Appendix "I"

Jurisdictional Delineation

GLENN LUKOS ASSOCIATES
Regulatory Services

December 13, 2023

Mitch Adkison
Executive Vice President
Adkan Engineers
6879 Airport Drive
Riverside, California 92504

SUBJECT: Jurisdictional Delineation of the Green Tree Project Site, an Approximate 98.59-Acre Site Located in Unincorporated Riverside County, California

Dear Mr. Adkison:

This letter report summarizes our preliminary findings of U.S. Army Corps of Engineers (Corps), Regional Water Quality Control Board (Regional Board), and California Department of Fish and Wildlife (CDFW) jurisdiction for the above-referenced property.[1]

The Green Tree Project (Project site) in unincorporated Riverside County [Exhibit 1] comprises approximately 98.59 acres as depicted on the U.S. Geological Survey (USGS) topographic map Lake Mathews, California [Exhibit 2]. The Project site is bordered by the Citrus Heights residential development to the north, rural lands and El Sobrante Rd. to the south, agricultural lands to the east, and disturbed rural and residential lands to the west.

On September 15, 2023, regulatory specialists of Glenn Lukos Associates, Inc. (GLA) examined the Project site to determine the presence and limits of (1) Corps jurisdiction pursuant to Section 404 of the Clean Water Act (CWA), (2) Regional Board jurisdiction pursuant to Section 401 of the CWA and Section 13260 of the California Water Code (CWC), and (3) CDFW jurisdiction pursuant to Division 2, Chapter 6, Section 1600 of the Fish and Game Code. Enclosed are 400-scale maps [Exhibits 3A, 3B, 3C] that depict the areas of Corps, Regional Board and CDFW jurisdiction. Photographs to document the topography, vegetative communities, and general widths of each of the waters are provided as Exhibit 4. Wetland data sheets are attached as Appendix A and Streambed Duration Assessment Method (SDAM) forms are attached as Appendix B.

[1] This report presents our best effort at estimating the subject jurisdictional boundaries using the most up-to-date regulations and written policy and guidance from the regulatory agencies. Only the regulatory agencies can make a final determination of jurisdictional boundaries.

Corps jurisdiction at the Project site totals approximately 0.26 acre, of which 0.16 acre consists of federal wetlands.

Regional Board jurisdiction at the Project site totals approximately 0.75 acre, of which 0.16 acre consist of State wetlands. Of this total, 0.26 acre, of which 0.16 acre consists of State wetlands comprise Corps jurisdiction and the remaining 0.49 acre represents Regional Board jurisdiction only.

CDFW jurisdiction at the Project site totals approximately 1.89 acres, of which 1.28 acres consist of riparian habitat.

I. METHODOLOGY

Prior to beginning the field delineation, a color aerial photograph, a topographic base map of the property, the previously cited USGS topographic map, and a soils map were examined to determine the locations of potential areas of Corps, Regional Board, and CDFW jurisdiction. Suspected jurisdictional areas were field checked for evidence of stream activity and/or wetland vegetation, soils and hydrology. Where applicable, reference was made to the 2008 Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (OHWM Manual)[2] to identify the width of Corps jurisdiction, and suspected federal wetland habitats on the site were evaluated using the methodology set forth in the U.S. Army Corps of Engineers 1987 Wetland Delineation Manual[3] (Wetland Manual) and the 2008 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Supplement (Arid West Supplement).[4] Reference was also made to the 2019 State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (State Board Wetland Definition and Procedures) to identify suspected State wetland habitats.[5] While in the field, the potential limits of jurisdiction were recorded with a sub-meter Trimble GPS device in conjunction with a color aerial photograph using visible landmarks. Other data were recorded onto wetland data sheets and field forms for the beta Arid West Streambed Duration Assessment Method (SDAM).

[2] U.S. Army Corps of Engineers. 2008. A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States
[3] Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1, U.S. Army Engineer Waterways Experimental Station, Vicksburg, Mississippi.
[4] U.S. Army Corps of Engineers. 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-08-28. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
[5] State Water Resources Control Board. 2019. State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State.

The National Cooperative Soil Survey (NCSS) has mapped the following soil types as occurring in the general vicinity of the Project site:

Buren Fine Sandy Loam, 2 to 8 Percent Slopes, Eroded (BuC2)

The Buren series consists of well drained slow to moderately slowly permeable soils. These soils are on gently to strongly sloping alluvial fans and terraces. They formed in alluvium derived mostly from basic igneous rocks and partly from other crystalline rocks. Average annual precipitation of 12 to 15 inches.

Cajalco Fine Sandy Loam, 8 to 15 Percent Slopes (CaD2), Eroded; Cajalco Fine Sandy Loam, 15 to 35 Percent Slopes, Eroded (CaF2); and Cajalco Rocky Fine Sandy Loam, 15 to 50 Percent Slopes, Eroded (CbF2)

The Cajalco soils are well drained, moderately permeable and occur on gently sloping to steep uplands in areas of deeply weathered, basic igneous rocks. Average annual rainfall is 9 to 16 inches.

Fallbrook Sandy Loam, 8 to 15 Percent Slopes, Eroded (FaD2)

The Fallbrook series consists of deep, well drained soils that formed in material weathered from granitic rocks. Fallbrook soils are on rolling hills and have slopes of 5 to 75 percent. The mean annual precipitation is about 15 inches.

Las Posas Loam, 2 to 8 Percent Slopes (LaC)

The Las Posas series consists of moderately deep, well drained soils that formed in material weathered from basic igneous rocks. Las Posas soils are on mountainous uplands and have slopes of 5 to 50 percent. The mean annual precipitation is about 16 inches.

II. JURISDICTION

A. Army Corps of Engineers

Pursuant to Section 404 of the Clean Water Act, the Corps regulates the discharge of dredged and/or fill material into waters of the United States. The term "waters of the United States" is defined in Corps regulations at 33 CFR Part 328.3(a) as:

(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;
(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;
(3) Tributaries of waters identified in paragraphs (a)(1) or (2) of this section that are relatively permanent, standing or continuously flowing bodies of water;
(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) of this section and with a continuous surface connection to those waters;
(5) Intrastate lakes and ponds 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.

Corps regulations at 33 CFR Part 328.3(b) exclude the following from being "waters of the United States" even where they otherwise meet the terms of paragraphs (a)(2) through (5) above:

(1) Waste treatment systems, including treatment ponds or lagoons, designed to meet the requirements of the Clean Water Act;
(2) Prior converted cropland designated by the Secretary of Agriculture. The exclusion would cease upon a change of use, which means that the area is no longer available for the production of agricultural commodities. Notwithstanding the determination of an area's status as prior converted cropland by any other Federal agency, for the purposes of the Clean Water

Act, the final authority regarding Clean Water Act jurisdiction remains with EPA;

(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.

In the absence of wetlands, the limits of Corps jurisdiction in non-tidal waters, such as intermittent streams, extend to the OHWM which is defined at 33 CFR 328.3(c)(4) as:

> ...that line on the shore established by the fluctuation 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.

"Adjacent" wetlands are defined by 33 CFR 328.3(c)(2) as having a "continuous surface connection" to other waters of the United States.

1. Wetland Definition Pursuant to Section 404 of the Clean Water Act

The term "wetlands" (a subset of "waters of the United States") is defined at 33 CFR 328.3(c)(1) as "areas that are inundated or saturated by surface or ground water 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." In 1987 the Corps published the Wetland Manual to guide its field personnel in determining jurisdictional wetland boundaries. The methodology set forth in

the Wetland Manual and the Arid West Supplement generally require that, in order to be considered a wetland, the vegetation, soils, and hydrology of an area exhibit at least minimal hydric characteristics. While the Wetland Manual and Arid West Supplement provide great detail in methodology and allow for varying special conditions, a wetland should normally meet each of the following three criteria:

- More than 50 percent of the dominant plant species at the site must be hydrophytic in nature as published in the most current national wetland plant list;

- Soils must exhibit physical and/or chemical characteristics indicative of permanent or periodic saturation (e.g., a gleyed color, or mottles with a matrix of low chroma indicating a relatively consistent fluctuation between aerobic and anaerobic conditions); and

- Whereas the Wetland Manual requires that hydrologic characteristics indicate that the ground is saturated to within 12 inches of the surface for at least five percent of the growing season during a normal rainfall year, the Arid West Supplement does not include a quantitative criteria with the exception for areas with "problematic hydrophytic vegetation", which require a minimum of 14 days of ponding to be considered a wetland.

B. Regional Water Quality Control Board

The State Water Resource Control Board and each of its nine Regional Boards regulate the discharge of waste (dredged or fill material) into waters of the United States[6] and waters of the State. Waters of the United States are defined above in Section II.A and waters of the State are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (California Water Code 13050[e]).

