# Appendix E –
# Jurisdictional Delineation for Esperanza Hills Specific Plan Area Prepared by Glen Lukos Associates, Inc. dated March 18, 2013 (revised May 9, 2013 and July 15, 2013)

GLENN LUKOS ASSOCIATES
Regulatory Services

March 18, 2013 [Revised May 9, 2013] [Revised July 15, 2013]

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7114 East Stetson, Suite 350
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SUBJECT: Jurisdictional Delineation for Esperanza Hills Specific Plan Area, Unincorporated Orange County, California.

Dear Mr. Wymore:

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

The Esperanza Hills Specific Plan Area Project Site (Project) in Unincorporated Orange County [Exhibit 1], comprises approximately 504.20 acres. Within the 504.20-acre Project Site Study Area, 468.94 acres is on-site, and an additional 35.26 acres consists of off-site areas necessary for emergency access and utilities. The site contains four blue-line drainages (as depicted on the U.S. Geological Survey (USGS) topographic map (dated 1964 and photorevised in 1981) and Prado Dam (dated 1967 and photorevised in 1981]) [Exhibit 2]. On August 17, 21, and 22, 2007 and January 9 and 11, and February 11 and 22, 2013 regulatory specialists of Glenn Lukos Associates, Inc. (GLA) examined the project site to determine the limits of (1) Corps jurisdiction pursuant to Section 404 of the Clean Water Act, (2) CDFW jurisdiction pursuant to Division 2, Chapter 6, Section 1600 of the Fish and Game Code, and 3) Regional Board jurisdiction pursuant to Section 401 of the Clean Water Act. Enclosed are two 700-scale maps that depict the areas of Corps (and Regional Board) [Exhibit 3a] and CDFW [Exhibit 3b] 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.

[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. This report reflects the results of a verification visit with a representative of the Corps on July 12, 2013.

Areas of potential Corps jurisdiction within the Study Area total approximately 2.08 acres of which 0.19 acre is wetlands. With the exception of Drainage G and offsite portions of Drainage D, which exhibit intermittent flows, all of the drainages depicted on Exhibit 3a consist of non-relatively permanent (i.e., ephemeral) waters.

CDFW jurisdiction within the Study Area totals approximately 4.15 acres of which 2.57 acres consist of vegetated riparian habitat.

All of the drainages on the site are tributary to downstream navigable waters and as such are not isolated and therefore subject to Section 401 Certification by the Regional Board.

## I. METHODOLOGY

Prior to beginning the field delineation a 200-scale color aerial photograph, a 200-scale topographic base map of the property, and the previously cited USGS topographic maps were examined to determine the locations of potential areas of Corps/CDFW jurisdiction. Potential jurisdictional areas were field checked for the presence of definable channels and/or wetland vegetation, soils and hydrology. Suspected wetland habitats on the site were evaluated using the methodology set forth in the U.S. Army Corps of Engineers 1987 Wetland Delineation Manual[2] (Wetland Manual), the 2008 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Arid West Region, Version 2.0),[3] and the 2008 Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States. [4] While in the field the limits of CDFW jurisdiction were recorded onto a 300-scale color aerial photograph using visible landmarks. Other data were recorded onto wetland data sheets. A representative of the Corps visited the site on July 12, 2013 and this report reflects the determination of the extent of jurisdictional waters, including wetlands, during the field verification visit.

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

[3] U.S. Army Corps of Engineers. 2008. Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Supplement. Ed. J.S. Wakeley, R.W. Lichevar, and C.V. Noble. ERDC/EL TR-06-16. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

[4] 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. Ed. R.W. Lichvar and S.M. McColley ERDC/CRREL TR-08-12. Hanover, NH: U.S. Army Engineer Research and Development Center.

The Soil Conservation Service (SCS)[5] indicates the following soil types as occurring in the general vicinity of the project site [Exhibit 5]:

***Alo Series***

The Alo series consists of well-drained soils in the foothills. Slopes range from 9 to 50 percent. These soils formed in material weathered from calcareous sandstone and shale. Vegetation typically associated with the Alo series includes annual grasses, mustard and other forbs. In a typical profile, the surface layer is dark grayish brown clay 25 inches thick. Underlying this is light yellowish brown lime coated weathered shale. The soil is slightly acidic to moderately alkaline, and is slowly permeable. The Alo soils are used for dryland barley, dryland pasture, irrigated citrus, and urban development.

Within the Project Site, areas mapped as Alo Clay soils occur on hillsides and hill tops at higher elevations in the central portion of the property and currently supports grasslands, coastal sage scrub, and ruderal vegetation. Alo soils mapped within the Project Site include:

- Alo Clay, 9 to 15 percent slopes (100)
- Alo Clay, 15 to 30 percent slopes (101)

***Alo Variant Clay***

The Alo Variant Clay series consists of well-drained soils on uplands. Slopes range from 9 to 50 percent. These soils are formed in material weathered from calcareous sandstone and shale. Vegetation typically associated with the Alo Variant Clay series includes annual grasses, mustard and other forbs. In a typical profile the upper 26 inches is reddish brown light clay. The next 14 inches of reddish brown calcareous light clay with 10 to 20 percent lime threads and soft lime masses. The underlying material is fractured weathered soft sandstone and shale to a depth of 66 inches or more; the upper 8 inches is coated with lime threads and soft lime masses. Alo Variant Clay Soils are used for citrus, dryland barley, range, dryland pasture, and urban development.

Within the Project Site, areas mapped as Alo Variant Clay soils occur in a lower elevationsof the southwestern portion of the property and currently supports Coastal sage scrub. Alo Variant Clay soils mapped within the Project Site include:

- Alo Variant Clay; 15 to 30 percent slopes (104)

[5] SCS is now known as the National Resource Conservation Service or NRCS.

***Anaheim Series***

The Anaheim series consists of well drained soils on foothills. Slopes range from 15 to 75 percent. These soils developed in weathered material from soft sandstone or shale. Vegetation typically associated with the Anaheim series soils include sage, flattopped buckwheat, sumac or other brush, mustard, live oak, and annual grasses. Typically, the surface layer is grayish brown clay loam 26 inches thick. The underlying material is weathered fractured sandstone or shale. The soil is slightly acidic and mildly alkaline. The Anaheim soils are used for dryland pasture range, field crops and watershed.

Within the Project Site, areas mapped as Anaheim soils occur in a variety of elevations and consist of ridgetops, hillsides, and drainages. These areas support grassland, riparian, chaparral, coastal sage scrub, and ruderal vegetation. Anaheim soils mapped within the Project Site include:

- Anaheim Loam, 30 to 50 percent slopes (107)
- Anaheim Clay Loam, 15 to 30 percent slopes (108)
- Anaheim Clay Loam, 30 to 50 percent slopes (109)
- Anaheim Clay Loam, 50 to 75 percent slopes (110)

***Calleguas Series***

The Calleguas series are well-drained soils of the uplands. Slopes range from 50 to 75 percent. These soils developed on material weathered from lime coated shale or lime coated sandstone, or both. Vegetation typically associated with the Calleguas soils includes annual grasses, forbs, and some brush. Typically, the surface layer consists of pale brown clay loam and shaly clay loam 15 inches thick. The underlying material is soft fractured shale with lime coatings. This soil is moderately akaline and calcareous throughout. Calleguas soils are used for range, watershed, wildlife, and urban development.

