APPENDIX B-2

JURISDICTIONAL DELINEATION REPORT

JURISDICTIONAL DELINEATION REPORT

BIG TUJUNGA RESERVOIR SEDIMENT REMOVAL PROJECT LOS ANGELES COUNTY, CALIFORNIA

Prepared for

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July 2012
Updated February 2013

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SECTION 1.0 INTRODUCTION

This Jurisdictional Delineation Report (report) was prepared for the Los Angeles County Department of Public Works, Water Resources Division to provide baseline data concerning the type and extent of resources under the jurisdiction of the U.S. Army Corps of Engineers (USACE), the California Department of Fish and Wildlife (CDFW[1]), and the Los Angeles Regional Water Quality Control Board (RWQCB) for the Big Tujunga Reservoir Sediment Removal Project (hereafter referred to as "the proposed project"). This Jurisdictional Delineation Report is based on the jurisdictional delineation surveys performed on September 28 and October 27, 2011.

1.1 PROJECT LOCATION AND DESCRIPTION

The proposed project is located in Big Tujunga Canyon in unincorporated Los Angeles County, within the boundaries of the Angeles National Forest (Exhibit 1). It is located on the U.S. Geological Survey's (USGS') Condor Peak 7.5-minute quadrangle of the San Bernardino Meridian at Township 3 North, Range 12 West, Sections 29, 31, and 32 (Exhibit 2). The study area for this jurisdictional delineation includes Big Tujunga Reservoir (which extends approximately two river miles upstream of Big Tujunga Dam), Big Tujunga Canyon Creek (which flows into the reservoir), the plunge pool immediately downstream of Big Tujunga Dam, Big Tujunga Wash (located downstream of the plunge pool for approximately one mile), and the Maple Canyon Sediment Placement Site (SPS) (Exhibit 3). Josephine Canyon Creek, White Oak Canyon Creek, and Fox Canyon Creek are smaller creeks that feed into Big Tujunga Reservoir, but only small portions of these creeks are within the survey area. The topography steeply slopes down into Big Tujunga canyon; elevations range from approximately 2,150 to 3,400 feet above mean sea level (msl).

1.2 REGULATORY AUTHORITY

1.2.1 SUMMARY OF REGULATIONS

U.S. Army Corps of Engineers

The USACE Regulatory Branch regulates activities that discharge dredged or fill materials into "waters of the U.S." under Section 404 of the Federal Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. This permitting authority applies to all "waters of the U.S." where the material (1) replaces any portion of a "waters of the U.S." with dry land or (2) changes the bottom elevation of any portion of any "waters of the U.S.". These fill materials would include sand, rock, clay, construction debris, wood chips, and materials used to create any structure or infrastructure in these waters. The selection of disposal sites for dredged or fill material was done in accordance with Section 404(b)(1) guidelines, which were developed by the U.S. Environmental Protection Agency (USEPA).

Waters of the United States

"Waters of the U.S." can be divided into three categories: territorial seas, tidal waters, or non-tidal waters. The term "waters of the U.S." is defined by the *Code of Federal Regulations* (CFR, Title 33, Navigation and Navigable Waters; Part 328, Definition of waters of the United States; Section 328.3, Definitions) and includes those listed below.

[1] The California Department of Fish and Game (CDFW) changed its name to the California Department of Fish and Wildlife (CDFW) effective January 1, 2013.

1. All waters that have, are, or may be used in interstate or foreign commerce (including sightseeing or hunting), including all waters subject to the ebb and flow of the tide.
2. All interstate waters including interstate wetlands.
3. All other waters such as intrastate lakes, rivers, or streams (including intermittent streams); mudflats; sand flats; wetlands; sloughs; prairie potholes; wet meadows; playa lakes; or natural ponds where the use, degradation, or destruction of which could affect interstate or foreign commerce.
4. All impoundments of waters otherwise defined as "waters of the U.S." under the definition.
5. All tributaries of waters identified above.
6. The territorial seas.
7. All wetlands adjacent to waters (other than waters that are themselves wetlands) identified above.

Ordinary High Water Mark

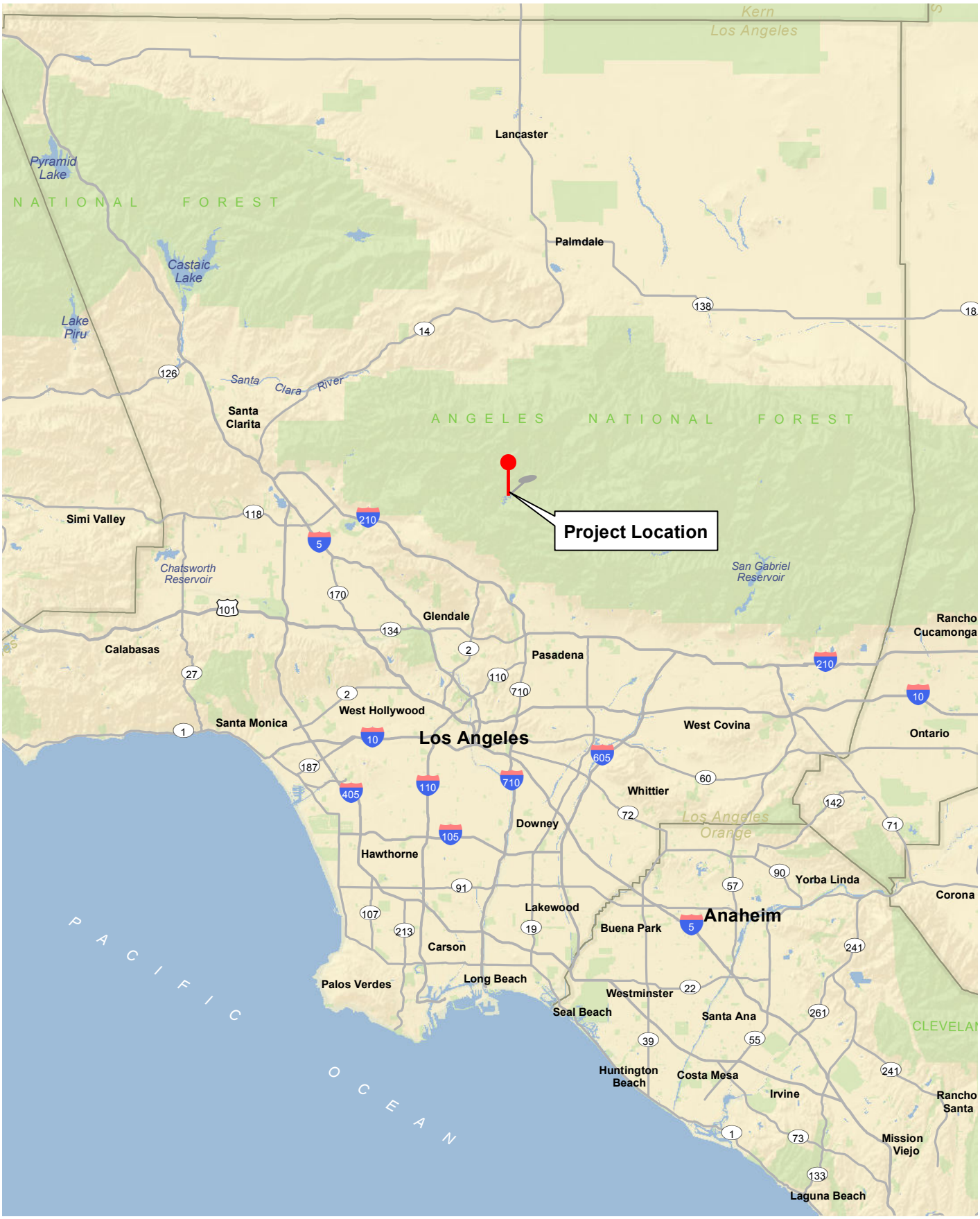
The landward limit of tidal "waters of the U.S." is the high-tide line. In non-tidal waters where adjacent wetlands are absent, jurisdiction extends to the ordinary high water mark (OHWM). In the absence of wetlands in non-tidal waters, the extent of jurisdictional limits is determined by the OHWM. The OHWM is defined as "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" (33 CFR §328.3[e]).

Wetlands

A wetland is a subset of jurisdictional waters and is defined by the USACE and the USEPA as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances, do support a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR §328.3[b]). Wetlands generally include swamps, marshes, bogs, and areas containing similar features. The definition and methodology for identifying wetland resources can be found in the USACE's 2008 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region,* a supplement to the USACE's *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987). The methodology contained in this supplement was used to identify the type and extent of wetland resources within the boundaries of the project site.

On June 19, 2006, a majority of the U.S. Supreme Court overturned two Sixth Circuit Court of Appeals decisions, finding that certain wetlands constituted "waters of the U.S." under the CWA. Justice Scalia argued that "waters of the U.S." should not include channels through which water flows intermittently or ephemerally or channels that periodically provide drainage for rainfall. He also stated that a wetland may not be considered "adjacent to" remote "waters of the U.S." based on a mere hydrologic connection. On June 5, 2007, the USACE published a memorandum that provides guidance to both the USEPA regions and the USACE districts that implement the Supreme Court's decision in the Rapanos cases (which address the jurisdiction over "waters of the U.S." under the CWA).[2] The memorandum includes a chart that summarizes

[2] Consolidated cases: *Rapanos v. United States* and *Carabell v. United States* refer to the U.S. Supreme Court's decision concerning USACE jurisdiction over "waters of the U.S." under the Clean Water Act.



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Regional Location

Exhibit 1

Big Tujunga Reservoir Sediment Removal Project

N W E S

10 5 0 10 Miles

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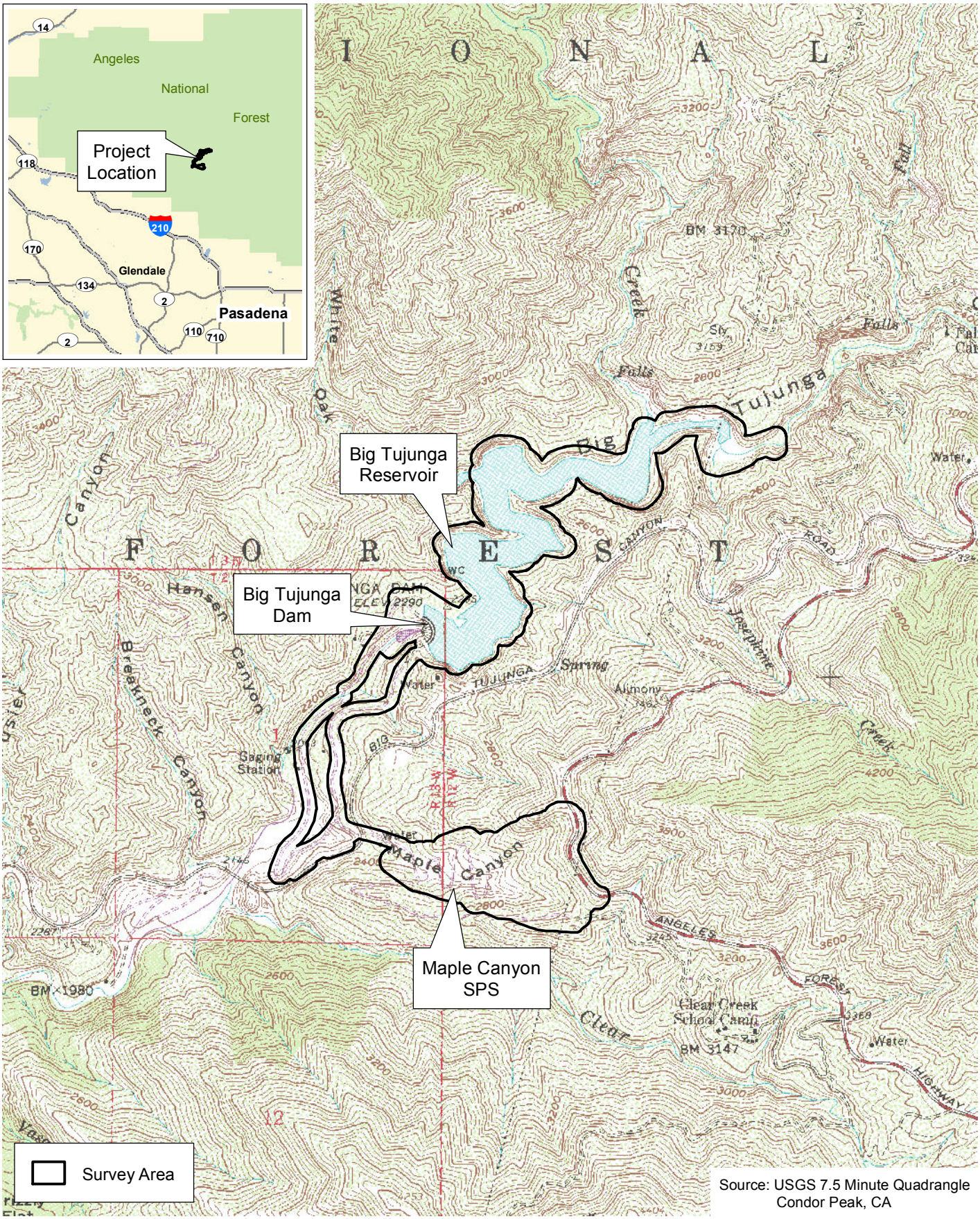

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U.S. Geological Survey 7.5-Minute Quadrangle

Exhibit 2

Big Tujunga Reservoir Sediment Removal Project

N
W E
S

2,000 1,000 0 2,000 Feet

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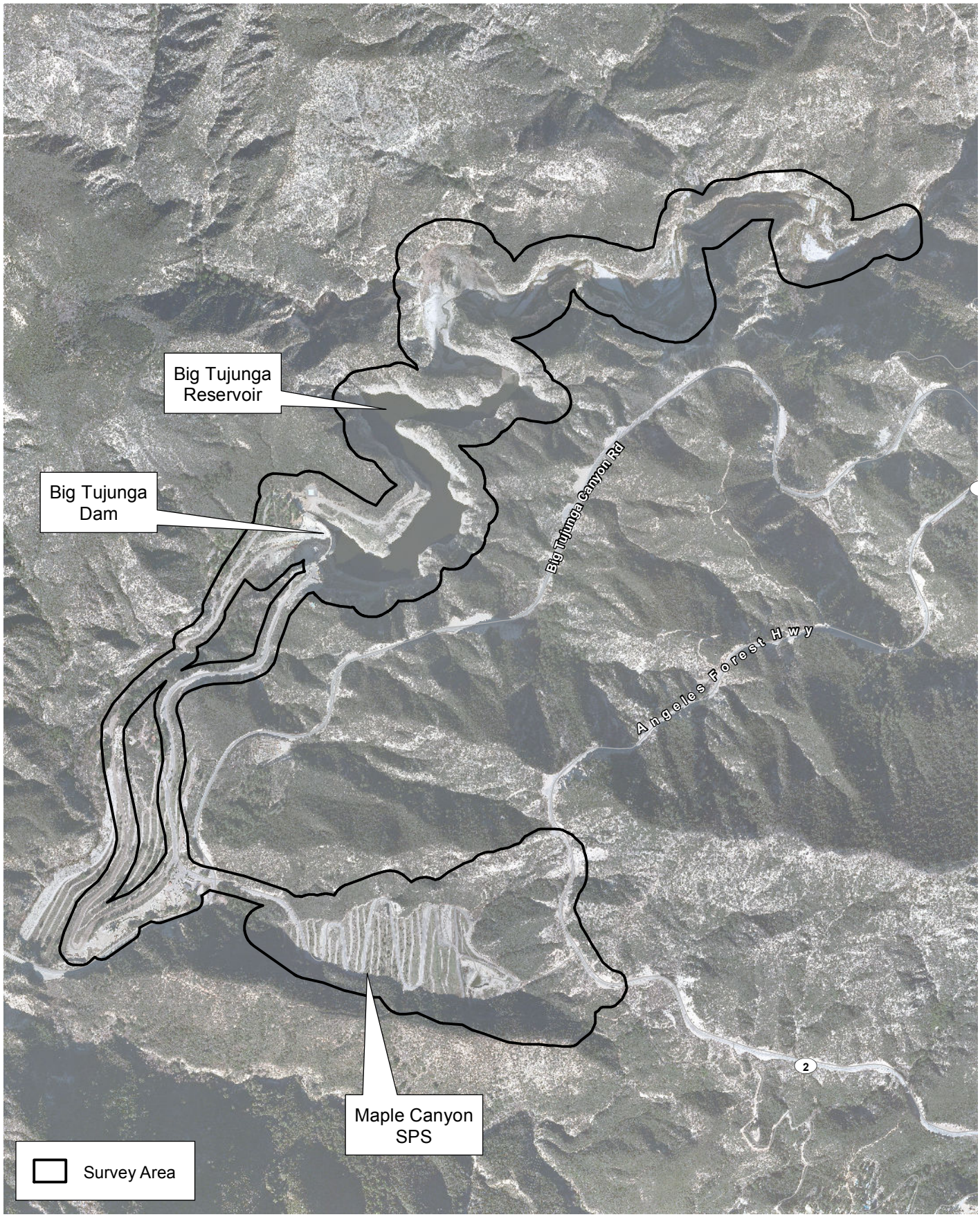

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Project Location

Exhibit 3

Big Tujunga Reservoir Sediment Removal Project

N
W E
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1,200 600 0 1,200

Feet

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its key points, which is intended to be used as a reference tool along with a complete discussion of issues and guidance furnished throughout the memorandum.

