U.S. ARMY CORPS OF ENGINEERS JURISDICTIONAL DELINEATION

FOR THE

KAISER MANTECA ED EXPANSION PROJECT

SAN JOAQUIN COUNTY, CALIFORNIA

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FEBRUARY 2025 DRAFT

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SUMMARY

Olberding Environmental, Inc. (Olberding Environmental) investigated the geographic extent of areas potentially subject to U.S. Army Corps of Engineers (Corps) jurisdiction under Section 404 of the Clean Water Act (wetlands and other waters) within the designated boundaries of the approximately 32.22-acre Survey Area, located within the City of Manteca, in San Joaquin County. General location maps are provided in Attachment 1, Figures 1-3, while an aerial map of the Survey Area is provided in Attachment 1, Figure 4.

Results of the jurisdictional delineation survey identified a total of 1.82 acres of wetland and other water features. This includes one seasonal wetland, two ephemeral drainages, and one intermittent drainage. The seasonal wetland and ephemeral drainages are fed by direct precipitation and surface runoff from the surrounding landscape. The seasonal wetland was constructed in 2022 as a bio-retention basin. The intermittent drainage feature (Manteca Drainage 5) is part of the City of Manteca's stormwater drainage system and originates further to the east of the Survey Area and is fed by numerous storm drains.

1.0 INTRODUCTION

1.1 Scope

Olberding Environmental investigated the geographic extent of areas potentially subject to Corps jurisdiction under Section 404 of the Clean Water Act (wetlands and other waters) within a portion of the identified boundaries of the Kaiser – Manteca Drainage 5 Property (Survey Area), in San Joaquin County, California. The Survey Area is approximately 32.22 acres in size.

On December 11, 2024, field surveys were performed for the purposes of determining the presence and possible extent of Corps jurisdiction within predetermined boundaries identifying the Survey Area. The Survey Area was investigated in order to make a technical evaluation as to the extent of Corps jurisdiction based on current and historic land use conditions. Visual observations as to the presence or absence of indicators of wetland soil, vegetation and hydrology conditions were made during the investigation of the Survey Area. The boundaries of all potential wetland/water features observed were mapped and further defined in accordance with the Corps regulations and the required methodology described in the 1987 Corps Wetlands Delineation Manual (1987 Manual) and Arid West Supplement to the 1987 Manual (Arid West Supplement, 2008).

1.2 Location

The Survey Area is located north of Highway 120 and east of Interstate 5, in the City of Manteca, California. The Survey Area itself lies within the City Limits of Manteca Attachment 1, Figure 1

depicts the regional location of the Survey Area in San Joaquin County, and Attachment 1, Figure 2 illustrates the vicinity of the Survey Area in relationship to the City of Manteca. Attachment 1, Figure 3 identifies the location of the Survey Area on the USGS 7.5 Quadrangle Map. An aerial photograph of the Survey Area has been included as Attachment 1, Figure 4.

Access to the Survey Area is provided from Highway 120. Take Exit 3 for Airport Way and turn north onto Airport Way. Continue for 1.1 miles and turn right onto West Yosemite Road and travel for 0.4 miles. Then turn left onto St. Dominics Drive and travel for 0.1 miles. After continuing for approximately 90 feet, the Survey Area will be on your right-hand side.

1.3 Survey Area Description

The Survey Area encompasses approximately 32.22 acres in a polygon shape consisting of developed and undeveloped parcels predominantly of non-native grassland habitat with a seasonal wetland, ruderal component, and several drainages, both intermittent and ephemeral. The Survey Area is bounded to the north by Manteca Park Golf Course, to the east and west by non-native annual grassland, and to the south by West Yosemite Avenue. The Survey Area supports six habitat types consisting of annual grassland, ruderal grassland, developed, ephemeral drainage, intermittent drainage, and a seasonal wetland. Three drainages occur in the Survey Area. One drainage is intermittent and flows along the north end of the Survey Area (Drainage 5). There are also two ephemeral drainages located approximately in the center of the Survey Area, to the north of the developed habitat and to the south of the annual grassland.

The topography is relatively flat with elevations ranging from 20 feet in Drainage 5 to 75 feet in the southwest corner. Plants observed during the December 2024 field survey can be viewed in Attachment 2.

The Survey Area mostly consisted of development with a portion of annual grassland to the north which was dominated by species such as wild oat (*Avena fatua),* black mustard (*Brassica nigra),* annual hairgrass (*Deschampsia danthonioides),* telegraph weed (*Heterotheca grandiflora),* and rose clover (*Trifolium hirtum).*There is a single seasonal wetland on the western portion of the Survey Area and is characterized with species such as tall flatsedge (*Cyperus eragrostis),* salt grass (*Distichlis spicata),* and bare ground with moss covering. The vegetation within the two ephemeral drainages that bisect the Survey Area consists of stinkwort (*Dittrichia graveolens*), common sunflower (*Helianthus annuus),* prickly lettuce (*Lactuca serriola),* giant wildrye (*Leymus condensatus),* and Russian thistle (*Salsola tragus).*

3.0 METHODOLOGY

3.1 Overview

Potential wetlands were delineated using Corps' methodology during site investigations conducted in December 2024. The existing landforms as well as associated vegetation, hydrology, and soil conditions were studied to identify areas that would likely contain wetland/waters and/or aquatic habitats. Potential jurisdictional areas were identified on field maps and compared to available aerial photography and topographical maps.

Prior to completing the site survey for this report, site maps, topographic maps, and aerial photographs of the Survey Area were obtained from several sources and reviewed. This information was used in association with the detailed delineation survey to determine the extent and boundaries of wetland features. Resource materials used for the site analysis were as follows:

- *U. S. Geological Survey 7.5-Minute Quadrangle Maps for Manteca, California*
- Google Earth aerial images; and
- Soils map information contained in the Web Soil Survey from the USGS (NRCS 2024).
- The National Hydrology Dataset Online Map Viewer (USGS 2024)

The extent or boundary of wetland habitats was further defined using the 1987 "Corps Wetlands Delineation Manual" (1987 Manual)[1], the "Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region" (Arid West Supplement)[2], routine on-site wetland determination protocol currently in use by the Corps, published Corps of Engineers regulatory guidance letters, and Sacramento District regulatory policy.

3.2 Corps Definitions

Pursuant to the 1987 Manual, key criteria for determining the presence of wetlands are:

a) the presence of inundated or saturated soil conditions resulting from permanent or periodic inundation by ground water or surface water, and

[1] Environmental Laboratory. 1987. "Corps of Engineers Wetlands Delineation Manual." U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi. 100 pp. plus appendices.

[2] Environmental Laboratory. 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, Mississippi. 123 pp.

b) a prevalence of vegetation typically adapted for life in saturated soil conditions (hydrophytic vegetation).

Explicit in the definition is the consideration of three environmental parameters: hydrology, soil, and vegetation. Positive wetland indicators of all three parameters are normally present in wetlands. The assessment of all three parameters enhances the technical accuracy, consistency, and credibility of wetland determination and is required per the 1987 Corps Manual.

Aquatic habitats other than wetlands that are considered to be waters of the United States were also investigated as part of this study. On January 23, 2020, the EPA and the Corps enacted the Navigable Waters Protection Rule (NWPR) to redefine "waters of the United States" to include four categories. However, the EPA and Corps are in receipt of the U.S. District Court for the District of Arizona's August 30, 2021, order vacating and remanding the NWPR in the case of *Pascua Yaqui Tribe v. U.S. Environmental Protection Agency*. On January 18, 2023, the EPA released a "Revised Definition of 'Waters of the United States'" [88 FR 3004]. This ruling largely reverts back to the "pre-2015" ruling but with additional guidance on the definitions of "adjacency" and "significant nexus". The EPA and Corps issued a final rule to amend the final "Revised Definition of 'Waters of the United States'" rule, published in the Federal Register on January 18, 2023. This final rule conforms the definition of "waters of the United States" to the U.S. Supreme Court's May 25, 2023, decision in the case of *Sackett v. Environmental Protection Agency*. Parts of the January 2023 Rule are invalid under the Supreme Court's interpretation of the Clean Water Act in the *Sackett* decision. Therefore, the agencies amended key aspects of the regulatory text to conform it to the Court's decision. The conforming rule was published in the Federal Register (88 FR 61964) and became effective September 8, 2023. Under this ruling, Waters of the U.S. are defined as:

(a)(1) Waters which are:

(i) Currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
(ii) The territorial seas; or
(iii) Interstate waters;

(a)(2) Impoundments of waters otherwise defined as waters of the United States under this definition, other than impoundments of waters identified under paragraph (a)(5) of this section;

(a)(3) Tributaries of waters identified in paragraph (a)(1) or (2) of this section that are relatively permanent, standing, or continuously flowing bodies of water;

(a)(4) Wetlands adjacent to the following waters:

(i) Waters identified in paragraph (a)(1) of this section; or

(ii) Relatively permanent, standing or continuously flowing bodies of water identified in paragraph (a)(2) or (a)(3)(i) of this section and with a continuous surface connection to those waters;

(a)(5) Intrastate lakes and ponds, streams, or wetlands not identified in paragraphs (a)(1) through (4) of this section that are relatively permanent, standing, or continuously flowing bodies of water with a continuous surface connection to the waters identified in paragraph (a)(1) or (a)(3) of this section.

Non-jurisdictional waters.

The following are included as exemptions to "waters of the United States":

(1) waste treatment systems, including treatment ponds or lagoons, designed to meet the requirements of the Clean Water Act;
(2) prior converted cropland;
(3) ditches (including roadside ditches) excavated wholly in and draining only dry land and that do not carry a relatively permanent flow of water;
(4) artificially irrigated areas that would revert to dry land if the irrigation ceased;
(5) artificial lakes or ponds created by excavating or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing;
(6) artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating or diking dry land to retain water for primarily aesthetic reasons;
(7) waterfilled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States; and
(8) swales and erosional features (e.g., gullies, small washes) characterized by low volume, infrequent, or short duration flow.

(b) *Definitions.* In this section, the following definitions apply:

(1) *Adjacent wetlands.* Adjacent means having a continuous surface connection.
(2) *Ditch.* A constructed or excavated channel used to convey water.
(3) *Ephemeral.* Surface water flowing or pooling only in direct response to precipitation (e.g., rain or snow fall).

(4) *High tide line.* The line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along the shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings of characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide.

(5) *Intermittent.* Surface water flowing continuously during certain times of the year and more than in direct response to precipitation (e.g., seasonally when the groundwater table is elevated or when snowpack melts).

(6) *Lakes and ponds, and impoundments of jurisdictional waters.* Standing bodies of open water that contribute surface water flow to territorial seas or traditional navigable waters in a typical year either directly or through one or tributaries, lakes, ponds, and impoundments of jurisdictional waters, or adjacent wetlands. A lake, pond, or impoundment of a jurisdictional water does not lose its jurisdictional status if it contributes to surface water flow to a downstream jurisdictional water in a typical year through a channelized non-jurisdictional surface water feature, through a culvert, dike, spillway, or similar artificial feature, or through a debris pile, boulder field, or similar natural feature. A lake or pond, or impoundment of a jurisdictional waters is also jurisdictional if it is inundated by flooding from territorial seas or traditional navigable waters, tributaries, lakes, ponds, and impoundments of jurisdictional waters, or adjacent wetlands in a typical year.