Within the Project Site, areas mapped as Calleguas soils occur on hillsides, riparian, and ridgelines throughout the property. Calleguas soils support coastal sage scrub, chaparral, sage scrub chaparral ecotone, grassland and ruderal vegetation types. Calleguas soils mapped within the Project Site include:

- Calleguas Clay Loam, 50 to 75 percent slopes (134)

***Cieneba Series***

The Cieneba series are somewhat excessively drained soils. Slopes range from 9 to 75 percent. These soils developed in material weathered from granitic rocks of the Santa Ana Mountains and

from sandstone of the coastal foothills. Vegetation typically associated with the Cieneba soils is mostly brush. Typically, the surface layer consists of light brownish gray and pale brown sandy loam 7 inches thick. The underlying material is weathered granodiorite. The soil is medium acid throughout and is moderately rapidly permeable. Cieneba soils are used for watershed, wildlife habitat, and range.
Within the Project Site, areas mapped as Cieneba soils occur on hillsides, riparian, and ridgelines throughout the property. Cieneba soils support coastal sage scrub, chaparral, and ruderal vegetation types. Cieneba soils mapped within the Project Site include:

- Cieneba-Rock Outcrop Complex, 30 to 75 percent slopes (145)

***Mocho Series***

The Mocho series consist of well-drained soils on alluvial fans and floodplains. Slopes range from 0 to 9 percent. These soils developed in alluvium derived from sedimentary rocks. Vegetation typically associated with the Mocho soils is annual grasses, forbs and Sycamore trees. Typically, the surface layer consists of brown and grayish brown loam 31 inches thick. The underlying materials are light brownish gray, brown, and pale brown stratified fine sandy loam, silty clay loam, and loam to a depth of 61 inches or more. The soil is moderately alkaline and calcareous throughout. Mocho soils are used for irrigated crops, citrus, and urban development.

Within the Project Site, areas mapped as Mocho soils occur on low elevation hills in the extreme southern portion of the property. Mocho soils support coastal sage scrub, and sage scrub-chaparral ecotone. Mocho soils mapped within the Project Site include:

- Mocho Loam, 2 to 9 percent slopes (167)

***Myford Series***

The Myford series consist of well-drained soils on maritime terraces. Slopes range from 0 to 30 percent. These soils developed in sandy sediments. Vegetation typically associated with the Myford soils is annual grasses, forbs and low-lying brush. Typically, the surface layer consists of a pale brown and pinkish gray, medium acid sandy loam 4 inches thick. The underlying material consists of pinkish gray, medium acid sandy loam 8 inches thick. The substratum is very pale brown slightly acid sandy loam to a depth of 79 inches or more. The soil is very slowly permeable. Myford soils are used for citrus, pasture, range, barley, and urban development.

Within the Project Site, areas mapped as Myford soils occur on moderate elevation hilltops in the south central portion of the property. Myford soils on the property support coastal sage scrub,

sage scrub-chaparral ecotone, ruderal and developed land. Myford soils mapped within the Project Site include:

- Myford Sandy Loam, 2 to 9 percent slopes (173)
- Myford Sandy Loam, 9 to 15 percent slopes (175)

***Nacimiento Series***

The Nacimiento series consist of well-drained soils on foothills. Slopes range from 15 to 50 percent. These soils developed in material weathered from soft sandstone or shale, or both. Vegetation typically associated with the Nacimiento soils is sagebrush and annual grasses. Typically, the surface layer consists of a brown clay loam 28 inches in depth. The underlying material consists of light yellowish brown and very pale brown shale or sandstone, or both. The soil is moderately alkaline and calcareous throughout. Nacimiento soils are used for pasture, range, and watershed.

Within the Project Site, areas mapped as Nacimiento soils occur on ridgetops in the southwestern portion of the property. Nacimiento soils on the property support coastal sumac savannah, grassland, and ruderal vegetation types. Nacimiento soils mapped within the Project Site include:

- Nacimiento Clay Loam, 15 to 30 percent slopes (180)

***Soper Series***

The Soper series consist of well-drained soils on foothills. Slopes range from 15 to 75 percent. These soils developed in weakly consolidated sandstone and conglomerate. Vegetation typically associated with the Soper series consist of cactus, brush, and annual grassland. Typically, the surface layer consists of a brown, slightly acid, gravelly loam 8 inches thick. The sub-soil is reddish brown and yellowish red, neutral gravelly clay loam, and gravelly loam 21 inches thick. Soper soils are used for pasture, range, wildlife habitat, and watershed.

Within the Project Site, areas mapped as Soper soils occur on a ridgetop in the extreme western portion of the property. Soper soils on the property support coastal sumac savannah, grassland, and ruderal vegetation types. Soper soils mapped within the Project Site include:

- Soper Gravelly Loam, 15 to 30 percent slopes (201)

***Sorrento Series***

The Sorrento series consist of well-drained soils on alluvial fans and floodplains. Slopes range from 0 to 9 percent. These soils developed from alluvium derived from sedimentary rocks. Vegetation typically associated with the Sorrento soils is annual grasses, forbs and Sycamore trees. Typically, the surface layer consists of a grayish brown loam 12 inches thick. The underlying material consists of grayish brown, light brownish gray, and pale brown silty clay loam to a depth of 62 inches and light brown gray sandy loam to a depth of 72 inches. The soil is neutral in the upper 6 inches and becomes moderately alkaline and calcareous below. Sorrento soils are used for irrigated crops, citrus and urban development.

Within the Project Site, areas mapped as Sorrento soils occur on hill sides, and riparian areas in the western portion of the property and supports riparian, sage scrub, and sage scrub-chaparral ecotone vegetation types. Sorrento soils mapped within the Project Site include:

- Sorrento Clay Loam, 2 to 9 percent slopes (209)

None of these soil units are identified as hydric in the SCS's publication, Hydric Soils of the United States[6], or the local hydric soils list for Orange County, California.

## 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) All waters which are 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;*
> *(2) All interstate waters including interstate wetlands;*
> *(3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation*

[6] United States Department of Agriculture, Soil Conservation Service. 1991. Hydric Soils of the United States, 3rd Edition, Miscellaneous Publication Number 1491. (In cooperation with the National Technical Committee for Hydric Soils.)

*or destruction of which could affect foreign commerce including any such waters:*

*(i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or*

*(ii) From which fish or shell fish are or could be taken and sold in interstate or foreign commerce; or*

*(iii) Which are used or could be used for industrial purpose by industries in interstate commerce...*

*(4) All impoundments of waters otherwise defined as waters of the United States under the definition;*

*(5) Tributaries of waters identified in paragraphs (a) (1)-(4) of this section;*

*(6) The territorial seas;*

*(7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) (1)-(6) of this section.*

## 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(b) as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support...a prevalence of vegetation typically adapted for life in saturated soil conditions." In 1987 the Corps published a manual to guide its field personnel in determining jurisdictional wetland boundaries. The methodology set forth in the 1987 Wetland Delineation 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 Region Version 2.0 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 typical of wetlands (i.e., rated as facultative or wetter in the National List of Plant Species that Occur in Wetlands[7]);

- 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

[7] U.S. Army Corps of Engineers. 2012. The National Wetland Plant List. Ed. R.W. Lichvar. ERDC/CRREL TR-12-11. Hanover, NH: U.S. Army Engineer Research and Development Center.

