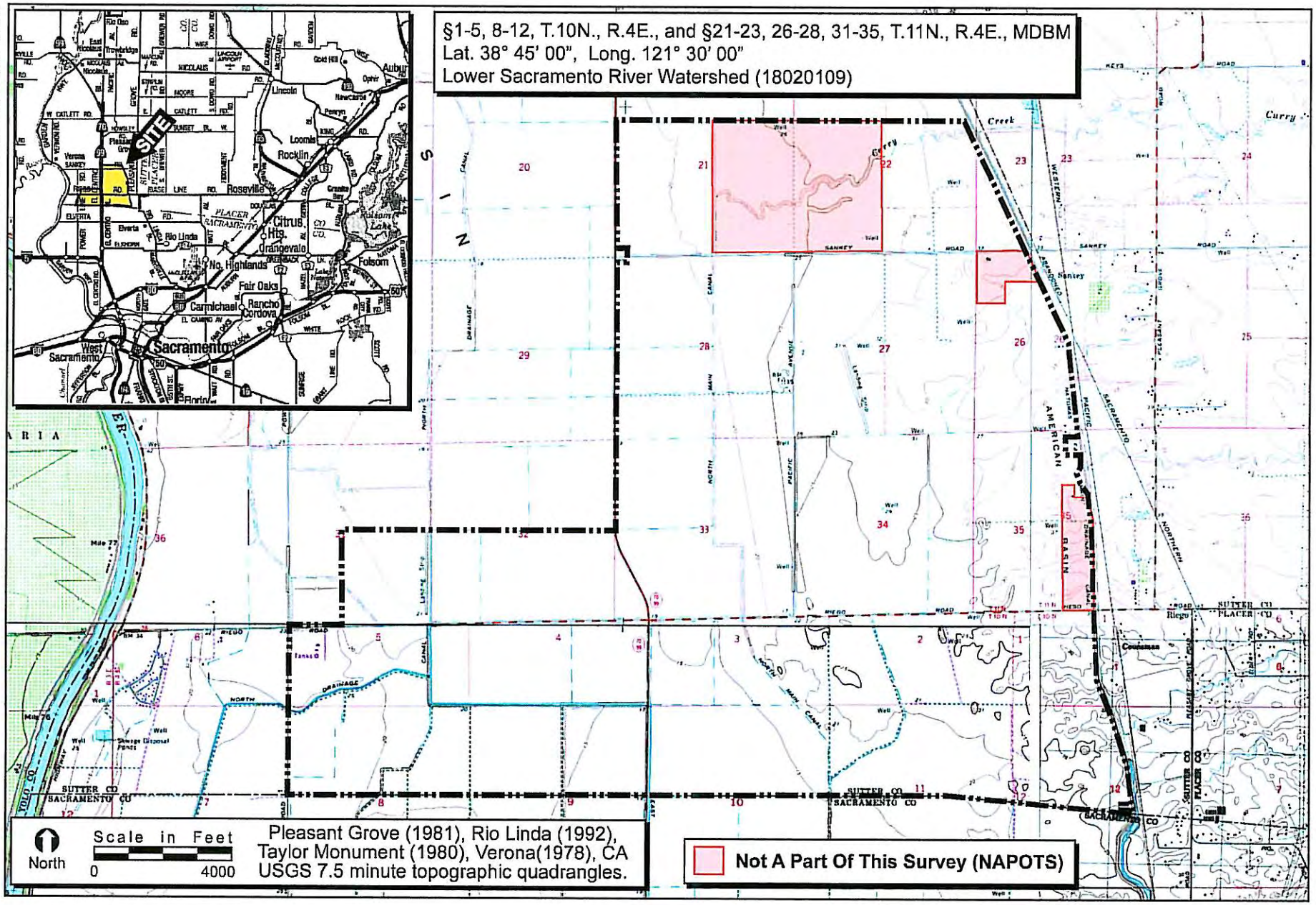


FIGURE 1. Project Site and Vicinity

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

This wetland delineation is submitted on behalf of the Measure M Group for the area within the Sutter Pointe Specific Plan for the purpose of obtaining a jurisdictional determination from the Corps. The report and maps delineate wetlands on all properties within the Plan Area except those shown as N.A.P.O.T.S. (or, Not a Part of the Site). Although the delineation is submitted jointly, each member of the Measure M Group retains the right to object to the delineation or the resultant determination as they pertain to their respective property or properties (or the properties they control). In addition, Measure M Group members may submit separate applications seeking authorization to discharge dredged or fill material to jurisdictional features on their respective properties. The separate applications will be based on and consistent with this delineation unless otherwise noted in the application.

Existing Site Conditions

The Plan Area is situated within the Natomas Basin, which is bordered by the Sacramento River, a traditional navigable water, to the south and west. The Natomas East Main Drainage Canal and Pleasant Grove Canal are located immediately east of the Plan Area and the Cross Canal is located approximately one mile north of the property . These canals run along the levees bordering the northern and eastern edges of the Basin, and are relatively permanent tributaries that flow directly to the Sacramento River.

The majority of the Plan Area has been historically leveled and farmed for cultivated rice (*Oryza sativa*) production. Irrigation water is mechanically pumped from groundwater wells into the rice fields or cells via a system of man-made canals. A more in depth discussion of water flows within the canal system and rice fields is provided in a later section of this document. The fields typically remain flooded until the fall harvest when each field is drained through manually controlled gates into a matrix of irrigation ditches and canals. Individual fields are separated by small upland checks or larger levees, some of which are used as access roads. Rice cells have been leveled to facilitate uniform-depth flooding during the growing season. The rice fields are rotated in and out of production and may remain in production for several years followed by fallow periods. Soils are typically saturated prior to the onset of the winter rainy season.

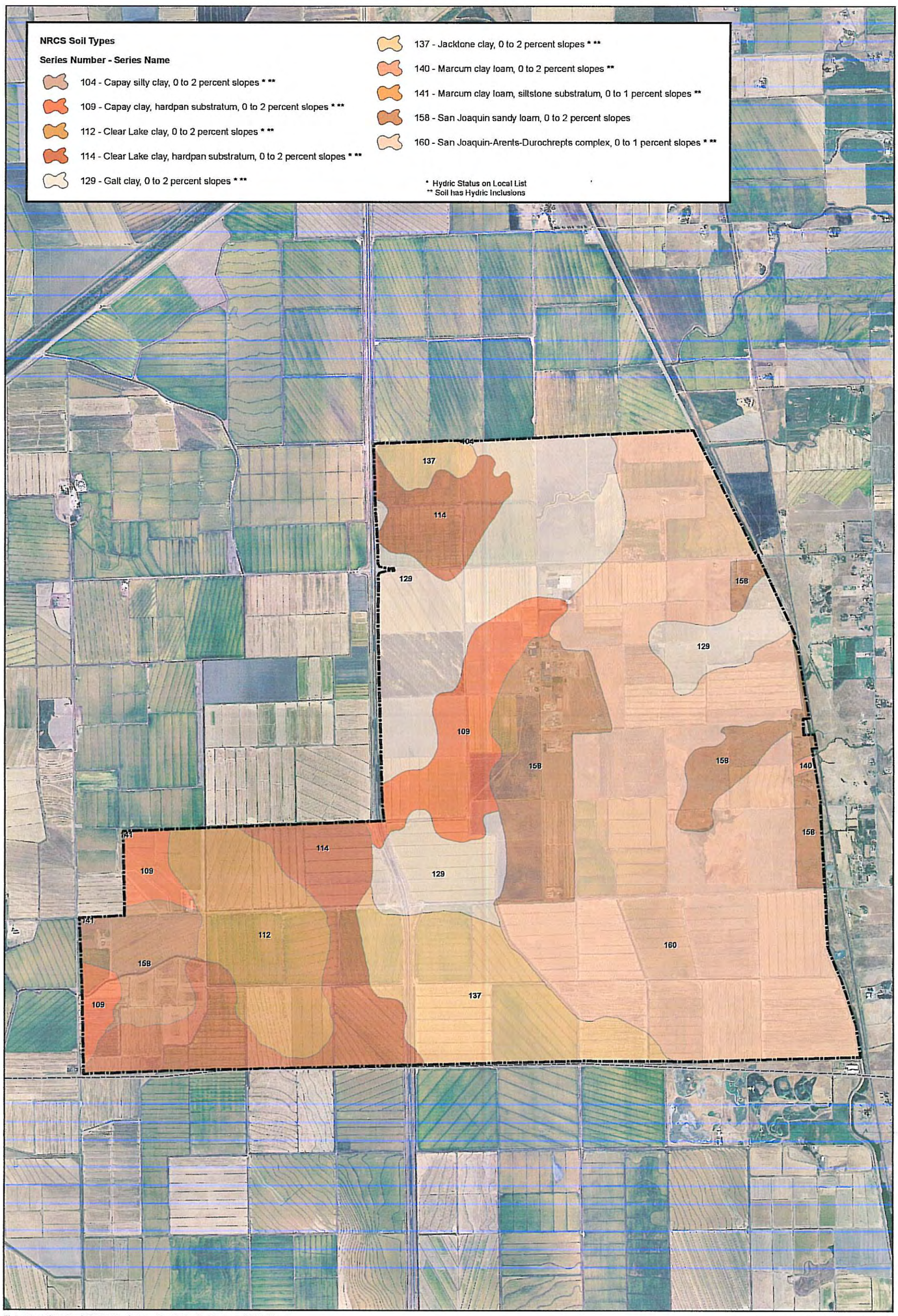
The irrigation ditches on-site range from temporary features, generally less than 5 feet wide and 1 foot deep, to drainage features of up to 30 feet wide and several feet deep which have been in place for a longer period of time. The temporary ditches and furrows are constructed to provide uniform irrigation within individual rice fields and expedite drainage prior to harvesting. These ditches are leveled during the overwintering preparations within each field and re-excavated, as necessary, the following growing season when the fields and upland checks are recontoured. The larger irrigation ditches mapped during this delineation are discussed in further detail in the Results and Discussion sections of this report.

Other vegetation communities observed on-site include non-irrigated and irrigated pastures. A field south of the Sankey Road/Natomas Road intersection has not been leveled and appears to be utilized for non-irrigated hay crops, such as oats or wheat. An irrigated pasture used for cattle grazing is located on the north side of Sankey Road, immediately west of Natomas Road. Plant species observed in the irrigated pasture included ryegrass (*Lolium multiflorum*), Bermuda grass (*Cynodon dactylon*), clover (*Trifolium* spp.), alfalfa (*Medicago sativa*), and Kentucky fescue (*Festuca arundinaceae*). A rural residence is located near the irrigated pasture on Sankey Road.

Trees within the Plan Area are limited in distribution and are largely associated with the larger drainages. These include Goodding's black willow (*Salix gooddingii*) and Fremont's cottonwood (*Populus fremontii*).

A food distribution warehouse, farm equipment dealer, cement mixing plant, and farm buildings are located along Pacific Avenue south of Sankey Road. A rural residence, farm buildings, grain silos, and an airstrip are located along Riego Road immediately east of Power Line Road.

According to the *Soil Survey of Sutter County, California* (U.S. Department of Agriculture, Soil Conservation Service (SCS) 1988) (Soil Survey), ten soil units, or types, have been mapped within the Plan Area (Figure 2. *Natural Resources Conservation Service Soil Types*). These are: (104) Capay silty clay, 0 to 2 percent slopes, (109) Capay clay, hardpan substratum, 0 to 2 percent slopes, (112) Clear Lake clay, 0 to 2 percent slopes, (114) Clear Lake clay, hardpan substratum, 0 to 2 percent slopes, (129) Galt clay, 0 to 2 percent slopes, (137) Jacktone clay, 0



File Location: J:\GIS_Maps\2005-186_South_Sutter_Specific_Plan\SouthSutter_Soils(tabloid).mxd

Map Projection: CA StatePlane Zone II
Datum: North American Datum 1983 (NAD83)

Figure 2. Natural Resources Conservation Service Soil Types

1 inch equals 3,000 feet

2005-186 Sutter Pointe Specific Plan

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

to 2 percent slopes, (140) Marcum clay loam, 0 to 2 percent slopes, (141) Marcum clay loam, siltstone substratum, 0 to 1 percent slopes, (158) San Joaquin sandy loam, 0 to 2 percent slopes, and (160) San Joaquin-Arents-Durochrepts complex, 0 to 1 percent slopes. All of these soil units contain hydric components and/or inclusions, except for (158) San Joaquin Sandy loam, 0 to 2 percent slopes (SCS 1992). Due to the disturbance associated with construction of the rice fields, the accuracy of the soil map in those areas is unknown. Of the 12 data points collected (Attachment A), the soil at only one data point (DP5) matched the soil description in the Soil Survey (U.S. Department of Agriculture, Soil Conservation Service (SCS) 1988). This can possibly be attributed to disturbances from rice agriculture including extensive discing, leveling, and irrigation, which commenced well before passage of the Clean Water Act.

