APPENDIX H JURISDICTIONAL DELINEATION REPORT

EL MONTE SAND MINING PROJECT

Jurisdictional Delineation Report

Prepared for
County of San Diego

July 2018

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EL MONTE SAND MINING PROJECT

Jurisdictional Delineation Report

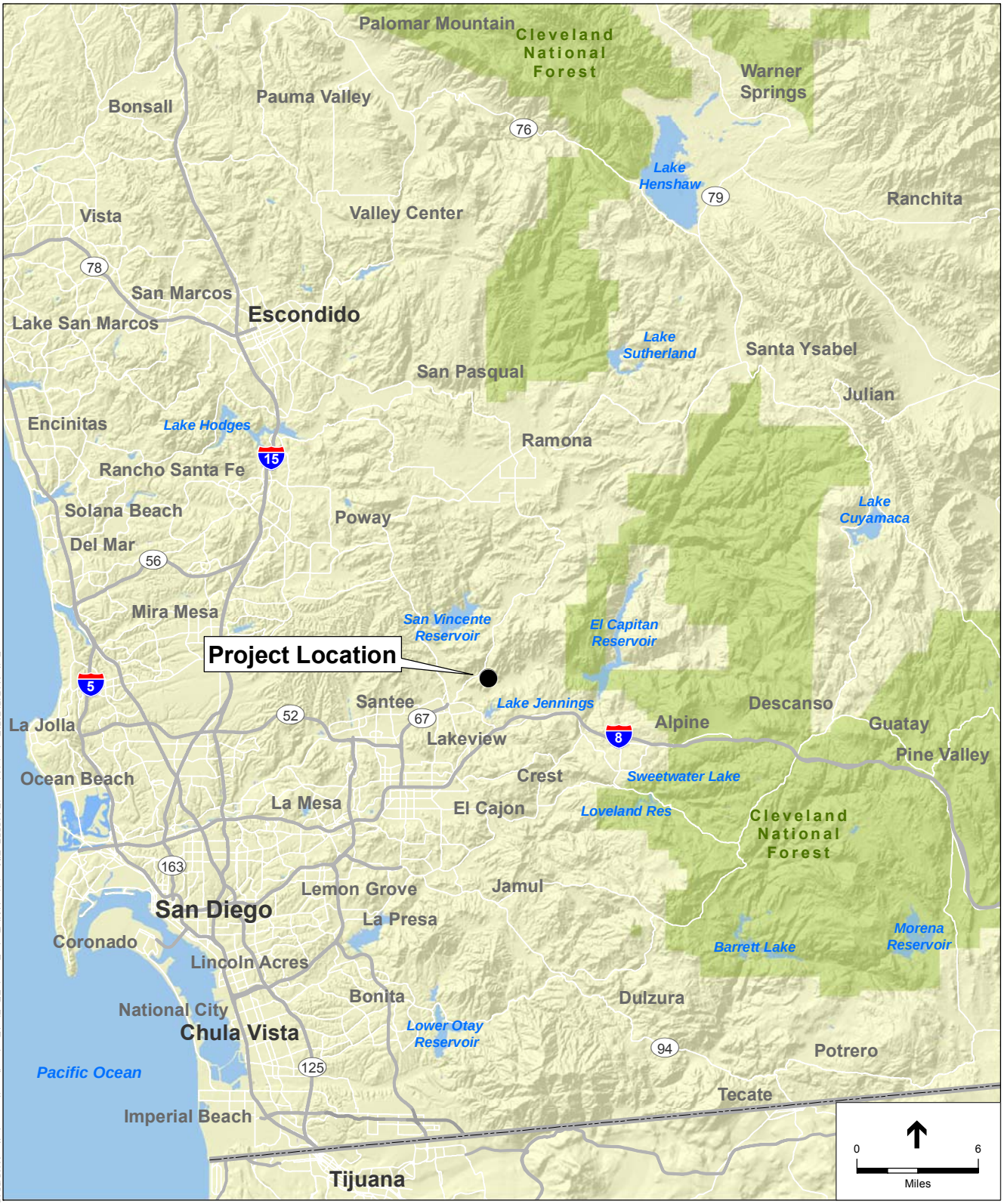
1. Introduction and Purpose

Environmental Science Associates (ESA) conducted a jurisdictional delineation for the El Monte Sand Mining Project (project). The proposed project is located in El Monte Valley on approximately 479.5 acres. The project would have a Major Use Permit (MUP) and Reclamation Plan boundaries of approximately 479.5 acres (the terms MUP boundary and project site boundary are used interchangeably for this project). The proposed project includes the modification of an approved MUP (PDS2015-MUP-98-014W2) for a golf course complex. The MUP would be modified to eliminate the golf course use and allow extraction of construction aggregates. In addition, a Reclamation Plan (PDS2015-RP-15-001) is required for the proposed project in compliance with the California Surface Mining and Reclamation Act of 1975 (SMARA). The proposed project would be completed within 16 years. This would include mining, reclamation and restoration over the first 12 years, with reclamation and restoration starting in year four and continuing for an additional four years after the cessation of mining.

The purpose of this preliminary jurisdictional delineation report is to serve as an update to a previous jurisdictional delineation survey conducted in 2010, and to assess whether existing conditions have changed since the 2010 survey. This updated jurisdictional delineation report will document all drainage features and wetlands within the project boundary subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE), the California Regional Water Quality Control Board (RWQCB) and the California Department of Fish and Wildlife (CDFW). This report will also address wetlands protected by the County of San Diego. For the purpose of this report, the existing biological resources and jurisdictional features are described in relation to the project boundary, which includes a 100-foot buffer around the project boundary. Representative photographs of the jurisdictional features within the project boundary are provided in Appendix C.

1.1 Project Location

The proposed project is located in the San Diego River watershed in the Lakeside Community Planning Area, within an unincorporated portion of San Diego County (**Figure 1**). The project consists of approximately 479.5 acres and is bordered by El Monte Road to the south and Willow Road to the north. Highway 67 is approximately 1.2 miles to the west and El Capitan Dam is approximately 2 miles upstream (**Figure 2**). The proposed project is located within Township 15 South; Range 1 East; portions of Sections 9, 10, and 16 of the El Cajon Mountain, California; the United States Geological Survey (USGS) 7.5-minute quadrangle; and the San Bernardino Baseline and Meridian.



SOURCE: ESRI; SanGIS 2015

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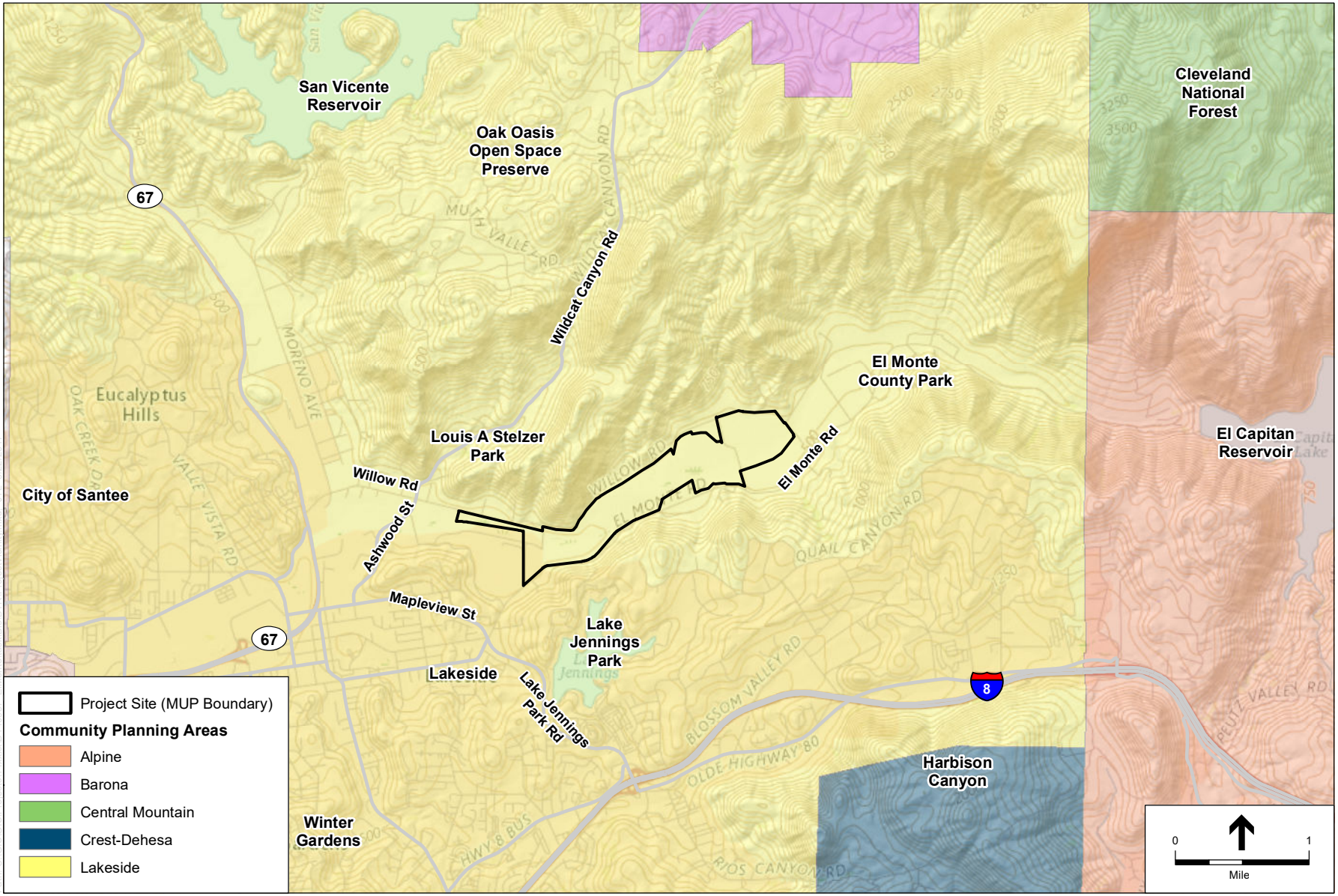
Figure 1

Regional Location



SOURCE: ESRI; EnviroMine; The Altum Group; Chang Consultants; ESA; SanGIS

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Figure 2

Project Vicinity

2. Jurisdictional Authority

2.1 Waters of the United States

USACE regulates "discharge of dredged or fill material" into "waters" of the United States, which includes tidal waters, interstate waters, and "all other waters, interstate lakes, rivers, streams (including intermittent streams), mud flats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce or which are tributaries to waters subject to the ebb and flow of the tide" (33 C.F.R. 328.3(a)), pursuant to provisions of Section 404 of the Clean Water Act (CWA).

The USACE (Federal Register 1982) and the U.S. Environmental Protection Agency (EPA) (Federal Register 1980) jointly define wetlands as: "Those 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." Wetlands have the following general diagnostic environmental characteristics: hydrophytic vegetation, hydric soils, and wetland hydrology (Environmental Laboratory 1987).

The USACE takes jurisdiction within rivers and streams to the "ordinary high water mark (OHWM)," determined by erosion, the deposition of vegetation or debris, and changes in vegetation or soil characteristics. However, if there is no federal nexus to navigable waters, these waters are considered "isolated" and thus not subject to their jurisdiction.

The USACE and EPA have issued a set of guidance documents detailing the process for determining CWA jurisdiction over waters of the United States following the Rapanos decision. The EPA and USACE issued a summary memorandum of the guidance for implementing the Supreme Court's decision in Rapanos that addresses the jurisdiction over waters of the United States under the CWA. The complete set of guidance documents, summarized in the Rapanos Key Points Summary on the following page, were used to collect relevant data for evaluation by the EPA and USACE to determine CWA jurisdiction over the project sites and to complete the "significant nexus test" as detailed in the guidelines.

The significant nexus test includes consideration of hydrologic and ecologic factors. For circumstances such as those described in point B of the Rapanos Key Points Summary, the significant nexus test would take into account physical indicators of flow (e.g., OHWM), whether a hydrologic connection to a Traditionally Navigable Water (TNW) exists, and if the aquatic functions of the water body have a significant effect (more than speculative or insubstantial) on the chemical, physical, and biological integrity of a TNW. The USACE and EPA will apply the significant nexus standard to assess the flow characteristics and functions of the tributary drainage to determine if it significantly affects the chemical, physical, and biological integrity of the downstream TNW.

Rapanos Key Points Summary

(A) The USACE and EPA will assert jurisdiction over the following waters:

- TNWs.

Wetlands adjacent to TNW.

Non-navigable tributaries of TNWs that are relatively permanent.

- Where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months)
- Wetlands that directly abut such tributaries

(B) The USACE and EPA will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with a TNW:

- Non-navigable tributaries that are not relatively permanent.
- Wetlands adjacent to non-navigable tributaries that are not relatively permanent
- Wetlands adjacent to but that do not directly abut a relatively permanent non-navigable tributary

(C) The USACE and EPA generally will not assert jurisdiction over the following features:

- Swales or erosion features (e.g., gullies, small washes characterized by low-volume, infrequent, or short-duration flow)
- Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water

2.2 Waters of the State

San Diego Regional Water Quality Control Board

Most projects involving drainages are regulated by the California RWQCB, the principal State agency overseeing water quality of the state at the local/regional level. The State Water Resources Control Board (State Water Board) directly regulates multi-regional projects and supports the Section 401 certification and wetlands program statewide. The RWQCB regulates activities pursuant to Section 401(a)(1) of the federal CWA, which specifies that certification from the State is required for any applicant requesting a federal license or permit to conduct any activity, including but not limited to the construction or operation of facilities that may result in any discharge into navigable waters. The certification shall originate from the state in which the discharge originates or will originate, or, if appropriate, from the interstate water pollution control agency having jurisdiction over the navigable water at the point where the discharge originates or will originate. Any such discharge will comply with the applicable provisions of Sections 301, 302, 303, 306, and 307 of the CWA. The project site is located within the jurisdiction of the San Diego RWQCB.

California Department of Fish and Wildlife

Pursuant to Division 2, Chapter 6, Section 1602 of the California Fish and Game (CFG) Code, an entity may not substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

As further defined by the California Code of Regulations (CCR) Title 14 Section 720, for the purpose of implementing Sections 1601 and 1603 of the CFG Code, this applies to all rivers, streams, lakes, and streambeds in the state of California, including all rivers, streams and streambeds which may have intermittent flows of water. Furthermore, the Lake and Streambed Alteration (LSA) program requires notification for impacts to streams, which "includes ephemeral streams, desert washes, and watercourses with a subsurface flow. It may also apply to work undertaken within the flood plain of a body of water" (CDFW 2014).