- Whereas the 1987 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. California Department of Fish and Wildlife

Pursuant to Division 2, Chapter 6, Sections 1600-1603 of the California Fish and Wildlife 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 jurisdiction within altered or artificial waterways is based upon the value of those waterways to fish and wildlife. CDFW Legal Advisor has prepared the following opinion:

- Natural waterways that have been subsequently modified and which have the potential to contain fish, aquatic insects and riparian vegetation will be treated like natural waterways...

- Artificial waterways that have acquired the physical attributes of natural stream courses and which have been viewed by the community as natural stream courses, should be treated by [CDFW] as natural waterways...

- Artificial waterways without the attributes of natural waterways should generally not be subject to Fish and Wildlife Code provisions...

Thus, CDFW jurisdictional limits closely mirror those of the Corps. Exceptions are CDFW's exclusion of isolated wetlands (those not associated with a river, stream, or lake), the addition of artificial stock ponds and irrigation ditches constructed on uplands, and the addition of riparian habitat supported by a river, stream, or lake regardless of the riparian area's federal wetland status.

### C. Regional Water Quality Control Board

All of the drainages within the Study Area are tributary to downstream navigable waters and as such are subject to Regional Board jurisdiction under Section 401 of the Clean Water Act. There are no isolated drainages within the Study Area subject to Regional Board jurisdiction in accordance with the Porter-Cologne Act.

## III. RESULTS

### A. Corps Jurisdiction

The Esperanza Hills Specific Plan Study Area contains 2.08 acres of waters on-site, of which 0.19 acre consist of wetlands. All of the drainages with the exception of Drainage G and offsite portions of Drainage D, below its confluence with Drainage G, are ephemeral, meaning that they are non-relatively permanent waters (Non-RPWs). There are seven main drainage systems within the Project Study Area (A–G). Drainage System D, E, F, and G and their tributaries are the main features on site. All of these drainages exhibit signs of an OHWM, which is indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, and/or the presence of litter and debris. Table 1 below summarizes Corps jurisdiction. The drainages potentially subject to Corps jurisdiction are depicted on the enclosed delineation map (Exhibit 3a) and includes onsite and offsite areas.

**Drainage System A**

Corps jurisdiction associated with Drainage System A totals approximately 0.12 acre, none of which consists of wetlands. Drainage System A is located in the northeastern portion of the Project area and is tributary to Drainage System D which traverses the site and then exits the property to the south-west. Drainage A extends from the north to south for approximately 3,630 linear feet before the confluence with Drainage D. The OHWM associated with this drainage system varies in width from one to two feet. Drainage System A exhibits an OHWM that is indicated by the presence of shelving, debris wrack, and/or destruction of terrestrial vegetation.

The banks of Drainage System A are generally vegetated with Toyon-Sumac Chaparral. In general drainage A is characterized by a dominance of evergreen chaparral species including toyon (*Heteromeles arbutifolia*, UPL), laurel sumac (*Malosma laurina* UPL), lemonade berry (*Rhus integrifolia* UPL), holly-leaved redberry (*Rhamnus ilicifolia*, UPL), poison oak (*Toxicodendrom diversilobium*, UPL), and southern honeysuckle (*Lonicera subspicata*, UPL).

**Drainage System B**

Corps jurisdiction within the Study Area associated with Drainage System B totals approximately 436 square feet (0.01 acre), all of which occurs on-site. None of Drainage B consists of wetlands. From where it enters the site, Drainage B flows from the north to south for approximately 281 linear feet to the confluence with Drainage D. The OHWM associated with this drainage system varies in width from one to two feet and is indicated by the presence of shelving, debris wrack, and/or destruction of terrestrial vegetation.

In general, Drainage B is characterized by a dominance of bush mallow (*Malacothamnus fasciculatus*, UPL), ), coyote bush (*Baccharis pilularis*, UPL), laural sumac (*Malosma laurina*, UPL), giant wild rye (*Leymus condensatus*, FACU), poison oak (*Toxicodendron diversilobium*, UPL), sweet fennel (*Foeniculum vulgare*, UPL), southern honeysuckle (*Lonicera subspicata*, UPL), poison hemlock (*Conium maculatum*, FAC), chaparral nightshade (*Solanum xanti*, UPL), stinging nettle (*Urtica dioica*, FAC), and fuchsia flowered gooseberry (*Ribes speciosum*, UPL).

**Drainage System C**

Corps jurisdiction associated with Drainage System C totals approximately 44 square feet (0.001 acre), none of which consist of wetlands. Drainage System C is located in the northwestern portion of the Project area and is tributary to Drainage System D as noted above. This drainage system flows from the north to south for approximately 415 linear feet more-or-less straddling the property line, such that only 14 linear feet are actually located within the Study Area. The OHWM in this drainage system averages approximately two feet in width. Drainage System C exhibits an OHWM that is indicated by the presence of shelving, debris wrack, and/or destruction of terrestrial vegetation.

The banks of Drainage System C generally support a mix of native scrub species and herbaceous weedy species including laurel sumac (*Malosma laurina*, UPL), poison oak (*Toxicodendron diversilobium*, UPL), sweet fennel (*Foeniculum vulgare*, UPL), southern honeysuckle (*Lonicera subspicata*, UPL), poison hemlock (*Conium maculatum*, FAC), chaparral nightshade (*Solanum xanti*, UPL), and California sage brush (*Artemisia californica* UPL).

**Drainage System D**

Corps jurisdiction associated with Drainage System D within the Study Area totals approximately 0.74 acre, of which approximately 0.13 acre consist of wetlands. Drainage System D is located in the north-central portion of the Project and traverses the site flowing east to west before exiting the property at the western edge of the site and extending to the limits of the Study Area at San Antonio Road. This Drainage extends for 9,409 linear through the Study

Area. The OHWM in this drainage system varies in width from one to five feet within the project boundaries. Drainage System D exhibits an OHWM that is indicated by the presence of shelving, debris wrack, and/or destruction of terrestrial vegetation.

Drainage System D generally contains coast live oak riparian forest as well as several small areas of mulefat scrub. The extreme southern portion of Drainage D, which is within offsite portions of the study area is characterized by Black Willow Riparian Forest. In general Drainage D is characterized by a dominance of bush mallow (*Malacothamnus fasciculatus*, UPL), coyote bush (*Baccharis pilularis*, UPL), laurel sumac (*Malosma laurina*, UPL), giant wild rye (*Leymus condensatus*, FACU), poison oak (*Toxicodendron diversilobium*, UPL), sweet fennel (*Foeniculum vulgare*, UPL), southern honeysuckle (*Lonicera subspicata*, UPL), poison hemlock (*Conium maculatum*, FAC), chaparral nightshade (*Solanum xanti*, UPL), mulefat (*Baccharis salicifolia*, FAC), coast live oak (*Quercus agrifolia*, UPL), stinging nettle (*Urtica dioica*, FAC), fuchsia flowered gooseberry (*Ribes speciosum*, UPL), and within the southernmost extent, black willow (*Salix gooddingii*, FACW) and arroyo willow (*Salix lasiolepis*, FACW) with areas immediately adjacent exhibit high levels of disturbance due to dense stands of non-native species such as poison hemlock that is mixed with other non-native invasive species such as castor bean (*Ricinus communis*, FACU) and tree tobacco (*Nicotiana glauca*, FACU).