(7) *Ordinary high-water mark.* That 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.

(8) *Perennial.* Surface water flowing continuously year-round.

(9) *Prior converted cropland.* Any area that prior to December 23, 1985, was drained or otherwise manipulated for the purpose, or having the effect, of making production of an agricultural product possible. An area is no longer considered prior converted cropland for purposes of the CWA when the area is abandoned and has reverted to wetlands, as defined in paragraph (c)(16) of this section. Abandonment occurs when prior converted cropland is not used for, or in support of, agricultural purposes at least one in the immediately preceding five years.

(10) *Snowpack.* Layers of snow that accumulate over extended periods of time in certain geographic regions or at high elevation.

(11) *Tidal waters and waters subject to the ebb and flow of the tide.* Those waters that rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters and waters subject to the

ebb and flow of the tide end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by hydrologic, wind, or other effects.

(12) *Tributary.* A river, stream, or similar naturally occurring surface water channel that contributes surface water flow to the territorial seas or traditional navigable waters in a typical year either directly or through one of more tributaries, lakes, ponds, and impoundments of jurisdictional waters, or adjacent wetlands. A tributary must be perennial or intermittent in a typical year.

(13) *Typical year.* When precipitation and other climatic variables are within the normal periodic range (e.g., seasonally, annually) for the geographic area of the applicable aquatic resource based on a rolling thirty-year period.

(14) *Upland.* Any land area that under normal circumstances does not satisfy all three wetland factors (i.e., hydrology, hydrophytic vegetation, hydric soils) identified in paragraph (c)(16) of this section, and does not lie below the ordinary high-water mark or the high tide line of a jurisdictional water.

(15) *Waste treatment system.* Includes all components, including lagoons and treatment ponds (such as settling or cooling ponds), designed to either convey or retain, concentrate, settle, reduce, or remove pollutants, either actively or passively, from wastewater prior to discharge (or eliminating any such discharge).

(16) *Wetlands.* 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. Wetlands generally include swamps, marshes, bogs, and similar areas.

The Survey Area was also reviewed to assess the potential for qualifying for Section 10 jurisdiction as a navigable water of the United States. Navigable waters of the U.S. are those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce (33 CFR 329, Section 329.4). Section 10 jurisdiction extends to the lateral extent of the ordinary high-water mark (OHWM) on opposing channel banks. Ultimately, the determination of navigability is made by the division engineer (33 CFR, Part 329, Section 329.14).

3.3 Data Collection for Potential Jurisdictional Wetlands/Waters

Data was collected by Olberding Environmental biologists Scott Tidball and Katie Miller for the determination of wetlands/waters on December11th, 2024, as outlined in the methodology section. Specific information on the vegetation, soils, and hydrology were gathered during this survey. Attachment 1, Figure 5 depicts the jurisdictional delineation map of the Survey Area. The purpose of this investigation was to identify and delineate potential jurisdictional waters, including

wetlands. The Survey Area was examined for topographic features, drainages, alterations to site hydrology and areas of recent disturbance. All vascular plant species that were identifiable at the time of the survey were recorded in Attachment 2 of this report and were identified using keys and descriptions in The Jepson Manual (Baldwin 2012).

The habitat types occurring in the Survey Area were characterized according to pre-established categories. In classifying the habitat types on the site, the generalized plant community classification schemas of *A Manual of California Vegetation* (Sawyer, Keeler-Wolf 2009) were consulted. The final classification and characterization of the habitat types found on the Survey Area were based on field observations.

Data was collected on vegetation, soils, and hydrology using wetland determination protocol as described in the 1987 Manual. Both upland and wetland data were collected to distinguish wetland boundaries from the adjacent upland. No soil test pits were taken within potential aquatic features that were confined to channels, thus conforming to the definition of "other waters" of the U.S. (i.e., exhibits a distinct bed and bank, with an OHWM). A total of 6 sample points were established within the boundaries of the Survey Area.

The nearby Stockton Airport National Weather Forecast station measured a total of 14.21 inches of precipitation for the 2023-2024 water year. This is higher than the 20-year average of 12.80 inches (NOAA 2024) for this weather station. Weather conditions on December 11, 2024, included morning fog, which cleared with mid-day temperatures reaching approximately 60 degrees Fahrenheit.

The approximate location and extent of potentially jurisdictional wetlands/waters as well as other relevant data were transferred on to a 1" = 200' scale topographical map of the survey area while in the field. Information obtained at the sample point locations was recorded on modified Corps data sheets included in this report (Attachment 3). Representative photographs of the Survey Area can be viewed in Attachment 4.

4.0 TECHNICAL FINDINGS

The following discussion reports on the hydrology, soil and vegetation conditions observed in the Survey Area during the course of the investigation.

4.1 Vegetation Conditions

The 1987 Manual states that the diagnostic environmental characteristics indicating wetland vegetation conditions are met when the prevalent vegetation (more than 50%) consists of macrophytes that are typically adapted to areas having hydrologic and soil conditions described

above. In addition, hydrophytic species, due to morphological, physiological, and/or reproductive adaptation(s), have the ability to grow, effectively compete, reproduce, and/or persist in anaerobic soil conditions. Indicators of vegetation associated with wetlands include:

1. more than 50% of the dominant species are rated as Obligate ("OBL"), Facultative Wet ("FACW") or Facultative ("FAC") on lists of plant species that occur in wetlands;[3]
2. visual observations of plant species growing in areas of prolonged inundation or soil saturation; and
3. reports in the technical literature indicating the prevalent vegetation is commonly found in saturated soils" (1987 Manual).

In addition, hydrophytic indicators are applied to plant communities using the Arid West Supplement (December 2006) in the following sequence:

1. Apply the dominance test – more than 50% of the dominant species are rated as OBL, FACW, or FAC on lists of plant species that occur in wetlands.
   a. If the plant community passes the dominance test, then the vegetation is hydrophytic and no further vegetation analysis is required.
   b. If the plant community fails the dominance test, but indicators of hydric soil and wetland hydrology are both present, proceed to step 2.
2. Apply the prevalence index – a weighted average wetland indicator status of all plant species (OBL=1, FACW=2, FAC=3, FACU=4, UPL=5). Weighting is by abundance (percent cover). A hydrophytic plant community will result in a prevalence index of 3.0 or less.
   c. If the plant community satisfies the prevalence index, then the vegetation is hydrophytic. No further vegetation analysis is required.
   d. If plant community fails prevalence index, proceed to step 3.
3. Apply morphological adaptations – morphological features which help plants survive prolonged inundation or saturation in the root zone, must occur on more than 50% of the FACU species living in an area where indicators of hydric soil and wetland hydrology are present.

[3] Lichvar, R.W. 2012. The National Wetland Plant List. Indicator Rating Definitions (ERDC/CRREL TR-12-11). U.S. Army Engineer Research and Development Center Cold Regions Research and Engineering Laboratory, Hanover, NH.

Since 2006, the Corps has assumed administrative responsibility for the National Wetland Plant List (NWPL). The Corps initiated a national effort, led by a National Panel (NP) made up of representatives of the four agencies responsible for the NWPL, to update the NWPL indicator status categories, nomenclature, and geographic regions.[4] To more accurately reflect the existing information on plant frequencies, the NP dropped the 1988 numeric rating categories and revised the narrative definitions to be based on ecological descriptions; the plus (+) and minus (–) indicators were also eliminated. The following are the final refined wetland indicator definitions:

OBL (Obligate Wetland Plants) - Almost always occur in wetlands. With few exceptions, these plants (herbaceous or woody) are found in standing water or seasonally saturated soils (14 or more consecutive days) near the surface.

These plants are of four types:

- Submerged (plants that conduct virtually all of their growth and reproductive activity under water),
- Floating (plants that most often grow with the leaves and other vegetative and reproductive organs floating on the water surface),
- Floating-leaved (plants that are rooted in sediment but also have leaves that float on the water surface), and
- Emergent (herbaceous and woody plants that grow with their bases submerged and rooted in inundated sediment or seasonally saturated soil and their upper portions, including most of the vegetative and reproductive organs, growing above the water level).

FACW (Facultative Wetland Plants) - Usually occur in wetlands but may occur in non-wetlands. These plants predominately occur with hydric soils, often in geomorphic settings where water saturates the soils or floods the soil surface at least seasonally.

FAC (Facultative Plants) - Occur in wetlands and non-wetlands. These plants can grow in hydric, mesic[5], or xeric[6] habitats. The occurrence of these plants in different habitats represents responses

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[4] Lichvar, R., and P. Minkin. 2008. Concepts and Procedures for Updating the National Wetland Plant List. ERDC/CRREL TN-08-03. Hanover, NH: U.S. Army Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory. http://libweb.erdc.usace.army.mil/Archimages/2295.PDF.

[5] The mesic habitat description is essentially defined as occurring in a variety of habitats, typically with dense vegetation that shades "damp or moist" soils that are not hydric. In these settings, organic matter, which accumulates as plants decay, moderates soil temperatures, and increases the soil's water-holding capacity.

[6] Nationally, the habitat description "xeric" is based in two different concepts. The xeric habitats of the Arid West typically occur in areas of low rainfall and in what are referred to as desert conditions. The other concept of xeric occurs throughout the remainder

to a variety of environmental variables other than just hydrology, such as shade tolerance, soil pH, and elevation, and they have a wide tolerance of soil moisture conditions.

FACU (Facultative Upland Plants) - Usually occur in non-wetlands but may occur in wetlands. These plants predominately occur on drier or more mesic sites in geomorphic settings where water rarely saturates the soils or floods the soil surface seasonally.

UPL (Upland Plants) - Almost never occur in wetlands. These plants occupy mesic to xeric non-wetland habitats. They almost never occur in standing water or saturated soils. Typical growth forms include herbaceous, shrubs, woody vines, and trees.

Table 1 provides a summary of the wetland plant indicator status categories used to determine if a particular plant species qualifies as a macrophyte which has adapted to areas having hydrologic and soil conditions.

It is important to note that, although there is a high probability that one would expect to find obligate, facultative wet and facultative plants growing in wetlands, there is also a significant possibility that the obligate, facultative wet, and facultative species will occur in areas that do not exhibit wetland soil and/or wetland hydrology conditions.

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of the country in habitats often, but not always, located on hilltops and ridges, on south- or west-facing slopes, or on flatlands with sandy, porous soils. Vegetative cover in xeric habitats is sparser than the vegetation associated with mesic soils. As such, more sunlight reaches the soil surface, creating warmer, drier conditions in the rooting zone. Surface runoff and wind often erode topsoil, maintaining a shallow, excessively well drained to dry soil profile with a low water- holding capacity.