Surrounding land uses include primarily rice agriculture with scattered rural residences. .

METHODS

This wetland delineation was conducted in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987). Field work was conducted prior to issuance of the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Arid West Region Supplement) (U.S. Army Corps of Engineers 2006). The boundaries of potential waters of the U.S. were delineated through a combination of aerial photograph interpretation and standard field methodologies (i.e., paired data set analyses), and all wetland data were recorded on Routine Wetland Determination Forms (see Attachment A). A color aerial photograph (1"=800 ft) was used to assist with mapping and ground-truthing. *Munsell Soil Color Charts* (Kollmorgen Instruments Co. 1990) and the *Soil Survey of Sutter County, California* (U.S. Department of Agriculture, Soil Conservation Service 1988) were used to aid in identifying hydric soils in the field. *The Jepson Manual* (Hickman, *ed.* 1993) was used for plant nomenclature and identification.

Field wetland surveys were conducted on August 19, September 13, 14, 16, 23, and 28, October 3 and 6, 2005 by ECORP biologists Mr. Keith Kwan, Mr. Tom Scofield, Ms. Paula Ellison Gill, Mr. Dustin McLain, Ms. Kristie Scarazzo, and Mr. Dustin Brown. The entire Plan Area was walked and all accessible roads were driven to access the location of potentially jurisdictional

boundaries within the property. Twelve representative data point locations were sampled to evaluate whether the vegetation, hydrology, and soils data supported a determination of wetland or non-wetland status. At each paired location, one point was located such that it was within the estimated wetland area or drainage feature, and the other point was situated outside the limits of the estimated subject area. The data collected at each single point location were used to support a non-wetland determination or to document conditions within rice fields.

Rice field documentation data points were taken within both laser-leveled and contoured fields throughout the project site, and within both fallow and recently-harvested rice fields. Documentation was collected at a sufficient number of data points to represent the variety of rice fields present on-site. The wetland boundaries mapped are the extent of the area that exhibits all three of the wetland criteria (discussed below in Routine Determinations). Data points were not taken along transects due to the homogeneity of the site and the small number of vegetation communities. The total area of potential wetlands and major canals within the property was recorded in the field using a post-processing capable global positioning system (GPS) unit with sub-meter accuracy (Trimble GeoXT).

Methods used to evaluate canals and areas used for rice production are described in the "Irrigation Ditches" and "Rice Fields" sections of this report, respectively, and follow guidance provided in Regulatory Branch Memorandum 2007-01 regarding "irrigated" wetlands dated 13 March 2007. This effort involved considerable research, including evaluations of historical data and consultation with numerous individuals (e.g. land owners and operators) and agencies (e.g. Natural Resources Conservation Service and Reclamation District 1000).

Waters of the United States

This report describes potential waters of the United States that may be regulated by the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act. Wetlands are "those areas that are inundated or saturated by surface or groundwater at a frequency and duration

sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" [33 CFR 328.3(b), 51 FR 41250, November 13, 1986]. Wetlands can be perennial or intermittent, and isolated or adjacent to other waters.

Other waters are non-tidal, perennial, and intermittent watercourses and tributaries to such watercourses [33 CFR 328.3(a), 51 FR 41250, November 13, 1986]. The limit of USACOE jurisdiction for non-tidal watercourses (without adjacent wetlands) is defined in 33 CFR 328.4(c)(1) as the "ordinary high water mark" (OHWM). The OHWM is defined as the "*line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas"* [33 CFR 328.3(e), 51 FR 41250, November 13, 1986]. The bank-to-bank extent of the channel that contains the water-flow during a normal rainfall year generally serves as a good first approximation of the lateral limit of USACOE jurisdiction. The upstream limits of other waters are defined as the point where the OHWM is no longer perceptible.

Routine Determinations

To be determined a wetland, the following three criteria should be met:

- A majority of dominant vegetation species are wetland associated species;
- Hydrologic conditions exist that result in periods of flooding, ponding, or saturation during the growing season; and
- Hydric soils are present.

Vegetation

Hydrophytic vegetation is defined as the sum total of macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanent or periodically saturated soils of sufficient duration to exert a controlling influence on the plant

species present (Environmental Laboratory 1987). The definition of wetlands includes the phrase "a prevalence of vegetation typically adapted for life in saturated soil conditions." Prevalent vegetation is characterized by the dominant plant species comprising the plant community (Environmental Laboratory 1987). The "50/20 rule" was used to determine the dominant plant species at each data point location. The rule states that for each stratum in the plant community, dominant species are the most abundant plant species (when ranked in descending order of abundance and cumulatively totaled) that immediately exceed 50 percent of the total dominance measure, plus any additional species that individually comprise 20 percent or more of the total dominance measure (HQUSACE 1992).

Dominant plant species observed at each data point were classified according to their indicator status (probability of occurrence in wetlands) (Table 1 – *Classification of Wetland-Associated Plant Species*), in accordance with the U.S. Fish and Wildlife Service's (USFWS) National List of Vascular Plant Species That Occur in Wetlands: California (Region 0) (Reed 1988). If the majority (greater than 50 percent) of the dominant vegetation on a site are classified as obligate (OBL), facultative wetland (FACW), or facultative (FAC) (excluding FAC-), then the site is considered to by dominated by hydrophytic vegetation.

Table 1 – Classification of Wetland-Associated Plant Species[1]

Plant Species Classification	Abbreviation[2]	Probability of Occurring in Wetland
Obligate	OBL	>99%
Facultative Wetland	FACW	66-99%
Facultative	FAC	33-66%
Facultative Upland	FACU	1-33%
Upland	UPL	<1%
No indicator status	NI	Insufficient information to determine status
Plants That Are Not Listed (assumed upland species)	NL	Does not occur in wetlands in any region.

[1] Source: Reed 1988

[2] A '+' or '–' symbol can be added to the classification to indicate greater or lesser probability, respectively, of occurrence in a wetland.

Soils

A hydric soil is defined as a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (USDA-NRCS 2003). Indicators that a hydric soil is present include soil color (gleyed soils and

soils with bright mottles and/or low matrix chroma), aquic or preaquic moisture regime, reducing soil conditions, sulfidic material (odor), soils listed on hydric soils list, iron and manganese concretions, organic soils (Histosols), histic epipedon, high organic content in surface layer in sandy soils, and organic streaking in sandy soils.

A soil pit was excavated to a depth of 16 inches or refusal at each data point. The soil was then examined for hydric soil indicators. The matrix color and mottle color (if present) of the soil was determined using the *Munsell Soil Color Charts*.

Hydrology

Wetlands, by definition, are seasonally inundated or saturated at or near (within 12 inches of) the soil surface. To be classified as a wetland, a site should have at least one primary indicator or two secondary indicators of wetland hydrology. Primary indicators of wetland hydrology may include, but are not limited to: water marks, drift lines, sediment deposition, drainage patterns, visual observation of saturated soils, and visual observation of inundation. In addition to the primary indicators, there are a variety of secondary wetland hydrology indicators. Secondary indicators include, but are not limited to: oxidized root channels in the upper 12 inches, water-stained leaves, and local soil survey data. When no primary indicators of wetland hydrology are observed at a data point, two or more secondary indicators are required to confirm wetland hydrology. Where it was apparent that irrigation contributed to hydrology, this was noted on the data sheet.

RESULTS

A total of 4.335 acres of potentially non-jurisdictional wetlands have been mapped within the Plan Area. This area is comprised of a large seasonally wet swale that exhibits wetland characteristics, but appears to be an isolated feature as it is not adjacent to any Waters of United States. As such, it would not fall under Corps jurisdiction. In addition, numerous irrigation canals were similarly mapped as nonjurisdictional features for reasons provided in subsequent sections of this delineation. Wetland determination forms describing mapped

features are included in Attachment A, and a list of plant species observed at data point locations is included in Attachment B. A discussion of the seasonal wetland swale is presented below, and delineation maps are presented in Figure 3 and Attachment C.

Wetlands

Seasonal Wetland Swales

Seasonal wetland swales are typically ephemerally wet, linear drainage features that support a dominance of wetland vegetation and hydric soils and exhibits wetland hydrology. One seasonal wetland swale has been mapped within the eastern portion of the Plan Area. This large swale comprises approximately 4.335 acres in area. It receives runoff during the wet season from natural precipitation and probably through periodic irrigation runoff from the adjacent rice field and pastures. The drainage pattern and the topography surrounding this swale suggest that irrigation runoff contributes to the hydrology. The swale is situated within a field that is planted for hay crops that has not been leveled. During the field surveys, this field had been harvested and recently plowed, so most of the vegetation could not be identified. Scattered plant species that remained identifiable included Mediterranean barley (*Hordeum marinum*), ryegrass (*Lolium perenne*), vetch (*Vicia* spp.), and soft chess (*Bromus hordeaceus*). By comparison, the adjacent upland areas were comprised of wild oats (*Avena* spp.), ryegrass, and soft chess. During rare plant surveys this spring (2006), dominant plants observed within the swale included, ryegrass, annual rabbit-foot grass (*Polypogon monspeliensis*), curly dock (*Rumex crispus*), hyssop loosestrife (*Lythrum hyssopifolium*), and toad rush (*Juncus bufonius*).

Wetland hydrology indicators observed within the seasonal wetland swale on-site included sediment deposits (i.e., algal matting) and oxidized root channels. Other hydrologic indicators (i.e., soil saturation and inundation) were not observed due to the time of year that field surveys were conducted. Within ephemeral features, these indicators are generally only observable during the wet season and early in the growing season. Wetland hydrologic indicators were not observed in the adjacent uplands.

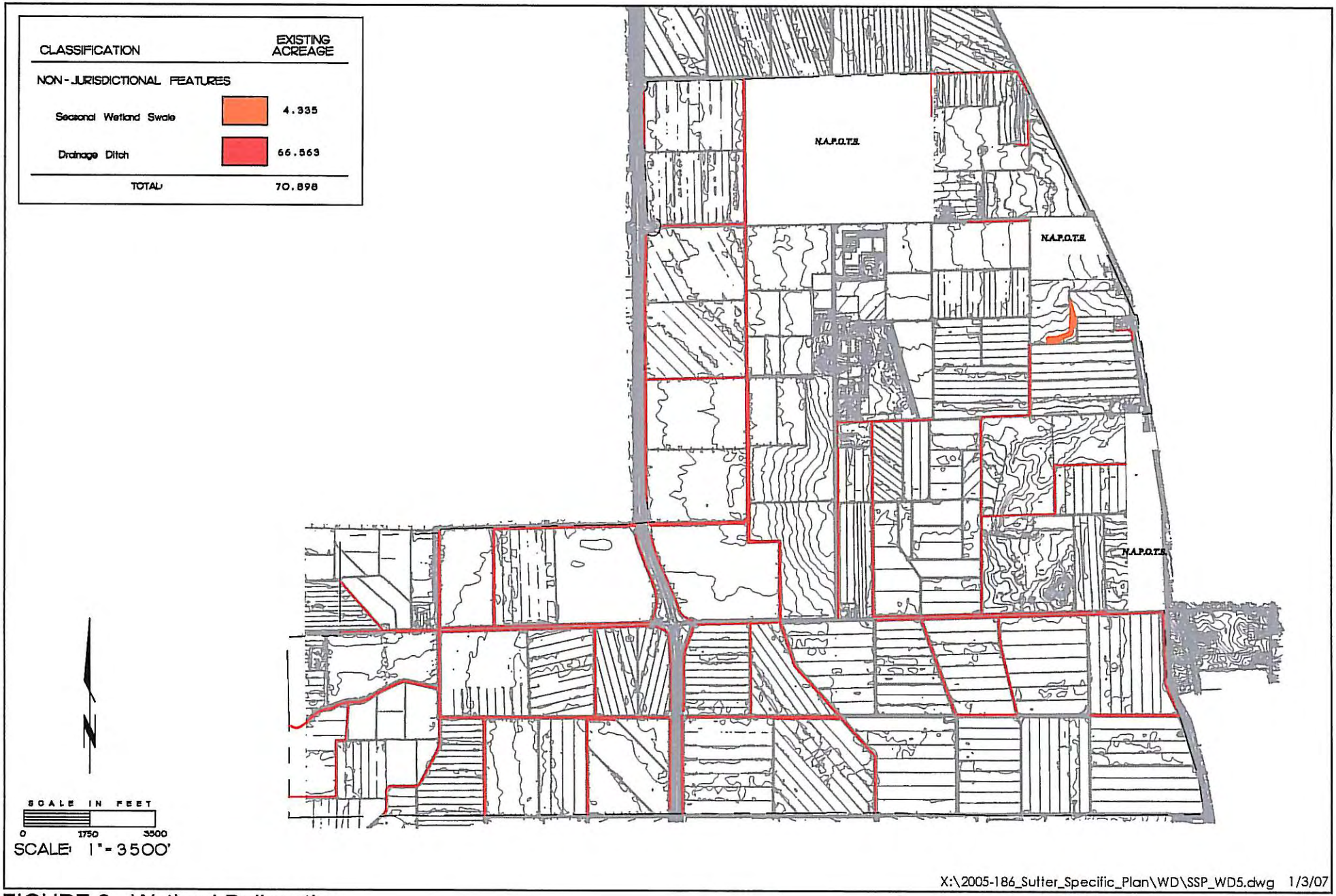


FIGURE 3. Wetland Delineation

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

The soil matrix color within the seasonal wetland swale was 10YR3/2 with redoximorphic (redox) features (i.e., mottles) of 10YR5/8. The soil was considered hydric based upon low chroma colors with redox features. Soil matrix color in the adjacent upland area was of high chroma colors that include 710YR4/3 (without redox features).