The reach of Drainage D in the vicinity of the offsite access road right-of-way connection to San Antonio Road consists of an intermittent drainage and adjacent wetlands that vary in width from eight to 40 feet with an earthen bank and bottom with the bottom exhibiting small cobbles. The channel is mostly unvegetated, with limited small patches of southern cattail (*Typha domingensis*, OBL), and non-natives such white watercress (*Rorippa nasturtium-aquaticum*, OBL), yerba mansa (*Anemopsis californica*, OBL), and African umbrella sedge (*Cyperus involucratus*, FACW). The banks support southern arroyo willow forest dominated by black willow (*Salix gooddingii*, FACW), occasional arroyo willow (*Salix lasiolepis*, FACW), and mulefat (*Baccharis salicifolia*, FAC). Large areas of the bank and adjacent terrace exhibit substantial disturbance and are dominated by non-natives such as poison hemlock (*Conium maculatum*, FAC), castor bean (*Ricinus communis*, FACU), summer mustard (*Hirschfeldia incana*, UPL), sweet fennel (*Foeniculum vulgare*, UPL), and tree tobacco (*Nicotiana glauca*, FACU).

**Drainage System E**

Corps jurisdiction associated with Drainage System E totals approximately 0.47 acre, none of which consists of wetlands. Drainage System E is located in the southern portion of the Project area and converges with Drainage System G, as noted above. This drainage system flows from the east to west for approximately 7,563 linear feet before its confluence with Drainage G. The

OHWM varies in width from one to five feet as indicated by the presence of shelving, debris wrack, and/or destruction of terrestrial vegetation.

The banks of Drainage System E are vegetated with scrub and non-native grasses including bush mallow (*Malacothamnus fasciculatus,* UPL) a few surviving blue elderberry (*Sambucus nigra* subsp. *caerulea*, FACU), coyote bush (*Baccharis pilularis*, UPL), laurel sumac (*Malosma laurina* UPL), giant wild rye (*Leymus condensatus*, FACU), poison oak (*Toxicodendron diversilobium,* UPL), sweet fennel (*Foeniculum vulgare*, UPL), poison hemlock (*Conium maculatum*, FAC), chaparral nightshade (*Solanum xanti*, UPL), mulefat (*Baccharis salicifolia*, FAC), and fuchsia flowered gooseberry (*Ribes speciosum*, UPL).

**Drainage System F**

Corps jurisdiction associated with on-site segments of Drainage System F total approximately 0.70 acre, of which 0.02 acre consists of wetlands. The Corps jurisdictional wetland associated with Drainage F is within the off-site portion of the Study Area and is associated with a small debris basin. Drainage System F is located in the southern portion of the Project area and extends from the east to west for approximately 6,076 linear feet before exiting the Study Area at the southwest corner. The OHWM in this drainage system varies in width from one to 25 feet. Drainage System F exhibits an OHWM that is indicated by the presence of shelving, debris wrack, and/or destruction of terrestrial vegetation.

Drainage System F is generally vegetated with mulefat scrub, remnant California walnut woodland (most were killed by the 2008 Freeway Complex Fire), California walnut woodland/mulefat scrub, and limited amounts of blue elderberry woodland (also largely killed by the fire). In general drainage F is characterized by a dominance of bush mallow (*Malacothamnus fasciculatus*, UPL), limited areas of Arroyo willow (*Salix lasiolepis*, FACW), mulefat (*Baccharis salicifolia*, FAC), coyote bush (*Baccharis pilularis*, UPL), laural sumac (*Malosma laurina* UPL), giant wild rye (*Leymus condensatus*, FACU), poison oak (*Toxicodendron diversilobium,* UPL), sweet fennel (*Foeniculum vulgare*, UPL), stinging nettle (*Urtica dioica*, FAC), and fuchsia flowered gooseberry (*Ribes speciosum*, UPL).

**Drainage System G**

Corps jurisdiction associated with Drainage System G is all in the off-site portion of the Study Area and could be affected by development of an emergency access road connecting to the existing Aspen Way cul-de-sac. Drainage G totals approximately 0.04 acre, all of which consist of jurisdictional wetlands. Drainage System G is located in the western portion of the Project area. The Drainage flows from the north to south for approximately 187 linear feet and is tributary to Drainage D, which is noted above. The OHWM in this drainage system varies in

width from six to ten feet. Drainage System G supports an OHWM consisting of shelving, debris wracks, and/or destruction of terrestrial vegetation.

Drainage System G is generally vegetated with Black Willow Riparian Forest. In general drainage g is characterized by a dominance of black willow (*Salix gooddingii*, FACW), arroyo willow (*Salix lasiolepis*, FACW), mulefat (*Baccharis salicifolia*, FACW), common celery (*Apium graveolens*, FACW), sweet fennel (*Foeniculum vulgare*, UPL), blue elderberry (*Sambucus nigra* subsp. *caerulea* FACU), coyote bush (*Baccharis pilularis*, UPL), mugwort (*Artemisia douglasiana*, FACW), and poison hemlock (*Conium maculatum*, FAC),

**TABLE 1. Total Corps Jurisdiction within Study Area (acres)**

| | Total Study Area | | | |
|---|---|---|---|---|
| **Drainage** | **Total Non-Wetland Waters** | **Total Wetland** | **Total Corps Jurisdiction (acres)** | **Linear Length (ft)** |
| A | 0.12 | 0 | 0.12 | 3,630 |
| B | 0.01 | 0 | 0.01 | 281 |
| C | 0.001 | 0 | 0.001 | 14 |
| D | 0.61 | 0.13 | 0.74 | 9,409 |
| E | 0.47 | 0 | 0.47 | 7,563 |
| F | 0.68 | 0.02 | 0.70 | 6,076 |
| G | 0 | 0.04 | 0.04 | 187 |
| **Total** | **1.89** | **0.19** | **2.08** | **27,161** |

## B. CDFW Jurisdiction

CDFW jurisdiction associated with the Esperanza Hills Specific Plan Area totals approximately 4.15 acres of which 2.57 acres consist of vegetated riparian habitat. As described above, there are seven drainages or drainage systems within the Project Study Area. All of the drainage systems support the presence of a bed, bank, and/or channel. For descriptions of CDFW jurisdictional areas and associated vegetation see the descriptions for Corps above. Table 2 below summarizes CDFW jurisdiction for the entire Study Area that includes offsite areas as well. The limits of CDFW jurisdiction are depicted on Exhibit 3b for both onsite and offsite areas.

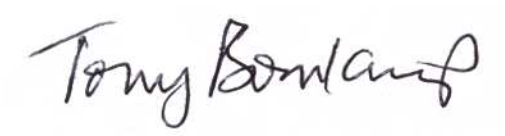
**TABLE 2. Total CDFW Jurisdiction within Study Area (acres)**

| | Total Study Area | | | |
|---|---|---|---|---|
| **Drainage** | **Total Unvegetated Streambed** | **Riparian Streambed** | **Total CDFW Jurisdiction (acres)** | **Linear Length (ft)** |
| A | 0.12 | 0 | 0.12 | 3,630 |
| B | 0.01 | 0 | 0.01 | 281 |
| C | 0.001 | 0 | 0.001 | 14 |
| D | 0.41 | 1.89 | 2.30 | 9,409 |
| E | 0.42 | 0.13 | 0.55 | 7,563 |
| F | 0.62 | 0.51 | 1.13 | 6,076 |
| G | 0 | 0.04 | 0.04 | 187 |
| **Total** | **1.58** | **2.57** | **4.15** | **27,161** |

If you have any questions about this letter report, please contact either Glenn Lukos or Tony Bomkamp at (949) 837-0404.