Stream-dependent riparian habitat is defined in the CFG Code (Section 2785) as "lands which contain habitat which grows close to and which depends upon soil moisture from a nearby freshwater source." In addition, CDFW has jurisdiction over riparian habitats and wetlands associated with watercourses. As defined by CFG Code, "wetlands" means lands which may be covered periodically or permanently with shallow water and which include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, fens, and vernal pools. Jurisdictional waters are delineated by the outer edge of riparian vegetation or at the top of the bank of a stream or lake, whichever is wider. CDFW jurisdiction does not include tidal areas or isolated resources. The CDFW reviews proposed actions, and if necessary, submits to the applicant a proposal that includes measures to protect affected fish and wildlife resources. The final proposal that is mutually agreed upon by CDFW and the applicant is called the LSA Agreement. Removal of stream-dependent riparian vegetation may also require an LSA Agreement from CDFW. However, CDFW may not regulate "isolated wetlands," that is, those that are not associated with a river, stream, or lake.

California Wetland Definition

Unlike the federal government, California has adopted the Cowardin et al. (1979) definition of wetlands. For purposes of this classification, wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports predominantly hydrophytes (at least 50 percent of the aerial vegetative cover); (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is non-soil and saturated with water or covered by shallow water at some time during the growing season of each year.

Under normal circumstances, the federal definition of wetlands requires all three wetland identification parameters to be met, whereas the Cowardin definition requires the presence of at least one of these parameters. For this reason, identification of wetlands by state agencies consists of the union of all areas that are periodically inundated or saturated or in which at least seasonal dominance by hydrophytes may be documented or in which hydric soils are present.

Porter-Cologne Water Quality Control Act

The RWQCB also has jurisdiction over waters deemed isolated or not subject to Section 404 jurisdiction under the Solid Waste Agency of Northern Cook County decision. Dredging, filling, or excavation of isolated waters constitutes a discharge of waste to waters of the state and prospective dischargers are required to obtain authorization through an Order of Waste Discharge or waiver thereof from the RWQCB and comply with other requirements of Porter-Cologne Act.

County of San Diego Resource Protection Ordinance

Per the County of San Diego Resource Protection Ordinance (RPO), "wetlands" are defined as "All lands which are transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or where the land is covered by water. All lands having one or more of the following attributes are wetlands: a) At least periodically, the land supports predominately hydrophytes (plants whose habitat is water or very wet places); b) The substratum is predominately undrained hydric soil; or c) an ephemeral or perennial stream is present, whose substratum is predominately non-soil and such lands contribute substantially to the biological functions or values of wetlands in the drainage system." In this definition, a "non-soil" substrate includes, but is not limited to, rock outcroppings, or deep-water habitats generally greater than 6.6 feet in depth, as well as cobble rock, bedrock, or scoured channels.

3. Methods

3.1 Literature Review

ESA biologists Mark Tucker and Darren Burton conducted a jurisdictional delineation survey in November 2010 and produced a corresponding preliminary jurisdictional delineation report in July 2011. The 2010 survey encompassed the current project's boundaries; therefore, the 2016 survey was conducted to update the previous survey and report, which expired after 5 years. Prior to the 2016 field survey, a desktop analysis was conducted to obtain contextual information relevant to the project. ESA conducted a review of available background information pertaining to the project geography and topography prior to conducting the jurisdictional delineation, including a review of the 2010 survey data and geographic information system (GIS) files, U.S. Fish and Wildlife Service (USFWS) Wetlands Mapper, aerial photography, and topographic maps for the USGS 7.5-minute El Cajon, El Cajon Mountain, and San Vicente Reservoir, California topographic quadrangles. Site maps were generated with available aerial photographs, and potentially jurisdictional features were identified and marked with lines and global positioning system (GPS) coordinates to assist in field verification. Soil types mapped within the project site from the previous jurisdictional delineation and from the SSURGO database (Soil Survey Staff 2016) were also reviewed prior to field efforts to target areas with potentially hydric soils.

3.2 Field Survey

ESA biologists Tommy Molioo and Alanna Bennett conducted a site visit on January 21, 2016, from 8:00 am to 3:00 pm, to evaluate potential jurisdictional features within the project boundary. The potentially jurisdictional features were recorded in the field using aerial maps, measurements of the width of the OHWM coincident along the low flow channel segments, and a hand-held Trimble Geo-XH GPS unit. A desktop analysis was also conducted using Google Earth to

accurately map the limits of jurisdiction observed and mapped onsite. Representative photographs of the jurisdictional features were taken during the field visit and are included in Appendix C. Vegetation mapping for the project boundary was conducted by Bloom Biological biologists in 2006 and verified by ESA biologists during the various field reconnaissance surveys for biological resources from 2010 through 2015. All vegetation mapping within the project boundary was conducted according to the County of San Diego Report Format and Content Requirements for Biological Resources (2010), as documented in the Draft Biological Resources Report for the project (ESA 2018a). Vegetation communities were classified according to the nomenclature in the Draft Vegetation Communities of San Diego County (Holland [1986] as modified by Oberbauer [2008]).

Federal Wetlands

The presence/absence of federal wetlands was determined through implementation of the methods described in the *U.S. Army Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987). The definition of growing season and the basis of determining and recording indicators for hydrophytic vegetation, hydric soils, and wetland hydrology was based on the *Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Arid West Region (Version 2.0)*, as well as the *Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008a; USACE 2008b).

A Level 2 Determination (i.e., onsite inspection) was conducted as defined in the 1987 USACE Manual. The onsite inspection evaluated the three parameters that identify and delineate the boundaries of jurisdictional wetlands, including (1) the dominance of wetland vegetation; (2) the presence of hydric soils; and (3) hydrologic conditions that result in periods of inundation or saturation on the surface from flooding or ponding. The National List of Plant Species That Occur in Wetlands: California (Region 0) and the National Wetland Plant List (Lichvar 2014) were used to determine the wetland indicator status of plants observed in the project boundary. The 1987 USACE Manual and 2008 Arid West Regional Supplement were used for the analysis and evaluation of any normal circumstances, atypical situations, and problem areas, as needed.

Data on vegetation, soils, and hydrologic characteristics were recorded in the field and data points (DPs) were taken to identify boundaries between upland and wetland habitats. All sample locations were examined for the presence of positive hydrologic indicators (i.e., direct evidence of saturated soils, oxidized rhizospheres). Soils were examined to determine composition, matrix color, and the presence of redoximorphic features or other hydric soil indicators. The percent dominance by hydrophytic vegetation was also recorded at each sample location. Arid West Data Sheets were prepared for sample sites within drainage features that exhibited potential wetland features, which are located in Appendix A. Plant species observed during the course of surveys is provided in Appendix B. Representative photographs of the project and jurisdictional features are located in Appendix C.

Non-Wetland Waters of the United States

The USACE-jurisdictional status of the project was determined by in-field verification of the hydrological connection between the watercourse and downstream TNW (i.e., significant nexus test). Non-wetland waters of the United States were identified if the OHWM was clearly visible and passed the significant nexus test (to the Pacific Ocean) but one or more of the remaining USACE wetland parameters were absent (i.e., hydrophytic vegetation or hydric soils). The OHWM of channels was determined based on observations of physical evidence that included direct observations of flow, scour marks, and drift lines of debris. The width of the OHWM was determined by field measurements and recorded with GPS coordinates. The limits of non-wetland waters were confined to the ordinary limits of flow and excluded adjacent upland areas that have been created through the previous placement of fill material from dredging activities.

Waters of the State

California Department of Fish and Wildlife

CDFW jurisdictional waters include streams that show evidence of at least intermittent flow, such as the floodplain and wetland or riparian habitats associated with watercourses in accordance with Section 1600 of CFG Code. These areas were delineated by the outer edge of riparian vegetation or at the top of the bank of a stream or lake, whichever was wider. Under the CFG Code, "wetlands" are defined as lands that may be covered periodically or permanently with shallow water and that include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, fens, and vernal pools (CFG Code Section 2785).

State Boards (SWRCB and RWQCB)

It is assumed for the purpose of this report that USACE jurisdictional areas are also under the jurisdiction of the San Diego RWQCB, and are subject to Section 401 of the CWA or California Porter-Cologne Act. USACE and RWQCB jurisdictional areas have been delineated using the same methodology.

County of San Diego Wetlands

It is assumed for the purpose of this report that CDFW jurisdictional areas are also under the jurisdiction of the County of San Diego, which are considered County wetlands regulated by the RPO, and have been delineated using the same CDFW methodology.

4. Results and Conclusions

4.1 Literature Review and Field Survey Results

The potentially jurisdictional features within the project boundary were reviewed during a desktop analysis using available data discussed in Chapter 3, and were delineated during the field survey. Results are discussed below and in the following pages. Data forms from the delineation can be found in Appendix A.

Soils

As shown in **Figure 3**, the U.S. Department of Agriculture (USDA) Soil Conservation Series Maps identify the soils along the San Diego River floodway within the project boundary as Riverwash. Riverwash occurs in intermittent stream channels and is typically sandy, gravelly, or cobbly. Tujunga sand and Visalia sandy loam occur along either side of the river channel. Tujunga sand is derived from granitic alluvium found on alluvial fans and floodplains with slopes less than 5 percent. Visalia sandy loam consists of moderately well-drained, very deep sand loams derived from granitic alluvium. These soils are found on alluvial fans and floodplains and have slopes of 0 to 5 percent.

Vegetation

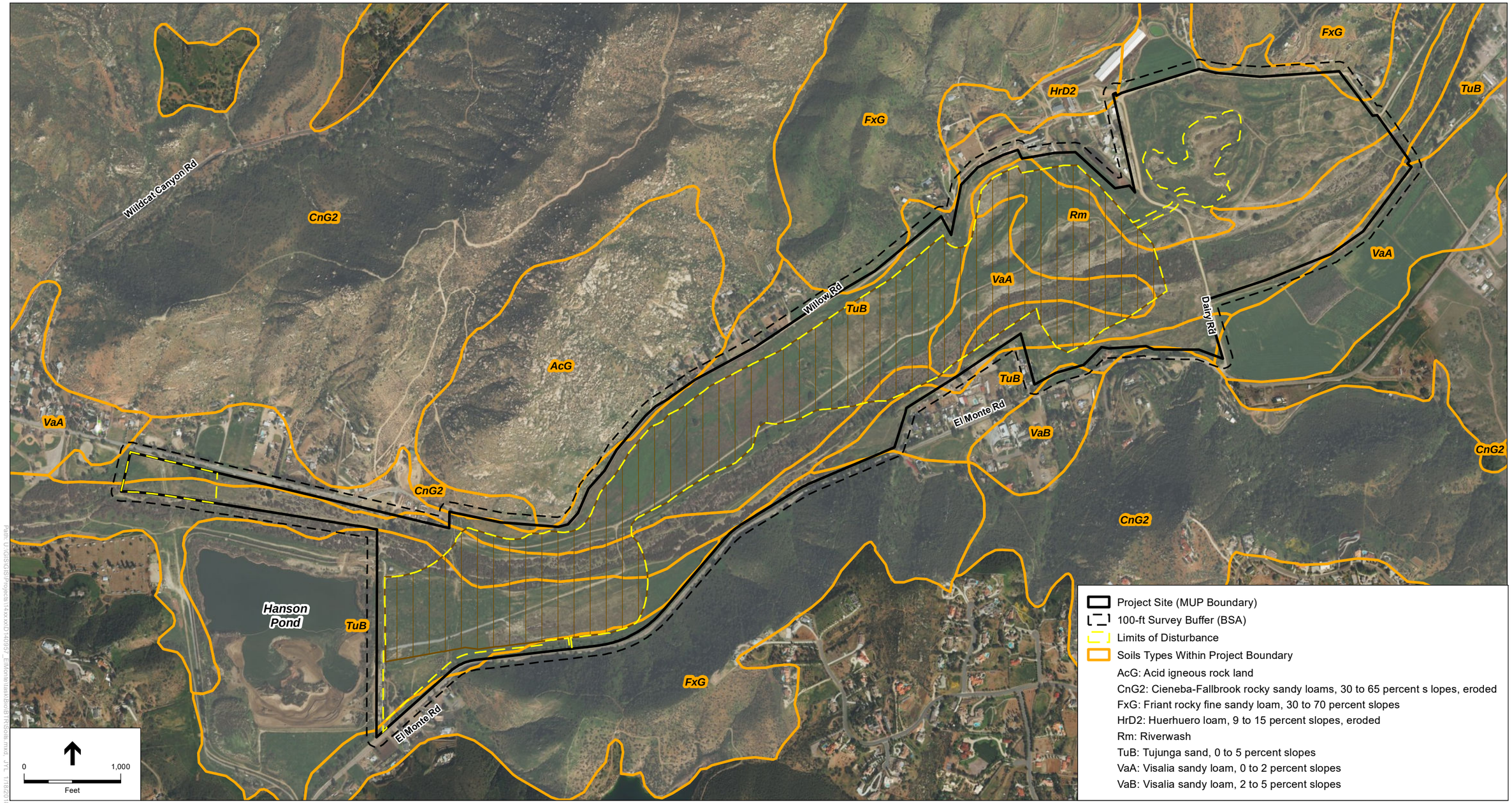
Vegetation communities are assemblages of plant species that occur together in the same area and are defined by species composition and relative abundance. The vegetation communities mapped in the project boundary were identified based on the aggregation of plants and wildlife and the composition and structure of the dominant vegetation observed at the time field reconnaissance was conducted. Habitat types follow the Holland classification system as modified by Oberbauer (Holland 1986, Oberbauer et al. 2008).

The vegetation communities within the proposed project boundary are shown on **Figure 4**, and the acreages of each habitat and vegetation community within the project area are listed in **Table 1**. Nine habitat/land use types as defined by the Holland classification system as modified by Oberbauer (Holland 1986, Oberbauer et al. 2008) were observed onsite, including four native habitats (Diegan coastal sage scrub, southern willow scrub, southern cottonwood-willow riparian forest, and non-vegetated channel), four non-native habitat types (non-native grassland, eucalyptus woodland, tamarisk scrub, and disturbed habitat), and developed areas. In addition to these vegetation communities defined by Holland/Oberbauer, mature riparian woodland, which is defined in the County of San Diego RPO was mapped as an overlay atop the Holland/Oberbauer mapping.

TABLE 1
VEGETATION COMMUNITIES WITHIN THE PROJECT BOUNDARY

Habitat Type	Acreage
Southern Cottonwood-Willow Riparian Forest (Holland Code 61330)	11.18
Southern Willow Scrub (Holland Code 63320)	0.71
Tamarisk Scrub (Holland Code 63810)	85.69
Non-Vegetated Channel (Holland Code 64200)	1.66
Diegan Coastal Sage Scrub (Holland Code 32500)	10.38
Non-Native Grassland (Holland Code 42200)	135.75
Eucalyptus Woodland (Holland Code 79100)	2.62
Disturbed Habitat (Holland Code 11300)	228.52
Developed (Holland Code 12000)	3.03
TOTAL	**479.54**[1]

1 Total excludes the 8.45 acres identified as Mature Riparian Woodland, which is defined in the County of San Diego RPO and was mapped as an overlay atop the Holland/Oberbauer vegetation mapping.