Table 1. Wetland Plant Indicator Status Categories		
Indicator Category	**Symbol**	**Ecological Description**
OBLIGATE WETLAND PLANTS	OBL	Almost always occur in wetlands
FACULTATIVE WETLAND PLANTS	FACW	Usually occur in wetlands, but may occur in non-wetlands
FACULTATIVE PLANTS	FAC	Occur in wetlands and non-wetlands
FACULTATIVE UPLAND PLANTS	FACU	Usually occur in non-wetlands, but may occur in wetlands
UPLAND PLANTS	UPL	Almost never occur in wetlands
*Based upon revised information contained in Army Corps of Engineers 2012 The National Wetland Plant List. Indicator Rating Definitions (ERDC/CRREL TR-12-11)		

4.2 Vegetation Analysis of the Survey Area

The Survey Area supports six habitat types consisting of annual grassland, developed, ephemeral drainage, intermittent drainage, ruderal, and seasonal wetland habitat. In classifying the habitat types in the Survey Area, generalized plant community classification schemes were used (Sawyer, Keeler-Wolf 2009). The final classification and characterization of the habitat types of the Survey Area was based on field observations. A complete list of plant species observed in the Survey Area, with each species' Wetland Plant Indicator Status, can be found in Attachment 2.

4.2.1 Annual Grassland

The northern portion of the Survey Area contains a large area of annual grassland. This portion of the Survey Area is disked regularly to reduce the risk of fire. Despite this, the area has approximately 80% vegetation cover that includes several annual grass and forb species such as Bermuda grass (*Cynodon dactylon*), whitestem filaree (*Erodium moschatum*), brome fescue (*Festuca bromoides*), telegraph weed (*Heterotheca grandiflora*), and rose clover (*Trifolium hirtum*).

4.2.2 Developed

The majority of the Survey Area consists of developed habitat. This includes paved and gravel areas, buildings and structures, and ornamental plantings that are maintained as part of the

landscaping. Many of these ornamental plantings include trees and shrubs such as red maple (*Acer rubrum*), camphor tree (*Cinnamomum camphora*), hydrangea (*Hydrangea macrophylla*), golden rain tree (*Koelreuteria paniculata*), Fremont cottonwood (*Populus fremontii*), valley oak (*Quercus lobata*), Peruvian pepper tree (*Schinus molle*), coast redwood (*Sequoia sempervirens*), and Chinese elm (*Ulmus parvifolia*).

4.2.3 Ephemeral Drainage

There are two ephemeral drainages that occur within the Survey Area which are separated by a box culvert. The ephemeral drainages occur along the north side of the developed portion of the Kaiser medical complex property. The drainages flow to the west and exit the Survey Area before flowing into a box culvert and continuing underground. The ephemeral drainages include dense vegetation throughout bed and banks of the features including black mustard (*Brassica nigra*), ripgut brome (*Bromus diandrus*), watermelon (*Citrullus lanatus* var. *citroides*), Jimson weed (*Datura stramonium*), stinkwort, blue wildrye (*Elymus glaucus*), tall willow herb (*Epilobium brachycarpum*), common sunflower (*Helianthus annuus*), telegraph weed, prickly lettuce (*Lactuca serriola*), and Russian thistle (*Salsola tragus*).

4.2.4 Intermittent Drainage

There is a large intermittent drainage feature that occurs along the northern boundary of the Survey Area. This feature is part of the City of Manteca flood control project and is named Manteca Drainage 5. This feature is located within an excavated channel, and the OHWM sits approximately 10 feet below the surrounding landscape. The banks of the feature are completely unvegetated and there is sparse vegetation along the bed of the feature. This vegetation was dominated by black mustard, barnyard grass (*Echinochloa crus-galli*), weeping lovegrass (*Eragrostis curvula*), watercress (*Nasturtium officinale*), annual bluegrass (*Poa annua*), and curly dock (*Rumex crispus*).

4.2.5 Ruderal

A large ruderal area occurs in the eastern portion of the Survey Area. This area appears to be used for parking and storage by the Kaiser facility and consists of gravel and hard-packed soil with sparse vegetation. The vegetation that is present within this area includes black mustard, stinkwort, and telegraph weed.

4.2.6 Seasonal Wetland

There is one large seasonal wetland located in the northern portion of the Survey Area. This linear feature consists of a constructed bio-retention basin that sits approximately three feet below the surrounding landscape. Historic aerial imagery suggests that the feature was constructed in 2022. Dominant vegetation within this feature includes silvergreen bryum moss (*Bryum argenteum*), tall flat sedge (*Cyperus eragrostis*), salt grass (*Distichlis spicata*), alfalfa (*Medicago sativa*), and cotton-batting plant (*Pseudognaphalium stramineum*).

4.3 Hydrology Conditions

The Corps 1987 Manual states that the diagnostic environmental characteristics indicative of wetland hydrology conditions are: "the area is inundated either permanently or periodically at mean water depths less than or equal to 6.6 feet, or the soil is saturated to the surface at some time during the growing season of the prevalent vegetation" (1987 Manual, p. 14). According to the Manual, indicators of hydrologic conditions that occur in wetlands may include features provided in Table 2.

Table 2. Hydrology Indicators

Primary Indicators	Secondary Indicators
Inundation, Saturation	Oxidized Rhizospheres Associated with Living Roots
Watermarks	Water-Stained Leaves
Drift Lines	FAC-Neutral Test
Water-Borne Sediment Deposits	Local Soil Survey Data
Drainage Patterns Within Wetlands (With Caution)	

Department of the Army, U.S. Army Corps of Engineers, Washington, D.C., *Memorandum - Subject: Clarification and Interpretation of the 1987 Manual*, dated March 8, 1992, provides further clarification that:

> "Areas which are seasonally inundated and/or saturated to the surface for a consecutive number of days for more than 12.5 percent of the growing season are wetlands, provided the soil and vegetation parameters are met. Areas wet between 5 percent and 12.5 percent of the growing season in most years (see Table 5, page 36 of the 1987 Manual) may or may not be wetlands. Areas saturated to the surface for less than 5 percent of the growing season are non-wetlands. Wetland hydrology

exists if field indicators are present as described herein and in the enclosed data sheet."

The presence of wetland hydrology using the Arid West Supplement (December 2006) is dependent on the presence of any one primary indicator or two or more secondary indicators included in Table 3.

Table 3. Arid West Region - Hydrology Indicators

Primary Indicators	Secondary Indicators
Surface Water	Water Marks (riverine)
High Water Table	Sediment Deposits (riverine)
Saturation	Drift Deposits (riverine)
Water Marks (nonriverine)	Drainage Patterns
Sediment Deposits (nonriverine)	Dry-Season Water Table
Drift Deposits (nonriverine)	Thin Muck Surface
Surface Soil Cracks	Crayfish Burrows
Inundation Visible on Aerial Imagery	Saturation Visible on Aerial Imagery
Water-Stained Leaves	Shallow Aquitard
Salt Crust	FAC-Neutral Test
Biotic Crust	
Aquatic Invertebrates	
Hydrogen Sulfide Odor	
Oxidized Rhizospheres along Living Roots	
Presence of Reduced Iron	
Recent Iron Reduction in Plowed Soils	

4.3.1 Hydrologic Analysis of the Survey Area

A total of 6 sample points were examined for positive field indicators of wetland hydrology. During the December 2024, survey, primary indicators were used to determine the wetland/upland boundary in the Survey Area. Three of the sample points contained hydrologic indicators including sediment deposits, biotic crust, aquatic invertebrates, and oxidized rhizospheres along living roots. These primary hydrologic indicators were used to make a determination on the presences of wetland features within the Survey Area.

4.4 Soils Conditions

The Corps' 1987 Manual states that the diagnostic environmental characteristics indicative of wetland soil conditions are met where "soils are present and have been classified as hydric, or they possess characteristics that are associated with reducing soil conditions" (1987 Manual, p. 14). According to the Manual, indicators of soils developed under reducing conditions may include:

1. Organic soils (Histosols),
2. Histic epipedons,
3. Sulfidic material,
4. Aquic or peraquic moisture regime,
5. Reducing soil conditions,
6. Soil colors (chroma of 2 or less),
7. Soil appearing on hydric soils list, and
8. Iron and manganese concretions.

According to the most recent version of the National Technical Committee for Hydric Soils, the criteria to be used by the Corps for what constitutes current hydric soil/wetland soil conditions for the soils found at the Site are:

1. Minimum Saturation at 12" to the surface: 14 consecutive days during the growing season.
2. Minimum Inundation (Flooded or Ponded): Soils that are frequently "ponded" for long duration (15 to 30 consecutive days) or very long duration (> 30 consecutive days) during the growing season, or soils that are frequently "flooded" for long duration or very long duration during the growing season.

According to the Arid West Supplement (September 2008), indicators for hydric soils are presented in three groups. Indicators for “all soils” (A) are used in any soil regardless of texture. Indicators for “sandy soils” (S) are used in soil layers with USDA textures of loamy fine sand or coarser. Indicators for “loamy or clayey soils” (F) are used with soil layers of loamy very fine sand and finer (2006 Arid West Supplement, p.32). Hydric soils can be identified by the following indicators:

1. Histosol (A)
2. Histic Epipedon (A)
3. Black Histic (A)
4. Hydrogen Sulfide (A)
5. Stratified Layers (A)
6. 1 cm Muck (A)
7. Depleted Below Dark Surface (A)
8. Thick Dark Surface (A)
9. Sandy Mucky Mineral (S)
10. Sandy Gleyed Matrix (S)
11. Sandy Redox (S)
12. Stripped Matrix (S)
13. Loamy Mucky Mineral (F)
14. Loamy Gleyed Matrix (F)
15. Depleted Matrix (F)
16. Redox Dark Surface (F)
17. Depleted Dark Surface (F)
18. Redox Depressions (F)
19. Vernal Pools (F)

Where possible, the top 12 inches of the soil profile was examined for hydric characteristics. Such characteristics include the presence of organic soils (Histisols), histic epipedons, aquic or peraquic moisture regime, presence of soil on hydric soil list, mottling indicated by the presence of gleyed or bright spots of color within the soil horizons observed. Mottling of soils usually indicates poor aeration and lack of good drainage. A Munsell soil color charts (Kollmorgen Instr. Corp. 1990) were reviewed to obtain the soil color matrix for each soil sample. The last digit of the Munsell Soil Notation refers to the chroma of the sample. This notation consists of numbers beginning with zero for neutral grays and increasing at equal intervals to a maximum of about 20. Chroma values of the soil matrix which are one or less, or of two or less when mottling is present, are typical of soils which have developed under anaerobic conditions.

In sandy soils, such as alluvial deposits in the bottom of drainage channels, hydric soil indicators include high organic matter content in the surface horizon and streaking of subsurface horizons by organic matter.

4.5 Soil Analysis of the Survey Area

The NRCS (2024) reports two soil types within the Survey Area. A detailed map of the soil for the Survey Area can be found in Attachment 1, Figure 6. More detailed information about the soil types located in the Survey Area can be found in Attachment 5. The soils mapped include the following types.

- **255 – Tinnin loamy coarse sand, 0 to 2 percent slopes**
- **266 – Veritas fine sandy loam, 0 to 2 percent slopes**

The Veritas fine sandy loam is classified as hydric by the Soil Conservation Service (2024). Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing

season to develop anoxic conditions in the upper part.

4.5.1 Soil Analysis of the Survey Area

Soils were analyzed for color within the seasonal wetland areas. A total of 6 soil test pits were dug by shovel to a maximum depth of 12 inches at locations representative of various hydrogeomorphic surface conditions of a seasonal wetland, or at paired upland points.