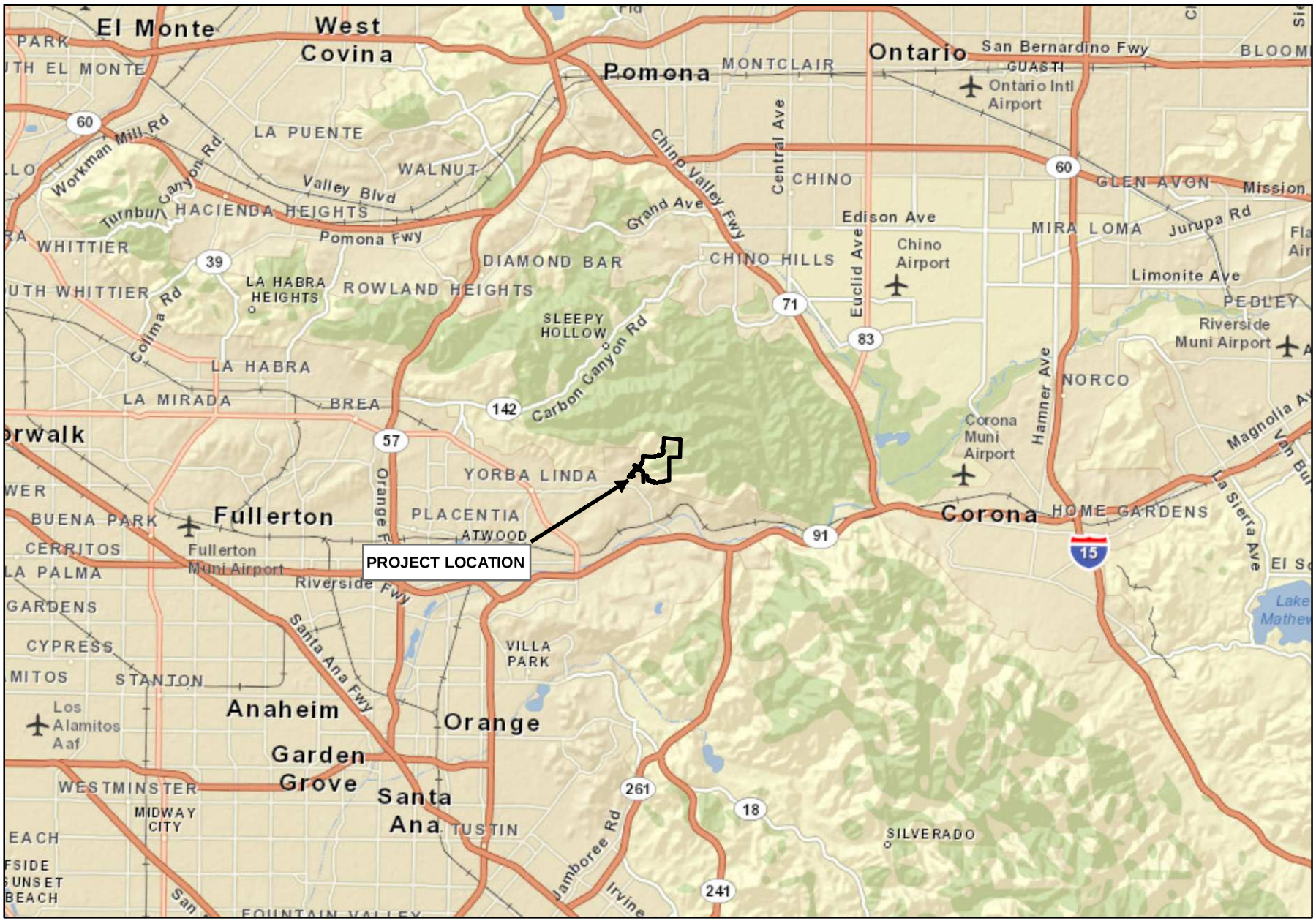
Sincerely,

GLENN LUKOS ASSOCIATES, INC.