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SOURCE: ESRI; EnviroMine; The Altum Group; Chang Consultants; SSURGO

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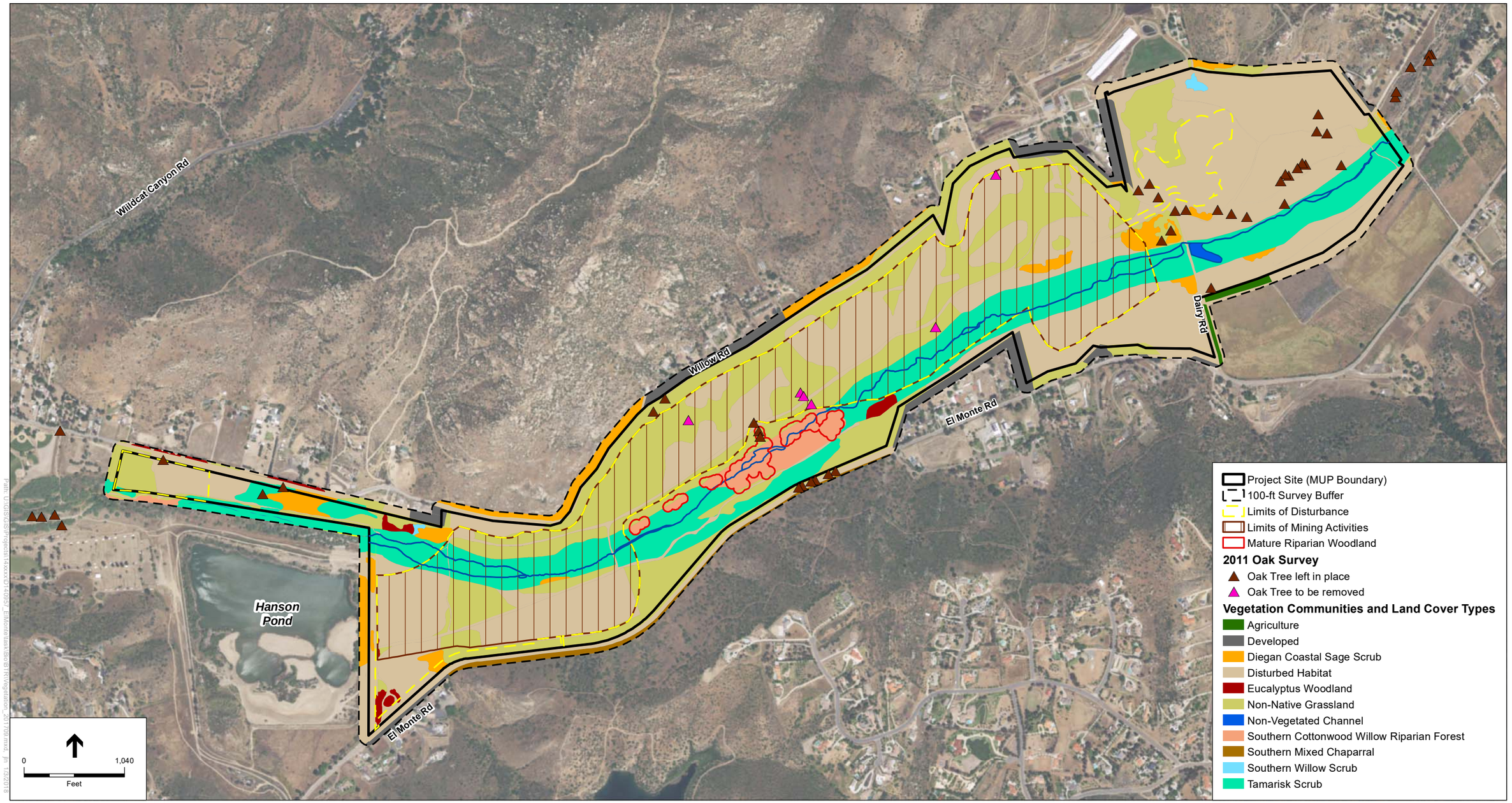
Figure 3

Soils



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SOURCE: ESRI; EnviroMine; The Altum Group; Chang Consultants; ESA; SanGIS

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Figure 4

Vegetation Communities and Cover Types

Southern Cottonwood-Willow Riparian Forest (Holland Code 61330)

Southern cottonwood-willow riparian forest is a tall, relatively open, broadleaved winter-deciduous riparian forest dominated by cottonwood trees and willow tree and shrub species (*Salix* spp.) with occasional emergent western sycamore trees. It usually occurs along stream banks with well-drained mineral soils.

Within the project boundary, southern cottonwood-willow riparian forest occurs as fragmented patches on either side of the river in the middle region and along the western edges, typically surrounded by non-native habitats such as tamarisk scrub and non-native grassland (described in the following pages). Southern cottonwood-willow riparian forest fragments are dominated by cottonwood and a variety of willow species, and support a variably dense understory of native annual forbs such as mugwort (*Artemisia douglasiana*) and nettle (*Urtica dioica* ssp. *holosericea*).

Much of the cottonwood-willow riparian forest fragments observed within the project site, which totaled approximately 11.2 acres, are somewhat disturbed as a result of an abundance of non-native, invasive species such as castor bean (*Ricinus communis*), tamarisk, non-native grasses, and invasive mustards. However, this habitat provides good quality nesting habitat for a variety of raptors and other native birds.

Southern Willow Scrub (Holland Code 63320)

Southern willow scrub is a deciduous, riparian community dominated by dense thickets of one or more willow tree species and various other scattered shrubs and larger emergent trees. Two small patches of southern willow scrub occur within the project boundary. These areas consist mainly of red willow (*Salix laevigata*), Gooding's willow (*Salix goodingii*), arroyo willow (*Salix lasiolepis*), and sandbar willow (*Salix exigua*), mixed with patches of mule fat (*Baccharis salicifolia*), cottonwood (*Populus fremontii*), and western sycamore (*Platanus racemosa*) trees. Much of this habitat within the BSA is between 6 and 15 feet in height and varies in density, from relatively open to impenetrable. One small patch (approximately 0.3 acre) of relatively disturbed southern willow scrub occurs in the middle of the BSA north of the river along Willow Road. This area contains a relatively high percentage of non-native species such as giant reed (*Arundo donax*), tamarisk (*Tamarix* spp.), and pampas grass (*Cortaderia* spp). A second small patch (approximately 0.4 acres) of southern willow scrub occurs at the northeastern portion of the BSA just south of Willow Road. This area is relatively undisturbed and is characterized by a dense thicket of arroyo willows.

Tamarisk Scrub (Holland Code 63810)

Tamarisk scrub usually occurs as a dense monoculture where natural, riparian vegetation has been completely or almost completely replaced often by a single invasive, non-native tamarisk species. It usually forms in sandy or gravelly braided washes or intermittent streams in areas where high evaporation increases stream salinity. Tamarisk is a strong phreatophyte (a plant with a deep root system that draws water from near the water table) and prolific seeder with a high tolerance to changes in salinity and water table depth, attributes that predispose the species to be aggressive competitors in disturbed riparian corridors, where it can quickly supersede existing native riparian.

Tamarisk scrub covers approximately 85.7 acres of the project boundary and is characterized by sparse to dense stands that include chiefly tamarisk (*Tamarix ramossisima*) with little to no understory. Dense patches within the river channel are generally impenetrable, while open stands observed both within the channel and in upland areas are punctuated by patches of curly dock (*Rumex* sp.), castor-bean (*Ricinus communis*), cockle-bur (*Xanthium strumarium*), tree tobacco (*Nicotiana glauca*), pampas grass, and an abundance of non-native grasses and forbs. In various areas, this habitat supports sparse mule fat, broom baccharis, scattered individual willow and cottonwood trees, and infrequent western sycamore trees; however, those areas are not large enough to be identifiable as functional native woodland or scrub communities. Tamarisk scrub is the most commonly observed habitat within and surrounding the river channel and floodplain as well as in some upland areas adjacent to, but separated from, the channel.

Non-Vegetated Floodway or Channel (Holland Code 64200)

Non-vegetated floodway or channel consists of the sandy, gravelly, or rocky fringes of waterways or flood channels. These areas tend to remain relatively unvegetated (generally less than 10 percent cover) as a result of variable water hydrology, which inhibits the growth of vegetation. It is not uncommon for non-native weedy vegetation to grow along the outer edges of the wash. Within the project boundary, a total of approximately 1.7 acres of this land cover type occurs along the center of the river channel.

Diegan Coastal Sage Scrub (Holland Code 32500)

Diegan coastal sage scrub is typically composed of a predominance of aromatic, drought-deciduous perennial shrubs and subshrubs typically growing to no more than 3 feet high, with a diverse understory of herbaceous species and annual and perennial grasses. It is usually located on dry, south-facing slopes and intermingles with chaparral, non-native grassland, and other local vegetation communities. It had been widely distributed in the region in the past; however, Diegan coastal sage scrub has lost much of its historic range to residential development and agricultural conversion.

A total of approximately 10.4 acres of coastal sage scrub occurs in scattered patches throughout the project boundary. The patches differ significantly from one another based on the dominant shrub species and shrub density. Many of the patches are highly disturbed and support a high abundance of non-native grasses and forbs. Some patches are dominated by California buckwheat (*Eriogonum fasciculatum*). Other patches are dominated by California sagebrush (*Artemisia californica*) or broom baccharis (*Baccharis sarothroides*). One patch of coastal sage scrub occurs on the rocky south-facing slopes north of Willow Road within the 100-foot survey buffer and is dominated by chuparosa (*Justicia californica*), which is typically found in desert communities. Other native species occur more sparsely within the coastal sage scrub patches, including goldenbush (*Isocoma menziesii*), laurel sumac (*Malosma laurina*), native grasses such as foothill needlegrass (*Stipa lepida*), and a variety of annual herbs.

The disturbed condition of the habitat could be due to extended drought conditions in the area, post fire recovery (from the 2003 Cedar Fire), or both. However, even in its disturbed condition, this habitat can support the federally listed coastal California gnatcatcher and other upland scrub species.

Non-Native Grassland (Holland Code 42200)

Non-native grassland is generally dominated by invasive, non-native annual grasses of various species and may contain non-native herbaceous species or remnant scattered native scrub species. It usually occurs in areas of previous disturbance on fine-textured, well-drained soils that are moist in winter but very dry in summer months, and frequently intergrades with disturbed habitats. Although it is not a naturally occurring community in California and is often indicative of prior disturbance through development or as a remnant of fallow agricultural fields, non-native grassland provides habitat for small terrestrial vertebrates such as small mammals, reptiles, and amphibians and is frequently used for foraging by migratory birds and raptors. Special-status species such as the State Species of Special Concern grasshopper sparrow (*Ammodramus savannarum*) are known to rely in this habitat for nesting.

A total of approximately 135.8 acres of non-native grassland occurs within the project boundary in a large, mainly continuous swath north and south of the river interspersed with disturbed habitat. It is composed chiefly of wild oat (*Avena* spp.), red brome (*Bromus madritensis*), and ripgut brome (*B. diandrus*), interspersed with areas dominated by short-pod mustard (*Hirshfeldia incana*) and black mustard (*Brassica nigra*) and other non-native herbaceous species. Scattered native shrubs such as California buckwheat occur very occasionally in the non-native grassland.

Eucalyptus Woodland (Holland Code 79100)

Eucalyptus woodland is a non-native community dominated by ornamentally planted eucalyptus and gum trees (*Eucalyptus* spp.). The understory is usually poorly developed or absent as a result of the allelopathic (toxic) effect of eucalyptus leaves that inhibit the growth of native and other plants. Although this habitat is not native, it is often used by nesting raptors and other birds or occasionally by roosting bats.

Four patches of eucalyptus woodland totaling approximately 2.6 acres were identified in the project site, on either side of the floodplain throughout the middle section. Scattered individual eucalyptus trees were also identified throughout the project boundary, within assorted patches of disturbed riparian communities, but, individually, they did not account for woodland acreage. The eucalyptus woodland patches within the survey boundary include saplings up to 20 feet tall and mature eucalyptus trees that range from 20 to more than 50 feet in height.

Disturbed Habitat (Holland Code 11300)

Disturbed habitat has typically undergone intense physical transformation due to prior disturbance (usually from past development or agriculture), is primarily bare without vegetation, and is no longer recognizable as a native or naturalized vegetation association but continues to retain a soil substrate. Such habitat is typically found in vacant lots, roadsides, construction staging areas, abandoned fields, and unpaved roads and trails. Typically, disturbed habitats are mostly bare but the vegetation that does occur mostly includes ruderal, weedy non-native, or ornamental species and does not resemble or function as a native plant community. Disturbed habitat typically has little to no foraging or other habitat value for native wildlife species.

A total of approximately 228.5 acres of disturbed habitat occur within the project boundary. Scattered vegetation that does occur within disturbed areas primarily includes non-native herbaceous annual and perennial species such as tree tobacco, mustard, Russian thistle (*Salsola*

tragus), and to a lesser extent, weedy annual grasses (*Avena* spp., *Bromus* spp.), but without enough vegetation cover to classify it as non-native grassland. The larger areas of disturbed habitat primarily occur in the northeastern portion of the site, and several patches occur in the western end of the site. Disturbed areas also include completely un-vegetated areas that consist of existing dirt, paved, and gravel roads, which are located throughout the BSA, including footpaths and other access routes associated with previous development.

Developed (Holland Code 12000)

Developed areas contain commercial or residential buildings and landscaped surfaces and generally do not support natural plant or wildlife species of any kind. The project boundary includes approximately 3 acres of developed urban residences adjacent to the northern middle portion of the project boundary. Although residential and commercial buildings occur very near the project boundary, the boundary itself crosses over landscaped, ornamental, and paved areas only and does not intersect with actual built or any inhabited establishments.