Within the upland areas, the soil samples were observed to have a chroma of 10 YR with a value and hue of 4/3. The western and middle wetland soil samples were observed to be 10 YR 4/3 with 5% redox concentrations of 5 YR 4/6. The eastern wetland soil sample was observed to have a matrix color of 2.5 Y 5/2 with 2% redox depletion concentrations of 5 Y 3/1. Each of these wetland sample points meet the requirements for Sandy Redox (S5). The presence of hydric soil indicators was used to make a determination on the presence of wetland features within the Survey Area.

5.0 AREAS POTENTIALLY REGULATED BY THE CORPS OF ENGINEERS

5.1 Areas Potentially Subject to Regulation (Wetlands/Waters of the U.S.)

The EPA and Corps regulations define wetlands as "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. Wetlands generally include swamps, marshes, bogs, and similar areas" (40 C.F.R. §230.3(t); 33 C.F.R. §328.3(c)(16)). The term "waters of the United States" are defined in 88 FR 3004 and summarized in Section 2.2 of this report.

5.1.1 Potential Wetlands

Based on information obtained during the December 2024 survey, it was determined that there is one potential wetland feature mapped within the Survey Area, totalling 1.31 acres. Data sheets for theses sample points are included in Attachment 3.

Seasonal wetland 1 (SW 1) is a large, linear, artificially constructed bio-retention basin located near the north end of the Survey Area. Historical aerial imagery on Google Earth shows that the feature was constructed in the spring of 2022. The feature has been excavated to a depth of approximately three feet below the surrounding landscape. A storm drain grate is located in the western portion of the feature, outside of the Survey Area. It appears that this storm-drain empties into Manteca Drainage 5, approximately 140 feet to the north. This feature appears to be regularly disked, like the surrounding annual grassland habitat. However, the feature still contained approximately 50% vegetation cover, and is dominated by species including silvergreen moss, salt

grass, tall flat sedge, and cotton-batting plant. The soil samples within this feature had the consistency of silty-sand. The western sample points had a soil matrix color of 10 YR 4/3 with redox concentrations of 5 YR 4/6. The sample point taken in the eastern portion of the feature had a matrix color of 2.5Y 5/2, with redox depletions of 5Y 3/1. While no ponding or saturation was observed within the feature, the soil samples were moist and other hydrology indicators were present including sediment deposits, biotic crust, aquatic invertebrates, and oxidized rhizospheres along living roots.

5.1.2 Potential Waters

Based on the information obtained during the December survey, it was determined that there are a total of two ephemeral drainages and one intermittent drainage within the Survey Area. The ephemeral drainages total 0.19 ac. and 1,312 ln. ft. and the intermittent drainage total 0.32 ac. and 1,125 ln. ft. The ephemeral drainages were characterized by an inconsistent OHWM or signs of flow, whereas the intermittent features contained a defined bed and bank throughout the feature with recent signs of flow or water flowing through the drainage during the survey event. A brief description of each of the drainages is below.

An ephemeral drainage feature flows west, across the northern part of the Kaiser medical facilities. This feature has been artificially constructed to allow water to drain from the surrounding landscape, into an underground storm drainage system. The drainage is split by a box culvert that runs under a gravel access road. The eastern portion of this drainage has been labeled ED 1A, and the western portion has been labeled ED 1B. Water flows to the southwest corner of these drainage features where they enter a box culvert located outside of the Survey Area, and flow underground into the stormwater drainage system. A berm has been built along the top-of-bank of the features to a height of four – six feet. The ephemeral drainages include dense vegetation such as Russian thistle and mustard throughout the bed and banks of the features.

An intermittent drainage flows along the north boundary of the Survey Area. This feature is a portion of the Manteca Drainage 5 canal that is part of the City of Manteca's stormwater drainage system. This feature enters the Survey Area from the east, and flows west out of the Survey Area. The feature has been excavated approximately ten feet below the surrounding landscape. The banks of the feature are unvegetated and consist of loose sandy slopes. Patches of vegetation occur throughout the bed of the feature, but it is largely unvegetated.

5.1.3 Section 10 Navigable Waters

There are no Section 10 Navigable Waters on the Survey Area.

5.2 Areas Potentially Excluded from Regulation under Section 404

5.2.1 Discretionary Exemptions

A number of exemptions from Section 404 Clean Water Act regulations exist for waters of the United States. These exemptions fall into two basic categories: (1) discretionary and (2) non-discretionary.

According to the 2023 EPA definition of "Waters of the U.S." [88 FR 3004], certain areas which may meet the technical definition of a wetland are generally not regulated. Such areas include:

(1) waste treatment systems, including treatment ponds or lagoons, designed to meet the requirements of the Clean Water Act;
(2) prior converted cropland;
(3) ditches (including roadside ditches) excavated wholly in and draining only dry land and that do not carry a relatively permanent flow of water;
(4) artificially irrigated areas that would revert to dry land if the irrigation ceased;
(5) artificial lakes or ponds created by excavating or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing;
(6) artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating or diking dry land to retain water for primarily aesthetic reasons;
(7) waterfilled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States; and
(8) swales and erosional features (e.g., gullies, small washes) characterized by low volume, infrequent, or short duration flow.

5.2.2 Application of Discretionary Exemptions

Based on the description above, it is our determination that the ephemeral drainage features (ED 1A and ED 1B) would fall under Exemptions (3) and (8) in that they are ditches excavated wholly in and draining only dry land and that do not carry a relatively permanent flow of water. While portions of these features contained a defined bed and bank and signs of flow, these indicators were not evident throughout the entirety of these features, which indicates a low volume, infrequent, and short duration of flow.

It is our determination that feature SW 1 would fall under Exemption (5) in that the feature was constructed as a bio-retention basin and functions as a settling basin. There is a storm grate in the western part of the feature, outside of the Survey Area, that drains water from the wetland into Manteca Drainage 5.

Additionally, a delineation of the adjacent, upstream portion of Manteca Drainage 5 on the neighboring property was verified on December 22, 2022 (SPK-2022-00525). This delineation determined that Manteca Drainage 5 did not fall under Corps jurisdiction. The language within the Approved Jurisdictional Determination From issued from the Corps states,

"*Irrigation Drainage Ditch 0.048-acres. SSJID Irrigation Lateral Tb-AA is utilized to discharge SSJID irrigation water onto the project boundary. While the Irrigation Drainage Ditch does collect runoff from the subject property, there is no documented evidence of drainage from the Irrigation Drainage Ditch segment through SSJID Irrigation Lateral Tb-AA, SSJID Drain AA, SSJID Dual-Use Lateral, French Camp Outlet Canal, French Camp Slough and into the San Joaquin River, a navigable water of the US in its lower reaches.*"

To be consistent with previous determinations, we believe that the portion of Manteca Drainage 5 that flows through this Survey Area would also not fall under Corps jurisdiction.

5.2.3 Isolated Wetlands/Waters

The U.S. Supreme Court ruled that isolated, non-navigable wetlands and other waters are not subject to federal regulation even if they provide habitat for migratory birds and endangered species. *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (hereinafter SWANCC) (No. 99-1178). The Corps has attempted to define isolated as "not having hydrological connectivity to other jurisdictional features." Based on this determination, the Court has eliminated the need to secure fill permits from the Corps under Section 404 of the Clean Water Act when isolated wetlands are encountered. Nevertheless, the decision is by no means a blanket repeal of Section 404. Every landowner's on-the-ground situation is unique and must be analyzed individually. In the aftermath of this decision, each landowner must still carefully assess its situation to determine whether its survey area contains features which qualify as "waters of the U.S." It is therefore recommended that a jurisdictional delineation be verified by the Corps rather than making an assumption regarding the potential regulation of a specific wetland/water feature.

The RWQCB has indicated that they intend to continue regulation of isolated wetlands under the Porter-Cologne Act (Water Code Section 13260). Their interpretation of the Court ruling indicates that the SWANCC decision has no bearing on the RWQCB's regulation of "waters of the state" and as such they will continue to issue waste discharge requirements (WDRs) in lieu of a Section 401 Certification which is required when the Corps issues a Section 404 permit.

5.2.4 Application of Isolated Waters Exemptions

Based on the description above, it is our determination that the aquatic features identified within the Survey Area would fall under the isolated waters exemption. Based on the Corps determination of the adjacent property,

"*While the Irrigation Drainage Ditch* [Manteca Drainage 5] *does collect runoff from the subject property, there is no documented evidence of drainage from the Irrigation Drainage Ditch segment through SSJID Irrigation Lateral Tb-AA, SSJID Drain AA, SSJID Dual-Use Lateral, French Camp Outlet Canal, French Camp Slough and into the San Joaquin River, a navigable water of the US in its lower reaches.*"

The seasonal wetland feature (SW 1) is directly connected to Manteca Drainage 5 via a storm drain, and the intermittent drainage features (ED 1A and ED 1B) flow into an underground stormwater drainage system at the edge of the Survey Area. Therefore, these features are not hydrologically connected to other jurisdictional features.

6.0 CONCLUSIONS

Results of the field delineation conducted by Olberding Environmental in December 2024 identified the presence of one wetland feature totaling 1.31 ac and three other water features totaling 0.51 ac and 2,437 ln. ft. Details of the aquatic features identified in the Survey Area are included in Table 4 below.

The seasonal wetland feature (SW 1) is located in the northern portion of the Survey Area and consists of an artificially constructed bio-retention basin. The feature has been excavated to approximately three feet below the surrounding landscape. The wetland feature has a prevalence of hydrophytic vegetation, hydric soils, and contained primary hydrologic indicators. The feature contains a storm drain in the western portion of the feature, outside of the Survey Area. It appears that this storm-drain empties into the Manteca Drainage 5 feature located to the north. It is our determination that the seasonal wetland feature would fall under Exemption (5), discussed in Section 5.2.1, in that the feature was constructed as a bio-retention basin and functions as a settling basin.

The Manteca Drainage 5 feature is an intermittent drainage that flows along the northern boundary of the Survey Area. This feature contained areas of ponded and flowing water during the December survey and contained evidence of flow and a well-defined bed and bank throughout its course. A delineation of the adjacent, upstream portion of this feature was verified in 2022 (SPK-2022-00525) and was determined to not fall under Corps jurisdiction due to a lack of downstream connectivity to any Traditional Navigable Water. As there have not been any changes in conditions

to this adjacent portion of this feature, the section of the Manteca Drainage 5 that flows through this Survey Area would also lack any downstream connectivity to a Traditional Navigable Water.

The two ephemeral drainage features (ED 1A and ED 1B) contained some evidence of flow and portions of the channels contained a defined bed and bank. However, these indicators were not present throughout most of the drainage course. It is our determination that the ephemeral drainage features would fall under Exemptions (3) and (8), discussed in Section 5.2.1, in that they are ditches excavated wholly in and draining only dry land and that do not carry a relatively permanent flow of water. While portions of these features contained a defined bed and bank and signs of flow, these indicators were not evident throughout the entirety of these features, which indicates a low volume, infrequent, and short duration of flow.