Section 401 of the CWA requires certification for any federal permit or license authorizing impacts to waters of the U.S. (i.e., waters that are within federal jurisdiction), such as Section 404 of the CWA and Section 10 of the Safe Rivers and Harbors Act, to ensure that the impacts

[6] Therefore, wetlands that meet the current definition, or any historic definition, of waters of the U.S. are waters of the state. In 2000, the State Water Resources Control Board determined that all waters of the U.S. are also waters of the state by regulation, prior to any regulatory or judicial limitations on the federal definition of waters of the U.S. (California Code or Regulations title 23, section 3831(w)). This regulation has remained in effect despite subsequent changes to the federal definition. Therefore, waters of the state includes features that have been determined by the U.S. Environmental Protection Agency (U.S. EPA) or the U.S. Army Corps of Engineers (Corps) to be "waters of the U.S." in an approved jurisdictional determination; "waters of the U.S." identified in an aquatic resource report verified by the Corps upon which a permitting decision was based; and features that are consistent with any current or historic final judicial interpretation of "waters of the U.S." or any current or historic federal regulation defining "waters of the U.S." under the federal Clean Water Act.

do not violate state water quality standards. When a project could impact waters outside of federal jurisdiction, the Regional Board has the authority under the Porter-Cologne Water Quality Control Act to issue Waste Discharge Requirements (WDRs) to ensure that impacts do not violate state water quality standards. Clean Water Act Section 401 Water Quality Certifications, WDRs, and waivers of WDRs are also referred to as orders or permits.

1. State Wetland Definition

The State Board Wetland Definition and Procedures define an area as wetland as follows: "An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation."
The following wetlands are waters of the State:

1. Natural wetlands;
2. Wetlands created by modification of a surface water of the state;[7] and
3. Artificial wetlands[8] that meet any of the following criteria:

    a. Approved by an agency as compensatory mitigation for impacts to other waters of the state, except where the approving agency explicitly identifies the mitigation as being of limited duration;
    b. Specifically identified in a water quality control plan as a wetland or other water of the state;
    c. Resulted from historic human activity, is not subject to ongoing operation and maintenance, and has become a relatively permanent part of the natural landscape; or
    d. Greater than or equal to one acre in size, unless the artificial wetland was constructed, and is currently used and maintained, primarily for one or more of the following purposes (i.e., the following artificial wetlands are not waters of the state unless they also satisfy the criteria set forth in 2, 3a, or 3b):
        i. Industrial or municipal wastewater treatment or disposal,
        ii. Settling of sediment,

[7] "Created by modification of a surface water of the state" means that the wetland that is being evaluated was created by modifying an area that was a surface water of the state at the time of such modification. It does not include a wetland that is created in a location where a water of the state had existed historically, but had already been completely eliminated at some time prior to the creation of the wetland. The wetland being evaluated does not become a water of the state due solely to a diversion of water from a different water of the state.
[8] Artificial wetlands are wetlands that result from human activity.

iii. Detention, retention, infiltration, or treatment of stormwater runoff and other pollutants or runoff subject to regulation under a municipal, construction, or industrial stormwater permitting program,
iv. Treatment of surface waters,
v. Agricultural crop irrigation or stock watering,
vi. Fire suppression,
vii. Industrial processing or cooling,
viii. Active surface mining – even if the site is managed for interim wetlands functions and values,
ix. Log storage,
x. Treatment, storage, or distribution of recycled water, or
xi. Maximizing groundwater recharge (this does not include wetlands that have incidental groundwater recharge benefits); or
xii. Fields flooded for rice growing.[9]

All artificial wetlands that are less than an acre in size and do not satisfy the criteria set forth in 2, 3.a, 3.b, or 3.c are not waters of the state. If an aquatic feature meets the wetland definition, the burden is on the applicant to demonstrate that the wetland is not a water of the state.

C. California Department of Fish and Wildlife

Pursuant to Division 2, Chapter 6, Sections 1600-1603 of the California Fish and Game Code, the CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake, which supports fish or wildlife.

CDFW defines a stream (including creeks and rivers) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." CDFW's definition of "lake" includes "natural lakes or man-made reservoirs." CDFW also defines a stream as "a body of water that flows, or has flowed, over a given course during the historic hydrologic regime, and where the width of its course can reasonably be identified by physical or biological indicators."

[9] Fields used for the cultivation of rice (including wild rice) that have not been abandoned due to five consecutive years of non-use for the cultivation of rice (including wild rice) that are determined to be a water of the state in accordance with these Procedures shall not have beneficial use designations applied to them through the Water Quality Control Plan for the Sacramento and San Joaquin River Basins, except as otherwise required by federal law for fields that are considered to be waters of the United States. Further, agricultural inputs legally applied to fields used for the cultivation of rice (including wild rice) shall not constitute a discharge of waste to a water of the state. Agricultural inputs that migrate to a surface water or groundwater may be considered a discharge of waste and are subject to waste discharge requirements or waivers of such requirements pursuant to the Water Board's authority to issue or waive waste discharge requirements or take other actions as applicable.

It is important to note that the Fish and Game Code defines wildlife to include "all wild animals, birds, plants, fish, amphibians, invertebrates, reptiles, and related ecological communities, including the habitat upon which they depend for continued viability" (FGC Division 0.5, Chapter 1, section 89.5). Furthermore, Division 2, Chapter 5, Article 6, Section 1600 et seq. of the California Fish and Game Code does not limit jurisdiction to areas defined by specific flow events, seasonal changes in water flow, or presence/absence of vegetation types or communities.

III. RESULTS

The Project site is comprised of vacant and disturbed land that functioned as a citrus operation until the early 2000's. Evidence of operational site disturbance includes compacted soils, erosional areas, debris piles, and various dirt roads. Elevation ranges from approximately 1,425 feet above mean sea level (amsl) to 1,235 feet amsl. The following vegetation types occur within the Project site: Red Brome Grasslands, Brittle Bush Scrub, Disturbed/Developed Land, Four Wing Saltbush Scrub, Pepper Tree Groves, Goodding's Willow Riparian Woodland, Eucalyptus Groves, and Mulefat Thickets.

A total of four drainage features extend through the Project site in a general north/northwest direction before continuing offsite towards the neighboring Citrus Heights development, and eventually the Gage Canal. The Gage Canal is a man-made irrigation canal that is a distributary of the Santa Ana River. The drainages at the Project site range from ephemeral to intermittent within portions containing perennial seeps, and are described herein as Drainage A, Tributary A-1, Tributary A-2, and Drainage B.

Drainage A originates as an ephemeral drainage in the eastern portion of the Project site and extends northwesterly before continuing its path offsite. The upper and middle reaches of Drainage A are dry with portions of the channel incised down to bedrock. The upper reaches are disturbed with patches of tree tobacco (*Nicotiana glauca*, FAC), Mexican fan palm (*Washingtonia robusta*, FACW)), desert brittlebush (*Encelia farinose*, UPL), mulefat (*Baccharis salicifolia*, FAC), castor bean (*Ricinus communis*, FACU), Peruvian pepper (*Schinus molle*, UPL), four-wing saltbush (*Atriplex canescens*, UPL), blue elderberry (*Sambucus nigra* ssp. *caerulea*, FACU), California buckwheat (*Eriogonum fasciculatum*, UPL), black mustard (*Brassica nigra*, UPL), and various bromes (*Bromus* ssp.).

A perennial seep occurs in the downstream reach of Drainage A where the drainage course becomes vertically incised to a depth that coincides with a semi-impermeable layer. This area receives relatively permanent hydrology from a buried pipe culvert that conveys flows from the neighboring development to the north. The mid and downstream reaches of Drainage A support areas of dense willow riparian canopy including black willow (*Salix goodingii*, FACW) and

arroyo willow (*Salix lasiolepis*, FACW). Additional species associated with the drainage include stinging nettle (*Urtica dioica*, FAC), mulefat (*Baccharis salicifolia*, FAC), yerba mansa (*Anemopsis californica*, OBL), Mexican fan palm, Canary palm (*Phoenix canariensis*, UPL), and perennial pepperweed (*Lepidium latifolium*, FAC). Portions of Drainage A exhibit evidence of hydric soils and support emergent hydrophytic plant species such as southern cattail (*Typha domingensis*, OBL), duckweed (*Lemna* sp., OBL), and water cress (*Nasturtium officinale*, OBL). Wetland data sheets are attached as Appendix A.