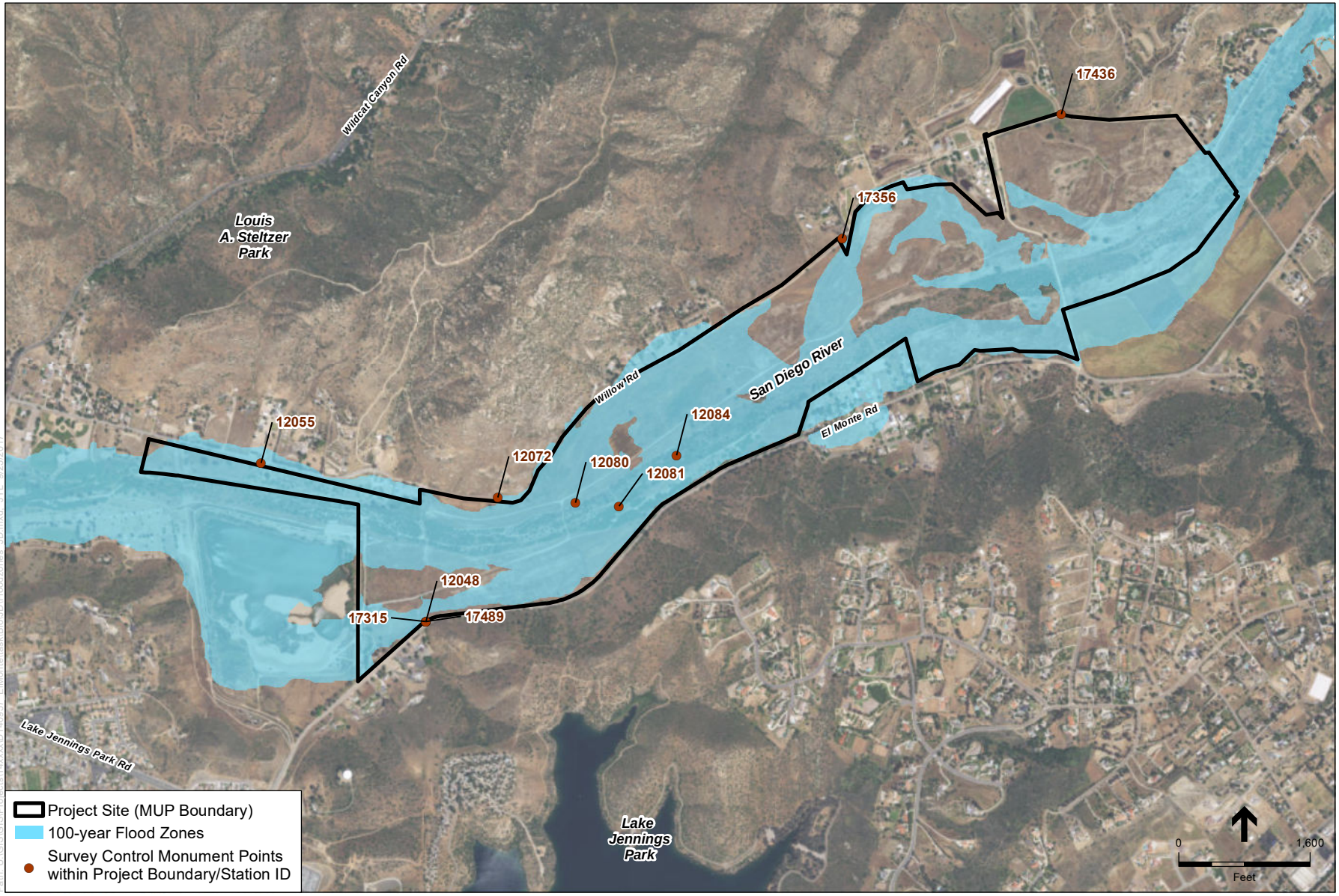
Mature Riparian Woodland

Mature riparian woodland occurs onsite but was not mapped as one of the Holland/Oberbauer vegetation communities. Rather, it was mapped separately and overlaid onto the vegetation communities and cover types map (Figure 4) because the County's RPO includes a distinct definition of this vegetation type that differs from the Holland/Oberbauer classification system. Mature riparian woodland occurs in several patches within the limits of mining activities, totaling approximately 8.5 acres, and occurs within the cottonwood-willow riparian woodland and tamarisk scrub communities in the central portion of the project boundary. A total of 275 trees were recorded during the tree surveys.

Hydrology

Hydrologic function for the potentially jurisdictional features within the project boundary is primarily provided by the San Diego River. The San Diego River channel traverses the project boundary in an east-west meandering direction. Currently, water flows in the river during periods of extended precipitation only during local storm events. The highly permeable nature of the endemic soils and man-made controls has reduced historic flows in the river to minor levels. While hydrologic functions are limited because of the lack of regular flooding and brief inundation periods due to sandy, highly impervious soils, the San Diego River through this portion of the project boundary is considered to be a non-relatively permanent water (non-RPW). The San Diego River continues downstream to the west of the project boundary and eventually connects to the Pacific Ocean, demonstrating a significant nexus to the Pacific Ocean, a TNW. When flooding and flow do occur, this reach of the San Diego River functions as a losing stream[1] and would be expected to contribute to groundwater recharge, and to a limited extent, flood control. The Federal Emergency Management Agency (FEMA) 100-Year Flood Zone boundaries are depicted on **Figure 5**.

[1] Losing streams are defined as rivers which lose water from the streambed out into the ground. Rivers can be gaining and losing at different locations; they can be gaining one time of the year and losing in another time of year (DOI 2015).



SOURCE: ESRI, FEMA, SanGIS

El Monte Sand Mining Project. 140957

Figure 5

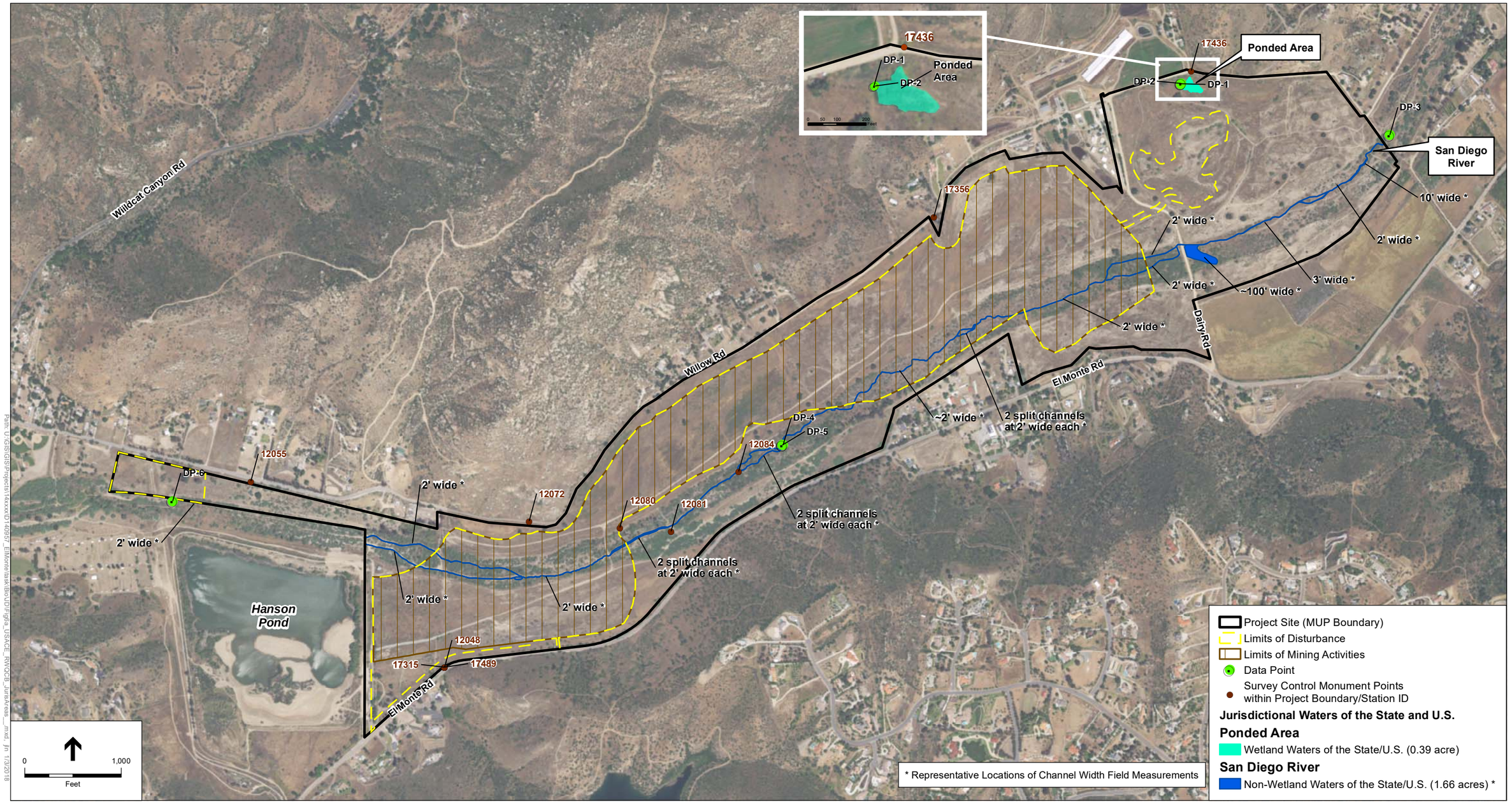
Flood Zones

Construction and operation of the El Capitan Reservoir and sand mining operations have resulted in changes to the river channel over time. The dam associated with El Capitan Reservoir is a historical feature and conditions onsite are considered normal circumstances. Therefore, the effects of the dam do not need to be considered when assessing the presence of wetland hydrology. There were no hydrology indicators present within the vegetated portions of the trapezoidal channel as recorded in DP3 through DP6 (**Figures 6a** and **6b)**. Surface water was observed in a small 0.39-acre ponded area containing southern willow scrub habitat in the northeast portion of the site. This was considered to be a primary hydrology indicator and wetland hydrology was present at this one spot on the site (DP2). A data collection point was taken at DP1, upslope from DP2, in an upland area that contains suitable hydrology but lacks the hydric soil indicators to be considered a wetland. Hydrologic function is supplied to this wetland area through road runoff and upstream flows that enter the area through a concrete culvert beneath Willow Road. The upland swale feature that transports upstream flows to the small ponded area is offsite to the north and therefore not included in the project mapping limits. Since this nearby jurisdictional feature contributes to runoff on the road that leads to the culvert and it is adjacent to the San Diego River (a non-RPW that demonstrates a significant nexus with a TNW), the small pond is not considered an isolated jurisdictional area.

4.2 Jurisdictional Features Summary

The potential jurisdictional features delineated within the project boundary are shown on Figures 6a and 6b and further described on the following pages. The literature review described in Section 3.2 determined that the San Diego River within the project boundary contains riverine and palustrine systems, and no wetlands are depicted for the project boundary. Additionally, the San Diego River that traverses the project boundary is mapped as a meandering blue-line stream. A blue-line stream tributary is also mapped on the topographic maps; however, because of historic disturbances to the area that have altered and graded the surrounding topography, this mapped blue-line tributary was not evident during the field delineation survey and does not currently connect with the San Diego River within the project boundary. The San Diego River within the project boundary functions as an ephemeral stream that is supported by groundwater, and has been degraded as a result of frequent recreational uses such as hiking and horseback riding.

Table 2 summarizes the potential jurisdictional features within the project boundary that were determined from the literature review and field delineation survey. Figure 6a depicts potential areas under the jurisdiction of USACE and RWQCB. Figure 6b depicts potential areas under the jurisdiction of CDFW and the County of San Diego. Figure 6b includes areas under the jurisdiction of USACE and RWQCB since they are coincident with non-vegetated waters of the state. The areas potentially considered County of San Diego wetlands and subject to regulation under the County RPO include the San Diego River and associated tamarisk scrub habitat, and the ponded area in the northeast portion of the project boundary. These areas contain a dominance of hydrophytes and the presence of a perennial stream of San Diego jurisdiction for a total of 86.14 acres. Although areas of tamarisk scrub in upland areas are likely partially supported by a subsurface freshwater source, this habitat is separated from the jurisdictional limits of the river by an upland area and this area of tamarisk scrub is not overhanging the channel or immediately adjacent and therefore is not associated with the river and not jurisdictional.



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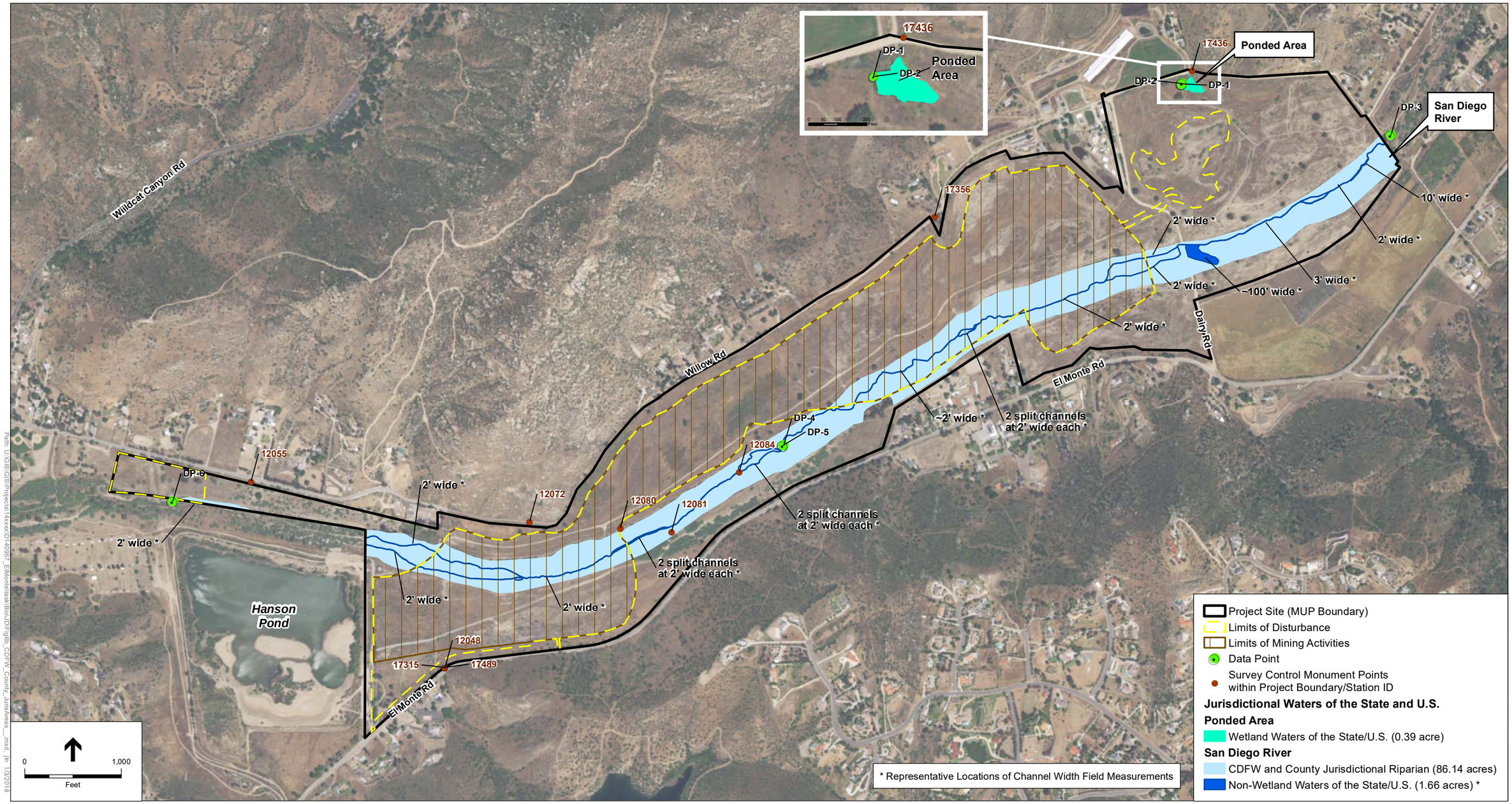
SOURCE: ESRI; EnviroMine; The Altum Group; Chang Consultants; ESA; SanGIS

El Monte Sand Mining Project .140957

Figure 6a

USACE/RWQCB Jurisdictional Areas



Path: U:\GIS\GIS\Projects\14xxxxx\D140957_ElMonte\task\Bio\JDFig6b_CDFW_County_JurisAreas_.mxd, jln 12/2018

ESRI; EnviroMine; The Altum Group; Chang Consultants; ESA; SanGIS

El Monte Sand Mining Project .140957

Figure 6b

CDFW/County Jurisdictional Areas

The ephemeral stream of the San Diego River and associated hydrophytic vegetation qualify as County of San Diego wetlands protected under the RPO. The tamarisk scrub outside the channel on the adjacent flats outside the 100-year flood plain was not considered to be CDFW or County jurisdictional.