In summary, the USACE and the USEPA will assert jurisdiction over the following waters: (1) traditional navigable waters (TNW); (2) wetlands adjacent to a TNW; (3) relatively permanent, non-navigable tributaries of a TNW that typically flow year-round or have continuous flow at least seasonally (e.g., typically three months); and (4) wetlands that directly abut such tributaries.

The USACE and the USEPA will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with a TNW: (1) non-navigable tributaries that are not relatively permanent; (2) wetlands adjacent to non-navigable tributaries that are not relatively permanent; and (3) wetlands adjacent to but that do not directly abut a relatively permanent, non-navigable tributary.

The USACE and the USEPA generally will not assert jurisdiction over the following features: (1) swales or erosional features (e.g., gullies or small washes characterized by low volume, infrequent, or short duration flow) and (2) ditches (including roadside ditches) excavated wholly within and draining only uplands and that do not carry a relatively permanent flow of water.

The USACE and the USEPA will apply the significant nexus standard defined as follows:

1. A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of downstream TNWs.
2. A significant nexus includes consideration of hydrologic and ecological factors.

Regional Water Quality Control Board

The RWQCB is the primary agency responsible for protecting water quality within California through the regulation of discharges to surface waters under the CWA and the California Porter-Cologne Water Quality Control Act (Porter-Cologne Act). The RWQCB's jurisdiction extends to all "waters of the State" and to all "waters of the U.S.", including wetlands (isolated and non-isolated).

Section 401 of the CWA provides the RWQCB with the authority to regulate, through a Water Quality Certification, any proposed, federally permitted activity that may affect water quality. Among such activities are discharges of dredged or fill material permitted by the USACE pursuant to Section 404 of the CWA. Section 401 requires the RWQCB to provide "certification that there is reasonable assurance that an activity which may result in the discharge to 'waters of the U.S.' will not violate water quality standards". Water Quality Certification must be based on a finding that the proposed discharge will comply with water quality standards, which contain numeric and narrative objectives that can be found in each of the nine RWQCBs' Basin Plans.

The Porter-Cologne Act provides the State with very broad authority to regulate "waters of the State" (which are defined as any surface water or groundwater, including saline waters). The Porter-Cologne Act has become an important tool in the post-SWANCC (Solid Waste Agency of Northern Cook Counties vs. Unites States Corps of Engineers) and Rapanos era with respect to the State's authority over isolated waters. Generally, any person proposing to discharge waste into a water body that could affect its water quality must file a "Report of Waste Discharge" (ROWD) when there is no federal nexus, such as under Section 404(b)(1) of the

CWA. Although "waste" is partially defined as any waste substance associated with human habitation, the RWQCB interprets this to include fill discharge into water bodies.

Los Angeles Region Water Quality Control Plan

There are nine Regional Water Quality Control Boards in California. The project site is located within Regional Water Quality Control Board Region 4, the Los Angeles Region. The State Water Resources Control Board and the Regional Water Quality Control Board have adopted a Water Quality Control Plan (or "Basin Plan") for the Los Angeles Region. The Basin Plan contains goals and policies, descriptions of conditions, and proposed solutions to surface and groundwater issues. The Basin Plan also establishes water quality standards for surface and groundwater resources and includes beneficial uses and levels of water quality that must be met and maintained to protect these uses. These water quality standards are implemented through various regulatory permits pursuant to CWA Section 401 for Water Quality Certifications and Section 402 for Report of Waste Discharge permits.

The Basin Plan indicates that the project site is located within the Los Angeles-San Gabriel River Hydrologic Unit, the San Fernando Hydrologic Area Split, and the Tujunga Hydrologic Subarea (HSA). Table 3-8 of the Basin Plan (Water Quality Objectives for Selected Constituents in Inland Surface Waters) indicates that the following numeric objectives have been established for this HSA: (1) Total Dissolved Solids (TDS), less than 350 milligrams per liter (mg/L); (2) sulfate, less than 50 mg/L; (3) chloride, less than 20 mg/L (Los Angeles RWQCB 1994).

The Basin Plan identifies a number of beneficial uses, some or all of which may apply to a specific HSA, including Municipal and Domestic Water Supply (MUN) waters; Agricultural Supply (AGR) waters; Industrial Service Supply waters (IND); Industrial Process Supply (PROC) waters; Groundwater Recharge (GWR) waters; Navigation (NAV) waters; Hydropower Generation (POW) waters; Water Contact Recreation (REC 1) waters; Non-Contact Water Recreation (REC 2) waters; Commercial and Sport Fishing (COMM) waters; Aquaculture (AQUA); Warm Fresh Water Habitat (WARM) waters; Cold Fresh Water Habitat (COLD) waters; Inland Saline Water Habitat (SAL); Preservation of Biological Habitats of Special Significance (BIOL) waters; Wildlife Habitat (WILD) waters; Rare, Threatened or Endangered Species (RARE) waters; Migration of Aquatic Organisms (MIGR); Spawning, Reproduction, or Early Development of Aquatic Organisms (SPWN); Marine Habitat (MAR) waters; Shellfish Harvesting (SHEL) waters; Estuarine Habitat (EST) waters; and Potential Presence of Wetlands (WET) (Los Angeles RWQCB 1994).

Based on the project site's hydrologic and biological resources, existing beneficial uses for Big Tujunga Reservoir that are listed in the Basin Plan include Groundwater Recharge (GWR); Warm Fresh Water Habitat (WARM); Wildlife Habitat (WILD); and Spawning, Reproduction, or Early Development of Aquatic Organisms (SPWN). Potential beneficial uses include Municipal and Domestic Water Supply (MUN) and Cold Fresh Water Habitat (COLD). Possible effects to these existing and potential beneficial uses would need to be addressed as part of the request for a CWA Section 401 Water Quality Certification for this project.

GWR waters are used for natural or artificial recharge of groundwater for purposes that may include, but are not limited to, future extraction, maintaining water quality, or halting saltwater intrusion into freshwater aquifers. Perennial surface flows within Big Tujunga Canyon Creek flow into Big Tujunga Reservoir and infiltrate into the aquifer which is used for domestic potable water use. Flows that are released from Big Tujunga Reservoir flow through Big Tujunga Wash, ultimately reaching the Hansen Flood Control Basin for additional groundwater recharge.

WARM waters support warm water ecosystems that may include, but are not limited to, preservation and enhancement of aquatic habitats, vegetation, fish, and wildlife (including invertebrates). Big Tujunga Canyon Creek is a perennial stream that contains southern willow woodland and associated riparian resources that is utilized by wildlife. The proposed project activities will be implemented in a manner that will preserve these existing aquatic habitats, vegetation, fish, and wildlife resources consistent with this policy.

WILD waters support wildlife habitats that may include, but are not limited to, the preservation and enhancement of vegetation and prey species used by waterfowl and other wildlife. As previously noted, Big Tujunga Canyon Creek provides wildlife habitat for waterfowl and other wildlife consistent with this policy.

SPWN waters support high quality aquatic habitats that are suitable for reproduction and early development of fish. The proposed project activities will be implemented in a manner that will preserve these existing aquatic habitats, vegetation, fish, and wildlife resources consistent with this policy.

MUN waters support community, military, or individual water supply systems including, but not limited to, drinking water supply. Big Tujunga Dam and Reservoir are part of water supply systems owned and operated that are the Los Angeles County Department of Public Works; both are consistent with the policy.

COLD waters support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates. The proposed project activities will be implemented in a manner that will preserve these existing cold water ecosystem resources containing aquatic habitats, vegetation, fish, and wildlife resources consistent with this policy.

RARE waters support habitats necessary, at least partially, for the survival and successful maintenance of plant or animal species established under State or federal law as Rare, Threatened, or Endangered. Surveys for special status species conducted by BonTerra Consulting in 2011 identified the following State or federal Threatened or Endangered species: (1) arroyo toad (*Anaxyrus californicus*) at the upstream end of Big Tujunga Reservoir (BonTerra Consulting 2011a) and (2) Santa Ana sucker (*Catostomus santaanae*) downstream of Big Tujunga Dam (BonTerra Consulting 2011b). Proposed project activities will be implemented in a manner that will protect these existing State and federally listed species consistent with this policy.

California Department of Fish and Wildlife

The CDFW has jurisdictional authority over wetland resources associated with rivers, streams, and lakes pursuant to the *California Fish and Game Code* (§1600–1616). Activities of State and local agencies as well as public utilities that are project proponents are regulated by the CDFW under Section 1602 of the *California Fish and Game Code;* this section regulates any work that will (1) substantially divert or obstruct the natural flow of any river, stream, or lake; (2) substantially change or use any material from the bed, channel, or bank of any river, stream, or lake; or (3) 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.

Because the CDFW includes streamside habitats under its jurisdiction that, under the federal definition, may not qualify as wetlands on a particular project site, its jurisdiction may be broader than that of the USACE. Riparian forests in California often lie outside the plain of ordinary high water regulated under Section 404 of the CWA, and often do not have all three parameters (wetland hydrology, hydrophytic vegetation, and hydric soils) sufficiently present to be regulated

as a wetland. However, riparian forests are frequently within CDFW regulatory jurisdiction under Section 1602 of the *California Fish and Game Code.*

The CDFW enters into a Lake or Streambed Alteration Agreement (SAA) with a project proponent and can impose conditions in the agreement. The notification process involves the completion of the applications that will serve as the basis for the CDFW's issuance of a Section 1602 SAA. Section 1602 of the *California Fish and Game Code* applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the State.

The CDFW jurisdictional limits are not as clearly defined by regulation as those of the USACE. While they closely resemble the limits described by USACE regulations, they include riparian habitat supported by a river, stream, or lake regardless of the presence or absence of hydric and saturated soils conditions. In general, the CDFW takes jurisdiction from the top of a stream bank or to the outer limits of the adjacent riparian vegetation (outer drip line), whichever is greater. Notification is generally required for any project that will take place within or in the vicinity of a river, stream, lake, or their tributaries. This includes rivers or streams that flow at least periodically or permanently through a bed or channel with banks that support fish and other aquatic plant and/or wildlife species, and watercourses that have a surface or subsurface flow that support or have supported riparian vegetation.

SECTION 2.0 METHODOLOGY

The three-parameter approach used to identify USACE wetlands is summarized in Sections 2.1 through 2.3; literature reviewed for the preparation of the delineation is outlined in Section 2.4; and the field delineation is outlined in Section 2.5.

2.1 VEGETATION

Hydrophytic vegetation (or hydrophytes) is defined as any macrophytic plant that is typically adapted to and subsequently grows within water or that is on a substrate at least periodically deficient in oxygen; this oxygen deficiency can be a result of excessive saturation conditions that range from open water to periodically saturated soils. Specifically, these plant species are specialized and can survive in permanently saturated to periodically saturated soils where oxygen levels are very low or the soils are anaerobic. The U.S. Fish and Wildlife Service (USFWS) has identified approximately 2,000 plant species of this type within the State of California (i.e., Zone 0) and nearly 5,000 species throughout the U.S. (Reed 1988). The wetland indicator categories reflect the range of estimated probabilities (expressed as a frequency of occurrence) that a species occurs in wetlands versus non-wetlands. Therefore, a frequency of 67 percent to 99 percent means that 67 percent to 99 percent of sample plots containing the species randomly selected across the range of the species would be a wetland. A positive (+) or negative (-) sign is used with the wetland indicator categories to more specifically define the regional frequency of a species occurrence in wetlands (Reed 1988). The positive sign indicates a frequency toward the higher end of the category (i.e., more frequently found in wetlands), and a negative sign indicates a frequency toward the lower end of the category (less frequently found in wetlands). The positive and negative modifiers are eliminated from the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* when determining if an area meets the hydrophytic plant criterion for a wetland. Species not listed by Reed (1988) are considered to be upland (UPL).

Plant indicator status categories are as follows:

- ***Obligate Wetland (OBL):*** Plants that occur almost always (estimated probability 99 percent) in wetlands under natural conditions, but which may also occur rarely (estimated probability 1 percent) in non-wetlands (e.g., cattails [*Typha* spp.] or common water hyacinth [*Eichhornia crassipes*]).
- ***Facultative Wetlands (FACW):*** Plants that occur usually (estimated probability 67-99 percent) in wetlands, but also occur (estimated probability 1–33 percent) in non-wetlands (e.g., mule fat [*Baccharis salicifolia*] or arroyo willow [*Salix lasiolepis*]).
- ***Facultative (FAC):*** Plants with similar likelihood (estimated probability 34–66 percent) of occurring in both wetlands and non-wetlands (e.g., California orach [*Atriplex californica*]).
- ***Facultative Upland (FACU):*** Plants that occur sometimes (estimated probability 1-33 percent) in wetlands, but occur more often (estimated probability 67–99 percent) in non-wetlands (e.g., giant wild rye [*Elymus condensatus*]).
- ***Obligate Upland (UPL):*** Plants that occur rarely (estimated probability 1 percent) in wetlands, but occur almost always (estimated probability 99 percent) in non-wetlands under natural conditions (e.g., coast live oak [*Quercus agrifolia*]).

The following are three procedures for determining hydrophytic vegetation: Indicator 1, "Dominance Test", using the "50/20 Rule"; Indicator 2, "Prevalence Index"; or Indicator 3, "Morphological Adaptation", as identified in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008c).

Hydrophytic vegetation is present if any indicator is satisfied. If none of the indicators are satisfied, then hydrophytic vegetation is absent unless (1) indicators of hydric soil and wetland hydrology are present and (2) the site meets the requirements for a problematic wetland situation.

Dominance Test: Vegetative cover is estimated and is ranked according to its dominance. Dominant species are the most abundant species for each stratum of the community (i.e., tree, sapling/shrub, herb, or woody vine) that individually or collectively amount to 50 percent of the total coverage of vegetation plus any other species that, by itself, accounts for 20 percent of the total vegetation cover (also known as the "50/20 Rule"). These species are recorded on the "Wetland Determination Data Form – Arid West Region" (see Attachment A). The wetlands indicator status of each species is also recorded on the data forms based on the *National List of Plant Species that Occur in Wetlands* (Reed 1988). If greater than 50 percent of the dominant species across all strata are OBL, FACW or FAC species, the criterion for wetland vegetation is considered to be met.

Prevalence Index: The prevalence index considers all plant species in a community, not just the dominant ones. The prevalence index is the average of the wetland indicator status of all plant species in a sampling plot. Each indicator status category is given a numeric code (OBL=1, FACW=2, FAC=3, FACU=4, and UPL=5) and is weighted by the species' abundance (percent cover). Hydrophytic vegetation is present if the prevalence index is 3.0 or less.

Morphological Adaptation: Morphological adaptations, such as adventitious roots (i.e., roots that take advantage of the wet conditions) and shallow root systems, must be observed on more than 50 percent of the individuals of a FACU species for the hydrophytic vegetation wetland criterion to be met.

2.2 SOILS

The National Technical Committee for Hydric Soils (NTCHS) defines a hydric soil as a soil that is formed under conditions of saturation, flooding, or ponding that occurs long enough during the growing season to develop anaerobic conditions (or conditions of limited oxygen) at or near the soil surface and that favor the establishment of hydrophytic vegetation (USDA NRCS 2011). It should be noted that hydric soils created under artificial conditions of flooding and inundation sufficient for the establishment of hydrophytic vegetation would also meet this hydric soils indicator.