Tributaries A-1 and A-2 flow only in direct response to precipitation and were completely dry during the field assessment. Both features extend northerly/northwesterly and are tributary to Drainage A. Tributary A-1 meanders in a northerly direction along the western Project boundary, with approximately 254 linear feet occurring within the Project site. Tributary A-1 is highly disturbed with disjunct patches of tree tobacco, California sagebrush, desert brittlebush, castor bean, Russian thistle (*Salsola tragus*, FACU), four-wing saltbush, California buckwheat, black mustard, and various bromes. Additional vegetation associated with the downstream extent includes Peruvian pepper, blue elderberry, and sparse occurrences of mulefat.

Tributary A-2 originates in the east central portion of the Project site and extends northwesterly for approximately 2,738 linear feet before its eventual confluence with Drainage A. The drainage is highly disturbed with disjunct patches of tree tobacco, California sagebrush, desert brittlebush, castor bean, Russian thistle, four-wing saltbush, California buckwheat, and black mustard. Sparse riparian vegetation associated with the drainage includes blue elderberry and sparse occurrences of mulefat. The majority of the channel banks are incised with erosional undercutting, rock and cobble, and sediment deposition within the low flow channel.

Drainage B conveys intermittent flows from the neighboring citrus operations in the southeast and contained standing water during the field assessments. This feature is interspersed by perennial seeps that occur where the drainage course becomes vertically incised to a depth where ground water is perched. Drainage B runs along the southwestern and southern boundaries of the Project site and extends in a general west/northwest direction for approximately 998 linear feet before continuing its path offsite towards its eventual confluence with Drainage A. Drainage B supports areas of vegetated riparian habitat adjacent to the channel banks. The downstream reaches of Drainage B are moderately disturbed with stands of tree tobacco, California juniper, Mexican fan palm, desert brittlebush, castor bean, Peruvian pepper, four-wing saltbush, California buckwheat, and black mustard. Riparian species associated with the drainage include mulefat, blue elderberry, black willow and arroyo willow. Additional species include stinging nettle, yerba mansa, Mexican fan palm, and Canary palm. Where perennial seeps occur, Drainage B supports emergent hydrophytic plant species such as southern cattail, duckweed, and water cress.

A. Corps Jurisdiction

Corps jurisdiction at the Project site totals approximately 0.26 acre, of which 0.16 acre consists of federal wetlands.

Corps jurisdiction at the Project site is limited to the downstream reach of Drainage A and the majority of Drainage B. These drainages convey relatively permanent flows and encompass wetlands dominated by hydrophytes. Tributaries of waters of the U.S. that convey relatively permanent flows are considered waters of the U.S. as defined under 33 CFR Part 328.3(a). As such, the downstream reach of Drainage A and all of Drainage B within the Project site are subject to Corps jurisdiction under Section 404 of the CWA.

The Project site also contains two drainage features and portions of two drainages that flow only in direct response to precipitation and were completely dry during the field delineation. These include the majority of Drainage A, Tributary A-1, Tributary A-2, and two small tributary segments of Drainage B. Features that do not convey a relatively permanent flow of water are not considered waters of the U.S. as defined under 33 CFR Part 328.3(a), and are therefore not subject to Corps jurisdiction under Section 404 of the CWA. SDAM forms are provided as Appendix B.

Table 1 below summarizes Corps jurisdiction at the Project site, followed by a description of each feature. The boundaries of the waters of the United States are depicted on Exhibit 3A. Site photographs are provided as Exhibit 4.

Table 1: Summary of Corps Jurisdiction

Drainage Name	Non-Wetland Waters of the U.S. (acres)	Wetland Waters of the U.S. (acres)	Total Waters of the U.S. (acres)	Length (linear feet)
Drainage A	0.02	0.06	0.08	306
Drainage B	0.08	0.10	0.18	710
Total	**0.10**	**0.16**	**0.26**	**1,016**

1. **Drainage A**

Corps jurisdiction associated with Drainage A totals 0.08 acre, of which 0.06 acre consists of federal wetlands.

Drainage A originates as an ephemeral drainage in the eastern portion of the Project site and extends northwesterly before continuing its path offsite. Corps jurisdiction associated with Drainage A is limited to the downstream reach, totaling approximately 306 linear feet. This portion of the drainage is fed by a pipe culvert that conveys relatively permanent flows from the adjacent development to the north. OHWM indicators range from approximately eight (8) to 12 feet in width as evidenced by water marks, changes in soil characteristics, wracking and shelving. A perennial seep occurs in the low flow channel, which has resulted in an approximate 0.06-acre wetland. Wetland indicators include the presence of surface water, hydrogen sulfide odor, and a predominance of hydrophytic vegetation as described above. Wetland data sheets are provided as Appendix A.

2. **Drainage B**

Corps jurisdiction associated with Drainage B totals 0.18 acre, of which 0.10 acre consists of federal wetlands.

Drainage B is an incised drainage that conveys relatively permanent flows from the neighboring citrus orchards and surrounds. Drainage B runs northwesterly along the southwestern and southern boundaries of the Project site for approximately 998 linear feet. The drainage exhibits an OHWM ranging from eight (8) to 25 feet in width and is evidenced by watermarks, presence of litter and debris, changes in soil characteristics, wracking, and shelving. A series of perennial seeps occur in the low flow channel, resulting in approximately 0.10 acre of wetlands. Wetland indicators include the presence of surface water, hydrogen sulfide odor, and a predominance of hydrophytic vegetation. Wetland data sheets are provided as Appendix A.

B. <u>Regional Water Quality Control Board Jurisdiction</u>

Regional Board jurisdiction at the Project site totals approximately 0.75 acre, of which 0.16 acre consists of State wetlands. Of this total, 0.26 acre, of which 0.16 acre consists of State wetlands comprise Corps jurisdiction and the remaining 0.49 acre represents Regional Board jurisdiction only.

Regional Board jurisdiction at the Project site includes Drainage A, Tributary A-1, Tributary A-2, and Drainage B. The downstream reach of Drainage A and the majority of Drainage B convey relatively permanent flows with encompassing wetlands and are subject to Corps jurisdiction

under Section 404 of the CWA. Accordingly, these features are also subject to Regional Board jurisdiction under Section 401 of the CWA and need not be analyzed separately under Section 13260 of the CWC.

As noted above, the remaining portions of Drainage A, Tributary A-1, Tributary A-2, and two small tributary segments of Drainage B do not convey a relatively permanent flow of water and are not subject to Corps jurisdiction under Section 404 of the CWA. However, since these features convey surface flow with the potential to support beneficial uses, they are considered waters of the State that would be subject to Regional Board jurisdiction under Section 13260 of the CWC.

Table 2 below summarizes Regional Board jurisdiction at the Project site, followed by a description of each feature. The boundaries of the waters of the State are depicted on Exhibit 3B. Site photographs are provided as Exhibit 4.

Table 2: Summary of Regional Board Jurisdiction

Drainage Name	Non-Wetland Waters of the State (acres)	Wetland Waters of the State (acres)	Total Waters of the State (acres)	Length (linear feet)
Waters of the U.S./State				
Drainage A	0.02	0.06	0.08	306
Drainage B	0.08	0.10	0.18	710
Sub-Total	*0.10*	*0.16*	*0.26*	*1,016*
Waters of the State Only				
Drainage A	0.24	0	0.24	1,756
Tributary A-1	0.01	0	0.01	254
Tributary A-2	0.23	0	0.23	2,738
Drainage B	0.01	0	0.01	288
Sub-Total	*0.48*	*0*	*0.48*	*4,748*
Total	**0.10**	**0.16**	**0.75**	**6,052**

1. Drainage A

Regional Board jurisdiction associated with Drainage A totals 0.32 acre, of which 0.06 acre consists of State wetlands. Of this total, 0.08 acre, of which 0.06 acre consists of State wetlands, is identical to Corps jurisdiction and the remaining 0.24 acre is subject to Regional Board jurisdiction only.

Drainage A originates as an ephemeral drainage in the eastern portion of the Project site and extends northwesterly along the northern Project boundary from southeast to northwest for approximately 2,062 before continuing its path offsite. The up and middle reaches of Drainage A are dry with portions of the channel incised down to bedrock. These reaches are disturbed with patches of upland vegetation along the channel banks. Stream flow indicators range from two (2) to 12 feet in width as evidenced by changes in soil characteristics, break in bank slope, and presence of debris. Further down the watershed, Drainage A transitions from an ephemeral system to an intermittent system with associated wetlands. The downstream drainage reach is fed by a pipe culvert that conveys relatively permanent flows from the adjacent development to the north. OHWM indicators in this portion of the channel range from approximately eight (8) to 12 feet in width as evidenced by water marks, changes in soil characteristics, wracking, and defined channel banks. A perennial seep occurs in the low flow channel, which has resulted in an approximate 0.06-acre wetland. Wetland indicators include the presence of surface water, hydrogen sulfide odor, and a predominance of hydrophytic vegetation as described above. Wetland data sheets are provided as Appendix A.