TABLE 2
POTENTIAL JURISDICTIONAL FEATURES WITHIN THE PROJECT BOUNDARY

Map ID	Type of Feature	Habitat Type	Non-Wetland Waters[1]	Wetland Waters	Total[2]
Waters of the United States/State (USACE/RWQCB)					
San Diego River	Ephemeral Channel	Non-Vegetated Stream Channel	1.66 ac. (7,264 linear ft.)	0.0	1.66 ac. (7,264 linear ft.)
CDFW/County of San Diego Jurisdiction					
San Diego River	Riparian Habitat	Tamarisk Scrub (74.21 ac.), Southern Cottonwood-Willow Riparian Forest (11.16 ac.), Disturbed Habitat (0.50 ac.), Diegan Coastal Sage Scrub (0.26 ac.), Nonnative Grassland (0.01 ac.)	86.14 ac.	0.0	86.14 ac.
USACE/RWQCB/CDFW/County of San Diego Jurisdiction					
Ponded Area	Wetland	Southern Willow Scrub	0.0	0.39 ac.	0.39 ac.

1 Linear feet are only provided for linear aquatic resource such as stream/riverine features and wetland/riparian corridors directly adjacent to stream features.
2 Jurisdictional waters acreage was determined by using ArcGIS. All acreages are rounded to the nearest hundredth if the areas of the potentially jurisdictional features were less than 0.01 acre (which may account for minor rounding error).

Waters of the United States/State

Waters of the United States and State potentially subject to the jurisdiction of USACE, RWQCB, CDFW, and the County of San Diego RPO include the San Diego River and associated riparian habitat, as well as a ponded area in the northeast portion of the project boundary. For the purpose of this report, channels were defined as drainage features that have bed and bank and a distinguishable OHWM. The potential jurisdictional features in the project boundary are further described below.

San Diego River

The San Diego River within the project boundary is a non-RPW (ephemeral stream) that meanders in an east-west fashion and eventually connects downstream with the Pacific Ocean, a TNW. Soil pits were dug within the low-flow channel of the San Diego River and adjacent upland areas at Data Points DP3–DP6. Soils throughout this reach of the San Diego River range from coarse sand to sandy loam belonging to the Tujunga, Riverwash, and Visalia soil series with colors of 10YR 3/2 and 10YR 4/2 throughout. No redoximorphic features or other hydric soil indicators were observed within Data Points DP3–DP6 in the San Diego River. Therefore, no wetlands subject to state or federal agency jurisdiction are located within the San Diego River on the project boundary. Federal USACE and State RWQCB jurisdiction is limited to the low-flow channels within the San Diego River and was delineated out to the OHWM for a total of 1.66 acres (7,264 linear feet).

Adjacent riparian communities were not considered to be under the jurisdiction of the USACE due to the lack of hydrology indicators. However, all channels and riparian habitat (tamarisk scrub) within the San Diego River floodplain were considered to be subject to CDFW and County Ponded Area

The small ponded area in the northeastern portion of the property was considered to be a county, state, and federal jurisdictional wetland based on the three-parameter wetland hydrology indicators, its source being a stream and its proximity to regulated features within the San Diego River. This ponded area receives flows as runoff from the adjacent Willow Road and an upland swale, and through a concrete culvert below Willow Road. The upland swale is offsite to the north and therefore not included in the project mapping limits. The small pond is adjacent to the San Diego River, a non-RPW that demonstrates a significant nexus with a TNW. Soil pits were dug at Data Points DP1 and DP2 to determine if hydric soil indicators were present within the coarse sand mapped as the Tujunga soil series. Tujunga soils are on the National Wetland Hydric Soils List (DOI 2014). DP1 was placed in an upland area, upslope from the ponded area, and while hydrophytic vegetation and hydrology was present, hydric soil indicators were not evident. DP2 was placed on the edge of the ponded area and displayed soil colors of 10YR 3/2 and 10YR 4/3, with an organic layer on the surface and a layer of muck approximately 4 inches thick at a depth of 2–6 inches in the soil pit. The soil sample at DP2 was determined to have the hydric soil indicator Sandy Mucky Mineral (S1) due to the layer of muck that is a minimum 2 inches thick in sandy soil. Therefore, the 0.39-acre ponded area is considered a wetland feature subject to the jurisdiction of USACE/RWQCB/CDFW and the County of San Diego RPO.

4.3 Impacts and Mitigation

The proposed project would consist of active mining that would occur over approximately 12 years. As mining is completed (in four distinct phases), the disturbed areas previously mined would be progressively reclaimed starting in year 4 of the project and generally moving upstream to downstream. Reclamation is an ongoing process that commences when mining operations have ceased within a given area and continues until all mining related disturbance is reclaimed and all equipment involved in these operations have been removed. Habitat mitigation revegetation would also be performed to ensure successful restoration/creation of self-sustaining native habitats, which would serve as mitigation for impacts to sensitive vegetation communities, pursuant to County regulations. In contrast to the Reclamation Plan, the goal of the habitat mitigation Revegetation Plan is to restore the ecological functions and values of the impacted habitats, rather than to provide landscape stability (ESA 2018b, ESA 2018c). Areas designated for habitat mitigation in accordance with County and resource agency requirements for impacts to sensitive vegetation communities include more stringent standards, including a 5-year maintenance and monitoring program to attain designated success standards and long-term preservation and management.

A combination of habitat mitigation (for uplands and jurisdictional resources) and reclamation revegetation would be initiated for each specific phase after completion of mining in that area. For example, as mining progresses into the Phase 2 area, habitat mitigation and reclamation revegetation would begin in the Phase 1 area. Revegetation will occur where temporary impacts occur to address Reclamation Plan, County, and resource agency requirements. Final landforms would be established and the entire temporary impact area (i.e., 241.11 acres) would be planted with the native species identified in the Reclamation Plan and Revegetation Plan. This revegetation will result in a net increase in native habitat acreage on-site and improve overall native habitat quality and functions. Restoration of habitat beyond those limits is not required or proposed, other than enhancement of riparian and transitional habitat outside of mining limits within the site to provide a portion of the mitigation for impacts to tamarisk scrub habitat. Additional information on revegetation including habitat mitigation and reclamation is included in the Revegetation Plan (ESA 2018c).

The four phases of mining and jurisdictional mitigation and reclamation are represented in **Figure 7**. The proposed project would include an onsite trail system (shown as part of the permanent impacts) that would generally border the area of disturbance and the project site boundary. Trails would consist of both Type C and Type D trail types. The proposed trails would contribute to the expansion of and linkage to the County's Community Trails Master Plan trail system. Type C Primitive trails would be designed to be three feet wide in a 20-foot wide easement. Type D Pathways would be 10-12 feet wide in a 20-foot wide easement. Trails would be constructed both during Phase I and after mining has been completed. Trails would be designed to support equestrian users, pedestrians, and bicyclists. Public access across the mined area could be limited during the rainy season due to the potential for the mining pit to collect and pond rainfall.

Trails along the northern perimeter of the project site and along Dairy Road would be constructed during Phase 1. Trails south of the low flow channel, east of the drop structure, and in the northwest corner of the project site would be constructed following completion of mining operations. A 20-foot wide trail easement would be located over an existing trail in the northwestern corner of the project site. Temporary and permanent fencing and exclusionary signage would be placed along the fence at appropriate intervals warning the public of hazards and restricted access.

The proposed project would temporarily and permanently affect jurisdictional non-wetland waters (non-vegetated streambed) and riparian habitats as defined by USACE, RWQCB, CDFW, and the County of San Diego through removal of vegetation, grading, placement of temporary structures (including a portable processing plant, temporary power lines, weigh scales, and modular scale house), excavation to a maximum of 35 feet below the current surface, placement of fill to create a bench around the mined pit, and permanent impact project components including a mining pit drop structure/rock dam, fuel modification zones and a trail system. A total of 0.36 acre of USACE/RWQCB jurisdictional non-wetland waters, and a total of 41.46 acres of CDFW riparian and San Diego County jurisdictional wetlands would be affected (Figures 6a and 6b and **Table 3**). In permitting projects, USACE (and RWQCB and CDFW) seek to meet the goal of no net loss of functions and values of wetlands and other waters (non-wetland waters) of the United States and

would require at a minimum the restoration of disturbed areas to original contours and a habitat mitigation revegetation program to restore jurisdictional areas disturbed by the proposed project.

TABLE 3
IMPACTS TO JURISDICTIONAL RESOURCES (ACRES)

Jurisdiction	Temporary Impacts	Permanent Impacts	Total Impacts
Federal (USACE)/State (RWQCB)	0.35	0.01	**0.36**
State (CDFW)/County (San Diego)	39.18	2.28	**41.46**
Total	**39.53**	**2.29**	**41.82**

A summary of temporary and permanent impacts to jurisdictional resources is provided in Table 3. Temporary and permanent impacts related to each project component (four mining phases, fuel modification zones, and trails outside of the site phasing plan) and associated mitigation requirements, are provided in **Table 4**. Habitat-based mitigation per phase, as detailed by the project's Conceptual Revegetation Plan (ESA 2018c), is shown in **Table 5**. Total jurisdictional resource mitigation requirements, including for phases and project components outside of the site phasing plan (i.e., trails and fuel modification zones), is shown in **Table 6**.

Impacts to waters of the U.S./State (USACE/RWQCB) totals 0.36 acre of non-vegetated channel (0.35 acre of temporary impacts and 0.01 acre of permanent impacts). These impacts would occur within areas mapped as non-vegetated channel and are proposed to be mitigated at a 1:1 ratio with the restoration of 0.36 acre of vegetated channel. Impacts to CDFW/County of San Diego jurisdictional features total 41.46 acres (39.18 acres of temporary impacts and 2.28 acres of permanent impacts). These impacts would primarily occur within areas mapped as tamarisk scrub and are proposed to be mitigated at a 3:1 ratio by a combination of restoration of native Riparian Forest and Riparian Scrub habitats within post-mining areas (62.71 acres; 1.5:1), and restoration of riparian and transitional habitat outside of mining limits but within the project site (62.72 acres, rounded up to 64.16 acres to address all riparian areas onsite; 1.5:1) via exotic plant removal and activities to promote native plant revegetation. Refer to the project's Conceptual Revegetation Plan (ESA 2018c), included as Appendix I to the project's EIR (County of San Diego 2018), for additional detail.

4.4 Discussion and Conclusions

Two primary features within the project boundary have been identified as potentially being regulated by the USACE, RWQCB, CDFW, and the County of San Diego. The limits of jurisdiction for each regulatory agency are summarized below. However, these estimates are preliminary and the final determination of jurisdiction will be made by each regulatory agency during the permitting/approval process. Impacts to USACE jurisdictional waters will require applying for a CWA Section 404 Nationwide Permit (NWP) 44 with a 300-foot limit waiver or application for Individual Permit. Impacts to CDFW jurisdictional waters will require applying for a 1602 Streambed Alteration Agreement (SAA). Impacts to RWQCB jurisdictional waters will require applying for a CWA Section 401 Water Quality Certification. While all three permit applications can be submitted concurrently, the processing time for each application varies from 3 months to 12 months.

Jurisdictional Mitigation By Phase (Inside site phasing plan)

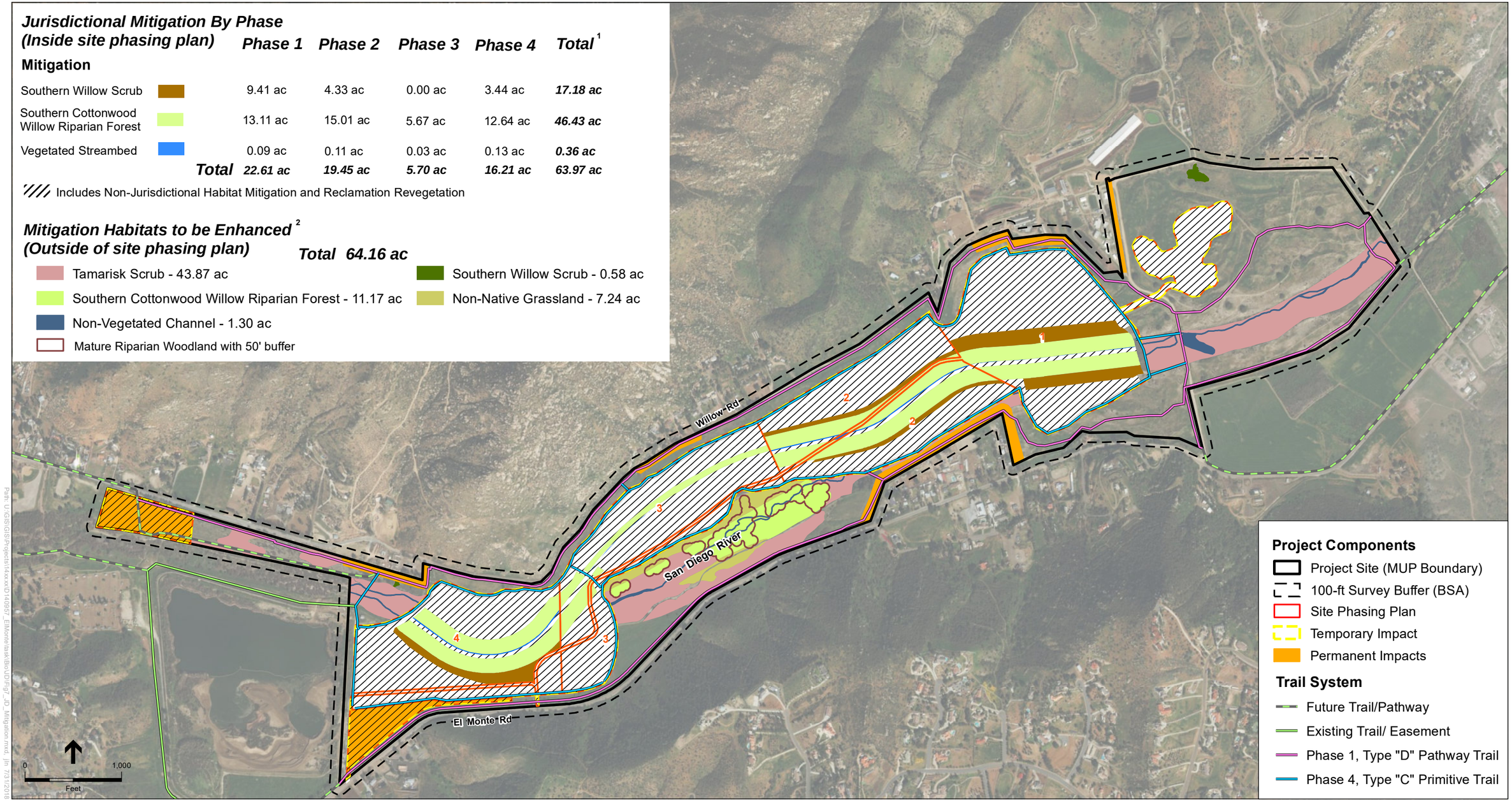
Mitigation	Phase 1	Phase 2	Phase 3	Phase 4	Total [1]
Southern Willow Scrub	9.41 ac	4.33 ac	0.00 ac	3.44 ac	***17.18 ac***
Southern Cottonwood Willow Riparian Forest	13.11 ac	15.01 ac	5.67 ac	12.64 ac	***46.43 ac***
Vegetated Streambed	0.09 ac	0.11 ac	0.03 ac	0.13 ac	***0.36 ac***
Total	***22.61 ac***	***19.45 ac***	***5.70 ac***	***16.21 ac***	***63.97 ac***