Tony Bomkamp
Regulatory Specialist

s:1050-2 JD 071513 REVISED.docx




Source: ESRI World Street Map

N

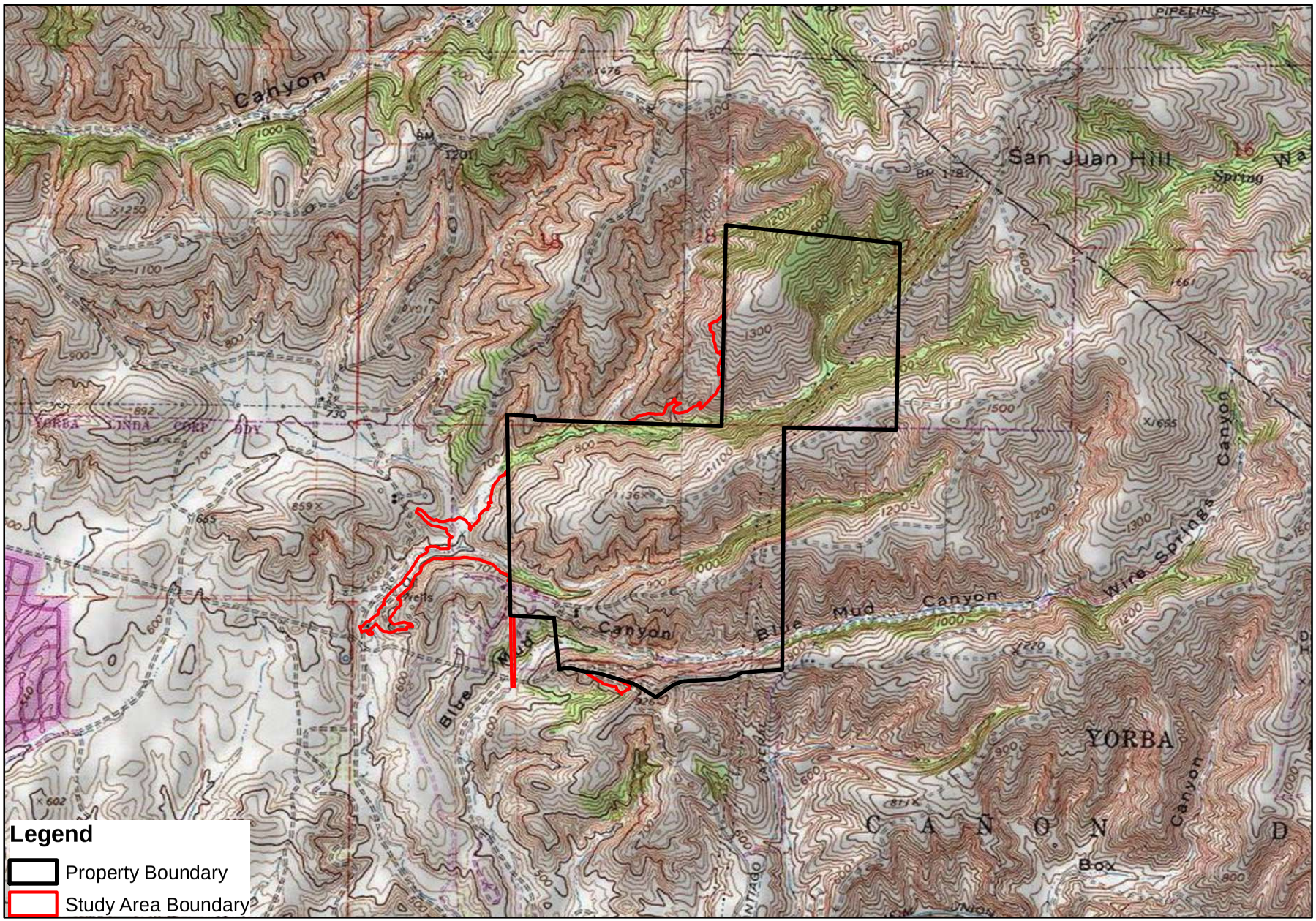
0 2 4 8 Miles

**ESPERANZA HILLS SPECIFIC PLAN AREA**

Regional Map

GLENN LUKOS ASSOCIATES

Exhibit 1




Adapted from USGS Prado Dam & Yorba Linda, CA quadrangles

N

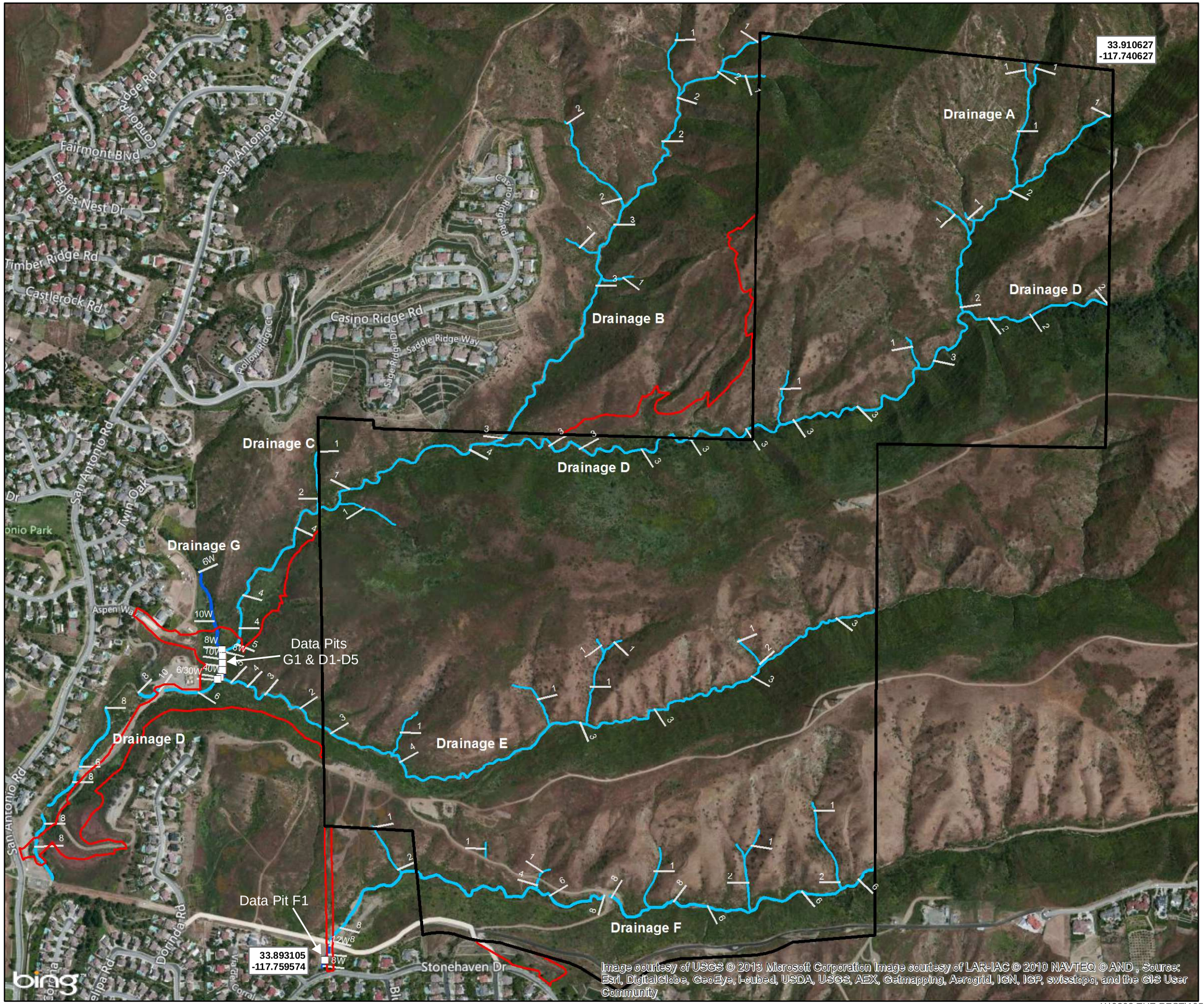
0 1,000 2,000 4,000 Feet

**ESPERANZA HILLS SPECIFIC PLAN AREA**

Vicinity Map

GLENN LUKOS ASSOCIATES

Exhibit 2




## Legend

- Property Boundary
- Study Area Boundary
- Corps Non-Wetland Waters
- Corps Wetland
- Width in Feet (W indicates wetland jurisdiction)
- Data Pit Location

N

0 350 700 1,400

Feet

1 inch = 700 feet

Aerial Photo: ESRI Basemaps Bing Hybrid
Reference Elevation Datum: State Plane 6 NAD 83
Map Prepared by: K. Kartunen, GLA
Date Prepared: May 10, 2013

**ESPERANZA HILLS SPECIFIC PLAN AREA**

Corps Jurisdictional Delineation Map

GLENN LUKOS ASSOCIATES

Exhibit 3A

X:\0363-THE REST\1050-02ESPE\1050-02_GIS FINAL_USE THIS FOLDER\DelineationGIS\1050-2 Exhibit 3A.mxd


## Legend

- Property Boundary
- Study Area Boundary
- CDFW Unvegetated Streambed
- CDFW Riparian
- Width in Feet (R indicates riparian jurisdiction)

N

0 350 700 1,400

Feet

1 inch = 700 feet

Aerial Photo: ESRI Basemaps Bing Hybrid
Reference Elevation Datum: State Plane 6 NAD 83
Map Prepared by: K. Kartunen, GLA
Date Prepared: May 10, 2013

**ESPERANZA HILLS SPECIFIC PLAN AREA**

CDFW Jurisdictional Delineation Map

GLENN LUKOS ASSOCIATES

Exhibit 3B

X:\0363-THE REST\1050-02ESPE\1050-02_GIS FINAL_USE THIS FOLDER\DelineationGIS\1050-2 Exhibit 3B.mxd

Photograph 1: View of Drainage D near middle of site looking east.

Photograph 2: View of Drainage D showing burned oaks looking west.

Photograph 3: View of Drainage D, immediately below confluence with Drainage G, offsite.