It is our determination that feature SW 1 would fall under Corps Exemption (5), features ED 1A and ED 1B would fall under Exemptions (3) and (8), and the adjacent, upstream portion of Manteca Drainage 5 was previously determined to not fall under Corps jurisdiction, as per the language within the Approved Jurisdictional Determination From issued from the Corps states,

"*Irrigation Drainage Ditch 0.048-acres. SSJID Irrigation Lateral Tb-AA is utilized to discharge SSJID irrigation water onto the project boundary. While the Irrigation Drainage Ditch does collect runoff from the subject property, there is no documented evidence of drainage from the Irrigation Drainage Ditch segment through SSJID Irrigation Lateral Tb-AA, SSJID Drain AA, SSJID Dual-Use Lateral, French Camp Outlet Canal, French Camp Slough and into the San Joaquin River, a navigable water of the US in its lower reaches.*"

To be consistent with previous determinations, we believe that the portion of Manteca Drainage 5 that flows through this Survey Area would also not fall under Corps jurisdiction.

Table 4. Aquatic Features	
Wetlands	
Seasonal Wetland (SW) 1	1.31 ac
TOTAL WETLAND FEATURES	**1.31 ac**
Other Waters	
Ephemeral Drainage (ED) 1A	0.12 ac, 945 ln. ft.
ED 1B	0.07 ac, 367 ln. ft.
Intermittent Drainage (Manteca Drainage 5)	0.32 ac, 1,125 ln. ft.
TOTAL OTHER WATER FEATURES	**0.51 ac, 2,473 ln. ft.**
TOTAL AQUATIC FEATURES	**1.82 ac, 2,473 ln. ft.**

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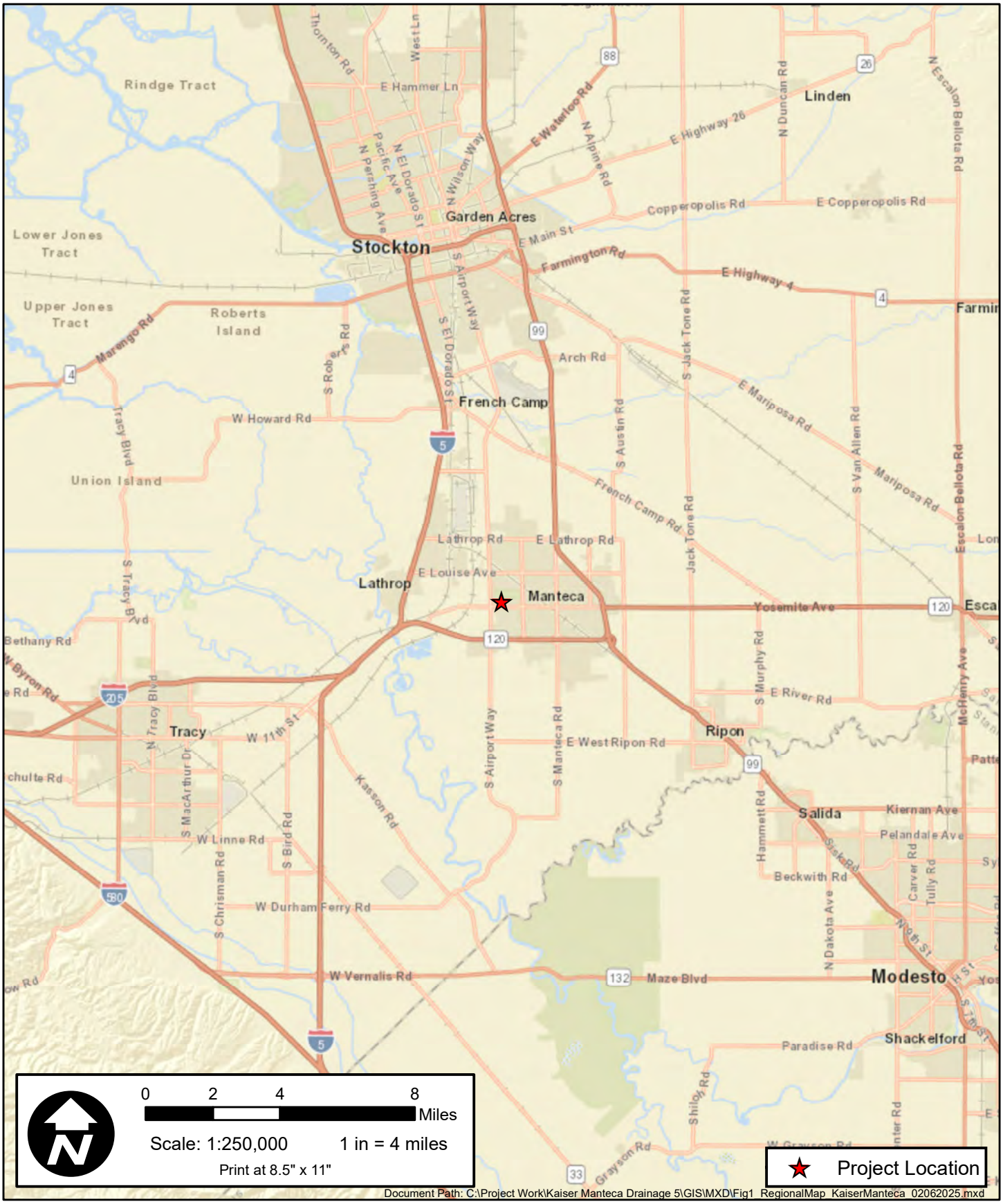
ATTACHMENTS

ATTACHMENT 1
FIGURES



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OLBERDING -ENVIRONMENTAL-
193 Blue Ravine Road, Ste. 165
Folsom, CA 95630
Phone: (916) 985-1188

Figure 1: Regional Map
Kaiser Manteca ED Expansion Project
San Joaquin County, California

Revision Date: 02/06/2025

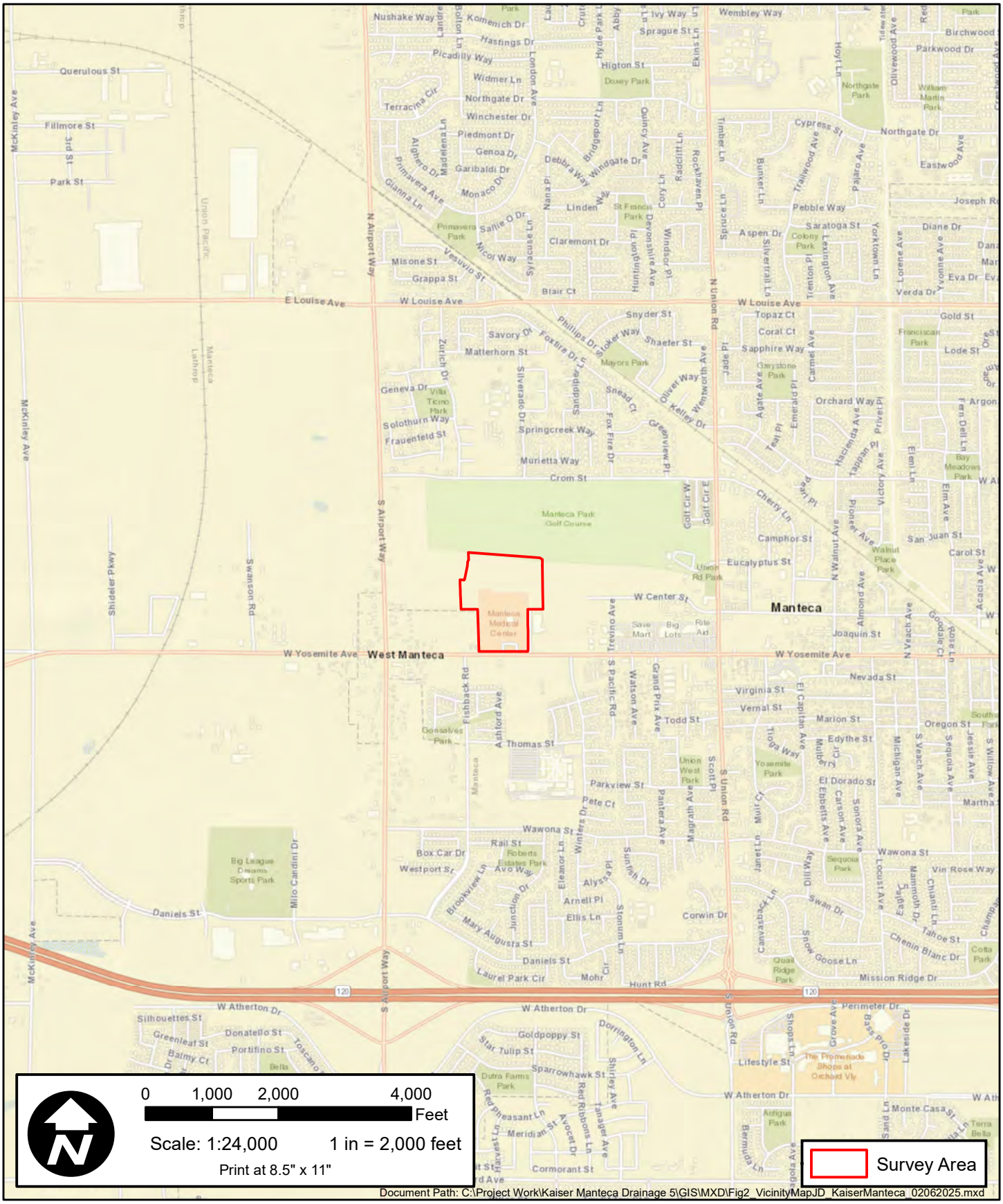

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Figure 2: Vicinity Map
Kaiser Manteca ED Expansion Project
San Joaquin County, California

Revision Date: 02/06/2025

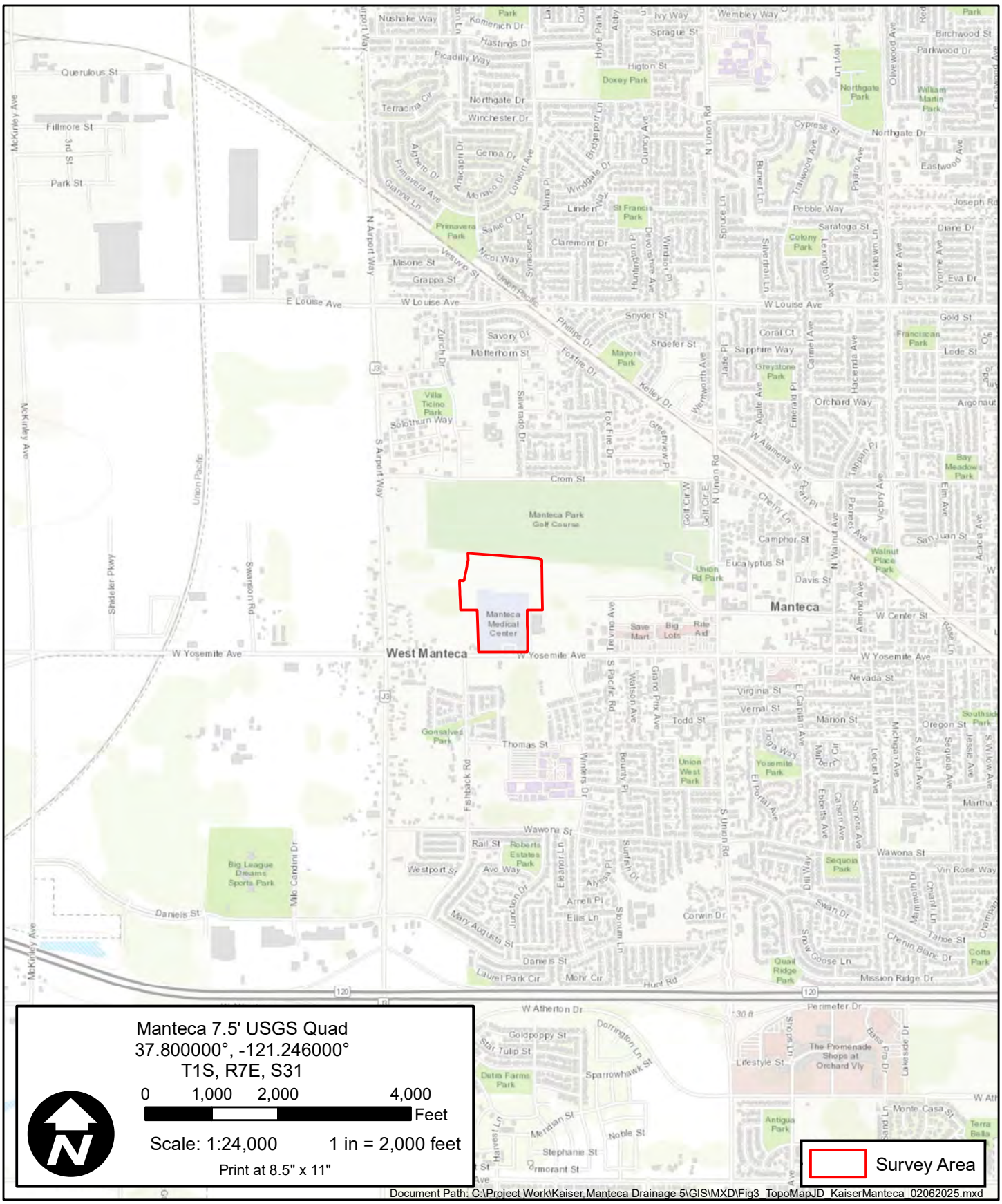

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Figure 3: USGS Topographic Map
Kaiser Manteca ED Expansion Project
San Joaquin County, California

Revision Date: 02/06/2025

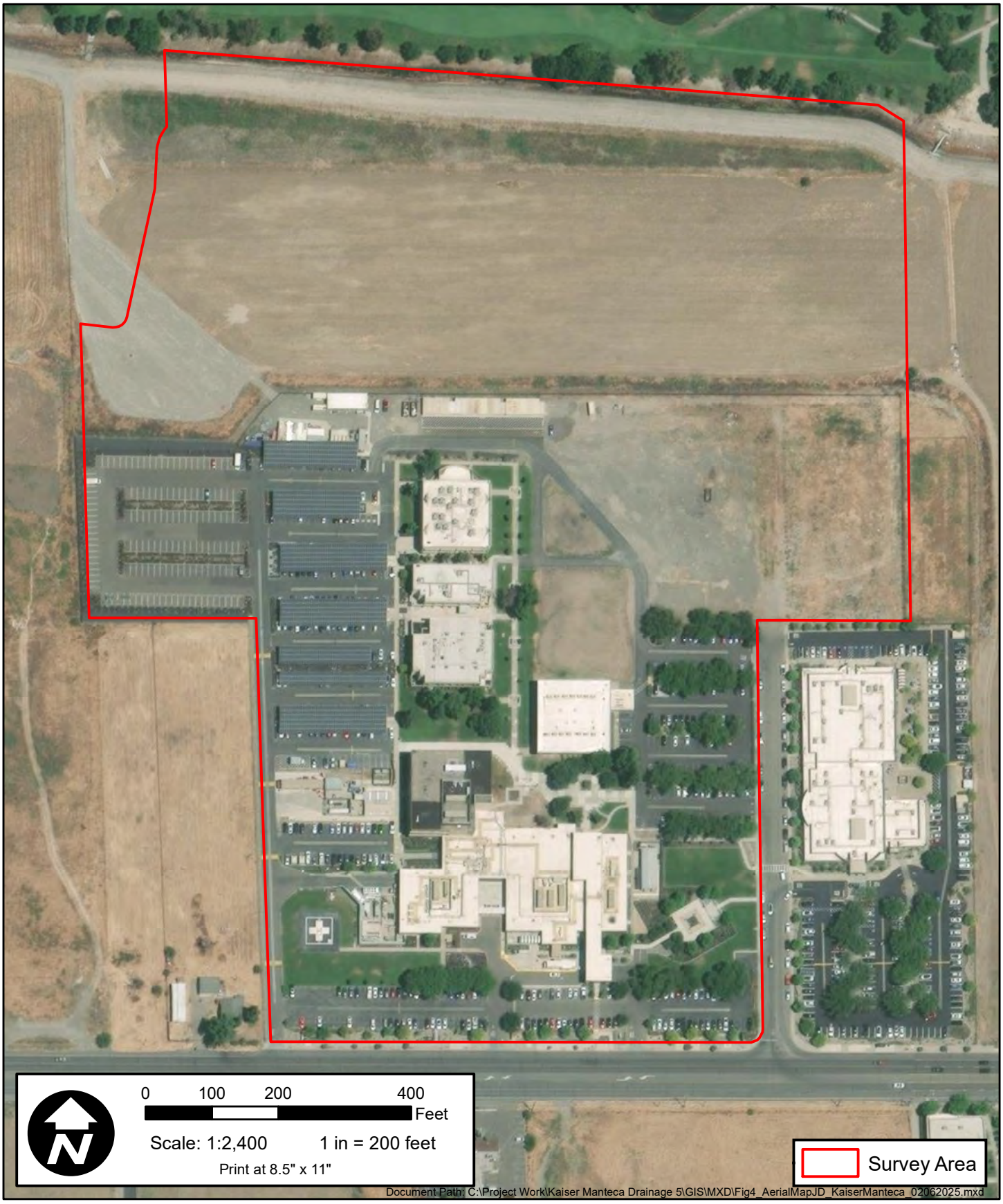

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Figure 4: Aerial Map
Kaiser Manteca ED Expansion Project
San Joaquin County, California

Revision Date: 02/06/2025

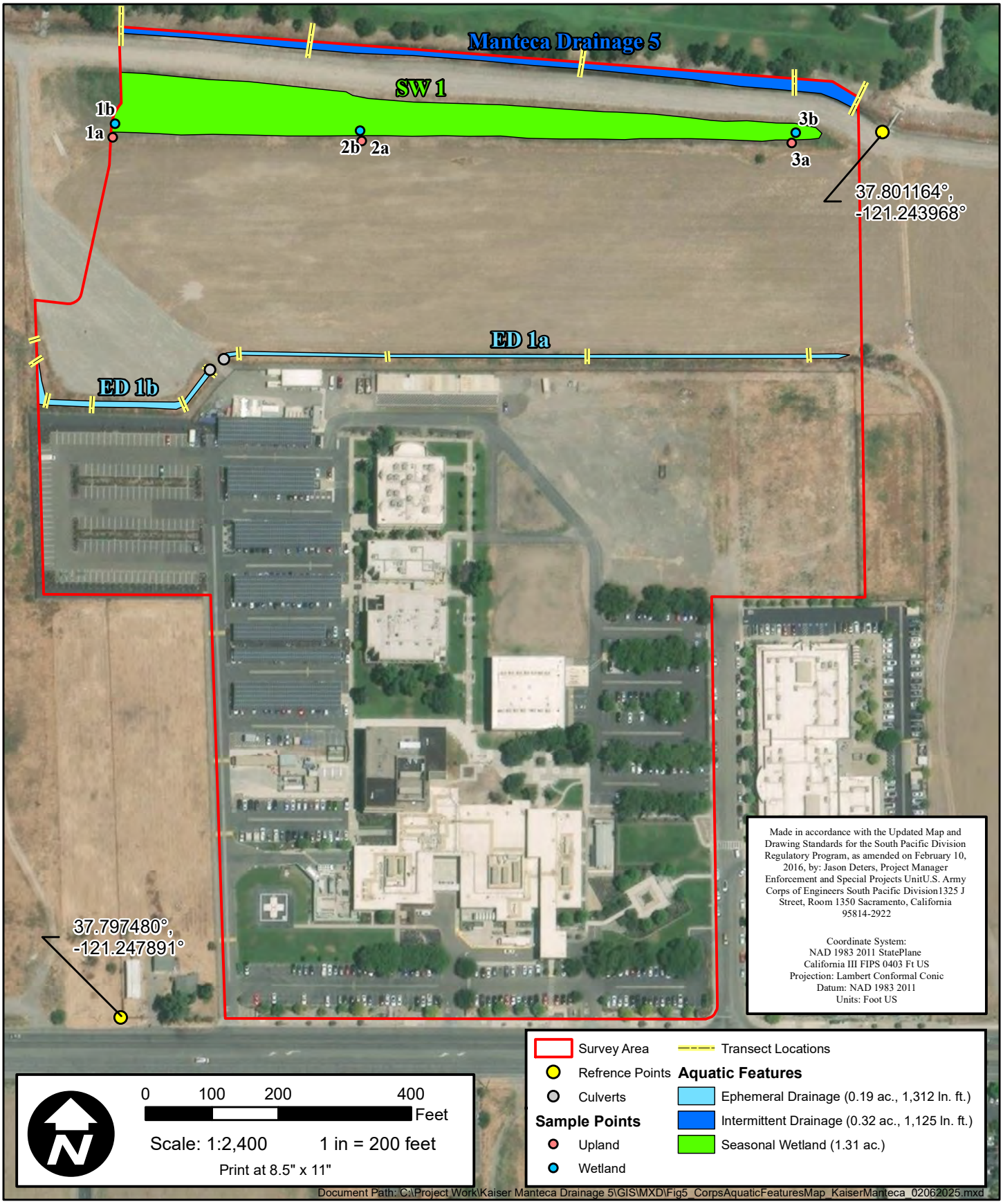

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Figure 5: Corps Jurisdictional Delineation Map
Kaiser Manteca ED Expansion Project
San Joaquin County, California

Revision Date: 02/06/2025

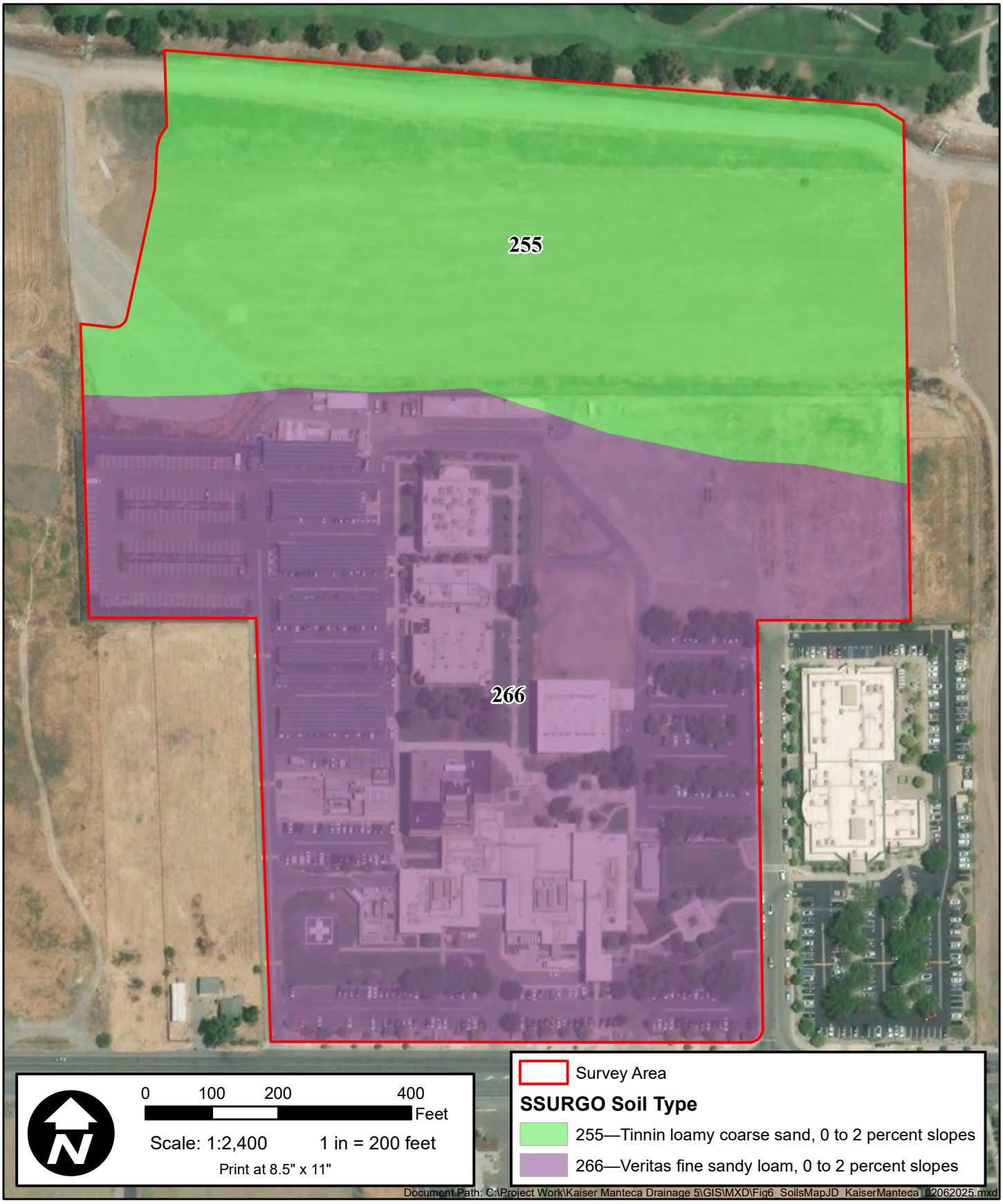

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Figure 6: Soils Map
Kaiser Manteca ED Expansion Project
San Joaquin County, California

Revision Date: 02/06/2025

ATTACHMENT 2
PLANT LIST

Attachment 2: Kaiser Manteca Drainage 5 Property – Plant Species Observed (December 2024)

Species Name	Common Name	Indicator Status
Acer rubrum	red maple	NL
Amaranthus sp.	amaranth	-
Avena fatua	wild oat	NL
Brassica nigra	black mustard	NL
Bromus diandrus	ripgut brome	NL
Bryum argenteum	silvergreen moss	NL
Centaurea solstitialis	yellow star thistle	NL
Cinnamonomum camphora	camphor tree	UPL
Citrullus lanatus var. *citroides*	watermellon	UPL
Cynodon dactylon	Bermuda grass	FACU
Cyperus eragrostis	tall flat sedge	FACW
Datura stramonium	Jimson weed	NL
Deschampsia danthonioides	annual hair grass	FACW
Distichlis spicata	salt grass	FAC
Dittrichia graveolens	stinkwort	NL
Echinochloa crus-galli	barnyard grass	FACW
Elymus glaucus	blue wild rye	FACU
Epilobium brachycarpum	tall willow herb	FAC
Eragrostis curvula	weeping lovegrass	NL
Erigeron canadensis	Canada horseweed	FACU
Erodium moschatum	whitestem filaree	NL
Eucalyptus globulus	blue gum	NL
Festuca bromides	brome fescue	FACU
Helianthus annuus	common sunflower	FACU
Heterotheca grandiflora	telegraph weed	NL
Hydrangea macrophylla	hydrangea	NL
Juglans nigra	black walnut	UPL
Koelreuteria paniculata	golden rain tree	NL
Lactuca serriola	prickly lettuce	FACU
Medicago sativa	alfalfa	UPL
Melilotus albus	white sweetclover	NL
Nasturtium officinale	watercress	OBL
Pinus sabiniana	gray pine	NL
Poa annua	annual blue grass	FAC
Populus fremontii	Fremont cottonwood	FAC
Pseudognaphalium stramineum	cotton-batting plant	FAC
Quercus agrifolia	coast live oak	NL
Quercus lobata	valley oak	FACU
Quercus robur	English oak	NL
Rumex crispus	curly dock	FAC
Salsola tragus	prickly Russian thistle	FACU
Schinus molle	Peruvian pepper tree	FACU
Sequoia sempervirens	coast redwood	NL
Trifolium hirtum	rose clover	NL
Ulmus parvifolia	Chinese elm	UPL

ATTACHMENT 3
WETLAND DELINEATION DATA FORMS

WETLAND DETERMINATION DATA FORM – Arid West Region

Project Site: Kaiser - Manteca Drainage 5 City/County: Manteca/San Joaquin Sampling Date: 12/11/2024

Applicant/Owner: _____ State: CA Sampling Point: 1A

Investigator(s): Olberding Environmenal INC Section, Township, Range: _____

Landform (hillslope, terrace, etc.): bio-retention basin Local relief (concave, convex, none): convex Slope (%): 1

Subregion (LRR): _____ Lat: 37.801112° Long: -121.247997° Datum: _____

Soil Map Unit Name: Tinnin loamy coars sand, 0 to 2 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☒, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ 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 ☒	**Is the Sampled Area within a Wetland?**	**Yes ☐ No ☒**
Wetland Hydrology Present?	Yes ☐	No ☒		

Remarks: The feature is artificially excavated and the surface is regularly disked, creating significantly disturbed soils.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
50% = _____, 20% = _____	_____	= Total Cover	
Sapling/Shrub Stratum (Plot size:_____)			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
50% = _____, 20% = _____	_____	= Total Cover	
Herb Stratum (Plot size:_____)			
1. *Heterotheca grandiflora*	10	no	NL (UPL)
2. *Erodium moschatum*	50	yes	NL (UPL)
3. *Distichlis spicata*	10	no	FAC
4. *Trifolium hirtum*	5	no	NL (UPL)
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
50% = 38, 20% = 15	75	= Total Cover	
Woody Vine Stratum (Plot size:_____)			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
50% = _____, 20% = _____	_____	= Total Cover	
% Bare Ground in Herb Stratum 25	% Cover of Biotic Crust _____		

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	_____	x1 =	_____
FACW species	_____	x2 =	_____
FAC species	_____	x3 =	_____
FACU species	_____	x4 =	_____
UPL species	_____	x5 =	_____
Column Totals:	_____ (A)		_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[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: Vegetation dominated by Erodium and bare ground.

Project Site: Kaiser - Manteca Drainage 5

SOIL

Sampling Point: 1A

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	10 YR 4/3	100					silty 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 Soils Present? **Yes** ☐ **No** ☒

Remarks: No redox concentrations present.

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 ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? **Yes** ☐ **No** ☒

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

Remarks: No wetland hydrology indicators present.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project Site: Kaiser - Manteca Drainage 5 City/County: Manteca/San Joaquin Sampling Date: 12/11/2024

Applicant/Owner: _____ State: CA Sampling Point: 1B

Investigator(s): Olberding Environmenal INC Section, Township, Range: _____

Landform (hillslope, terrace, etc.): bio-retention basin Local relief (concave, convex, none): concave Slope (%): 1

Subregion (LRR): _____ Lat: 37.801165° Long: -121.247980° Datum: _____

Soil Map Unit Name: Tinnin loamy coars sand, 0 to 2 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☒, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ 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 ☐	**Is the Sampled Area within a Wetland?**	**Yes ☒ No ☐**
Wetland Hydrology Present?	Yes ☒	No ☐		

Remarks: The feature is artificially excavated and the surface is regularly disked, creating significantly disturbed soils.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____			
2. _____			
3. _____			
4. _____			
50% = _____, 20% = _____		= Total Cover	
Sapling/Shrub Stratum (Plot size:_____)			
1. _____			
2. _____			
3. _____			
4. _____			
5. _____			
50% = _____, 20% = _____		= Total Cover	
Herb Stratum (Plot size:_____)			
1. *Distichlis spicata*	30	yes	FAC
2. *Pseudognaphalium stramineum*	5	no	FAC
3. *Dittrichia graveolens*	1	no	NL (UPL)
4. *Melilotus albus*	2	no	NL (UPL)
5. *Erodium moschatum*	3	no	NL (UPL)
6. _____			
7. _____			
8. _____			
50% = 20, 20% = 8	41	= Total Cover	
Woody Vine Stratum (Plot size:_____)			
1. _____			
2. _____			
50% = _____, 20% = _____		= Total Cover	
% Bare Ground in Herb Stratum 59		% Cover of Biotic Crust _____	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[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: Bareground includes silvergreen moss (Bryum argenteum)

Project Site: Kaiser - Manteca Drainage 5

SOIL

Sampling Point: 1B

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	10 YR 4/3	95	5 YR 4/6	5	C	PL	silty 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 Soils Present? **Yes** ☒ **No** ☐

Remarks: Soils meet the requirements for Sandy Redox (S5).

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	☒	Depth (inches):	
Water Table Present?	Yes	☐	No	☒	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	☐	No	☒	Depth (inches):	

Wetland Hydrology Present? **Yes** ☒ **No** ☐

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

Remarks: Contained numerous aquatic invertebrate remains throughout the feature.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project Site: Kaiser - Manteca Drainage 5 City/County: Manteca/San Joaquin Sampling Date: 12/11/2024

Applicant/Owner: _____ State: CA Sampling Point: 2A

Investigator(s): Olberding Environmenal INC Section, Township, Range: _____

Landform (hillslope, terrace, etc.): bio-retention basin Local relief (concave, convex, none): convex Slope (%): 1

Subregion (LRR): _____ Lat: 37.801103° Long: -121.246693° Datum: _____

Soil Map Unit Name: Tinnin loamy coars sand, 0 to 2 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☒, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ 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 ☒	**Is the Sampled Area within a Wetland?**	**Yes ☐ No ☒**
Wetland Hydrology Present?	Yes ☐	No ☒		

Remarks: The feature is artificially excavated and the surface is regularly disked, creating significantly disturbed soils.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____			
2. _____			
3. _____			
4. _____			
50% = _____, 20% = _____		= Total Cover	
Sapling/Shrub Stratum (Plot size:_____)			
1. _____			
2. _____			
3. _____			
4. _____			
5. _____			
50% = _____, 20% = _____		= Total Cover	
Herb Stratum (Plot size:_____)			
1. *Festuca bromides*	40	yes	FACU
2. *Heterotheca grandiflora*	15	yes	NL (UPL)
3. *Trifolium hirtum*	10	no	NL (UPL)
4. _____			
5. _____			
6. _____			
7. _____			
8. _____			
50% = 33, 20% = 13	65	= Total Cover	
Woody Vine Stratum (Plot size:_____)			
1. _____			
2. _____			
50% = _____, 20% = _____		= Total Cover	
% Bare Ground in Herb Stratum 35		% Cover of Biotic Crust _____	

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	_____	x1 =	_____
FACW species	_____	x2 =	_____
FAC species	_____	x3 =	_____
FACU species	_____	x4 =	_____
UPL species	_____	x5 =	_____
Column Totals:	_____ (A)		_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[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: Vegetation dominated by brome fescue, telegraph weed, and bare ground.

Project Site: Kaiser - Manteca Drainage 5

SOIL

Sampling Point: 2A

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	10 YR 4/3	100					silty 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 Soils Present? **Yes** ☐ **No** ☒

Remarks: No redox concentrations present.

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 ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? **Yes** ☐ **No** ☒

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

Remarks: No wetland hydrology indicators present.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project Site: Kaiser - Manteca Drainage 5 City/County: Manteca/San Joaquin Sampling Date: 12/11/2024

Applicant/Owner: _____ State: CA Sampling Point: 2B

Investigator(s): Olberding Environmenal INC Section, Township, Range: _____

Landform (hillslope, terrace, etc.): bio-retention basin Local relief (concave, convex, none): concave Slope (%): 1

Subregion (LRR): _____ Lat: 37.801142° Long: -121.246702° Datum: _____

Soil Map Unit Name: Tinnin loamy coars sand, 0 to 2 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☒, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ 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 ☐	**Is the Sampled Area within a Wetland?**	**Yes ☒ No ☐**
Wetland Hydrology Present?	Yes ☒	No ☐		

Remarks: The feature is artificially excavated and the surface is regularly disked, creating significantly disturbed soils.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____			
2. _____			
3. _____			
4. _____			
50% = _____, 20% = _____		= Total Cover	
Sapling/Shrub Stratum (Plot size:_____)			
1. _____			
2. _____			
3. _____			
4. _____			
5. _____			
50% = _____, 20% = _____		= Total Cover	
Herb Stratum (Plot size:_____)			
1. *Pseudognaphalium stramineum*	10	yes	FAC
2. *Distichlis spicata*	35	yes	FAC
3. *Medicago sativa*	5	no	UPL
4. _____			
5. _____			
6. _____			
7. _____			
8. _____			
50% = 25, 20% = 10	50	= Total Cover	
Woody Vine Stratum (Plot size:_____)			
1. _____			
2. _____			
50% = _____, 20% = _____		= Total Cover	
% Bare Ground in Herb Stratum 50		% Cover of Biotic Crust _____	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

☒ Dominance Test is >50%

☐ Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[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: Vegetation is dominated by salt grass, cotton-bating plant, and bare ground.

Project Site: Kaiser - Manteca Drainage 5

SOIL

Sampling Point: 2B

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	10 YR 4/3	95	5 YR 4/6	5	C	M	silty 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 Soils Present? **Yes** ☒ **No** ☐

Remarks: Soils meet the requirements for Sandy Redox (S5).

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 ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? **Yes** ☒ **No** ☐

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

Remarks: Contained numerous aquatic invertebrate remains throughout the feature.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project Site: Kaiser - Manteca Drainage 5 City/County: Manteca/San Joaquin Sampling Date: 12/11/2024

Applicant/Owner: _____ State: CA Sampling Point: 3A

Investigator(s): Olberding Environmenal INC Section, Township, Range: _____

Landform (hillslope, terrace, etc.): bio-retention basin Local relief (concave, convex, none): convex Slope (%): 1

Subregion (LRR): _____ Lat: 37.801110° Long: -121.244452° Datum: _____

Soil Map Unit Name: Tinnin loamy coars sand, 0 to 2 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☒, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ 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 ☒	**Is the Sampled Area within a Wetland?**	**Yes ☐ No ☒**
Wetland Hydrology Present?	Yes ☐	No ☒		

Remarks: The feature is artificially excavated and the surface is regularly disked, creating significantly disturbed soils.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
50% = _____, 20% = _____	_____	= Total Cover	
Sapling/Shrub Stratum (Plot size:_____)			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
50% = _____, 20% = _____	_____	= Total Cover	
Herb Stratum (Plot size:_____)			
1. *Epilobium brachycarpum*	5	no	FAC
2. *Heterotheca grandiflora*	2	no	NL (UPL)
3. *Erigeron canadensis*	10	yes	FACU
4. *Festuca bromides*	20	yes	FACU
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
50% = 19, 20% = 7	37	= Total Cover	
Woody Vine Stratum (Plot size:_____)			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
50% = _____, 20% = _____	_____	= Total Cover	
% Bare Ground in Herb Stratum 63	% Cover of Biotic Crust _____		

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	_____	x1 =	_____
FACW species	_____	x2 =	_____
FAC species	_____	x3 =	_____
FACU species	_____	x4 =	_____
UPL species	_____	x5 =	_____
Column Totals:	_____ (A)		_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[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: Bare ground includes silvergreen moss (Bryum argenteum).

Project Site: Kaiser - Manteca Drainage 5

SOIL

Sampling Point: 3A

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	10 YR 4/3	100					silty 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 Soils Present? **Yes** ☐ **No** ☒

Remarks: No redox concentrations present.

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 ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? **Yes** ☐ **No** ☒

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

Remarks: No wetland hydrology indicators present.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project Site: Kaiser - Manteca Drainage 5 City/County: Manteca/San Joaquin Sampling Date: 12/11/2024

Applicant/Owner: _____ State: CA Sampling Point: 3B

Investigator(s): Olberding Environmenal INC Section, Township, Range: _____

Landform (hillslope, terrace, etc.): bio-retention basin Local relief (concave, convex, none): concave Slope (%): 1

Subregion (LRR): _____ Lat: 37.801151° Long: -121.244433° Datum: _____

Soil Map Unit Name: Tinnin loamy coars sand, 0 to 2 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☒, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ 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 ☐	**Is the Sampled Area within a Wetland?**	**Yes ☒ No ☐**
Wetland Hydrology Present?	Yes ☒	No ☐		

Remarks: The feature is artificially excavated and the surface is regularly disked, creating significantly disturbed soils.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____			
2. _____			
3. _____			
4. _____			
50% = _____, 20% = _____		= Total Cover	
Sapling/Shrub Stratum (Plot size:_____)			
1. _____			
2. _____			
3. _____			
4. _____			
5. _____			
50% = _____, 20% = _____		= Total Cover	
Herb Stratum (Plot size:_____)			
1. *Distichlis spicata*	90	yes	FAC
2. *Cyperus eragrostis*	3	no	FACW
3. _____			
4. _____			
5. _____			
6. _____			
7. _____			
8. _____			
50% = 45, 20% = 18	93	= Total Cover	
Woody Vine Stratum (Plot size:_____)			
1. _____			
2. _____			
50% = _____, 20% = _____		= Total Cover	
% Bare Ground in Herb Stratum 7	% Cover of Biotic Crust _____		

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[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: Vegetation is dominated by salt grass.

Project Site: Kaiser - Manteca Drainage 5

SOIL

Sampling Point: 3B

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	2.5 Y 5/2	98	5 Y 3/1	2	D	M, PL	silty 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 Soils Present? **Yes** ☒ **No** ☐

Remarks: Soils meet the requirements for Sandy Redox (S5).

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 ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? **Yes** ☒ **No** ☐

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

Remarks: Contained numerous aquatic invertebrate remains throughout the feature.

ATTACHMENT 4
SITE PHOTOGRAPHS

1. Facing west, the photo shows the northern intermittent drainage (Manteca Drainage 5); there was 0-6inches of water present during the time of the December 11, 2024, survey. A cut in the bank can be seen to the left of the shovel that represents the ordinary high water mark.

2. Facing east, the photo shows the top of bank and bank slope of Manteca Drainage 5, the gravel access road in the middle, and the seasonal wetland (SW 1) to the right of the photo.

3. Facing west, the photo shows sample point 2b and the western portion of feature SW 1.

4. Facing west, the photo shows sample point 3b, and the eastern portion of feature SW 1.

5. Facing east, the photo shows a portion of the ephemeral drainage feature ED 1a. The drainage feature contained large amounts of Russian thistle (*Salsola tragus*).

6. Facing southwest, the photo shows the west end of feature ED 1a, and the box culvert that allows water to flow under the gravel access road into feature ED 1b.

7. Facing southwest, the photo shows a portion of feature ED 1b. The feature contains large amounts of Russian thistle.

8. Facing west, the photo shows the culvert, located outside of the Survey Area, where water from feature ED 1b flows underground into the stormwater drainage system.

ATTACHMENT 5
SOILS DATA

San Joaquin County, California

266—Veritas fine sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hhxb
Elevation: 20 to 80 feet
Mean annual precipitation: 11 inches
Mean annual air temperature: 61 degrees F
Frost-free period: 270 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Veritas and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Veritas

Setting

Landform: Fan remnants
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from mixed rock sources

Typical profile

A - 0 to 15 inches: fine sandy loam
Bk - 15 to 54 inches: fine sandy loam
2Bqm - 54 to 70 inches: cemented

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 40 to 60 inches to duripan
Drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 3 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 7.6 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A

Ecological site: R017XY902CA - Duripan Vernal Pools
Hydric soil rating: No

Minor Components

Unnamed, mod fine textured surface
Percent of map unit: 4 percent
Landform: Fan remnants
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Grangeville
Percent of map unit: 4 percent
Landform: Flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Bisgani
Percent of map unit: 2 percent
Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

Tinnin
Percent of map unit: 1 percent
Landform: Fan remnants
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Unnamed, w/ hardpan above 40 inches
Percent of map unit: 1 percent
Landform: Fan remnants
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Madera
Percent of map unit: 1 percent
Landform: Fan remnants
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Unnamed, w/ mod fine texture above hardpan
Percent of map unit: 1 percent

Landform: Fan remnants
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Jahant

Percent of map unit: 1 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Data Source Information

Soil Survey Area: San Joaquin County, California
Survey Area Data: Version 18, Sep 8, 2024

San Joaquin County, California

255—Tinnin loamy coarse sand, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hhwz
Elevation: 20 to 70 feet
Mean annual precipitation: 11 inches
Mean annual air temperature: 61 degrees F
Frost-free period: 270 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Tinnin and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tinnin

Setting

Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granitic rock sources

Typical profile

A - 0 to 28 inches: loamy coarse sand
C1 - 28 to 53 inches: loamy coarse sand
C2 - 53 to 75 inches: loamy coarse sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: No

Minor Components

Delhi

Percent of map unit: 4 percent
Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: No

Honcut

Percent of map unit: 3 percent
Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: No

Veritas

Percent of map unit: 3 percent
Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: No

Manteca

Percent of map unit: 3 percent
Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: No

Timor

Percent of map unit: 1 percent
Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: No

Unnamed, med tex substratum

Percent of map unit: 1 percent
Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear

Hydric soil rating: No

Data Source Information

Soil Survey Area: San Joaquin County, California
Survey Area Data: Version 18, Sep 8, 2024