//// Includes Non-Jurisdictional Habitat Mitigation and Reclamation Revegetation

Mitigation Habitats to be Enhanced [2] (Outside of site phasing plan)

Total 64.16 ac

- Tamarisk Scrub - 43.87 ac
- Southern Willow Scrub - 0.58 ac
- Southern Cottonwood Willow Riparian Forest - 11.17 ac
- Non-Native Grassland - 7.24 ac
- Non-Vegetated Channel - 1.30 ac
- Mature Riparian Woodland with 50' buffer



Project Components

- Project Site (MUP Boundary)
- 100-ft Survey Buffer (BSA)
- Site Phasing Plan
- Temporary Impact
- Permanent Impacts

Trail System

- Future Trail/Pathway
- Existing Trail/ Easement
- Phase 1, Type "D" Pathway Trail
- Phase 4, Type "C" Primitive Trail

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SOURCE: ESRI; ESA 2016; EnviroMine 2016

[1] Total includes mitigation required for impacts within site phasing plan and outside (i.e., impacts from trails and fuel modification zones).

[2] Mitigation habitats to be enhanced outside the site phasing plan include restoration of riparian and transitional habitat via exotic plant removal and activities to promote native plant revegetation (62.72 acres required, rounded up to 64.16 acres). This enhancement plus 63.25 acres of Riparian Forest and Riparian Scrub restoration within the site phasing plan area will provide a 125.97 acres of mitigation for impacts to Tamarisk Scrub.

Figure 7
Jurisdictional Mitigation and Reclamation

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TABLE 4
MITIGATION FOR IMPACTS RELATED TO JURISDICTIONAL RESOURCES (ACRES)

Jurisdiction / Vegetation Community	Mining Phase 1 Perm[1]	1 Temp	2 Perm[1]	2 Temp	3 Perm[1]	3 Temp	4 Perm[1]	4 Temp	Trails Outside Mining Phases (Perm)	Fuel Mod Zones Outside Mining Phases (Perm)	Total Impacts	Mitigation Ratio	Habitat Mitigation
Waters of the United States/State (USACE/RWQCB)													
Non-Vegetated Channel[2]	0.01	0.08	0.00	0.11	0.00	0.03	0.00	0.13	0.00	0.00	0.36	1:1	0.36
CDFW/County of San Diego Jurisdiction													
Tamarisk Scrub[3]	0.53	11.83	0.10	12.79	0.01	3.54	0.02	11.02	1.62	0.00	41.46[4]	3:1	124.38[5]
Total[5]	**0.54**	**11.91**	**0.10**	**12.90**	**0.01**	**3.57**	**0.02**	**11.15**	**1.62**	**0.00**	**41.81**	**-**	**124.74**

1 Permanent impacts within the mining phases are from the drop structure (Phase 1 only) and trails.
2 Non-Vegetated Channel will be mitigated by restoration of Vegetated Channel since it is expected the post-mining grades and conditions will support native plants in the channel
3 CDFW/County of San Diego jurisdictional areas subject to temporary impacts include small areas of Diegan coastal sage scrub (0.26 acre) and disturbed (0.17 acre) habitat types. These areas occur as small patches within a majority (39.41 acres) of jurisdictional tamarisk scrub habitat that would be impacted. For the purposes of this table, acreages of coastal sage scrub and disturbed habitat within CDFW and County of San Diego jurisdiction are rolled up into tamarisk scrub.
4 Total impacts to tamarisk scrub habitat (125.43 acres) differs from the acreage presented in this table because not all tamarisk scrub habitat is located within areas subject to CDFW/County of San Diego jurisdiction.
5 Total impacts to tamarisk scrub habitat (jurisdictional and non-jurisdictional areas; 41.81 acres) will be mitigated at a 3:1 ratio (total of 125.43 acres of mitigation) by a combination of restoration of native Riparian Forest and Riparian Scrub habitats within post-mining areas (62.71 acres; 1.5:1), and restoration of riparian and transitional habitat outside of mining limits but within the project site (62.72 acres, rounded up to 64.16 acres to address all riparian areas on-site; 1.5:1) via exotic plant removal and activities to promote native plant revegetation.

TABLE 5
HABITAT-BASED MITIGATION PER PHASE (ACRES)

Mitigation	Phase 1	Phase 2	Phase 3	Phase 4	Total
Southern Cottonwood Willow Riparian Forest	13.11	15.01	5.67	12.64	46.43
Southern Willow Scrub	8.87	4.33	0.00	3.44	16.64
Vegetated Streambed	0.09	0.11	0.03	0.13	0.36
Total	22.07	19.45	5.70	16.21	63.43

TABLE 6
MITIGATION FOR IMPACTS RELATED TO JURISDICTIONAL RESOURCES (ACRES)

Jurisdictional Resource	Impacts	Mitigation Ratio[1]	Required Mitigation
Riparian (CDFW and County)	41.46	3:1	124.38
Non-vegetated Streambed/Non-Wetland Waters (CDFW and USACE)	0.36	1:1	0.36

1 Wetland mitigation shall include a minimum 1:1 creation or restoration (re-establishment) component, while restoration (rehabilitation) or enhancement of existing habitats may be used to make up the remaining requirements.

Waters of the United States

Waters of the United States that are subject to the jurisdiction of the USACE include the ephemeral channel (OHWM limits) within the San Diego River floodplain. The San Diego River, a non-RPW through this portion of the project boundary, functions as a riverine and palustrine system that conveys water flow downstream toward the Pacific Ocean, a TNW. The San Diego River within the project boundary is mapped as palustrine by the USFWS Wetlands Mapper; however, based on data collected during the field survey, the river contains riparian habitat but lacks hydric soils to be considered a federally protected wetland. Additionally, no hydric soils are mapped for the entire San Diego River. Therefore, a total of 1.66 acres of non-wetland waters of the United States (ephemeral channel), subject to USACE jurisdiction under Section 404 of the CWA, occurs in the project boundary. Additionally, the ponded area in the northeastern portion of the project boundary contains all three wetland parameters to be considered a federally protected wetland. Therefore, 0.39 acre of wetland waters of the United States subject to USACE jurisdiction occur in the project boundary. The total waters of the United States delineated on the project boundary is 2.05 acres, of which 0.36-acre of non-wetland waters may be impacted by the proposed project that would require permitting mitigation at a 1:1 ratio.

Waters of the State

The features described above as subject to USACE's jurisdiction also potentially fall under the authority of the San Diego RWQCB in accordance with Section 401 of the CWA. Therefore, 1.66 acres of non-wetland waters of the State and 0.39 acre of wetland waters of the State are subject to RWQCB jurisdiction within the project boundary. Therefore, a total of 2.05 acres of waters of the State occur within the project boundary, of which 0.36-acre of non-wetland waters may be impacted by the proposed project that would require permitting mitigation at a 1:1 ratio.

CDFW Jurisdiction

Areas potentially under CDFW jurisdiction include the San Diego River floodplain and associated riparian habitat (tamarisk scrub), as well as the ponded area in the northeast portion of the project boundary. Based on the data collected during the delineation survey, the ephemeral floodplain of the San Diego River displays evidence of flow, and the outer limits of the tamarisk scrub canopy provide habitat for a number of species. Therefore, the 86.14 acres of the San Diego River within the project boundary is potentially subject to CDFW jurisdiction. Additionally, the ponded area in the northeast portion of the project boundary contains surface water at least periodically and associated southern willow scrub vegetation that provides habitat for species. Therefore, the ponded area contains 0.39 acre of wetland habitat subject to CDFW jurisdiction. The total waters and wetlands present on the project boundary, potentially subject to CDFW jurisdiction, is 86.53 acres. The proposed project may result in a total of 41.46 acres of impacts to CDFW jurisdiction, which would require permitting and mitigation at a 3:1 ratio.

County of San Diego Wetlands

Areas potentially considered County of San Diego wetlands and subject to regulation under the County RPO include the 86.53 acres of the San Diego River and associated tamarisk scrub habitat, and the 0.39-acre ponded area in the northeast portion of the project boundary. These areas contain a dominance of hydrophytes and the presence of a perennial stream, and a total 86.92 acres of County of San Diego wetlands occur in the project boundary.

5. Supplemental Information

5.1 Directions to the Project

From Los Angeles, take Interstate 5 south, to Interstate 805 south, to State Route 52 east, to State Route 67 north, to the Mapleview Street exit. Head east on Mapleview Street to Ashwood Street and turn north, continuing for approximately 0.6 mile to the project boundary on the east side of Ashwood Street.

5.2 Project Applicant Contact Information

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El Monte Nature Preserve, LLC
1335 San Lucas Court
Solana Beach, CA 92075

5.3 Field Delineator Contact Information

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6. References

Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken, editors, 2012. The Jepson manual: Vascular plants of California, second edition. University of California Press, Berkeley, CA

California Department of Fish and Wildlife (CDFW). 2014. Lake and Streambed Alteration Program. http://www.dfg.ca.gov/habcon/1600.

Cowardin, L. M., V. Carter, F. C. Golet, E. T. LaRoe, 1979. Classification of wetlands and deepwater habitats of the United States. U. S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. Jamestown, ND: Northern Prairie Wildlife Research Center Online, http://www.npwrc.usgs.gov/resource/wetlands/classwet (Version 04DEC98).

County of San Diego. 1991 The Resource Protection Ordinance. Department of Planning and Land Use and Department of Public Works. Effective October 10, 1991.

County of San Diego. 2018. Draft Environmental Impact Report for the El Monte Sand Mining Project.

Environmental Laboratory, Department of the Army, 1987. Corps of Engineers Wetland Delineation Manual (Technical Report Y-87-1). U.S. Army Corps of Engineers. Waterways Experimental Station. Vicksburg, Mississippi.

Environmental Science Associates (ESA), 2018a. Draft Biological Resources Report El Monte Sand Mining Project. County of San Diego. July.

Environmental Science Associates (ESA). 2018b. Draft Reclamation Plan for the El Monte Sand Mine Project. July.

Environmental Science Associates (ESA). 2018c. Draft Conceptual Revegetation Plan for the El Monte Sand Mine Project. July.

Google, Inc. (Google Earth). 2016. Available URL: http://www.google.com/earth/index.html.

Holland, R.F., 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California*, October 1986.

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

Natural Resources Conservation Service (NRCS), 2016. Custom Soil Resource Report for San Diego County, California. United States Department of Agriculture, National Cooperative Soil Survey, websoilsurvey.nrcs.usda.gov.

NRCS, 2014. List of Hydric Soils. United States Department of Agriculture,

Oberbauer, Thomas, Meghan Kelly, and Jeremy Buegge. 2008. *Draft Vegetation Communities of San Diego County*, based on "Preliminary Descriptions of the Terrestrial Natural Communities of California," Robert F. Holland, Ph.D., October 1986, revised March 2008.

Sawyer, J.O., T. Keeler-Wolf, and J.M. Evens. 2009. A Manual of California Vegetation, Second Edition. California Native Plant Society, Sacramento. 1300 pp.

Soil Survey Staff, U.S. Department of Agriculture (USDA), Natural Resources Conservation Service. 1999. Official Soil Series Descriptions [Online WWW]. Available URL: http://soils.usda.gov/technical/classification/osd/index.html. Accessed February 12, 2016. USDA-NRCS, Lincoln, NE.

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at http://websoilsurvey.nrcs.usda.gov/. Accessed February 11, 2016.

U.S. Army Corps of Engineers (Corps), 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.

U.S. Department of the Interior, (U.S. DOI), 2016. Fish and Wildlife Service, National Wetlands Inventory, www.wetlands.fws.gov.

2010. Field Indicators of Hydric Soils in the United States, Version 7.0. L.M. Vasilas, G.W. Hurt, and C.V. Noble (eds.). USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils.

2013. Web Soil Survey. Available URL: http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed September 19, 2014.

2015a. National Hydric Soils List. Available URL: http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric. December. Accessed February 12, 2016.

2015b. The USGS Water Science School. Rivers Contain Groundwater. http://water.usgs.gov/edu/rivers-contain-groundwater.html. August. Accessed February 16, 2016.

USFWS. 2016. National Wetlands Inventory, Wetlands Mapper. Available URL: http://www.fws.gov/wetlands/Data/Mapper.html. Accessed February 10, 2016.

Appendix A
Wetland Datasheets

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: El Monte Sand Mining and Nature Preserve City/County: Lakeside/San Diego Sampling Date: 1/21/2016

Applicant/Owner: El Monte Nature Preserve/County of San Diego State: CA Sampling Point: DP1

Investigator(s): T. Molioo and A. Bennett Section, Township, Range: Sec 9,10, and 16, T15S, R1E

Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): concave Slope (%): 2%

Subregion (LRR): C Lat: 32.88445363070 Long: -116.86863151 Datum: NAD83

Soil Map Unit Name: Tujunga Sand NWI classification: N/A

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes x No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

upland area immediately adjacent to wetland (ponded area)

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Nicotiana glauca	1	yes	FAC
2.			
3.			
4.			
	1	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10')			
1. Baccharis salicifolia	15	yes	FACW
2. Heterotheca grandiflora	1	no	UPL
3.			
4.			
5.			
	16	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Bromus madritensis ssp. rubens	90	yes	UPL
2. Salsola tragus	1	no	UPL
3. Sonchus oleraceus	1	no	UPL
4. Glebionis segetum	1	no	UPL
5.			
6.			
7.			
8.			
	93	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust _____

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species 15	x 2 =	30
FAC species 1	x 3 =	3
FACU species	x 4 =	
UPL species 94	x 5 =	470
Column Totals: 110 (A)		503 (B)

Prevalence Index = B/A = 4.57

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.