2. **Tributary A-1**

Regional Board jurisdiction associated with Tributary A-1 totals 0.01 acre, none of which consists of State wetlands. Tributary A-1 is an ephemeral drainage that extends northerly/northwesterly along the western Project boundary for approximately 254 linear feet before exiting the site.

Tributary A-1 exhibits an OHWM extending up to six feet wide as evidenced by changes in soil characteristics and incised banks. Vegetation associated with this feature is primarily brittle bush scrub and four wing saltbush scrub with some sparse mulefat, elderberry, and pepper tree inclusions in the downstream reach. This feature lacks hydrophytic vegetation and was completely dry during the field delineation.

3. **Tributary A-2**

Regional Board jurisdiction associated with Tributary A-2 totals 0.23 acre, none of which consists of State wetlands. Tributary A-1 is a disturbed ephemeral drainage that extends through the central portion of the Project site in a northwesterly direction for approximately 2,738 linear feet.

Tributary A-2 exhibits an OHWM extending up to five feet wide as evidenced by changes in soil characteristics and incised banks. Vegetation associated with this feature includes red brome grasslands with four wing saltbush scrub in the downstream reach. A few scattered mulefat and

elderberry occur in the middle reached of the drainage. This feature lacks hydrophytic vegetation and was completely dry during the field delineation.

4. Drainage B

Regional Board jurisdiction associated with Drainage B totals 0.19 acre, of which 0.10 acre consists of State wetlands. Of this total, 0.18 acre, of which 0.10 acre consists of State wetlands, is identical to Corps jurisdiction and the remaining 0.01 acre is subject to Regional Board jurisdiction only.

Drainage B is an incised drainage that conveys relatively permanent flows from the neighboring citrus orchards and surrounds. Drainage B runs northwesterly along the southwestern and southern boundaries of the Project site for approximately 998 linear feet and is inclusive of two ephemeral tributaries that connect to the mainstem channel. The drainage exhibits an OHWM ranging from eight (8) to 25 feet in width and is evidenced by watermarks, presence of litter and debris, changes in soil characteristics, wracking, and shelving. A series of perennial seeps occur in the low flow channel, resulting in approximately 0.10 acre of wetlands. Wetland indicators include the presence of surface water, hydrogen sulfide odor, and a predominance of hydrophytic vegetation. Wetland data sheets are provided as Appendix A.

C. CDFW Jurisdiction

CDFW jurisdiction at the Project site totals approximately 1.89 acres, of which 1.28 acres consist of riparian habitat and includes all areas within Corps and Regional Board jurisdiction.

CDFW jurisdiction at the Project site includes Drainage A, Tributary A-1, Tributary A-2, and Drainage B. These features convey ephemeral to relatively permanent flows with physical and biological stream flow indictors including changes in soil characteristics, break in bank slope, and incised channel banks with identifiable widths. These features support wetland/riparian habitat and/or have the potential to support aquatic resources and are subject to CDFW jurisdiction under Section 1600 of the Fish and Game Code.

Table 3 below summarizes CDFW jurisdiction at the Project site, followed by a description of each feature. The boundaries of CDFW jurisdiction are depicted on Exhibit 3C. Site photographs are provided as Exhibit 4.

Table 3: Summary of CDFW Jurisdiction

Drainage Name	CDFW Non-Riparian Stream (acres)	CDFW Riparian Stream (acres)	Total CDFW Jurisdiction (acres)	Length (linear feet)
Drainage A	0.22	0.45	0.68	2,071
Tributary A-1	0.02	0.00	0.02	254
Tributary A-2	0.33	0.16	0.49	2,738
Drainage B	0.04	0.67	0.71	1011
Total	**0.61**	**1.28**	**1.89**	**6074**

1. Drainage A

CDFW jurisdiction associated with Drainage A totals 0.68 acre, of which 0.45 acre consists of riparian habitat.

Drainage A originates as an ephemeral drainage in the eastern portion of the Project site and extends northwesterly along the northern Project boundary from southeast to northwest for approximately 2071 before continuing its path offsite. The up and middle reaches of Drainage A are dry with portions of the channel incised down to bedrock. These reaches are disturbed with patches of upland vegetation along the channel banks. Stream flow indicators include changes in soil characteristics, break in bank slope, and presence of debris. Further down the watershed, Drainage A transitions from an ephemeral system to an intermittent system with associated wetlands. The downstream drainage reach is fed by a pipe culvert that conveys relatively permanent flows from the adjacent development to the north. Physical indicators of streamflow in this portion of the channel include water marks, changes in soil characteristics, wracking, and defined channel banks. A perennial seep occurs in the low flow channel, which has resulted in an approximate 0.06-acre wetland. Riparian habitat associated with this feature extends to the dripline of the channel.

2. Tributary A-1

CDFW jurisdiction associated with Tributary A-1 totals 0.02 acre, none of which consists of riparian habitat. Tributary A-1 is an ephemeral drainage that extends northerly/northwesterly along the western Project boundary for approximately 254 linear feet before exiting the site.

Tributary A-1 averages six feet wide as evidenced by changes in soil characteristics and incised banks. Vegetation associated with this feature is primarily brittle bush scrub and four wing saltbush scrub with some sparse mulefat, elderberry, and pepper tree inclusions in the

downstream reach. This feature lacks hydrophytic vegetation and was completely dry during the field delineation.

3. Tributary A-2

CDFW jurisdiction associated with Tributary A-2 totals 0.49 acre, of which 0.16 acre consists of riparian habitat. Tributary A-1 is a disturbed ephemeral drainage that extends through the central portion of the Project site in a northwesterly direction for approximately 2,738 linear feet.

Tributary A-2 averages five feet wide as evidenced by changes in soil characteristics and incised channel banks. Vegetation associated with this feature includes red brome grasslands with four wing saltbush scrub in the downstream reach. A few scattered mulefat and elderberry occur along the middle reaches of the drainage. This feature lacks hydrophytic vegetation and was completely dry during the field delineation.

4. Drainage B

CDFW jurisdiction associated with Drainage B totals 0.71 acre, of which 0.67 acre consists of riparian habitat.

Drainage B is an incised drainage that conveys relatively permanent flows from the neighboring citrus orchards and surrounds. Drainage B runs northwesterly along the southwestern and southern boundaries of the Project site for approximately 1,011 linear feet and is inclusive of two ephemeral tributaries that connect to the mainstem channel. The low flow channel extends upwards of 25 feet in width as evidenced by watermarks, presence of litter and debris, changes in soil characteristics, wracking, and shelving. A series of perennial seeps occur in the low flow channel, resulting in approximately 0.10 acre of wetland. Riparian vegetation associated with this feature extends to the dripline of the channel.

If you have any questions about this letter report, please contact Jason Fitzgibbon at (949) 340-3974.