While the seasonally wet swale exhibits wetland characteristics and meets wetland criteria, it appears to be an isolated feature and as such would not be subject to Corps jurisdiction. Runoff from this swale is directed into canals on the property which we, similarly, believe to not fall under Corps jurisdiction for reasons discussed in the following section.

Irrigation Ditches

Numerous drainages ditches occur within the Plan Area. The more significant ditches on the property were mapped as non-jurisdictional canals and comprise an estimated 66.563 acres. They are shown as non-jurisdictional features as all water flows within them are the direct result of active pumping from and ultimately back into the Sacramento River, Natomas Drainage Canal, and East Main Drainage Canal. Smaller features such as smaller temporary ditches and furrows were not mapped, as these are reconstructed on a regular basis as a part of normal farming practices. The irrigation ditches mapped on-site range from approximately four to thirty feet in width. They have been mapped at the ordinary high water mark, which in most cases was evident due to the presence of watermarks, debris, erosion lines, and/or changes from upland to hydrophytic vegetation. Most of the ditches were largely unvegetated except for a relatively narrow strip of wetland vegetation at the ordinary high water or the presence of scattered Goodding's black willows or Fremont's cottonwoods along the banks.

Within the greater Natomas Basin, there are approximately 180 miles of canals and numerous pumps which move water throughout the Basin. Prior to May 1, 2006, water conveyance was operated as a closed loop system for the majority of the year, with discharges permitted back into the Sacramento River in October. Any discharges that did occur were due to pumping into the Natomas Drainage Canal or the East Main Drainage Canal. However, since May 1, 2006, the system has converted to allow pumped discharge throughout the year under specified conditions. For example, after a chemical spray has taken place in the irrigated rice fields,

depending on the chemical type, a range of five to 30 days must pass before the water can flow out of the irrigated rice fields and into the canals. After the water is released into the canals, the water can be pumped out of the system and into the Sacramento River at any given month of the year without a holding period. Due to the number of pumps within the Plan Area and in the Natomas Basin, both the direction of water conveyance and locations of water discharge can be manipulated and can vary daily, monthly, or annually; however, in general most flows are directed from north to south. Typical flow directions within the Plan Area are depicted in Attachment D. Representative photographs of canals and pumps within and outside of the Plan Area are depicted in Attachment E.

Irrigation canals within the Plan Area convey water supplied by the Natomas Mutual Water District (Natomas Mutual) and Reclamation District 1000 (RD 1000). The RD 1000 was formed in 1911 and construction of levees along the Sacramento River and the developing canal system began at that time. Since that time, the Corps has raised/repaired the levees several times (e.g. 1920's, 1930's and 1950's) (Michael J. Blickle pers. com October 24, 2006). The levees are currently rated as providing the Basin with protection against a 135-year storm (Michael J. Blickle pers. com September 5, 2007). Water is pumped out of the Sacramento River and directed through the canal system for agricultural use, typically most intensively during May and June. Natomas Mutual water is discharged at a relatively higher elevation and is supplied to various agricultural users within and outside of the Plan Area. RD 1000 ultimately discharges water to the Sacramento River at one or more electric water pumping plants in the greater Natomas Basin. Discharge of drainage water into the Sacramento River at these pumping plants has not required issuance of a permit by the USACOE (Michael J. Blicke pers.com June 30, 2006). Many of the pumping plants are located on the Sacramento River, the Natomas Cross Canal, or the Pleasant Grove Canal / Natomas East Main Drainage Canal. The Natomas Cross Canal and the Pleasant Grove Canal / Natomas East Main Drainage Canal ultimately discharge via an open discharge (no pumping) into the Sacramento River (Michael J. Blickle pers. com September 5, 2007).

Absent pumping within the Basin, the area would likely flood during extreme storms; however, it would take a very high interval storm for the water to reach the Sacramento River, due to the levees (Michael J. Blickle pers. com September 5, 2007).

There are two pumping plants, which are located outside of the Plan Area, that typically control the water within the Plan Area. A map depicting the location of pumping stations is provided in Attachment F. A third pump, previously located on the Sacramento River south of the intersection of Riego Road and Garden Highway, was recently removed and may or may not be reestablished in the future. Pumping plant 4 is located at the confluence of the North Drainage Canal and the Natomas Cross Canal, to the north west of the Plan Area. Pumping plant 6 is located on the Natomas East Main Drainage Canal, south east of the Plan Area. Both pumping plants 4 and 6 pump water into and out of the Basin, including the Plan Area. If Plant 4 is running, then water flows are generally directed from south to north, into the Natomas Cross Canal and then into the Sac River. When Plant 4 is not running, then the flows are directed from north to south, down the North Drainage Canal and into the Natomas Basin (this is the typical flow direction). Plant 4 is set on an automated system that begins pumping at predetermined water levels throughout the year and may pump water up to ten different times per week.

Agricultural irrigation ditches have a history of exemption from regulation under Section 404 of the Clean Water Act. Section 404(f) provides that the construction and maintenance of a minor agricultural irrigation ditch is exempt from the Section 404 program. 33 U.S.C. § 1344(f)(1)(A) (2002). Further, the District has long considered agricultural irrigation ditches not to be waters of the United States. In 1977, the Corps' rules expressly stated that manmade non-tidal drainage and irrigation ditches excavated on dry land are not considered to be waters of the United States, and specifically that they were not "tributaries." 33 C.F.R. § 323.2(a)(5) (1977).

Since 1977, the Corps' policy regarding the explicit exclusion of agricultural irrigation ditches has been subject to repeated proposed and actual modification. However, as recently as 2000, the final rule modifying the Corps' Nationwide Permit program presented the policy regarding irrigation ditches in its preamble as follows:"

> "A drainage ditch constructed in a stream, wetland, or other water of the United States remains a water of the United States, ***provided an [ordinary high water mark (OHWM)] is still present***. * * * If the construction of a drainage ditch legally converted the entire area to dry land, then the area

drained is not a water of the United States, however, in most cases the drainage ditch would remain a water of the United States. The statement that non-tidal drainage ditches are waters of United States if they ***extend the OHWM*** of an existing water of the United States is consistent with the final rule published in November 13, 1986 and applies to ditches ***constructed in waters or that connect waters***. Nothing in the NWP notice is intended to change the November 13, 1986 [rule] which states that drainage ditches constructed in entirely upland areas are ***generally not considered to be*** waters of the United States."

65 Fed. Reg. 12823 (March 9, 2000) (emphasis added).

Based on this history, the Corps' current position is that irrigation ditches constructed in uplands are not generally considered jurisdictional, but may be considered jurisdictional in limited circumstances on a case-by-case basis. This policy of non-jurisdiction is supported by language within the Code. Under Section 404(f), the discharge of dredged or fill material from normal farming including minor drainage is not subject to Section 404 regulation by the Corps. *See* 33 U.S.C. § 1344(f)(1). Discharge from a minor drainage is defined as "discharge of dredged or fill material incidental to connecting upland drainage facilities to waters of the United States, adequate to effect the removal of excess soil moisture from upland crops." 33 C.F.R. § 323.4(a)(1)(iii)(C). Additionally, the construction or maintenance of farm irrigation ditches, and the maintenance of irrigation ditches are also exempt under Section 404(f). 33 C.F.R. § 323.4(a)(3).

The ditch system within the Plan Area, indeed much of the Natomas Basin, has been engineered since 1911 to facilitate drainage and irrigation of various agricultural crops. Flows are pumped out of and into the Sacramento and American Rivers, but there is no direct or indirect natural connectivity with these Waters of the United States. In fact, in reviewing historical topographic maps of the Plan Area, it appears that none of the historic drainages on site including Sciata Creek and Curry Creek had direct connections with the Sacramento River. The oldest map of the area that we are aware of is the: *"Map of the American Basin in Sacramento and Sutter Counties, California from Surveys Made for Natomas Consolidated of*

California under Direction of Stephen E. Kieffer, M. AM. Soc. C.E. 1908-1909 dated March 1, 1910" (Also known as the "Kieffer Map") (Natomas Consolidated of California 1910*)*. The Kieffer map depicts various swales and drainages, including Curry and Sciata Creeks, as flowing in an east to west direction into the Plan Area. However, both creeks are shown as terminating within what is now the Plan Area and neither of these creeks, or any other drainages on the property, appear to have been tributary to the Sacramento or American Rivers.

Following formation of RD 1000, Curry Creek, as it is today, was diverted into the Pleasant Grove canal along what is now Natomas Road, east of the Plan Area. Based on this history, and given its ultimate connectivity to Sacramento River via the Natomas Cross Canal, Curry Creek east of the Plan Area appears to be a jurisdictional Water of the U.S. A remnant of Curry Creek is evident on land within the Brennans Tract, which is designated as a NAPOTS area. This abandoned segment of the creek now functions as a managed drainage feature receiving pumped flows for irrigation purposes. Sciata Creek is no longer visible within the Plan Area. Following formation of the RD 1000, Sciata Creek was diverted into what is now the Natomas East Main Drainage Canal (east to the Plan Area). A map depicting both 1908 Kieffer Map and current (2005) topographic contour data is provided for comparison as Attachment G.

The vast majority of drainage canals within the Plan Area appear to have been excavated linear features and do not appear to have been historic drainages. A few exceptions include the northern portion of the sinuous, angled drainage canal located immediately south of Riego Road and east of the North Main Canal. This segment appears to represent a section of the terminal end of former Sciata Creek. The other drainage canal which appears to have once been a natural drainage feature is the sinuous portion of the North Drainage Canal in the western-most portion of the Plan Area. While both of these drainages appear to have been natural features, neither of these drainages were tributary to Waters of the United States as areas to the west of the Plan Area were at higher topographic elevations.

The ditches within the Natomas Basin are not traditional navigable waters. They are not subject to the ebb and flow of the tide. They are not, have not been, and do not have the potential to be used for transport interstate commerce. They were constructed for the

purposes of transporting irrigation water to and to draining excess water from agricultural fields in the Natomas Basin.

In general, such irrigation ditches have been exempt from Corps jurisdiction under Section 404. The Guidance affirms that after *Rapanos* guidance the Corps will not generally assert jurisdiction over "[d]itches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water." It continues the Corps policy of reviewing ditches on a case-by-case basis.

The ditches on site are not tributary to rivers or the main drainage canals. As discussed, ditches within the Natomas Basin were constructed in the early 1900s, before enactment of the Clean Water Act in 1972. Because they were constructed before the Clean Water Act was adopted, by definition, they could not have been constructed in wetlands subject to Corps jurisdiction. This legal distinction did not exist until these terms of art were introduced by the Clean Water Act. Congress did not intend for the Clean Water Act to have retroactive effect and did not require regulation of activities undertaken prior to the Clean Water Act. In addition, the ditches are not tidal, do not extend the ordinary high water line of the Sacramento River, and do not connect waters that are otherwise jurisdictional.