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

Remarks:

willow, tamarisk, cottonwood in the middle of pond

SOIL

Sampling Point: DP1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-18	10 YR 3/3	100					coarse sand	UPL soil pit, no redox, 4' up from water

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No __x__

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- _x_ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- _x_ 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 Plowed Soils (C6)
- ___ 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)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes __x__ No _____

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

Remarks:

Soil is wet but not saturated. Recent rainfall has created wet conditions.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: El Monte Sand Mining and Nature Preserve City/County: Lakeside/San Diego Sampling Date: 1/21/2016

Applicant/Owner: El Monte Nature Preserve/County of San Diego State: CA Sampling Point: DP2

Investigator(s): T. Molioo and A. Bennett Section, Township, Range: Sec 9,10, and 16, T15S, R1E

Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): concave Slope (%): 2%

Subregion (LRR): C Lat: 32.884459536 Long: -116.868618706 Datum: NAD83

Soil Map Unit Name: Tujunga Sand NWI classification: N/A

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes x No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes 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:

Sampling point ~3 feet closer to water's edge than DP1.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Nicotiana glauca	1	yes	FAC
2.			
3.			
4.			
	1 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10')			
1. Baccharis salicifolia	15	yes	FACW
2. Heterotheca grandiflora	1	no	UPL
3.			
4.			
5.			
	16 = Total Cover		
Herb Stratum (Plot size: 5')			
1. Bromus madritensis ssp. rubens	90	yes	UPL
2. Salsola tragus	1	no	UPL
3. Sonchus oleraceus	1	no	UPL
4. Glebionis segetum	1	no	UPL
5.			
6.			
7.			
8.			
	93 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust _____

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species 15	x 2 =	30
FAC species 1	x 3 =	3
FACU species	x 4 =	
UPL species 94	x 5 =	470
Column Totals: 110 (A)		503 (B)

Prevalence Index = B/A = 4.57

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.

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

Remarks:

willow, tamarisk, cottonwood in the middle of pond

SOIL

Sampling Point: DP2

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
0-2								organic layer
2-6	10 YR 3/2	100					coarse sand w/muck	
6-18	10 YR 4/3	100					coarse sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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)
- x 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.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes x No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- x 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)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ 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)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes x No ___ Depth (inches): 1”

Water Table Present? Yes x No ___ Depth (inches): 1”

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

Wetland Hydrology Present? Yes x No ___

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

Remarks:

Completely ponded area.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: El Monte Sand Mining and Nature Preserve City/County: Lakeside/San Diego Sampling Date: 1/21/2016

Applicant/Owner: El Monte Nature Preserve/County of San Diego State: CA Sampling Point: DP3

Investigator(s): T. Molioo and A. Bennett Section, Township, Range: Sec 9,10, and 16, T15S, R1E

Landform (hillslope, terrace, etc.): riverbed Local relief (concave, convex, none): concave Slope (%): 0%

Subregion (LRR): C Lat: 32.883029176 Long: -116.861578837 Datum: NAD83

Soil Map Unit Name: Riverwash NWI classification: R4SBA - Riverine

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes x No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Data point taken in riverbed/low-flow channel.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Tamarix ramosissima	25	Yes	FAC
2. Baccharis salicifolia	10	Yes	FACW
3.			
4.			
	35 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10)			
1. Baccharis salicifolia	20	Yes	FACW
2.			
3.			
4.			
5.			
	20 = Total Cover		
Herb Stratum (Plot size: 5)			
1. Bromus rubens ssp. madritensis	60	Yes	UPL
2. Sysimbrium irio	15	No	UPL
3. Hirschfeldia incana	5	No	UPL
4.			
5.			
6.			
7.			
8.			
	80 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 20 % Cover of Biotic Crust _____

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 35	x 2 = 60
FAC species 20	x 3 = 75
FACU species 0	x 4 = 0
UPL species 80	x 5 = 400
Column Totals: 135 (A)	535 (B)

Prevalence Index = B/A = 3.96

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.

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

Remarks:

SOIL

Sampling Point: DP3

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10 YR 3/2	100					sandy loam	low-flow channel

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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.

Restrictive Layer (if present):

Type: unknown; compacted soil/rock

Depth (inches): 12

Hydric Soil Present? Yes _____ No x

Remarks:

no redox

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- x 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 Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- x Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes x No _____

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

Remarks:

Riverine feature

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: El Monte Sand Mining and Nature Preserve City/County: Lakeside/San Diego Sampling Date: 1/21/2016

Applicant/Owner: El Monte Nature Preserve/County of San Diego State: CA Sampling Point: DP4

Investigator(s): T. Molioo and A. Bennett Section, Township, Range: Sec 9,10, and 16, T15S, R1E

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

Subregion (LRR): C Lat: 32.8741030382 Long: -116.881986849 Datum: NAD83

Soil Map Unit Name: Tujunga Sand NWI classification: PSSC - 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? Are "Normal Circumstances" present? Yes x No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Data point in upland area adjacent to low-flow channel

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Eucalyptus camaldulensis	40	yes	FAC
2. Quercus agrifolia	5	no	UPL
3.			
4.			
	45	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10)			
1. Baccharis salicifolia	20	yes	FACW
2. Baccharis sarothroides	3	no	FAC
3.			
4.			
5.			
	23	= Total Cover	
Herb Stratum (Plot size: 5)			
1. Bromus diandrus	100	yes	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____	= Total Cover	

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

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 0	x 1 =	0
FACW species 20	x 2 =	40
FAC species 43	x 3 =	129
FACU species 0	x 4 =	0
UPL species 105	x 5 =	525
Column Totals: 168 (A)		694 (B)

Prevalence Index = B/A = 4.13

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.

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

Remarks:

SOIL

Sampling Point: DP4

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
0-18	10 YR 4/2	100					coarse sand	Upland area 3' above bank

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No x

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ 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 Plowed Soils (C6)
- ___ 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)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No x

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

Remarks:

In grassy area with upland vegetation.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: El Monte Sand Mining and Nature Preserve City/County: Lakeside/San Diego Sampling Date: 1/21/2016

Applicant/Owner: El Monte Nature Preserve/County of San Diego State: CA Sampling Point: DP5

Investigator(s): T. Molioo and A. Bennett Section, Township, Range: Sec 9,10, and 16, T15S, R1E

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

Subregion (LRR): C Lat: 32.8741054523 Long: -116.882015813 Datum: NAD83

Soil Map Unit Name: Tujunga Sand NWI classification: PSSC - 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? Are "Normal Circumstances" present? Yes x No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Data point within low-flow channel

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Eucalyptus camaldulensis	40	yes	FAC
2. Quercus agrifolia	5	no	UPL
3.			
4.			
	45 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10)			
1. Baccharis sarothroides	2	no	FAC
2.			
3.			
4.			
5.			
	2 = Total Cover		
Herb Stratum (Plot size: 5)			
1. Bromus diandrus	100	yes	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	50 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust _____

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 0	x 1 =	0
FACW species 0	x 2 =	0
FAC species 42	x 3 =	126
FACU species 0	x 4 =	0
UPL species 55	x 5 =	275
Column Totals: 97 (A)		401 (B)

Prevalence Index = B/A = 4.13

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.

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

Remarks:

SOIL

Sampling Point: DP5

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
0-18	10 YR 3/2	100					coarse sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No x

Remarks:

middle of low-flow channel/trail

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ 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 Plowed Soils (C6)
- ___ 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)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No x

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

Remarks:

Hydrology present during rain/storm events; ephemeral stream.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: El Monte Sand Mining and Nature Preserve City/County: Lakeside/San Diego Sampling Date: 1/21/2016

Applicant/Owner: El Monte Nature Preserve/County of San Diego State: CA Sampling Point: DP6

Investigator(s): T. Molioo and A. Bennett Section, Township, Range: Sec 9,10, and 16, T15S, R1E

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

Subregion (LRR): C Lat: 32.872406795 Long: -116.902572176 Datum: NAD83

Soil Map Unit Name: Tujunga Sand NWI classification: PSSA - 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? Are "Normal Circumstances" present? Yes x No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Data point within low-flow channel

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix gooddingii	5	yes	OBL
2. Tamarix ramosissima	20	yes	FAC
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 10)			
1. Baccharis salicifolia	20	yes	FAC
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5)			
1. Hirschfeldia incana	10	yes	UPL
2. Erodium cicutarium	10	yes	UPL
3. Urtica dioica	5	no	FAC
4. Bromus diandrus	10	yes	UPL
5.			
6.			
7.			
8.			
	= Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 65 % Cover of Biotic Crust _____

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 5	x 1 =	5
FACW species 0	x 2 =	0
FAC species 45	x 3 =	135
FACU species 0	x 4 =	0
UPL species 30	x 5 =	150
Column Totals: 80 (A)		290 (B)

Prevalence Index = B/A = 3.63

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.

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

Remarks:

SOIL

Sampling Point: DP6

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
0-4	10 YR 3/2	100					loamy sand	
SR								highly compacted

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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.

Restrictive Layer (if present):

Type: highly compacted

Depth (inches): 4

Hydric Soil Present? Yes _____ No x

Remarks:

low-flow channel also used as trail

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ 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 Plowed Soils (C6)
- ___ 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)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No x

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

Remarks:

Appendix B
Species Observed

Appendix B: Plant Species Observed

Scientific Name	Common Name	2006 Surveys	2010 Surveys	2015 Surveys	2016 Surveys	2017 Survey
Acmispon argophyllus var. argophyllus	Southern California silver lotus	--	--	--	--	x
Acmispon glaber	Deerweed	x	x	--	x	x
Acmispon maritimus	Coastal bird's-foot-trefoil	x	x	--	x	--
Acmispon strigosus	Strigose lotus	--	--	--	--	x
*Ailanthus altissima**	Tree of heaven	--	--	--	x	x
*Amaranthus albus**	White tumbleweed	--	--	--	x	x
Ambrosia psylostachya	Western ragweed	--	--	--	--	x
Amblyopappus pusillus	Pineapple weed	x	x	--	x	--
Ambrosia acanthicarpa	Annual bur-sage	x	x	x	x	--
Ambrosia psylostachya	Western ragweed	x	x	x	x	x
Amsinckia menziesii var. *intermedia*	Fiddleneck	x	x	x	x	x
*Anagallis arvensis**	Scarlet pimpernel	x	x	x	x	x
Antirrinum nuttallianum ssp. *nuttallianum*	Nuttall's snapdragon	--	--	--	x	--
Artemisia californica	California sagebrush	x	x	x	x	x
Artemisia douglasiana	Mugwort	x	x	x	x	--
Artemisia palmeri	Palmer's sagewort	--	x	x	x	--
*Arundo donax**	Giant reed	x	x	x	x	x
Atriplex canescens	Fourwing saltbush					x
*Atriplex semibaccata**	Australian saltbush	--	x	--	x	--
*Avena barbata**	Slender wild oat	--	x	x	x	x
Avena fatua*	Wild oat	x	--	--	x	x
Baccharis pilularis	Coyote brush	x	x	x	x	x
Baccharis salicifolia	Mule fat	x	x	x	x	x
Baccharis sarothroides	Broom baccharis	x	x	x	x	x
Bebbia juncea	Sweetbush	--	--	x	--	--

Scientific Name	Common Name	2006 Surveys	2010 Surveys	2015 Surveys	2016 Surveys	2017 Survey
*Brassica nigra**	Black mustard	--	x	x	x	--
*Brassica rapa**	Field mustard	--	x	x	x	--
Brassica sp.*	Mustard	x	--	x	--	--
*Brassica tournefortii**	Saharan mustard	--	--	--	--	x
Brickellia californica	California brickelbush	--	--	x	x	--
*Bromus diandrus**	Ripgut grass	x	x	x	x	x
*Bromus hordaceus**	Smooth brome	--	x	--	--	x
Bromus madritensis ssp. *rubens**	Foxtail chess	x	x	x	x	x
*Bromus tectorum**	Cheat grass	x	x	--	x	--
Callistemon sp.*	Bottlebrush	--	x	--	x	--
Calystegia macrostegia	California morning-glory	--	--	--	x	--
Camissonia californica	False mustard	--	--	--	x	--
Camissonia strigulosa	Contorted primrose	--	--	--	--	x
Camissoniopsis bistorta	California sun cup	--	--	x		--
Camissoniopsis cheiranthifolia	Beach evening-primrose	x	--	--	x	x
*Carduus pycnocephalus**	Italian thistle	x	x	x	x	--
Carpobrotus edulis	Hottentot fig	--	--	--	--	x
*Centaurea melitensis**	Star-thistle	x	x	x	x	x
*Cerastium glomeratum**	Mouse-eared chickweed	x	--	--	--	--
Chaenactis glabriuscula	Yellow pincushion	x	x	--	x	x
*Chenopodium album**	Lamb's quarters	x	x	x	x	x
Chenopodium californicum	California goosefoot	--	x	--	x	--
*Chenopodium murale**	Nettle-leaf goosefoot	--	--	--	x	x
*Cirsium vulgare**	Bull thistle	--	x	x	x	--
Claytonia perfoliata	Miner's lettuce	x	x	--	x	x
*Cnicus benedictus**	Blessed thistle	--	--	--	x	--
*Conyza canadensis**	Horseweed	--	x	x	x	--

Scientific Name	Common Name	2006 Surveys	2010 Surveys	2015 Surveys	2016 Surveys	2017 Survey
*Cotaderia jubata**	Pampas grass	x	x	x	x	--
Crassula connata	Pygmy weed	x	x	--	x	x
Croton californicus	California croton	--	--	--	--	x
Croton setigerus	Dove weed	x	x	x	--	--
Cryptantha intermedia	Nievitas cryptantha	--	--	--	x	--
Cucurbita foetidissima	Calabazaill	x	x	x	x	x
Cuscuta californica	Dodder	x	x	x	x	--
Cuscuta salina	Salicornia dodder	x	x	--	--	--
Cuscuta subinclusa	Dodder	x	x	--	--	--
Cynara cardunculus ssp. cardunculus	Globe artichoke	--	--	--	--	x
Cyperus sp.	Sedge	--	x	--	x	--
Datura wrightii	Jimsonweed	x	x	--	x	x
Daucus pusillus	Rattlesnake weed	x	x	--	x	--
Deinandra sp.	Tarplant	--	--	--	x	--
Dichelostoma capitatum	Blue eyed-grass	--	x	--	--	x
Distichlis spicata	Saltgrass	--	x	--	x	--
Emmenanthe penduliflora	Whispering bells	--	--	--	x	--
Encelia californica	California encelia	--	--	--	x	x
Encelia farinosa	Brittlebush	--	--	--	--	x
Ericameria palmeri var. palmeri	Palmer's goldenbush	--	--	x	--	--
Erigeron canadensis	Horseweed	--	--	--	--	x
Eriogonum fasciculatum	California buckwheat	x	x	x	x	x
Eriogonum gracile	Slender buckwheat	--	--	--	x	x
Eriophyllum sp.	Yarrow	--	--	--	x	--
*Erodium botrys**	Long-beaked filaree	--	x	x	x	x
*Erodium cicutarium**	White-stemmed filaree	--	x	x	x	x
*Erodium moschatum**	Greenstem filaree	--	x	x	--	x