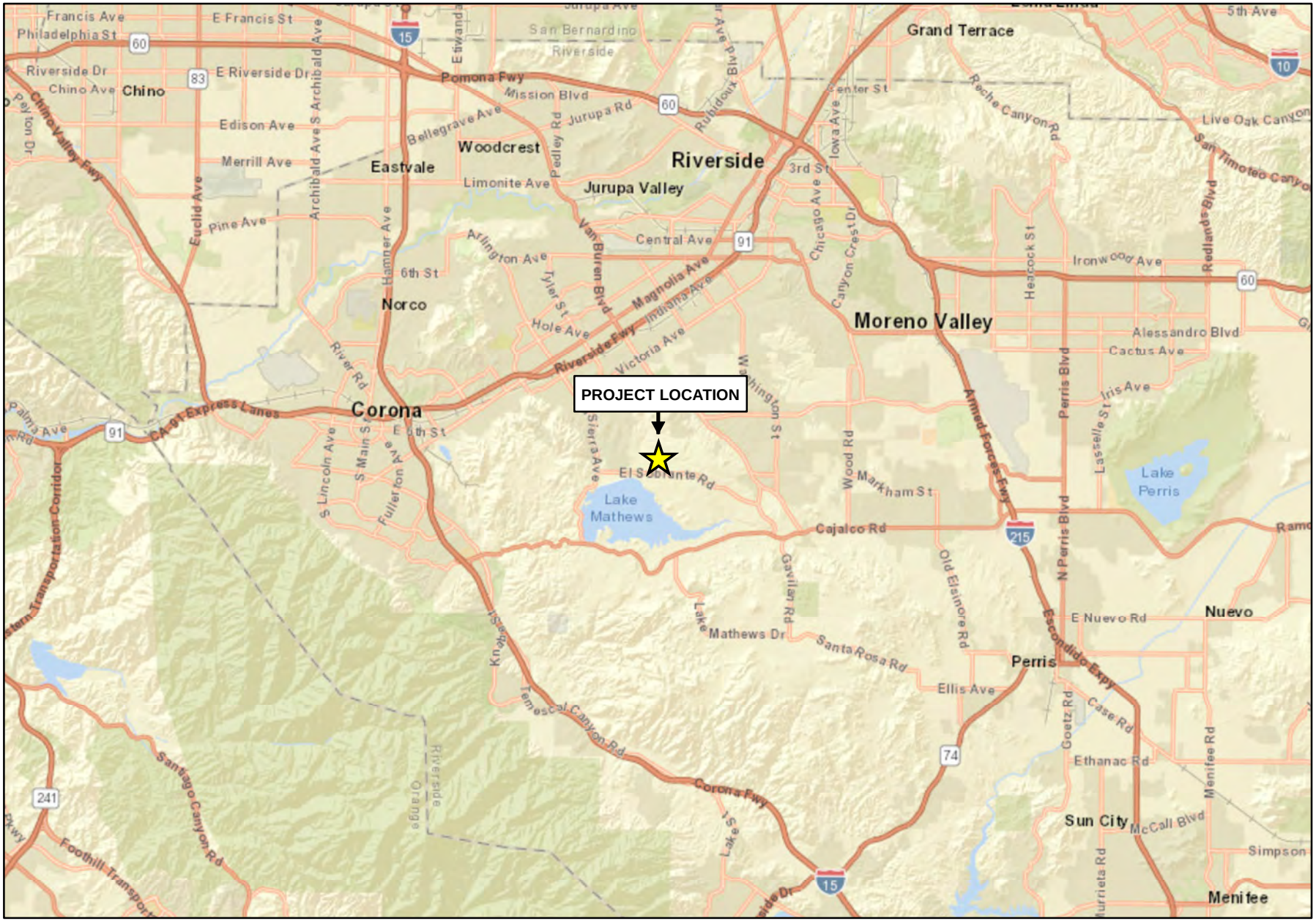
Sincerely,

GLENN LUKOS ASSOCIATES, INC.



Lesley Lokovic-Gamber
Senior Regulatory Specialist

p:1106-2a.jd



Source: ESRI World Street Map

N

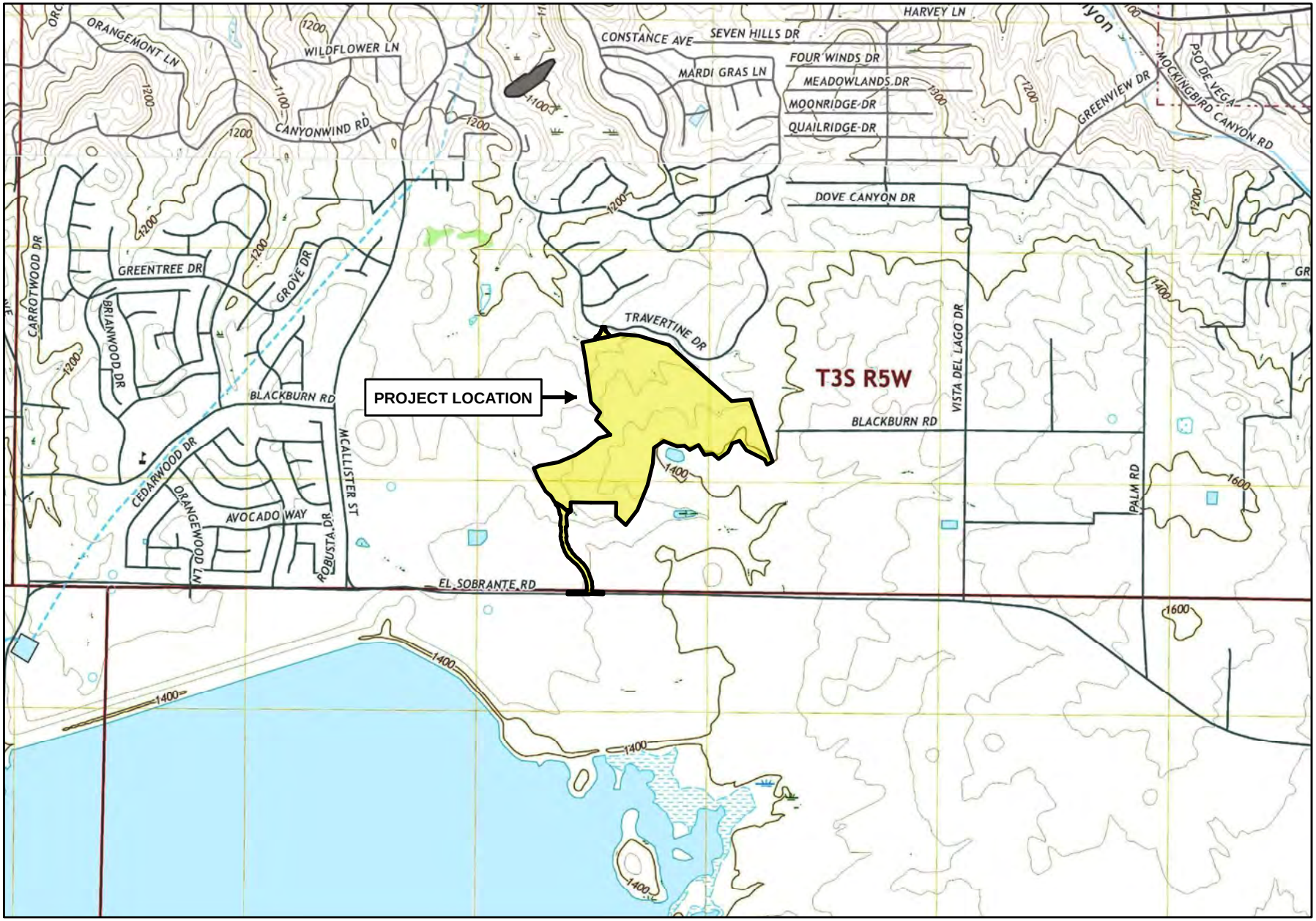
0 2 4 8 Miles

GREEN TREE PROJECT

Regional Map

GLENN LUKOS ASSOCIATES

Exhibit 1



Adapted from USGS Lake Mathews, CA quadrangle

N

0 1,000 2,000 4,000 Feet

GREEN TREE PROJECT

Vicinity Map

GLENN LUKOS ASSOCIATES

Exhibit 2



Project - Onsite

Project - Offsite

Wetland
Waters of the U.S.

Non-Wetland
Waters of the U.S.

Non-Jurisdictional Feature

Flowline - Not a Part

Width in Feet
(W indicates Wetland)

Sampling Point

Photo Location

N

0 200 400 800
Feet

1 inch = 400 feet

Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD 1983 2011
Map Prepared by: B. Gale, GLA
Date Prepared: December 12, 2023

GREEN TREE PROJECT

Potential Corps Jurisdictional Delineation Map

GLENN LUKOS ASSOCIATES

Exhibit 3A

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Project - Onsite

Project - Offsite

Wetland
Waters of the State

Non-Wetland
Waters of the State

Flowline - Not a Part

Width in Feet
(W indicates Wetland)

Sampling Point

Photo Location

N

0 200 400 800
Feet

1 inch = 400 feet

Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD 1983 2011
Map Prepared by: B. Gale, GLA
Date Prepared: December 6, 2023

GREEN TREE PROJECT

RWQCB Jurisdictional Delineation Map

GLENN LUKOS ASSOCIATES

Exhibit 3B

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Project - Onsite

Project - Offsite

Riparian Stream

Non-Riparian Stream

Flowline - Not a Part

Photo Location

N

0 200 400 800

Feet

1 inch = 400 feet

Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD 1983 2011
Map Prepared by: B. Gale, GLA
Date Prepared: December 6, 2023

GREEN TREE PROJECT

CDFW Jurisdictional Delineation Map

GLENN LUKOS ASSOCIATES

Exhibit 3C

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Photograph 1: Downstream view depicting start of Drainage A facing north/northwest.



Photograph 2: Upstream view of Drainage A facing south/southeast.



Photograph 3: Downstream view of Drainage A fork facing northwest from top of berm.



Photograph 4: Downstream view of Drainage A facing northwest.

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Exhibit 4 – Page 1

GREEN TREE PROJECT

Site Photographs



Photograph 5: Downstream view of Drainage A looking down at start of wetland and perennial seep.



Photograph 6: Downstream view of Drainage A where the drainage continues its path offsite.



Photograph 7: View from uplands facing north towards start of Tributary A-1.



Photograph 8: Downstream view of Tributary A-1 A middle reach facing north.



Photograph 9: Downstream view depicting start of Tributary A-2 facing north.



Photograph 10: View from start of Tributary A-2 facing south at uplands.



Photograph 11: Downstream view of Tributary A-2 facing west from lower reach of channel.



Photograph 12: Upstream view of Tributary A-2 facing southeast from upper reach of channel.

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Exhibit 4 – Page 3

GREEN TREE PROJECT

Site Photographs



Photograph 13: Downstream view of small ephemeral tributary associated with Drainage B facing west towards main channel.



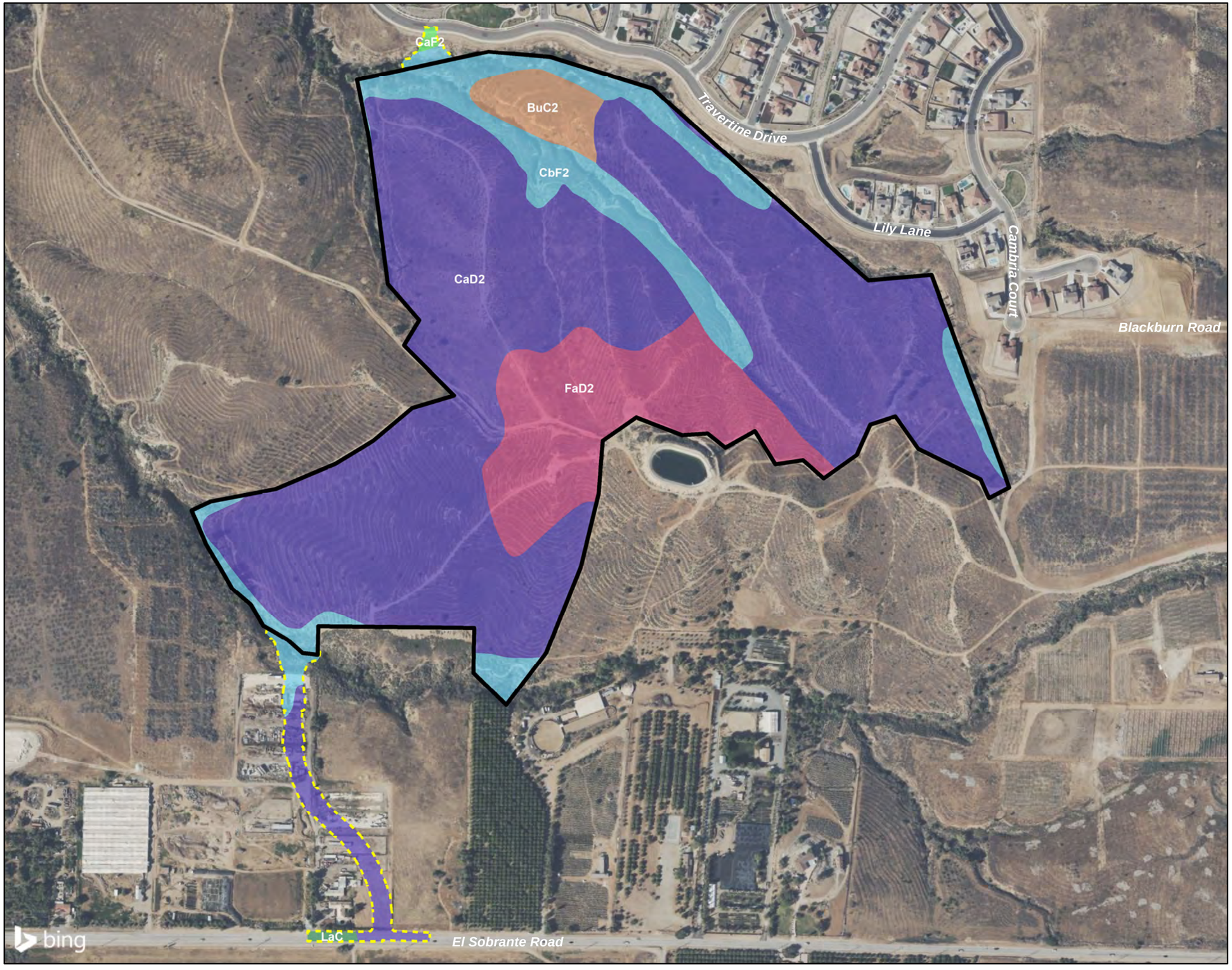
Photograph 14: Upstream view of Drainage B wetland/riparian habitat within southern portion of Project site facing east/southeast.



Photograph 15: Upstream view of Drainage B wetland/riparian habitat facing south/southeast.



Photograph 16: Downstream view of Drainage B facing northwest where the drainage continues its path offsite.



- Project - Onsite
- Project - Offsite
- BuC2 — Buren fine sandy loam, 2 to 8 percent slopes, eroded
- CaD2 — Cajalco fine sandy loam, 8 to 15 percent slopes, eroded
- CaF2 — Cajalco fine sandy loam, 15 to 35 percent slopes, eroded
- CbF2 — Cajalco rocky fine sandy loam, 15 to 50 percent slopes, eroded
- FaD2 — Fallbrook sandy loam, 8 to 15 percent slopes, eroded
- LaC — Las Posas loam, 2 to 8 percent slopes

N

0 200 400 800
Feet

1 inch = 400 feet

Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD 1983 2011
Map Prepared by: B. Gale, GLA
Date Prepared: December 6, 2023

GREEN TREE PROJECT

Soils Map

GLENN LUKOS ASSOCIATES

Exhibit 5

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APPENDIX A

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Greentree Ranch project City/County: Unincorporated/Riverside Co Sampling Date: 09/15/23

Applicant/Owner: Adkan Engineers State: CA Sampling Point: 1

Investigator(s): L. Lokovic, D. Smith Section, Township, Range: S32, T35, R5W

Landform (hillslope, terrace, etc.): channel bed Local relief (concave, convex, none): concave Slope (%): 0-2

Subregion (LRR): C Lat: 33.868209 Long: -117.426420 Datum: NAD 83

Soil Map Unit Name: Cajalco Rocky Fine Sandy Loam NWI classification: riverine

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix goodingii	15	Y	FACW
2.			
3.			
4.			
	15 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10'x20')			
1. Typha domingensis	50	Y	FACW
2. Baccharis salicifolia	10	Y	FAC
3. Ficus carica	8	Y	FACU
4. Baccharis emoryi	5	N	UPL
5.			
	75 = Total Cover		
Herb Stratum (Plot size: 5')			
1. Urtica dioca	10	Y	FAC
2. Nasturtium officinale	10	Y	OBL
3.			
4.			
5.			
6.			
7.			
8.			
	20 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

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

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	65	x 2 =	130
FAC species	20	x 3 =	60
FACU species	8	x 4 =	32
UPL species	5	x 5 =	25
Column Totals:	108 (A)		257 (B)

Prevalence Index = B/A = 2.38

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:

SOIL

Sampling Point: 1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12"	see comment							standing water

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

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

Remarks:

Standing water in low flow channel; soils assumed present based on presence of hydrophytic vegetation and hydrology

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:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Greentree Ranch project City/County: Unincorporated/Riverside Co Sampling Date: 09/15/23

Applicant/Owner: Adkan Engineers State: CA Sampling Point: 2

Investigator(s): L. Lokovic, D. Smith Section, Township, Range: S32, T35, R5W

Landform (hillslope, terrace, etc.): channel bed Local relief (concave, convex, none): concave Slope (%): 0-2

Subregion (LRR): C Lat: 33.861381 Long: -117.428178 Datum: NAD 83

Soil Map Unit Name: Cajalco Rocky Fine Sandy Loam NWI classification: riverine

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix goodingii	35	Y	FACW
2. Salix lasiolepis	15	Y	FACW
3. Nicotiana glauca	10	N	FAC
4. Washingtonia robusta	5	N	FACW
	65	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10'x20')			
1. Typha domingensis	50	Y	OBL
2. Baccharis salicifolia	15	Y	FAC
3. Urtica dioca	8	N	FAC
4.			
5.			
	73	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Nasturtium officinale	10	Y	OBl
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	10	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____	= Total Cover	

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

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	60	x 1 =	60
FACW species	55	x 2 =	110
FAC species	33	x 3 =	99
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	148 (A)		269 (B)

Prevalence Index = B/A = 1.82

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:

SOIL

Sampling Point: 2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12"	see comment							standing water, sulfide odor

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ **No** ___

Remarks:

Approx 12" of standing water; A4

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): 12"

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:

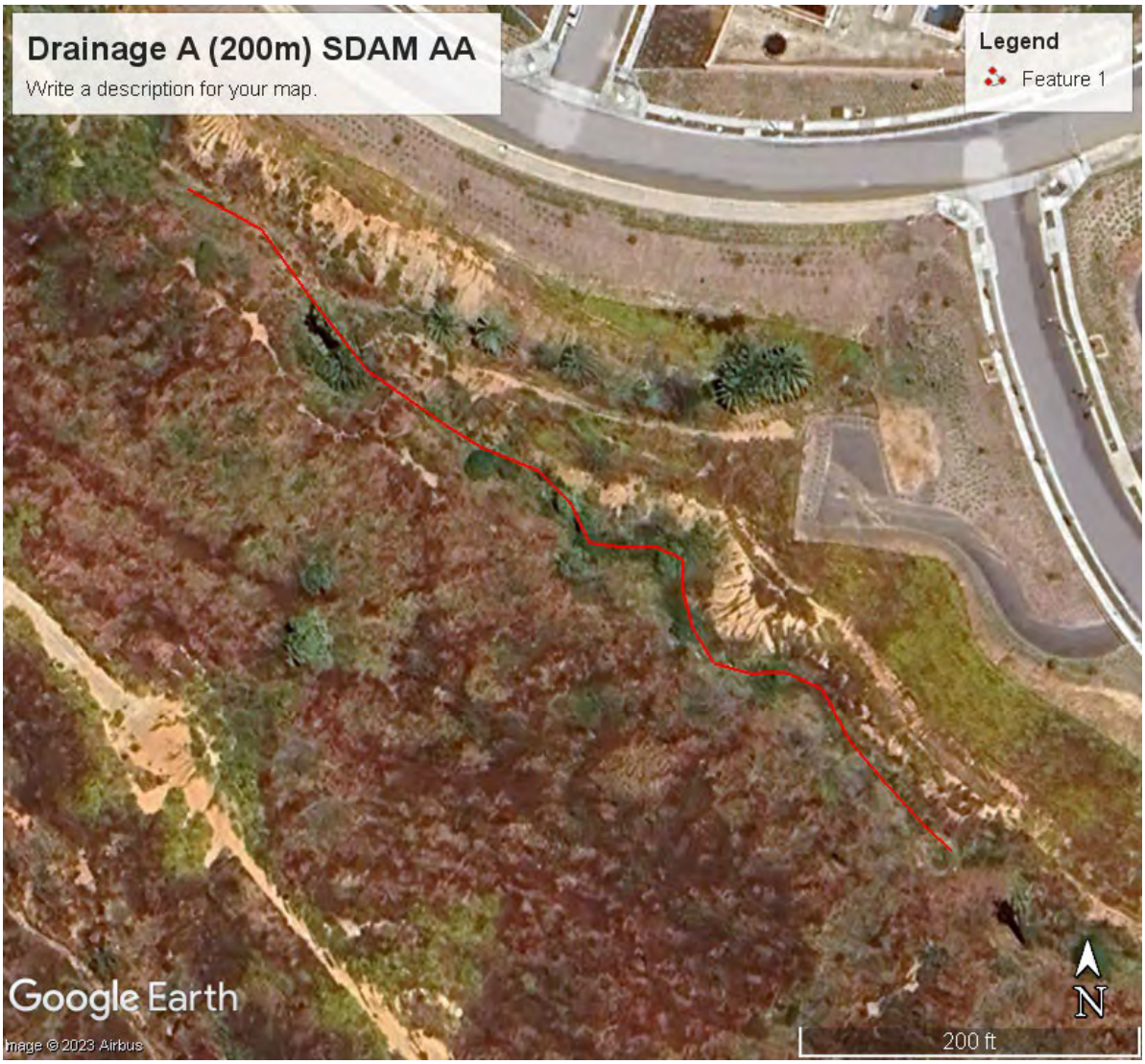
APPENDIX B

Beta Arid West Streamflow Duration Assessment Method

General site information

Project name or number: Greentree Project, Unincorporated Riverside County, CA		
Site code or identifier: N/A	Assessor(s): Lesley Lokovic and David Smith	
Waterway name: Unnamed drainage feature (referred to herein as Drainage A)		Visit date: September 15, 2023
Current weather conditions (check one) ☐ Storm/heavy rain ☐ Steady rain ☐ Intermittent rain ☐ Snowing ☐ Cloudy (___ % cover) X Clear/Sunny	Notes on current or recent weather conditions (e.g., precipitation in previous week): Clear; no precipitation in previous week	Coordinates at downstream end (decimal degrees): Lat (N): 33.867377 Long (W): -117.423055 Datum: NAD 1983
Surrounding land-use within 100 m (check one or two): X Urban/industrial/residential ☐ Agricultural (farmland, crops, vineyards, pasture) ☐ Developed open-space (e.g., golf course) ☐ Forested X Other natural – undeveloped land ☐ Other: _____	Describe reach boundaries: The reach boundary (the assessment area) is the central portion of Drainage A that occurs within the Project site. The reach extends northwesterly along the northern portion of the Project site for approximately 200 meters before briefly exiting the site. Vegetation observed in the Drainage A assessment area include FAC or drier species. No hydrophytes (FACW or OBL) were observed in the assessment area.	
Mean channel width (m) 2 m	Reach length (m): 40x width; min 40 m; max 200 m. 200 m	Enter photo ID, or check if completed Top down: _____ Mid down: _____ Mid up: _____ Bottom up: _____ X See photo exhibit.
Disturbed or difficult conditions (check all that apply): ☐ Recent flood or debris flow ☐ Stream modifications (e.g., channelization) ☐ Diversions ☐ Discharges ☐ Drought ☐ Vegetation removal/limitations ☐ Other (explain in notes) X None	Notes on disturbances or difficult site conditions:	
Observed hydrology: ___0___ % of reach with surface flow ___0___ % of reach with sub-surface or surface flow ___0___ # of isolated pools	Comments on observed hydrology: No surface water or saturation detected. Changes in soil characteristics observed in the channel.	

Site sketch:



Aerial view of Drainage A (200m) Assessment Area Reach. Google Earth 2023.

1. Hydrophytic plant species

Record up to 5 hydrophytic plant species (FACW or OBL in the **Arid West** regional wetland plant list) within the assessment area: **within the channel or up to one half-channel width**. Explain in notes if species has an odd distribution (e.g., covers less than 2% of assessment area, long-lived species solely represented by seedlings, or long-lived species solely represented by specimens in decline), or if there is uncertainty about the identification. Enter photo ID, or check if photo is taken.

Check if applicable: ☐ No vegetation in assessment area X No hydrophytes in assessment area

Species	Odd distribution?	Notes	Photo ID

Notes on hydrophytic vegetation: N/A. No hydrophytes in assessment area and little to no vegetation in assessment area.

2 and 3. Aquatic invertebrates

2. How many aquatic invertebrates are quantified in a 15-minute search?

Number of individuals quantified:
X None
☐ 1 to 19
☐ 20 +

(Do not count mosquitos)

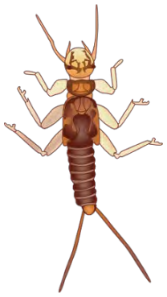
Photo ID:_____

3. Is there evidence of aquatic stages of EPT (Ephemeroptera, Plecoptera and Trichoptera)?

Yes / No



Ephemeroptera larva
Image credit: Dieter Tracey



Plecoptera larva
Tracey Saxby



Trichoptera larva
Tracey Saxby

Notes on aquatic invertebrates:

4. Algal Cover

Are algae found on the streambed?		Notes on algae cover:	Photo ID:
☐ Check if *all* observed algae appear to be deposited from an upstream source.	X Not detected ☐ Yes, < 10% cover ☐ Yes, ≥ 10% (check Yes in single indicator below)		

5. Are single indicators observed?

Indicator	Present	Notes	Photo ID
Fish	☐ Yes X No, no fish ☐ No, only non-native mosquitofish		
Algae cover ≥ 10%	☐ Yes X No		

Supplemental information E.g., aquatic or semi-aquatic amphibians, snakes, or turtles; iron-oxidizing bacteria and fungi; etc.

Some moss <5% observed along shaded channel banks in the assessment area

Photo log

Indicate if any other photos taken during the assessment

Photo ID	Description
Jurisdictional Delineation Report 2023, Exhibit 5	See representative photos *, *, *, and *.

Additional notes about the assessment:

The Antecedent Precipitation Tool (APT) data for the date of the field visit (09/15/2023) shows that the visit was conducted during the dry season and normal conditions apply to this timeframe. The Drainage A assessment area was observed to be completely dry during the jurisdictional delineation conducted in September 2023.

The results of this form indicate an ephemeral conclusion due to an absence of hydrophytes, an absence of aquatic invertebrates, absence of EPT taxa, absence of algae, and absence of single indicators.

The results of the APT data and the information contained herein support the determination of an ephemeral streamflow duration for the upper and middle reaches of Drainage A as depicted on Exhibit 3A

of the jurisdictional delineation report. These results are also representative of Tributary A-1 as depicted on Exhibit 3A of the jurisdictional delineation report.

Classification: __Ephemeral_____

1. Hydrophytic plant species	2. Aquatic invertebrates	3. EPT taxa	4. Algae	5. Single indicators • fish present • algae cover ≥ 10%	Classification
None	None	Absent	Absent	Absent	**Ephemeral**
				Present	**At least intermittent**
			Present	Absent	**Need more information**
				Present	**At least intermittent**
	Few (1-19)	Absent	Absent	Absent	**Need more information**
				Present	**At least intermittent**
			Present	Absent	**Need more information**
				Present	**At least intermittent**
		Present			**At least intermittent**
	Many (20+)	Absent	Absent	Absent	**Need more information**
				Present	**At least intermittent**
			Present	Absent	**Need more information**
				Present	**At least intermittent**
		Present			**At least intermittent**
Few (1-2)	**None**	**Absent**	**Absent**	**Absent**	**Need more information**
				Present	**At least intermittent**
			Present		**At least intermittent**
	Few (1-19)	Absent	Absent		**Intermittent**
			Present		**At least intermittent**
		Present			**At least intermittent**
	Many (20+)	Absent	Absent		**Intermittent**
			Present		**At least intermittent**
		Present	Absent		**At least intermittent**
			Present		**Intermittent**
Many (3+)	None	Absent	Absent	Absent	**Need more information**
				Present	**At least intermittent**
			Present		**At least intermittent**
	Few (1-19)	Absent			**At least intermittent**
		Present			**Perennial**
	Many (20+)	Absent			**At least intermittent**
		Present			**Perennial**

Shading provided to enhance readability by increasing the contrast between neighboring cells; empty cells indicate the classification will not change with additional information however it is recommended that all five indicators be measured and recorded during every assessment.

Beta Arid West Streamflow Duration Assessment Method

General site information

Project name or number: Greentree Project, Unincorporated Riverside County, CA		
Site code or identifier: N/A	Assessor(s): Lesley Lokovic and David Smith	
Waterway name: Unnamed drainage feature (referred to herein as Tributary A-2)		Visit date: September 15, 2023
Current weather conditions (check one) ☐ Storm/heavy rain ☐ Steady rain ☐ Intermittent rain ☐ Snowing ☐ Cloudy (___ % cover) X Clear/Sunny	Notes on current or recent weather conditions (e.g., precipitation in previous week): Clear; no precipitation in previous week	Coordinates at downstream end (decimal degrees): Lat (N): 33.867582 Long (W): -117.425707 Datum: NAD 1983
Surrounding land-use within 100 m (check one or two): X Urban/industrial/residential ☐ Agricultural (farmland, crops, vineyards, pasture) ☐ Developed open-space (e.g., golf course) ☐ Forested X Other natural – undeveloped land ☐ Other: _____	Describe reach boundaries: The reach boundary (the assessment area) is the central portion of Tributary A-2 that occurs within the Project site. The reach extends northwesterly through the north-central portion of the Project site for approximately 200 meters. Vegetation observed in the Drainage A assessment area include FAC or drier species. No hydrophytes (FACW or OBL) were observed in the assessment area.	
Mean channel width (m) 1 m	Reach length (m): 40x width; min 40 m; max 200 m. 200 m	Enter photo ID, or check if completed Top down: _____ Mid down: _____ Mid up: _____ Bottom up: _____ X See photo exhibit.
Disturbed or difficult conditions (check all that apply): ☐ Recent flood or debris flow ☐ Stream modifications (e.g., channelization) ☐ Diversions ☐ Discharges ☐ Drought ☐ Vegetation removal/limitations ☐ Other (explain in notes) X None	Notes on disturbances or difficult site conditions:	
Observed hydrology: ___0___ % of reach with surface flow ___0___ % of reach with sub-surface or surface flow ___0___ # of isolated pools	Comments on observed hydrology: No surface water or saturation detected. Changes in soil characteristics observed in the channel.	

Site sketch:



Aerial view of Tributary A-2 (200m) Assessment Area Reach. Google Earth 2023.

1. Hydrophytic plant species

Record up to 5 hydrophytic plant species (FACW or OBL in the **Arid West** regional wetland plant list) within the assessment area: **within the channel or up to one half-channel width**. Explain in notes if species has an odd distribution (e.g., covers less than 2% of assessment area, long-lived species solely represented by seedlings, or long-lived species solely represented by specimens in decline), or if there is uncertainty about the identification. Enter photo ID, or check if photo is taken.

Check if applicable: ☐ No vegetation in assessment area X No hydrophytes in assessment area

Species	Odd distribution?	Notes	Photo ID

Notes on hydrophytic vegetation: N/A. No hydrophytes in assessment area and little to no vegetation in assessment area.

2 and 3. Aquatic invertebrates

2. How many aquatic invertebrates are quantified in a 15-minute search?

Number of individuals quantified:
X None
☐ 1 to 19
☐ 20 +

(Do not count mosquitos)

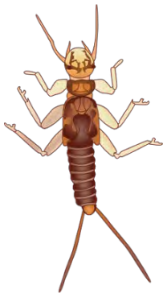
Photo ID:_____

3. Is there evidence of aquatic stages of EPT (Ephemeroptera, Plecoptera and Trichoptera)?

Yes / No



Ephemeroptera larva
Image credit: Dieter Tracey



Plecoptera larva
Tracey Saxby



Trichoptera larva
Tracey Saxby

Notes on aquatic invertebrates:

4. Algal Cover

Are algae found on the streambed? ☐ Check if *all* observed algae appear to be deposited from an upstream source.	X Not detected ☐ Yes, < 10% cover ☐ Yes, ≥ 10% (check Yes in single indicator below)	Notes on algae cover:	Photo ID:

5. Are single indicators observed?

Indicator	Present	Notes	Photo ID
Fish	☐ Yes X No, no fish ☐ No, only non-native mosquitofish		
Algae cover ≥ 10%	☐ Yes X No		

Supplemental information E.g., aquatic or semi-aquatic amphibians, snakes, or turtles; iron-oxidizing bacteria and fungi; etc.

Some moss <5% observed along shaded channel banks in the assessment area

Photo log

Indicate if any other photos taken during the assessment

Photo ID	Description
Jurisdictional Delineation Report 2023, Exhibit 5	See representative photos *, *, *, and *.

Additional notes about the assessment:

The Antecedent Precipitation Tool (APT) data for the date of the field visit (09/15/2023) shows that the visit was conducted during the dry season and normal conditions apply to this timeframe. The Tributary A-2 assessment area was observed to be completely dry during the jurisdictional delineation conducted in September 2023.

The results of this form indicate an ephemeral conclusion due to an absence of hydrophytes, an absence of aquatic invertebrates, absence of EPT taxa, absence of algae, and absence of single indicators.

The results of the APT data and the information contained herein support the determination of an ephemeral streamflow duration for Tributary A-2 as depicted on Exhibit 3A of the jurisdictional delineation report. These results are also representative of two small tributary segments associated with

the up- and downstream reaches of Drainage B within the Project site as depicted on Exhibit 3A of the jurisdictional delineation report.

Classification: __Ephemeral_____

1. Hydrophytic plant species	2. Aquatic invertebrates	3. EPT taxa	4. Algae	5. Single indicators • fish present • algae cover ≥ 10%	Classification
None	None	Absent	Absent	Absent	**Ephemeral**
				Present	**At least intermittent**
			Present	Absent	**Need more information**
				Present	**At least intermittent**
	Few (1-19)	Absent	Absent	Absent	**Need more information**
				Present	**At least intermittent**
			Present	Absent	**Need more information**
				Present	**At least intermittent**
		Present			**At least intermittent**
	Many (20+)	Absent	Absent	Absent	**Need more information**
				Present	**At least intermittent**
			Present	Absent	**Need more information**
				Present	**At least intermittent**
		Present			**At least intermittent**
Few (1-2)	**None**	**Absent**	**Absent**	**Absent**	**Need more information**
				Present	**At least intermittent**
			Present		**At least intermittent**
	Few (1-19)	Absent	Absent		**Intermittent**
			Present		**At least intermittent**
		Present			**At least intermittent**
	Many (20+)	Absent	Absent		**Intermittent**
			Present		**At least intermittent**
		Present	Absent		**At least intermittent**
			Present		**Intermittent**
Many (3+)	None	Absent	Absent	Absent	**Need more information**
				Present	**At least intermittent**
			Present		**At least intermittent**
	Few (1-19)	Absent			**At least intermittent**
		Present			**Perennial**
	Many (20+)	Absent			**At least intermittent**
		Present			**Perennial**

Shading provided to enhance readability by increasing the contrast between neighboring cells; empty cells indicate the classification will not change with additional information however it is recommended that all five indicators be measured and recorded during every assessment.