The soil conditions are verified by digging test pits along each transect to a depth of at least 20 inches (except where a restrictive layer occurs in areas containing hard pan, cobble, or solid rock). It should be noted that at some sites, it may be necessary to make exploratory soil test pits up to 40 inches deep to more accurately document and understand the variability in soil properties and hydrologic relationships on the site. Soil test pit locations are usually dug within the drainage invert or at the edge of a drainage course within vegetated areas. Soil extracted from each soil test pit is then examined for texture and color using the standard plates within the Munsell Soil Color Chart (1994) and recorded on the Data Form. The Munsell Soil Color Chart aids in designating soils by color labels based on gradations of three simple variables: hue, value, and chroma. Any indicators of hydric soils such as the following are also recorded on the Data Form: redoximorphic features (i.e., areas where iron is reduced under anaerobic conditions and oxidized following a return to aerobic conditions); buried organic matter; organic streaking; reduced soil conditions; gleyed (i.e., soils having a characteristic bluish-gray or greenish-gray in color) or low-chroma soils; or sulfuric odor. If hydric soils are found, progressive pits are dug along the transect, moving laterally away from the active channel area until hydric soil features are no longer present within the top 20 inches of the soil.

2.3 HYDROLOGY

Wetlands hydrology is represented by either (1) all of the hydrological elements or characteristics of areas permanently or periodically inundated or (2) areas containing soils that are saturated for a sufficient duration of time to create hydric soils suitable for the establishment of plant species that are typically adapted to anaerobic soil conditions. The presence of wetland hydrology is evaluated at each intersect by recording the extent of observed surface flows, the depth of inundation, the depth to saturated soils, and the depth to free water in soil test pits. In instances where stream flow is divided into multiple channels with intervening sandbars, the entire area between the channels is considered within the OHWM. Therefore, an area containing these features would meet the indicator requirements for wetland hydrology.

2.4 LITERATURE

Prior to conducting the delineation field investigations on September 29 and October 27, 2011, BonTerra Consulting reviewed the following documents to identify areas that may fall under agency jurisdiction: the USGS' Condor Peak 7.5-minute quadrangle; color aerial photography provided by Aerials Express (Spring 2009); the Report and General Soil Maps for the Angeles National Forest (USDA NRCS 2006); the National Hydric Soils List (USDA NRCS 2011); and the National Wetlands Inventory's (NWI) Wetland Mapper (USFWS 2011). A description of this literature is provided below.

USGS Topographic Quadrangle. USGS quadrangle maps show geological formations and their characteristics; they describe the physical settings of an area through topographic contour lines and other major surface features. These features include lakes, streams, rivers, buildings, roadways, landmarks, and other features that may fall under the jurisdiction of one or more regulatory agencies. In addition, the USGS maps provide topographic information that is useful in determining elevations, latitude and longitude, and Universal Transverse Mercator Grid coordinates for a project site.

The project site is shown on the USGS Condor Peak 7.5-minute quadrangle. Big Tujunga Canyon Creek and Big Tujunga Reservoir are identified on the quad map along with three blueline streams that drain into Big Tujunga Reservoir: Josephine Canyon Creek, White Oak Canyon Creek, and Fox Canyon Creek.

Color Aerial Photography. BonTerra Consulting reviewed an existing color aerial photograph prior to the September 29 and October 27, 2011, site visits to identify the extent of any drainages and riparian vegetation occurring on the project site.

Big Tujunga Canyon Creek, Big Tujunga Reservoir, Big Tujunga Wash, Josephine Canyon Creek, White Oak Canyon Creek, Fox Canyon Creek, and associated vegetation are visible on the aerial photograph.

U.S. Department of Agriculture, Natural Resources Conservation Service. The presence of hydric soils is one of the chief indicators of jurisdictional wetlands. BonTerra Consulting reviewed the U.S. Department of Agriculture (USDA) soil data for the project site (USDA NRCS 2007).

Soils within the project site are shown on Exhibit 4 and consist of Trigo, granitic substratum-Modjeska families association (5 to 60 percent slopes); Rock outcrop-Chilao family-Haploxerolls, warm association (15 to 120 percent slopes); Typic Xerorthents, warm (55 to 90 percent slopes); Olete-Kilburn-Etsel families complex (50 to 80 percent slopes); and Stukel-Sur-Winthrop families complex (60 to 100 percent slopes). No soils mapped on the project site are listed as "hydric" on the National Hydric Soils List (USDA NRCS 2011). Available

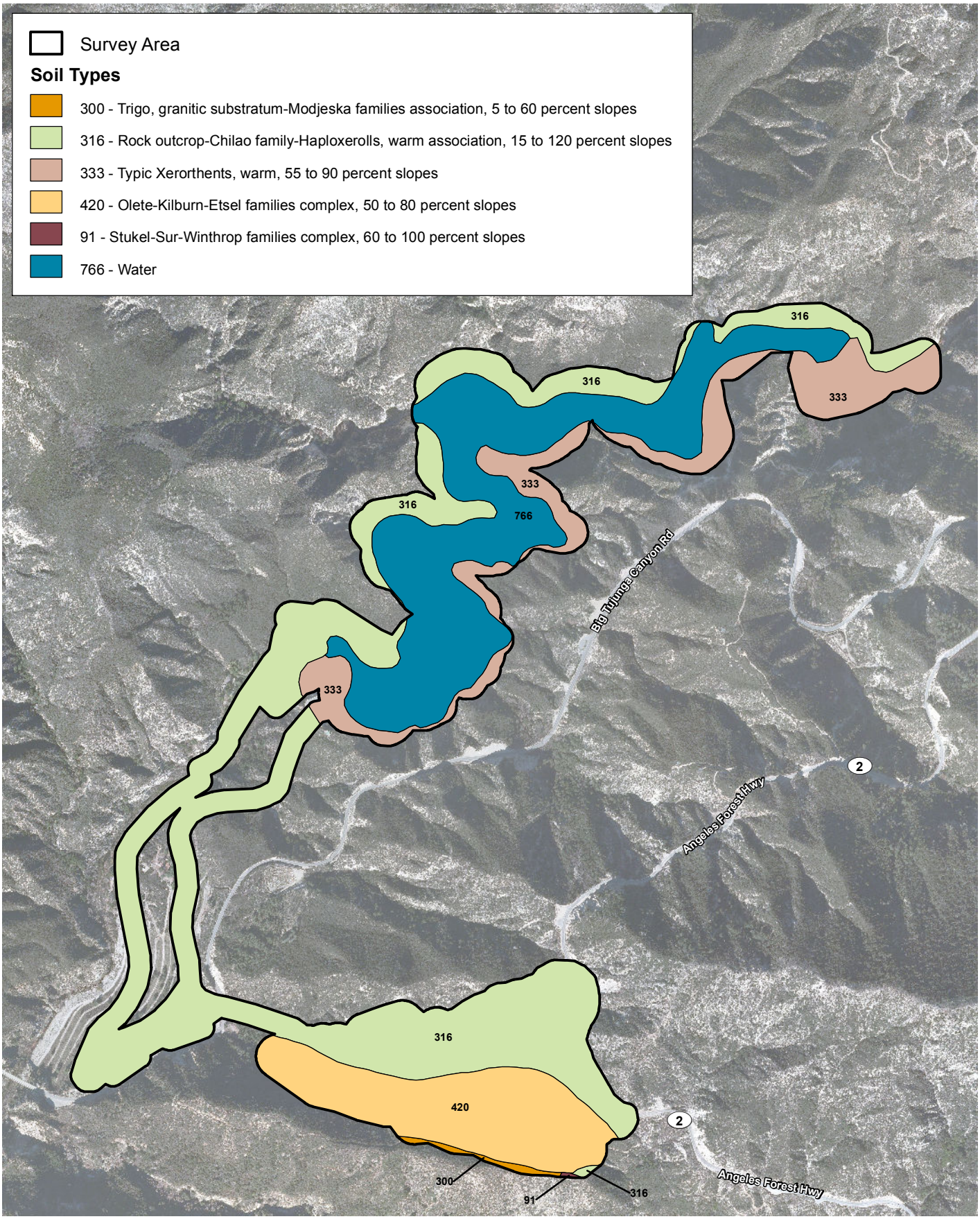
descriptions of the soil series mapped on the project site are provided in Attachment B of this report.

U.S. Fish and Wildlife Service, National Wetlands Inventory. The NWI Wetlands Mapper shows wetland resources available from the Wetlands Spatial Data Layer of the National Spatial Data Infrastructure (USFWS 2011). This resource provides the classification of known wetlands following the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979). This classification system is arranged in a hierarchy of (1) systems that share the influence of similar hydrologic, geomorphologic, chemical, or biological factors (i.e., Marine, Estuarine, Riverine, Lacustrine, and Palustrine); (2) subsystems (i.e., Subtidal and Intertidal; Tidal, Lower Perennial, Upper Perennial, and Intermittent; or Littoral and Limnetic); (3) classes, which are based on substrate material and flooding regime or on vegetative life forms; (4) subclasses; and (5) dominance types, which are named for the dominant plant or wildlife forms. In addition, there are modifying terms applied to Classes or Subclasses.

The mapped wetlands resources are included in Attachment C. Resources on the project site upstream of Big Tujunga Dam are mapped as L1UBK (identified with the outdated code L1OWKZ on the exhibit in Attachment C), L2FLKY, R3USK (R3SBZ in Attachment C), R3FLY, PSSW, and PFOY. Resources downstream of Big Tujunga Dam are mapped as PEMY and within Maple Canyon SPS as PFOY.

The description for codes L1UBK and L2FLKY is as follows:

- ***L: System LACUSTRINE*****.** The Lacustrine System includes wetlands and deepwater habitats with all of the following characteristics : (1) situated in a topographic depression or a dammed river channel; (2) lacking trees, shrubs, persistent emergent vegetation, emergent mosses, or lichens with greater than 30 percent areal coverage ; and (3) total area exceeds 20 acres.
    - ***1: Subsystem LIMNETIC.*** This subsystem includes all deepwater habitats (i.e., deeper than two meters) within the Lacustrine system.
        - ***UB: Class UNCONSOLIDATED BOTTOM.*** This class is characterized by wetland and deepwater habitats with at least 25 percent cover of particles smaller than stones, and a vegetative cover less than 30 percent. Water regimes are restricted to subtidal, permanently flooded, intermittently exposed, and semi-permanently flooded.
            - ***K: Water Regime Modifier ARTIFICIALLY FLOODED*****.** This modifier refers to inundated areas in which the amount and duration of flooding is controlled by means of pumps or siphons in combination with dikes or dams. Neither wetlands resulting from leakage from man-made impoundments, nor irrigated pasture lands supplied by diversion ditches or artesian wells, are included under this modifier.
    - ***2: Subsystem LITTORAL.*** This subsystem includes all wetland habitats in the Lacustrine System. The boundary of this subsystem extends from the shoreward boundary of the system to a depth of two meters below low water or to the maximum extent of non-persistent emergent vegetation, if growing at depths greater than two meters.
        - ***FL: Class FLATS*****.** This class is characterized by exposed sand or mud at low tide or low water stages and is not vegetated.
            - ***K: Water Regime Modifier ARTIFICIALLY FLOODED*****.** This modifier refers to inundated areas in which the amount and duration of flooding is controlled by means of pumps or siphons in combination with dikes or dams. Neither wetlands resulting from leakage from man-made impoundments, nor irrigated pasture



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Soil Types

Exhibit 4

Big Tujunga Reservoir Sediment Removal Project

N W E S

1,200 600 0 1,200 Feet

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lands supplied by diversion ditches or artesian wells, are included under this modifier.

- ***Y: Water Regime Modifier SATURATED ON A SEMI-PERMANENT OR SEASONAL BASIS*.** This modifier refers to areas in which surface water persists throughout the growing season or for extended periods in most years. When surface water is absent, the water table is usually at or very near the land surface.

The description for codes R3FLY and R3USK is as follows:

- ***R: System RIVERINE*.** The Riverine System includes all wetlands and deep water habitats contained in natural or artificial channels periodically or continuously containing flowing water or which forms a connecting link between the two bodies of standing water. Upland islands or Palustrine wetlands may occur in the channel, but they are not part of the Riverine System.
  - ***3: Subsystem UPPER PERENNIAL.*** This subsystem is characterized by channels in which the gradient is high (compared to the Lower Perennial Subsystem), velocity of the water is fast, and very little floodplain development exists. There is no tidal influence and some water flows throughout the year. The substrate consists of rock, cobbles, or gravel with occasional patches of sand. The natural dissolved oxygen concentration is normally near saturation. The fauna is characteristic of running water, and there are few or no planktonic forms.
    - ***FL: Class FLATS*.** This class is characterized by exposed sand or mud at low tide or low water stages and is not vegetated.
      - ***Y: Water Regime Modifier SATURATED ON A SEMI-PERMANENT OR SEASONAL BASIS*.** This modifier refers to areas in which surface water persists throughout the growing season or for extended periods in most years. When surface water is absent, the water table is usually at or very near the land surface.
    - ***US: Class UNCONSOLIDATED SHORE.*** The Class Unconsolidated Shore includes all wetland habitats having three characteristics: (1) unconsolidated substrates with less than 75 percent areal cover of stones, boulders, or bedrock; (2) less than 30 percent areal cover of vegetation other than pioneering plants; and (3) any of the following water regimes: irregularly exposed, regularly flooded, irregularly flooded, seasonally flooded, temporarily flooded, intermittently flooded, saturated, or artificially flooded. Unconsolidated Shores are characterized by substrates lacking vegetation except for pioneering plants that become established during brief periods when growing conditions are favorable. Erosion and deposition by waves and currents produce a number of landforms such as beaches, bars, and flats, all of which are included in this Class. Unconsolidated Shores are found adjacent to Unconsolidated Bottoms in all Systems; in the Palustrine and Lacustrine Systems, the Class may occupy the entire basin. As in Unconsolidated Bottoms, the particle size of the substrate and the water regime are the important factors determining the types of plant and animal communities present
      - ***K: Water Regime Modifier ARTIFICIALLY FLOODED*.** This modifier refers to inundated areas in which the amount and duration of flooding is controlled by means of pumps or siphons in combination with dikes or dams. Neither wetlands resulting from leakage from man-made impoundments, nor irrigated pasture lands supplied by diversion ditches or artesian wells, are included under this modifier

The description for codes PEMY, PFOY, and PSSW is as follows:

- ***P: System PALUSTRINE.*** The Palustrine System includes all nontidal wetlands dominated by trees, shrubs, emergents, mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean-derived salts is below 0.5 part per trillion (ppt). Wetlands lacking (such vegetation) are also included if they exhibit all of the following characteristics: (1) are less than 8 hectares (20 acres); (2) do not have an active wave-formed or bedrock shoreline feature; (3) have at low water a depth of less than 6.6 feet in the deepest part of the basin; and (4) have salinity due to ocean-derived salts of less than 0.5 ppt.
    - ***EM: Class EMERGENT.*** This Class is characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. The vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants.
    - ***FO: Class FORESTED.*** This Class is characterized by woody vegetation that is 6 meters (20 feet) tall or taller.
        - ***Y: Water Regime Modifier SATURATED ON A SEMI-PERMANENT OR SEASONAL BASIS*.** This modifier refers to areas in which surface water persists throughout the growing season or for extended periods in most years. When surface water is absent, the water table is usually at or very near the land surface.
    - ***SS: Class SCRUB-SHRUB.*** This Class is dominated by woody vegetation less than 6 meters (20 feet) tall. The species include true shrubs, young trees (saplings), and trees or shrubs that are small or stunted because of environmental conditions.
        - ***W: Water Regime Modifier INTERMITTENTLY FLOODED.*** This modifier refers to areas in which the substrate is usually exposed, but surface water is present for variable periods without detectable seasonal periodicity. Weeks, months, or even years may intervene between periods of inundation. The dominant plant communities under this regime may change as soil moisture conditions change. Some areas exhibiting this regime do not meet the characteristics of a wetland because they do not have hydric soils or support hydrophytes.

2.5 JURISDICTIONAL DELINEATION

In September 2008, the USACE issued the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region. This regional supplement is designed for use with the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987). Both the 1987 Wetlands Manual and the Arid West Supplement to the manual provide technical methods and guidelines for determining the presence of “waters of the U.S.” and wetland resources. A three-parameter approach is used to identify wetlands and requires evidence of wetland hydrology, hydrophytic vegetation, and hydric soils. Wetlands generally include swamps, marshes, bogs, and similar areas. In order to be considered a wetland, an area must exhibit at least minimal hydric characteristics within the three parameters. However, problem areas may periodically or permanently lack certain indicators due to seasonal or annual variability of the nature of the soils or plant species on site. Atypical wetlands lack certain indicators due to recent human activities or natural events. Guidance for determining the presence of wetlands in these situations is presented in the regional supplement. Non-wetland “waters of the U.S.” are delineated based on the limits of the OHWM, which can be determined by a number of factors including erosion, the deposition of vegetation or debris, and changes in vegetation.

It should be noted that the RWQCB shares USACE jurisdiction unless isolated conditions are present. If isolated waters conditions are present, the RWQCB takes jurisdiction using the USACE's definition of the OHWM and/or the three-parameter wetlands methodology pursuant to the 1987 Wetlands Manual. The CDFW's jurisdiction is defined as the top of the bank to the top of the bank of the stream, channel, or basin or to the outer limit of riparian vegetation located within or immediately adjacent to the river, stream, creek, pond, or lake or other impoundment, whichever is greater.

The analysis contained in this report uses the results of a field survey conducted by BonTerra Consulting Associate Principal/Regulatory Services Gary Medeiros and BonTerra Consulting Restoration Ecologist/Regulatory Technician David Hughes on September 28 and October 27, 2011. Photographs of the project site are included in Attachment D. The field survey included the collection of vegetation, soils, and hydrologic data from 12 sampling points on the project site. This information was recorded on a 1 inch equals 200 feet (1″ = 200′) scale aerial photograph and on Wetland Determination Data Forms (Attachment A).

SECTION 3.0 RESULTS

Twelve sampling points were assessed within drainage features within the project site. This included four sample points within Big Tujunga Reservoir, four sample points within Big Tujunga Canyon Creek downstream of Big Tujunga Dam, and four sample points within Maple Canyon SPS. The results of collected data are summarized in Table 1.

3.1 VEGETATION

The following vegetation types were observed during botanical surveys in 2011 (BonTerra Consulting 2011c): coastal sage scrub, chaparral (with chamise chaparral, scrub oak chaparral, and mixed chaparral subassociations), California annual grassland, disturbed freshwater seep, riparian herb, willow riparian scrub, willow riparian forest, white alder – Fremont cottonwood – willow riparian forest, California sycamore woodland, coast live oak stands, bigcone Douglas-fir – canyon live oak woodland (forest), open water, streambed, cliff, and developed.

The most common vegetation types within Big Tujunga Reservoir include willow riparian scrub, riparian herb, California annual grassland, and open water. The canyon sides adjacent to the reservoir are vegetated by mixed chaparral; unvegetated cliff faces are also located in these areas. Downstream of Big Tujunga Dam, the most common vegetation types are willow riparian forest, coast live oak stands, disturbed freshwater seeps, and ornamental. The Maple Canyon SPS consists of chamise chaparral, scrub oak chaparral, mixed chaparral, California annual grassland, and coast live oak stands.

Two listed species were observed during focused biological surveys performed by BonTerra Consulting in 2011: the arroyo toad, a federally Endangered species (BonTerra Consulting 2011a), and the Santa Ana sucker, a federally Threatened species (BonTerra Consulting 2011b). A single arroyo toad was observed at the extreme upstream end of Big Tujunga Reservoir, and Santa Ana sucker was observed in Big Tujunga Canyon Creek downstream of Big Tujunga Dam. Other special status wildlife species that have been observed within the project boundary include western pond turtle (*Emys marmorata*), peregrine falcon (*Falco peregrinus*), arroyo chub (*Gila orcuttii*), Santa Ana speckled dace (*Rhinichthys osculus* ssp. *3*), and two-striped garter snake (*Thamnophis hammondii*). Special status plants observed within the project boundary include Plummer's mariposa lily (*Calochortus plummerae*), fragrant pitcher plant (*Lepechinia fragrans*), San Gabriel oak (*Quercus durata* var. *gabrielensis*), and Greata's aster (*Symphyotrichum greatae*).

The hydrophytic vegetation criterion was met at sampling points 1 through 8. Vegetation associated with sampling points 1 through 4 (Big Tujunga Reservoir) was characterized by sparse willow riparian scrub and riparian herb vegetation species (see Table 1). Vegetation downstream of Big Tujunga Dam (sampling points 5 through 8) consists of willow trees as well as various riparian herbaceous species. Vegetation associated with sampling points 9 through 12 (Maple Canyon SPS) consists of native and non-native upland shrubs. Therefore, the hydrophytic vegetation criterion was not met for sampling points 9 through 12.

TABLE 1
SUMMARY OF HYDROPHYTIC VEGETATION, HYDRIC SOILS, AND WETLANDS HYDROLOGY WETLANDS INDICATOR STATUS BY SOIL TEST PIT LOCATION

Soil Test Pit	Location	Plant species	Common Name	Absolute Percent Cover	Wetland Indicator Status[a]	Passed Dominance Test	Passed Prevalence Index	Meets Hydrophytic Vegetation Criterion	Meets Hydric Soils Criterion	Meets Wetlands Hydrology Criterion
1	Big Tujunga Reservoir	*Salix lasiolepis*	arroyo willow	15	OBL	Yes	Yes	Yes	No	Yes
		Salix exigua	sandbar willow	10	OBL					
		Xanthium strumarium	cocklebur	5	FAC					
		Baccharis salicifolia	mule fat	5	FACW					
		Mimulus pilosus	downy monkeyflower	40	OBL					
		Persicaria lapathifolia	willow weed	5	OBL					
2	Big Tujunga Reservoir	*Sisymbrium orientale*	hare's ear cabbage	2	FACU	Yes	Yes	Yes	No	Yes
		Mimulus cardinalis	scarlet monkeyflower	2	OBL					
		Ambrosia psilostachya	western ragweed	2	FAC					
3	Big Tujunga Reservoir	*Salix gooddingii*	Goodding's black willow	2	OBL	Yes	Yes	Yes	No	Yes
4	Big Tujunga Reservoir	*Typha* sp.	cattail	1	OBL	Yes	Yes	Yes	Yes	Yes
		Chamaesyce maculata	spotted spurge	1	FAC					
5	Big Tujunga Wash[b]	*Persicaria lapathifolia*	willow weed	5	OBL	Yes	Yes	Yes	No	Yes
6	Big Tujunga Wash[b]	*Alnus rhombifolia*	white alder	15	FACW	Yes	Yes	Yes	No	Yes
		Salix lasiolepis	arroyo willow	10	OBL					
		Nicotiana glauca	tree tobacco	5	FAC					
		Salvia mellifera	black sage	20	UPL					
		Acmispon glaber	deerweed	10	UPL					
		Erigeron canadensis	common horseweed	5	FAC					
		Xanthium strumarium	cocklebur	20	FAC					
		Veronica anagalis-aquatica	water speedwell	20	OBL					
7	Big Tujunga Wash[b]	*Salix lasiolepis*	arroyo Willow	80	OBL	Yes	Yes	Yes	Yes	Yes
		Typha sp.	cattail	20	OBL					
		Persicaria lapathifolia	willow weed	15	OBL					
		Ageratina adenophora	crofton weed	5	NI					
		Rorippa nasturtium-aquaticum	water cress	5	OBL					
		Mimulus cardinalis	scarlet monkeyflower	5	OBL					
		Xanthium strumarium	cocklebur	1	FAC					

TABLE 1 (Continued)
SUMMARY OF HYDROPHYTIC VEGETATION, HYDRIC SOILS, AND WETLANDS HYDROLOGY WETLANDS INDICATOR STATUS BY SOIL TEST PIT LOCATION

Soil Test Pit	Location	Plant species	Common Name	Absolute Percent Cover	Wetland Indicator Status[a]	Passed Dominance Test	Passed Prevalence Index	Meets Hydrophytic Vegetation Criterion	Meets Hydric Soils Criterion	Meets Wetlands Hydrology Criterion
8	Big Tujunga Wash[b]	*Salix lasiolepis*	arroyo willow	40	OBL	Yes	Yes	Yes	Yes	Yes
		Populus fremontii	Fremont's cottonwood	10	FACW					
		Typha sp.	cattail	10	OBL					
		Persicaria lapathifolia	willow weed	5	OBL					
		Cyperus eragrostis	tall umbrella sedge	2	OBL					
		Polypogon monspeliensis	rabbitsfoot grass	2	FACW					
9	Maple Canyon SPS	*Mimulus cardinalis*	scarlet monkeyflower	5	OBL	No	No	No	No	Yes
		Salix lasiolepis	arroyo willow	5	OBL					
		Melilotus alba	white sweetclover	25	FACU					
		Medicago polymorpha	bur clover	25	UPL					
		Veronica anagalis-aquatica	water speedwell	10	OBL					
		Rumex crispus	curly dock	10	FACW					
		Ambrosia psilostachya	western ragweed	5	FAC					
10	Maple Canyon SPS	*Salsola tragus*	russian thistle	60	UPL	No	No	No	No	Yes
		Brassica nigra	black mustard	40	UPL					
		Ambrosia acanthicarpa	annual bur-sage	30	UPL					
11	Maple Canyon SPS	*Brassica nigra*	black mustard	80	UPL	No	No	No	No	Yes
		Ambrosia acanthicarpa	annual bur-sage	20	UPL					
		Bromus madritensis ssp. *rubens*	foxtail chess	10	UPL					
		Melilotus alba	white sweetclover	5	FACU					
12	Maple Canyon SPS	*Brassica nigra*	black mustard	30	UPL	No	No	No	No	Yes
		Ambrosia acanthicarpa	annual bur-sage	30	UPL					
		Salsola tragus	Russian thistle	10	UPL					

SPS: Sediment Placement Site

Note: A positive (+) or negative (-) sign is used with the wetland indicator categories to more specifically define the regional frequency of a species' occurrence in wetlands.

[a] FACW: facultative wetland; FAC: facultative; UPL: obligate upland; OBL: obligate wetland; FACU: facultative upland; NI: no indicator (i.e., insufficient information available to determine an indicator status).

[b] Big Tujunga Wash refers to areas downstream of Big Tujunga Dam

3.2 SOILS

Soils within Big Tujunga Reservoir (Sampling Points 1 through 4) are generally coarse sand, though Sample Point 4 consists of clayey-silt. A hydric soil indicator was observed at Sampling Point 4.

Soils downstream of Big Tujunga Dam (Sampling Points 5 through 8) generally consist of clayey-silt or silty clay, sometimes under a thin layer of gravel. Soil is very thin at Sampling Points 7 and 8, but due to the perennial nature of the stream combined with obligate wetland vegetation (e.g., cattails, willows) the presence of hydric soil conditions was inferred.

Soils within the Maple Canyon SPS (Sampling Points 9 though 12) are all dominated by sand, none of which contain wetland soil indicators.

3.3 HYDROLOGY

The project site is within the 834-square-mile Los Angeles River Watershed. Big Tujunga Canyon Creek (Hydrologic Unit Code 180701050103) flows into Big Tujunga Reservoir. Water that is discharged through Big Tujunga Dam flows into Big Tujunga Wash and travels approximately 14 miles before it reaches the Hansen Flood Control Basin. Water that is discharged through Hansen Dam travels through the concrete-lined Tujunga Wash until flowing into the Los Angeles River and ultimately the Pacific Ocean in the City of Long Beach.

All sampling points exhibit indicators of wetland hydrology. Sampling Points 1 through 9 exhibit one or more primary indicators of wetland hydrology (surface water, high water table, and/or saturated soil), while Sampling Points 10 through 12 exhibit two secondary indicators of wetland hydrology (sediment deposits and drainage patterns).

SECTION 4.0 JURISDICTIONAL DELINEATION

4.1 U.S. ARMY CORPS OF ENGINEERS DETERMINATION

"Waters of the U.S." (Non-Wetland) Determination. Big Tujunga Canyon Creek flows into Big Tujunga Reservoir. Water released through Big Tujunga Dam flows into Big Tujunga Wash, which reaches Hansen Flood Control Basin. Flows that are discharged through Hansen Dam travel through Tujunga Wash, which conveys flows to the Los Angeles River, which ultimately flows into the Pacific Ocean in the City of Long Beach. The project site is approximately 62 river miles and 37 aerial miles from the Pacific Ocean.

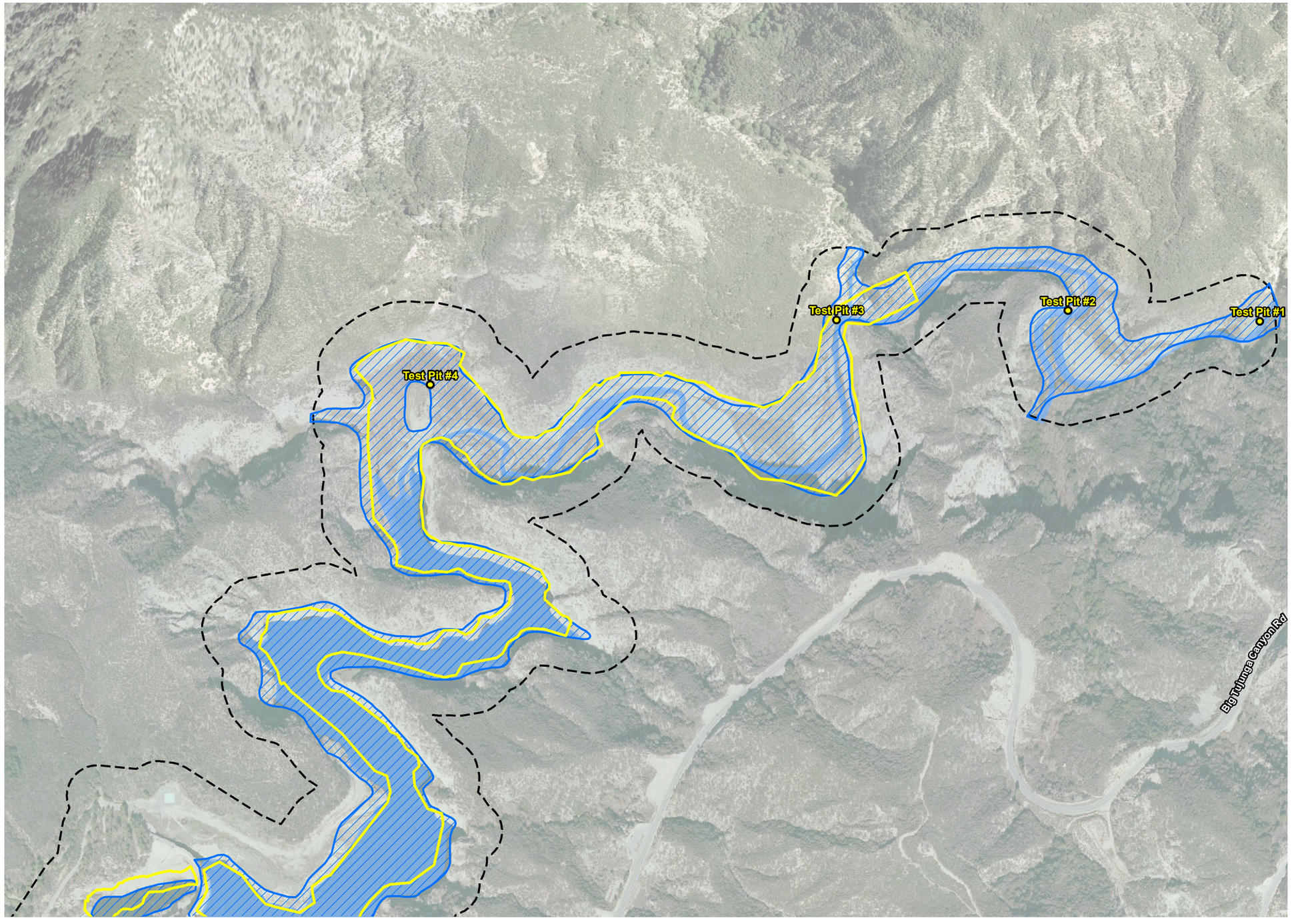
The NWI describes Big Tujunga Canyon Creek upstream of Big Tujunga Reservoir as a perennial stream. The NWI classification of Big Tujunga Wash contains the modifier of being saturated on a semi-permanent or seasonal basis. These classifications are consistent with field observations during the jurisdictional delineation. Therefore both these portions of the project site satisfy the USACE criteria for Relatively Permanent Waters (RPW). The Los Angeles River and Pacific Ocean are designated as Traditional Navigable Waters (TNW) by the USACE. As a result, Big Tujunga Canyon Creek, Big Tujunga Reservoir, and Big Tujunga Wash all fall within the USACE's jurisdiction, as described in the Supreme Court's *Rapanos* decision.

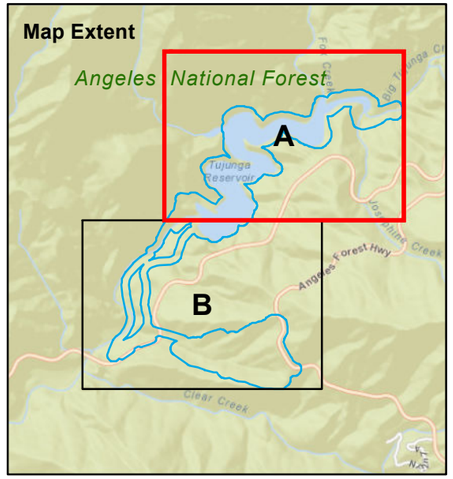
The drainages mapped within the upper portion of the Maple Canyon SPS are not described by the NWI. These drainages do not appear to contain seasonal flows and would not be considered to be RPW. However, these drainage features appear to drain eventually into Big Tujunga Wash, meaning they have a "significant nexus" with a TNW, as described in the *Rapanos* decision. As a result, the USACE may assert jurisdiction over these drainages.

The limits of the "waters of the U.S." on the project site were defined by the presence of the OHWM, which were observed as drainage patterns, surface water, saturation, and drift deposits within the drainage features within the project site. Based on the field observations and data collected, approximately 76.88 acres of non-wetland "waters of the U.S." occur within the project site. This consists of 67.43 acres within Big Tujunga Reservoir, 1.72 acre within Maple Canyon SPS, 1.51 acre within the plunge pool immediately downstream of Big Tujunga Dam, and 6.22 acres within Big Tujunga Wash to the Big Tujunga Canyon Road overpass. The extent of "waters of the U.S." on the project site is shown on Exhibits 5A through 5B.

Based on the currently proposed limits of disturbance, approximately 43.20 acres of non-wetland "waters of the U.S." would be temporarily impacted by the removal of excess sediment within Big Tujunga Reservoir and 1.27 acre would be temporarily impacted for sediment removal within the plunge pool below the dam. Approximately 1.03 acre would be permanently impacted within Maple Canyon SPS as sediment from the reservoir is deposited in the SPS, which would fill the drainage features in the upper portion of the SPS. A summary of the quantity of "waters of the U.S." that are located on the project and that are within the proposed impact boundary is provided in Table 2.

Wetlands Determination. As previously described in Section 2.0 of this report, an area must exhibit all three wetland parameters, as described in the 2008 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* and the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) in order to be considered a jurisdictional wetland. Wetland hydrology and hydrophytic vegetation are present throughout sampling points within Big Tujunga Canyon Creek, Big Tujunga Reservoir, and Big Tujunga Wash. However, all three parameters were observed at Sampling Point 4 (within Big Tujunga Reservoir) and Sampling Points 7 and 8 (Big Tujunga Wash). Sampling Points within the Maple Canyon SPS contain wetland hydrology characteristics only.





- Project Area
- Test Pit Location
- Proposed Limits of Sediment Removal
- Proposed Limits of Sediment Deposition
- Open Water*

USACE Jurisdiction

- "Waters of the U.S." (width in feet)
- "Waters of the U.S." (concrete channel)
- "Waters of the U.S."

*Open water boundaries observed on October 27, 2011, though variable throughout year.
Aerial Source: Aerials Express, 2009

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USACE Jurisdictional Resources

Exhibit 5A

Big Tujunga Reservoir Sediment Removal Project

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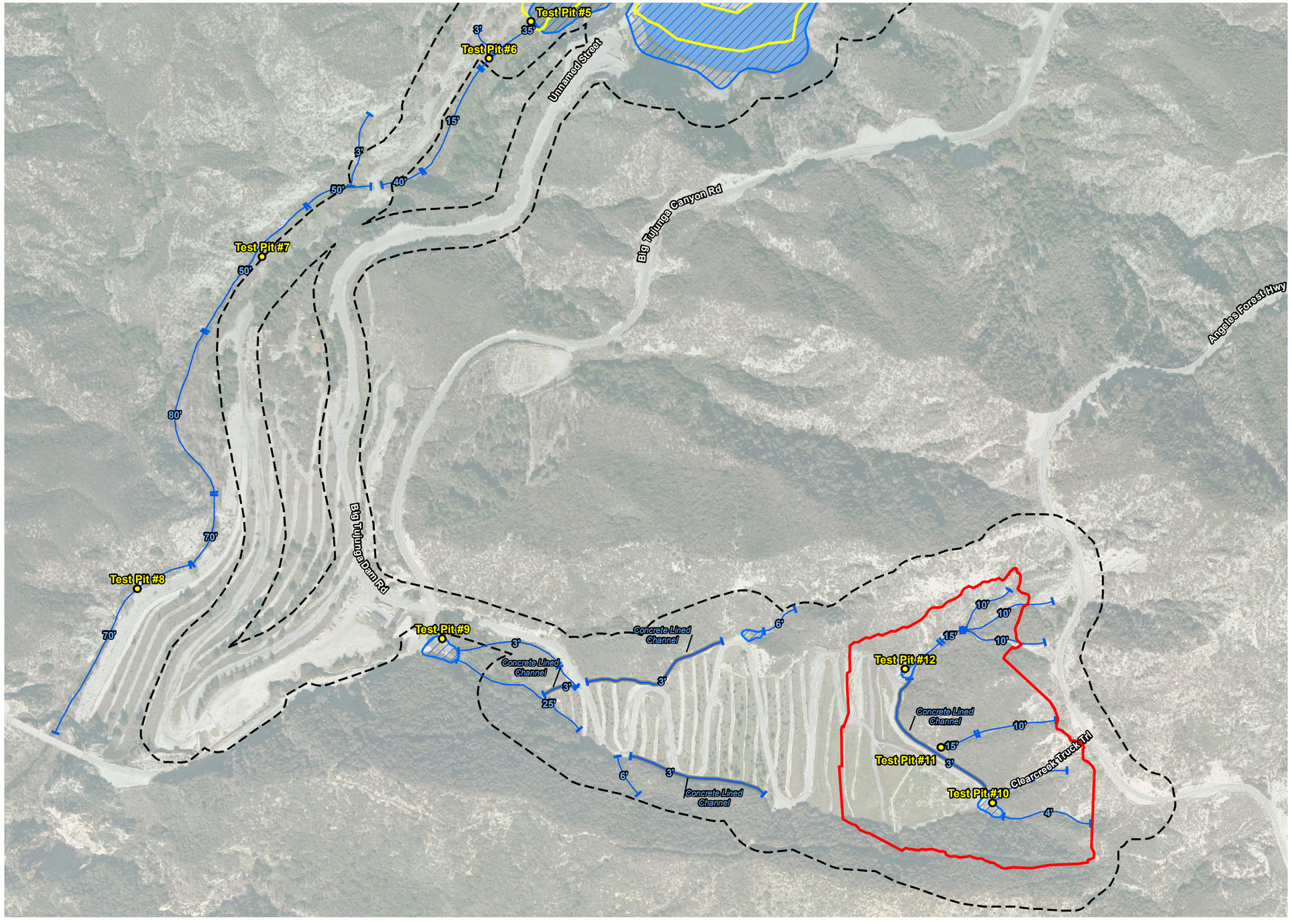

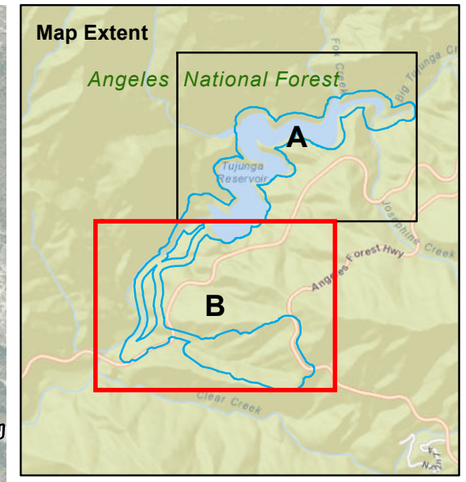

- Project Area
- Test Pit Location
- Proposed Limits of Sediment Removal
- Proposed Limits of Sediment Deposition
- Open Water*

USACE Jurisdiction

- "Waters of the U.S." (width in feet)
- "Waters of the U.S." (concrete channel)
- "Waters of the U.S."

*Open water boundaries observed on October 27, 2011, though variable throughout year.
Aerial Source: Aerials Express, 2009

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USACE Jurisdictional Resources

Exhibit 5B

Big Tujunga Reservoir Sediment Removal Project

N W E S

500 250 0 500 Feet

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Though all three parameters were observed at Sampling Points 4, 7, and 8, identification of these areas as wetlands is problematic. Sampling Point 4 contains very sparse and immature wetland vegetation, as this area is typically underwater. The project area was surveyed during the time of year when water levels are at the lowest point for access purposes. Because the presence of wetland vegetation is not expected to persist beyond a few weeks each year in this location, this location is not shown as a wetland in Exhibit 5B.

Sampling Points 7 and 8 were chosen because of the presence of obligate wetland vegetation including cattails (*Typha* sp.) and water cress (*Rorippa nasturtium-aquaticum*). However, analysis of the soil characteristics was difficult due to the presence of a restrictive layer (cobble). The presence of perennial water and wetland vegetation led to an assumption of the presence of wetland soils as well. Based on this approach, wetland conditions would exist in several small pockets extending from Sampling Point 7, downstream to the Big Tujunga Canyon Road overpass where this investigation concluded. Much of Big Tujunga Wash is outside of the survey area and no impacts are proposed in this area. Sampling Points 7 and 8 are included in the jurisdictional delineation to better characterize the overall condition of this reach. Due to the small size of the assumed wetland conditions and because this area is outside of the project survey area, the extent of wetlands in this area was not mapped.

TABLE 2
USACE JURISDICTIONAL "WATERS OF THE U.S." AND CDFW JURISDICTIONAL WATERS WITHIN THE PROJECT SITE

	USACE non-wetland "waters of the U.S."			CDFW Jurisdictional Waters		
Project Areas	**Total Existing (acres)**	**Proposed Permanent Impact (acres)**	**Proposed Temporary Impact (acres)**	**Total Existing (acres)**	**Proposed Permanent Impact (acres)**	**Proposed Temporary Impact (acres)**
Big Tujunga Reservoir	67.43	0.00	43.20	68.06	0.00	43.20
Maple Canyon Sediment Placement Site	1.72	1.03	0.00	3.79	1.76	0.00
Plunge Pool	1.51	0.00	1.27	1.97	0.00	1.40
Big Tujunga Wash[a]	6.22	0.00	0.00	12.48	0.00	0.00
Total	**76.88**	**1.03**	**44.47**	**86.30**	**1.76**	**44.60**

[a] Note that 6.14 acres of "waters of the U.S." and 12.0 acres of CDFW jurisdiction within Big Tujunga Wash that are included in this analysis are outside the survey area but were included in the delineation to provide a complete description of site conditions.

4.2 CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD DETERMINATION

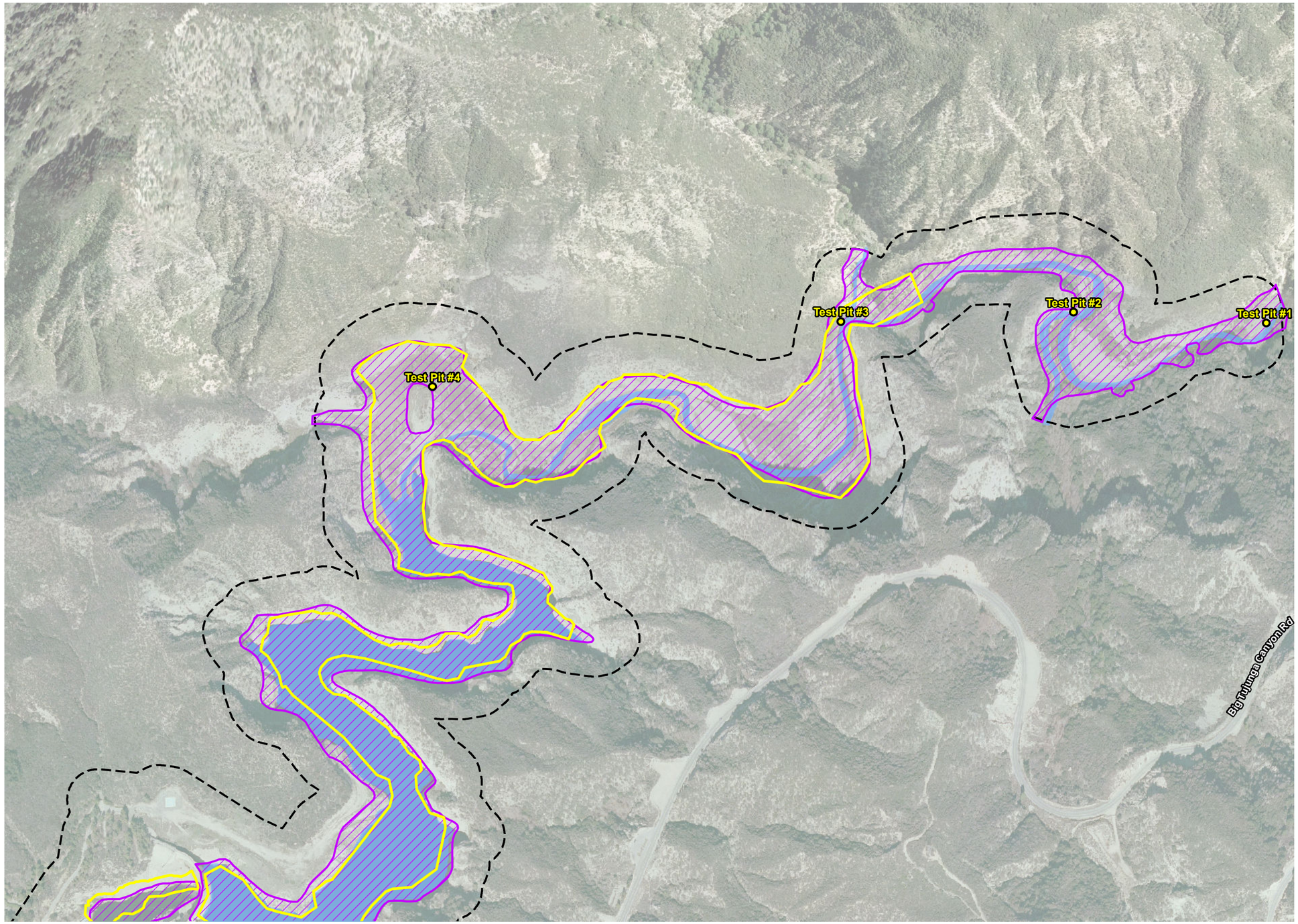
The RWQCB jurisdictional boundaries are defined as those determined for the USACE under "waters of the U.S.". However, the RWQCB takes jurisdiction over both connected and isolated waters. None of the "waters of the U.S." identified within the project survey limits would be considered isolated; therefore, the RWQCB and USACE jurisdictions are the same. Approximately 76.88 acres (including 67.43 acres within Big Tujunga Reservoir, 1.72 acres within Maple Canyon SPS, 1.51 acre within the plunge pool, and 6.22 acres within Big Tujunga Wash) would be considered "waters of the U.S." based on the presence of an OHWM and connectivity to a TNW; therefore, it would be considered jurisdictional by the RWQCB. Based on the current project limits of disturbance, approximately 44.47 acres of non-wetland "waters of the U.S." would be temporarily impacted through the removal of excess sediment within Big Tujunga Reservoir and the plunge pool. Approximately 1.03 acre would be permanently impacted within the Maple Canyon SPS. The extent of RWQCB jurisdictional areas is shown in Exhibits 5A through 5B and is summarized above in Table 2.

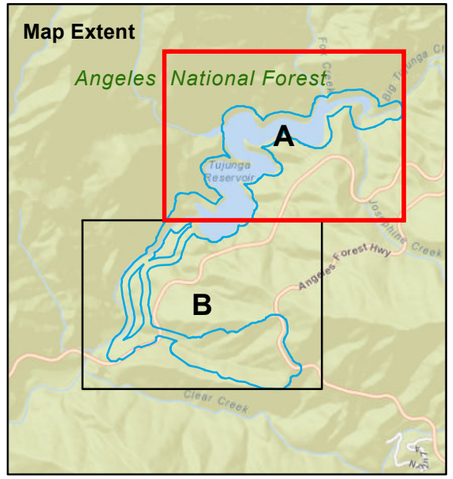
4.3 CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE DETERMINATION

The limits of CDFW jurisdiction within the drainages extends from the top of the bank to the top of the bank and to the outer drip line in areas containing riparian vegetation. Based on field observations and data collection, a total of approximately 86.30 acres of resources under CDFW jurisdiction pursuant to Section 1602 of the *California Fish and Game Code* are located within the project site. This consists of 68.06 acres within Big Tujunga Reservoir, 3.79 acres within the Maple Canyon SPS, 1.97 acre within the plunge pool, and 12.48 acres within Big Tujunga Wash to the point where it reaches the Big Tujunga Canyon Road overpass.

Based on the currently proposed limits of disturbance, approximately 44.6 acres of CDFW jurisdictional waters would be temporarily impacted by the removal of excess sediment within Big Tujunga Reservoir and the plunge pool. Approximately 1.76 acre would be permanently impacted within the Maple Canyon SPS as sediment from the reservoir is deposited in the SPS. The extent of CDFW jurisdiction on the project site is shown on Exhibits 6A through 6B and is summarized above in Table 2.

Please note that the limits of USACE and CDFW jurisdiction are largely the same within Big Tujunga Reservoir due to the general lack of hydrophytic vegetation within the reservoir which typically causes CDFW's jurisdiction to exceed that of the USACE.





Survey Area
Test Pit Location
Proposed Limits of Sediment Removal
Proposed Limits of Sediment Deposition
Open Water*

CDFG Jurisdiction

CDFW Jurisdictional Area (width in feet)
CDFW Jurisdictional Area (concrete channel)
CDFW Jurisdictional Area

*Open water boundaries observed on October 27, 2011, though variable throughout year.
Aerial Source: Aerials Express, 2009

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CDFW Jurisdictional Resources

Exhibit 6A

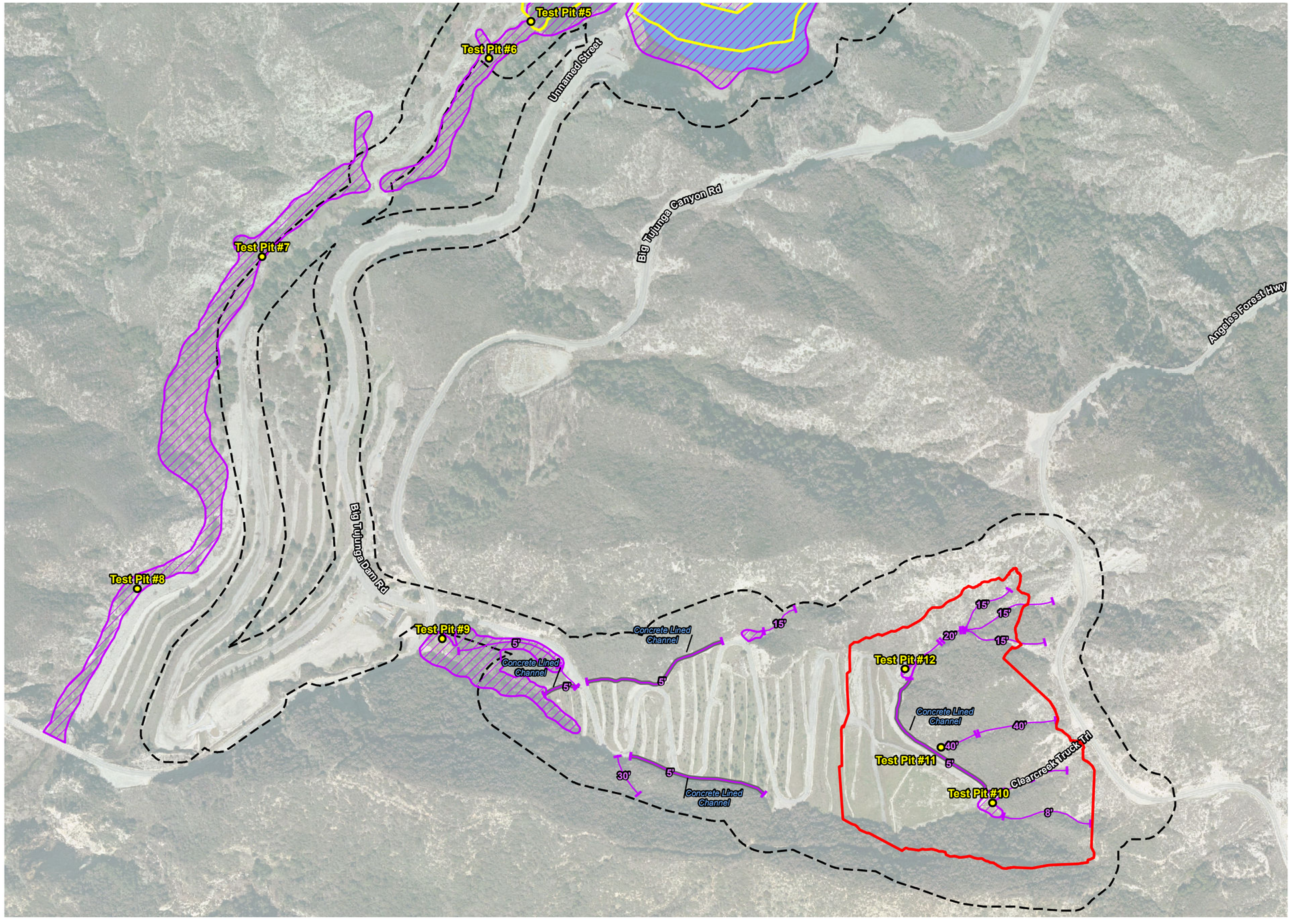
Big Tujunga Reservoir Sediment Removal Project

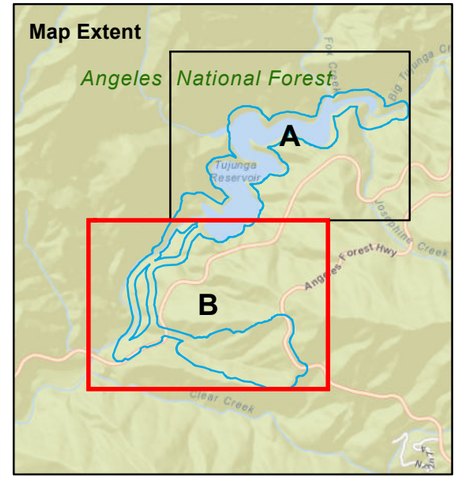
N W E S

500 250 0 500 Feet

Bonterra CONSULTING

(Rev: 2-20-2013 JAZ) Projects\CoLADPW\J162\Graphics\JD_Report\Ex6_JD_CDFW.pdf





- Survey Area
- Test Pit Location
- Proposed Limits of Sediment Removal
- Proposed Limits of Sediment Deposition
- Open Water*

CDFG Jurisdiction

- CDFW Jurisdictional Area (width in feet)
- CDFW Jurisdictional Area (concrete channel)
- CDFW Jurisdictional Area

*Open water boundaries observed on October 27, 2011, though variable throughout year.
Aerial Source: Aerials Express, 2009

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CDFW Jurisdictional Resources

Exhibit 6B

Big Tujunga Reservoir Sediment Removal Project

N W E S

500 250 0 500 Feet

Benterra CONSULTING

(Rev: 2-20-2013 JAZ) Projects\CoLADPW\J162\Graphics\JD_Report\Ex6_JD_CDFW.pdf

SECTION 5.0 CONCLUSION OF REGULATORY APPROVAL PROCESS

5.1 REGULATORY PERMIT REQUIREMENTS

The following is a general summary of the various permits, agreements, and certifications required prior to initiation of project activities that involve impacts to areas under the jurisdiction of the USACE, the RWQCB, and the CDFW.

- USACE Section 404 Permit;
- RWQCB Section 401 Water Quality Certification; and
- CDFW Section 1602 Streambed Alteration Agreement.

Please note that although impacts to the federally listed Endangered arroyo toad observed at the upstream end of Big Tujunga Reservoir and the federally Threatened Santa Ana sucker observed downstream of Big Tujunga Dam are not expected to be affected by the proposed project activities, the USACE may elect to consult with the U.S. Fish and Wildlife Service (USFWS) pursuant to Section 7 of the Federal Endangered Species Act. The USFWS would then determine if the project may affect these species and issue a biological opinion (BO) to the USACE. The BO would then need be issued before the USACE would issue a Section 404 Permit.

It should also be noted that the USACE and the RWQCB applications can be processed concurrently. The USACE permit would be issued subject to the receipt of the RWQCB's Section 401 Water Quality Certification. There is no filing fee for the Section 404 Permit. The Section 401 Water Quality Certification filing fee has a $944 base fee (as of November 2011) with additional fees based on the size of the dredge or fill unless the project qualifies for a flat fee. For low impact discharges (e.g., discharge of less than 0.1 acre, 200 linear feet, and 25 cubic yards), there is no charge above the base fee. For fill and excavation discharges, the filing fee is based on a rate of $4,059 per acre of discharge or excavation. For projects that propose to discharge fill into channels (as is proposed for drainages within Maple Canyon SPS) the fee must be calculated based on a rate of $4,059 per acre of impact and $9.44 per linear foot of impact. The higher of the two calculations is charged for the permit fee.

The CDFW's Streambed Alteration Agreement filing fee is based on project cost and length of permit authorization (i.e., maintenance permit for greater than five years). For projects lasting five years or less, the maximum fee is $4,482.75 (as of January 1, 2010) for projects costing $500,000 or more; the fee decreases as cost decreases. For projects lasting longer than five years, there is a base fee of $2,689.50 plus a maximum of $4,482.75. The CDFW application submittal will not be deemed complete until the application fees have been paid and the agency is provided with a certified California Environmental Quality Act (CEQA) document and a signed copy of the receipt of County Clerk filing fees for the Notice of Determination (NOD). In addition, land use jurisdictions can no longer make "de minimis" findings if they determine that the project will not impact resources under the CDFW's jurisdiction. Therefore, the finding of "No Impact" or "No Substantial Effect" to the CDFW jurisdictional resources must now be made by the CDFW prior to the payment of CDFW fees.

A detailed explanation of the regulatory permitting requirements for impacts to jurisdictional resources is provided in Sections 5.2 through 5.4.

5.2 U.S. ARMY CORPS OF ENGINEERS

Regulatory authorization in the form of an NWP is provided for certain categories of activities (e.g., repair, rehabilitation, or replacement of a structure or fill which was previously authorized; utility line placement; bank stabilization). These permits are valid only if the conditions applicable to the permits are met. The sediment removal portion of the proposed project would likely qualify for an NWP (either NWP 3 [Maintenance] or NWP 31 [Maintenance of Existing Flood Control Facilities]), but the amount of fill that is proposed for deposition within the Maple Canyon SPS would exceed the threshold for an NWP 18 (Minor Discharges). The Los Angeles District USACE District Engineer could consider a waiver since the Maple Canyon drainages are ephemeral in nature. If the conditions cannot be met or if the District Engineer does not approve a waiver that would allow impacts to these resources to be authorized under NWP 18, an Individual Permit (IP) will be required. "Waters of the U.S." that are temporarily filled, flooded, excavated, or drained but restored to pre-construction contours and elevations after construction are not included in the measurement of loss of "waters of the U.S.". The appropriate permit authorization will be based on the amount of impacts to "waters of the U.S.", as determined by the USACE. Please note that the current NWP program is expiring on March 18, 2012, and a new set of NWPs are expected to become effective on that date.

5.2.1 JURISDICTIONAL DETERMINATIONS

Pursuant to USACE Regulatory Guidance Letter (RGL) 08-02 (dated June 26, 2008), the USACE can issue two types of jurisdictional determinations to implement Section 404 of the CWA: Approved Jurisdictional Determinations and Preliminary Jurisdictional Determinations (USACE 2008a). An Approved Jurisdictional Determinations is an official USACE determination that jurisdictional "waters of the U.S.", "Navigable waters of the U.S.", or both are either present or absent on a site. An Approved Jurisdictional Determinations also identifies the precise limits of jurisdictional waters within a project site.

The USACE will provide an Approved Jurisdictional Determination when (1) an applicant requests an official jurisdictional determination; (2) an applicant contests jurisdiction over a particular water body or wetland; or (3) when the USACE determines that jurisdiction does not exist over a particular water body or wetland. The Approved Jurisdictional Determination then becomes the USACE's official determination that can then be relied upon over a five-year period to request regulatory authorization as part of the permit application process.

In addition, an Applicant may decline to request an Approved Jurisdictional Determination and instead obtain a USACE IP or General Permit Authorization based on a Preliminary Jurisdictional Determination or, in certain circumstances (e.g., authorizations by non-reporting nationwide general permits), with no Jurisdictional Determination.

Preliminary Jurisdictional Determinations are non-binding, advisory in nature, and may not be appealed. They indicate that there may be "waters of the U.S." on a project site. An applicant may elect to use a Preliminary Jurisdictional Determination to voluntarily waive or set aside questions regarding CWA jurisdiction over a site, usually in the interest of allowing the applicant to move ahead expeditiously with the permitting process. The USACE will determine what form of Jurisdictional Determination is appropriate for a particular project site. Given the type and extent of project impacts and duration of construction, the USACE will likely approve the Jurisdictional Delineation Report through a Preliminary Jurisdictional Determination.

On January 31, 2007, the USACE published a memorandum clarifying the Interim Guidance for amendments to the National Historic Preservation Act and the Advisory Council on Historic Preservation (ACHP) implementing regulations (USACE 2007). The Interim Guidance applies to all Department of the Army requests for authorization/verification, including Individual Permits

(standard permits and letters of permission) and all Regional General Permits (RGPs) and NWPs. The State or Tribal Historic Preservation Officer (SHPO/THPO) has 30 days to respond to a determination that a proposed activity, that otherwise qualifies for an NWP or RGP, has no effect or no adverse effect on a historic property. If the SHPO/THPO does not respond within 30 days of notification, the Los Angeles District may proceed with verification. If the SHPO/THPO disagrees with the District's determination, the District may work with the SHPO/THPO to resolve the disagreement or request an opinion from the ACHP. The USACE will submit the Draft Jurisdictional Delineation Report to the SHPO/THPO for review prior to initiating the actual regulatory process.

The USACE Regulatory Branch Offices will coordinate with the USEPA Regional Office and USACE Headquarters (HQ), as outlined in its January 28, 2008, memorandum entitled the *Process for Coordinating Jurisdictional Delineations Conducted Pursuant to Section 404 of the Clean Water Act in Light of the Rapanos and SWANCC Supreme Court Decisions* (USACE 2008b). The guidance provided in this memorandum is quoted as follows:

1. Effective immediately, unless and until paragraph 5(b) of the June 5, 2007, Rapanos guidance coordination memorandum is modified by a joint memorandum from Army and EPA, we will follow these procedures:
    a. For jurisdictional determinations involving significant nexus determinations, USACE districts will send copies of draft jurisdictional delineations via e-mail to appropriate EPA regional offices. The EPA regional office will have 15 calendar days to decide whether to take the draft jurisdictional delineation as a special case under the January 19, 1989, "Memorandum of Agreement Between the Department of the Army and the USEPA Concerning the Determination of the Section 404 Program and the Application of the Exceptions under Section 404(f) of the Clean Water Act." If the EPA regional office does not respond to the district within 15 days, the district will finalize the jurisdictional determination.
    b. For jurisdictional determinations involving isolated waters determinations, the agencies will continue to follow the procedure in paragraph 5(b) of June 5, 2007, coordination memorandum, until a new coordination memorandum is signed by USACE and EPA. (In accordance with paragraph 6 of the June 5, 2007, coordination memorandum, this is a 21-day timeline that can only be changed through a joint memorandum between agencies).
2. Approved JDs are not required for non-reporting NWPs, unless the project proponent specifically requests an approved JD. For proposed activities that may qualify for authorization under a State Programmatic General Permit (SPGP) or RGP, an approved JD is not required unless requested by the project proponent.
3. The USACE will continue to work with EPA to resolve the JDs involving significant nexus and isolated waters determinations that are currently in the elevation process.
4. USACE districts will continue posting completed Approved JD Forms on their web pages.

Please note that if the USACE determines that the drainage is jurisdictional and would be impacted by project implementation, the Applicant will be required to obtain a CWA Section 401 Water Quality Certification from the RWQCB before the USACE will issue the Section 404 permit. That is, the USACE may issue a "Denial Without Prejudice" as part of the issuance of the Section 404 permit that makes the permit valid once the Section 401 Water Quality Certification is issued. If the USACE determines that the impacted drainage is not jurisdictional, the Applicant will be required to obtain RWQCB authorization under the provisions of a Report of Waste Discharge (ROWD).

Please also note that the USACE has prepared Draft Guidelines on Identifying Waters Protected by the Clean Water Act (Act) to implement the U.S. Supreme Court's decisions concerning the extent of waters covered by the Act (Solid Waste Agency of Northern Cook County v. USACE [SWANCC] and Rapanos v. United States [Rapanos]). The review period for the draft guidelines ended in June 2011, and the USEPA is expected to issue a rule for public review in 2012. The U.S. Environmental Protection Agency and the USACE will now consider comments received on the draft guidelines; make revisions where appropriate; and finalize and undertake rulemaking consistent with the Administrative Procedure Act. The result will be a "nonbinding guidance" for the identification of resources under the jurisdiction of the USACE. The final guidance will not affect jurisdictional delineations that have already received approval from the USACE.

5.3 REGIONAL WATER QUALITY CONTROL BOARD

As noted above, issuance of the USACE Section 404 permit would be contingent upon the approval of a Section 401 Water Quality Certification from the Los Angeles RWQCB. Also, the RWQCB requires certification of the project's CEQA documentation before it will approve the Section 401 Water Quality Certification or ROWD. The RWQCB, as a responsible agency, will use the project's CEQA document to satisfy its own CEQA-compliance requirements.

Upon acceptance of a complete permit application, the RWQCB has between 60 days and 1 year to make a decision regarding the permit request. That is, USACE regulations indicate that the RWQCB has 60 days from the date of receipt of a completed application that requests water quality certification to make a decision (33 CFR §325.2[b][1][ii]). The USACE District Engineer may specify a longer time (up to one year) or shorter time based on his/her determination of a reasonable processing time (33 CFR §325.2[b][1][ii]). If the RWQCB determines that more than 60 days are needed to process the request, it has the option of requesting additional time from the USACE. Also, the RWQCB has the option of issuing a "Denial Without Prejudice", which does not mean that the request is denied, but that it requires more information in order to make a decision. This effectively stops the processing clock until this information is provided.

The RWQCB is required under the *California Code of Regulations* (CCR) (Title 23, §3858[a]) to have a "minimum 21 day public comment period" before any action can be taken on the Section 401 application. This period closes when the RWQCB acts on the application. Since projects often change or are revised during the Section 401 permit process, the comment period can remain open. The public comment period starts as soon as an application has been received. Although the RWQCB Section 401, USACE Section 404, and CDFW Section 1602 permit applications are submitted at the same time as a permit application package, the RWQCB Section 401 Water Quality Certification may take longer to process.

The RWQCB requires the Applicant to address urban storm water runoff during and after construction in the form of Best Management Practices (BMPs). These BMPs are intended to address the treatment of pollutants carried by storm water runoff and are required for an application to be deemed complete. Also, the RWQCB requires that the Applicant address the policies contained in the Basin Plan (i.e., compliance with water quality objectives and protection of Beneficial Uses). Please note that the application would also require the payment of a Section 401 Application Fee, which would be based on project impacts.

5.4 CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

The CDFW regulates all work (including initial construction and ongoing operation and maintenance) that may 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 through its Streambed Alteration Program. An Applicant must enter into an agreement with the CDFW to ensure no net loss of wetland values and acreages.

Impacts resulting from Project implementation will require a Section 1602 Streambed Alteration Agreement. The Streambed Alteration Agreement must address the initial construction and long-term operation and maintenance of any structures within areas identified as "waters of the State" (such as a culvert or desilting basin) that may require periodic maintenance if these are included in the project design.

Prior to construction, a notification (Streambed Alteration Agreement application) must be submitted to the CDFW that describes any proposed streambed alteration contemplated by the proposed project. In addition to the formal application materials and the fee, a copy of the appropriate environmental document (e.g., mitigated negative declaration [MND]) should be included in the submittal, consistent with CEQA requirements. The CDFW will prepare a draft Streambed Alteration Agreement, which will include standard measures to protect sensitive plant and wildlife resources during project construction and during ongoing operation and maintenance of any project element that occurs within a CDFW jurisdictional area.

If a Streambed Alteration Agreement is required, the CDFW may want to conduct an on-site inspection. The CDFW then prepares a draft agreement, which will include measures to protect fish and wildlife resources that will be directly or indirectly impacted by project construction. The draft agreement will be transmitted to the Applicant within 60 calendar days of the CDFW's determination that the notification is complete. It should be noted that the 60-day timeframe may not apply to long-range operation and maintenance agreements.

The Applicant has 30 calendar days to notify the CDFW concerning the acceptability of the proposed terms, conditions, and measures. If the Applicant agrees with these terms, conditions, and measures, the agreement must be signed and returned to the CDFW. The agreement becomes final once the CDFW executes it and a Streambed Alteration Agreement is issued to the Applicant. Please note that all application fees must be paid and the final certified CEQA documentation must be provided prior to the CDFW's execution of the agreement.

If the CDFW does not respond in writing concerning the completeness of the Notification within 30 days of its submittal, the Notification automatically becomes complete. If the CDFW does not submit a draft Streambed Alteration Agreement to the Applicant within 60 days of the determination of a completed Notification package, the CDFW will issue a letter that either (1) identifies the final date to transmit a draft Streambed Alteration Agreement or (2) indicates that a Streambed Alteration Agreement was not required. The CDFW will also indicate that it was unable to meet this mandated date and that by law the Applicant must complete the project without a Streambed Alteration Agreement and must comply with all avoidance, minimization, and mitigation measures described in the Notification package that was submitted to CDFW.

SECTION 6.0 REFERENCES

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ATTACHMENT A

WETLAND DATA FORMS

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Big Tujunga Reservoir City/County: unincorported LA County Sampling Date: 10/27/11

Applicant/Owner: Los Angeles County Department of Public Works/U.S. Forest Service State: CA Sampling Point: 1

Investigator(s): Gary Medeiros, David Hughes Section, Township, Range: 3 North, 12 West

Landform (hillslope, terrace, etc.): Foothills Local relief (concave, convex, none): _____ Slope (%): 10

Subregion (LRR): Mediterranean California Lat: 34.30126 Long: 118.17034 Datum: NAD 83

Soil Map Unit Name: Typic Xerorthents, warm, 55 to 90 percent slopes NWI classification: R3USK (R3SBZ)

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

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

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

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

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

Remarks:

2010 Station Fire burned majority of vegetation within survey area

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lasiolepis	15	Y	OBL
2. Salix exigua	10	Y	OBL
3.			
4.			
	25	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5')			
1. Xanthium strumarum	5	Y	FAC
2. Baccharis salicifolia	5	Y	FACW
3.			
4.			
5.			
	10	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Mimulus guttatus	40	Y	OBL
2. Persicaria lapathifolia	5	N	OBL
3.			
4.			
5.			
6.			
7.			
8.			
	45	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 55 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 70	x 1 =	70
FACW species 5	x 2 =	10
FAC species 5	x 3 =	15
FACU species _____	x 4 =	
UPL species _____	x 5 =	
Column Totals: 80 (A)		95 (B)

Prevalence Index = B/A = 1.19

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: 1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-24	2.5 YR 4/3	100					SAND	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Big Tujunga Reservoir City/County: unincorported LA County Sampling Date: 10/27/11

Applicant/Owner: Los Angeles County Department of Public Works/U.S. Forest Service State: CA Sampling Point: 2

Investigator(s): Gary Medeiros, David Hughes Section, Township, Range: 3 North, 12 West

Landform (hillslope, terrace, etc.): Foothills Local relief (concave, convex, none): _____ Slope (%): 10

Subregion (LRR): Mediterranean California Lat: 34.30155 Long: 118.17298 Datum: NAD 83

Soil Map Unit Name: Water NWI classification: R3USK (R3SBZ)

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

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

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

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

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

Remarks:

2010 Station Fire burned majority of vegetation within survey area

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Sisymbrium orientale	2	Y	FACU
2. Mimulus cardinalis	2	Y	OBL
3. Ambrosia psilostachya	2	Y	FAC
4.			
5.			
6.			
7.			
8.			
	6	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 94 % Cover of Biotic Crust 0

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: 67 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 2	x 1 =	2
FACW species _____	x 2 =	_____
FAC species 2	x 3 =	6
FACU species 2	x 4 =	8
UPL species _____	x 5 =	_____
Column Totals: 6 (A)		16 (B)

Prevalence Index = B/A = 2.67

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: 2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-24	2.5 YR 4/2	100					SAND	COARSE SAND AND GRAVEL

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

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

Water Table Present? Yes ✓ No _____ Depth (inches): 5

Saturation Present? (includes capillary fringe) Yes ✓ No _____ Depth (inches): 5

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Big Tujunga Reservoir City/County: unincorported LA County Sampling Date: 10/27/11

Applicant/Owner: Los Angeles County Department of Public Works/U.S. Forest Service State: CA Sampling Point: 3

Investigator(s): Gary Medeiros, David Hughes Section, Township, Range: 3 North, 12 West

Landform (hillslope, terrace, etc.): Foothills Local relief (concave, convex, none): _____ Slope (%): 10

Subregion (LRR): Mediterranean California Lat: 34.30160 Long: 118.17619 Datum: NAD 83

Soil Map Unit Name: Water NWI classification: R3USK (R3SBZ)

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

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

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

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

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

Remarks:

2010 Station Fire burned majority of vegetation within survey area

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix gooddingii	2	Y	OBL
2.			
3.			
4.			
	2 = Total Cover		
Sapling/Shrub Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 = Total Cover		
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 98 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = 1.0

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: 3

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
0-24	2.5 YR 4/3	100					SAND	COARSE SAND AND GRAVEL

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes ✓ No _____ Depth (inches): 0

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

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Big Tujunga Reservoir City/County: unincorported LA County Sampling Date: 10/27/11

Applicant/Owner: Los Angeles County Department of Public Works/U.S. Forest Service State: CA Sampling Point: 4

Investigator(s): Gary Medeiros, David Hughes Section, Township, Range: 3 North, 12 West

Landform (hillslope, terrace, etc.): Foothills Local relief (concave, convex, none): _____ Slope (%): 10

Subregion (LRR): Mediterranean California Lat: 34.30052 Long: 118.18384 Datum: NAD 83

Soil Map Unit Name: Water NWI classification: L2FLKY

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

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

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

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

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

Remarks:

2010 Station Fire burned majority of vegetation within survey area

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 5')			
1. Typha sp.	1	Y	OBL
2. Chamaesyce maculata	1	Y	FAC
3.			
4.			
5.			
	2 = Total Cover		
Herb Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 = Total Cover		
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 98 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = 2.0

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: 4

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
0-24	2.5 YR 2.5/1	100	10 YR 5/4	5	RM	M	CLAY-SILT	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

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

Water Table Present? Yes ✓ No _____ Depth (inches): 7

Saturation Present? (includes capillary fringe) Yes ✓ No _____ Depth (inches): 0

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

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

Remarks:

Soil pit location is within portion of reservoir that is typically inundated. Reservoir was inundated approximately 30 feet downstream of pit location.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Big Tujunga Wash City/County: unincorported LA County Sampling Date: 9/28/11

Applicant/Owner: Los Angeles County Department of Public Works/U.S. Forest Service State: CA Sampling Point: 5

Investigator(s): Gary Medeiros, David Hughes Section, Township, Range: 2 North, 13 West

Landform (hillslope, terrace, etc.): Foothills Local relief (concave, convex, none): _____ Slope (%): 10

Subregion (LRR): Mediterranean California Lat: 34.29308 Long: 118.18931 Datum: NAD 83

Soil Map Unit Name: Rock outcrop-Chilao family-Haploxerolls, warm association, 15 to 120 p NWI classification: PEMY

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Persicaria lapathifolia	5	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	5	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 95 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = 1.0

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

Sample point is located at downstream end of Big Tujunga Dam plunge pool. Site is mostly bare ground and boulders. Soil pit is immediately adjacent to flowing water.

SOIL

Sampling Point: 5

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
0-5	2.5 Y 4/2	100					GRAVEL	
5-12	2.5 Y 3/1	100					CLAY-SILT	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: COBBLE

Depth (inches): 12

Hydric Soil Present? Yes ____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ✓ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

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

Water Table Present? Yes ____ No ✓ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ✓ No ____ Depth (inches): 2

Wetland Hydrology Present? Yes ✓ No ____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Big Tujunga Wash City/County: unincorported LA County Sampling Date: 9/28/11

Applicant/Owner: Los Angeles County Department of Public Works/U.S. Forest Service State: CA Sampling Point: 6

Investigator(s): Gary Medeiros, David Hughes Section, Township, Range: 2 North, 13 West

Landform (hillslope, terrace, etc.): Foothills Local relief (concave, convex, none): _____ Slope (%): 10

Subregion (LRR): Mediterranean California Lat: 34.29260 Long: 118.19001 Datum: NAD 83

Soil Map Unit Name: Rock outcrop-Chilao family-Haploxerolls, warm association, 15 to 120 p NWI classification: PEMY

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rhombifolia	15	Y	FACW
2. Salix lasiolepis	10	Y	OBL
3. Nicotiana glauca	5	N	FAC
4.			
	30	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5')			
1. Lotus scoparius	20	Y	UPL
2. Salvia mellifera	10	Y	UPL
3. Conyza canadensis	5	N	FAC
4.			
5.			
	35	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Xanthium strumarum	20	Y	FAC
2. Veronica anagalis-aquatica	20	Y	OBL
3.			
4.			
5.			
6.			
7.			
8.			
	40	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 70 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 6 (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	30	x 1 =	30
FACW species	15	x 2 =	30
FAC species	10	x 3 =	30
FACU species		x 4 =	
UPL species	30	x 5 =	150
Column Totals:	85 (A)		240 (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: 6

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	2.5 Y 4/1	100					SILTY CLAY	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: COBBLE

Depth (inches): 2

Hydric Soil Present? Yes ____ No ✓

Remarks:

Sample point is located immediately adjacent to to flowing water though soil is a thin layer of silty clay on top of cobble.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ✓ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

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

Water Table Present? Yes ____ No ✓ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ✓ No ____ Depth (inches): 1

Wetland Hydrology Present? Yes ✓ No ____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Big Tujunga Wash City/County: unincorported LA County Sampling Date: 9/28/11

Applicant/Owner: Los Angeles County Department of Public Works/U.S. Forest Service State: CA Sampling Point: 7

Investigator(s): Gary Medeiros, David Hughes Section, Township, Range: 2 North, 13 West

Landform (hillslope, terrace, etc.): Foothills Local relief (concave, convex, none): _____ Slope (%): 10

Subregion (LRR): Mediterranean California Lat: 34.29010 Long: 118.19347 Datum: NAD 83

Soil Map Unit Name: Rock outcrop-Chilao family-Haploxerolls, warm association, 15 to 120 p NWI classification: PEMY

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lasiolepis	80	Y	OBL
2.			
3.			
4.			
	80 = Total Cover		
Sapling/Shrub Stratum (Plot size: 5')			
1. Typha sp.	20	Y	OBL
2.			
3.			
4.			
5.			
	20 = Total Cover		
Herb Stratum (Plot size: 5')			
1. Persicaria lapathifolia	15	Y	OBL
2. Rorippa naturtium-aquatica	5	Y	OBL
3. Ageratina adenophora	5	N	NI
4. Xanthium strumarium	5	N	FAC
5. Mimulus cardinalis	1	N	OBL
6.			
7.			
8.			
	31 = Total Cover		
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	121	x 1 =	121
FACW species		x 2 =	
FAC species	5	x 3 =	15
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	126 (A)		136 (B)

Prevalence Index = B/A = 1.08

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: 7

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
0-4	2.5 Y 4/2	100					CLAY-SILT	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: COBBLE

Depth (inches): 4

Hydric Soil Present? Yes ✓ No ___

Remarks:

Hydric soil conditions are assumed due to perennial water and presence of wetland vegetation

HYDROLOGY

Wetland Hydrology Indicators:

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

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Big Tujunga Wash City/County: unincorported LA County Sampling Date: 9/28/11

Applicant/Owner: Los Angeles County Department of Public Works/U.S. Forest Service State: CA Sampling Point: 8

Investigator(s): Gary Medeiros, David Hughes Section, Township, Range: 2 North, 13 West

Landform (hillslope, terrace, etc.): Foothills Local relief (concave, convex, none): _____ Slope (%): 10

Subregion (LRR): Mediterranean California Lat: 34.28540 Long: 118.19557 Datum: NAD 83

Soil Map Unit Name: Rock outcrop-Chilao family-Haploxerolls, warm association, 15 to 120 p NWI classification: PEMY

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lasiolepis	40	Y	OBL
2. Populus fremontii	10	Y	FACW
3.			
4.			
	50 = Total Cover		
Sapling/Shrub Stratum (Plot size: 5')			
1. Typha sp.	10	Y	OBL
2.			
3.			
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot size: 5')			
1. Persicaria lapathifolia	5	Y	OBL
2. Cyperus eragrostis	2	Y	OBL
3. Polypogon monspeliensis	2	Y	FACW
4.			
5.			
6.			
7.			
8.			
	9 = Total Cover		
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 80 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	57	x 1 =	57
FACW species	12	x 2 =	24
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	69 (A)		81 (B)

Prevalence Index = B/A = 1.17

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

Sample point is at interface between artificially hardened bank and flowing water. Vegetation is growing at water edge and on an island within the OHWM.

SOIL

Sampling Point: 8

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
0-4	2.5 Y 4/2	100					GRAVEL	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: COBBLE/GUNNITE

Depth (inches): 4

Hydric Soil Present? Yes ✓ No ___

Remarks:

This area has a thin layer of fine material mixed in with gravel. Below 4 inches is where this area has been artificially hardened. Presence of hydric soils is assumed as areas immediately adjacent to sample point are perennially inundated.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Maple Canyon Sediment Placement Site City/County: unincorported LA County Sampling Date: 9/28/11

Applicant/Owner: Los Angeles County Department of Public Works/U.S. Forest Service State: CA Sampling Point: 9

Investigator(s): Gary Medeiros, David Hughes Section, Township, Range: 2 North, 13 West

Landform (hillslope, terrace, etc.): Foothills Local relief (concave, convex, none): _____ Slope (%): 30

Subregion (LRR): Mediterranean California Lat: 34.28463 Long: 118.19062 Datum: NAD 83

Soil Map Unit Name: Olete-Kilburn-Etsel families complex, 50 to 80 percent slopes NWI classification: PFOY

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5')			
1. Mimulus cardinalis	5	Y	OBL
2. Salix lasiolepis	5	Y	OBL
3.			
4.			
5.			
	10	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Melilotus alba	25	Y	FACU
2. Medicago polymorpha	25	Y	UPL
3. Veronica nasturtium-aquatica	10	N	OBL
4. Rumex crispus	10	N	FACW
5. Ambrosia psilostachya	5	N	FAC
6.			
7.			
8.			
	75	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 30 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20
FACW species	10	x 2 =	20
FAC species	5	x 3 =	15
FACU species	25	x 4 =	100
UPL species	25	x 5 =	125
Column Totals:	85 (A)		280 (B)

Prevalence Index = B/A = 3.3

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

Vegetation consists mostly of weedy herbaceous species within a debris basin adjacent to Big Tujunga Canyon Road.

SOIL

Sampling Point: 9

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
0-20	10 YR 4/3	100					SAND	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

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

Water Table Present? Yes ✓ No _____ Depth (inches): 8

Saturation Present? (includes capillary fringe) Yes ✓ No _____ Depth (inches): 4

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Maple Canyon Sediment Placement Site City/County: unincorported LA County Sampling Date: 9/28/11

Applicant/Owner: Los Angeles County Department of Public Works/U.S. Forest Service State: CA Sampling Point: 10

Investigator(s): Gary Medeiros, David Hughes Section, Township, Range: 2 North, 12 West

Landform (hillslope, terrace, etc.): Foothills Local relief (concave, convex, none): _____ Slope (%): 10

Subregion (LRR): Mediterranean California Lat: 34.28250 Long: 118.18048 Datum: NAD 83

Soil Map Unit Name: Olete-Kilburn-Etsel families complex, 50 to 80 percent slopes NWI classification: _____

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Salsola tragus	60	Y	UPL
2. Brassica nigra	40	Y	UPL
3. Ambrosia acanthicarpa	30	Y	UPL
4.			
5.			
6.			
7.			
8.			
	130	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 20 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species 130	x 5 = 650
Column Totals: 130 (A)	650 (B)

Prevalence Index = B/A = 5

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

SOIL

Sampling Point: 10

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
0-6	10 YR 4/2	100					SAND	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: hard pan

Depth (inches): 6

Hydric Soil Present? Yes ____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

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

Water Table Present? Yes ____ No ✓ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No ✓ Depth (inches): ____

Wetland Hydrology Present? Yes ✓ No ____

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

Remarks:

sample point is at the upper portion of sediment placement site where two ephemeral drainages come together before a 72" corrugated pipe collects water that runs underground through the site. Sediment has collected here as this area acts as a debris basin.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Maple Canyon Sediment Placement Site City/County: unincorported LA County Sampling Date: 9/28/11

Applicant/Owner: Los Angeles County Department of Public Works/U.S. Forest Service State: CA Sampling Point: 11

Investigator(s): Gary Medeiros, David Hughes Section, Township, Range: 2 North, 12 West

Landform (hillslope, terrace, etc.): Foothills Local relief (concave, convex, none): _____ Slope (%): 30

Subregion (LRR): Mediterranean California Lat: 34.28327 Long: 118.18240 Datum: NAD 83

Soil Map Unit Name: Rock outcrop-Chilao family-Haploxerolls, warm association, 15 to 120 p NWI classification: _____

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Brassica nigra	80	Y	UPL
2. Ambrosia acanthicarpa	20	N	UPL
3. Bromus madritensis ssp. rubens	10	N	UPL
4. Melilotus alba	5	N	FACU
5.			
6.			
7.			
8.			
	115	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species 5	x 4 =	20
UPL species 110	x 5 =	550
Column Totals: 115 (A)		570 (B)

Prevalence Index = B/A = 4.9

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

SOIL

Sampling Point: 11

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
0-8	10 YR 2/1	100					SILTY SAND	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: hard pan

Depth (inches): 8

Hydric Soil Present? Yes ____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

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

Water Table Present? Yes ____ No ✓ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No ✓ Depth (inches): ____

Wetland Hydrology Present? Yes ✓ No ____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Maple Canyon Sediment Placement Site City/County: unincorported LA County Sampling Date: 9/28/11

Applicant/Owner: Los Angeles County Department of Public Works/U.S. Forest Service State: CA Sampling Point: 12

Investigator(s): Gary Medeiros, David Hughes Section, Township, Range: 2 North, 12 West

Landform (hillslope, terrace, etc.): Foothills Local relief (concave, convex, none): _____ Slope (%): 30

Subregion (LRR): Mediterranean California Lat: 34.28443 Long: 118.18302 Datum: NAD 83

Soil Map Unit Name: Rock outcrop-Chilao family-Haploxerolls, warm association, 15 to 120 p NWI classification: _____

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

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

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

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

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

Remarks:

Sample point is within debris basin area. Significant sand and rock has washed down from adjacent steep side canyon.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Brassica nigra	30	Y	UPL
2. Ambrosia acanthicarpa	30	Y	UPL
3. Salsola tragus	10	N	UPL
4.			
5.			
6.			
7.			
8.			
	70	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 40 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species 70	x 5 = 350
Column Totals: 70 (A)	350 (B)

Prevalence Index = B/A = 5

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

ATTACHMENT B

SOIL SURVEY

The soil classifications identified below was obtained from the U.S. Department of Agriculture, Natural Resources Conservation Service[3]. The Official Soil Series Descriptions were obtained from the Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture.

Stukel Series

The Stukel series consists of shallow, well drained soils that formed in slope alluvium derived from pumiceous tuff. These soils are on shoulders of hills and adjacent to rock outcrops. Slopes are 60 to 100 percent. The mean annual precipitation is approximately 27 to 39 inches and the mean annual temperature is approximately 55 to 64 degrees Fahrenheit (°F).

Range in Characteristics:

The soil is shallow to consolidated sediments. Depth is 8 to 18 inches to lithic bedrock.

The A horizon has dry color of 10YR 4/3, 5/2, or 5/3. Moist color is 10YR 3/2 or 3/3. Reaction is slightly acid or neutral. The particle size control section is 10 to 18 percent clay.

Drainage and Permeability:

Stukel soils are classified as somewhat excessively drained.

Trigo Series

The Trigo series is a loamy, mixed, superactive, nonacid, thermic, shallow Typic Xerorthent. It consists of shallow, well drained soils formed in consolidated alluvium from mixed sources on dissected terraces. Slopes are 2 to 60 percent. The mean annual precipitation is approximately 10 inches and the mean annual temperature is approximately 61 degrees °F.

Range in Characteristics:

The soil is shallow to consolidated sediments. Depth is 6 to 20 inches. The mean annual soil temperature is 59 to 65 °F. The soil is moist for about 100 days when the soil temperature is above 41 °F.

The A horizon is 2.5Y or 10YR 5/2, 5/3, 6/2, 6/3 or 7/2 dry, and 2.5Y or 10YR 3/3, 4/2, 4/3, 4/4 or 5/2 dry. Reaction is slightly acid or neutral. The particle size control section is 8 to 18 percent clay.

The C horizon is 2.5Y or 10YR 5/3, 6/2, 6/3, 6/4 or 7/2. Moist color is 2.5Y or 10YR 4/2, 4/3. 5/2, 5/4 or 6/4. Reaction is slightly acid to slightly alkaline. Some areas have a few lime seams and are slightly effervescent in the lower part.

Drainage and Permeability:

Trigo soils are well drained, have medium to rapid runoff, and have moderately rapid permeability.

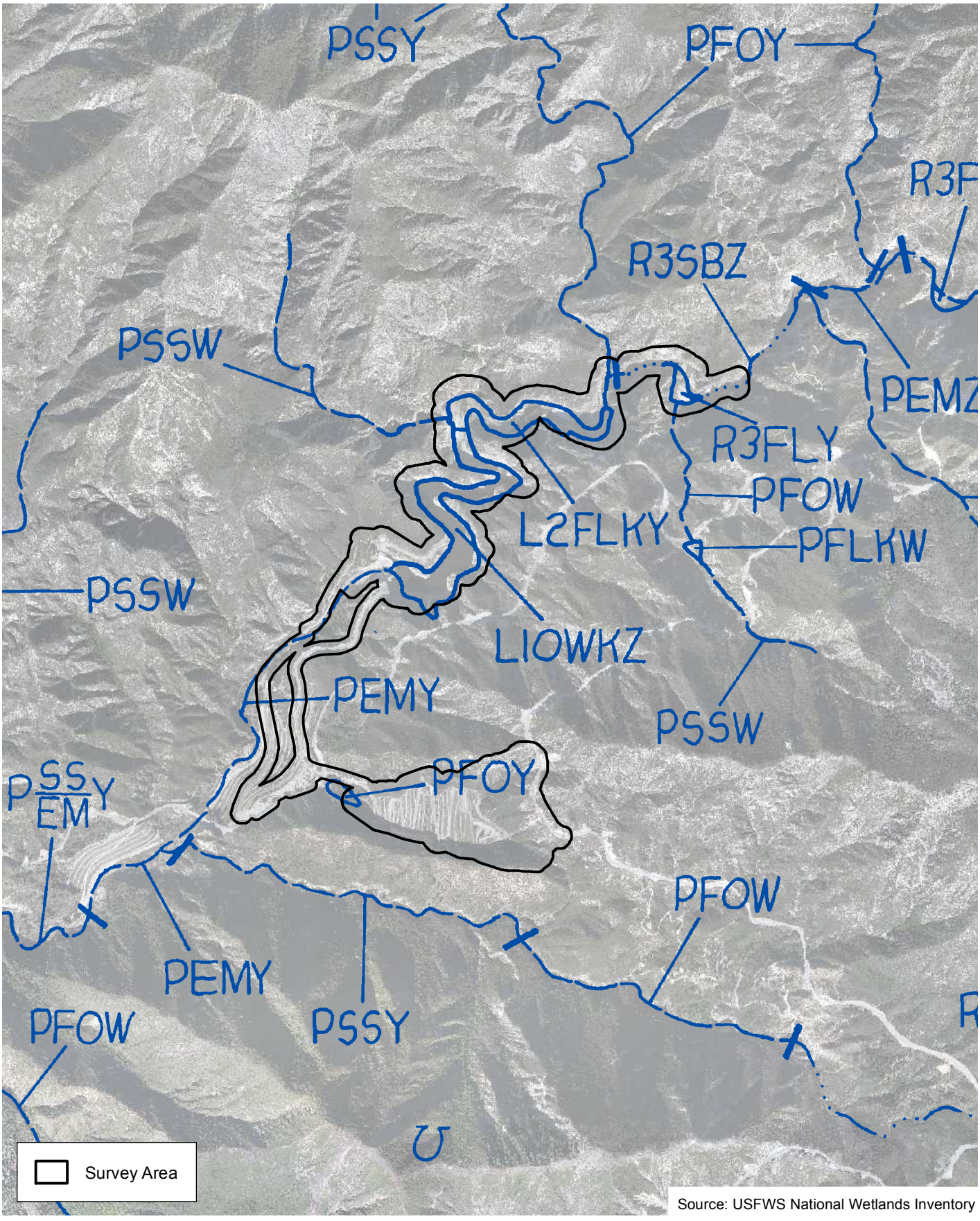
[3] U.S. Department of Agriculture, Natural Resources Conservation Service (USDA NRCS). 2011 (February). Official Soil Series Descriptions (Tujunga). Fort Worth, TX: USDA, NRCS. http://soils.usda.gov/technical/classification/osd/index.html.

Typic Xerorthents

The Typic subgroup of Xerorthents consists of soils that are moderately deep or deep to hard rock, do not have ground water within a depth of 150 cm, and are not partially cemented by silica. These soils have a base saturation of 60 percent or more in some part at a depth of between 25 and 75 cm below the soil surface. Soils that have a shallow lithic contact are excluded from the Typic subgroup, a convention used throughout this taxonomy. Soils that are partially cemented by silica are excluded because such soils are thought to represent intergrades to Durixerepts. Commonly, Typic Xerorthents are in a sandy-skeletal family or have a thin ochric epipedon that rests on a densic or paralithic contact with weakly cemented rock or dense sediments. Some of these soils have been cultivated for a long time or have been reshaped for irrigation and consist of what was the C horizon of other soils, chiefly Xeralfs and Xerolls. Typic Xerorthents are used mostly as forest or grazing land. A few of these soils are used as cropland, and a few are idle.

ATTACHMENT C

NATIONAL WETLANDS INVENTORY



Source: USFWS National Wetlands Inventory

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National Wetland Inventory

Attachment C

Big Tujunga Reservoir Sediment Removal Project

N W E S

2,000 1,000 0 2,000 Feet

BonTerra CONSULTING

(Rev: 1-13-2012 CJS) \PAS\Projects\CoLADPW\J162\Graphics\JD_Report\ExC_wet_inventory.pdf

ATTACHMENT D

SITE PHOTOGRAPHS

Big Tujunga Reservoir, upstream portion looking downstream. October 27, 2011

Big Tujunga Reservoir, reservoir midpoint portion looking upstream. October 27, 2011

Big Tujunga Reservoir, reservoir midpoint portion looking downstream. October 27, 2011

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Site Photographs

Exhibit D-1

Big Tujunga Reservoir Sediment Removal Project

BonTerra CONSULTING

Plunge pool immediately downstream of Big Tujunga Dam. September 28, 2011

Big Tujunga Wash, looking downstream from plunge pool. September 28, 2011

Big Tujunga Wash, looking upstream from culvert bridge. September 28, 2011

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Site Photographs

Exhibit D-2

Big Tujunga Reservoir Sediment Removal Project

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Big Tujunga Wash, looking downstream from culvert bridge. September 28, 2011

Big Tujunga Wash, looking downstream from soil pit 7. September 28, 2011

Big Tujunga Wash, looking upstream from downstream end of survey area. September 28, 2011

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Site Photographs

Exhibit D-3

Big Tujunga Reservoir Sediment Removal Project

BonTerra CONSULTING

Unnamed drainge within Maple Canyon SPS, facing upstream from soil pit 10. September 28, 2011

Unnamed drainge within Maple Canyon SPS, facing upstream from soil pit 11. September 28, 2011

Unnamed drainge within Maple Canyon SPS, facing upstream from soil pit 12. September 28, 2011

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Site Photographs

Exhibit D-4

Big Tujunga Reservoir Sediment Removal Project

BonTerra CONSULTING