Scientific Name	Common Name	2006 Surveys	2010 Surveys	2015 Surveys	2016 Surveys	2017 Survey
Erodium sp.*	Filaree	x	--	x	--	--
Eschscholzia californica	California poppy	--	--	--	--	x
Eucalyptus camaldulensis	Red gum	--	--	--	--	x
Eucalyptus spp.*	Eucaplyptus	x	x	x	x	--
*Euphorbia maculata**	Spotted spurge	--	--	x	--	x
*Euphorbia peplus**	Petty spurge	x	x	x	--	x
Euphorbia polycarpa	Small seeded spurge	--	--	--	--	x
*Festuca myuros**	Foxtail fescue	--	--	--	--	x
*Foeniculum vulgare**	Sweet fennel	--	x	x	x	--
Galium angustifolium ssp. *angustifolium*	Narrow-leafed bedstraw	x	x	x	x	--
Galium aparine	Common bedstraw	--	--	--	--	x
Geranium sp.	Geranium	--	--	--	--	x
*Glebionis coronarium**	Crown daisy	x	x	x	x	x
Gnaphalium bicolor	Bicolored everlasting	x	x	--	x	--
Gnaphalium californicum	California everlasting	--	--	--	x	--
Gnaphalium leucocephalum	White-head cudweed	--	--	--	x	--
Heliotropium curassavicum	Salt heliotrope	x	x	x	x	x
*Helminthotheca echioides**	Bristly ox-tongue	--	x	x	x	--
Hesperoyucca whipplei	Chaparral candle	--	x	--	--	--
Heterotheca grandiflora	Telegraph weed	x	x	x	x	x
*Hirschfeldia incana**	Perennial mustard	--	x	x	x	x
*Hordeum murinum**	Wild barley	x	x	--	--	x
*Hordeum vulgare**	Common barley	x	--	--	--	--
*Hypochoeris glabra**	Smooth cat's ear	--	x	--	x	x
Isocoma menziesii var. *menziesii*	Coast goldenbush	--	x	x	x	--
Juncus bufonius	Toad rush	--	x	--	x	--
Justicia californica	Chuparosa	--	--	x	--	--
*Lactuca serriola**	Prickly lettuce	x	x	x	x	x

Scientific Name	Common Name	2006 Surveys	2010 Surveys	2015 Surveys	2016 Surveys	2017 Survey
*Lamarckia aurea**	Goldentop	x	x	--	x	x
*Lamium amplexicaule**	Dead nettle	x	x	--	x	--
Lastarriaea coriacea	Lastarriaea	--	--	--	x	x
Lasthenia coronaria	Royal goldfields	--	--	--	--	x
Lepidium nitidum	Peppergrass	x	x	--	x	x
Lessingia filaginifolia var. *filaginifolia*	California sand-aster	--	x	--	x	x
*Lobularia maritima**	Sweet alyssum	x	x	--	--	--
*Logfia gallica**	Narrowleaf cottonrose	--	--	--	--	x
*Lolium perenne**	Perennial rye grass	--	x	--	--	--
Lupinus bicolor	Dove lupine	x	x	--	x	x
Lupinus concinnus	Bajada lupine	--	--	--	--	x
Lupinus hirsutissimus	Stinging lupine	x	x	--	x	x
Malacothamnus fasciculatus	Chaparral mallow	--	x	--	x	x
Malosma laurina	Laurel sumac	x	x	x	x	x
*Malva parviflora**	Cheeseweed	x	x	--	x	x
Marah macrocarpus	Wild cucumber	x	x	--	x	x
*Marrubium vulgare**	Horehound	x	x	x	x	x
Matricaria discoidea	Pineapple weed	--	--	--	--	x
*Medicago polymorpha**	Burclover	x	x	--	--	x
*Melia azedarach**	China berry tree	--	--	--	--	x
*Melilotus officinalis**	Yellow sweetclover	x	x	x	x	x
Mentha sp.*	Mint	--	--	--	x	--
*Mesembryanthemum crystallinum**	Crystalline iceplant	--	--	--	x	x
Micropus californicus		--	--	--	--	x
*Nicotiana glauca**	Tree tobacco	x	x	x	x	x
Oenothera californica	California evening primrose	x	--	--	x	--

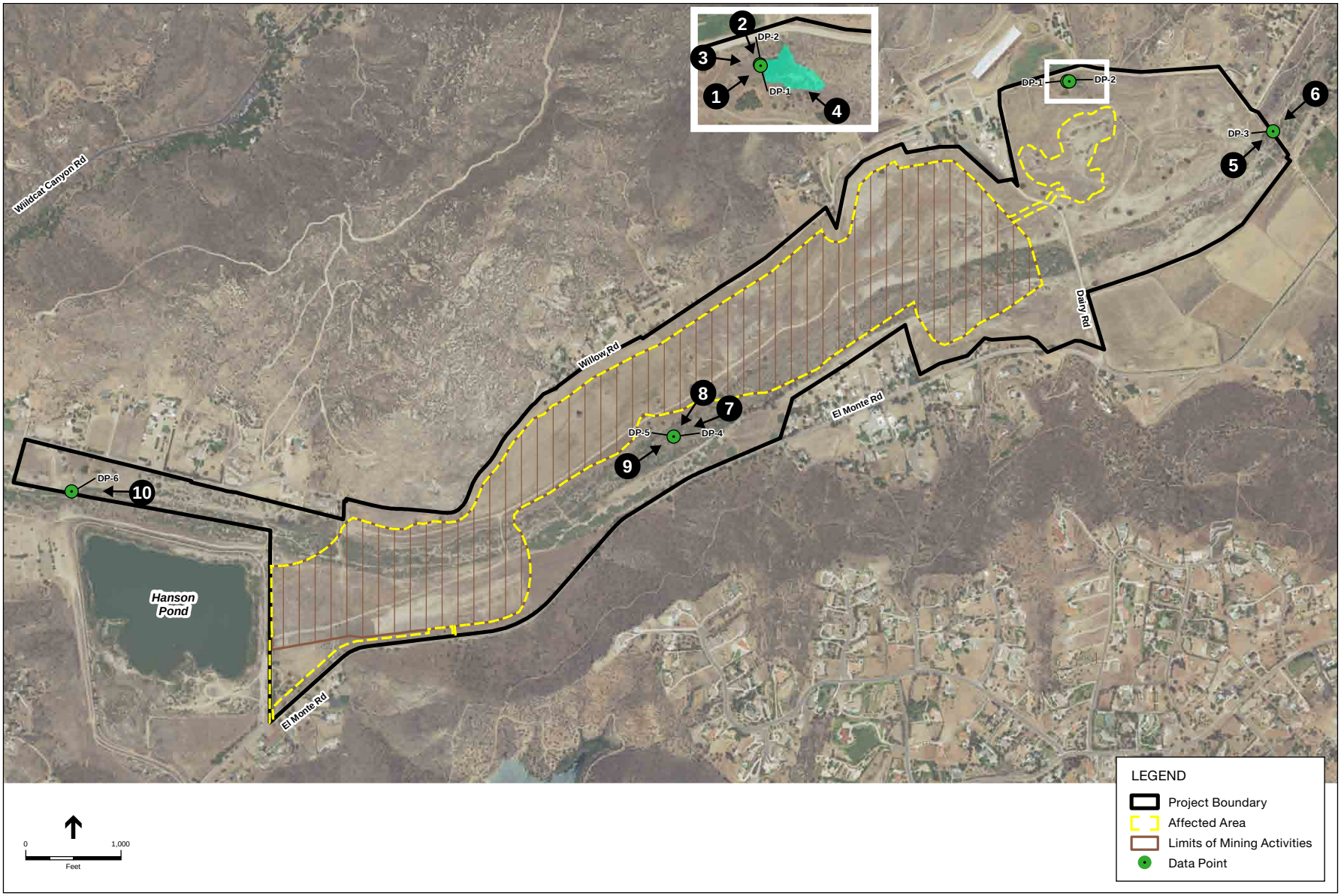
Scientific Name	Common Name	2006 Surveys	2010 Surveys	2015 Surveys	2016 Surveys	2017 Survey
Oenothera elata	Tall yellow evening primrose	x	--	--	--	--
*Opunitia ficus-indica**	Indian-fig	--	x	x	x	x
Opuntia littoralis	Coastal prickly pear	x	x	x	--	x
*Oxalis pes-caprae**	Bermuda buttercup	--	x	--	x	--
Parkinsonia microphylla	Palo verde	--	x	--	x	--
Pectocarya penicillata	Pectocarya	x	x	x	--	--
*Pennisetum setaceum**	African fountain grass	x	x	x	x	x
Phaceclia circutaria	Catterpillar phacelia	x	x	x	x	--
Phacelia parryi	Parry's phacelia	x	x	x	x	--
*Phalaris canariensis**	Canary grass	--	x	--	--	--
*Pholistoma auritum**	Fiesta flower	x	x	--	--	x
Plagiobothrys canescens	Grey popcorn flower	--	--	--	--	x
Plagiobothrys collinus	Cooper's popcornflower	--	--	--	--	x
Platanus racemosa	Western sycamore	x	x	x	x	x
Pluchea sericea	Arrow weed	x	x	x	x	--
*Polypogon monspeliensis**	Annual beard grass	--	x	--	--	x
Populus freemontii	Cottonwood	x	x	x	x	x
Pseudognaphalium beneolens	Fragrant everlasting	--	--	--	x	--
Pseudognaphalium leucocephalum	White-head cudweed	--	--	--	--	x
Pseudognaphalium palustre	Lowland cudweed	--	--	--	--	x
Pseudognaphalium stramineum	Cottonbatting plant	--	--	--	--	x
Quercus agrifolia	Coast live oak	x	x	x	x	x
*Raphanus sativus**	Wild radish	x	x	x	x	x
Rhus ovata	Sugarbush	--	--	--	x	--
*Ricinus communis**	Castor bean	x	x	x	x	--
*Rumex crispus**	Curley dock	--	x	--		x
Salix exigua	Sandbar willow	--	x	--	x	--

Scientific Name	Common Name	2006 Surveys	2010 Surveys	2015 Surveys	2016 Surveys	2017 Survey
Salix gooddingii	Goodding's black willow	x	x	x	x	x
Salix laevigata	Red willow	--	--	x	x	x
Salix lasiolepis	Arroyo willow	--	x	x	x	--
*Salsola tragus**	Russian thistle	x	x	--	x	x
Sambucus mexicana	Mexican elderberry	x	x	x	x	x
*Schinus molle**	Peruvian pepper tree	x	x	--	x	x
*Schinus terebinthifolius**	Brazialian pepper tree	--	x	--	x	--
*Schismus barbatus**	Mediterranean schismus	x	x	--	x	--
Scrophularia californica ssp. *floribunda*	California beeplant	--	--	--	x	--
*Senecio vulgaris**	Common grounsel	--	x	--	--	--
*Silene gallica**	Windmill pink	--	x	--	--	x
*Sisymbrium irio**	London rocket	x	--	--	x	x
Solanum americanum	Common nightshade	x	x	--	x	--
*Sonchus asper**	Spiny-leaf sow-thistle	x	x	x	x	x
*Sonchus oleraceus**	Common sow-thistle	--	x	x	x	x
*Spergularia bocconi**	Boccone's sand spurry	--	--	--	--	x
Stephanomeria virgata	Virgate wreath plant	--	x	x	x	--
Stipa lepida	Foothill needlegrass	--	x	--	x	x
Stylocline gnaphaloides	Everlasting nest straw	x	x	--	--	x
*Tamarix ramosissima**	Tamarisk/salt-cedar	x	x	x	x	x
*Taraxacum officinale**	Common dandelion	x	x	--	x	--
Thalictrum fendleri var. *polycarpum*	Many fruit meadow-rue	x	x	--	x	--
Torilis arvensis	Tall sock-destroyer	x	--	--	--	--
Toxicodendron diversilobum	Poison oak	--	x	--	x	--
*Trifolium hirtum**	Rose clover	--	--	--	--	x

Scientific Name	Common Name	2006 Surveys	2010 Surveys	2015 Surveys	2016 Surveys	2017 Survey
Urtica dioica ssp. *holosericea*	Hoary nettle	--	x	x	x	--
*Urtica urens**	Dwarf nettle	x	x	x	x	x
*Vulpia myuros**	Foxtail fescue	--	x	--	--	--
*Washingtonia robusta**	Mexican fan palm	--	x	--	--	--
Xanthium strumarium	Cocklebur	--	x	--	x	--

*=not native to California

Appendix C
Site Photographs



SOURCE: ESRI 2015; EnviroMine 2015

Appendix C
Site Photograph Locations

Site Photograph 1: Taken near the ponded area, facing north towards DP1.

Site Photograph 2: Taken near the ponded area, facing south towards DP2.

SOURCE: ESA 2016

Appendix C

Site Photographs 1 and 2

Site Photograph 3: Taken near the ponded area, facing northeast towards DP2. Note non-native vegetation surrounding ponded area.

Site Photograph 4: Taken near the ponded area, facing northwest towards the pond and wetland area. Note native wetland vegetation within the ponded area.

SOURCE: ESA 2016

Appendix C
Site Photographs 3 and 4

Site Photograph 5: Taken from the low-flow channel of the river, facing east towards DP3. Note channel is unvegetated and disturbed as a trail.

Site Photograph 6: Taken from the river channel, facing west towards DP3.

SOURCE: ESA 2016

Appendix C

Site Photographs 5 and 6

Site Photograph 7: Taken from an upland area adjacent to the river channel, facing west towards DP4.

Site Photograph 8: Taken from the low-flow channel of the river, facing west towards DP5. Note non-native grasses dominate the adjacent upland areas.

SOURCE: ESA 2016

Appendix C
Site Photographs 7 and 8

Site Photograph 9: Taken from the low-flow channel of the river, facing east towards DP5. Note non-native tree cover in background.

Site Photograph 10: Taken near the western boundary of the project, facing west towards DP6. Note use of channel as trail for hikers and horses.

SOURCE: ESA 2016

Appendix C

Site Photographs 9 and 10