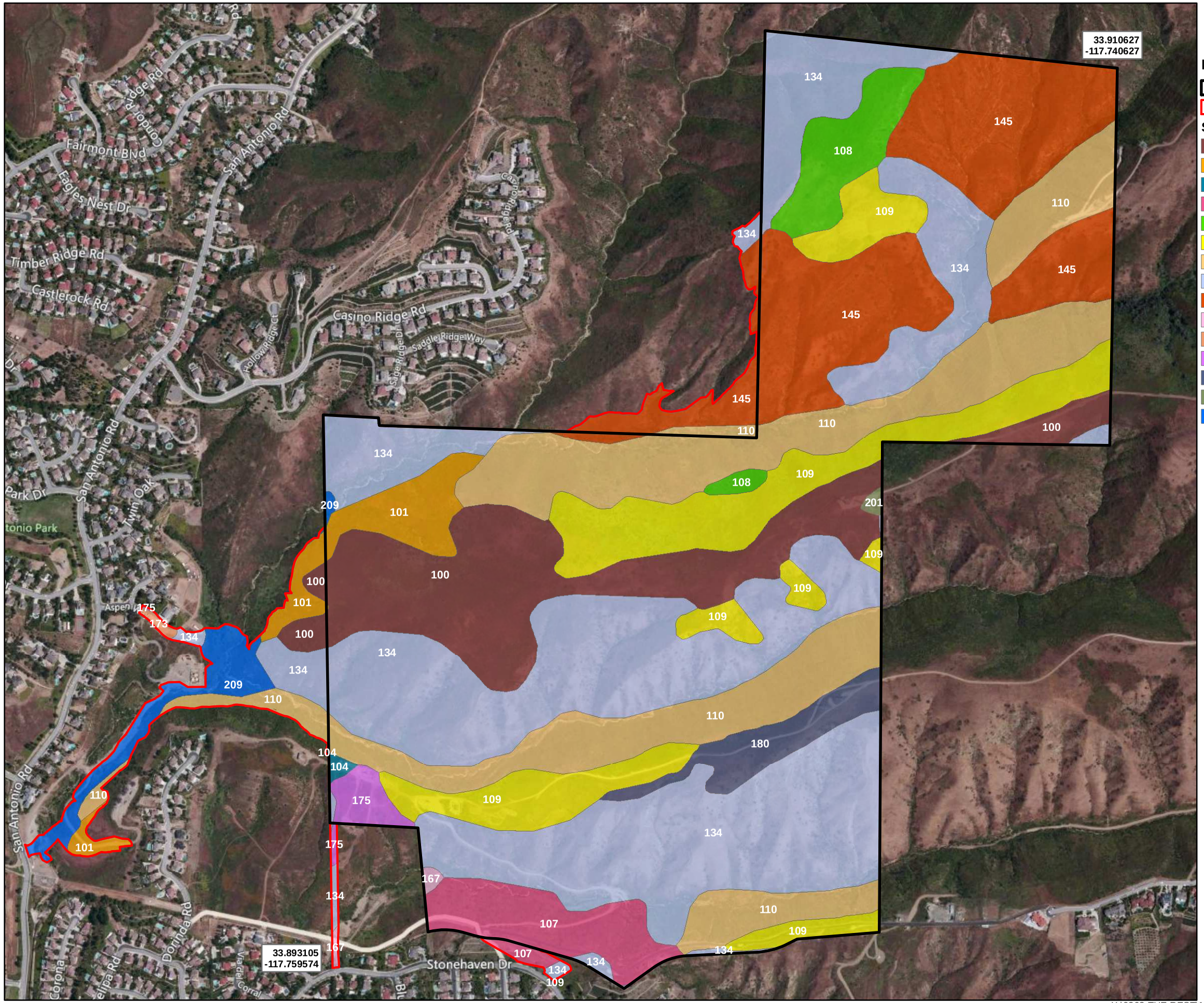
Photograph 4: View of Blue Mud Canyon Drainage looking east before Freeway Complex Fire.

GLENN LUKOS ASSOCIATES

Exhibit 4

**ESPERANZA HILLS**
**SITE SPECIFIC PLAN**

Site Photographs




**Legend**

- Property Boundary
- Study Area Boundary

**Soils**

- 100 - ALO CLAY, 9 TO 15 PERCENT SLOPES
- 101 - ALO CLAY, 15 TO 30 PERCENT SLOPES
- 104 - ALO VARIANT CLAY, 15 TO 30 PERCENT SLOPES
- 107 - ANAHEIM LOAM, 30 TO 50 PERCENT SLOPES
- 108 - ANAHEIM CLAY LOAM, 15 TO 30 PERCENT SLOPES
- 109 - ANAHEIM CLAY LOAM, 30 TO 50 PERCENT SLOPES
- 110 - ANAHEIM CLAY LOAM, 50 TO 75 PERCENT SLOPES
- 134 - CALLEGUAS CLAY LOAM, 50 TO 75 PERCENT SLOPES, ERODED
- 145 - CIENEBA-ROCK OUTCROP COMPLEX, 30 TO 75 PERCENT SLOPES
- 167 - MOCHO LOAM, 2 TO 9 PERCENT SLOPES
- 173 - MYFORD SANDY LOAM, 2 TO 9 PERCENT SLOPES
- 175 - MYFORD SANDY LOAM, 9 TO 15 PERCENT SLOPES
- 180 - NACIMIENTO CLAY LOAM, 15 TO 30 PERCENT SLOPES
- 201 - SOPER GRAVELLY LOAM, 15 TO 30 PERCENT SLOPES
- 209 - SORRENTO CLAY LOAM, 2 TO 9 PERCENT SLOPES

N

0 350 700 1,400
Feet

1 inch = 700 feet

Aerial Photo: ESRI Basemaps Bing Hybrid
Reference Elevation Datum: State Plane 6 NAD 83
Map Prepared by: K. Kartunen, GLA
Date Prepared: May 10, 2013

# ESPERANZA HILLS SPECIFIC PLAN AREA

Soils Map

GLENN LUKOS ASSOCIATES

Exhibit 5

X:\0363-THE REST\1050-02ESPE\1050-02_GIS FINAL_USE THIS FOLDER\SoilsGIS\1050-02 Soils Layout.mxd

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Esperanza Hills City/County: Yorba Linda Sampling Date: 7-12-13
Applicant/Owner: Esperanza Hills LLC State: CA Sampling Point: D2
Investigator(s): TBomkamp Section, Township, Range:
Landform (hillslope, terrace, etc.): Canyon Local relief (concave, convex, none): Concave Slope (%): 25%
Subregion (LRR): LRRC Lat: 33.898649 Long: -117.761113 Datum:
Soil Map Unit Name: Sorrento clay loam 2-9% slopes NWI classification: None L1578D # Palustrine
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? NO (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 X No ____ | **Is the Sampled Area within a Wetland?** Yes X No ____ |
| Hydric Soil Present? | Yes X No ____ | |
| Wetland Hydrology Present? | Yes X No ____ | |

Remarks:

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30'-radius) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Salix lasiolepis | 80 | Y | FACW |
| 2. Salix laevigata | 10 | N | FACW |
| 3. | | | |
| 4. | | | |
| | 90 | = Total Cover | |
| **Sapling/Shrub Stratum** (Plot size: ____) | | | |
| 1. Baccharis salicifolia | 30 | Y | FAC |
| 2. Artemisia douglasiana | 5 | N | FAC |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 35 | = Total Cover | |
| **Herb Stratum** (Plot size: ____) | | | |
| 1. Typha domingensis | 10 | Y | OBL |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 10 | = Total Cover | |
| **Woody Vine Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| | 100+ | = Total Cover | |