The ditches do not have a surface water connection with traditional navigable waters or other waters of the United States. Water does not flow from the ditches directly or indirectly into Sacramento River or the American River farther south. These ditches convey water through the Natomas Basin to pumping plants and stations, where the water is pumped into the Sacramento River, the Cross Canal or the Pleasant Grove Canal/East Main Drainage Canal. A jurisdictional assessment map depicting the Plan Area in relation to the greater Natomas Basin, pumping plants and Traditionally Navigable Waters and Relatively Permanent Waters is included as Attachment H, along with corresponding Approved Jurisdictional Determination Forms (pursuant to Corps and EPA guidance). The ditches transport water throughout a closed water conveyance system in the Basin. The water conveyed is pumped water supplemented in the rainy season by precipitation. Water from precipitation does not contribute water for year-round flow or even enough water for continuous flow seasonally. Absent pumping, the ditches do not constitute relatively permanent waters.

Flows in these ditches or any waters of the United States in the Natomas Basin do not directly affect the chemical, physical or biological integrity of navigable waters in the absence of pumping. The water would remain in the Natomas Basin. The pumping plants and pumping stations at the levees preclude the ditches from having a significant nexus with jurisdictional waters of the United States. By stopping the pumps or changing the rate of pumping, the conveyance of water from the basin can be modified or altogether stopped. The effect on waters of the United States is determined entirely by the effects generated by pumping water from a closed basin into the jurisdictional waters.

The ditches in the Natomas Basin are non-jurisdictional, because (1) they are non-navigable waters, (2) they are not tributaries of and do not connect waters of the United States, (3) they do not have a relatively permanent flow in the absence of pumped irrigation, (4) they were excavated prior to the enactment of the Clean Water Act, and (5) they have no significant nexus to waters of the United States. Any wetlands adjacent to these ditches would be non-jurisdictional based on isolation.

Rice Fields

In accordance with 33 CFR 328.3, any area exhibiting wetland characteristics sustained solely by the application of irrigation water is not regulated under Section 404 of the Clean Water Act. While rice fields are typically not considered waters of the U.S. (Federal Register, vol. 51. no. 219, pg. 41217), the USACOE typically reviews each site with irrigated wetlands on a case-by-case basis. According to Corps of Engineers 2003 guidance on irrigated wetlands (Regulatory Branch Memorandum, dated October 1, 2003; included as Attachment H to this document), the rice fields, or portions of the rice fields, may be considered waters of the U.S. if a) there are positive indicators for all three parameters and the source of non-irrigation water is clearly identified or b) there are positive soils and vegetation indicators, but the relative importance of irrigation versus natural hydrology/groundwater in maintaining the wetland cannot be determined. According to the Corps' recent 2007 guidance on irrigated wetlands (Regulatory Branch Memorandum, dated March 13, 2007; included as Attachment I to this document), the rice fields, or portions of the rice fields, may be considered waters of the U.S. if a) there are positive indicators for all three parameters and the source of non-irrigation water is clearly

identified, or b) if it is determined that the area was a wetland prior to being brought into agricultural production, and under normal circumstances would likely continue to meet wetland criteria absent direct application of irrigation water to the property (e.g., hydrology is maintained by natural or artificial means, including groundwater seepage from irrigation ditches that service the surrounding areas). The phrase "normal circumstances" is defined in Regulatory Guidance Letter 86-09: Clarification of "Normal Circumstances" in the Wetland Definition is as follows:

> "Normal circumstances" are determined on the basis of an area's characteristics and use, at present and in the recent past. Thus, if a former wetland has been converted to another use (other than by recent un-permitted action not subject to 404(f) or 404(r) exemptions) and that use alters its wetland characteristics to such an extent that it is no longer a "water of the United States", that area will no longer come under the Corps regulatory jurisdiction for purposes of Section 404.

According to Corps guidance, demonstration that on-site wetlands are the result of irrigation practices can require cessation of irrigation for two or more growing seasons, with the caveat that several years may be necessary under drought conditions. Cessation of irrigation within the Plan Area, which is and has long been used almost exclusively for agriculture, is not a viable option for economic reasons. Recognizing that such measures may not always be practical, the Corps has promulgated an alternate procedure for making jurisdictional determinations in such situations.

This alternate procedure requires additional data reporting on the following:

a. "Obtain information from the Natural Resources Conservation Service Soil Survey for the subject area (if available). The soil survey will usually provide groundwater table and flooding information, as well as the type of vegetation found in particular soil types. Once the soil series is identified, determine whether the soil is listed as a hydric soil, or a soil with hydric inclusions, on the local and national hydric soils lists.

b. Check with Federal, State, and local agencies to determine if any surface or groundwater records are available for the property.
c. Obtain information from the landowner, neighbors, or others who may have knowledge of the hydrologic characteristics of the property.
d. Conduct an on-site wetland delineation for the property.
e. Review period of record and determine whether drought conditions exist.
f. Review available aerial photography to characterize historical conditions of the site and past irrigation practices."

We are providing the following additional data to assist the Corps in making a jurisdictional determination regarding the irrigated features within the project area and to support subsequent verification of the wetland delineation. As it is not practical to discontinue irrigation within these features for economic reasons, ECORP has reviewed numerous sources of information pursuant to Corps guidance documents.

The 2007 Irrigated Wetlands guidance states that "if it can be demonstrated that the area was not a wetland (i.e., upland) prior to being brought into agricultural production, and under normal circumstances would likely continue to exhibit wetland criteria only through direct application of irrigation water, then the irrigated wetland generally would not meet the definition of a wetland under the manual." None of the data points that were taken in rice fields that had been fallow for more than one year exhibited sufficient wetland hydrology or hydric soils indicators to qualify as a wetland; thus, it appears that these rice fields would not meet the definition of a wetland under the Manual.

Aerial Photograph Review

The following summary is based on a review of historical aerial photographs of the Plan Area that were taken in 1937, 1971, 1975, and 1983. Also reviewed was the previously-referred *Kieffer Map* (dated 1910) depicting topographic contours circa 1908-1909 (see Attachment G).

Areas that are in agricultural production are evident in all of the historical aerial photographs, indicating that the area has long been used for agricultural purposes. The vast majority of the

site had been converted to cropland prior to Section 404 of the Clean Water Act of 1972 and subsequent federal regulation of isolated wetlands in 1975. These farmed areas may also qualify as "prior converted cropland." Prior converted cropland is specifically excluded from the Corps' definition of waters of the United States. 33 C.F.R. § 328.3(a)(8); 51 Fed. Reg. 41250 (Nov. 13, 1986)(amended at 58 Fed. Reg. 45036, (Aug. 25, 1993)). The Corps issued Regulatory Guidance Letter 86-09: Clarification of "Normal Circumstances" in the Wetland Definition ("Guidance Letter")[2] which helps to clarify what constitutes prior converted cropland. This Guidance Letter "addresses situations involving changes in the physical characteristics of a wetland which cause the area to lose or gain characteristics which would alter its status of 'waters of the United States' for purposes of the Section 404 regulatory program." The Corps explains that the successful conversion of a wetland to another uses (e.g., agricultural) that alters its characteristics such that it is no longer a water of the United States is not jurisdictional under section 404. However, if the prior converted cropland has been abandoned and regains wetland characteristics, then Corps jurisdiction over the area may be restored. The Corps asserts Section 404 jurisdiction over only truly aquatic areas, not those that were formerly wetlands and part of an aquatic system but have been transformed to dry land.

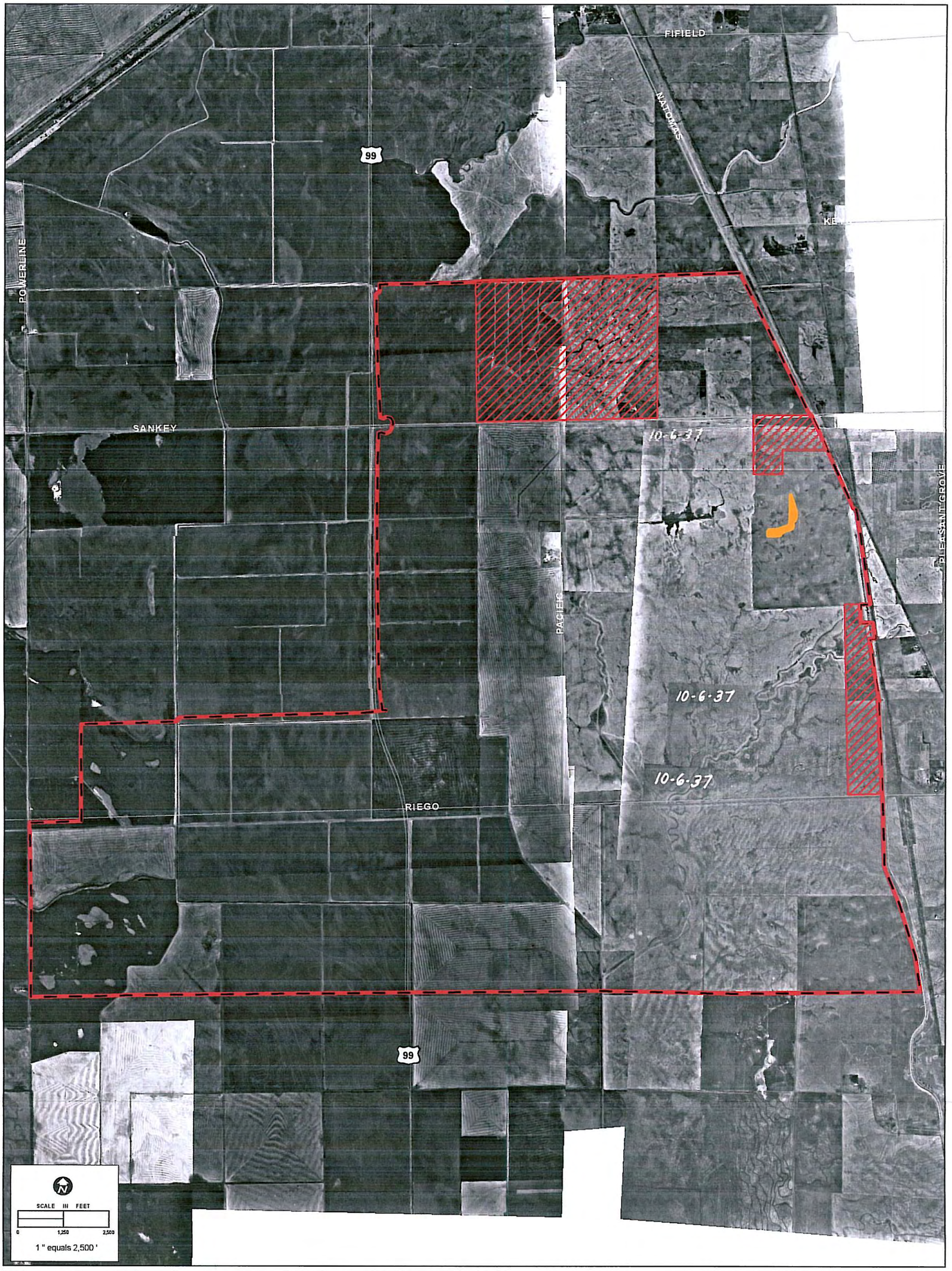
Land Use Patterns / Wetland / Waters Features

The 1910 Kieffer Map provides a topographic depiction of the greater area but no aerial photographic data. The map documents the fact that Curry Creek and Sciata Creek both flowed into the Plan Area in the early 1900's. A series of topographic swales and smaller drainages are evident in the eastern portion of the project area. However, none of these creeks or drainage swales appear to have been tributary to the Sacramento or American Rivers. The central and western central portion of the property is depicted as having been relatively flat. Additional drainage contours are evident in the western-most portion of the property, with higher elevations (perhaps resultant from past river sediment deposition) evident farther west of the Plan Area, indicating that flows were not tributary to the Sacramento River (see Attachment G).

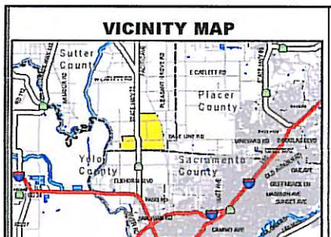
[2] The Corps subsequently issued Guidance 90-07; however, that Guidance has expired. In 2006, the Corps issued Guidance stating that expired RGL 86-09 represents current Corps policy.

The 1937 aerial photograph (Figure 4. *1937-Aerial Photograph of the Project Area*) depicts rice fields in the southwestern project area and along the southern edge of the study area. The remainder of the area east of where Highway 99 currently lies appears to have been used for non-irrigated grain crops at that time. The current grain silo is visible near the western edge of the grain fields. Review of 1937 aerial photography indicates that remnants of both Curry Creek and Sciata Creek were present on the property at that time, but upstream reaches had been directed into canals. Also present were numerous wetland swales and several linear drainage canals were also present at this time. The 1937 photograph depicts numerous swales throughout the study area in addition to seasonal wetlands and, possibly, vernal pools in the eastern portion of the site, primarily associated with San Joaquin soil types.

The June 1971 aerial shows the Plan Area as being more intensively farmed predominantly in rice, but also in row crops and possibly cereal grains (Figure 5. *1971-Aerial Photograph of the Project Area*). In many cases one can see light reflected off of many of the rice fields. Some remnant seasonal wetland features appear to be present within some fields in the eastern-most portion of the Plan Area. In 1975, the entire the property was under agricultural production (Figure 6. *1975-Aerial Photograph of the Project Area*). Again, most of the Plan Area was being used for rice production. A few fallowed agricultural fields are evident in the eastern-most portion of the site. These fallow areas may have been previously farmed in rice and fallowed during the time of the photograph. Curry Creek, at that time, meandered across a portion of northeastern project area. The creek was later redirected/channelized such that only a truncated portion remained in the current N.A.P.O.T.S area (e.g. Brennan Tract). The truncated creek is now used for irrigation purposes and functions as an irrigation ditch, receiving controlled flows. With the exception of a large seasonal wetland swale depicted in this delineation (which is evident in many of the historical aerial photographs), all of the historical features have since been manipulated (i.e. leveled, excavated, disced and plowed) as part of a long history of agricultural production. What appear to be remnant seasonal wetland features are evident within some of the N.A.P.O.T.S. areas (which were not included in this delineation). These include some potential seasonal wetlands within the eastern N.A.P.O.T.S. area and the truncated portion of Curry Creek within the Brennans Property.



VICINITY MAP



Project Located on USGS 7.5' Quadrangles: Verona, Pleasant Grove, Rio Linda and Taylor Monument, CA

FIGURE 4. 1937 - AERIAL PHOTOGRAPH OF THE PROJECT AREA

2005-186 Sutter Pointe Specific Plan

Location: J:\GIS_Maps\2005-186_South_Sutter_Specific_Plan\	Map Name: Sutter_CountyGP_ESU_Aerial1937.mxd	Project Number	2005-186
Original Production Date: 01/09/06	Revision:	Project Manager:	BALFPS
Printing Date: 05/16/06	Scale: 1 " equals 2,500 '	GIS Specialist:	JDS

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Headquarters
2525 Warren Drive
Rocklin, CA 95677
Ph: 916.782.9100

Oakland Office
2100 Embarcadero, Suite 201
Oakland, CA 94606
Ph: 510.434.0150

Santa Ana Office
1801 Park Court Place Building B, Suite 103
Santa Ana, CA 92701
Ph: 714.648.0630

Redlands Office
412 East State St.
Redlands, CA 92373
Ph: 909.307.0046

NOTES

Map Projection: California State Plane Zone II (NAD83)

[1] Project Boundary: Wood Rodgers; Selected from ECORP Wetland Delineation.

Aerial Photo Source: USDA 1937. The aerial photos were georeferenced using ArcGIS software. The photos have not been rectified, and thus there may be variations in location from one photo to another.

[1] Boundaries

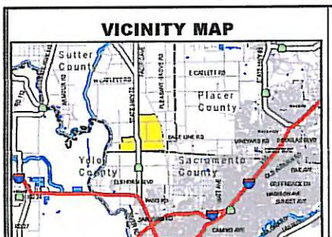
Project Boundary

NAPOTS

Wetland Features:

seasonal wetland swale

VICINITY MAP



Project Located on USGS 7.5' Quadrangles: Verona, Pleasant Grove, Rio Linda and Taylor Monument, CA

FIGURE 5. 1971 - AERIAL PHOTOGRAPH OF THE PROJECT AREA

2005-186 Sutter Pointe Specific Plan

Location: J:\GIS_Maps\2005-186_South_Sutter_Specific_Plan\	Map Name: Sutter_County\SP_1971_Aerial(Edited).mxd	Project Number	2005-186
Original Production Date: 01/09/06	Revision:	Project Manager:	BALFPS
Printing Date: 05/16/06	Scale: 1 " equals 2,500 '	GIS Specalist:	JDS

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Headquarters
2525 Warren Drive
Rocklin, CA 95677
Ph: 916.782.9100

Oakland Office
2100 Embarcado, Suite 201
Oakland, CA 94606
Ph: 510.434.0150

Santa Ana Office
1801 Park Court Place Building B, Suite 103
Santa Ana, CA 92701
Ph: 714.648.0630

Redlands Office
412 East State St.
Redlands, CA 92373
Ph: 909.307.0046

NOTES

Map Projection: California State Plane Zone II (NAD83)

[1] Project Boundary: Wood Rodgers; Selected from ECORP Wetland Delineation.

Aerial Photo Source: USDA, 1971 aerial survey The aerial photos were georeferenced using ArcGIS software. The photos have not been rectified, and thus there may be variations in location from one photo to another.

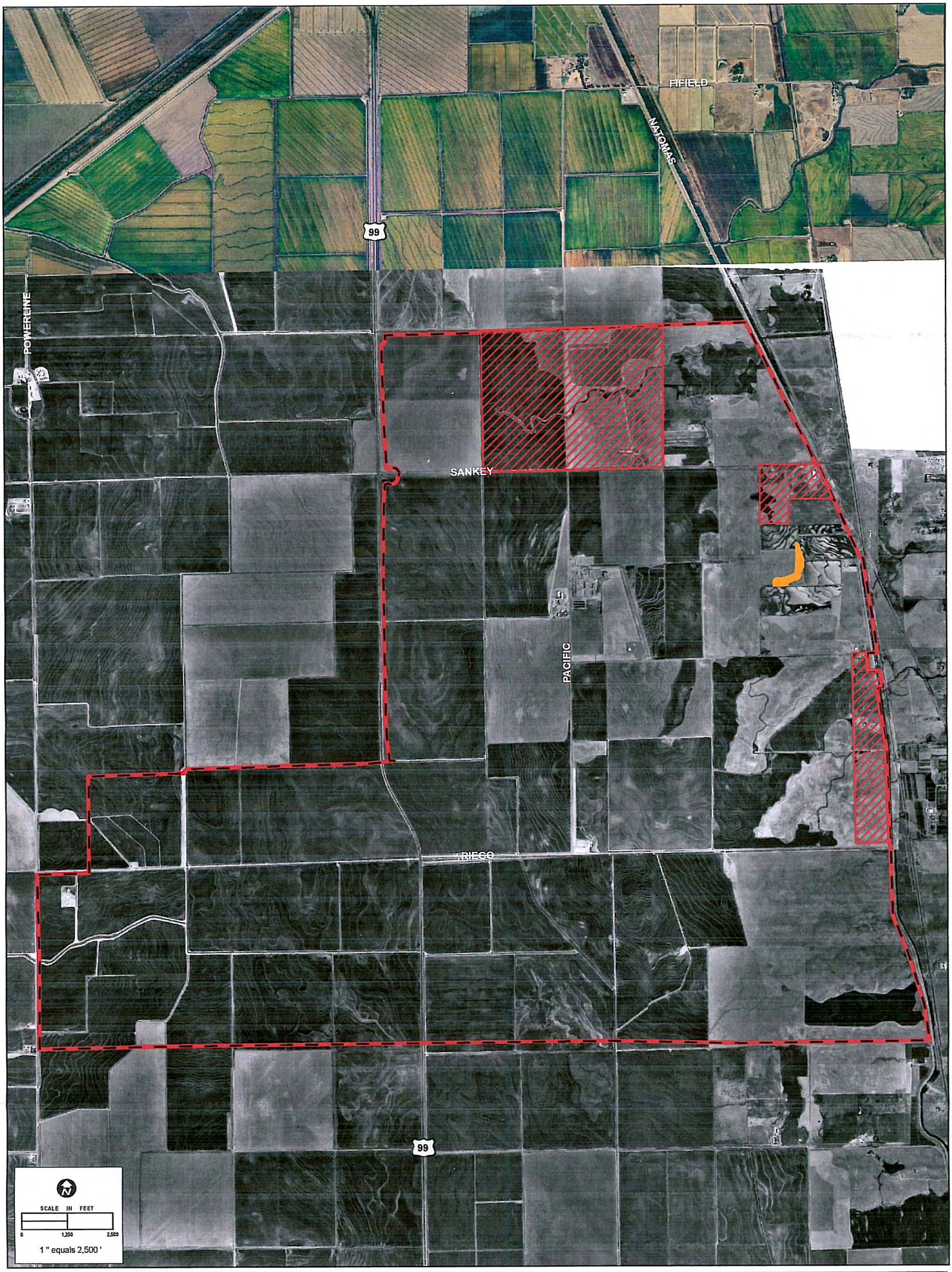
[1] *Boundaries*

Project Boundary

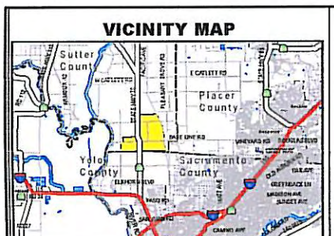
NAPOTS

Wetland Features:

seasonal wetland swale



VICINITY MAP



Project Located on USGS 7.5' Quadrangle: Verona, Pleasant Grove, Rio Linda and Taylor Monument, CA

FIGURE 6. 1975 - AERIAL PHOTOGRAPH OF THE PROJECT AREA

2005-186 Sutter Pointe Specific Plan

Location:	J:\GIS_Maps\2005-186_South_Sutter_Specific_Plan\	Map Name: Sutter_County\GP_1975_Aerial(Tablet).mxd	
Original Production Date:	01/09/06	Revision:	Project Number: 2005-186
Printing Date:	05/16/06	Scale: 1 " equals 2,500 '	Project Manager: BALFPS
			GIS Specalist: JDS

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Headquarters
2525 Warren Drive
Rocklin, CA 95677
Ph: 916.782.9100

Oakland Office
2100 Embarcadero, Suite 201
Oakland, CA 94606
Ph: 510.434.0150

Santa Ana Office
1801 Park Court Place Building B, Suite 103
Santa Ana, CA 92701
Ph: 714.648.0930

Redlands Office
412 East State St.
Redlands, CA 92373
Ph: 909.307.0046

NOTES

Map Projection: California State Plane Zone II (NAD83)

[1] Project Boundary: Wood Rodgers; Selected from ECORP Wetland Delineation.

Aerial Photo Source: Radman Surveys. The aerial photos were georeferenced using ArcGIS software. The photos have not been orthorectified, and thus there may be variations in location from one photo to another.

[1] *Boundaries*

Project Boundary

NAPOTS

Wetland Features:

seasonal wetland swale

In 1983, land uses within the Plan Area were similar to those today (Figure 7. *1983-Aerial Photograph of the Project Area*). The differences included varied crop rotation and rice farming practices. Many of the rice fields that were shown as contour-leveled in the 1983 photograph have since been laser-leveled to facilitate more uniform irrigation of rice fields. Several additional fields in the southeastern portion of the site appear to consist of grain or irrigated row crops.

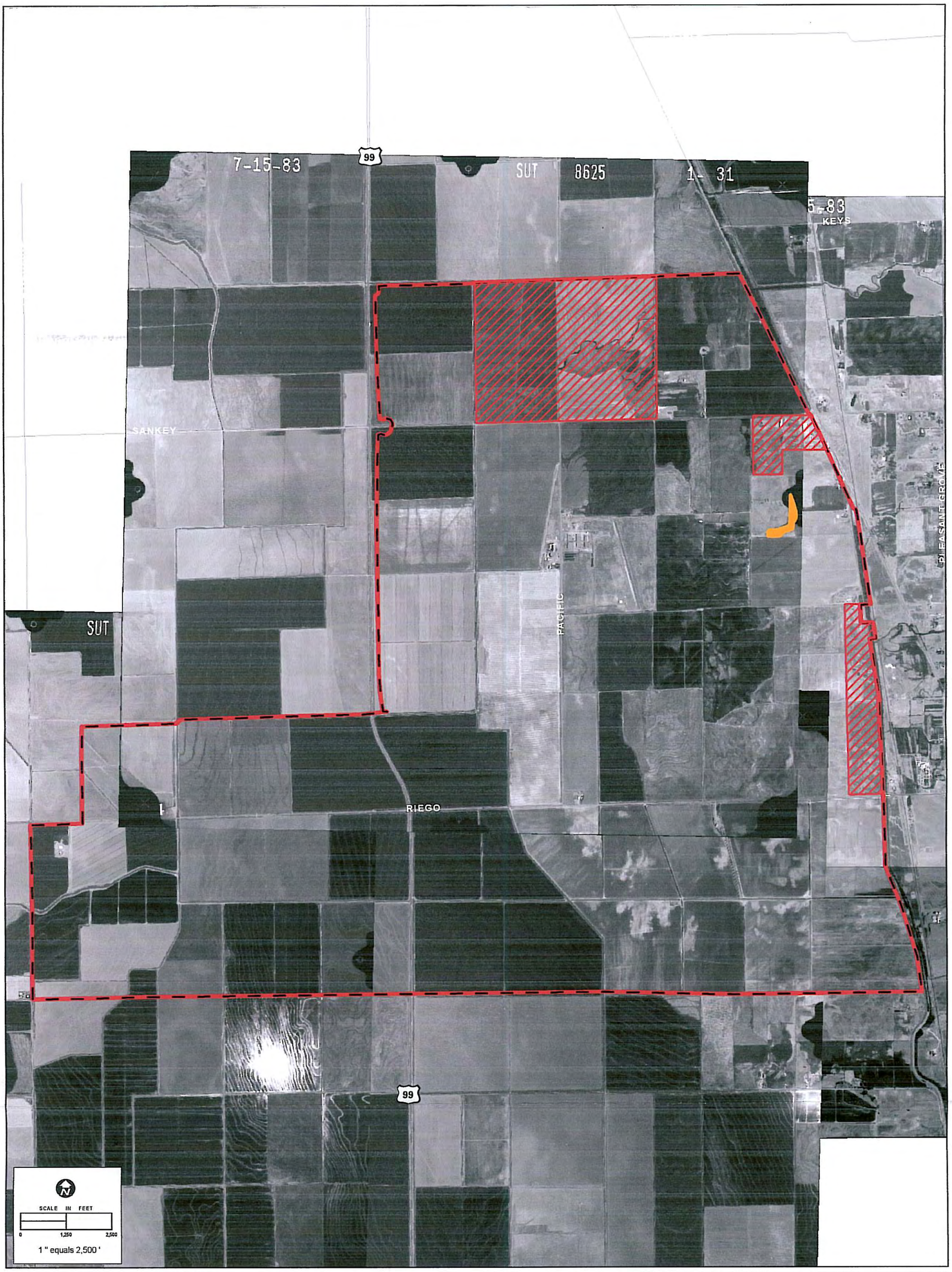
As described in the Existing Site Conditions section of this report and depicted on the wetland delineation maps (see Figure 3 and Attachment C), the vast majority of the site is currently used for rice production. The few exceptions are areas located along Pacific Avenue and north of Elverta Road on the eastern side of the study area. These areas include industrial development, residences, and non-irrigated hay crops.

The Plan Area has been intensively used for agricultural production for many years. Information obtained from property owners regarding agricultural practices on specific parcels within the Plan Area indicates that all of the area within the Plan Area was converted to agriculture prior to 1970's and subsequent regulation under Section 404 of the Clean Water Act. Parcels have been used for rice production as early as the 1920's and as recently as 40 years ago (prior to 1970's). A map depicting areas within the Plan Area that were used for irrigated crop cultivation prior to 1972 is included as Figure 8. This is consistent with responses to land use questionnaires provided by landowners in the Plan Area. A map identifying ownership parcels as well as attached corresponding agricultural use questionnaires obtained from property owners is included as Attachment J.

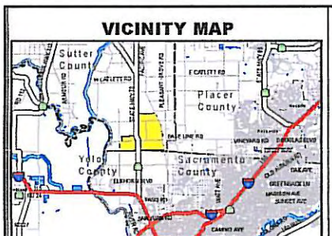
Local Knowledge of Hydrologic Characteristics

A discussion of general rice field practices in the region is presented below:

In March, fields are typically leveled with laser-guided grading equipment (California Rice Commission 2006). Fertilizer is then added, and shallow furrows are rolled into the field. In mid to late April, the fields are flooded to a depth of 5 inches, and seeded (California Rice Commission 2006). Fields remain flooded for the four-to five month growing cycle, and are



VICINITY MAP



Project Located on USGS 7.5' Quadrangles: Verona, Pleasant Grove, Rio Linda and Taylor Monument, CA

FIGURE 7. 1983 - AERIAL PHOTOGRAPH OF THE PROJECT AREA

2005-186 Sutter Pointe Specific Plan

Location: J:\GIS_Maps\2005-186_South_Sutter_Specific_Plan\	Map Name: Sutter_CountyGP_1983_Aerial(Updated).mxd	Project Number	2005-186
Original Production Date: 01/09/06	Revision:	Project Manager:	BALFPS
Printing Date: 05/16/06	Scale: 1 " equals 2,500 '	GIS Specalist:	JDS

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Headquarters
2525 Warren Drive
Rocklin, CA 95677
Ph: 916.782.9100

Oakland Office
2100 Embarcadero, Suite 201
Oakland, CA 94606
Ph: 510.434.0150

Santa Ana Office
1801 Park Court Place Building B, Suite 103
Santa Ana, CA 92701
Ph: 714.648.0930

Redlands Office
412 East State St.
Redlands, CA 92373
Ph: 909.307.0046

NOTES

Map Projection: California State Plane Zone II (NAD83)

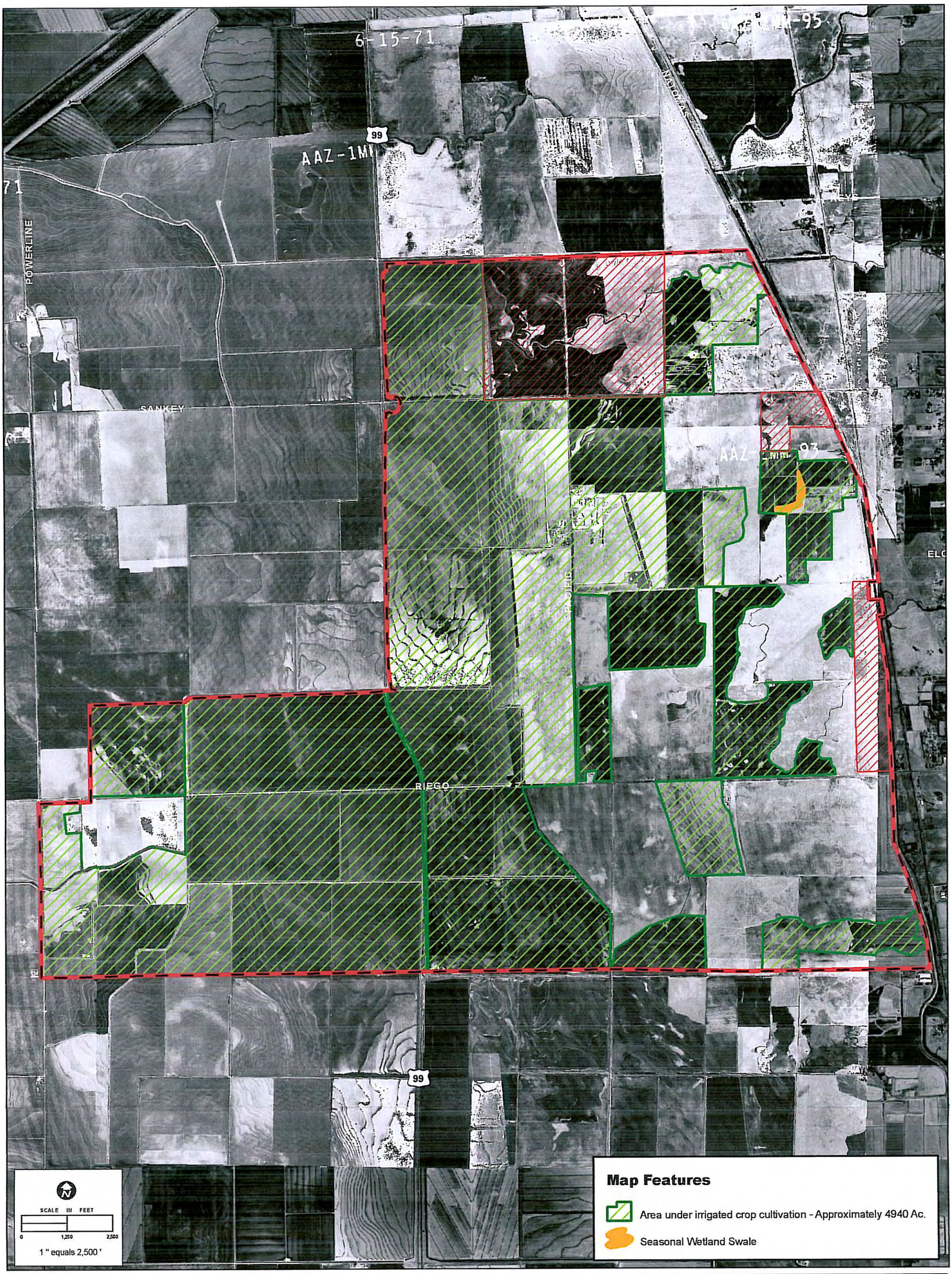
[1] Project Boundary: Wood Rodgers; Selected from ECORP Wetland Delineation.

Aerial Photo Source: Radman Aerial. The aerial photos were georeferenced using ArcGIS software. The photos have not been rectified, and thus there may be variations in location from one photo to another.

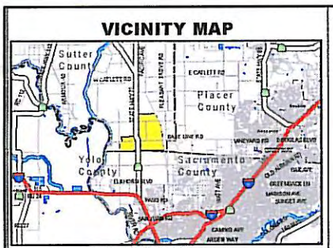
[1] Boundaries

Project Boundary NAPOTS

Wetland Features: *seasonal wetland swale*



VICINITY MAP



Project Located on USGS 7.5' Quadrangles: Verona, Pleasant Grove, Rio Linda and Taylor Monument, CA

FIGURE 8. AREA UNDER IRRIGATED CROP CULTIVATION PRIOR TO 1972

2005-186 Sutter Pointe Specific Plan

Location: J:\GIS_Maps\2005-186_South_Sutter_Specific_Plan\	Map Name: Sutter_CountyCP_71.mxd	Project Number	2005-186
Original Production Date: 01/09/06	Revision:	Project Manager:	BALFPS
Printing Date: 07/12/06	Scale: 1 " equals 2,500 '	GIS Specalist:	JDS

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Headquarters
2525 Warren Drive
Rocklin, CA 95677
Ph: 916.782.9100

Oakland Office
2100 Embarcadero, Suite 201
Oakland, CA 94606
Ph: 510.434.0150

Santa Ana Office
1801 Park Court Place Building B, Suite 103
Santa Ana, CA 92701
Ph: 714.648.0830

Redlands Office
412 East State St.
Redlands, CA 92373
Ph: 909.307.0046

NOTES

Map Projection: California State Plane Zone II (NAD83)

[1] Project Boundary: Wood Rodgers; Selected from ECORP Wetland Delineation.

Aerial Photo Source: Radman Aerial. The aerial photos were georeferenced using ArcGIS software. The photos have not been rectified, and thus there may be variations in location from one photo to another.

[1] Boundaries

Project Boundary

NAPOTS

typically sprayed once or twice with herbicide early on. Water depth is maintained at 5 inches throughout this period for optimal growth (California Rice Commission 2006). In August and September, fields are drained, and as soon as the fields are dry, the rice is harvested (typically September through October) (Hill et al 1997). In October and November, the rice fields are either burned, left fallow, or flooded to incorporate the rice straw into the soil. When flooding is the chosen option, the fields are flooded shortly after harvest, and often remain flooded until spring (Hill et al 1997). Thus, depending on the farming practice employed, rice fields may be flooded from a minimum of four months to a maximum of ten months out of the year. Many of the rice fields within the Plan Area were found to be flooded or in the process of being harvested during the delineation. Following harvest many of the fields were observed to be flooded and/or tilled during late December.

A review of the agricultural practices questionnaires that were filled out by the farmers on-site (see Attachment J) reveals that almost all of the rice fields on-site are flooded from May through September, and the irrigated pastures on-site are irrigated from May through October. Approximately half of the farmers use wells for irrigation, and half use water from the irrigation canals. The water from all of the fields drains into irrigation ditches and canals within the Reclamation District system.

Soils Data

Table 2 summarizes the flooding frequency, high water table, and hydric status of each of the soils occurring within the study area. Based on this information derived from the *Soil Survey of Sutter County, California*, the *Field Office Official List of Hydric Soil Map Units for Sutter County, California*, and the *National Hydric Soils List*, the study area is not currently prone to flooding, and groundwater in much of the study area east of Highway 99 is at least 6 feet below the surface of the soil in most years. Much of the area in the eastern portion of the project area consists of soils that are not hydric, according to the local list. However, some of these soil types do contain hydric inclusions. Most of the soil types classified as hydric are located in the western portion of the project area. Typically, the hydric status of a soil mapping unit on a local hydric soils list takes priority over the national list due to the fact that local lists do not generalize across the country, but instead only apply to the local area (in this case, Sutter

Table 2 – Flooding, Water Table, and Hydric Status of Soil Mapping Units

Soil Mapping Unit[1]	Frequency of Flooding[1, 2]	High Water Table[1, 3]			Hydric Status on Local List[4]	Hydric Status on National List[5]	Hydric Inclusions[4, 5]
		Depth	*Kind*	*Months*			
104- Capay silty clay, 0 to 2 percent slopes	Rare	> 6.0	--------	--------	Hydric	Hydric	Oswald, Clear Lake
109- Capay clay, hardpan substratum, 0 to 2 percent slopes	Rare	> 6.0	--------	--------	Hydric	Hydric	Clear Lake, Galt, Jacktone
112- Clear Lake clay, 0 to 2 percent slopes	Rare	4.0 – 5.0	Perched	Dec – Apr	Hydric	Hydric	Capay, Oswald, Subaco
114- Clear Lake clay, hardpan substratum, 0 to 2 percent slopes	Rare	3.0 – 5.0	Perched	Dec – Apr	Hydric	Hydric	Capay, Clear Lake, Galt, Jacktone
129- Galt clay, 0 to 2 percent slopes	Rare	> 6.0	--------	--------	Hydric	Hydric	Capay, Jacktone, Clear Lake
137- Jacktone clay, 0 to 2 percent slopes	Rare	1.5 – 3.0	Perched	Dec – Apr	Hydric	Hydric	Capay, Clear Lake, Galt
140- Marcum clay loam, 0 to 2 percent slopes	Rare	> 6.0	--------	--------	Not hydric	Hydric	Galt, Capay
141- Marcum clay loam, siltstone substratum, 0 to 1 percent slopes	None	> 6.0	--------	--------	Not hydric	Hydric	Oswald
158- San Joaquin sandy loam, 0 to 2 percent slopes	None	> 6.0	--------	--------	Not hydric	Not included	None
160- San Joaquin-Arents-Durochrepts complex, 0 to 1 percent slopes	None	> 6.0	--------	--------	Not hydric	Hydric	Galt

[1] Source: SCS 1988
[2] Rare flooding means that flooding is unlikely but possible under unusual weather conditions (chance of flooding in any year is 0 to 5 percent); None means that flooding is not probable.
[3] High water table is the highest level of the saturated zone in most years. Depth is the depth to the seasonal high water table; Kind is the type of water table (a perched water table is water standing over an unsaturated zone); and Months is the months of the year that the water table is usually the highest.
[4] Source: SCS 1992
[5] Source: SCS 2005

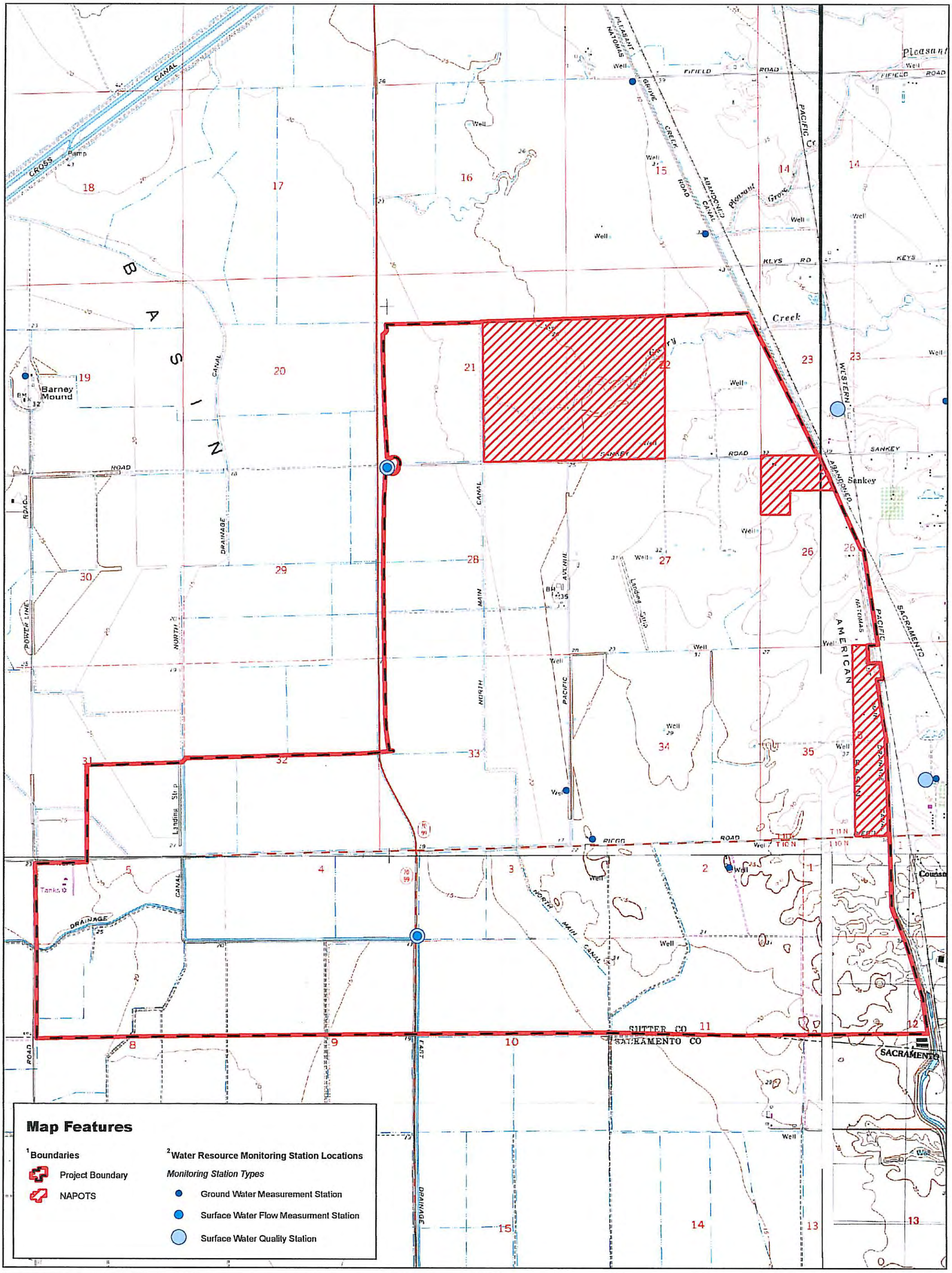
County). Thus, although units (140), (141), and (160) are listed as hydric on the national list, the "not hydric" designation on the local list takes precedence.

Characteristic plant community data provided in the *Soil Survey of Sutter County, California* are only provided for those soil types that support rangeland vegetation suitable for grazing. This excludes all of the soil types present within the project area. This is not surprising considering the report was published in 1988 and most of the soil types present on-site have been historically targeted for agricultural crop production.

Surface and Groundwater Records

Although no records could be located on surface flows within the Plan Area, ECORP Consulting obtained groundwater records for three wells operated by the California Department of Water Resources (Figure 9. *Map of Groundwater Wells within the Study Area*). The average water table depth for the three wells within the study area is approximately 20 feet below the ground surface. The shallowest groundwater depth at any of these wells is 8.7 feet below the surface (California Department of Water Resources (DWR) 2005). This information is consistent with the estimate of groundwater depth provided by the *Soil Survey of Sutter County, California*.

ECORP biologists contacted the NRCS office in Marysville, CA to access available historical wetland information for this site. No wetland information was available other than the National Wetland Inventory data (Figure 10. *National Wetland Inventory Data within the Study Area*). Four features were identified on the National Wetland Inventory maps of the study area. The feature mapped as "PSSCX: Palustrine, Unconsolidated Bottom, Semi permanently flooded, Excavated" corresponds to a portion of the Natomas East Main Drainage Canal. The area shown as "PUBFX: Palustrine, Scrub-Shrub, Seasonally Flooded, Excavated" is, in fact, an actively irrigated sewage spray field associated with the small industrial area in the central portion of the Plan Area. As such, this area was not mapped during the delineation. Two areas depicted as "PEMA: Palustrine, Emergent, Temporarily Flooded" are shown as occurring within the Plan Area. One lies within an agriculture field that has since been leveled. The other larger feature corresponds to the seasonal swale mapped in the current delineation.



VICINITY MAP

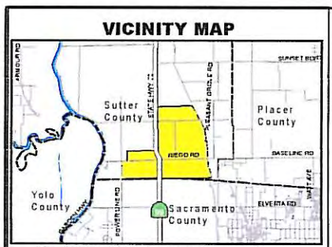


FIGURE 9. MAP OF GROUNDWATER WELLS WITHIN THE STUDY AREA

2005-186 Sutter Pointe Specific Plan

Location: J:\GIS_Maps\2005-186_South_Sutter_Specific_Plan\	Map Name: Monitoring_wells.mxd	Project Number	2005-186
Original Production Date: 01/16/06	Revision:	Project Manager:	BALFPS
Printing Date: 05/05/06	Scale: 1 " equals 2,500 '	GIS Specalist:	JDS

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Headquarters
2525 Warren Drive
Rocklin, CA 95677
Ph: 916.782.9100

Oakland Office
2100 Embarcado, Suite 201
Oakland, CA 94606
Ph: 510.434.0150

Santa Ana Office
1801 Park Court Place Building B, Suite 103
Santa Ana, CA 92701
Ph: 714.648.0930

Redlands Office
412 East State St.
Redlands, CA 92373
Ph: 909.307.0046

NOTES

[1]Project Boundary: Wood Rodgers

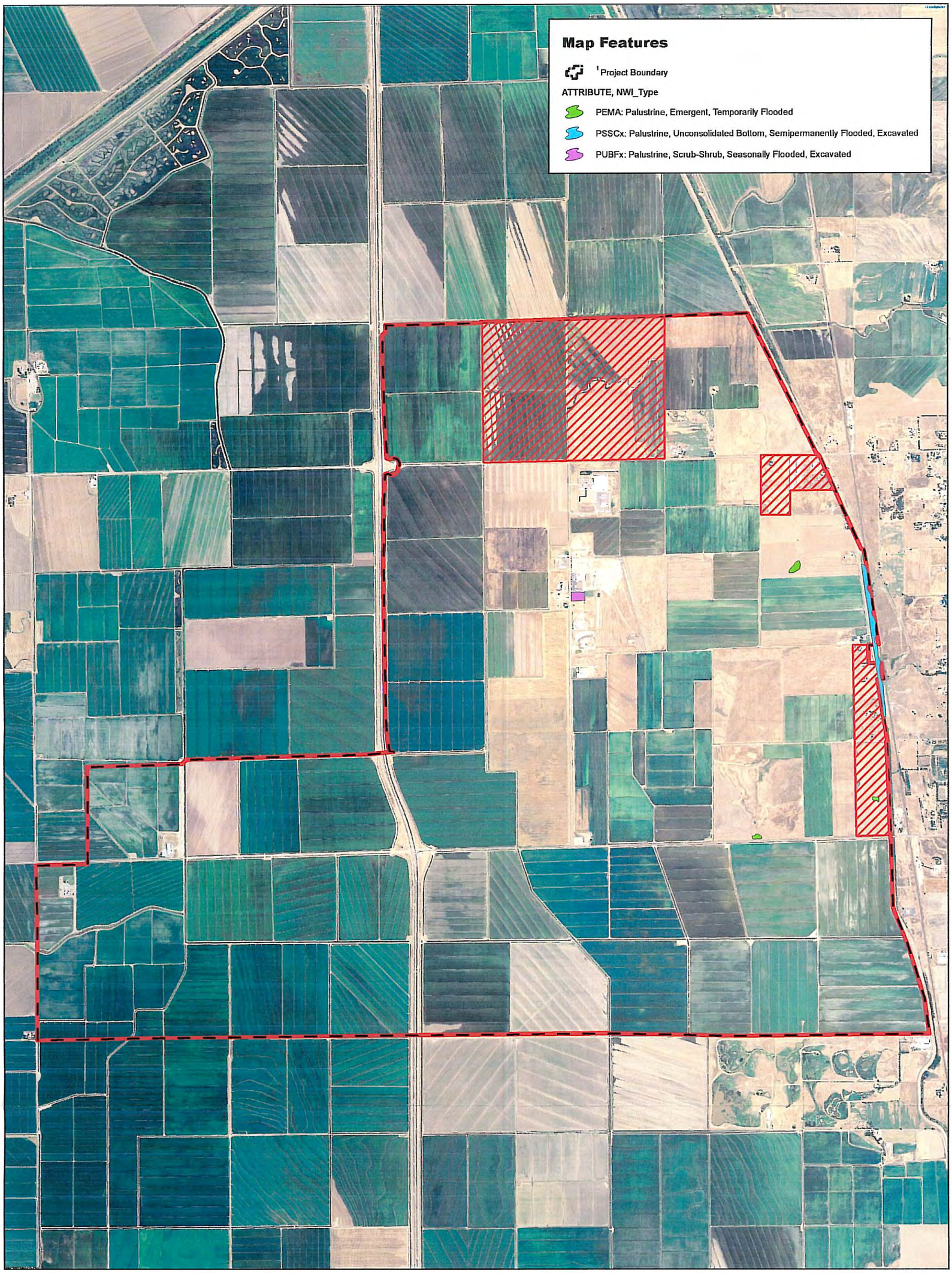
[2] California Department of Water Resources

Quads within view extent: Grays Bend, Knights Landing, Verona,Pleasant Grove, Rio Linda and Taylor Monument, CA

SCALE IN FEET

0 1,250 2,500 5,000

1 " equals 2,500 '



VICINITY MAP

Project Located on USGS 7.5' Quadrangles: Verona, Taylor Monument, Rio Linda and Pleasant Grove, CA

FIGURE 10. NATIONAL WETLAND INVENTORY DATA WITHIN THE STUDY AREA

2005-186 Sutter Pointe Specific Plan

Location: J:\GIS_Maps\2005-186_South_Sutter_Specific_Plan\	Map Name: SouthSutter_NWI.mxd	Project Number	2005-186
Original Production Date: 01/16/06	Revision:	Project Manager:	BALFPS
Printing Date: 05/05/06	Scale: 1 " equals 2,500 '	GIS Specalist:	JDS

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Headquarters
2525 Warren Drive
Rocklin, CA 95677
Ph: 916.782.9100

Oakland Office
2100 Embarcadero, Suite 201
Oakland, CA 94606
Ph: 510.434.0150

Santa Ana Office
1801 Park Court Place Building B, Suite 103
Santa Ana, CA 92701
Ph: 714.648.0630

Redlands Office
412 East State St.
Redlands, CA 92373
Ph: 909.307.0046

NOTES

[1]Project Boundary: Wood Rodgers

[2] NWI data downloaded from the NWI website

Aerial Photo Source: GlobExplorer September 2005

SCALE IN FEET

0 1,250 2,500 5,000

1 " equals 2,500 '

Review of Precipitation Data

Based on a review of precipitation data collected since 1996 at the Rio Linda Weather Center (DWR 2006), the average annual rainfall in the vicinity of the study area is approximately 20.1, and that 22.7 inches of rain fell between October 1, 2004 and August 31, 2005. The precipitation data indicate that rainfall levels during the 04-05 wet season were slightly above average. Precipitation data for the 2005/2006 rainy season document 24.96 inches of rain in the area as of May 4, 2006, which is approximately 125% of normal (California Department of Water Resources. 2006. *Query of Accumulated Precipitation Data for the Rio Linda Weather Center executed May 4, 2006.* http://cdec.water.ca.gov/cgi-progs/staMeta?station_id=RLN).

RAPANOS DETERMINATION

In June 2007, the U.S. Army Corps of Engineers ("Corps") and the U.S. Environmental Protection Agency ("EPA") issued guidance interpreting the United States Supreme Court's decisions in *Rapanos v. United States* and *Carabell v. United States Army Corps of Engineers* ("Guidance"). The Guidance presents the agencies' interpretation of the effect of the *Rapanos* and *Carabell* decisions on the Corps' regulatory jurisdiction under Section 404 of the Clean Water Act.

The Guidance sets out three general categories of waters. The categories are:

- Traditional navigable waters and their adjacent wetlands, and non-navigable tributaries to such traditional navigable waters that themselves flow continuously for at least three months out of the year and adjacent wetlands;
- Non-navigable tributaries that **do not** have at least three months of continuous flow per year and adjacent wetlands, and also wetlands that are adjacent to, **but do not directly abut**, tributaries that flow continuously for three months out of the year; and

- Swales, erosional features and gullies/small washes characterized by infrequent short duration flow, together with irrigation ditches constructed **wholly** in uplands.[3]

The first category includes traditional navigable waterways and their adjacent wetlands, which remain jurisdictional regardless of *Rapanos*. Relatively permanent, non-navigable tributaries to traditional navigable waters, and abutting wetlands will be jurisdictional. Waters are relatively permanent if they flow year-round or flow continuously at least seasonally, generally three months per year. Conversely, features falling in the last category generally will not be jurisdictional. Jurisdictional determinations for features falling in the middle category will be based on a fact-intensive "*substantial nexus*" test.

"A significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or an insubstantial effect on the chemical, physical, or biological integrity of a [traditional navigable water]." The substantial nexus test evaluates the flow characteristics and functions of the tributary in combination with the functions performed by adjacent wetlands.

In order to conduct this evaluation, an ECORP Consulting biologist collected additional supporting data at four additional locations within the Plan Area and summarized information on Approved Jurisdictional Determination Forms (pursuant to Corps and EPA guidance) (Attachment K).

CONCLUSION

A total of 4.335 acres of seasonal wetland swale have been mapped within the Plan Area. The swale exhibits wetland characteristics but appears to be an isolated feature as it is not adjacent to any Waters of the Untied States and, subsequently, would not be subject to Corps jurisdiction. An additional 66.563 acres of irrigation canals were also mapped within the property. These, similarly, do not appear to fall under Corps jurisdiction, as water flows within

---

[3] See RGL 07-20, Exemptions for Construction or Maintenance of Irrigation Ditches and Maintenance of Irrigation Ditches under Section 404 of the Clean Water Act.

them are the direct result of active pumping from and ultimately back into the Sacramento and Natomas East Main Drainage Canal. The canals were constructed (excavated) prior to federal regulation of wetlands under the Clean Water Act, are not tidally influenced, and do not connect or extend waters of the United States. Portions of some of these irrigation ditches may have comprised portions of natural drainage features, but in reviewing historical topographic data, it appears that these features were not tributary to Waters of the U.S.

The ditches in the Plan Area and greater Natomas Basin appear to be non-jurisdictional, because (1) they are non-navigable waters, (2) they are not tributaries of and do not connect waters of the United States, (3) they do not have a relatively permanent flow in the absence of pumped irrigation, (4) they were excavated prior to the enactment of the Clean Water Act, and (5) they have no significant nexus to waters of the United States. Any wetlands adjacent to these ditches would be non-jurisdictional based on isolation.

Rice fields and other prior converted areas have similarly not been included as jurisdictional features in this delineation. Review of historical photography indicates these areas were filled, manipulated, and cropped prior to Section 404 of the Clean Water Act of 1972 and federal regulation of isolated wetlands in 1975, and have remained in rotation since that time. Supporting data provided in this delineation conform to Corps of Engineers' guidance on irrigated wetlands (Regulatory Branch Memoranda, dated October 1, 2003 and March 13, 2007) and have been provided to assist the Corps during the verification process.

REFERENCES

AirPhoto USA. 2002. Aerial photograph of the project area.

California Department of Water Resources. 2005. *Query of Groundwater Level Readings for Wells 11N04E33J001M, 11N04E34N001M, and 10N04E02K001M executed on December 23, 2005.* http://wdl.water.ca.gov/gw/map/quad_map.cfm?rgpr=1215,385&qdpr=?218,104

California Department of Water Resources. 2006. *Query of Accumulated Precipitation Data for the Rio Linda Weather Center executed January 17, 2006.* http://cdec.water.ca.gov/cgi-progs/staMeta?station_id=RLN

California Rice Commission. 2006. *California Rice – A Circle of Life in Every Grain.* Available on-line at http://www.calrice.org/e7c_informational_brochures.htm

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

Headquarters, U.S. Army Corps of Engineers (HQUSACE). 1992. Clarification and Interpretation of the 1987 Manual. Memorandum from Major General Arthur E. Williams. Dated: 6 March 1992.

Hickman, J. C. (ed.). 1993. *The Jepson Manual: Higher Plants of California.* University of California Press. Berkeley, California.

Hill, J.E., S.R. Roberts, D.M. Brandon, S.C. Scardaci, J.F. Williams, R.G. Mutters. 1997. *Rice Production in California.* Cooperative Extension University of California, Division of Agriculture & Natural Resources Publication 21498

Kollmorgen Instruments Company. 1990. Munsell Soil Color Charts. Kollmorgen Corporation. Baltimore, Maryland.

Natomas Consolidated of California. 1910. *Map of the American Basin in Sacramento and Sutter Counties, California from Surveys Made for Natomas Consolidated of California under Direction of Stephen E. Kieffer, M. AM. Soc. C.E. 1908-1909* dated March 1, 1910"

Reed, P.B., Jr. 1988. National List of Plant Species that Occur in Wetlands: California (Region 0). (Biological Report 88[26.10].) U.S. Fish and Wildlife Service, Ft. Collins, Colorado.

U.S. Department of Agriculture, Natural Resources Conservation Service. 2003. National Soil Survey Handbook, title 430-VI. Available Online: http://soils.usda.gov/technical/handbook.

U.S. Department of Agriculture, Soil Conservation Service. 1988. Soil Survey of Sutter County, California. U.S. Department of Agriculture, Soil Conservation Service. Davis, California.

U.S. Department of Agriculture, Soil Conservation Service. 1992. Hydric Soils List for Sutter County. U.S. Department of Agriculture, Soil Conservation Service, Davis, California.

U.S. Department of Agriculture, Soil Conservation Service. 2005. National Hydric Soils List. Updated August 2005. Available online: http://soils.usda.gov/use/hydric/

U.S. Department of the Army, Corps of Engineers, Sacramento District. September 26, 1990. Regulatory Guidance Letter 90-07. Subject: Clarification of the Phrase "Normal Circumstances" as it Pertains to Cropped Wetlands.

U.S. Department of the Army, Corps of Engineers, Sacramento District. November 30, 2001. Minimum Standard for Acceptance of Preliminary Wetland Delineations.

U.S. Department of the Army, Corps of Engineers, Sacramento District. October 1, 2003. Regulatory Branch Memorandum 2003-04. Subject: "Irrigated" Wetlands.

U.S. Department of the Army, Corps of Engineers, Sacramento District. March 13, 2007. Regulatory Branch Memorandum 2007-01. Subject: "Irrigated" Wetlands.

U.S. Department of the Interior, Geological Survey. 1978. Hydrologic Unit Map, State of California. Geological Survey. Reston, Virginia.

U.S. Department of the Interior, Geological Survey. 1978. "Verona, California" 7.5-minute Quadrangle. Geological Survey. Denver, Colorado.

U.S. Department of the Interior, Geological Survey. 1980. "Taylor Monument, California" 7.5-minute Quadrangle. Geological Survey. Denver, Colorado.

U.S. Department of the Interior, Geological Survey. 1981. "Pleasant Grove, California" 7.5-minute Quadrangle. Geological Survey. Denver, Colorado.

U.S. Department of the Interior, Geological Survey. 1992. "Rio Linda, California" 7.5-minute Quadrangle. Geological Survey. Denver, Colorado.