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

**Dominance Test worksheet:**
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | Multiply by: | |
|---|---|---|
| OBL species | x 1 = | |
| FACW species | x 2 = | |
| FAC species | x 3 = | |
| FACU species | x 4 = | |
| UPL species | x 5 = | |
| Column Totals: (A) | | (B) |

Prevalence Index = B/A = ____

**Hydrophytic Vegetation Indicators:**
X 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 X No ____

Remarks:

## SOIL

Sampling Point: D2

**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 | 10YR 3/2 | 95 | 7.5Y 4/6 | 5 | C | M | Cobbly | loam |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X 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): NONE

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

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

- ___ Surface Water (A1)
- X 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)**
- X Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)

**Field Observations:**

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

Water Table Present? Yes X No _____ Depth (inches): 9"

Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): 6"

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

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

Remarks:

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Esperanza Hills City/County: Yorba Linda Sampling Date: 7-12-13

Applicant/Owner: Esperanza Hills LLC State: CA Sampling Point: D3

Investigator(s): TBornkamp Section, Township, Range:

Landform (hillslope, terrace, etc.): Canyon Local relief (concave, convex, none): Concave Slope (%): 5-10

Subregion (LRR): LRR C Lat: 33.898649 Long: -117.761113 Datum:

Soil Map Unit Name: Sorrento Clay loam NWI classification: NONE LISTED = Palustrine

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

Are Vegetation NO, Soil NO, or Hydrology NO significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation NO, Soil NO, or Hydrology NO 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 X No ____ | **Is the Sampled Area within a Wetland?** Yes X No ____ |
| Hydric Soil Present? | Yes X No ____ | |
| Wetland Hydrology Present? | Yes X No ____ | |

Remarks:

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30' radius) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Salix lasiolepis | 80 | Y | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 80 = Total Cover | | |
| **Sapling/Shrub Stratum** (Plot size: 30' rad.) | | | |
| 1. Baccharis salicifolia | 10 | Y | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 10 = Total Cover | | |
| **Herb Stratum** (Plot size: 30' rad.) | | | |
| 1. Typha domingensis | 15 | Y | OBL |
| 2. Ahemopis californica | 40 | Y | OBL |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 55 = Total Cover | | |
| **Woody Vine Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| | 100+ = Total Cover | | |

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

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

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

**Prevalence Index worksheet:**

| Total % Cover of: | Multiply by: | |
|---|---|---|
| OBL species | x 1 = | |
| FACW species | x 2 = | |
| FAC species | x 3 = | |
| FACU species | x 4 = | |
| UPL species | x 5 = | |
| Column Totals: (A) | | (B) |

Prevalence Index = B/A = ____

**Hydrophytic Vegetation Indicators:**

X 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 X No ____

Remarks:

## SOIL

Sampling Point: D3

**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 | 10YR 3/2 | 90 | 7.5YR 4/6 | 10 | C | M | Cobbly loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X 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): NONE

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

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

- ___ Surface Water (A1)
- X 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**)
- X Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)

**Field Observations:**

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

Water Table Present? Yes X No ___ Depth (inches): 10"

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 7"

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

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

Remarks:

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Esperanza Hills City/County: Yorba Linda Sampling Date: 7-12-13

Applicant/Owner: Esperanza Hills LLC State: CA Sampling Point: D4

Investigator(s): TBormkamp Section, Township, Range:

Landform (hillslope, terrace, etc.): Canyon Local relief (concave, convex, none): Concave Slope (%): 5 %

Subregion (LRR): LRR C Lat: 33.898649 Long: -117.761113 Datum:

Soil Map Unit Name: Sorrento Clay loam NWI classification: NONE LISTED = Palustrine

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

Are Vegetation NO, Soil NO, or Hydrology NO significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation NO, Soil NO, or Hydrology NO 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 X No | **Is the Sampled Area within a Wetland?** Yes X No |
| Hydric Soil Present? | Yes X No | |
| Wetland Hydrology Present? | Yes X No | |

Remarks:

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30' rad.) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Salix lasiolepis | 90 | Y | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 90 = Total Cover | | |
| **Sapling/Shrub Stratum** (Plot size: 30' rad.) | | | |
| 1. Baccharis salicifolia | 25 | Y | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 25 = Total Cover | | |
| **Herb Stratum** (Plot size: 30' rad.) | | | |
| 1. Typha domingensis | 5 | Y | OBL |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 5 = Total Cover | | |
| **Woody Vine Stratum** (Plot size: ) | | | |
| 1. | | | |
| 2. | | | |
| | 100 = Total Cover | | |

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

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

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

**Prevalence Index worksheet:**

| Total % Cover of: | Multiply by: |
|---|---|
| OBL species | x 1 = |
| FACW species | x 2 = |
| FAC species | x 3 = |
| FACU species | x 4 = |
| UPL species | x 5 = |
| Column Totals: (A) | (B) |

Prevalence Index = B/A =

**Hydrophytic Vegetation Indicators:**

X 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 X No

Remarks:

## SOIL

Sampling Point: D4

**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 | 10YR3/2 | 95 | 7.5YR 4/6 | 5 | C | M | Cobbly loam | |

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X 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): None

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

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X 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**)
- X Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)

**Field Observations:**

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

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

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 10"

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

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

Remarks:

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Esperanza Hills City/County: Yorba Linda Sampling Date: 7-12-13
Applicant/Owner: Esperanza Hills LLC State: CA Sampling Point: DS
Investigator(s): TBoomkamp Section, Township, Range:
Landform (hillslope, terrace, etc.): Canyon Local relief (concave, convex, none): Concave Slope (%): 5-7%
Subregion (LRR): LRR C Lat: 33.898649 Long: -117.761113 Datum:
Soil Map Unit Name: Sorrento Clay loam NWI classification: NONE LISTED = Palustrine
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation NO, Soil NO, or Hydrology NO significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation NO, Soil NO, or Hydrology NO 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 X No ____ | **Is the Sampled Area within a Wetland?** Yes X No ____ |
| Hydric Soil Present? | Yes X No ____ | |
| Wetland Hydrology Present? | Yes X No ____ | |

Remarks:

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30' radius) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Salix lasiolepis | 100 | Y | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | = Total Cover | | |
| **Sapling/Shrub Stratum** (Plot size: ____) | | | |
| 1. Baccharis salicifolia | 40 | Y | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | = Total Cover | | |
| **Herb Stratum** (Plot size: ____) | | | |
| 1. Rorippa nasturtium-aquaticum | 20 | Y | OBL |
| 2. Typha domingensis | 10 | Y | OBL |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | = 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: 4 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | Multiply by: | |
|---|---|---|
| OBL species | x 1 = | |
| FACW species | x 2 = | |
| FAC species | x 3 = | |
| FACU species | x 4 = | |
| UPL species | x 5 = | |
| Column Totals: (A) | | (B) |

Prevalence Index = B/A = ____

**Hydrophytic Vegetation Indicators:**
X 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 X No ____

Remarks:

## SOIL

Sampling Point: D5

**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 |
|---|---|---|---|---|---|---|---|---|
| | Sulfidic odor - Color not Taken | | | | | | | |

[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)
- X 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): NONE

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

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

- ___ Surface Water (A1)
- X High Water Table (A2)
- X 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)
- X 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)
- X FAC-Neutral Test (D5)

**Field Observations:**

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

Water Table Present? Yes X No ___ Depth (inches): 3"

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

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

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

Remarks: