David Magney Environmental Consulting

MOJAVE RIVER WATERSHED MITIGATION BANK: DELINEATION OF JURISDICTIONAL WETLANDS

Prepared for:
U.S. ARMY CORPS OF ENGINEERS, REGULATORY DIVISION

On Behalf of:
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Mission Statement:
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DMEC

Mojave River Watershed Mitigation Bank Delineation of Jurisdictional Wetlands

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Cover Photo: View of southern portion of East Cronese Lake with the Soda Mountains in the background. The dominant vegetation in the foreground is *Atriplex torreyi* Provisional Shrubland Alliance.

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PROJECT LOCATION

The proposed Mojave River Watershed Mitigation Bank (Bank Site) is located in the Cronese Basin in the Mojave Desert in the central-northern portion of San Bernardino County, California, east of the City of Barstow and west of the community of Baker along Interstate 15 (I-15). (Cronese is also spelled Cronise on some maps.) The Bank Site is located north of the I-15 and east of the Cronese Mountains (Figure 1, General Mitigation Bank Site Location). The Bank Site is situated within the Cave Mountain and West Cronese Lake California Quadrangles (7.5-minute USGS maps) at the approximate geographic coordinates of 35.111°N latitude and 116.292°W longitude, NAD83. The Bank Site is at an elevation of approximately 1,075 feet to approximately 1,090 feet above mean sea level, from north to south. Wetlands onsite range in elevation from 1,075 to 1,085 feet above mean sea level.

The Bank Site is comprised of six (6) total parcels (Assessor's Parcel Numbers [APN] 054-3-161-44 054-3-161-46, 054-3-171-54, 054-3-201-34, 054-3-20141 and 054-3-20142). The sizes and reference names used for the purpose of discussion are provided in Table 1, Mitigation Bank Parcels, and illustrated in Figure 2, Mojave River Watershed Bank Parcels with 2010 Aerial Imagery. The combined parcels and reference names are illustrated in Figure 3, USGS 7.5-minute Quadrangles.

Table 1. Mitigation Bank Parcels

Assessor's Parcel Number	Name	Size (acres)[1]
054-3-161-44 (2 parts)	Southwestern	237.161
054-3-161-46 (2 parts)	Southwestern	59.666[2]
054-3-171-54	Southeastern	39.341
054-3-201-34	Eastern	20.051
054-3-201-41	Northern	40.087
054-3-201-42	Northern	39.993
Total	**Bank Site**	436.298

The largest contiguous piece is herein referred to as the Southwestern parcel, and includes two parcels (APNs 054-3-161-44 & 054-3-161-46) bisected by the Los Angeles Department of Water and Power (LADWP) transmission line corridor. The LADWP corridor contains two parallel electric transmission lines. The Southwestern parcel contains 16.182 acres of a permittee responsible mitigation (PRM) project that, although compatible with the proposed mitigation bank,

[1] Parcel sizes according to measurements calculated from the San Bernardino County Parcel database using ArcView 3.3 and ArcMap 10.2.

[2] 59.666 acres is the adjusted acreage to be included in the proposed mitigation bank. 75.848 acres is the total size of the parcel. The PRM area is 16.182 acres (excluded from the proposed mitigation bank).

is excluded, leaving 436.298 acres available for the Bank, as listed in Table 1 above. Two parcels (APNs 054-3-171-54 & 054-3-171-34) on the southeastern and eastern areas of East Cronese Lake measuring approximately 40 and 20 acres shall be referred to as the Southeastern and Eastern parcels, respectively. The northernmost two 40-acre parcels (APNs 054-3-201-41 & 054-3-201-42) are referred to as the Northern parcels. Hereafter, the six separate parcels will collectively be referred to as the "Bank Site". The six legal parcels are illustrated with their associated APNs and reference names in Figure 2.

The Bank Site is located on and around East Cronese Lake, within the Cronese Basin. East Cronese Lake functions as the terminus of the Mojave River[3]. Thus, much of the Cronese Basin is comprised of the Mojave River Delta and landforms associated with the low-gradient river terminus. This situation appears to be a somewhat unique and unstudied interaction between a large riverine system and an isolated lacustrine system in a very arid environment. Flooding of the Bank Site is visible in historic satellite imagery (Landsat, USGS 2014) as illustrated as follows: Figure 4, 2005 Landsat Imagery of the Bank Site; Figure 5, 1993 Landsat Imagery of the Bank Site; and Figure 6, 1984 Landsat Imagery of the Bank Site.

The wetland delineation was conducted along the shores of East Cronese Lake, the Mojave River to just above (south of) I-15, and tributary washes with clear and unclear connections to East Cronese Lake, which covers each of the Bank Site parcels and areas beyond but within East Cronese Valley. The surface extent of jurisdictional waters/wetlands[4] on the Bank Site is approximately **419.7 acres** (435.9 acres total minus the 16.182 acres of PRM excluded), which is comprised of playa lake-bottom, playa shoreline, ephemeral streambed, and floodplain. Approximately 838 linear feet of ephemeral washes exist in the northwest corner, southeast corner, and eastern edge of the Southwestern parcel, and to the east of the Northern and Eastern parcels (beyond the Bank Site). There are about 30,000 linear feet of washes in the Cronese Basin; however, not all of them have been mapped, only the major ones flowing into East Cronese Lake. The jurisdictional areas account for approximately 95% of the Bank Site, with only the northwest and southwest corners of the Southwestern parcel, a small area in the northeastern corner of the Northern parcel, and a small portion of the southeastern corner of the Southeastern parcel occupied by upland habitats. East Cronese Lake is a major distributary basin to the Mojave River.

PROJECT BACKGROUND

Richard and Laurie Prange Lyons (Lyons), are applying to the U.S. Army Corps of Engineers (Corps) and the California Department of Fish and Wildlife (CDFW) to establish a lacustrine and riverine/palustrine (riparian) wetland restoration and preservation mitigation bank for use by public and private entities to satisfy Corps, CDFW, and Regional Water Quality Control Board mitigation requirements. David Magney Environmental Consulting (DMEC) was contracted by Lyons to conduct the wetland delineation to provide a baseline of jurisdictional wetland area and types present on the Lyons properties making up the Bank Site. The delineation is also intended to identify waters of the State of California.

DMEC has also conducted a biological resources survey of the Bank Site (DMEC 2014a), which found a variety of plant communities and plant species, including several special-status species, as listed by the California Native Plant Society (CNPS).

[3] Soda Lake is a secondary terminus of the Mojave River further east.
[4] The total area of jurisdictional wetlands will be less than the 414.42 acres of Waters of the U.S., and provided later in the report.

Figure 1. Mojave River Watershed Mitigation Bank General Location

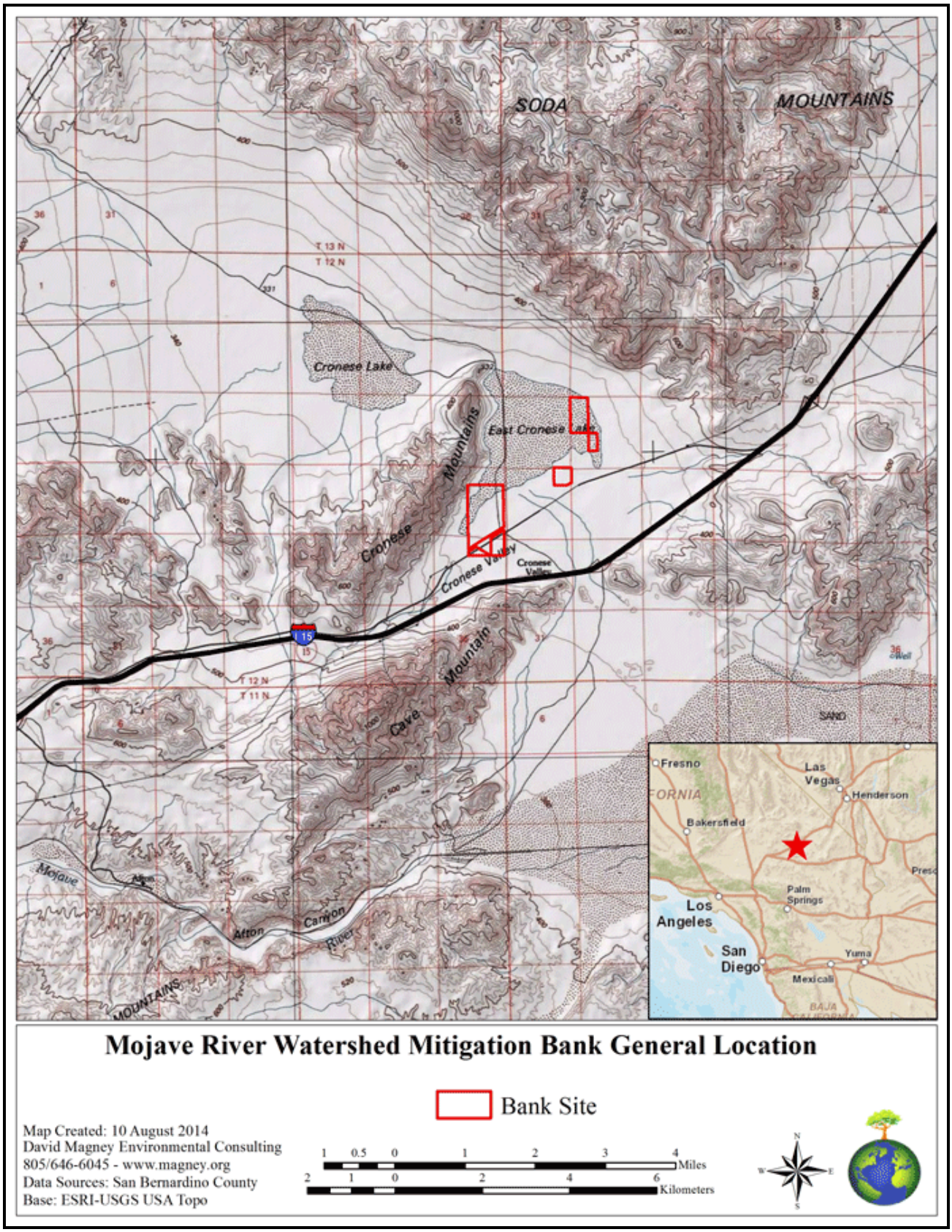


Figure 2. Mojave River Watershed Bank Parcels with 2010 Aerial Imagery

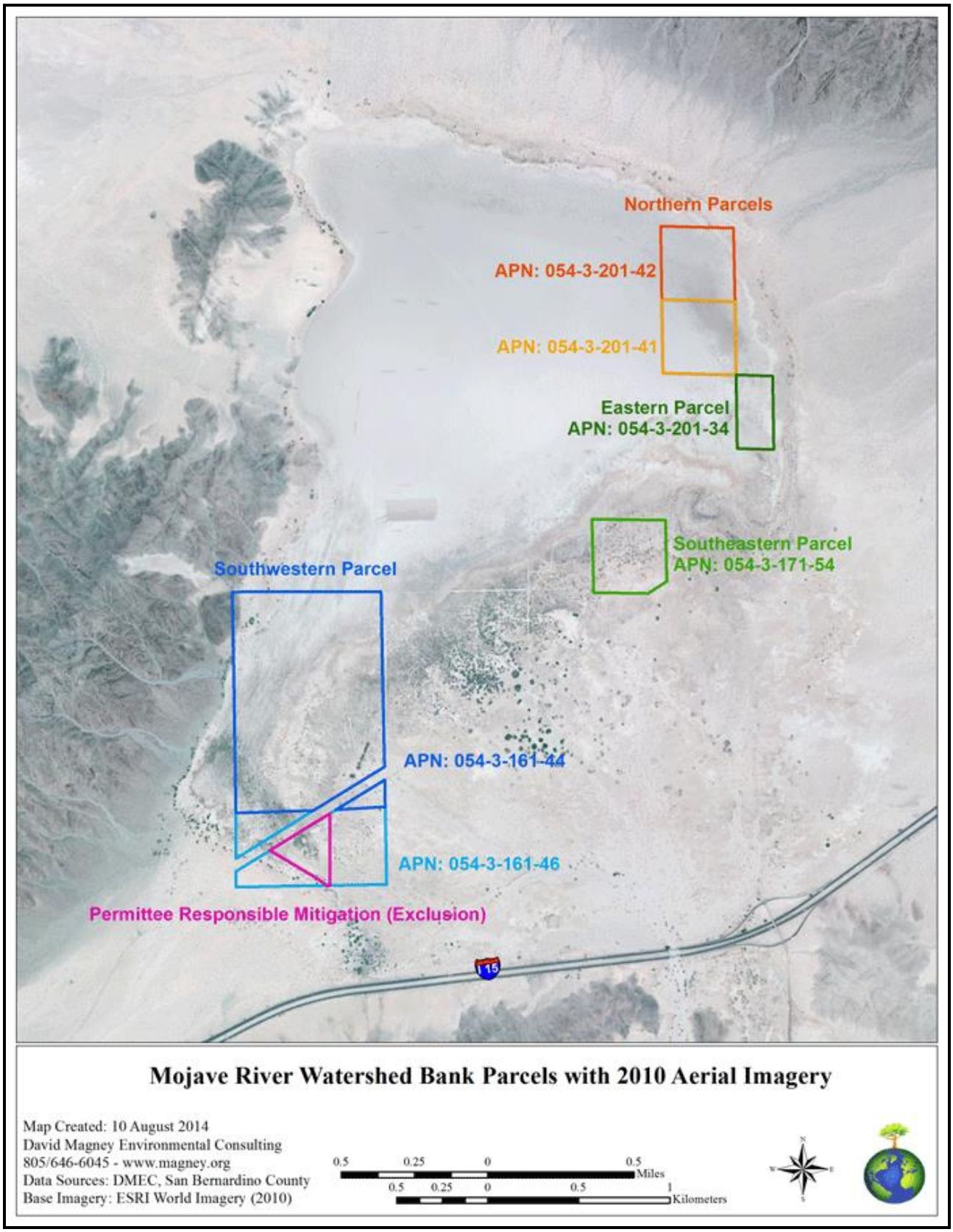


Figure 3. USGS 7.5-minute Quadrangles with Bank Site

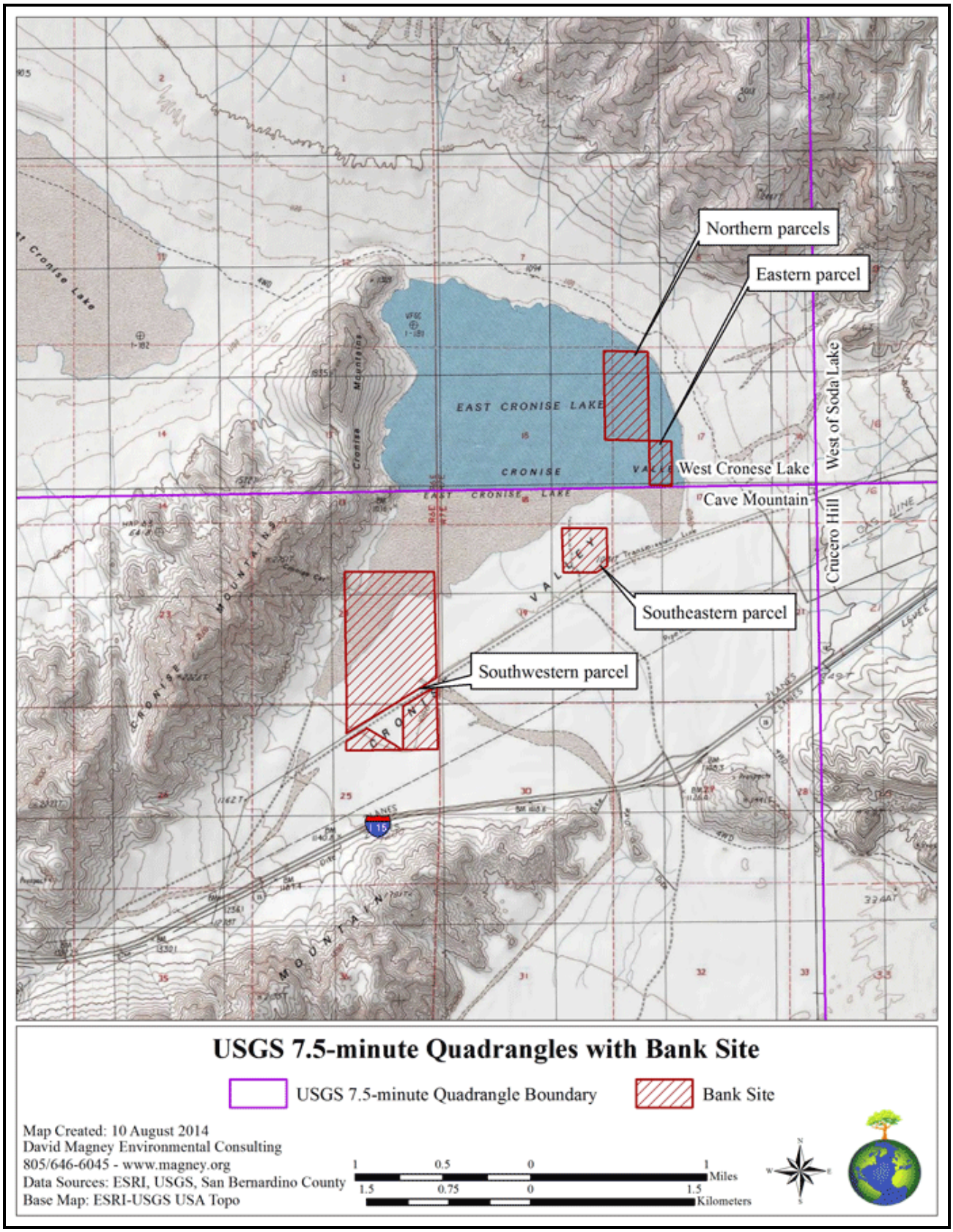


Figure 4. 2005 Landsat Imagery of the Bank Site

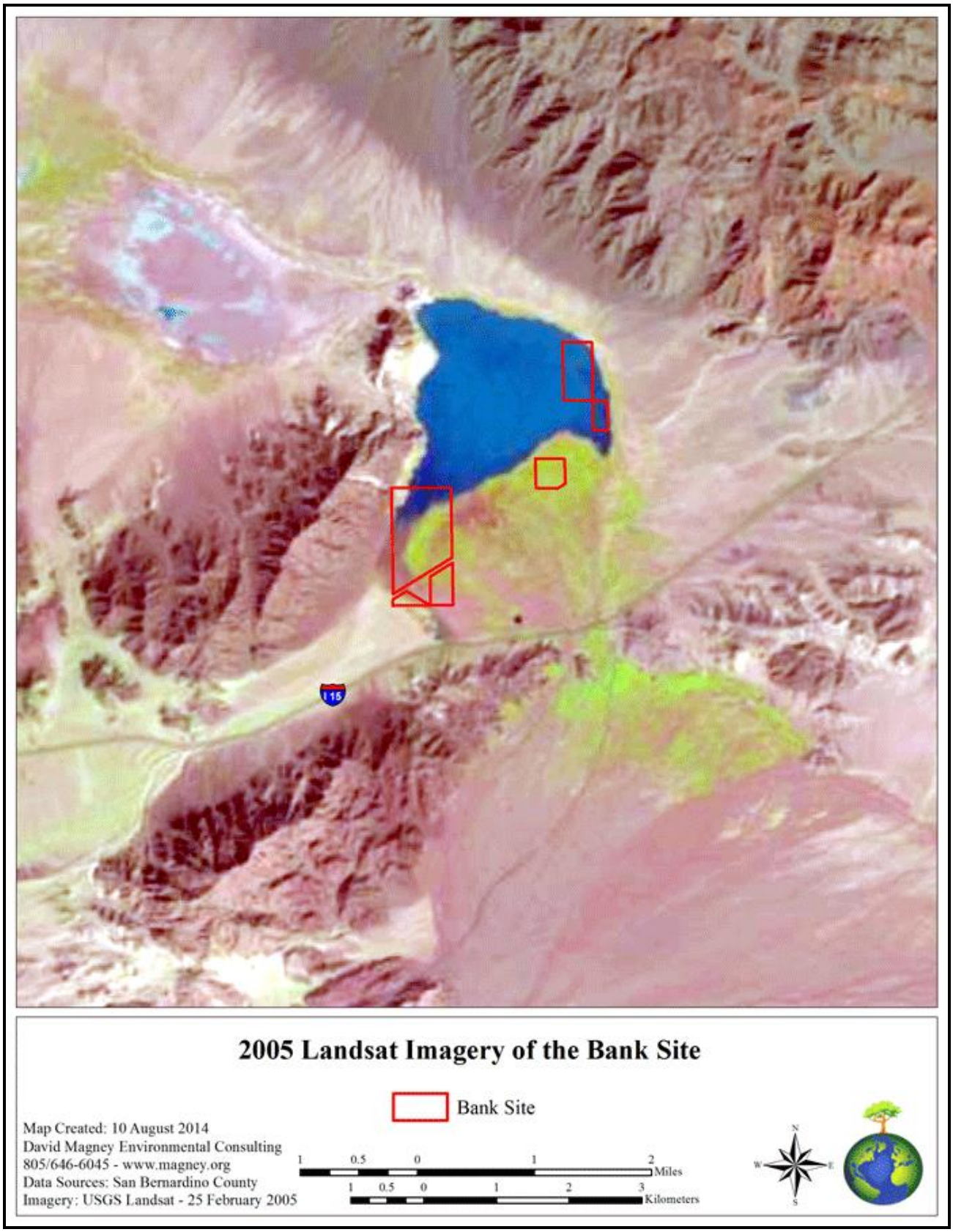
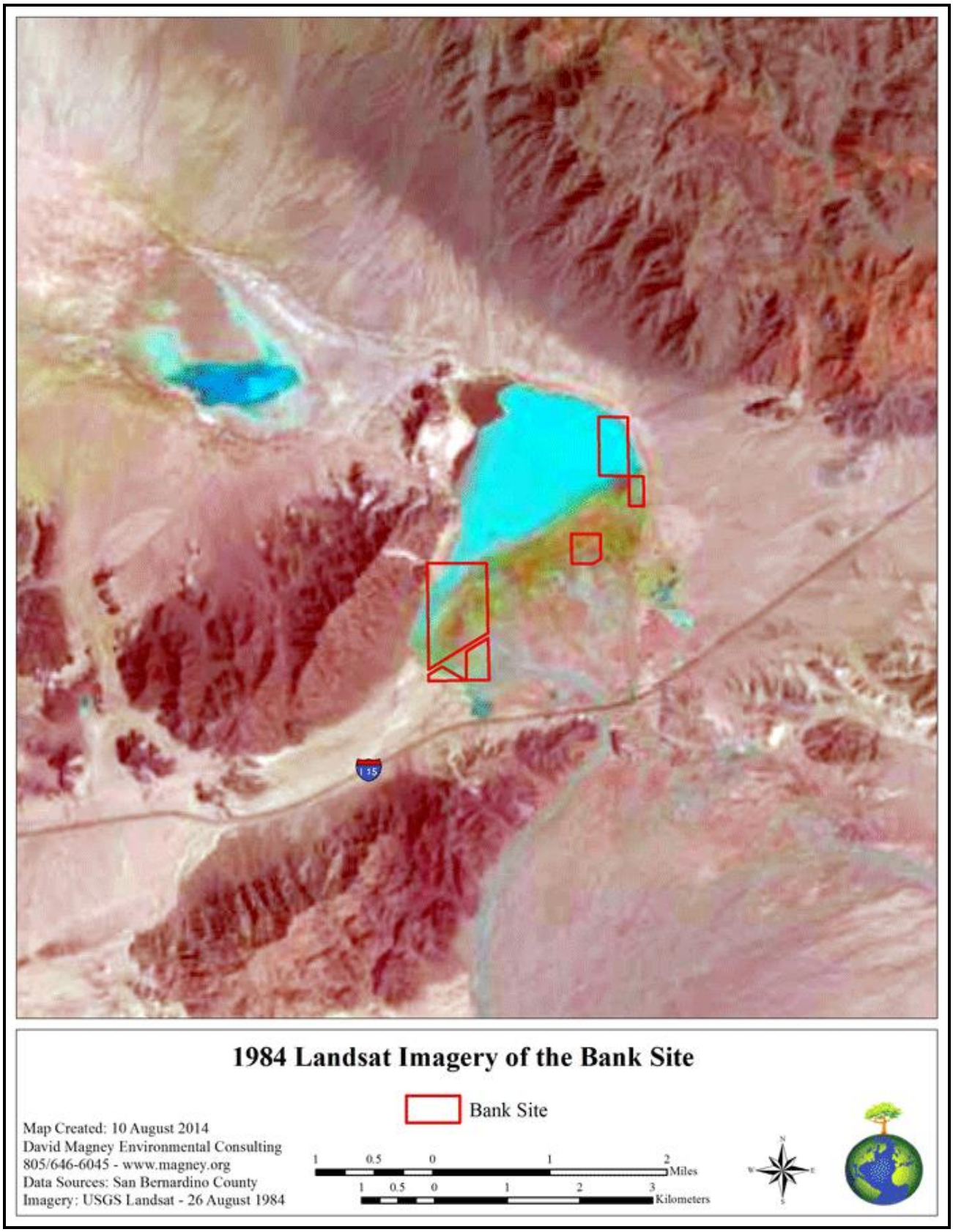


Figure 5. 1993 Landsat Imagery of the Bank Site

Figure 6. 1984 Landsat Imagery of the Bank Site



SECTION II. METHODOLOGY

This section describes the methods used by DMEC to delineate waters of the U.S. (and the State of California), including wetlands, at the Bank Site. This section also includes a discussion of the general delineation approach, lists the references cited and followed for classification of the existing habitats observed onsite, and provides a detailed analysis of the wetland delineation criteria assessed by DMEC biologists.

GENERAL APPROACH

DMEC followed Corps wetland delineation methods (described in detail below) to determine the area of the Bank Site that falls under the Corps' definition of wetland habitats. The Bank Site was surveyed for wetlands and waters of the U.S. to determine the location, extent, and type of wetlands present. The Bank Site landscape was evaluated to generally classify the various plant communities that are located in the Cronese Basin, as well as those plant communities inhabiting the surrounding upland areas of the site.

Waters of the State are nearly identical to that for the Corps (U.S.); however, the State of California lacks a formal method to determine its area of jurisdiction other than as described in Section 1600 et seq. of the California Fish and Game Code. The Code identifies jurisdictional streams as areas with a clear bed and bank and adjacent riparian vegetation. Waters (wetlands) of the State are quite similar to that for the nation but can be more expansive in some circumstances. Furthermore, all streams and internally drained depressions are jurisdictional with the State while some such areas are not under Corps jurisdiction.

HABITAT CLASSIFICATION

The habitat types of the study area, and the plant communities making up those habitats, were mapped and classified according to California Native Plant Society's *A Manual of California Vegetation* (Sawyer et al. 2009). Specific Alliances and Associations not expressly described in Sawyer et al. (2009) are described here following Sawyer's et al. (2009) classification scheme and protocols. The wetland habitat was cross-referenced with the USFWS *Classification of Wetlands and Deepwater Habitats of North America* (Cowardin et al. 1979).

DELINEATING CORPS-JURISDICTIONAL WETLANDS

All plots of the study area were examined according to the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Arid West Region* (Corps 2008), and following subsequent guidance (Brostoff et al. 2001, Lichvar and Wakeley 2004, Lichvar et al. 2006, Lichvar & Dixon 2007, and Lichvar et al. 2008). According to the *Corps Manual*, identification of wetlands is based on a three-criterion approach involving indicators of hydrophytic vegetation, hydric soil, and wetland hydrology. The Regional Supplement presents wetland indicators, delineation guidance, and other information that is specific to the Arid West Region. Data points (plots) were established in various locations along East Cronese Lake and the Mojave River to examine

vegetation, soils, and hydrology of each selected "site". Current and historical aerial photographs, topographic maps, general site observations, and wetland delineation results were used to define jurisdictional boundaries within the bank site.

Wetland Delineation

David Magney and Evan Lashly performed the delineation of wetland Lacustrine, Riverine, and Palustrine habitats at the Mojave River Watershed Bank Site, around and in East Cronese Lake. These biologists gathered data from forty-seven (47) sample plots, according to the *Corps Manual* (Environmental Laboratory 1987) and the *Arid West Supplement* (Corps 2008). The 47 sample plots were established along eleven (11) transects (A through K, Table 2. Wetland Delineation Transect Characteristics) and five (5) single sample locations (DMEC-1 through DMEC-4, Table 3. Wetland Delineation Single Sample Location Characteristics) across portions of the East Cronese Lake shoreline and portions of the Mojave River Delta near the bank site on 30-31 January, 11-12 March 2014, and 9 July 2014. Six (6) additional sample plots (AMEC-1 through AMEC-6, Table 3) were examined by Scot Chandler of AMEC Environment & Infrastructure Inc. (AMEC) on behalf of the California Department of Transportation (Caltrans) on the eastern portion of the Lyons Southwestern parcel on 20 February and 23 April 2014. One additional plot was sampled during the Corps delineation verification site visit by Mr. Magney and Ms. Veronica Li, Corps Project Manager, on 28 October 2014. Subsequent field observations of desert washes entering East Cronese Lake on its east side were made by Mr. Magney and Jared Logan on 6 January 2015.

Corps jurisdictional wetlands must possess one or more positive indicators for each of the three wetland criteria, including: (1) indicator(s) that the plot area is dominated by hydrophytic vegetation; (2) indicator(s) that wetland hydrology is present; and (3) indicator(s) that hydric soil conditions are present. Alterations to these specific requirements can be made in certain cases involving difficult sites and/or problematic or disturbed indicators. The transects and data points were surveyed to gather wetland data for these parameters and were recorded on field data forms for routine wetland determinations, which are included as Appendix A, Completed Wetland Determination Field Data Forms (Arid West Region). The suggested boundaries of waters of the U.S. and waters of the state are generally illustrated on Figure 7, Cronese Basin – Jurisdictional Waters.

Topography is considered in wetland boundary determination when diagnostics exist as hydrologic confinements. Total areas of wetland habitats were calculated using delineated lines, points, and polygons using Esri ArcView 3.3 and ArcGIS 10.2 software and onsite measurements. Delineation data points were collected using a Garmin eTrex Vista GPS and GPS Map 62stc handheld units.

The wetland delineation plots and transects sampled by DMEC are illustrated in Figure 8 through Figure 15. Note: The scale of the maps precludes depiction of the jurisdictional boundary exactly as compared with the wetland delineation data sheets, such as for plots I3 and I6, which are small inclusions of upland habitat within a large area that is jurisdictional. Wetland habitats were mapped by heads-up digitization (drawn on screen) using ArcMap 10.2 at a scale of approximately 1:2000 using color aerial photographs (2010 Digital Globe natural color aerial photography, 1-foot resolution) as a base layer.

Polygons were drawn to differentiate the distinct land cover and drainage signatures related to patterns observed on the aerial photograph and indicating changes in topography, vegetation cover, or community composition. The Corps jurisdictional boundary was modified in some select areas after the Corps verification visit.

Table 2. Wetland Delineation Transect Characteristics

Transects	Length (feet)	Starting Location	Transect Bearings	Survey Date
A	132	West Bank	East-Northeast	31 January & 28 October 2014
B	161	West Bank	East-Southeast	12 March 2014
C	102	West Bank	East-Northeast	12 March 2014
D	545	West Bank	East-Southeast	12 March 2014
E	109	Southwest Bank	North-Northeast	12 March 2014
F	80	South Bank	North-Northeast	31 January 2014
G	67	South Bank	North-Northwest	12 March 2014
H	318	South Bank	North-Northeast	12 March 2014
I	850	South Bank	North	9 July 2014
J	1,228	Central Floodplain	North-Northwest	9 July 2014
K	497	Eastern Playa Surface	East	9 July 2014

Table 3. Wetland Delineation Single Sample Location Characteristics

Sample	General Location	Survey Date
DMEC-1	Playa, Northeast Parcel Corner	12 March 2014
DMEC-2	Playa, East Parcel Boundary	31 January 2014
DMEC-3	Playa, Southeast Parcel Corner	12 March 2014
DMEC-4	Playa, West Parcel Boundary	12 March 2014
DMEC-5	Swale, South of Parcel	11 March 2014
AMEC-1	Playa, East Parcel Boundary	20 February 2014
AMEC-2	Playa, East Parcel Boundary	20 February 2014
AMEC-3	Playa, East Parcel Boundary	20 February 2014
AMEC-4	Mojave River Channel	23 April 2014
AMEC-5	Mojave River Channel	23 April 2014
AMEC-6	Mojave River Channel	23 April 2014

Left: Plot A2, soil test excavations

Right: Transect B conditions

Left: Plot C2, looking west toward uplands

Right: Plot C3, looking west toward C2 and uplands

Left: Plot D1, looking east along transect *Right: Plot E3 looking north towards playa surface*

Left: View upstream of ephemeral desert wash that flows westward of the Soda Mountains into East Cronese Lake, with a clearly defined bed and bank to the edge of the playa lake. Right: View eastward and upstream of the bank of an ephemeral desert wash near the edge of East Cronese Lake exhibiting a thick layer of organic matter as evidence of past inundation and organic matter accumulation on the eastern shore of East Cronese Lake.

Figure 7. Jurisdictional Boundary Determination

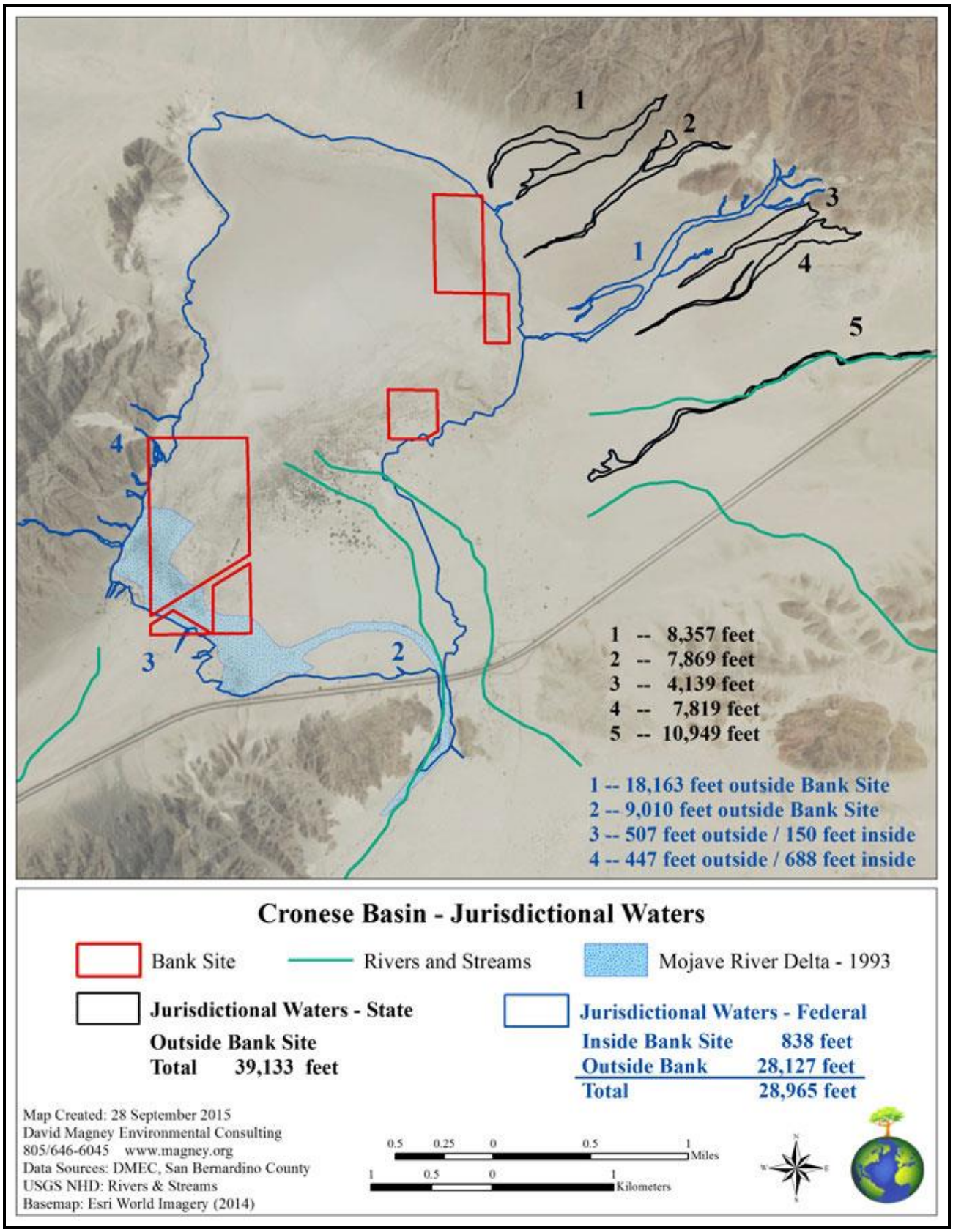


Figure 8. Wetland Delineation Sample Plots and Transects Key

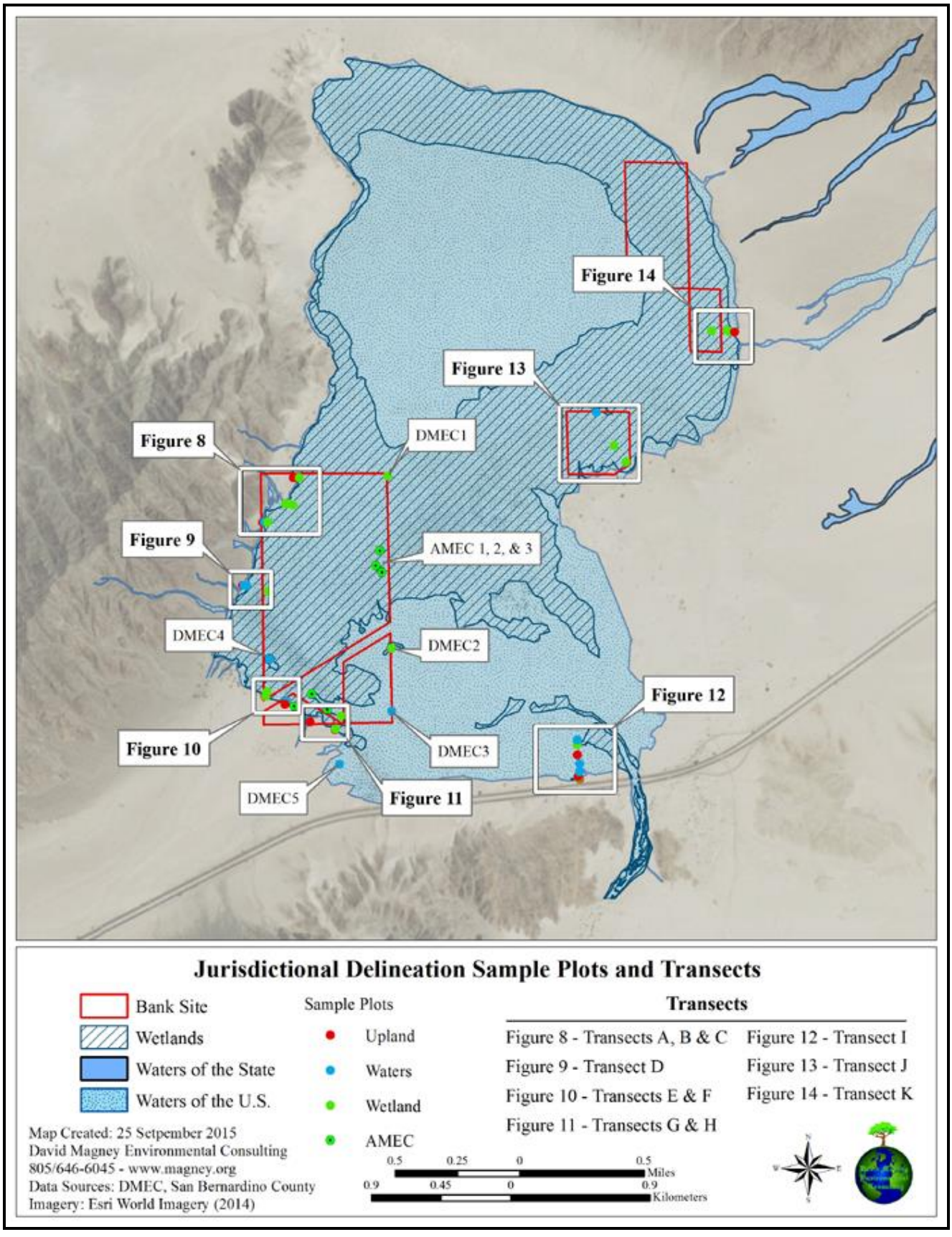


Figure 9. Wetland Delineation Transects A, B, and C

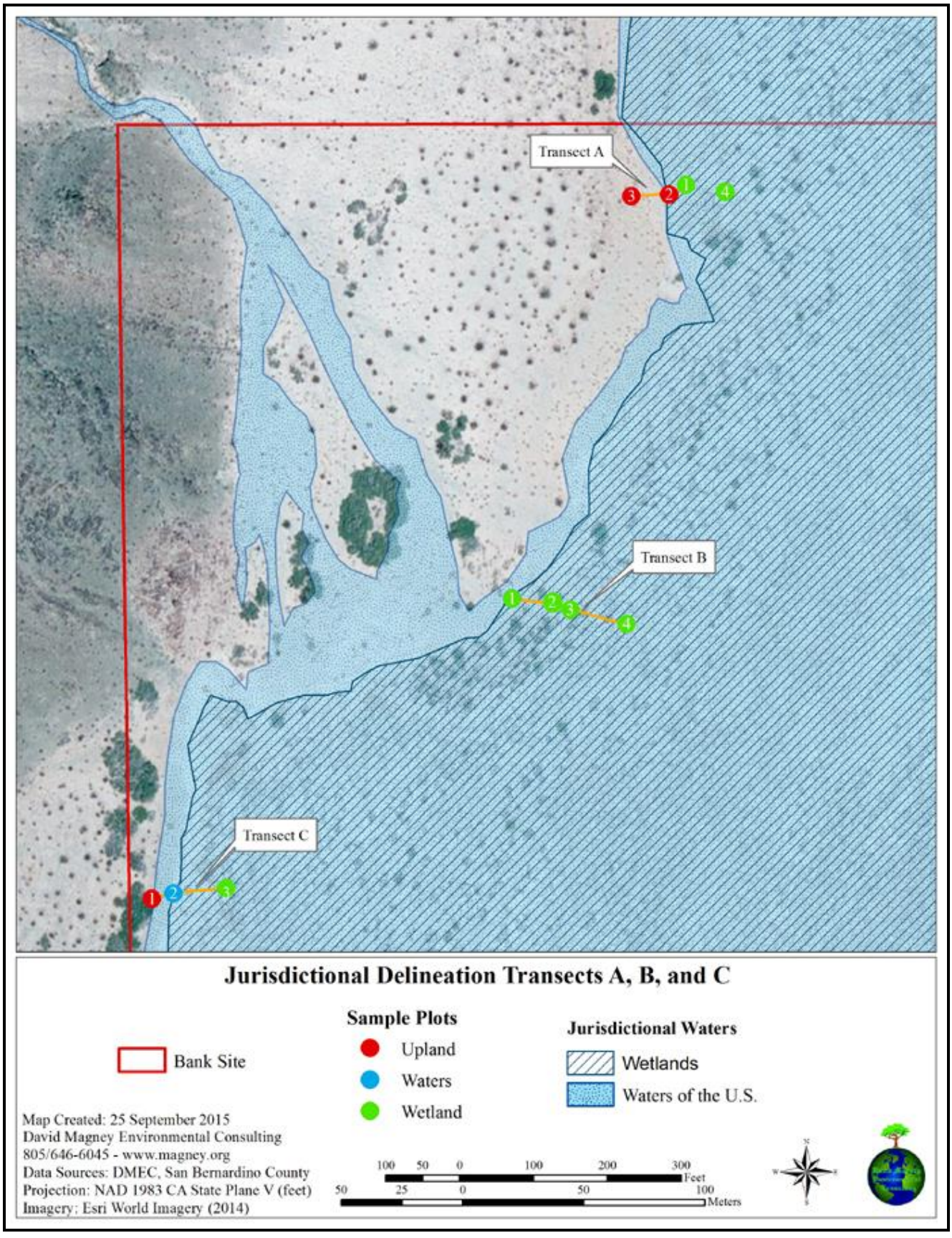


Figure 10. Wetland Delineation Transect D

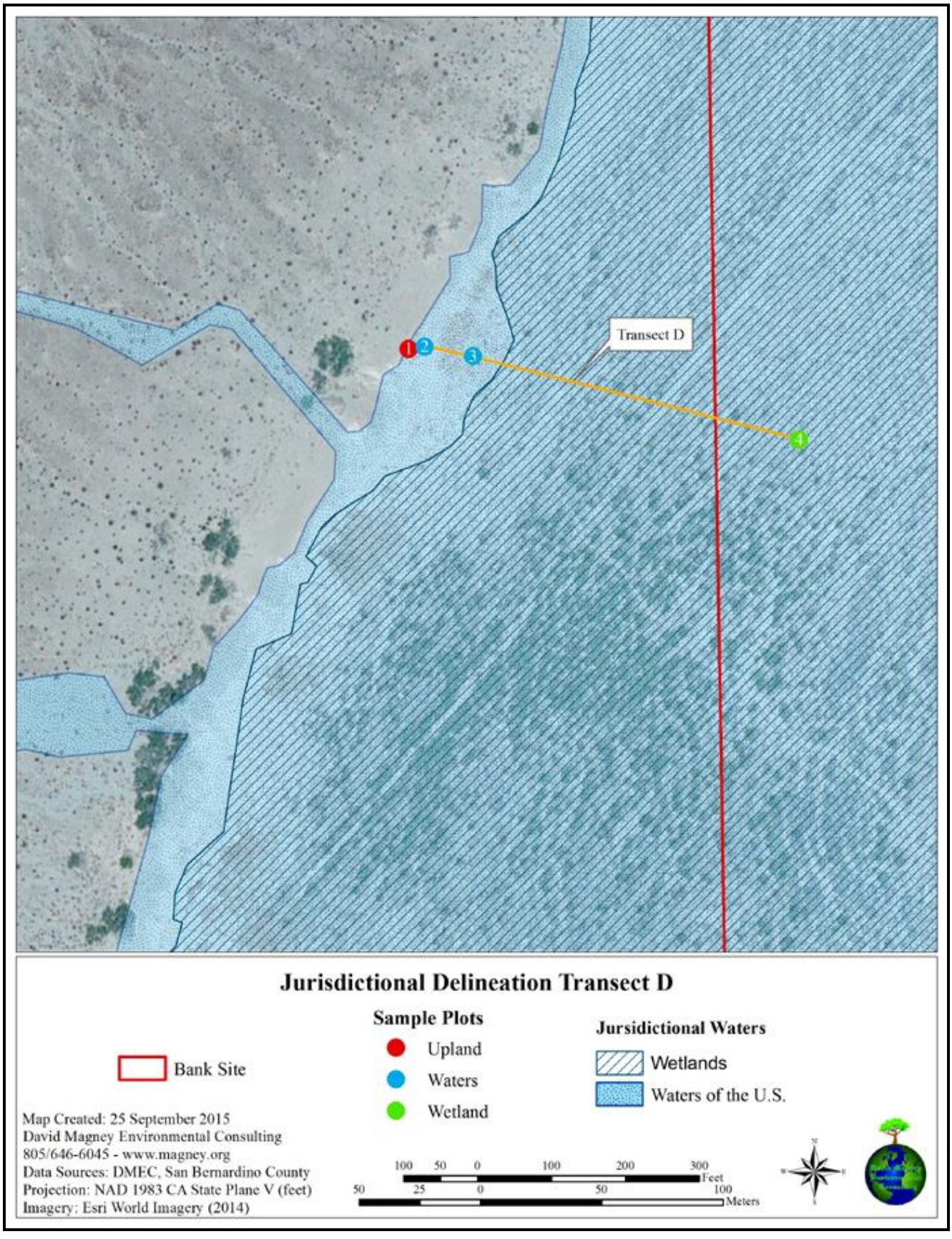


Figure 11. Wetland Delineation Transects E and F

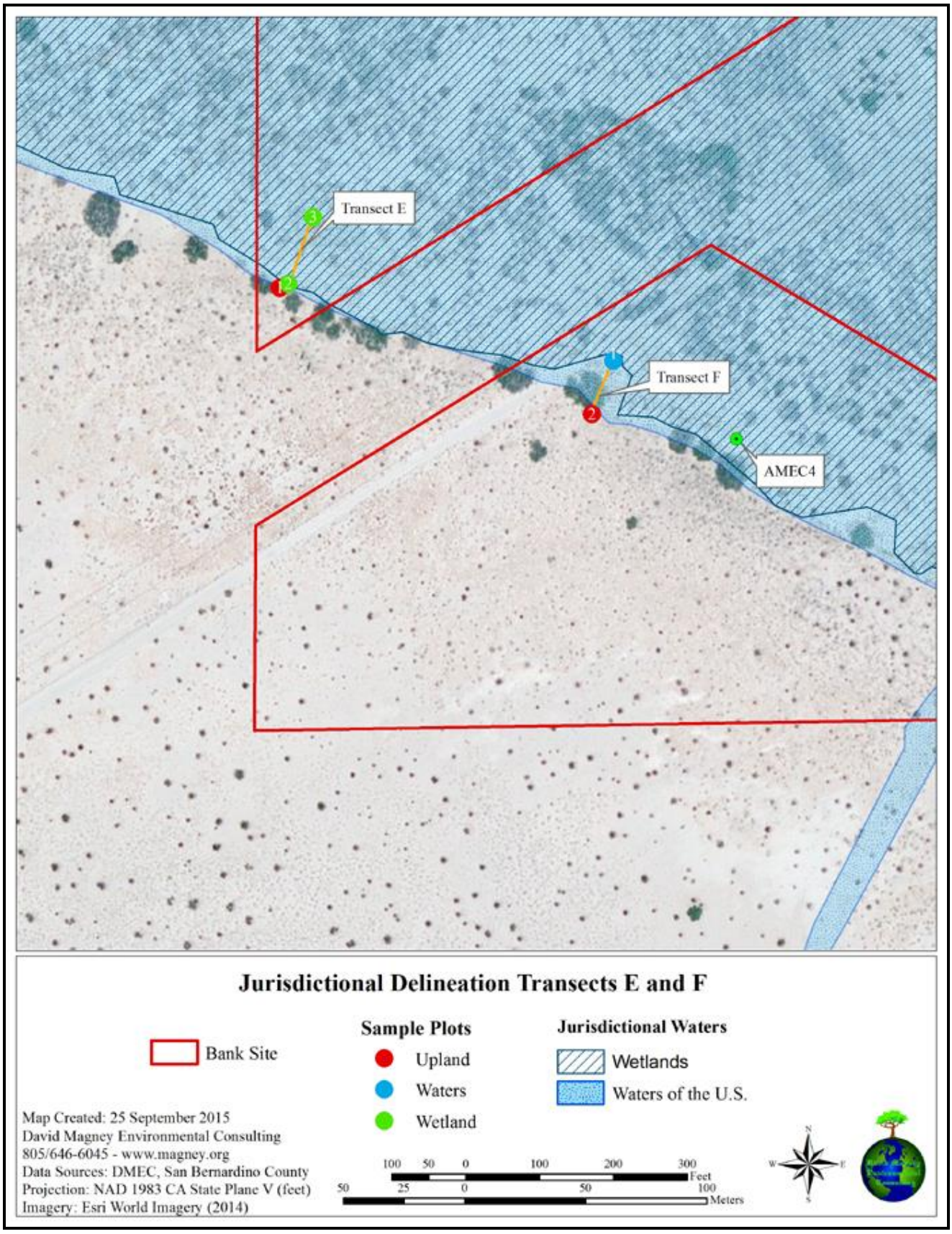


Figure 12. Wetland Delineation Transects G and H

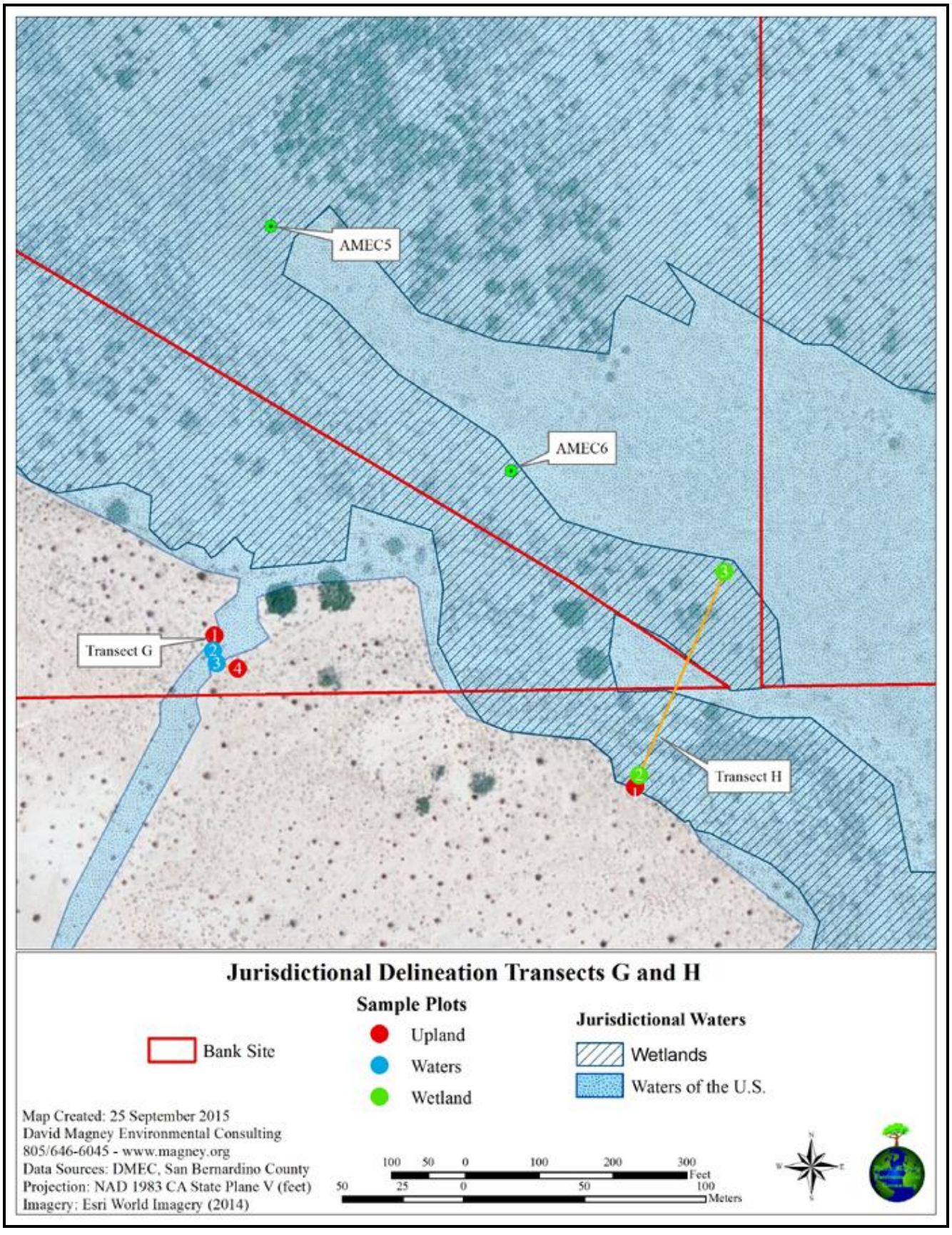


Figure 13. Wetland Delineation Transect I

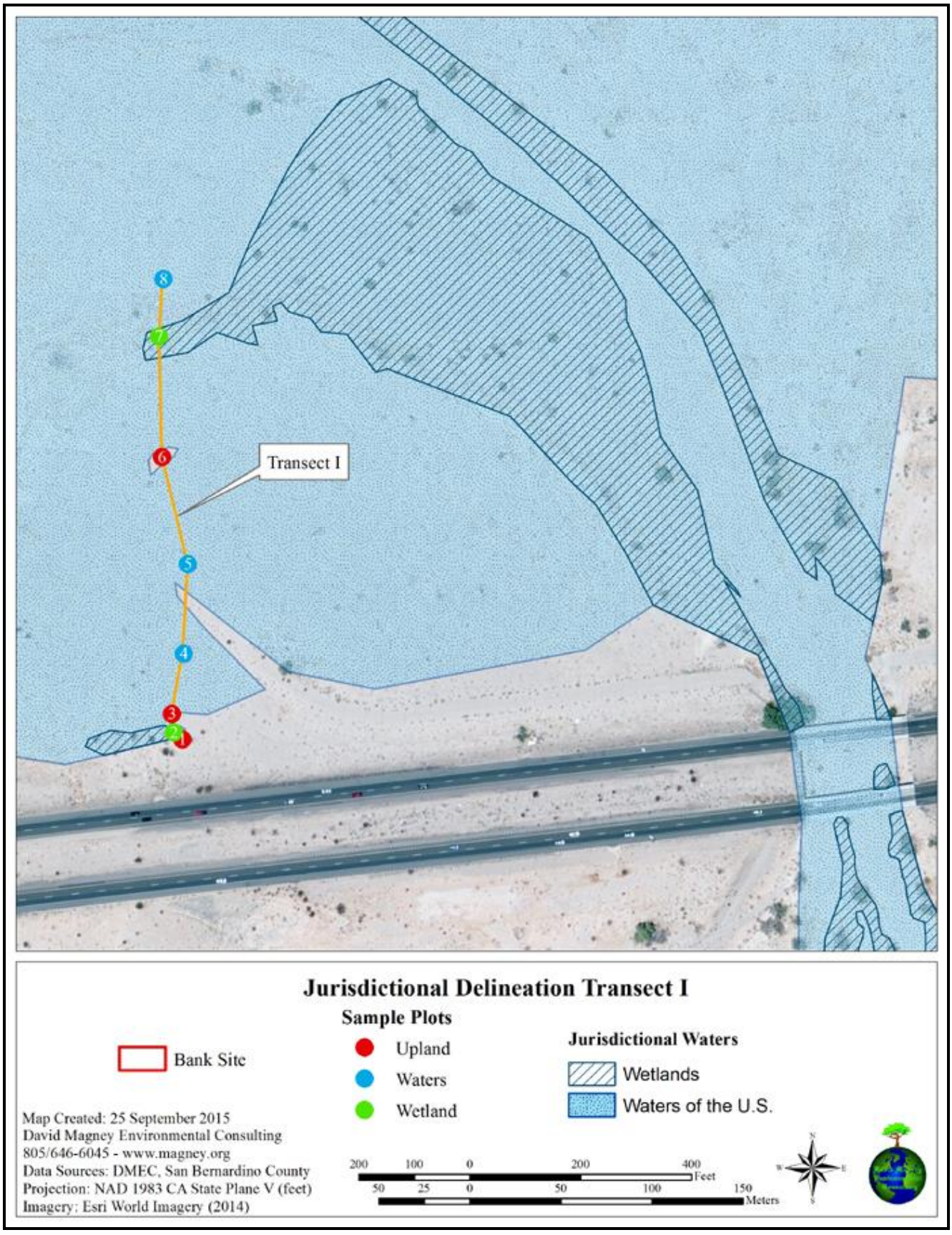


Figure 14. Wetland Delineation Transect J

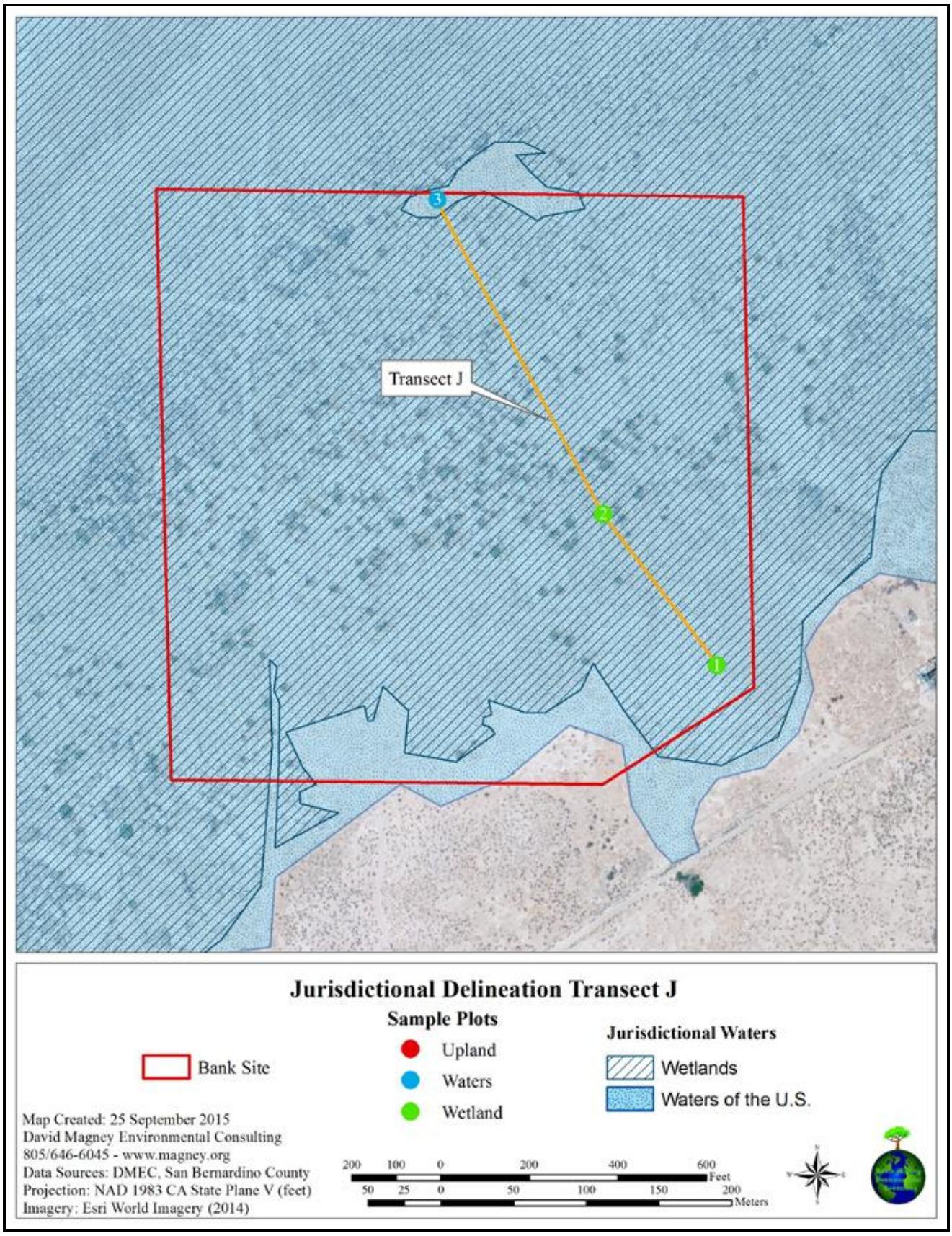
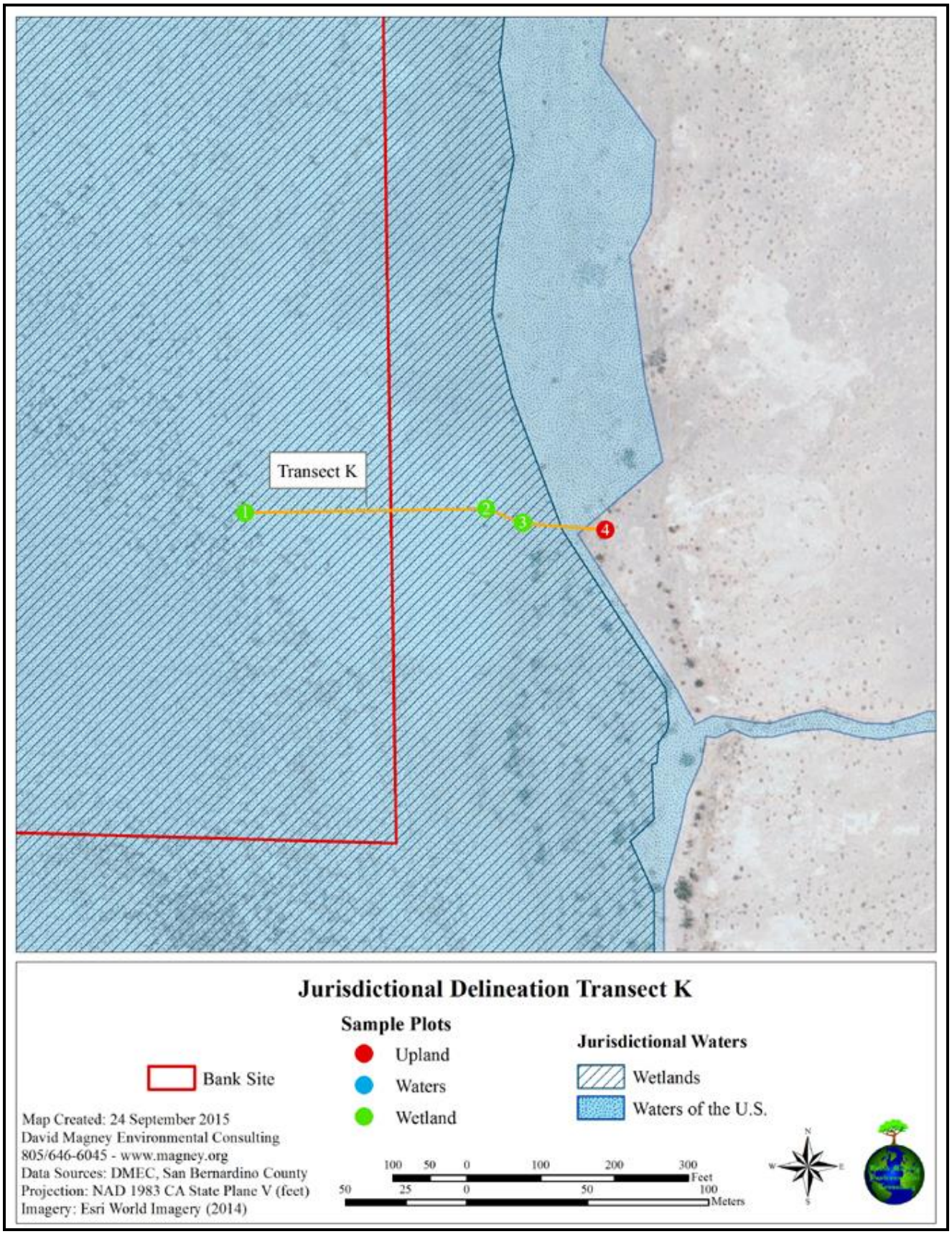


Figure 15. Wetland Delineation Transect K



Wetland Criteria

The Corps, under Section 404 of the Clean Water Act, defines a wetland as possessing the following three general diagnostic environmental characteristics during the growing season: (1) hydrophytic vegetation, (2) wetland hydrology, and (3) hydric soils. The Corps supplemental guidance for the Arid West region (2008) allows certain exceptions to be made in difficult situations and where these characteristics are found to be problematic or disturbed. These wetland criteria are discussed in detail below.

Hydrophytic Vegetation

Under normal circumstances, one of the three criteria necessary for wetland consideration is that the vegetation must be dominated by hydrophytic plant species. Hydrophytic vegetation is defined as the sum total of macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present (or plants typically adapted to growing in areas possessing hydrologic conditions and saturated soils). Emphasis is placed on the assemblage of plant species that exert a controlling influence on the character of the plant community, rather than on indicator species. Vegetation is considered to be hydrophytic when more than 50 percent of the dominant plant species of all vegetative strata (or those species making up at least 20 percent of relative cover) have a Wetland Indicator Status (WIS) of Facultative (FAC), Facultative Wetland (FACW), or Obligate Wetland (OBL) according to the *National List of Wetland Plants* (Lichvar et al. 2014). Lichvar et al. (2014) defines FAC species as equally likely to occur in wetlands or non-wetlands (34-66% probability), FACW species as usually found in wetlands (67-99% probability), and OBL species as occurring almost always in wetlands (>99% probability).

All plant species observed at each soil plot were recorded on the field data forms, and the percent absolute cover and the WIS of each species was indicated. The absolute cover was converted to relative cover to determine which species make up at least 20 percent of the plant community. More than 50 percent of the dominant plant species (those assigned a 20 percent relative cover or more) at each soil plot had to possess a WIS of FAC, FACW, or OBL in order to determine that a plot is dominated by hydrophytic vegetation in the field.

Note: While the National List of Wetland Plants provides generally a good guide for determining presence of hydrophytic vegetation, the creation of a national and statewide/regional lists is problematic since not all species have been fully assessed or quantitatively measured in the field as to their occurrence, or not, in wetland conditions. This is especially true for California and the Arid Southwest where there are over 7,000 vascular plant taxa, most of which have not been studied or sampled. Many species of plants often found in wetland situations lack a WIS and many of the plants with an assigned indicator status have been inaccurately assigned or the assignment lacks field measurements to support the assignment. There have been no publications based on actual field measurements determining the probability of any of the plants listed in Lichvar et al. (2014) or its predecessors (Reed 1988, 1996); therefore, professional judgment must be used in some instances when field observations conflict with a rigid adherence to the Lichvar et al. (2014) probability of occurrence in wetlands assignments.

In particular, DMEC addresses four (4) species encountered on the Bank Site with justification for alteration of an existing WIS, or assignment of an Wetland Indicator Status where lacking. These species are individually addressed below under Problematic Situations, and include: *Atriplex*

canescens, Chilopsis linearis var. *arcuata*, *Prosopis glandulosa* ssp. *torreyana, Petalonyx thurberi*, and *Tamarix ramosissima.* Several annual species were routinely encountered in several plots in areas dominated by hydrophytic shrubs that lack a WIS as well, including: *Amsinckia tessellata, Brassica tournefortii, Cryptantha angustifolia, Pectocarya recurvata, Salsola tragus, Schismus barbatus*, and *Sisymbrium irio*. Since each of these taxa were found regularly within plot considered jurisdictional wetlands, they should be given a WIS reflective of their probability of occurring within jurisdictional wetlands, not assumed to be U (upland species).

Wetland Hydrology

Wetland hydrology is another required wetland parameter necessary for wetland consideration. Hydrology conditions are met if (1) an area is inundated permanently or periodically, (2) has soil saturated to the surface at some time during the growing season of the prevalent vegetation, and/or (3) the area at least shows evidence of drainage patterns (well-defined bed and banks). Areas with evident characteristics of wetland hydrology are those where the presence of water has an overriding influence on characteristics of vegetation and soils due to anaerobic and reducing conditions, respectively. Hydrology of the selected locations within the study area was evaluated through direct observation of primary and/or secondary indicators (including all Arid West Supplement indicators) of hydrology. Hydrology of the East Cronese Basin also used climate data from weather stations nearby (the nearest weather station is at Baker, California, 20 miles ENE).

Primary wetland hydrology indicators (only one required for wetland hydrology to be present) include:

- Indicator A1: Surface water
- Indicator A2: High water table
- Indicator A3: Saturation
- Indicator B1: Water marks (Riverine)
- Indicator B2: Sediment deposits (Riverine)
- Indicator B3: Drift deposits (Riverine)
- Indicator B6: Surface soil cracks
- Indicator B7: Inundation visible on aerial imagery
- Indicator B9: Water-stained leaves
- Indicator B11: Salt crust
- Indicator B12: Biotic crust
- Indicator B13: Aquatic invertebrates
- Indicator C1: Hydrogen sulfide odor
- Indicator C3: Oxidized rhizospheres along living roots
- Indicator C4: Presence of reduced iron
- Indicator C6: Recent iron reduction in plowed soils
- Indicator C7: Thin muck surface

Secondary wetland hydrology indicators (two required for wetland hydrology to be present) include:

- Indicator B1: Water marks (Riverine)
- Indicator B2: Sediment deposits (Riverine)
- Indicator B3: Drift deposits (Riverine)
- Indicator B10: Drainage Patterns
- Indicator C2: Dry-season water table
- Indicator C8: Crayfish borrows
- Indicator C9: Saturation visible on aerial imagery

- Indicator D3: Shallow aquitard
- Indicator D5: FAC-neutral test

At least one of the primary indicators of hydrology, or at least two of the secondary indicators of hydrology, had to exist at each soil plot in order to determine that a plot possessed indicators of hydrology in the field.

Additional indicators and guidance for delineation jurisdiction in desert playa lakes have been provided by the Corps (Brostoff et al. 2001), and are summarized in Table 4, Additional Indicators for Jurisdictional Delineation.

Table 4. Additional Indicators for Jurisdictional Delineation

Primary Indicators:	Secondary Indicators:
Ponded water	Mud cracks (polygonal to open and lined)
Soil matrix colors of 10YR 7/1 to 8/2, moist	Unvegetated areas between mounds of phreatophytic vegetation
Potential to pond water	Salt crust
Drift lines	Soil texture with sand content >50%
Biotic soil crusts/algal surface films	
Low bulk density soils	

Hydric Soil

The third required parameter necessary for wetland consideration is that indicators of hydric soil must be present. Soils must be present and must be classified as hydric, which includes indicators such as soils consisting of thick organic layers, gleying, or low chroma soil matrix, or, existing materials possess characteristics that are associated with reducing soil conditions.

In accordance with the *Corps Manual* and *Arid West Supplement*, soil pits were examined at 47 selected locations within and adjacent to the Bank Site. Soils were generally determined to be hydric if they possessed thick organic layers, gleying, or low chroma soil matrix (chroma of 2 or less with bright mottles, or matrix chroma of 1 or less). Soils data collected at each soil plot onsite included: profile depth, soil color (or matrix color [moist]), matrix percent, redox features (mottle color), redox percent, redox type, redox location, soil texture, and hydric indicators (or evidence of soil saturation for a long duration). Salinity and pH data were collected for selected soil pits.

The hydric soil indicators applicable for all regions, and indicators specifically designed for the Arid West, include the following:

- Indicator A1: Histosol
- Indicator A2: Histic Epipedon
- Indicator A3: Black Histic
- Indicator A4: Hydrogen Sulfide
- Indicator A5: Stratified Layers
- Indicator A11: Depleted Below Dark Surface
- Indicator A12: Thick Dark Surface

- Indicator S1: Sandy Mucky Mineral
- Indicator S4: Sandy Gleyed Matrix
- Indicator S5: Sandy Redox
- Indicator S6: Stripped Matrix
- Indicator F1: Loamy Mucky Mineral
- Indicator F2: Loamy Gleyed Matrix
- Indicator F3: Depleted Matrix
- Indicator F6: Redox Dark Surface
- Indicator F7: Depleted Dark Surface
- Indicator F8: Redox Depressions
- Indicator F9: Vernal Pools
- Indicator A9: 1 cm Muck
- Indicator A10: 2 cm Muck
- Indicator F18: Reduced Vertic
- Indicator TF2: Red Parent Material

Soils of each plot had to possess at least one positive indicator of hydric soils in order to determine that a plot had hydric soils.

PROBLEMATIC INDICATORS

Some wetlands in the Arid West can be challenging to identify because the wetland indicators (hydrophytic vegetation, hydric soils, and/or wetland hydrology) may be altered or missing due to natural processes or anthropogenic disturbance (Corps 2008). Many factors affect the biotic and abiotic processes in wetlands, which in turn affect the presence and/or detectability of described and accepted wetland indicators. These factors include but are not limited to: climatic variability, ephemeral water sources, parent soil materials, alkaline soils, saline soils, and human land-use practices. The presence of these and other factors within a naturally occurring wetland may result in a permanent or periodic lack of hydrophytic vegetation, hydric soils, or wetland hydrology indicators.

The Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) (Corps 2008) provides guidance for many situations involving problematic or disturbed wetland indicators in the Arid West. The Corps guidance allows for identification of wetlands lacking one or more required wetland indicators based on site-specific problems and conditions. While the Corps guidance is specific, detailed, and effective, it is not comprehensive and allows for site specific interpretation (Corps 2008):

> *"…wetland determinations on difficult or problematic sites must be based on the best information available to the field inspector, interpreted in light of his or her professional experience and knowledge of the ecology of wetlands in the region.*"

Confounding the problem of challenging delineation situations is the difficulty of characterizing wetland habitat type. The Cronese Basin is the terminus of the Mojave River. Like many river deltas, the Mojave River disperses widely into a dynamic network of swales and channels with islands of upland habitat. The intensity and duration of floodwaters can have profound impacts upon the local surface morphology of these channels. Major wash channels can be rerouted and the entire delta reshaped by single flood events. Typically, wash channels exhibit obvious physical

characteristics and are easily identified. However, due to the nature of the Mojave Desert and the Cronese Basin, it becomes challenging to determine the frequency of flooding in any particular channel. As the wash channels distribute into secondary channels and water disperses in the delta, an intermediate area of transition between Riverine and Lacustrine habitats is formed.

This transition zone lies across an ecotonal gradient in which both Riverine and Lacustrine processes are influencing the landscape. As the slope gradient flattens, the flowing water's ability to do work (transport sediments and/or debris) decreases, reducing or eliminating the opportunities to develop obvious physical features of hydrology after the surface water flows have ceased. Furthermore, significant conversion between habitat types is possible following flood events, driven by the intensity of flood flows and duration and extent of ponded water, as well as wind-blown sediments.

DMEC has attempted to adhere to Cowardin et al. (1979) in classifying major wash channels as Riverine System, the dispersed floodplain as Palustrine System, the vegetated playa surface also as Palustrine System, and the un-vegetated playa surface as Lacustrine System. However, the distinction in reality is much less clear and errors of commission and omission likely exist. Thus, DMEC has relied largely on evidence of a clear erosion bank, vegetative cover, and aerial image interpretation for delineating areas outside the Bank parcel boundaries.

The East Cronese Lake shoreline is well defined and consistent (i.e. it is obvious) primarily along the northern and western edges. However, the southeastern and southern edges of East Cronese Lake (where the Mojave River enters the lake) are much more variable and dependent upon the intensity of the flood event, the result of a low elevation gradient, and creating an ecotonal gradient. These characteristics are well illustrated by a comparison of the historic extent of ponded waters on East Cronese Lake, provided in Figure 16, Historic Extent of Ponded Water at East Cronese Lake.

Figure 16 uses the obvious inundation extents from Landsat satellite imagery from just three different years spanning over 30 years to illustrate both the variability and similarities of the extent and location of inundation when East Cronese Lake was at or near bank full. The Landsat satellites have a return frequency of 18 and 16 days, depending on the satellite. Similarly, the Corps (Lichvar et al. 2002) addressed this same basic problem regarding frequency of inundation for desert playas:

> "The criteria for frequency and duration for OHW have not been defined under the CWA or any guidance from the Corps for field delineators. In an effort to provide background information concerning physical characteristics of xeric fluvial systems, Corps Districts in the southwestern United States have provided guidelines for making jurisdictional determinations for WoUS, including playas, but have not provided any guidance for the requirements of frequency or duration of ponding or flowing waters (U.S. Army Engineer Division, South Pacific 2001). In addition, few technical data are available documenting the areal extent of inundation of playas or other aspects of playa hydrology (Rosen 1994).
>
> "In an effort to provide support evidence about the frequency and duration of surface hydrology of playas in the arid Southwest, case studies were performed for several playas in the western Mojave Desert, California. The purpose of this study was to estimate the frequency of playa inundation lasting 16 days (typical Landsat frequency) or more by coupling available Landsat images from the past 21 years with precipitation data from the last 50 years."

Further confounding the problem is a lack of technical data. Desert aquatic systems are poorly studied and understood (Levick et al. 2008, Lichvar et al. 2006). Both playa and wash systems, particularly in the Mojave Desert, have been poorly examined relative to their counterparts

containing perennial water. Furthermore, the conditions in the Cronese Basin appear to be somewhat unique. While some literature is available addressing desert playa and wash systems independently, DMEC has not encountered a single study addressing the interaction between the two. The Mojave River terminus in East Cronese Lake is potentially one of the largest isolated xeric river deltas in California. This presents a unique situation that has never before been thoroughly examined. Lichvar et al. (2006) states:

> *"…the delineation of playas is based on a mixture of meager technical data, best professional judgment, and site-specific inferential study… some site-specific work will probably always be required because of the inherent variability among playas."*

Discussion of problematic situations in the Arid West and potential solutions can be found in the *Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Arid West Region* (Corps 2008), and supported by Brostoff et al. (2001), Lichvar and Wakeley (2004), Lichvar et al. (2006), Lichvar & Dixon (2007), and Lichvar et al. (2008).

Problematic Situations of East Cronese Lake

Several specific problematic situations encountered by DMEC in the Cronese Basin are discussed and illustrated below.

Problematic Hydrophytic Vegetation

The Arid West and the Mojave Desert in particular contain many harsh and specialized habitats (e.g. saline and alkaline soils and groundwater deeper than required to be considered a wetland). Plants with physiological and morphological adaptations to survive these specialized habitats dominate many of these habitats. Lichvar & Dixon (2007) present some of the challenges in assigning accurate WISs to plants in these specialized habitats, and argue that WISs should be treated in a habitat-specific approach. They present a series of species lists for special consideration as specialized habitat groups, the groups described include: Playa Edges, Dry Wash Species, Dry Wash Phreatophytes, Hygro-halophytes, Xero-halophytes, and Phreatophytes with salt tolerance.

DMEC encountered several species listed by Lichvar & Dixon (2007) in the Cronese Basin. These species are addressed individually below, with evidence for altering or assigning WISs as treated by Lichvar et al. (2014) where appropriate in Table 5, Problematic Plant Species.

Figure 16. Historic Extent of Ponded Water at East Cronese Lake

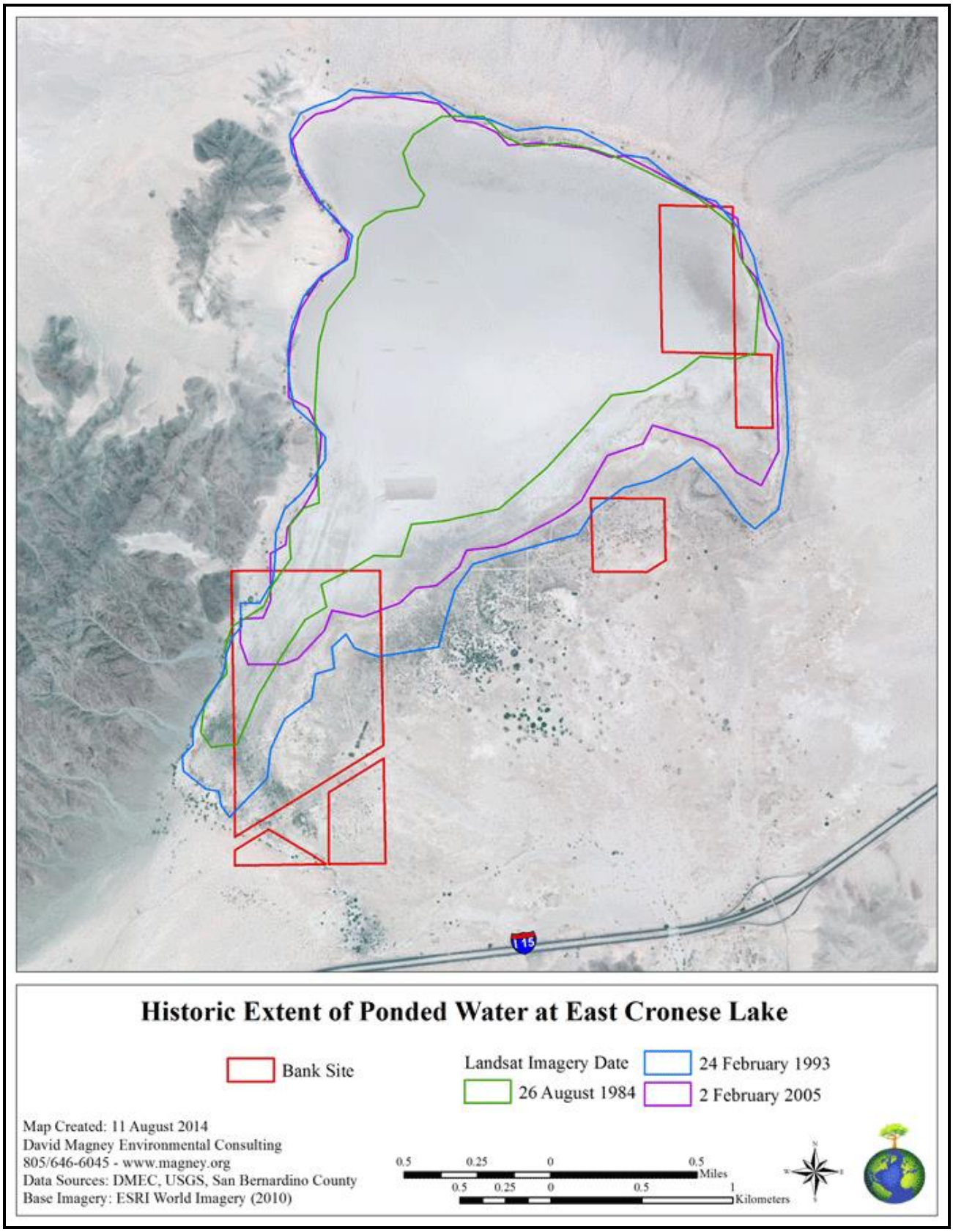


Table 5. Problematic Plant Species

Species	Assigned WIS[5]	Suggested WIS	Evidence/Rationale
Amsinckia tessellata	None	FACU	• DMEC personal observations include abundant and widespread playa edge communities
Atriplex canescens	None	FAC	• Included in Lichvar & Dixon (2007) Lists as: Playa Edges, Dry Washes, Dry Wash Phreatophytes, Xero-halophytic Species, & Phreatophytes with Salt Tolerance • Habitat preference described as "playas" Sawyer et al. (2009) • DMEC personal observations include abundant and widespread playa edge communities, in both wetland and upland locations
Chilopsis linearis ssp. *arcuata*	FACU	FACW	• Listed as FACW by Reed (1988, 1997) • Habitat preferences described as "wash", "stream", or "watercourse" by Jepson Flora Project 2014, Sawyer et al. (2009), Uchytil (1990), and Abrams (1960) • DMEC personal observations consist entirely of wash associated habitats
Cryptantha angustifolia	None	FACU	• DMEC personal observations include abundant and widespread playa edge communities and wash associated habitats
Eremalche exilis	None	FACU	• DMEC personal observations include abundant and widespread playa edge communities and wash associated habitats
Pectocarya recurvata	None	FACU	• DMEC personal observations include abundant and widespread playa edge communities and wash associated habitats
Petalonyx thurberi	None	FAC	• Included in Lichvar & Dixon (2007) Lists: Dry Wash Species and Dry Wash Phreatophytes
Prosopis glandulosa ssp. *torreyana*	UPL	FAC	• Included in Lichvar & Dixon (2007) Lists: Dry Wash Species and Dry Wash Phreatophytes • Habitat preference described as "Sonoran-Coloradan Semi-desert Wash Scrub" and several populations cited as "riparian" by Sawyer et al. (2009) • DMEC personal observations include abundant and widespread playa edge communities and wash associated habitats
Salsola tragus	FACU	FAC	• Included in Lichvar & Dixon (2007) Lists: Dry Wash Species • DMEC personal observations include numerous playa fringe, wash, and playa surface communities
Schismus barbatus	None	FAC	• Included in Lichvar & Dixon (2007) Lists: Playa Edge and Dry Wash Species • DMEC personal observations indicate it is just as likely to be seen within wetlands as outside of wetlands
Tamarix ramosissima	None	FAC	• Included in Lichvar & Dixon (2007) Lists: Dry Wash Species and Dry Wash Phreatophytes • Listed as FAC by Reed (1988, 1997) • All other species of the genus *Tamarix* are included in the Lichvar et al. (2014) list as FAC or FACW and share similar life history traits • DMEC personal observations include abundant and widespread playa edge communities and wash associated habitats

DMEC believes the species listed in Table 5 above should be treated as hydrophytes as suggested for the purposes of determining the presence of wetland habitats in the Cronese Basin and likely elsewhere in the Mojave Desert.

[5] According to Lichvar et al. (2014)

Problematic Hydric Soils

Hydric soils in the Arid West Region are often difficult to detect due to a variety of factors, including, but not limited to the following: parent material color results in non-hydric appearance, lack of conditions required to develop redoxomorphic conditions despite prolonged soil saturation, and insufficient time for development (Corps 2008). Furthermore, evidence of hydric soils may have formed in the distant past when conditions may have been wetter and persisted even though wetland hydrology may no longer be present.

Three of the described problematic hydric soil examples are present on the Bank Site: (1) Moderately to Very Strongly Alkaline Soils (very high pH of 7.9 or higher); (2) Vegetated Sand and Gravel Bars within Floodplains; and (3) Seasonally Ponded Soils.

Redoximorphic features are not readily expressed in saline and alkaline arid soils (Boettinger 1997). The low organic matter of desert soils also makes it difficult for iron depletions and concentrations to form (Brostoff et al. 2001). On 24 June 2015 DMEC sampled soil pH and conductivity (a measure of salinity) at selected plots from the wetland delineation, which are listed in Table 6 below. Nearly all of the sampled plots had a soil pH of over 7.9, suggesting that certain hydric soil indicators are masked in these soils. Conductivity values varied, but generally conductivity values were higher on the playa surface, and this could also confound hydric soil indicators. Vegetated sand and gravel bars are abundant throughout the Mojave River Delta approaching the playa surface.

Table 6. pH and Conductivity of Selected Wetland Delineation Plots

Plot	pH	Conductivity (µS)
A1	8.35	495
A2	8.45	200
A3	8.49	72
A4	7.96	890
B1	7.7	NR[6]
B2	7.65	259
B4	8.71	590
E2	8.04	NR
E3	8.58	NR
H1	8.7	NR
H2	8.91	NR
H3	8.21	NR
J1	8.54	160
J2	8.37	234
J3	8.15	195
K1	8.96	360
K2	8.99	495
DMEC1	8.61	495
DMEC2	7.99	472

[6] Not Recorded

Seasonally ponded soils are considered problematic due to soil features preventing the formation of hydric soils such as limited saturation depth or saline conditions. The extent, duration, and frequency of ponding at East Cronese Lake are somewhat unclear. Anthony Chavez with the Bureau of Land Management has indicated some ponding occurs roughly every two years (Chavez pers. comm. 2014). This low frequency of inundation in combination with high soil pH inhibits the creation of hydric soils (Brostoff et al. 2001). Lichvar et al. (2001) found that desert playas in the western Mojave Desert were inundated for at least 16 days every other year, on average. This finding generally supports Chavez's personal observations of ponding at East Cronese Lake.

DMEC has relied on the hydric soil indicator Stratified Layers (A5), interpreted in light of local conditions in the Cronese Basin. Many sample plots clearly exhibited fluvial deposits of stratified substrate layers, although they do not meet the requirement of chroma 2 or less, primarily because an accurate chroma reading cannot be taken in sandy soils, and likely due to high soil pH. These dark colors are the result of anoxic conditions that are not likely to form in the Cronese Basin. Therefore, when hydrology and hydrophytic vegetation are also present, the presence of hydric soils can be assumed, but masked or otherwise prevented from developing visible hydric soil features.

To quote the NRCS, "**the lack of an indicator is not necessarily test negative**"[7], and "**If it does not meet an indicator, it doesn't necessarily mean it is an upland soil. This is important!**"[8], which highlights the fact that soils do not always fit into the general categories, or exhibit the standard features that soil and wetland scientists are required to rely upon when performing wetland delineations. Ample evidence has been provided that hydric soil indicators may not be evident in desert playa soils.

Problematic Hydrology

Observing direct evidence of ponding or inundation in arid environmental such as the Mojave Desert is problematic due to the irregular occurrence of precipitation and/or flooding events, which are often highly localized, particularly for events during the summer months. Questions arise in the Mojave Desert regarding ponding of desert playas such as East Cronese Lake since some indicators may not be indicative of current (recent) hydrology, such as water marks around the playa lake (some of which could be relics of the late Pleistocene).

Lichvar et al. (2002) developed a method to determine the general frequency of ponding of desert playa lakes using precipitation data and Landsat satellite imagery for three playa lakes at Edwards Air Force Base in the western Mojave Desert. They found that "…ponding occurs at least every other year based on winter precipitation of 3.27 in. and that in years exceeding this threshold, ponding will be present for at least 14 days during the growing season. The analysis of duration also produced a linear relationship between amount of rain and total weeks that the playa remained ponded with a range of 1 to 32 weeks duration for the six years analyzed."

DMEC took a similar approach to demonstrate that East Cronese Lake does still pond water periodically using historic Landsat imagery, as illustrated on Figures 4, 5, and 6. These are further supported by National Weather Service National Climate Data Center (NWS NCDC) precipitation data from the nearest weather station located at Baker, California, in Table 7 below, Precipitation Data for Baker, California.

[7] NRCS Field Indicators of Hydric Soils training PowerPoint module (nrcs143_010773), notes for Slide 65.
[8] NRCS Field Indicators of Hydric Soils training PowerPoint module (nrcs143_010773), notes for Slide 62.

The NWS NCDC precipitation data show that, for the years when data were available for the entire year (fourteen years during the period from 1981 – 2010), annual precipitation exceeded 3.67 inches eight (8) different years. Assuming the precipitation at East Cronese Lake was similar to that for Baker, a reasonable assumption, and that Lichvar et al.'s (2002) model is valid, then we can reasonably assume that East Cronese Lake experienced ponding on average every other year. This is supported by Chavez's personal observations. Therefore, for East Cronese Lake in general, hydrology is present.

Table 7. Precipitation Data for Baker, California between 1981 and 2010

Monthly Total Precipitation for BAKER, CA

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1981	0.36	0.04	0.47	0.00	0.78	0.00	0.00	0.24	0.31	0.00	0.00	0.00	2.20
1982	0.00	M	1.01	M	M	0.00	0.00	0.69	0.00	0.00	0.87	M	M
1983	0.44	0.87	2.59	0.70	0.00	M	M	1.95	0.17	0.51	0.07	0.37	M
1984	0.00	0.00	0.00	T	0.00	T	2.08	0.30	0.23	0.00	0.54	1.54	4.69
1985	0.20	0.00	0.08	0.05	T	T	0.15	0.00	0.34	0.04	0.59	T	1.45
1986	0.07	0.43	0.94	M	0.04	T	1.16	0.83	0.00	M	1.03	1.02	M
1987	0.44	0.32	0.22	T	0.02	0.48	0.20	0.01	0.12	M	1.63	0.40	M
1988	0.50	0.15	0.00	2.02	0.00	0.00	0.00	2.53	0.00	0.00	0.18	0.15	5.53
1989	1.00	0.10	0.15	0.00	0.03	0.00	0.00	0.40	0.00	0.00	0.00	0.00	M
1990	0.70	0.11	0.00	0.14	0.13	M	M	M	M	M	M	M	M
1991	M	M	M	M	M	M	M	M	M	M	M	M	M
1992	M	M	M	M	M	M	M	M	M	M	M	M	M
1993	M	M	M	M	M	M	M	M	M	M	M	M	M
1994	M	M	M	M	M	M	M	M	M	M	M	M	M
1995	M	M	M	M	M	M	M	M	M	M	M	M	M
1996	M	M	M	M	M	M	M	M	0.00	0.29	0.59	0.13	M
1997	0.52	0.10	0.00	T	0.01	0.01	1.08	0.52	1.89	0.01	0.05	0.34	4.53
1998	0.17	3.43	0.60	0.08	0.55	0.00	T	0.94	0.42	0.18	0.06	0.00	6.43
1999	0.18	0.15	0.02	0.63	T	0.25	0.35	0.05	0.52	0.00	0.00	0.00	2.15
2000	T	0.88	0.10	0.07	0.00	0.00	0.00	0.29	0.00	0.31	0.01	0.00	1.66
2001	0.92	2.02	0.57	0.01	0.00	0.00	0.32	0.00	0.00	0.00	0.09	M	M
2002	0.01	0.00	0.00	0.00	0.00	0.00	0.30	M	0.08	0.17	0.32	0.11	M
2003	0.04	1.45	0.96	0.80	0.03	0.00	0.03	1.98	0.01	0.06	0.97	0.25	6.58
2004	0.05	1.63	0.65	0.24	0.00	0.00	T	0.20	0.06	0.79	0.60	0.93	5.15
2005	M	3.28	0.75	0.05	0.00	0.00	0.23	1.10	1.07	0.00	0.01	0.00	M
2006	M	0.01	0.13	M	M	0.04	0.26	0.00	0.28	0.79	M	M	M
2007	0.00	M	M	0.00	0.00	0.00	T	T	2.81	0.00	0.00	0.73	M
2008	0.54	0.16	0.00	0.00	0.35	0.00	0.05	T	T	T	0.72	1.04	2.86
2009	0.02	0.49	T	0.02	T	0.00	0.05	T	0.00	0.00	0.00	0.29	0.87
2010	1.74	2.24	0.15	0.01	0.00	0.00	0.00	0.35	0.00	0.99	0.05	3.40	8.93
Mean	0.36	0.81	0.41	0.23	0.09	0.04	0.28	0.56	0.35	0.19	0.36	0.51	4.08
Max	1.74 2010	3.43 1998	2.59 1983	2.02 1988	0.78 1981	0.48 1987	2.08 1984	2.53 1988	2.81 2007	0.99 2010	1.63 1987	3.40 2010	8.93 2010
Min	0.00 2007	0.00 2002	0.00 2008	0.00 2008	0.00 2010	0.00 2010	0.00 2010	0.00 2006	0.00 2010	0.00 2009	0.00 2009	0.00 2005	0.87 2009

Source: http://nowdata.rcc-acis.org/

SECTION III. REGULATORY REQUIREMENTS

Waters of the U.S. (including stream channels, playas, and wetlands) fall under the jurisdiction of the Corps and State Water Resources Control Board (SWRCB), pursuant to Sections 404 and 401 of the Clean Water Act, respectively. Wetlands such as freshwater stream channels are considered sensitive and declining by several regulatory agencies including the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS).

Waters of the State are regulated by the CDFW pursuant to Section 1600 *et seq.* of the California Fish and Game Code (Streambed Alterations).

Several agencies have jurisdiction over, or policies regarding, waters and/or wetlands, including the Corps, SWRCB, CDFW, and County of San Bernardino. Each agency or jurisdiction has slightly different definitions for wetlands or descriptions of their policies regarding them. For the LYONS project, the Corps and SWRCB use the same definition for waters of the U.S. and wetlands as they apply to the Clean Water Act. The CDFW uses a broader definition under Section 1600 *et seq.* of California Fish and Game Code.

Waters of the U.S., including wetlands, are under jurisdiction of the Corps pursuant to Section 404 of the Clean Water Act, and discharging dredge or fill material into waters of the U.S. requires a permit from the Corps. Certain activities are covered under a number of generic permits, known as General (Nationwide) Permits. Activities not covered by existing Nationwide Permits require an application for an Individual Permit from the Corps. Areas exhibiting clearly defined bed and banks of water courses with evidence of periodic or regular erosion and/or deposition by water are considered to be waters of the U.S., and are under the jurisdiction of the Corps.

DEFINITION OF WATERS OF THE UNITED STATES

The term "waters of the United States" means:

"(1) All waters, which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to ebb and flow of the tide;

(2) All interstate waters including interstate wetlands;

(3) All other waters - such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds – where the use, degradation, or destruction of which could affect interstate or foreign commerce, including any such waters:

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

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

(iii) Which are used, or could be used, for industrial purposes by industries in interstate commerce; or

(iv) Including all impoundments of waters, otherwise defined as waters of the U.S., under the definition;

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

(6) The territorial seas; and

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

(8) Waters of the U.S. do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA."

Basically, areas exhibiting clearly defined bed and banks of water courses with evidence of periodic or regular erosion and/or deposition by water are considered to be waters of the U.S., and are under the jurisdiction of the Corps, except as excluded by the Supreme Court of the U.S..

DEFINITIONS OF WETLANDS

The official definition of "wetland" differs among regulatory agencies, but all variations possess the following three general diagnostic environmental characteristics:

1. **Hydrophytic Vegetation**. The prevalent vegetation consists of macrophytes that are typically adapted to areas having hydrologic and soil conditions described in wetland definitions above.
2. **Hydric Soil.** Soils are present and have been classified as hydric, or they possess characteristics that are associated with reducing soil conditions.
3. **Hydrology.** The area is inundated either permanently or periodically at mean water depths less than or equal to two meters (6.6 feet), or the soil is saturated to the surface at some time during the growing season of the prevalent vegetation.

The **Corps** (Environmental Laboratory 1987) defines wetlands as:

> "Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

The Corps requires that positive indicators for all three criteria must be found (hydrophytic vegetation, hydric soil, and hydrology as listed above), with exceptions only where disturbance or problematic situations exist, to be considered a jurisdictional wetland for the purpose of Federal regulations.

For the purpose of this report, wetlands were determined based on the Corps wetlands definition (above).

SECTION IV. GENERAL SITE CONDITIONS

This section provides the general site conditions, botanical resources, habitat types, and mapped soil units of the Bank Site.

CRONESE BASIN

The Bank Site occurs in the Cronese Basin which is entirely within the Cronise Valley watershed (HUC10) which is situated in the Mojave River sub-basin (HUC8), and wholly encompasses the historical and active floodplain, bounded on the north, west, and south by steep mountain slopes, Cronese, Cave, and Soda Mountains, respectively. The Mojave River enters the Cronese Basin underneath the "Mojave River Overflow" I-15 bridges. Upon entering the Cronese Basin, the Mojave River disperses into a large network of channels, braided channels, swales, and floodplain interspersed with islands and dunes. The apparent main channel of this network bends to the west and then north again and enters the Bank Site's Southwestern parcel, draining primarily as sheet flow into East Cronese Lake. The majority of the Cronese Basin is influenced by this interaction between the terminus of the Mojave River Riverine system and the East Cronese Lacustrine system. Several main river distributary channels have obvious banks and signatures visible on aerial imagery, while huge areas of floodplain have much more poorly defined boundaries.

Following Cowardin et al. (1979) the well-defined channels (not dominated by persistent vegetation, <30% absolute cover) are classified as Riverine System, while the large areas of floodplain (although often exhibiting much less than 30% vegetative cover) are excluded from the Riverine System and classified as Palustrine System. Therefore, the majority of areas exhibiting signs of hydrology fall into the Palustrine system. There are significant areas of overlap and intergradation between the three systems (Palustrine, Riverine, and Lacustrine), thus DMEC has relied largely on evidence of a clear bank, vegetative cover, and aerial imagery interpretation for delineating areas outside the bank parcel boundaries.

Transect I captures some of the potential variability within the floodplain system. Plots I-3 and I-6 are upland islands within the greater floodplain area due to microtopological relief and influences. Transect I is illustrated in Figure 13.

Atriplex torreyi Provisional Scrubland Alliance (Saltbush Scrub/Torrey Saltbush Scrub), *Tamarix ramosissima* Stand, *Prosopis glandulosa* Scrubland Alliance (Mesquite Bosque), *Larrea tridentata* Scrubland Alliance (Creosote Bush Scrub) plant communities occur within and along the edges of the playa lake and form intact, continuous, and contiguous habitat in all directions. Outside the boundaries of the Bank Site, the land cover includes Lacustrine habitats to the east and north, dune desert upland habitats (undeveloped) to the south, and steep rocky mountainous habitat to the west.

Numerous species of wildlife are known to occur within the vicinity of East Cronese Lake and its tributaries, and frequent the habitats present onsite on a resident and seasonal basis. Local wildlife species regularly utilize the food, water, and cover resources provided by the Mojave River Delta, playa, and adjacent upland habitats.

DMEC found that the Bank Site is in relatively good condition; with only the existing utility corridor and remnants of past development associated with several access road trails, except for the dominance of the site by *Tamarix ramosissima* (Saltcedar). *Tamarix ramosissima* is an aggressive

invasive exotic shrub/small tree that is dominant on much of the Southwestern parcel and exacerbated by historic plowing on the Southeastern parcel. DMEC bases this conclusion on the percent of native plant species (84%) compared to nonnative species (16%), the diversity of natural plant communities, and the significantly low level of disturbance by humans (past and present).

Southwestern Parcel

A Mojave River major distributary channel (delta) enters the Southwestern parcel on the southeast corner and fills East Cronese Lake on this parcel. The Mojave River Delta and its associated network of distributary channels and swales interspersed with palustrine and upland islands dominate the landscape to the east of the Southwestern parcel. This distributary network influences the hydrology of much of the east side of the Southwestern parcel. Much of the north-northwest portion of the parcel is clearly inundated in historical aerial imagery; however, the presence of persistent vegetation (primarily *Atriplex torreyi* Provisional Shrubland Alliance and *Tamarix ramosissima* Stand) on the playa surface qualifies the majority of the parcel for classification as Palustrine system. Some areas of the playa lake support a wetland plant community consisting of herbaceous species, primarily annuals, represented by the *Stutzia covillei-Lepidium nitidum-Cressa truxillensis* Provisional Association (under the *Cressa truxillensis-Distichlis spicata* Herbaceous Alliance). An ephemeral wash also enters the northwestern corner of Southwestern parcel from the Cronese Mountains. BLM Road/Trail 4N03 generally follows the west side of the playa lake.

Prosopis glandulosa Shrubland Alliance, *Larrea tridentata* Shrubland Alliance plant communities occur along the edges of the playa lake and form intact, continuous and contiguous habitat in all directions. Outside the boundaries of the parcel, the land-use includes lacustrine habitats to the east and north, dune desert upland habitats (undeveloped) to the south, and steep rocky mountainous habitat to the east. The surrounding land-use is undeveloped and forms intact continuous and contiguous habitat in all directions with no barriers to movement or dispersal.

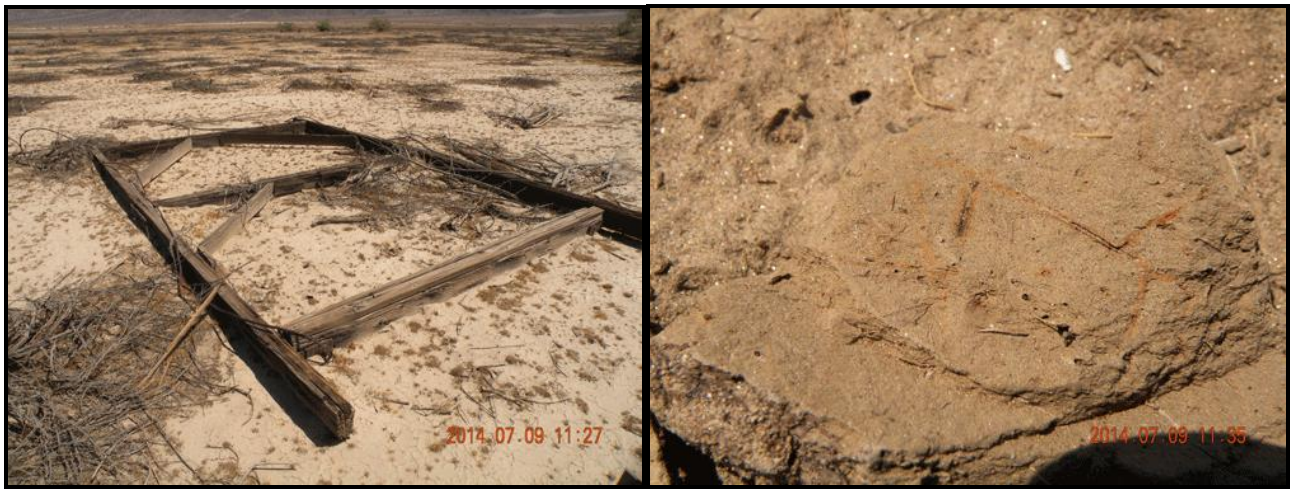
Left: View SW from the NE corner of the SW parcel (plot DMEC1)
Right: Tamarix ramosissima *Stand (Tamarisk Thicket) palustrine habitat of the SW property.*

Left: Sparely vegetated Palustrine floodplain area on SE portion of SW parcel with Prosopis glandulosa *in the distance. Right: Edge of Mojave River wash bank with* Prosopis glandulosa *on S end of SW parcel*

Southeastern Parcel

The Southeastern parcel lies on the fringe of the distributary network and the playa surface, just south of the East Cronese Lake and is dominated by *Tamarix ramosissima* with sparse herbs. The entire parcel was previously graded and plowed for agriculture; plow lines are clearly visible on the ground and in aerial imagery. The dominance of *T. ramosissima* and the lack of any native plant communities onsite is likely a result of this previous disturbance. DMEC believes the site was a mixture of *Atriplex torreyi* Provisional Shrubland Alliance and *Larrea tridentata* Shrubland Alliance prior to disturbance. Habitats outside the parcel consist of Lacustrine to the north, Palustrine floodplain to the immediate east, south, and west, and upland dunes further east. The surrounding land-use is undeveloped and forms intact continuous and contiguous habitat in all directions with no barriers to movement or dispersal.

Left: View S on SE parcel from Plot J-2. Right: Tamarix ramosissima *Stand (Tamarisk Thicket) palustrine habitat of the SE property*



Left: Flotsam deposited by floodwaters on the central portion of the SE parcel
Right: Oxidized rhizospheres from plot J3 on SE parcel

Eastern Parcel

The Eastern parcel lies entirely on the playa surface of East Cronese Lake, just to the west of the eastern shoreline. The Eastern parcel is dominated by natural communities, primarily *Suaeda nigra* Shrubland Alliance (Bush Seepweed Scrub) with open areas containing herbaceous communities such as *Cressa truxillensis-Distichlis spicata* Herbaceous Alliance represented by the unique *Stutzia covillei-Lepidium nitidum-Cressa truxillensis* Provisional Herbaceous Association. The presence of this persistent (i.e. shrubland) vegetation qualifies the majority of the parcel as Palustrine habitat, with a patchy intergradation with Lacustrine habitats in the northwestern corner. *Suaeda nigra* (WIS = OBL) is tolerant of inundation; however, it is possible that a major flood event could inundate the entire parcel longer than the scrubland can withstand and thereby convert the parcel entirely to Lacustrine habitats.

Left: View SW from Plot K1 on the Eastern parcel, with Suaeda nigra *Alliance (Bush Seepweed Scrub)*
Right: Watermarks on rocks and view NE (upland) from just outside the E boundary of the Eastern parcel

The Northern parcels (natural, intact Lacustrine and Palustrine habitat) lie directly to the northwest of the Eastern parcel. Outside the boundaries of the parcel, Lacustrine playa surface habitat exists to the north, west, and south, and Palustrine playa shoreline habitat exists to the east with upland

habitats dominated by *Larrea tridentata* Shrubland Alliance beyond. The surrounding land-use is undeveloped and the land cover forms intact continuous and contiguous habitat in all directions with no barriers to movement or dispersal.

Northern Parcels

The Northern parcels lie entirely on the playa surface of East Cronese Lake, near the northeastern shoreline. The Northern parcels are dominated almost entirely by natural undisturbed Palustrine habitats densely vegetated with *Atriplex torreyi* Provisional Shrubland Alliance. The northwestern corner of the Northern parcels contains Lacustrine habitat not dominated by vegetation. Outside the boundaries of the parcels *Prosopis glandulosa* Shrubland Alliance exists along the playa fringes to the east and north, with upland communities dominated by *Larrea tridentata* Shrubland Alliance beyond, and Lacustrine habitats to the south and west. The surrounding land-use is undeveloped and forms intact continuous and contiguous habitat in all directions with no barriers to movement or dispersal.

Property looking south, dominated by Atriplex torreyi *and* Suaeda nigra.

FLORA

The flora of the Bank Site and adjacent areas is presented in Table 8, Plant Species Observed by DMEC (East Cronese Lake) which lists the plant species observed during the surveys conducted onsite, as well as Consortium of California Herbaria (CCH) documented specimens collected within a 2-mile radius (CCH 2014) for a total of 142 vascular plant taxa.

DMEC observed 73 vascular plant taxa. Of the 73 vascular plant taxa, 61 (84%) are native and the remaining 12 (19%) are introduced naturalized species. The vascular plant flora of the property appears to be in better condition than what would normally be expected at similar-sized areas

elsewhere in the region and in California, except for the areas of the Bank Site dominated by invasive exotic plants. (DMEC 2015a.)

The nature of the property has resulted in a significantly higher ratio of native plant species than is typically found for the flora of California (~70% native) (Baldwin et al. 2009) overall.

Table 8. Plant Species Observed by DMEC (East Cronese Lake)

Scientific Name[9]	Common Name	Family	WIS[10]	Evidence[11]
Abronia villosa var. *villosa*	Hairy Sand-verbena	Nyctaginaceae	.	collected
Achyronychia cooperi	Frost Mat	Caryophyllaceae	.	CCH
Aliciella micromeria [*Gilia m.*]	Dainty Gilia	Polemoniaceae	.	CCH
Aliciella monoensis	Mono Lake Aliciella	Polemoniaceae	.	CCH
Amaranthus albus *	Tumbleweed	Amaranthaceae	FACU	CCH
Ambrosia dumosa	White Bur-sage	Asteraceae	.	collected
Ambrosia salsola var. *salsola*	Cheesebush	Asteraceae	.	collected
Amsinckia tessellata var. *tessellata*	Desert Fiddleneck	Boraginaceae	(FACU)	collected
Androstephium breviflorum	**Small-flowered Androstephium**	Themidaceae	.	CCH
Argemone corymbosa	Leafy Prickly Poppy	Papaveraceae	.	photographed
Arida arizonica [*Machaeranthera arida*]	Silver Lake Daisy	Asteraceae	FACU	photographed
Astragalus didymocarpus var. *dispermus*	Prostrate Two-seeded Milkvetch	Fabaceae	.	CCH
Astragalus lentiginosus* var. *borreganus	**Borrego Milkvetch**	Fabaceae	UPL	CCH
Astragalus lentiginosus var. *variabilis*	Varied Milkvetch	Fabaceae	UPL	CCH
Atriplex canescens var. *canescens*	Fourwing Saltbush	Chenopodiaceae	(FAC)	Observed
Atriplex canescens var. *laciniata*	Caleb Saltbush	Chenopodiaceae	(FAC)	collected
Atriplex polycarpa	Allscale Saltbush	Chenopodiaceae	FACU	CCH
Atriplex torreyi var. *torreyi*	Torrey Saltbush	Chenopodiaceae	FAC	collected
Baileya pauciradiata	Lax Flower	Asteraceae	.	CCH
Bebbia juncea var. *aspera*	Rough Sweatbush	Asteraceae		collected
Brassica tournefortii *	Sahara Mustard	Brassicaceae	(FACU)	collected
Brickellia incana	Woolly Brickellbush	Asteraceae	.	CCH
Bromus madritensis ssp. *rubens* *	Red Brome	Poaceae	UPL	collected
Caulanthus lasiophyllus [*Guillenia l.*]	California Mustard	Brassicaceae	.	collected
Chaenactis carphoclinia var. *carphoclinia*	Pebble Pincushion	Asteraceae	.	CCH
Chaenactis stevioides	Esteve Pincushion	Asteraceae	.	collected
Chaenactis xantiana	Fleshy Pincushion	Asteraceae	.	CCH
Chamaesyce micromera	Desert Spurge	Euphorbiaceae	.	CCH

[9] * = Introduced/naturalized plant species. **Bold** = Special-status species (CNPS 2006, 2014). Scientific and common names follow Baldwin et al. (2013) and Flora of North America Editorial Committee (1993-2010).

[10] WIS = Wetland Indicator Status. The following code definitions are according to Lichvar (2013):
OBL = obligate wetland species, occurs almost always in wetlands (>99% probability).
FACW = facultative wetland species, usually found in wetlands (67-99% probability).
FAC = facultative species, equally likely to occur in wetlands or nonwetlands (34-66% probability).
FACU = facultative upland species, usually found in nonwetlands (67-99% probability).
+ or - symbols are modifiers that indicate greater or lesser affinity for wetland habitats.
NI = no indicator has been assigned due to a lack of information to determine indicator status.
* = a tentative assignment to that indicator status by Lichvar (2013).
Parentheses indicate a wetland status as suggested by David L. Magney based on extensive field observations over 30 years, and evidence discussed in the Methods – Problematic Indicators section.

[11] CCH = species collected within a 2-mile radius of the bank site and deposited in an herbarium participating in the Consortium of California Herbaria; Collected (and vouchered), Observed, or Photographed = species encountered DMEC and the respective documentation.

Scientific Name[9]	Common Name	Family	WIS[10]	Evidence[11]
Chamaesyce ocellata ssp. *ocellata*	Valley Spurge	Euphorbiaceae	.	CCH
Chenopodium incanum var. *occidentale*	Pigweed	Chenopodiaceae	.	CCH
Chenopodium strictum var. *glaucophyllum* *	White-leaved Goosefoot	Chenopodiaceae	.	CCH
Chilopsis linearis var. *arcuata*	Desert Willow	Bignoniaceae	FACU(FACW)	collected
Chorizanthe brevicornu var. *brevicornu*	Brittle Spineflower	Polygonaceae	(FACU)	collected
Chorizanthe rigida	Rigid Spineflower	Polygonaceae	.	collected
Chylismia brevipes ssp. *brevipes*	Yellow Cups	Onagraceae	.	CCH
Chylismia claviformis ssp. *aurantiaca*	Pinnate-leaved Primrose	Onagraceae	.	CCH
Chylismia claviformis ssp. *claviformis*	Clavate-fruited Primrose	Onagraceae	.	collected
Cleomella obtusifolia	Mojave Stinkweed	Cleomaceae	.	collected
Cressa truxillensis	Alkali Weed	Convolvulaceae	FACW	collected
Croton californicus	California Croton	Euphorbiaceae	.	CCH
Cryptantha angustifolia	Narrow-leaved Forget-Me-Not	Boraginaceae	(FACU)	collected
Cryptantha barbigera var. *barbigera*	Bearded Forget-Me-Not	Boraginaceae	.	CCH
Cryptantha circumscissa	Cushion Forget-Me-Not	Boraginaceae	.	CCH
Cryptantha costata	**Ashen Forget-Me-Not**	Boraginaceae	.	CCH
Cryptantha maritima	Guadalupe Is. Forget-Me-Not	Boraginaceae	.	CCH
Cryptantha micrantha var. *micrantha*	Red-root Forget-Me-Not	Boraginaceae		CCH
Cryptantha nevadensis	Nevada Forget-Me-Not	Boraginaceae	.	CCH
Cryptantha pterocarya var. *pterocarya*	Winged-nut Forget-Me-Not	Boraginaceae	.	CCH
Cucurbita palmata	Coyote Melon	Cucurbitaceae	.	collected
Dalea mollissima	Downy Dalea	Fabaceae	.	CCH
Dicoria canescens	Desert Dicoria	Asteraceae	.	CCH
Dieteria canescens var. *canescens*	Hoary-aster	Asteraceae	.	collected
Distichlis spicata	Saltgrass	Poaceae	FAC(FACW)	CCH
Dithyrea californica	Spectacle Pod	Brassicaceae	.	collected
Encelia farinosa	Brittlebush	Asteraceae	.	collected
Ephedra sp.	Mormon Tea	Ephedraceae	.	collected
Eremalche exilis	White Mallow	Malvaceae	(FACU)	collected
Eremalche rotundifolia	Desert Fivespot	Malvaceae	.	collected
Eremothera [*Camissonia*] *boothii*	Booth Desert Primrose	Onagraceae	(FACU)	collected
Eriogonum inflatum var. *inflatum*	Desert Trumpet	Polygonaceae	.	collected
Eriogonum reniforme	Kidney-leaf Wild Buckwheat	Polygonaceae	.	CCH
Eschscholzia glyptosperma	Desert Golden Poppy	Papaveraceae	.	collected
Eschscholzia minutiflora	Small-flowered Poppy	Papaveraceae	.	collected
Eucrypta micrantha	Small-flowered Eucrypta	Boraginaceae	.	CCH
Funastrum hirtellum [*Sarcostemma h.*]	Trailing Townula	Apocynaceae	.	CCH
Geraea canescens	Hairy Desert Sunflower	Asteraceae	.	collected
Gilia sinuata	Rosy Gilia	Polemoniaceae	.	collected
Gilia stellata	Star Gilia	Polemoniaceae	.	CCH
Gilia tenuiflora ssp. *amphifaucalis*	Trumpet-throated Gilia	Polemoniaceae	.	CCH
Glyptopleura marginata	White-margined Waxplant	Asteraceae		CCH
Heliotropium convolvulaceum var. *californicum*	Morning-glory Heliotrope	Boraginaceae	.	CCH
Heliotropium curassavicum var. *oculatum*	Alkali Heliotrope	Boraginaceae	FACU	collected
Hesperocaulis undulata	Desert Lily	Agavaceae	.	collected
Hilaria rigida	Big Galleta	Poaceae	.	collected

Scientific Name[9]	Common Name	Family	WIS[10]	Evidence[11]
Isocoma acradenia var. *acradenia*	Alkali Goldenbush	Asteraceae	FACU	CCH
Langloisia setosissima var. *punctata*	Lilac Sunbonnet	Polemoniaceae	.	CCH
Langloisia setosissima var. *setosissima*	Bristly Langloisia	Polemoniaceae	.	collected
Larrea tridentata	Creosote Bush	Zygophyllaceae	.	Observed
Lepidium flavum	Yellow Peppergrass	Brassicaceae	UPL	collected
Lepidium lasiocarpum ssp. *lasiocarpum*	Shaggyfruit Peppergrass	Brassicaceae	.	collected
Lepidium nitidum	Shinny Peppergrass	Brassicaceae	FAC	collected
Linanthus arenicola	Sand Linanthus	Polemoniaceae	.	CCH
Loeseliastrum mathewsii	Desert Calico	Polemoniaceae	.	CCH
Loeseliastrum schottii	Scott Gilia	Polemoniaceae	.	collected
Logfia depressa	Hierba Limpia	Asteraceae	.	CCH
Lupinus shockleyi	Shockley Lupine	Fabaceae	.	collected
Malacothrix coulteri	Snake Heads	Asteraceae	.	collected
Malacothrix glabrata	Desert Dandelion	Asteraceae	(FACU)	CCH
Malvella leprosa	Alkali Mallow	Malvaceae	FACU	CCH
Mentzelia albicaulis	Whitestem Stickleaf	Loasaceae	.	CCH
Mentzelia desertorum	Desert Stickleaf	Loasaceae	.	CCH
Mentzelia obscura	Pacific Blazing Star	Loasaceae	.	CCH
Monolepis nuttalliana	Nuttall's Poverty Weed	Chenopodiaceae	FAC	CCH
Monoptilon bellioides	Desert Star	Asteraceae	.	Observed
Nama demissum var. *demissum*	Purple Mat	Boraginaceae	.	collected
Nama densa cf. var. *parviflora*	Purple Mat	Boraginaceae	.	collected
Nama hispidum	Bristly Nama	Boraginaceae	.	CCH
Nemacladus rubescens	Desert Threadplant	Campanulaceae	.	collected
Nicotiana obtusifolia	Desert Coyoto Tobacco	Solanaceae	FACU	collected
Oenothera deltoides ssp. *deltoides*	Desert Lantern	Onagraceae	.	collected
Oligomeris linifolia	Desert Cambess	Resedaceae	.	CCH
Orobanche cooperi	Cooper Broom-rape	Orobanchaceae		collected
Palafoxia arida var. *arida*	Desert Needle	Asteraceae	(FACU)	collected
Panicum urvilleanum	Silky Panic Grass	Poaceae	.	CCH
Pectis papposa var. *papposa*	Chinch Weed	Asteraceae	(FACU)	CCH
Pectocarya platycarpa	Wide-toothed Comb Bur	Boraginaceae	.	collected
Pectocarya recurvata	Arched-nut Comb Bur	Boraginaceae	(FACU)	collected
Perityle emoryi	Emory's Rock Daisy	Asteraceae	.	collected
Petalonyx thurberi ssp. *thurberi*	Thurber's Sandpaper Plant	Loasaceae	(FAC)	CCH
Peucephyllum schottii	Desert Pinebush	Asteraceae	.	collected
Phacelia crenulata var. *ambigua*	Purplestem Scorpionweed	Boraginaceae	.	CCH
Phacelia crenulata var. *crenulata*	Heliotrope Phacelia	Boraginaceae	.	collected
Phacelia ivesiana var. *pediculoides*	Ives' Phacelia	Boraginaceae	.	CCH
Phoradendron californicum	California Mistletoe	Viscaceae	.	collected
Physalis crassifolia	Thick-leaved Ground Cherry	Solanaceae	.	collected
Plagiobothrys jonesii	Jones' Popcornflower	Boraginaceae	.	CCH
Plantago ovata var. *fastigiata*	Desert Plantain	Plantaginaceae	FACU	collected
Plantago ovata var. *ovata*	Desert Plantain	Plantaginaceae	FACU	CCH
Pleurocoronis pluriseta	Arrowleaf	Asteraceae	.	CCH
Pluchea sericea	Arrow Weed	Asteraceae	FACW	collected
Prosopis glandulosa var. *torreyana*	Honey Mesquite	Fabaceae	UPL(FACW)	collected
Psorothamnus spinosus	Smoke Tree	Fabaceae	(FACW)	CCH
Rafinesquia neomexicana	Desert Chicory	Asteraceae	.	collected
Salsola gobicola *	Barbwire Russian Thistle	Chenopodiaceae	.	CCH
Salsola paulsenii *	Paulsen's Russian Thistle	Chenopodiaceae	.	CCH
Salsola tragus *	Russian Thistle	Chenopodiaceae	FACU(FAC)	collected

Scientific Name[9]	Common Name	Family	WIS[10]	Evidence[11]
Schismus barbatus *	Abu Mashi	Poaceae	(FAC)	collected
Sesuvium verrucosum	Western Sea-purslane	Aizoaceae	FACW	CCH
Sisymbrium irio *	London Rocket	Brassicaceae	(FACU)	collected
Spergularia marina	Saltmarsh Sand-spurrey	Caryophyllaceae	OBL	CCH
Stephanomeria exigua var. *exigua*	White-plume Wirelettuce	Asteraceae	.	collected
Stephanomeria pauciflora	Few-flowered Wirelettuce	Asteraceae	.	CCH
Stillingia spinulosa	Broad-leaved Stillingia	Euphorbiaceae	.	CCH
Streptanthella longirostris	Long-beaked Twistflower	Brassicaceae	.	CCH
Stutzia covillei [*Atriplex phyllostegia*]	Coville's Orach	Chenopodiaceae	FACW	collected
Suaeda nigra [*S. moquinii*]	Bush Seepweed	Chenopodiaceae	OBL	Observed
Tamarix aphylla *	Athel	Tamaricaceae	FAC	collected
Tamarix chinensis *	Fivestamen Tamarisk	Tamaricaceae	FAC	CCH
Tamarix ramosissima *	Saltcedar	Tamaricaceae	(FAC)	collected
Tidestromia suffruticosa var. *oblongifolia*	Honeysweet	Amaranthaceae	.	CCH
Tiquilia plicata	Fan-leaved Tiquilia	Boraginaceae	.	collected
Verbena bracteata	Large-bracted Verbena	Verbenaceae	FAC	CCH

Additional plant species are expected to occur on the Bank Site but where not observed since a number of annual species only emerge under specific environmental conditions, which were not present during the 2013-2014 field surveys.

MAPPED WETLAND HABITATS

The U.S. Fish and Wildlife Service (USFWS) have been conducting an ongoing effort to map and catalogue wetlands within the United States, the National Wetlands Inventory (NWI, USFWS 2014). The NWI has mapped several types of wetland habitats present on and near the Bank Site, as illustrated in Figure 17, NWI Mapped Wetlands in Cronese Basin. However, the NWI is an ongoing effort, and is not a comprehensive inventory of all wetlands nationwide. Some areas have been mapped in much greater detail relative to other areas.

The Bank Site is located in an area that is relatively poorly mapped when compared to other areas in the region. These disparities in mapping accuracy are apparent when viewing the Bank Site at a regional scale, as illustrated in Figure 18, Regional NWI Mapped Wetlands.

DMEC has observed significantly greater extent and variation in wetland habitats on and near the Bank Site than are included in the NWI mapping. There is substantial overlap and intergradation between wetland habitats around East Cronese Lake. There is also likely significant conversion between habitat types following flood events. The individual habitats observed are discussed in the following section.

Figure 17. NWI Mapped Wetlands in Cronese Basin

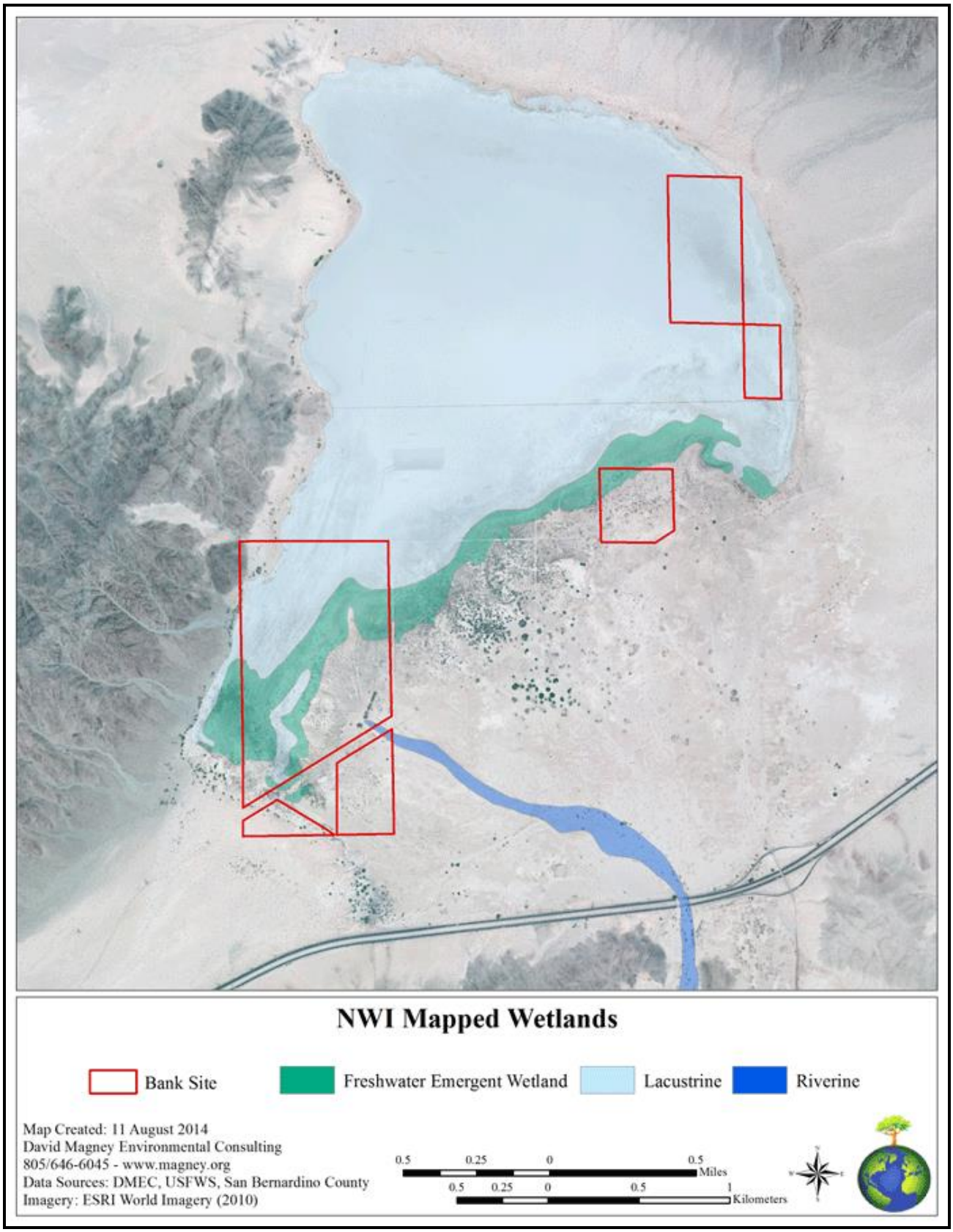
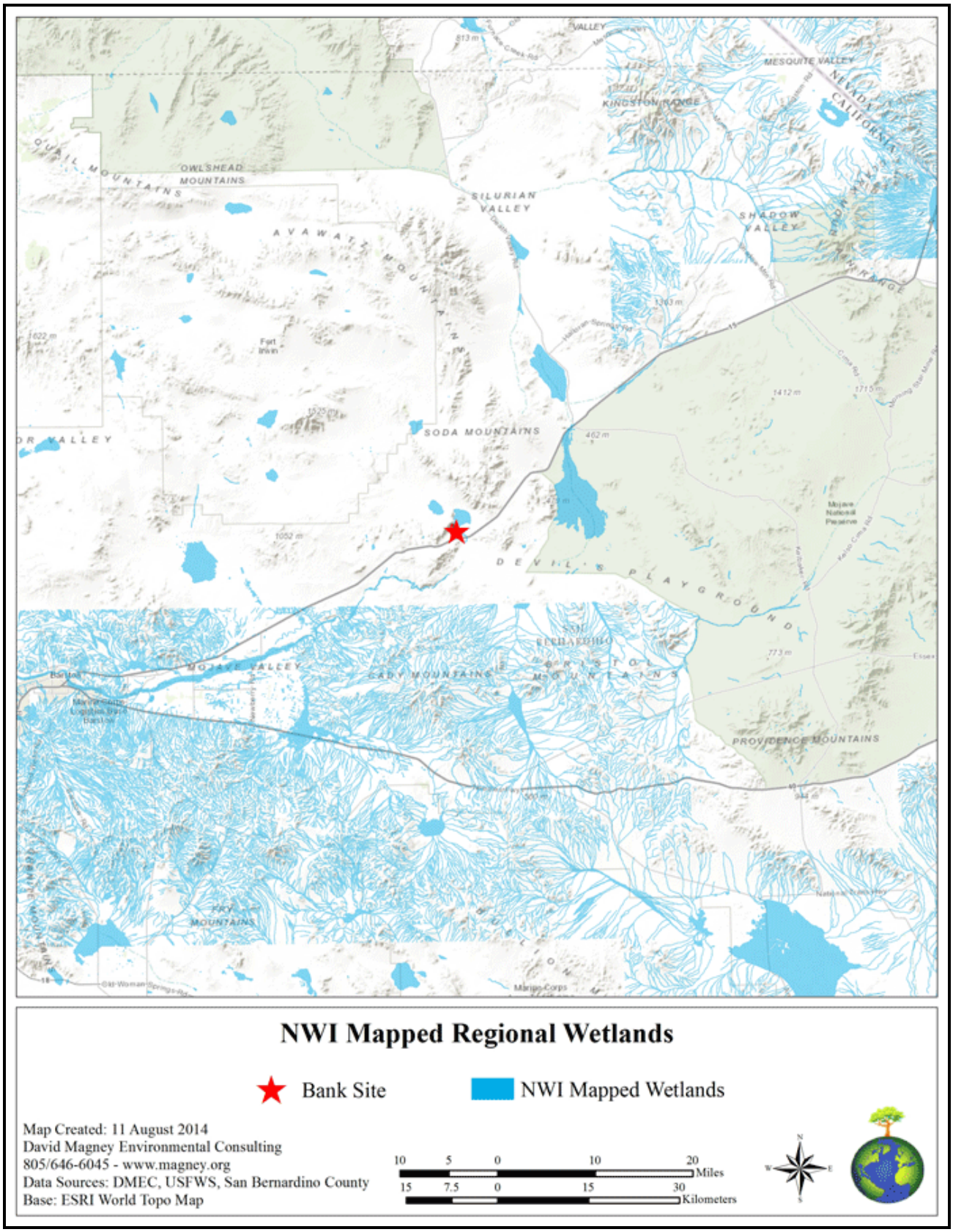


Figure 18. Regional NWI Mapped Wetlands



HABITAT TYPES PRESENT ONSITE

The Bank Site contains upland, riparian, and wetland habitats on steep slopes, on the surface and in the floodplain of East Cronese Lake and contributing drainages.

Vegetation (plant communities) of the East Cronese Lake basin is classified according to two systems: The National Vegetation Classification System for California (Sawyer et al. 2009) and the USFWS Wetlands Classification System (Cowardin et al. 1979).

The Bank Site vegetation is comprised of three predominant habitat groups, including Sonoran-Coloradan Semi-desert Wash Scrub, Lower Bajada and Fan Mojavean-Sonoran Desert Scrub, and Southwestern North American Salt Basin and High Marsh. Specifically the Bank Site habitats are classified as the following by Sawyer et al. (2009) and as suggested by DMEC (2015a):

- **Sonoran-Coloradan Semi-desert Wash Scrub**
  - *Prosopis glandulosa* Woodland Alliance (Mesquite Bosque)
    - *Prosopis glandulosa/Atriplex canescens* Association
    - *Prosopis glandulosa/Pluchea sericea-Atriplex canescens* Alkali Spring Association
- **Lower Bajada and Fan Mojavean-Sonoran Desert Scrub**
  - *Larrea tridentata* Shrubland Alliance (Creosote bush scrub)
    - *Larrea tridentata-Atriplex canescens* Association
    - *Larrea tridentata-Ambrosia salsola* Association
    - *Larrea tridentata/Eriogonum inflatum* Association
    - *Larrea tridentata/*Wash
- **Southwestern North American Salt Basin and High Marsh**
  - *Atriplex torreyi* Provisional Shrubland Alliance (Saltbush Scrub)[12]
  - *Suaeda* [*moquinii*] *nigra* Shrubland Alliance (Bush Seepweed Scrub)
  - *Tamarix ramosissima* Stand (Tamarisk Thickets)
  - *Cressa truxillensis-Distichlis spicata* Herbaceous Alliance (Alkali Weed and Saltgrass)
    - *Stutzia covillei-Lepidium nitidum-Cressa truxillensis* Provisional Herbaceous Association (Alkali Weed-Saltgrass Playas and Sinks)[13]

The predominant wetland habitat type onsite is classified within the Palustrine System, according to the U.S. Fish and Wildlife Service (USFWS) *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979); however, there are also habitats classified within the Riverine and Lacustrine Systems onsite. The general Cowardin classification types in the vicinity of East Cronese Lake are identified and illustrated in Figure 19 below.

While a clear distinction exists between upland and wetland habitats (i.e. change in vegetation, elevation, and/or soils), often no clear distinction exists among different wetland habitats due to a substantial ecotonal gradient between habitats (i.e. a low-gradient river delta entering a lake). This gradient is likely directly related to the duration of inundation, which is in turn a product of the dynamic Mojave River Delta and the variable extent of ponded waters, as East Cronese Lake is filled and then recedes.

[12] See Appendix B for a copy of the CNPS/CDFW Releveé Field Form for this newly described vegetation alliance.
[13] See Appendix B for a copy of the CNPS/CDFW Releveé Field Form for this newly described plant association.

Palustrine Habitats

According to Cowardin et al. (1979) the Palustrine System includes all nontidal wetlands that are dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean-derived salts is below 0.5‰. The Palustrine System also includes wetlands that lack such vegetation but have the following three characteristics: (1) area less than 8 ha (20 acres); (2) active wave-formed or bedrock shoreline features lacking; (3) water depth. The Palustrine System is bounded by upland or by any of the other four wetland systems: Riverine, Lacustrine, Marine, and Estuarine.

Within the Palustrine System there are several classes present on the Bank Site. Substantial localized variation in total vegetative cover and dominant species is present within the Palustrine System on the Bank Site, constituting several classes as defined by Cowardin et al. (1979). All classes present are classified as Intermittently Flooded; these systems have substrate which is usually exposed but surface water is present for variable periods and without detectable seasonal periodicity. It is possible for periods of weeks, months, and years of exposed substrate to pass between periods of present surface water. The classes present on the Bank Site are:

- **Scrub-Shrub Broad-leaved Evergreen Wetland** is characterized by woody vegetation that is less than six meters tall (true shrubs or young trees), in the case of the Bank Site, dominated by *Atriplex torreyi* var. *torreyi* (*Atriplex torreyi* Provisional Shrubland Alliance)
- **Scrub-Shrub Broad-leaved Deciduous Wetland** is characterized by woody vegetation that is less than six meters tall (true shrubs or young trees), in the case of the Bank Site, dominated by primarily by *Prosopis glandulosa* var. *torreyana* (*Prosopis glandulosa* Woodland Alliance).
- **Scrub-Shrub Needle-leaved Evergreen Wetland** is characterized by woody vegetation that is less than six meters tall (true shrubs or young trees), in the case of the Bank Site, dominated by *Tamarix ramosissima* Stand.
- **Scrub-Shrub Dead Wetland** is characterized by dead woody vegetation that is less than six meters tall (true shrubs or young trees) usually resulting from an impoundment of water.
- **Unconsolidated Bottom** is characterized by at least 25% cover of particles smaller than stones, and vegetative cover less than 30%. Cowardin et al. (1979) restricts this class to subtidal, permanently flooded, intermittently exposed, and semi-permanently flooded water regimes. Considering the nature of the East Cronese Playa bottom, DMEC finds it appropriate to consider this class in regards to intermittently flooded water regime as well. The sediment of the playa surface in combination with certain sparse vegetation patches is characteristic of the unconsolidated bottom class.
- **Emergent Wetland** is characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. In areas of climactic fluctuation, large precipitation or flood events can cause emergent wetlands to revert to an open water phase periodically. Considering the nature of the East Cronese Playa bottom and its dominant vegetation (*Atriplex torreyi* var. *torreyi* and *Tamarix ramosissima*), DMEC finds it appropriate to consider this class despite the lack of true herbaceous hydrophytes. The clear division between the playa surface vegetation alliances and upland alliances is a function of the periodic flooding of the playa surface and is characteristic of the emergent wetland class. Emergent Wetland is also included in the map of the project area, illustrated in Figure 17, USFWS NWI Wetlands.

There are approximately 1,713 acres of Palustrine habitat within the East Cronese Lake basin, with 379.42 acres occurring within the Lyons' parcels.

Riverine Habitats

According to Cowardin et al. (1979) the Riverine System includes all wetlands and deepwater habitats contained within a channel, with two exceptions: (1) wetlands dominated by trees, shrubs, and persistent emergent, emergent mosses or lichens, and (2) habitats with water containing ocean-derived salts in excess of 0.5‰. The Riverine System is bounded on the landward side by upland, by the channel bank (including man-made and natural levees), or by Palustrine System habitats. In braided streams, the system is bounded by the banks forming the outer limits of the depression within which the braiding occurs. It terminates at the downstream end where the concentration of ocean-derived salts in the water exceeds 0.5‰ or where the channel enters a lake. All habitats classified within the Riverine System present onsite are also classified within the Intermittent Subsystem. The Intermittent Subsystem is defined as Riverine habitats in which the channel contains flowing water for only part of the year, and when the water is not flowing it may remain in isolated pools or surface water may be absent. Within the Intermittent Riverine System there are several classes present onsite.

- **Streambed** is characterized as all wetland contained within all channels of the Intermittent Riverine Subsystem, the Estuarine system, or the Tidal Riverine Subsystem. Streambeds vary greatly in substrate and form, which are primarily dependent upon the gradient of the channel, the velocity of water, and the sediment load. Complex patterns of bars may form and be included as islands within a bed of braided streams. Typically streambeds are not vegetated because of the scouring effect of water, but they may be colonized by "pioneering" annuals or perennials during periods of low flow, or they may have perennial emergent and shrubs that are too scattered to qualify the area for classification as Emergent Wetland or Scrub-Shrub Wetland. The majority of Streambed habitats present onsite are classified within the Sand Subclass. These habitats often contain bars and beaches, and there are many interspersed areas with Cobble-Gravel Streambed Subclass in areas of fast flow or heavy sediment load.
- **Unconsolidated Bottom** is characterized by at least 25% cover of particles smaller than stones, and vegetative cover less than 30%. Cowardin et al. (1979) restricts this class to sub-tidal, permanently flooded, intermittently exposed, and semi-permanently flooded water regimes. Considering the nature of the Mojave River, and other tributaries of East Cronese Lake, DMEC finds it appropriate to consider this class in regards to intermittently flooded water regime as well. The sediment of the playa fringe in combination with certain sparse vegetation patches is characteristic of the unconsolidated bottom class.
- **Unconsolidated Shore** is characterized by all wetland habitats with three primary traits; (1) unconsolidated substrates less than 75% areal cover of stones, boulders, or bedrock; (2) less than 30% areal cover of vegetation other than pioneering plants; and (3) one of several different water regimes, including intermittently flooded. Erosion and deposition creates a number of landforms such as beaches, bars, and flats. Unconsolidated Shore habitats present on the bank site are primarily classified within the Sand Subclass. The Sand Subclass is characterized by unconsolidated substrate that is primarily sand; however, on the Bank Site there are also many interspersed areas with Cobble-Gravel substrates as well.
- **Emergent Wetland** is characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. In areas of climactic fluctuation, large precipitation or flood events can cause emergent wetlands to revert to an open water phase periodically. Considering the nature of the East Cronese Playa, the Mojave River and tributaries, DMEC finds it appropriate to consider this class despite the lack of true herbaceous hydrophytes in many

areas. The clear division between the desert wash vegetation alliances and upland alliances is a function of the periodic flooding of the playa surface and is characteristic of the emergent wetland class. Emergent Wetland is also included in the USFWS NWI map of the Bank Site area, as illustrated in Figure 17 above.

There are approximately 298.25 acres of Riverine habitat within the East Cronese Lake basin, with 19.56 acres occurring within the Lyons' parcels.

Lacustrine Habitats

According to Cowardin et al. (1979) the Lacustrine System includes wetlands and deepwater with the following characteristics: (1) situated in a topographic depression; (2) lacking greater than 30% areal coverage of vegetation; and (3) total area exceeds 8 ha (20 acres). Similar wetland and deepwater habitats that total less than 8 ha (20 acres) are included in the Lacustrine System if an active wave-formed or bedrock shoreline feature makes up all or part of the boundary, or if the water depth in the deepest part of the basin exceeds 2 meters. Lacustrine waters always contain less than 0.5‰ ocean-derived salts. The Lacustrine System is bounded by upland or Palustrine System habitats. Where a river meets a lake, the extension of the Lacustrine shoreline forms the Riverine-Lacustrine boundary. Cowardin et al. (1979) specifies that "the Lacustrine System includes permanently flooded lakes (e.g. Lake Superior), intermittent lakes (e.g. playa lakes), and tidal lakes…". Islands of Palustrine wetland may lie within the boundaries of the Lacustrine System.

The Lacustrine System is divided into two Subsystems: (1) the Limnetic Subsystem includes all deepwater habitats within the Lacustrine System, (2) the Littoral Subsystem includes all wetland habitats within the Lacustrine System, from the shoreward boundary of the system to a depth of 2 meters or to the maximum extent of non-persistent emergent, if these grow at depths greater than 2 meters. It is likely that during lesser flooding events the playa surface is covered by water of a depth less than 2 meters, while larger flood events can create depths of greater than 2 meters in areas of East Cronese Lake. Thus the extent of Limnetic and Littoral Subsystems is directly dependent upon the severity of the flood event.

The majority of potentially Lacustrine System habitats present on the Bank Site are dominated by greater that 30% areal coverage of persistent vegetation, which qualifies them as Palustrine System, despite inundation being visible in historic Landsat imagery (see Figures 4, 5, and 6). Flood events could convert Palustrine System Habitats to Lacustrine Habitats if persistent vegetation is killed off due to long periods of inundation; however, the majority of playa surface present on the Bank Site is dominated by *Atriplex torreyi* var. *torreyi,* which has been documented as tolerant of flooding (Dobrowolski et al. 1990). This tolerance is likely a significant mechanism driving community distribution. Lacustrine System habitats (not dominated by vegetation) are present only on the southwestern corner of the Northern parcel, furthermore; the Lacustrine System has profound influence upon all surrounding wetland habitats and the entirety of the bank site.

There are approximately 915.75 acres of Lacustrine habitat within the East Cronese Lake basin, with 19.42 acres occurring within the Lyons parcels.

The vegetated Palustrine, Lacustrine, and Riverine wetland habitats observed onsite are described in more detail below as follows:

Atriplex torreyi Provisional Alliance (Torrey Saltbush Scrub);

Prosopis glandulosa Woodland Alliance (Mesquite Bosque);

Suaeda nigra Shrubland Alliance (Bush Seepweed Scrub);

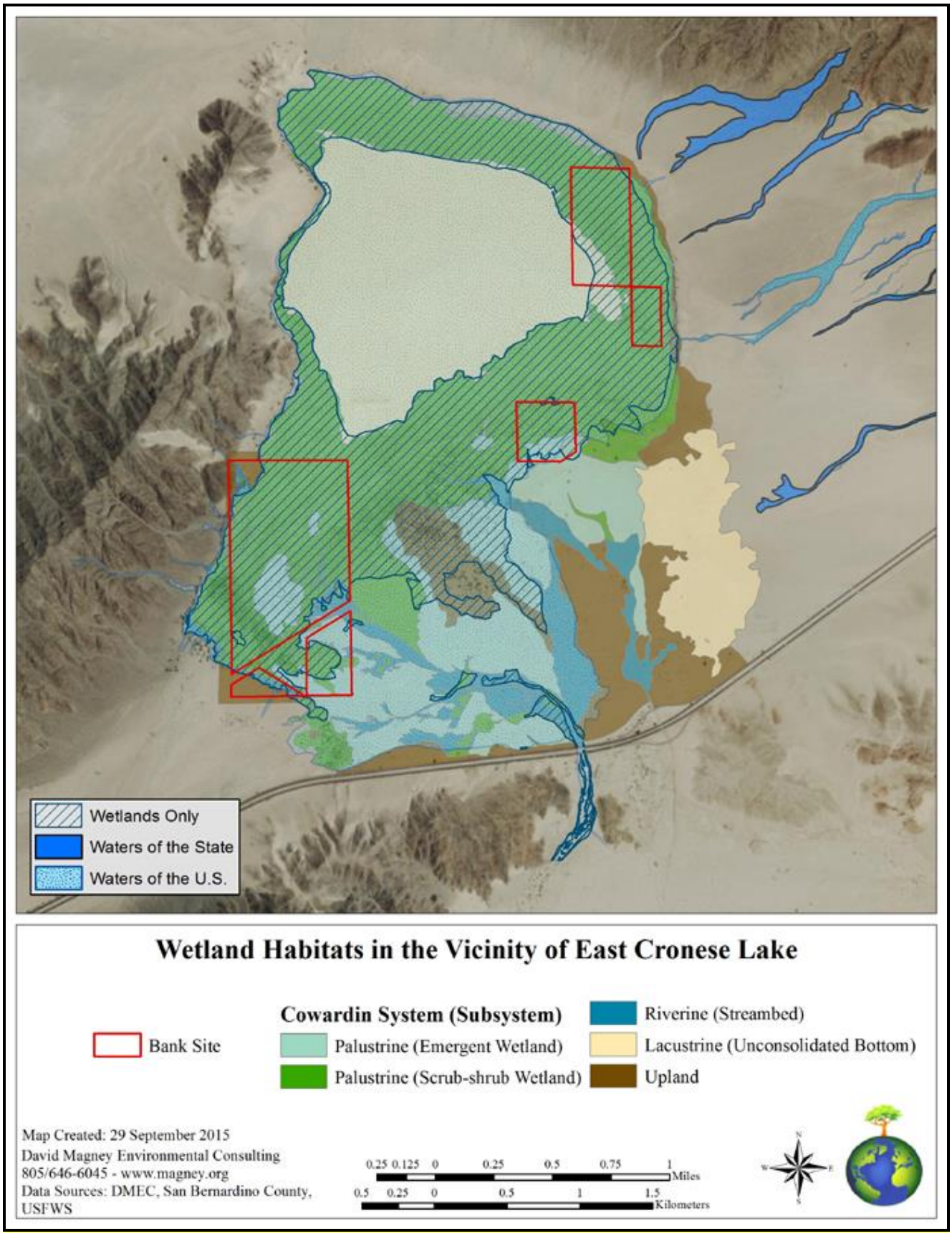
Tamarix ramosissima Stand; and

Cressa truxillensis-Distichlis spicata Herbaceous Alliance (Alkali Weed and Saltgrass)

Stutzia covillei-Lepidium nitidum-Cressa truxillensis Provisional Herbaceous Association (Alkali Weed-Saltgrass Playas and Sinks)

These habitats are discussed in the following subsections as suggested by DMEC, following conventions of Sawyer et al. (2009). The general habitat types present on the Bank Site are illustrated below in Figure 20, Land Cover in the Vicinity of East Cronese Lake. The vegetation alliances that constitute the general habitat types as classified by Cowardin et al. (1979) are defined and illustrated in Figure 22, Wetland Habitats in the Vicinity of East Cronese Lake.

Figure 19. Cowardin Wetland Habitats in the Vicinity of East Cronese Lake



VEGETATION ALLIANCES OF EAST CRONESE VALLEY

Below are detailed descriptions of each of the wetland vegetation alliances observed in the East Cronese Valley. Upland vegetation alliances are described fully in the Biological Resources report (DMEC 2015).

Atriplex torreyi Provisional Shrubland Alliance

Atriplex torreyi Provisional Shrubland Alliance (Torrey's Saltbush Scrub) is dominated by *Atriplex torreyi* var. *torreyi* (Torrey's Saltbush), which is a broad-leaved, evergreen, generally rounded shrub with pale brown to grey bark, sharp angled striate twigs, and pale green to grey, ovate to deltate-shaped leaves. *Atriplex torreyi* var. *torreyi* is uncommon but widely distributed east of the Sierra Nevada, through the Mojave Desert and into southwestern Utah. *Atriplex torreyi* occurs predominantly in dry lakes and washes with saline clayey soils, from 300 to 2,200 meters elevation (Zacharias 2013a). *Atriplex torreyi* has a WIS of FAC (Lichvar 2013).

Atriplex torreyi Provisional Alliance was observed inhabiting major areas of the East Cronese Lake playa bottom. The playa bottom is comprised of a network of patches and swales with varying degrees of absolute vegetation coverage, dominant species, and dead vegetation. Most undisturbed or uninvaded areas are dominated by *Atriplex torreyi* var. *torreyi*, which is associated with a variety of herbaceous annuals, including but not limited to: *Pectocarya recurvata* (Arched-nut Combseed), *Amsinckia tessellata* var. *tessellata* (Desert Fiddleneck), *Cryptantha angustifolia* (Narrow-leaved Forget-Me-Not), and *Schismus* spp. (Arabian and Mediterranean Grass). Scattered individuals of *Tamarix ramosissima* (Saltcedar) are also commonly found in *Atriplex torreyi* var. *torreyi* dominated areas.

Atriplex torreyi *Provisional Shrubland Alliance*

Atriplex torreyi *shrub and leaves and young fruit.*

The playa surface on the northern portion of the Southwestern parcel is primarily *Atriplex torrey*i Provisional Alliance, *Tamarix ramosissima* individuals become increasingly common moving south, eventually becoming dominant. *Atriplex torreyi* var. *torreyi* has been documented by Dobrowolski et al. (1990, as cited in Brostoff et al. 2001) as being very tolerant of flooding. This tolerance likely allows the species to persist and establish dominance on areas of the playa surface that are more frequently inundated. The majority of the Northern parcels are dominated by dense *Atriplex torreyi* Provisional Alliance and there are scattered individuals present on the Eastern parcel. Only several isolated individuals have been observed on the Southeastern parcel.

Prosopis glandulosa Woodland Alliance

Prosopis glandulosa Woodland Alliance (Mesquite Bosque, Mesquite Thicket) is dominated by *Prosopis glandulosa* var. *torreyana* (Honey Mesquite), which is a woody tree or shrub, primarily functioning as a shrub on the Bank Site parcels. It has feathery green leaves, and is winter deciduous. The small yellow flowers occur in dense dangling spikes, resembling catkins. *P. glandulosa* var. *torreyana* is a phreatophyte. It is dependent upon a permanent supply of groundwater, sending roots up to 15 meters deep to tap into water sources. It is found in deserts, commonly along the fringes of playa lakes, stream banks, floodplains, and margins of arroyos and washes below 1,100 meters elevation. *P. glandulosa* var. *torreyana* is assigned WIS of UPL (Lichvar 2014). However, DMEC, as well as other competent desert botanists[14], disagrees with this assignment. *P. glandulosa* var. *torreyana* is very strongly associated with the fringes various wetlands and is a reliable indicator of the presence of a relatively shallow groundwater table or access to permanent water. Due to its typical habitat of areas along playa fringes and stream banks, DMEC believes that *P. glandulosa* var. *torreyana* should be assigned a WIS of at least FAC if not FACW. Sawyer et al. (2009) classifies *Prosopis glandulosa* Woodland Alliance as "Sonoran-Coloradan Semi-desert Wash Scrub" and cites several populations as "riparian". Lichvar & Dixon (2007) characterize *Prosopis glandulosa* as both a "Dry Wash Species" and a "Dry Wash Phreatophyte", stating that, "These species, known and obligate phreatophytes, are usually limited

[14] Tim Thomas (retired botanist with the U.S. Fish & Wildlife Service) and Jim Andre (UC Reserve Manager, Granite Mountains Research Station), botanists very familiar with the flora of the Mojave Desert, personal communications in 2014.

to the narrow, gallery forest directly adjacent to the channel…". These patterns have been very clearly observed in the Cronese Basin, as discussed below.

Prosopis glandulosa *Woodland Alliance*

Prosopis glandulosa var. *torreyana* was observed inhabiting areas along the fringes of the East Cronese Lake playa bottom. A distinct band of *P. glandulosa* var. *torreyana* around the edges of the playa surface serves as a clear indicator of the edge of the wetland zone. However, dense *P. glandulosa* var. *torreyana* woodlands are also found in infrequently flooded and raised dune areas within the network of swales and washes that form the Mojave River Delta, which feeds floodwaters into the Cronese Basin (much of the Southwestern parcel). Scattered annual herbs are found among *Prosopis glandulosa* var. *torreyana* woodlands, sometimes forming dense clusters in openings, these herbaceous species primarily include: *Pectocarya recurvata* (Arched-nut Combseed), *Amsinckia tessellata* var. *tessellata* (Desert Fiddleneck), and *Schismus* spp. Scattered individuals of *Larrea tridentata* and *Tamarix ramosissima* occur in the playa fringe communities.

Suaeda nigra Shrubland Alliance

Suaeda nigra Shrubland Alliance (Bush Seepweed Scrub) is dominated by *Suaeda nigra* [formerly called *S. moquinii*] (Bush Seepweed), which is a shrub or subshrub, typically less than 1.5 meters tall. It has small linear to narrowly lanceolate-shaped leaves, 1 to 3 centimeters long, that can range from yellowish green to red to dark purple, appearing black. The flowers occur in clusters of 1 to 12 along the stems. It is found in desert and semi-desert habitats, often in saline and/or alkaline soils, on flat to gently sloping valley bottoms, playas, and toe slopes adjacent to alluvial fans, and bajadas below 1,300 meters elevation. *S. nigra* is assigned WIS of OBL (Lichvar 2014).

Suaeda nigra was observed inhabiting areas along the eastern fringes of the East Cronese Lake playa bottom, occupying the majority of the Eastern parcel. Its distribution is quite restricted to one distinct stand on the eastern fringe of East Cronese Lake; however it is somewhat more widespread around the fringes of West Cronese Lake. The densest stands occur on the eastern fringes of both east and west Cronese Lakes.

This distribution is presumed to be a function of the prevailing winds from the west which, in states of inundation, push the standing surface water to the east thereby concentrating evaporates and creating soil conditions favorable to *S. nigra*. Scattered annual herbs are found among *S. nigra* shrublands, sometimes forming dese clusters in openings, these herbaceous species primarily include: *Pectocarya recurvata* (Arched-nut Combseed), *Amsinckia tessellata* var. *tessellata* (Desert

Fiddleneck), and *Schismus* spp. *Suaeda nigra* Shrubland is also associated with scattered individuals and patches of *Stutzia covillei, Lepidium nitidum,* and *Cressa truxillensis*.

Suaeda nigra *dominated playa flats in East Cronese Lake.*

Suaeda nigra *shrub and leaves.*

Tamarix ramosissima Stand

Tamarix ramosissima Stand (Tamarisk Thicket)is dominated by *Tamarix ramosissima* (Saltcedar), which is a woody tree or shrub, primarily functioning as a shrub on the Bank site. It has scale-like green leaves, turning brown and deciduous during times of drought. The flowers are fluffy white to pink racemes. Native to Asia, it has naturalized in and aggressively invaded wetland and riparian habitats of the southwestern United States. While common and highly invasive in southern California and northern Mexico, it is also found as widespread as Washington and Louisiana. It occurs in washes and along streambanks below 200 meters elevation (Gaskin 2012).

Tamarix ramosissima is assigned no WIS in the most recent listing (Lichvar et al. 2014). DMEC suggests here that *T. ramosissima* be treated as FACW or FAC. All other species of the genus *Tamarix* are treated as FAC or FACW within the Arid West Region in the most recent listing (Lichvar et al. 2014), with which *T. ramosissima* shares a very similar life history. In both the previous Reed lists (1988 & 1997) *T. ramosissima* was treated as FAC in California.

Tamarix ramosissima was observed inhabiting major areas of the East Cronese Lake playa bottom and shorelines. The playa bottom is comprised of a network of patches and swales with varying degrees of absolute vegetation coverage, dominant species, and dead vegetation. *Tamarix ramosissima* becomes increasingly dominant moving southward on the East Cronese Playa bottom. Particularly along the southwestern portion, the east-central side of the Southwestern parcel, and into the adjacent property to the east, *Tamarix ramosissima* forms dense thickets with individuals occasionally reaching over 3 meters high. Scattered annual herbs are found among *Tamarix ramosissima* stands, sometimes forming dese clusters in openings, these herbaceous species primarily include: *Pectocarya recurvata*, *Amsinckia tessellata* var. *tessellata*, and *Schismus* spp. Scattered individuals are common among *Atriplex torreyi* Alliance, and some areas dominated by *Tamarix ramosissima* contain scattered individuals of *Atriplex torreyi* var. *torreyi*. The Southeastern parcel is also dominated by *Tamarix ramosissima* where vegetated, likely a result of *Tamarix ramosissima* colonizing following the historic disturbance due to plowing.

Tamarix ramosissima *dominating East Cronese Lake, some thriving, some dead or dormant.*

Tamarix ramosissima *habit (large shrub) and flowers.*

Cressa truxillensis-Distichlis spicata Herbaceous Alliance

Cressa truxillensis-Distichlis spicata Herbaceous Alliance (Alkali Weed-Saltgrass Grassland) is an low-growing herbaceous plant community occurring on saline and alkaline sinks and playas (Sawyer et al. 2009). This alliance is represented in the Cronese Basin in East Cronese Lake by a previously undescribed plant association so far unique to East Cronese Lake: *Stutzia covillei-Lepidium nitidum-Cressa truxillensis* Provisional Herbaceous Association. It is dominated by *Stutzia covillei* (Coville's Saltbush) and *Lepidium nitidum* (Shiny Peppergrass), with a minor representation by *Cressa truxillensis* (Alkali Weed) as a subdominant. *Stutzia covillei* and *Lepidium nitidum* are both broad-leaved, spring-flowering annuals that are either typically or often found in saline wetland sites.

Left: Cressa truxillensis *habit and habitat. Right: Close-up of* Cressa truxillensis *flowers and leaves.*

Stutzia covillei (Standl.) E.H. Zacharias [*Atriplex covillei* (Standl.) J.F. Macbr., *Atriplex phyllostegia* (Torr. ex S. Watson) S. Watson; *Endolepis covillei* Standl.] is uncommon but widely distributed in the San Joaquin Valley and east of the Sierra Nevada through the Mojave Desert and into southern Nevada (many occurrences in the San Joaquin Valley have been extirpated). *Stutzia covillei* occurs predominantly in dry lakes and flats with saline clayey soils, from below 2,100 meters elevation (Zacharias 2013b). *Stutzia covillei* (as *Atriplex phyllostegia*) has a WIS of FACW (Lichvar et al. 2014).

Lepidium nitidum Nutt. [*Lepidium nitidum* var. *howellii* C.L. Hitchc.; *Lepidium nitidum* var. *oreganum* (Greene) C.L. Hitchc.] is a puberulent (very small hairs) erect to decumbent annual herb in the Mustard family (Brassicaceae). It is an early blooming species that is typically in fruit by February and March. *Lepidium nitidum* occurs in alkaline soils, meadows, pastures, vernal pools, fields, and beaches <1,000 m. It ranges from Washington to Baja California, Mexico. *Lepidium nitidum* has been assigned a FAC WIS (Lichvar et al. 2014).

Stutzia covillei-Lepidium nitidum-Cressa truxillensis Provisional Herbaceous Association was observed inhabiting large areas of the East Cronese Lake playa bottom, primarily along the eastern side. The playa bottom is comprised of a network of patches and swales with varying degrees of absolute vegetation coverage, dominant species, and dead vegetation. Associated species observed with the dominants include: *Amsinckia tessellata* var. *tessellata*, *Chaenactis stevioides* (Esteve Pincushion), *Cryptantha angustifolia*, *Dieteria canescens* var. *canescens* (Hoary Aster), *Malacothrix glabrata* (Desert Dandelion), *Salsola tragus* (Russian Thistle), *Sisymbrium irio* (London Rocket), and *Schismus* spp. *Suaeda nigra* and *Atriplex torreyi* var. *torreyi* occur nearby.

Stutzia covillei-Lepidium nitidum-Cressa truxillensis *Provisional Herbaceous Association occurring in the bottom of the playa lake in the vicinity of the Eastern parcel of the Bank Site.*

Left: Stutzia covillei. *Right:* Lepidium nitidum *with* Cressa truxillensis.

USFWS CLASSIFICATION OF WETLANDS

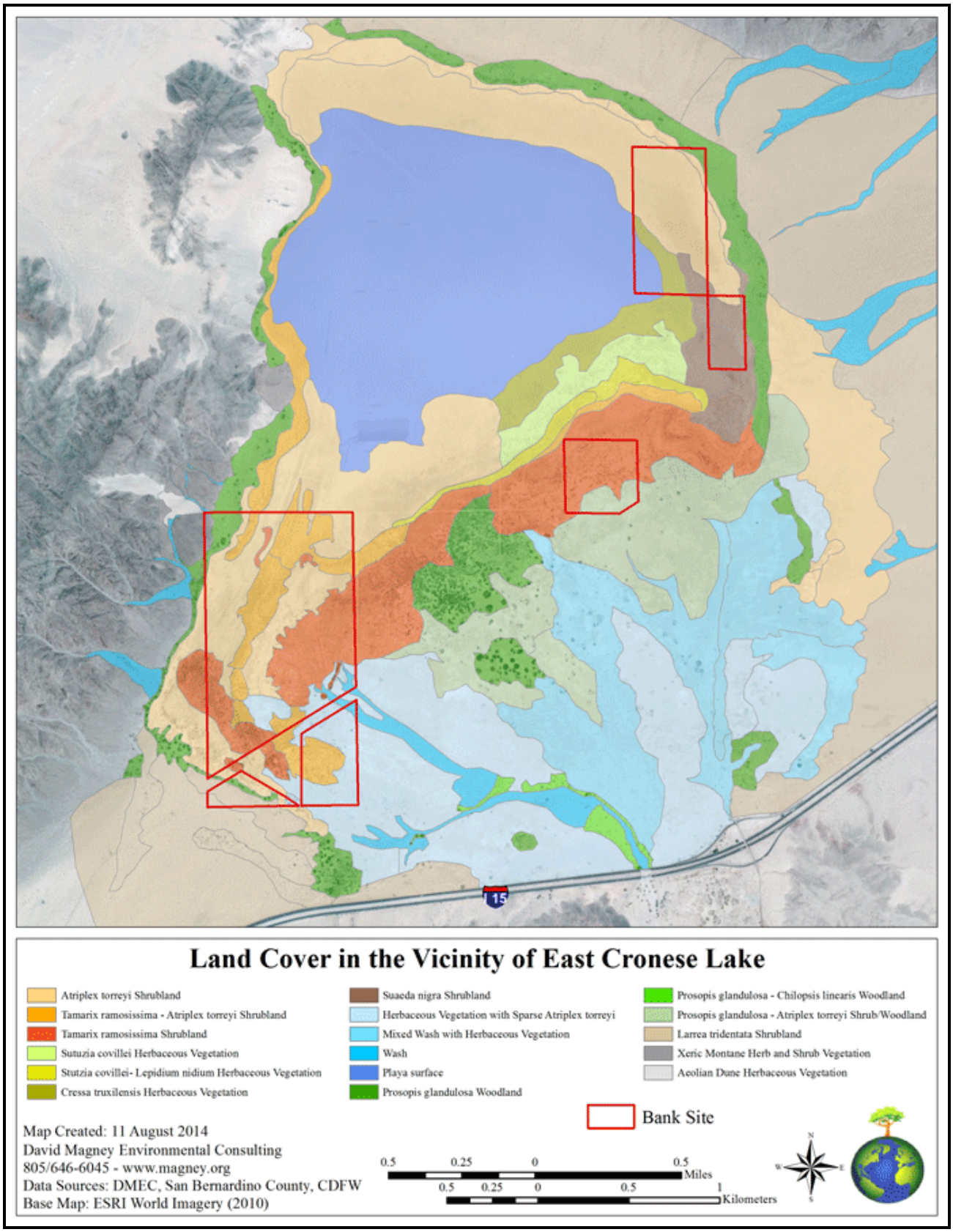
The USFWS classification of wetlands of the United States (Cowardin et al. 1979) differentiates wetland habitats based on landscape position, hydrology, and the form of vegetation, generally ignoring the identity of the dominant or characteristic species. Three basic forms are found in the East Cronese Lake basin: Palustrine, Riverine, and Lacustrine, which are described in detail above.

The vegetated Palustrine, Lacustrine, and Riverine wetland habitats observed onsite and described above include:

- *Atriplex torreyi* Provisional Shrubland Alliance (Torrey Saltbush Scrub);
- *Prosopis glandulosa* Woodland Alliance (Mesquite Bosque)
- *Suaeda nigra* Shrubland Alliance (Bush Seepweed Scrub)
- *Tamarix ramosissima* Stand
- *Cressa truxillensis-Distichlis spicata* Herbaceous Alliance
  - *Stutzia covillei-Lepidium nitidum-Cressa truxillensis* Provisional Herbaceous Association

The predominant wetland habitat type onsite is classified within the Palustrine System; however there are also habitats classified within the Riverine and Lacustrine Systems onsite. These wetland habitat types are illustrated in Figure 19. Refer to the previous discussion (pages 47 – 57) for a more complete explanation.

Figure 20. Land Cover and Plant Communities of East Cronese Lake



MAPPED SOIL UNITS

The Natural Resources Conservation Service (NRCS) has no available detailed data for the Bank Site. The NRCS California Soil Survey Status map (NRCS 2013) lists the Mojave Desert Area, California (CA695) as a non-project area. Query of the fine-scale NRCS Web Soil Survey (NRCS 2014) maps the Bank Site as "NOTCOM" with no digital data available. However, the broad-scale NRCS General Soils Map of the United States (STATS2GO Database, also accessed through Web Soils Survey, NRCS 2014) maps the Bank Site as containing Rositas-Carrizo Association, Cajon-Arizo, Playas, and Tecopa-Rock Outcrop-Lithic Torriorthents Association.

Figure 21, NRCS Mapped Soils, illustrates the NRCS defined soil boundaries in relation to the Bank Site. These associations are not included in the National List of Hydric Soils 2014 (NRCS 2014a). The NRCS General Soils Map is intended for use at the regional planning level and is not entirely accurate at finer-scale levels. Errors in soil boundaries are evident in Figure 21, particularly just west of the Southwestern parcel boundary where "Playa" soils clearly extend onto rocky mountainside. However, the general classifications and associations for the East Cronese Lake area, as defined by NRCS, are still valid and useful regardless of the roughly defined boundaries. The NRCS classified soil series present at each DMEC sampled plot is summarized in Table 9, Soils/Plot Series at the Bank Site.

Rositas-Carrizo Association

The **Rositas-Carrizo Association** is classified according to the description provided by Bowman, Soil Conservation Service (1973). This association occurs in the desert. It is comprised of soils that developed in alluvium derived from mica schist and acid igneous rock. It supports desert shrub, cactus, and annual herb vegetation communities. Rositas soils are somewhat excessively drained, light to brownish-grey loamy coarse sands to fine sand. Carrizo soils are excessively drained, very pale brown and very gravelly sands.

Cajon-Arizo Association

The **Cajon-Arizo Association** is classified according to the NRCS (2014b) official soil series descriptions for Cajon and Arizo series' independently.

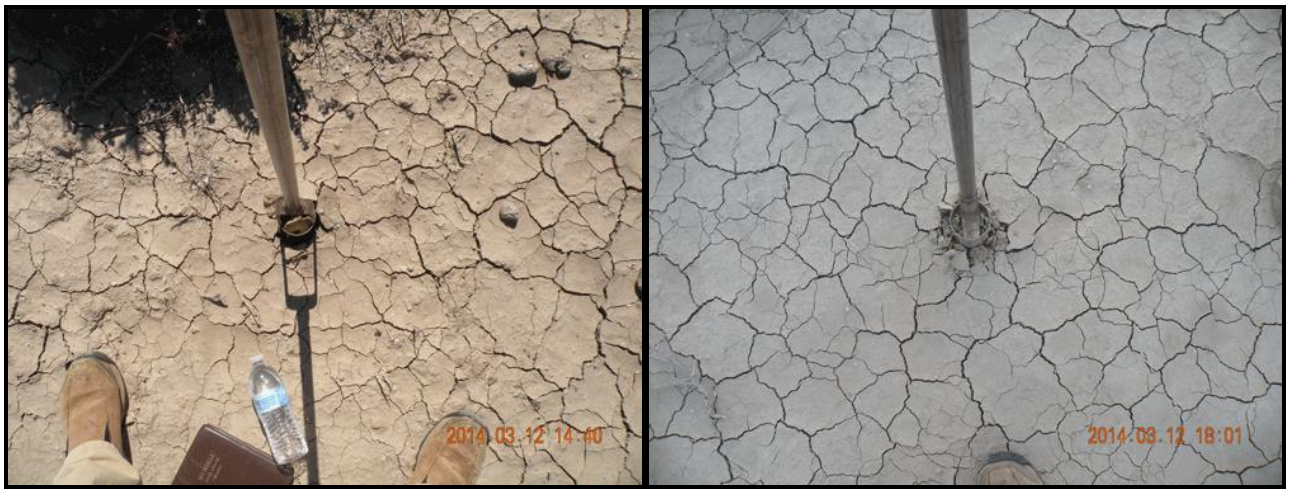
The Cajon series is among the mixed, thermic Typic Torripsamments class consisting of very deep, somewhat excessively drained soils that forms in sandy alluvium from dominantly granitic rocks. Cajon soils are on alluvial fans, fan aprons, fan skirts, inset fans, and river terraces. Cajon soils have a mostly gravel sized rock fragment control section. They support mostly desert shrubs including Creosote Bush, Saltbush, Joshua Trees, and annual grasses and forbs among others.

The Arizo series is among the sandy-skeletal, mixed, Typic Torriorthents class consisting of very deep, excessively drained soils that formed in mixed alluvium. Arizo soils are on recent alluvial fans, inset fans, fan apron, fan skirts, stream terraces, floodplains of intermittent streams and channels. It medium-sized gravel and larger rock fragment control section and supports mainly Creosote Bush and Burrobush.

Playas

Playas are geomorphic surfaces that occupy the lowest portion of an undrained depression or basin. Playas is not a distinct described soil association, and this classification within the General Soils

Map (NRCS 2014) is apparently a rough-scale generalization of playa surfaces that have not been thoroughly examined. However, DMEC has observed that the soils of Cronese Lake Playa surface typically have a thin cracked silty clay crust with unconsolidated sand to silty sand underneath, occasionally mixed with unconsolidated biotite, and/or exhibiting clay below 12 inches depth. In addition to surface crust cracks, East Cronese Lake exhibits extensive networks of deeper, gas-release created cracks, fissures, and holes. Playa surfaces, such as East Cronese Lake, are typically moderately to extremely more saline than the surrounding soils.



Left: Soil cracks visible at plot B-4. Right: Soil cracks visible at plot DMEC1.

Tecopa-Rock Outcrop-Lithic Torriorthents Association

The **Tecopa-Rock Outcrop-Lithic Torriorthents Association** is classified according to the Official Soil Series Descriptions (NRCS 2014b). Tecopa-Rock Outcrop-Lithic Torriorthents Association is a series of shallow, largely undeveloped soils confined to hillsides over and between solid rock outcrops. Tecopa series very gravelly sandy loam formed from weathered quartzite, schist and gneiss. Tecopa series is well drained, facilitating medium to rapid runoff and moderate permeability.

Figure 21. NRCS Mapped Soils of Cronese Basin

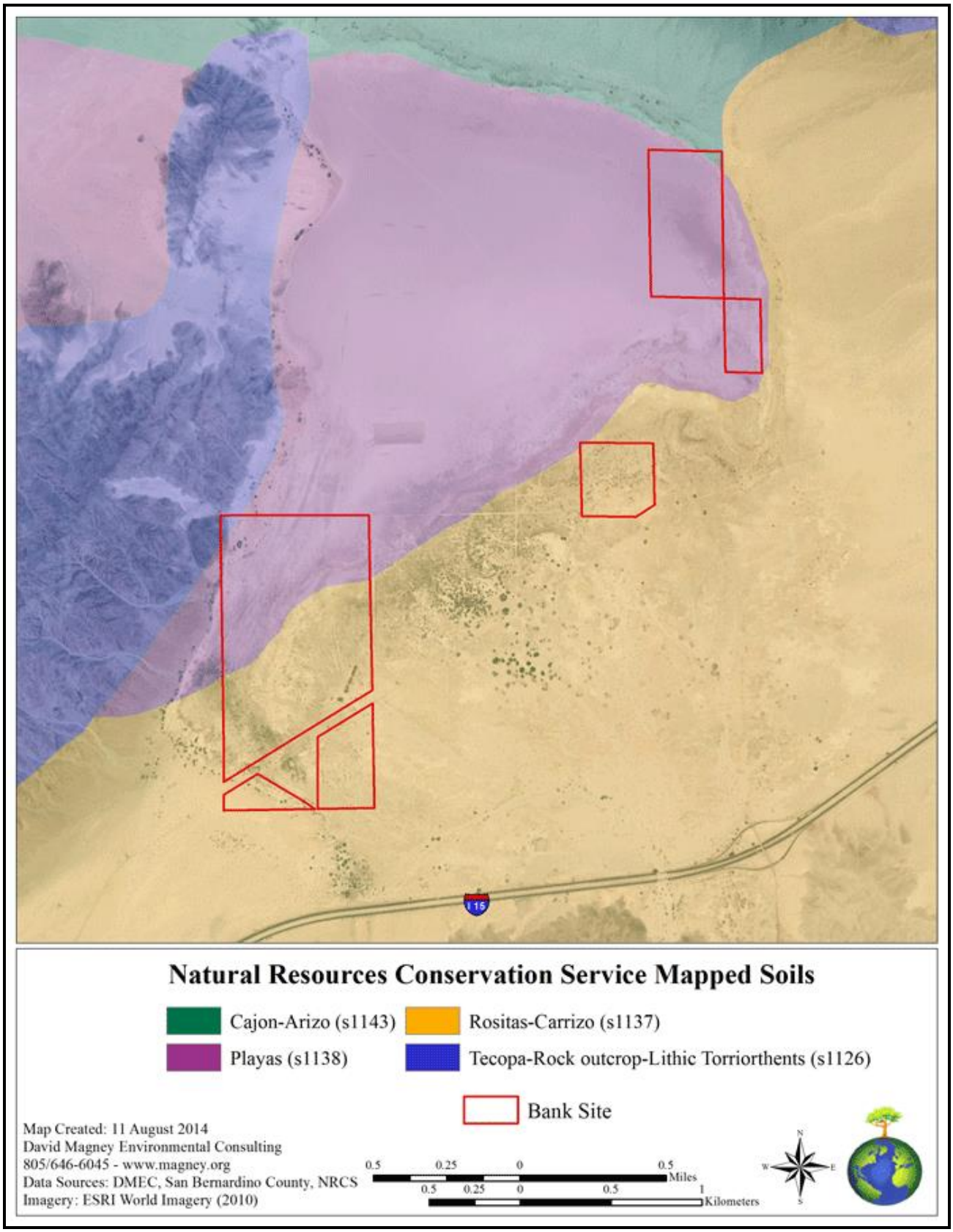


Table 9. Soils/Plot Series at the Bank Site

Transect	Plot #	Soil Series
A	1	Playas
	2	Rositas-Carrizo
	3	Rositas-Carrizo
	4	Playas
B	1	Playas
	2	Playas
	3	Playas
	4	Playas
C	1	Rositas-Carrizo
	2	Playas
	3	Playas
D	1	Tecopa
	2	Playas
	3	Playas
	4	Playas
E	1	Rositas-Carrizo
	2	Playas
	3	Playas
F	1	Playas
	2	Rositas-Carrizo
G	1	Rositas-Carrizo
	2	Playas
	3	Playas
	4	Rositas-Carrizo
H	1	Rositas-Carrizo
	2	Playas
	3	Playas
I	1	Rositas-Carrizo
	2	Rositas-Carrizo
	3	Rositas-Carrizo
	4	Rositas-Carrizo
	5	Rositas-Carrizo
	6	Rositas-Carrizo
	7	Rositas-Carrizo
	8	Rositas-Carrizo
J	1	Rositas-Carrizo
	2	Rositas-Carrizo
	3	Rositas-Carrizo
K	1	Playas
	2	Playas
	3	Rositas-Carrizo
	4	Rositas-Carrizo
Single Sample Locations	DMEC1	Playas
	DMEC2	Playas
	DMEC3	Playas
	DMEC4	Playas
	DMEC5	Playas
	AMEC1	Playas
	AMEC2	Playas
	AMEC3	Playas

SECTION V. WETLAND HABITATS DETERMINATION

This section provides a discussion of the findings of the wetland delineation and presents DMEC's Corps-defined determinations of wetland habitats currently present at the Bank Site. The results are based upon and supported by findings at 47 surveyed data points for each of the three wetland criteria.

RESULTS

All data were collected in the field by determining the presence (or absence) for all three wetland parameters. These data were analyzed in-office, aided by aerial photographic interpretation, and the final result for each criterion were determined. Finally, the wetlands were mapped onsite to compare with wetlands mapped by the USFWS (NWI) to determine any differences in acreage.

Table 10, Wetland Delineation Determinations for Surveyed Data Points, is a summary table of all determinations made for the 47 sampling plots surveyed at the bank site according to the *Corps Manual* and *Arid West Supplement*. Table 10 provides the transect letter, plot number, field determinations for all three wetland criteria (vegetation, hydrology, and soils), and a wetland determination for each plot surveyed.

Figure 8 illustrates the locations of each sample point site and transect in relation to the Bank Site. Figures 9 through 15 illustrate the individual transects sampled by DMEC.

Table 10. Wetland Delineation Determinations for Surveyed Data Points

Transect	Plot #	Hydrophytic Vegetation Present?	Wetland Hydrology Present?	Hydric Soils Present?	Waters of the U.S.	Corps Wetland	Waters of the State
A	1	Yes[15]	Yes	Yes[16]	Yes	Yes	Yes
	2	No	No	No	No	No	No
	3	No	No	No	No	No	No
	4	Yes	Yes	Yes	Yes	Yes	Yes
B	1	Yes	Yes	Yes	Yes	Yes	Yes
	2	Yes[17]	Yes	Yes	Yes	Yes	Yes
	3	Yes	Yes	Yes	Yes	Yes	Yes
	4	Yes	Yes	Yes	Yes	Yes	Yes
C	1	No	No	No	No	No	No
	2	No	Yes	No	Yes	No	Yes
	3	Yes	Yes	Yes	Yes	Yes	Yes
D	1	No	No	No	No	No	No
	2	No	Yes	Yes	Yes	No	Yes
	3	No	Yes	Yes	Yes	No	Yes

[15] See Table 5
[16] High alkalinity/saline conditions likely have prevented or masked development of observable hydric soil indicators (Brostoff et al. 2001). See Table 6 for specific pH and conductivity values at these plots.
[17] See Table 5

Transect	Plot #	Hydrophytic Vegetation Present?	Wetland Hydrology Present?	Hydric Soils Present?	Waters of the U.S.	Corps Wetland	Waters of the State
	4	Yes	Yes	Yes	Yes	Yes	Yes
E	1	Yes	No	No	No	No	No
	2	Yes[18]	Yes	Yes[19]	Yes	Yes	Yes
	3	Yes[20]	Yes	Yes[21]	Yes	Yes	Yes
F	1	No	Yes	No	Yes	No	Yes
	2	No	No	No	No	No	No
G	1	No	No	No	No	No	No
	2	No	Yes	No	Yes	No	Yes
	3	No	Yes	No	Yes	No	Yes
	4	No	No	No	No	No	No
H	1	No	No	No	No	No	No
	2	Yes[22]	Yes	Yes[23]	Yes	Yes	Yes
	3	Yes	Yes	Yes[24]	Yes	Yes	Yes
I	1	No	No	No	No	No	No
	2	Yes	Yes	Yes	Yes	Yes	Yes
	3	Yes	No	No	No	No	Yes
	4	Yes	Yes	Yes	Yes	Yes	Yes
	5	Yes	Yes	Yes	Yes	Yes	Yes
	6	Yes	No	No	No	No	Yes
	7	Yes[25]	Yes[26]	Yes	Yes	Yes	Yes
	8	No	Yes	Yes	Yes	No	Yes
J	1	Yes[27]	Yes	Yes[28]	Yes	Yes	Yes
	2	Yes	Yes	Yes[29]	Yes	Yes	Yes
	3	No	Yes	Yes[30]	Yes	No	Yes
K	1	Yes	Yes	Yes	Yes	Yes	Yes
	2	Yes	Yes	Yes	Yes	Yes	Yes
	3	Yes	Yes	Yes	Yes	Yes	Yes
	4	Yes	No	Yes	No	No	No
	DMEC1	Yes	Yes	Yes[31]	Yes	Yes	Yes

[18] See Table 5
[19] High alkalinity/saline conditions likely have prevented or masked development of observable hydric soil indicators (Brostoff et al. 2001), reflecting the discrepancy between the field data sheet and DMEC's determination. See Table 6 for specific pH and conductivity values at these plots.
[20] See Table 5
[21] See Table 6
[22] See Table 5
[23] See Table 6
[24] See Table 6
[25] See Table 5
[26] DMEC analysis after completion of the field surveys concluded that wetland hydrology was present.
[27] See Table 5
[28] See Table 6
[29] Ibid.
[30] Ibid.
[31] Ibid.

Transect	Plot #	Hydrophytic Vegetation Present?	Wetland Hydrology Present?	Hydric Soils Present?	Waters of the U.S.	Corps Wetland	Waters of the State
Single Sample Locations	DMEC2	Yes	Yes	Yes[32]	Yes	Yes	Yes
	DMEC3	No	Yes	No	Yes	No	Yes
	DMEC4	No	Yes	No	Yes	No	Yes
	DMEC5	No	Yes	Yes	Yes	No	Yes
	AMEC1	Yes	Yes	Yes	Yes	Yes	Yes
	AMEC2	Yes	Yes	Yes	Yes	Yes	Yes
	AMEC3	Yes	Yes	Yes	Yes	Yes	Yes
	AMEC4	No	Yes	No	Yes	Yes	Yes
	AMEC5	No	Yes	No	Yes	Yes	Yes
	AMEC6	No	Yes	No	Yes	Yes	Yes

The following is a summary of DMEC's analysis of the wetland riparian habitats at the Bank Site. DMEC has determined through the onsite delineation that there are approximately 368.6 acres of Corps Jurisdictional Wetlands, plus approximately 51.1 acres of Waters of the U.S., together totaling in 419.7 acres of jurisdictional waters and wetlands at the Bank Site. The wetland habitats and waters of the U.S. are illustrated on Figure 19 above and Figure 22 below, and are summarized in Table 11, Acreage of Wetlands and Waters of the U.S. Onsite.

Table 11. Acreage of Wetlands and Waters of the U.S. Onsite

Wetland Classification	Acres
Waters of the U.S. Only	51.1
Jurisdictional Wetlands	368.8
Grand Total Jurisdictional Area	**419.7**

All Corps Jurisdictional **Wetlands** are also considered Waters of the State for a total of 368.8 acres. Additional washes that are not directly connected to the Mojave River or East Cronese Lake but have clearly defined beds and banks in the Cronese Basin are Waters of the State but not Corps jurisdictional. These occur primarily on the eastern and southeastern side of the basin, as illustrated Figure 22, Wetland Habitats in the Vicinity of East Cronese Lake. None of these occur within the Bank Site parcels.

The proposed bank includes both restoration (rehabilitation) credits and preservation credits. Restoration credits are proposed for areas with high cover of invasive plants, primarily Saltcedar (*Tamarix ramosissima*). Preservation credits are proposed for areas with low cover of invasive plants; these areas will be protected from disturbances and preserved as intact wetlands. Table 12, Area of Wetland Habitats and Types of Proposed Mitigation of the Bank Site, shows the total number of acres for each proposed mitigation type, listed by Cowardin System wetland habitat type. More details on the areas targeted for restoration and preservation are in the Habitat Mitigation and Monitoring Plan for Mojave River Mitigation Bank at East Cronese Lake and the Mojave River Watershed Mitigaton Bank Prospectus (DMEC 2015c and DMEC 2015d).

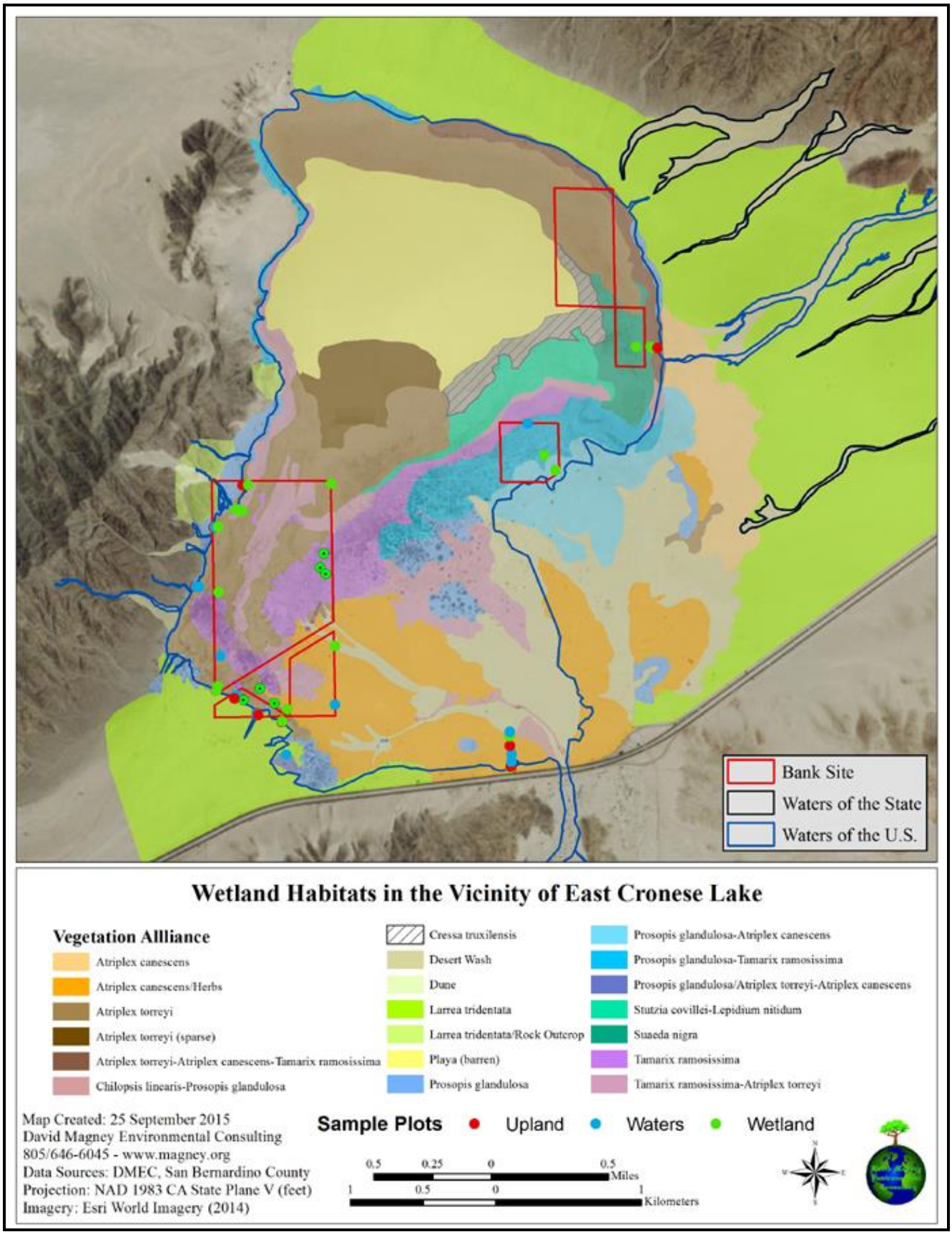
[32] Ibid.

Table 12. Area of Wetland Habitats and Types of Proposed Mitigation of the Bank Site

Cowardin System Wetland Type	Restoration (Rehabilitation) Area	Preservation Area	Total
Riverine (Streambed)	11.36	8.2	19.56
Palustrine (Scrub-shrub wetland)	172.21	140.02	312.23
Palustrine (Emergent wetland)	23.58	43.61	67.19
Lacustrine (Unconsolidated Bottom)	0	19.42	19.42
Total	**206.72**	**211.73**	**418.4**[33]

[33] The total area of wetland habitats varies slightly from the amount that is considered jurisdictional waters/wetlands since not all habitats that are classified as wetlands according to the Cowardin et al. (1979) system are jurisdictional in some circumstances.

Figure 22. Wetland Habitats in the Vicinity of East Cronese Lake



SECTION VI. ACKNOWLEDGEMENTS

This wetland delineation report was written by David Magney and Evan Lashly, with assistance from Joe Broberg. Mr. Magney and Mr. Lashly conducted the wetland delineation onsite, with assistance from Jared Logan in determining hydrological connections of desert washes into East Cronese Lake. Scot Campbell of AMEC separately delineated wetlands on small portions of the Lyons property on behalf of Caltrans. Mr. Broberg assisted with soil sampling and supplemental sections of the report.

All photographs were taken by Mr. Magney. Mr. Magney, Mr. Lashly, and Victoria Peters prepared the GIS database and the graphics for this report and calculated the area of jurisdiction. Mr. Magney reviewed and edited this report. Mr. Broberg created and edited supplemental tables. Ms. Peters proofread and edited the final draft of the report.

Veronica Li, Corps project manager, provided guidance on the parameters of the delineation and verified this delineation after minor adjustments. Jan Zimmerman, Lahontan Regional Water Quality Control Board, and Sarvy Mahdavi, E.P.A., provided valuable comments on the previous version of this report.

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PERSONAL COMMUNICATIONS

Chavez, Anthony, Resource Specialist, Bureau of Land Management, Barstow, California. Telephone conversation on 29 April 2014 with Richard Lyons, regarding conditions of East Cronese Lake and the LYONS, Inc., properties.

APPENDIX A.
COMPLETED WETLAND DETERMINATION FIELD DATA FORMS (ARID WEST REGION)

DMEC

A1

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: E. CRONESE LAKE City/County: SAN BERNARDINO Sampling Date: 1/31/14
Applicant/Owner: LYONS State: CA Sampling Point: S2 A
Investigator(s): MAHNEY | LASHLY Section, Township, Range: S25 T12N R6E
Landform (hillslope, terrace, etc.): EDGE OF LAKEBED Local relief (concave, convex, none): SLIGHT INCLINE Slope (%): 2
Subregion (LRR): INTERIOR DESERT (D) Lat: 35.11822 Long: -116.29461 Datum: NAD83
Soil Map Unit Name: MOJAVE DESERT AREA (CA695) NWI classification: NONE (<2 FT FROM
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.) LZUBF BOUNDARY)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation N, Soil Y, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: 3 YEAR DROUGHT IN DRY LAKE BED

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 3m)			
1. ATRIPLEX ~~[illegible]~~ CANESCENS	25	Y	(FAC)
2.			
3.			
4.			
5.			
	25 = Total Cover		
Herb Stratum (Plot size: ____)			
1. AMSINCKIA TESSELLATA	2		NL
2. PETROGLYPHA	2		↓
3. BRASSICA TOURNEFORTII	1		↓
4.			
5.			
6.			
7.			
8.			
	5 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= 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: 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 ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

DMEC

SOIL

Sampling Point: S2A1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 3/3	100					SANDY LOAM	UNCONSOLIDATED

[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)
- X 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)
- X 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 X No ____

Remarks: High alkalinity masking hydric soil indicators - pH = 8.35
conductivity = 495

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**)
- X Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- X Surface Soil Cracks (B6)
- X 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**)
- X 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 X No ____

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

Remarks:

A2

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: E. Cronese Lake City/County: San Bernardino County Sampling Date: 1/31/14
Applicant/Owner: Lyons State: CA Sampling Point: S3-94
Investigator(s): Magney | Lashly Section, Township, Range: S25 T12N R6E
Landform (hillslope, terrace, etc.): Hillside - Edge of lakebed Local relief (concave, convex, none): Hill Slope (%): 5
Subregion (LRR): Inter-mo Desert (D) Lat: 35°07.042' Long: 116°17.687' Datum: WGS84
Soil Map Unit Name: Mojave Desert Area (CA695) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation N, Soil Y, or Hydrology Y naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: 3 year drought @ on fringe of dry lakebed – on shoreline w/ clear veg/soils change

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 3m)			
1. Atriplex polycarpa	15		FACU
2.			
3.			
4.			
5.			
	15 = Total Cover		
Herb Stratum (Plot size: 3m)			
1. Pectocarya	5		
2. Camissonia bistorta	1		
3.			
4.			
5.			
6.			
7.			
8.			
	6 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 79 % 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: ____ (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? ~~Yes X~~ No X

Remarks:

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SOIL

Sampling Point: 53-94A2

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
0-16							FINE SAND	
16-18	10YR 5/4	100	10YR 3/2	2			LOAMY SAND	
							~~LOAMY 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 X

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 X Depth (inches): _____

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

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

DMEC

A3

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: E. CRONESE LAKE City/County: SAN BERNARDINO Co. Sampling Date: 1/31/14
Applicant/Owner: LYONS State: CA Sampling Point: S4 A3
Investigator(s): MAUNEY | LASHLY Section, Township, Range: S24 T12N R6E
Landform (hillslope, terrace, etc.): AEOLIAN SANDY HILLSIDE Local relief (concave, convex, none): CONVEX Slope (%): 3
Subregion (LRR): INTERIOR DESERT (D) Lat: 35.11818 Long: 116.29485 Datum: NAD83
Soil Map Unit Name: MOJAVE DESERT AREA (CAGGS) NWI classification: NONE - L2UBF ADJACENT
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: 3 YR DROUGHT IN DRY LAKE BED – ON SHORELINE W/ CLEAR CHANGE IN VEG/SOILS

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 3m)			
1. LARREA TRIDENTATA	30%	Y	NL
2.			
3.			
4.			
5.			
	30% = Total Cover		
Herb Stratum (Plot size: 3m)			
1. ATRIPLEX PELTOCARPA SP.	5%		NL
2. CAMISSONIA SP.	5%		NL
3.			
4.			
5.			
6.			
7.			
8.			
	10% = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 90 % 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: ____ (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
__ 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 X

Remarks:

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SOIL

Sampling Point: 54A3

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
0-16							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 X

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 X

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

Remarks:

US Army Corps of Engineers

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DMEC

WETLAND DETERMINATION DATA FORM – Arid West Region

A4

Project/Site: Coonese Lake Mitigation Bank City/County: San Bernardino, CA Sampling Date: 10/28/14
Applicant/Owner: T40, Inc. State: CA Sampling Point: WP020 A4
Investigator(s): David Magney, Veronica (Chm) Lee Section, Township, Range:
Landform (hillslope, terrace, etc.): playa Local relief (concave, convex, none): Concave Slope (%): 0
Subregion (LRR): Lat: 35.11819 Long: -116.29443 Datum: NAD 83
Soil Map Unit Name: NWI classification: Palustrine Scrub-shrub
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation X, Soil X, or Hydrology X naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 30m)			
1. Tamarix ramosissima	15	Yes	FAC
2. Atriplex torreyi	15	Yes	FAC
3.			
4.			
5.			
	30 = Total Cover		
Herb Stratum (Plot size: 30m)			
1. Schismus barbatus	20	No	(FAC)
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	20 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		

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

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 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	x 1 =
FACW species	x 2 =
FAC species 2	x 3 = 6
FACU species	x 4 =
UPL species	x 5 =
Column Totals: 2 (A)	6 (B)

Prevalence Index = B/A = 6/2

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: 020 A4

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
1-6"	5YR 3/3		10 YR 5/3	50	D	M	clayey loam	platy / blocky
>6"	5YR 3/3		10YR 5/3				clayey loam	smaller peds

[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)
- X 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**)
- X Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- X Surface Soil Cracks (B6)
- X Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- X Aquatic Invertebrates (B13) literature
- ___ 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 X Depth (inches): _____

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

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

Wetland Hydrology Present? Yes ✓ No ___

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

Landsat imagery on multiple dates

Remarks:

DMEC

B1

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: E. CRONESE City/County: SAN BERNARDINO Co. Sampling Date: 3/12/14
Applicant/Owner: ~~M~~ RICHARD LYONS State: CA Sampling Point: WP01
Investigator(s): MAGNEY | LASHLEY Section, Township, Range: S24 T12N R6E
Landform (hillslope, terrace, etc.): GENTLE SLOPE Local relief (concave, convex, none): SLIGHT CONCAVE Slope (%): 1
Subregion (LRR): INTERIOR DESERT (D) Lat: 35.11669 Long: 116.29543 Datum: NAD83
Soil Map Unit Name: MOJAVE DESERT AREA NWI classification: L2UBF
Are climatic / hydrologic conditions on the site typical for this time of year? Yes Y No _____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes Y No _____
Are Vegetation N, Soil Y, or Hydrology Y 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 Y No _____
Hydric Soil Present? Yes X No _____
Wetland Hydrology Present? Yes X No _____
Is the Sampled Area within a Wetland? Yes X No _____

Remarks: EDGE OF DRY LAKE PLAYA NEAR BASE OF EPHEMERAL STREAM - VEGETATED VEGETATED SAND/GRAVEL BARS NEAR BY - PLAYA SHORE CLEARLY VISIBLE UPSLOPE APPEARS RIVERINE → 20% VEG IS ANNUALS & SHRUBS SPARSE IN SANDY STRETCH

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 10 M)			
1. PLUCHIA SERICEA	15	Y	FACW
2. ATRIPLEX TORREYI	5	N	FAC
3.			
4.			
5.			
	20 = Total Cover		
Herb Stratum (Plot size: 10 M)			
1. ERMOTHERA BOOTII	8	N	N/A
2. CRYPTANTHA SP.	1		
3. CRYPTANTHA ANGUSTIFOLIA	8		
4. MALACOTHRIX GLABRATA	1		
5. RAFINESQUIA NEOMEXICANA	1		
6. SCHISMUS SP.	1		
7.			
8.			
	20 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 60 % 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 _____	x 1 = _____
FACW species 15	x 2 = 30
FAC species 5	x 3 = 15
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: 20 (A)	45 (B)

Prevalence Index = B/A = 2.25

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
X Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
✓ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks: VEG SPARSE - EDGE OF PLAYA & BASE OF EPHEMERAL WASH

US Army Corps of Engineers — Arid West – Version 2.0

SOIL

~~DMEC~~ Sampling Point: 011 B1

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
0-36in							UNCONSOLIDATED SAND	
			pH 7.7					

[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)
- X 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 X No ____

Remarks: VEGETATED SAND/GRAVEL BARS NEARBY & LIKELY ALKALINE SOILS
pH 7.7 on 24 June 2015

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)
- X 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 X Depth (inches): _____

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

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

Wetland Hydrology Present? Yes X No ____

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

Remarks: CLEAR PLUME SHOWS VISIBLE TO THE WEST (UPSLOPE)

DMEC

WETLAND DETERMINATION DATA FORM – Arid West Region

B2

Project/Site: E. CRONESE City/County: SAN BERNARDINO CO Sampling Date: 3/12/14
Applicant/Owner: RICHARD LYONS State: CA Sampling Point: WP012
Investigator(s): MAHNEY | LASHLY Section, Township, Range: S24 T12N R6E
Landform (hillslope, terrace, etc.): FLAT Local relief (concave, convex, none): FLAT - NONE Slope (%): 0
Subregion (LRR): INTERIOR DESERT (D) Lat: 35.116668 Long: 116.295524 Datum: NAD 83
Soil Map Unit Name: MOJAVE DESERT AREA (CA695) NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation Y, Soil Y, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____
Is the Sampled Area within a Wetland? Yes X No ____

Remarks: DRY PLAYA LAKE EDGE, PROBLEMATIC CONDITIONS PRESENT. SOIL SURFACE CRACKS

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	25 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10m)			
1. TAMARIX RAMOSISSIMA	15	Y	NL (FAC)
2. ATRIPLEX CONFERTIFOLIA	10	Y	NL (FAC)
3.			
4.			
5.			
	35 = Total Cover		
Herb Stratum (Plot size: 10m)			
1. ERIOGONUM	4	N	NL
2. CRYPTANTHA LONGLEAF	4		
3. PECTOCARYA	4		
4. SCLERUS	2		
5. AMSINCKIA	2		
6. RAFINESQUIA	4		
7.			
8.			
	20 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 45 % 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 ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species 35	x 3 = 105
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: 35 (A)	105 (B)

Prevalence Index = B/A = 3

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
X Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
X Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

US Army Corps of Engineers — Arid West – Version 2.0

SOIL

Sampling Point: 012B2

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
36"							UNCONSOLIDATED 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)
- X 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)
- X 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 X No ___

Remarks: ONE BRIGHT RED MOTTLE UNCOVERED N 12 in DOWN, CONDITIONS POOR FOR REDOX pH 7.65 on 24 June 2015

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**)
- X Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in 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 X No ___

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

Remarks:

DMEC

B3

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: E. Cronese City/County: San Bernardino Co. Sampling Date: 3/12/14
Applicant/Owner: Richard Lyons State: CA Sampling Point: WP013
Investigator(s): Mahney / Lashley Section, Township, Range: S24 T12N R6E
Landform (hillslope, terrace, etc.): Flat Playa bottom Local relief (concave, convex, none): Flat - none Slope (%): 0
Subregion (LRR): Interior Desert (D) Lat: 35.116067 Long: 116.295524 Datum: NAD83
Soil Map Unit Name: Mojave Desert Area (CA695) NWI classification: L2UBF
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 20)			
1. Atriplex torreyi	25	Y	FAC
2.			
3.			
4.			
5.			
	25 = Total Cover		
Herb Stratum (Plot size: 10)			
1. Schismus	1		(FAC)
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	1 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 74 % 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 ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species 25	x 3 = 75
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: 25 (A)	75 (B)

Prevalence Index = B/A = 3

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
X Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
X Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

US Army Corps of Engineers — Arid West – Version 2.0

SOIL

Sampling Point: 013 B3

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
½+24	10YR 3/3						FLUFFY	LOOSE UNCONSOLIDATED SILT
0-½	10YR 4/2						CRACKED	CONSOLIDATED 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)
- X 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)
- X 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 X No ___

Remarks:

CONDITIONS POOR FOR REDOX - high alkalinity pH between 7.7 - 8.7 on 24 June 2015

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)**
- X Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in 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)
- X 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 X No ___

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

Remarks:

DMEC

WETLAND DETERMINATION DATA FORM – Arid West Region

B4

Project/Site: E. CRONESE City/County: SAN BERNARDINO CO. Sampling Date: 3/12/14
Applicant/Owner: RICHARD LYONS State: CA Sampling Point: WP 014
Investigator(s): MAGNEY / LASHLY Section, Township, Range: S24 T12N R6E
Landform (hillslope, terrace, etc.): FLAT PLAYA BOTTOM Local relief (concave, convex, none): NONE - FLAT Slope (%): 0
Subregion (LRR): INTERIOR DESERT (D) Lat: 35.11659 Long: 116.29491 Datum: NAD83
Soil Map Unit Name: MOJAVE DESERT AREA (CA695) NWI classification: L2UBF
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation N, Soil Y, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:
Reexamined by D. Magney and Veronica (Chan) Lee on 28 October 2014
GPS waypoint 019 34.11661°N 116.29443°W 1063 ft Hydrology, soils, and veg positive!

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10m)			
1. ATRIPLEX TORREYI	30	Y	FAC
2.			
3.			
4.			
5.			
	30 = Total Cover		
Herb Stratum (Plot size: 10m)			
1. SCHISMUS SP.	2	N	NL(FAC)
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	2 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
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	x 1 =	
FACW species	x 2 =	
FAC species 30	x 3 =	90
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: 30 (A)		90 (B)

Prevalence Index = B/A = 3

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
X Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
X Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

US Army Corps of Engineers Arid West – Version 2.0

DMEC

SOIL

Sampling Point: 14 BH

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
6-14"	10YR 4/3						CRACKED	CONSOLIDATED SILTY CLAY
1/2-36"	10YR 3/3		10YR 4/6	rare				

[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)
- X 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 X No ___

Remarks: CONDITIONS POOR FOR REDOX

pH 8.71 on 24 June 2015

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)**
- X Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in 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)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes X No ___

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

Remarks:

MANY GAS BUBBLE PITFALLS PRESENT

C1

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: E. CRONESE City/County: SAN BERNARDINO Co. Sampling Date: 3/12/14
Applicant/Owner: RICHARD LYONS State: CA Sampling Point: WP015
Investigator(s): MAHNEY / LASHLEY Section, Township, Range: S24 T12N R6E
Landform (hillslope, terrace, etc.): GENTLE SLOPE Local relief (concave, convex, none): CONVEX Slope (%): 3
Subregion (LRR): INTERIOR DESERT (D) Lat: 35.11560 Long: 116.29708 Datum: NAD83
Soil Map Unit Name: MOJAVE DESERT AREA (CA695) NWI classification: NONE (LACUSTRINE FRINGE)
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ____ No X
Hydric Soil Present? Yes ____ No X
Wetland Hydrology Present? Yes ____ No X
Is the Sampled Area within a Wetland? Yes ____ No X

Remarks: (1) UPSLOPE ON VISIBLE BANK → CLEAR CHANGE IN VEG / SOILS

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 10m)			
1. PROSOPIS JUST UPSLOPE OUT OF PLOT	4	Y	(FAC)
2. LARREA " " " "	4	Y	
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: ____)			
1. PELTOPHORA	2	N	
2. CRYPTANTHA SHORT LEAVED	2		
3. SISYMBRIUM	2		
4. MALACOTHRIX	2		
5. ERIOGONUM	2		
6. PLANTAGO	2		
7. SPERGULA	2		(FAC)
8. CORIZANTHE	2		
	16 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 84 % 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: ____ (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
___ 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 X

Remarks:

SOIL

Sampling Point: 15 C1

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
12"							ROCKY SILTY SAND	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

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 X

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

Remarks:

SOME RILLS FROM ALLUVIAL FAN

C2

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: E. CRONESE City/County: SAN BERNARDINO Co. Sampling Date: 3/12/14
Applicant/Owner: RICHARD LYONS State: CA Sampling Point: 016
Investigator(s): MAGNEY | LASHLY Section, Township, Range:
Landform (hillslope, terrace, etc.): NEAR FLAT PLAYA EDGE Local relief (concave, convex, none): NONE Slope (%): 0.5
Subregion (LRR): INTERIOR DESERT (D) Lat: 35.11562 Long: 116.24698 Datum: NAD83
Soil Map Unit Name: MOJAVE DESERT AREA (CA665) NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation Y, Soil Y, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____	No X	Is the Sampled Area within a Wetland? WATERS Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1. SCHISMUS	2		(FAC)
2. SISYMBRIUM	2		
3. CRYPTANTHA SMALL LV	1		
4.			
5.			
6.			
7.			

5 = TOTAL COVER

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: ____ (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
__ Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
Morphological Adaptations[1] (Provide supporting

% BARE GROUND = 95 % BIOTIL CRUST = 0 HYDROPHYTIC VEGETATION? NO

SOIL

Sampling Point: 16 C2

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 - 1/4							CRACKED PLATES	SILTY CLAY
1/4 - 12"								ROCKY 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:

C3

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: E. Cronese City/County: San Bernardino Co. Sampling Date: 3/12/14
Applicant/Owner: Richard Lyons State: CA Sampling Point: 6 7
Investigator(s): Magney / Lashley Section, Township, Range:
Landform (hillslope, terrace, etc.): Playa surface Local relief (concave, convex, none): flat - none Slope (%): 0
Subregion (LRR): Interior Desert (D) Lat: 35.11564 Long: 116.24761 Datum: NAD83
Soil Map Unit Name: Mojave Desert area (CA695) NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation Y, Soil N, or Hydrology Y naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____
Is the Sampled Area within a Wetland? Yes X No ____

Remarks:
Verified by D. Magney & Veronica (Chan) Lee on 28 October 2014

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 10m)			
1. Atriplex torreyi	25	Y	FAC
2.			
3.			
4.			
5.			
	25 = Total Cover		
Herb Stratum (Plot size: 10m)			
1. Amsinckia tessellata	15		NL
2. Sysimbrium	5		b
3.			
4.			
5.			
6.			
7.			
8.			
	20 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= 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: 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	x 1 =	
FACW species	x 2 =	
FAC species 25	x 3 =	75
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: 25 (A)		75 (B)

Prevalence Index = B/A = 3

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
X Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
X Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

US Army Corps of Engineers — Arid West – Version 2.0

DMEC

SOIL

Sampling Point: 17 C3

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
0-1/4	10YR 4-3						CRACKED	PLATES SILTY CLAY
1/4-24	10YR 3-3						SOFT	UNCONSOLIDATED CLAY - fluffy
0-4"	10YR 4/2							
4"	10YR 4/2		10YR 5/4	15%				

[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)
- X 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)
- ? X Depleted Matrix (F3)
- ? X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks: POOR CONDITIONS FOR HYDRIC FORMATION

Gas bubbles present

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- X Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- X 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 X Depth (inches): ___

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

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

Wetland Hydrology Present? Yes X No ___

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

Remarks:

D1

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: E CRONESE City/County: SAN BERNARDINO CO Sampling Date: 3/12/14
Applicant/Owner: RICHARD LYONS State: CA Sampling Point: 018
Investigator(s): MAGNEY | LASHLY Section, Township, Range: S24 T12N R6E
Landform (hillslope, terrace, etc.): ALLUVIAL FAN EDGE Local relief (concave, convex, none): GENTLE FLAT SLOPE Slope (%): 2
Subregion (LRR): INTERIOR DESERT (D) GENTLE SLOPE Lat: 35.11197 Long: 116.29856 Datum: NAD83
Soil Map Unit Name: MOJAVE DESERT AREA (CA695) NWI classification: L2UBF
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1. ATRIPLEX LANESCENS	2	N	NL(FAC)
2.			
3.			
4.			
5.			
	2 = Total Cover		
Herb Stratum (Plot size: ____)			
1. CAMISSONIA	1	N	
2. RAFINESQUIA	1	N	
3. CORIZANTHE BREVICORNU	1	N	
4. PLANTAGO	2	N	
5.			
6.			
7.			
8.			
	5 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 93 % 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: ____ (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
__ Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
X 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 X

Remarks:

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SOIL

Sampling Point: 01Y D1

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
							ROCKS	CAN'T DIG

[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 X

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 X

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

Remarks:

D2

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: E. CRONESE City/County: SAN BERNARDINO CO. Sampling Date: 3/12/14
Applicant/Owner: RICHARD LYONS State: CA Sampling Point: 019
Investigator(s): MAHNEY / LASHLY Section, Township, Range: S24 T12N R6E
Landform (hillslope, terrace, etc.): FLAT PLAYE EDGE Local relief (concave, convex, none): FLAT - NONE Slope (%): 0
Subregion (LRR): INTERIOR DESERT (D) Lat: 35.11198 Long: 116.29649 Datum: NAD83
Soil Map Unit Name: MOJAVE DESERT AREA NWI classification: L2UBF
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____	No X	Is the Sampled Area within a Wetland? WATERS Yes ____ No X
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1. ATRIPLEX CANESCENS	10	Y	NL (FAC)
2.			
3.			
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
___ 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 X

Remarks:

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SOIL

Sampling Point: OP D2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	10YR 3/3						CRACKED	PLATES SILTY CLAY
1-12							SAME MATERIAL	UNCONSOLIDATED
12+							ROCKY	

[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)
- X 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 X No ____

Remarks:

- CRUST SHOW DISTICT DEPOSITED LAYERS
- EMERGENT BOULDER HAS CALCIUM CARBONATE COATING

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**)
- X Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in 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 X Depth (inches): _____

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

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

Wetland Hydrology Present? Yes X No ____

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

Remarks:

DMEC

D3

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: E. CRONESE City/County: SAN BERNARDINO Sampling Date: 3/12/14
Applicant/Owner: RICHARD LYONS State: CA Sampling Point: D20
Investigator(s): MAGNEY | LASHLY Section, Township, Range: S24 T12N R6E
Landform (hillslope, terrace, etc.): DEPRESSIONAL SWALE / MAIN SURFACE Local relief (concave, convex, none): CONCAVE Slope (%): 0
Subregion (LRR): INTERIOR DESERT (D) Lat: 35.11194 Long: 116.29827 Datum: NAD 83
Soil Map Unit Name: MOJAVE DESERT AREA (CA695) NWI classification: L2UBF
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation Y, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____	No X	Is the Sampled Area within a Wetland? WATERS Yes ____ No X
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks: SMALL SWALE DOMINATED BY ANNUALS

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1. ATRIPLEX TORREYI	5	N	FAC
2.			
3.			
4.			
5.			
	5 = Total Cover		
Herb Stratum (Plot size: ____)			
1. AMSINCKIA TESSELLATA	60	Y	NL
2. SISYMBRIUM	15		
3. MALACOTHRIX GLABRATA	3		
4. LAMIASSONIA	2		
5.			
6.			
7.			
8.			
	80 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

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

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: ____ (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
__ 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 X

Remarks: SMALL SWALE w/ ANNUALS & SURROUNDED BY A. TORREYI (FAC)

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SOIL

Sampling Point: 020 D3

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
	SAME		AS PREVIOUS					
	2 FT	DEEP	NO ROCKS					

[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)
- X 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 X No ___

Remarks: SIMILAR TO POINT 019

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**)
- X Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in 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 X Depth (inches): _____

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

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

Wetland Hydrology Present? Yes X No ___

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

Remarks:

D4

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: E. Cromese City/County: San Bernardino Co. Sampling Date: 3/12/14
Applicant/Owner: Richard Lyons State: CA Sampling Point: 021
Investigator(s): Magnem / Lashly Section, Township, Range: S24 T12N R6E
Landform (hillslope, terrace, etc.): Flat Playa Bottom Local relief (concave, convex, none): Flat - None Slope (%): 0
Subregion (LRR): Interior Desert (D) Lat: 35.11161 Long: 116.29690 Datum: NAD 83
Soil Map Unit Name: Mojave Desert Area (CA695) NWI classification: PEMF
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation N, Soil Y, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 10m)			
1. Atriplex torreyi	20	Y	FAC
2. Tamarix ramosissima	5	N	(FAC)
3.			
4.			
5.			
	25 = Total Cover		
Herb Stratum (Plot size: 10m)			
1. Schismus	3	N	
2. Amsinckia tessellata	2	N	
3. Sysimbrium	1	N	
4.			
5.			
6.			
7.			
8.			
	5 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species 25	x 3 = 75
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: 25 (A)	75 (B)

Prevalence Index = B/A = 3

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
X Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
X Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

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SOIL

Sampling Point: 021D4

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
0-1/4	10YR 5-2							SILTY CLAY
1/4-30"	10YR 4-4						FLUFFY	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)
- X 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:

same as for A1 - high pH (presumed based on location)

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**)
- X Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in 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)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes X No ___

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

Remarks:

E1

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: E. CRONESE City/County: SAN BERNARDINO Sampling Date: 5/12/14
Applicant/Owner: RICHARD LYONS State: CA Sampling Point: 024
Investigator(s): MALNEY | LASILLY (GENTLE SLOPE SANDY DUNE) Section, Township, Range: S25 T12N R6E
Landform (hillslope, terrace, etc.): PLAYA EDGE Local relief (concave, convex, none): SLIGHT INCLINE Slope (%): 3
Subregion (LRR): INTERIOR DESERT Lat: 35.10551 Long: 116.29710 Datum: NAD83
Soil Map Unit Name: MOJAVE DESERT AREA (CA695) NWI classification: NONE
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation N, Soil N, or Hydrology P naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes X No ____
Hydric Soil Present? Yes ____ No X
Wetland Hydrology Present? Yes ____ No X
Is the Sampled Area within a Wetland? Yes ____ No X

Remarks: CLEARLY ABOVE WASH ON BANK → PROSOPIS ACTING PHREATOPHYTE & TAKING ADV. OF PROXIMITY → ABOVE OHW

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10M)			
1. PROSOPIS GLANDULOSA	40	Y	(FAC)
2. ATRIPLEX CANESCENS	10	N	(FAC)
3.			
4.			
5.			
	50 = Total Cover		
Herb Stratum (Plot size: 10M)			
1. ABRONIA	5	P	NL
2. CRYPTANTHA LONG LEAF	5		
3. AMSINCKIA	5		
4. EREMALCHE	5	↓	↓
5.			
6.			
7.			
8.			
	20 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
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: 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 ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

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SOIL

Sampling Point: 024 E1

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
36"							SAND	UNCONSOLIDATED

[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 X

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 X Depth (inches): _____

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

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

DMEC

E2

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: E. CRONESE City/County: SAN BERNARDINO Sampling Date: 3/12/14
Applicant/Owner: RICHARD LYONS State: CA Sampling Point: 025
Investigator(s): MAHNEY | LASHLEY Section, Township, Range: S25 T12N R6E
Landform (hillslope, terrace, etc.): FLAT PLAYA BOTTOM Local relief (concave, convex, none): FLAT, NONE Slope (%): 0
Subregion (LRR): INTERIOR DESERT (D) Lat: 35.10552 Long: 116.29709 Datum: NAD83
Soil Map Unit Name: MOJAVE DESERT AREA (CA695) NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation Y, Soil Y, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____
Is the Sampled Area within a Wetland? Yes X No ____

Remarks: IN MAIN FLOOD CHANNEL, CLEAR OHW BANK TO SOUTH LINED W/ PROSOPIS

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10m)			
1. ATRIPLEX CANESCENS	10	Y	(FAC)
2.			
3.			
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot size: 10m)			
1. AMSINCKIA	1		NL
2. PECTOCARYA	1		
3. SYSYMBRIUM	1		
4. SCHISMUS	1		
5.			
6.			
7.			
8.			
	4 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 96 % Cover of Biotic Crust 0

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
__ Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks: TOO SPARSE → WASH BOTTOM i.e. WATERS

US Army Corps of Engineers Arid West – Version 2.0

DMEC

SOIL

Sampling Point: 025 E2

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
1/4							SILTY	CRACKED CLAY
19"							UNCONSOLIDATED	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)
- X 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 X No ____

Remarks: High pH masking hydric soil indicators
pH 8.04 on 24 June 2015

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)**
- X Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in 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 X Depth (inches): _____

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

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

Wetland Hydrology Present? Yes X No ____

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

Remarks:

DMEC

E3

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: E. CRONESE City/County: SAN BERNARDINO Co. Sampling Date: 3/12/14
Applicant/Owner: RICHARD LYONS State: CA Sampling Point: 026
Investigator(s): MAHONEY/LASHLEY Section, Township, Range: S25 T12N R6E
Landform (hillslope, terrace, etc.): FLAT PLAYA BOTTOM Local relief (concave, convex, none): NONE FLAT Slope (%): 0
Subregion (LRR): INTERIOR DESERT (D) Lat: 35.10577 Long: 116.29697 Datum: NAD 83
Soil Map Unit Name: MOJAVE DESERT AREA (CA695) NWI classification: NONE
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10m)			
1. TAMARIX RAMOSISSIMA	5	Y	NL(FAC)
2.			
3.			
4.			
5.			
	5 = Total Cover		
Herb Stratum (Plot size: 10m)			
1. AMSINCKIA TESSELATA	2		
2. PELOCARYA	2		
3. SALSOLA	2		
4. SYSIMBRIUM	2		
5. MALACOTRIX	2		
6.			
7.			
8.			
	10 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 85 % 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	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals:	(A)	(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

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DMEC

SOIL

Sampling Point: 026 E3

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
0-1/4							CRACKED PLATES	SILTY CLAY
1/2-16	10YR 3-3						FLUFFY CLAY	RICH IN BIOTITE
17-19	10 YR 3-2						"	" LESS BIOTITE

[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)
- X 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 X No ____

Remarks: High pH masking hydric soil indicators - pH 8.58 on 24 June 2014

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**)
- X Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in 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 X No ____

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

Remarks:

F1

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: E CRONESE LAKE City/County: SAN BERNARDINO Co. Sampling Date: 1/31/14
Applicant/Owner: LYONS State: CA Sampling Point: SO -
Investigator(s): MANNEY / LASHLEY Section, Township, Range: S25 T12N R6E
Landform (hillslope, terrace, etc.): LOWER EDGE OF BANK Local relief (concave, convex, none): UNDULATING SMALL SLOPE Slope (%): 4
Subregion (LRR): INTERIOR DESERT (D) Lat: 35.10522 Long: -116.29562 Datum:
Soil Map Unit Name: MOJAVE DESERT AREA (CA695) NWI classification: NONE
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ____ No X
Hydric Soil Present? Yes ____ No X
Wetland Hydrology Present? Yes X No ____
Is the Sampled Area within a Wetland? Yes ____ No X (WATERS)

Remarks: BASE OF BANK ON FLOOD CHANNEL

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: 5m)			
1. ATRIPLEX POLYCARPA	10	Y	FACU
2. PROSOPIS GLANDULOSA	40	Y	(FAC)
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 5m)			
1. AMSINCKIA TESSELLATA	2		NL
2. PECTOCARYA	5		
3. CREMACTIS EXILIS	10		
4.			
5.			
6.			
7.			
8.			
= Total Cover			
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
= Total Cover			

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

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species 40	x 3 = 120
FACU species 10	x 4 = 40
UPL species ____	x 5 = ____
Column Totals: 50 (A)	160 (B)

Prevalence Index = B/A = 3.2

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 X

Remarks: PROSOPIS ON BANK EXTENDING INTO MAIN FLOOD CHANNEL

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SOIL

Sampling Point: SoF1

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
0-1							SANDY SILT	UNCONSOLIDATED
2-6	10YR 4/3	100					CLAYEY LOAMY SAND	
7-20							LOAMY SAND	UNCONS.

[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 X

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**)
- X Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- X Surface Soil Cracks (B6)
- X 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**)
- X Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes X No ____

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

Remarks:

F2

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: E. Croneyse Lake City/County: San Bernardino Co. Sampling Date: 1/31/14
Applicant/Owner: Lyons State: CA Sampling Point: S1
Investigator(s): Mahney / Lashly Section, Township, Range: S25 T12N R6E
Landform (hillslope, terrace, etc.): Aeolian Sand Dune Local relief (concave, convex, none): Hillside Slope (%): 10
Subregion (LRR): Interior Desert (D) Lat: 35.10502 Long: 116.29573 Datum: NAD 83
Soil Map Unit Name: Mojave Desert Area (Lahont) NWI classification: None – Peric Adjacent
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation N, Soil Y, or Hydrology Y naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	~~Yes X~~	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks: On bank above OHWM + clear veg / soil change

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	~~8X~~ = Total Cover		
Sapling/Shrub Stratum (Plot size: 2m)			
1. Larrea tridentata	20	Y	NL
2. Atriplex polycarpa	20	Y	FACU
3.			
4.			
5.			
	40 = Total Cover		
Herb Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	____ = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
__ 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 X

Remarks:

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DMEC

SOIL

Sampling Point: 51 F2

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
0-16							LOAMY SAND	UNCONSOLIDATED

[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 X

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 X Depth (inches): _____

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

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

DMEC

WETLAND DETERMINATION DATA FORM – Arid West Region

G1

Project/Site: E. CRONESE City/County: SAN BERNARDINO Co. Sampling Date: 3/12/14
Applicant/Owner: RICHARD LYONS State: _____ Sampling Point: 028
Investigator(s): MAGNEY, LASHLEY Section, Township, Range: S25 T12N R6E
Landform (hillslope, terrace, etc.): SAND DUNE EDGE OF DATA SWALE Local relief (concave, convex, none): CONVEX Slope (%): 4
Subregion (LRR): INTERIOR DESERTS (D) Lat: 35.10409 Long: 116.29408 Datum: NAD83
Soil Map Unit Name: MOJAVE DESERT AREA (69655) NWI classification: NONE
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: UPSLOPE ABOVE OHW IN SMALL SWALE OFF MAIN FLOOD CHANNEL

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 10m)			
1. ATRIPLEX CANESCENS	15	Y	NL
2.			
3.			
4.			
5.			
	15 = Total Cover		
Herb Stratum (Plot size: 10m)			
1. ABRONIA VILLOSA	15		NL
2. EREMOTHERA SP.	2		NL
3.			
4.			
5.			
6.			
7.			
8.			
	17 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

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

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: _____ (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
__ 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 X

Remarks:

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SOIL

Sampling Point: 628 G1

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
0-24							UNCONSOLIDATED 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 X

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 X

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

Remarks:

G2

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: E. CRONESE City/County: SAN BERNARDINO Co. Sampling Date: 3/12/14
Applicant/Owner: RICHARD LYONS State: _____ Sampling Point: 029
Investigator(s): MAGNEY | LASHLY Section, Township, Range: S25 T12N R6E
Landform (hillslope, terrace, etc.): FLAT PLAYA SWALE BOTTOM Local relief (concave, convex, none): CONCAVE Slope (%): 0
Subregion (LRR): INTERIOR DESERT (D) Lat: 35.10403 Long: 116.29409 Datum: NAD 83
Soil Map Unit Name: MOJAVE DESERT AREA (CA695) NWI classification: NONE
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: W/IN SMALL SWALE, BELOW BANK LVL

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 10m)			
1. ATRIPLEX CANESCENS	10		NL
2.			
3.			
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot size: 10m)			
1. PECTOCARYA SP.	1		NL
2. SCIRPUS SP.	1		NL
3.			
4.			
5.			
6.			
7.			
8.			
	2 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= 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: _____ (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
___ 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 X

Remarks:

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SOIL

Sampling Point: 029 62

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
0-1/4							SILTY CLAY	CRACKED PLATE CRUST
1/4-24"							UNCONSOLIDATED 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 X

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**)
- X Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in 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 X No _____

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

Remarks:

G3

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: E. CRONESE City/County: SAN BERNARDINO Co. Sampling Date: 3/12/14
Applicant/Owner: RICHARD LYONS State: CA Sampling Point: 030
Investigator(s): MAHONEY | LASHLY Section, Township, Range: S25 T12N R6E
Landform (hillslope, terrace, etc.): FLAT PLAYA SWALE BOTTOM Local relief (concave, convex, none): FLAT - NONE Slope (%): 0
Subregion (LRR): INTERIOR DESERT (D) Lat: 35.10398 Long: 116.79407 Datum: NAD83
Soil Map Unit Name: MOJAVE DESERT AREA (CA695) NWI classification: NONE
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** WATERS Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes Y	No ____	

Remarks:
W/ IN SMALL SWALE BELOW BANK LVL

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 10m)			
1. ATRIPLEX CANESCENS	10	Y	NL
2.			
3.			
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot size: 10m)			
1. PECTOCARYA SP.	5	N	NL
2. CRYPTANTHA ANGUSTIFOLIA	1		
3. CHYLISMIA SP.	1		
4.			
5.			
6.			
7.			
8.			
	____ = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

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

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: ____ (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
___ 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 X

Remarks:

US Army Corps of Engineers Arid West – Version 2.0

SOIL

Sampling Point: 030 63

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
	SAME AS LAST (029)							

[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 X

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 X

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

Remarks:

DMEC

G4

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: E. CRONESE City/County: SAN BERNARDINO Co. Sampling Date: 3/12/14
Applicant/Owner: RICHARD LYONS State: CA Sampling Point: 031
Investigator(s): MAGNEY | LASHLEY Section, Township, Range: S25 T12N R6E
Landform (hillslope, terrace, etc.): SAND DUNE SWALE EDGE Local relief (concave, convex, none): SLIGHT INCLINE Slope (%): 3
Subregion (LRR): INTERIOR DESERT Lat: 35.10396 Long: 116.29398 Datum: NAD83
Soil Map Unit Name: MOJAVE DESERT AREA (CAGGS) NWI classification: NONE
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ____ No X
Hydric Soil Present? Yes ____ No X
Wetland Hydrology Present? Yes ____ No X
Is the Sampled Area within a Wetland? Yes ____ No X

Remarks: NEARLY UPSLOPE OF SMALL SWALE ABOVE OHW

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 10m)			
1. ATRIPLEX CANESCENS	20	Y	NL
2.			
3.			
4.			
5.			
	20 = Total Cover		
Herb Stratum (Plot size: 10m)			
1. ABRONIA VILLOSA	10		NL
2. CHYLISMA SP.	1		
3. CRYPTANTHA ANGUSTIFOLIA	2		
4. MENTZELIA SP.	1		
5.			
6.			
7.			
8.			
	14 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 66 % 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: ____ (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
___ 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 X

Remarks:

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SOIL

Sampling Point: 031 G4

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
0-24"							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 X

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 X

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

Remarks:

H1

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: E. CRONESE LAKE City/County: SAN BERNARDINO COUNTY Sampling Date: 3/12/04
Applicant/Owner: RICHARD LYONS State: CA Sampling Point: 032
Investigator(s): LASLEY / MAHONEY Section, Township, Range: S25 T12N R6E
Landform (hillslope, terrace, etc.): SAND DUNE Local relief (concave, convex, none): GENTLE SLOPE Slope (%): 4
Subregion (LRR): INTERIOR DESERT (D) Lat: 35.10350 Long: 116.29219 Datum: NAD83
Soil Map Unit Name: NWI classification: NONE
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ____ No X
Hydric Soil Present? Yes ____ No X
Wetland Hydrology Present? Yes ____ No X
Is the Sampled Area within a Wetland? Yes ____ No X

Remarks: UPLAND ON BANK ABOVE MAIN FLOOD CHANNEL

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 10M)			
1. ATRIPLEX LANESCENS	10	Y	NL
2.			
3.			
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot size: ____)			
1. CHAMATHUS LAZIUSCULUS	1		NL
2. AMBROSIA DESSERTATA	1		
3. ERIOGONUM FASCICULATUM	3		
4. DITHYREA CALIFORNICA	1		
5. MALACOTHRIX GLABRATA	1		
6.			
7.			
8.			
	7 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 93 % 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: ____ (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
___ 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 X

Remarks:

US Army Corps of Engineers Arid West – Version 2.0

SOIL

Sampling Point: 032 H1

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
0-24							SAND	UNCONSOLIDATED

[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 X

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 X

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

Remarks:

DMEC

WETLAND DETERMINATION DATA FORM – Arid West Region

H2

Project/Site: E. CRONESE LAKE City/County: San Bernardino Co. Sampling Date: 3/12/14
Applicant/Owner: RICHARD LYONS State: CA Sampling Point: 033
Investigator(s): LASHLEY/MAGNEY Section, Township, Range: S25 T12N R6E
Landform (hillslope, terrace, etc.): FLAT PLAYA BOTTOM Local relief (concave, convex, none): NONE Slope (%): 0
Subregion (LRR): INTERIOR DESERT (D) Lat: 35.10354 Long: 116.79217 Datum: NAD 83
Soil Map Unit Name: MOJAVE DESERT AREA (CA695) NWI classification: NONE
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1. ATRIPLEX CANESCENS	10	Y	(FAC)
2.			
3.			
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot size: ____)			
1. CODAMINE LEPTOPHYLLA	5		NL
2. SALSOLA	5		
3. PELECANDA	3		
4. MALACOTHRIX GLABRATA	1		
5. AMSINCKIA TESSELLATA	1		
6.			
7.			
8.			
	15 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

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

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 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 ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

US Army Corps of Engineers Arid West – Version 2.0

SOIL

Sampling Point: 033 H2

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- 1/4							CRACKED PLATES	SILTY CLAY
1/4- 18							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)
- X 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 X No ___

Remarks: High pH masking hydric soil indicators - pH 8.91 on 24 June 2015

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**)
- X Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in 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 X Depth (inches): _____

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

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

Wetland Hydrology Present? Yes X No ___

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

Remarks:

DMEC

WETLAND DETERMINATION DATA FORM – Arid West Region

H3

Project/Site: E. CRONESE City/County: SAN BERNARDINO COUNTY Sampling Date: 3/12/14
Applicant/Owner: LYONS, RICHARD State: CA Sampling Point: 034
Investigator(s): MAHNEY | LASHLY Section, Township, Range:
Landform (hillslope, terrace, etc.): UNDULATING Local relief (concave, convex, none): Slope (%): 0
Subregion (LRR): INTERIOR DESERT (D) Lat: 35.10429 Long: 116.29177 Datum: NAD83
Soil Map Unit Name: MOJAVE DESERT AREA (CA695) NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: STRANGE UNDULATING TOPOGRAPHY - CLEARLY HYDROLOGIC & AEOLIAN PROCESSES - SAND DUNES TO S & SW - CLEAR Δ IN VEG.
Verified by D. Mahney & Veronica (Chan) Lee on 28 October 2014

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size:)			
1. SCHISMUS BARBATUS	15	Y	(FAC)
2. PECTOCARYA	3		NL
3. EMMENANTHE	2		
4. CHENOPODIACEA	1		
5.			
6.			
7.			
8.			
	20 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum % Cover of Biotic Crust

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

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
__ 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 X

Remarks: SPARSE VEG IN PROBLEMATIC FLOOD PLAIN
verified by D. Mahney & Veronica Li on 28 October 2014

US Army Corps of Engineers Arid West – Version 2.0

SOIL

Sampling Point: 034 H3

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
0-24"							FLUVIAL SILT	RICH IN BIOTITE

[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)
- X 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 X No ___

Remarks: PROBLEMATIC FLOODPLAIN w/ VEGETATED HUMMOCKS
High pH masking indicators – pH 8.24 on 24 June 2015

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)**
- X Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in 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)**
- X 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 X Depth (inches): _____

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

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

Wetland Hydrology Present? Yes X No ___

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

Remarks: Water of the U.S.

I 1

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: CRONESE City/County: San Bernardino Co. Sampling Date: 7/9/2014
Applicant/Owner: Richard Lyons State: CA Sampling Point: WP064
Investigator(s): Magnen | Lashly Section, Township, Range: T12N R7E S30
Landform (hillslope, terrace, etc.): Playa edge - dune Local relief (concave, convex, none): Mostly flat Slope (%): 1
Subregion (LRR): Interior Desert (D) Lat: 35.100395 Long: -116.279962 Datum: NAD83
Soil Map Unit Name: Mojave Desert Area (CA695) Rositas-Cadiz 2 NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation X, Soil X, or Hydrology X naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ____ No X
Hydric Soil Present? Yes ____ No X
Wetland Hydrology Present? Yes ____ No X
Is the Sampled Area within a Wetland? Yes ____ No X

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1. —			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 3m)			
1. Larrea tridentata	10	Y	NL
2. Atriplex canescens var. canescens	10	Y	(FAC)
3. Petalonyx thurberi ssp thurberi	5	N	(FAC)*
4.			
5.			
	25 = Total Cover		
Herb Stratum (Plot size: ____)			
1. Brassica tournefortii	1		NL
2. Pleuraphis rigida	1		(FAC)*
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

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

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species 10	x 3 = 30
FACU species ____	x 4 = ____
UPL species 15	x 5 = 75
Column Totals: 25 (A)	105 (B)

Prevalence Index = B/A = 73

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 X

Remarks:
Problem area: Desert wash and playas are often problematic in that many vegetation, soil, and/or hydrology indicators are lacking or do not develop under normal circumstances
* See Lichvar & Dixon 2007 for species WIS in parentheses

SOIL

Sampling Point: 04 I1

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
18							UNCONSOLIDATED SAND	W/ FEW Pebbles (05%)

[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 X

Remarks:

NO Profile – loose aeolian sand

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 X Depth (inches): _____

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

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

NONE

DMEC

I2

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: CRONESE Lake City/County: San Bernardino Sampling Date: 7/9/2014
Applicant/Owner: Richard Lyons State: _____ Sampling Point: D65
Investigator(s): David Magney & Evan Lashly Section, Township, Range: _____
Landform (hillslope, terrace, etc.): playa Local relief (concave, convex, none): Concave Slope (%): 0
Subregion (LRR): _____ Lat: 35.100431 Long: -116.275074 Datum: _____
Soil Map Unit Name: _____ 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 X No _____
Are Vegetation X, Soil X, or Hydrology X naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: Verified by D. Magney & Vernon (Chen) Lee on 28 October 2014
SMALL SWALE FED BY ROAD BED DRAINAGE CULVERT (CONTAINED W/IN) SWALE ON EDGE OF LARGER MOJAVE RIVER DELTA HOWEVER NOT TYPICAL CONDITIONS

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: 3m)			
1. Atriplex canescens	20	Y	(FAC)
2. SARCOBATUS BUSH - PENSTEMON THURBERI	5		(FAC)
3.			
4.			
5.			
= Total Cover	25		
Herb Stratum (Plot size: 3m)			
1. Brassica tournefortii	2		N
2. Schismus barbatus	2		(FAC)
3.			
4.			
5.			
6.			
7.			
8.			
= Total Cover	4		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
= Total Cover			

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

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 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 _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks: ONLY HERBS W/ IN THE SWALE W/ SHRUBS ON FENCE

Arid West – Version 2.0

SOIL

Sampling Point: 065 I2

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
15"								UNCONSOLIDATED SAND
Biotic Crust	10YR 4/2		~1/4" thick					biotic crust
0.25-2"	10YR 4/2							compacted sand
	10YR 5/3		> stratified layers					sand
	↑ intervening layer							

[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)
- X 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 X No ___

Remarks:
SLIGHTLY MORE CONSOLIDATED THAN PREV. PLOT, MOIST TO 15" FROM RECENT RUNOFF. SMALL THIN DARK LAYER 3" DEEP

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- X Water Marks (B1) (**Nonriverine**)
- X 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)
- X 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)

- X 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 X Depth (inches): _____

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

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

Wetland Hydrology Present? Yes X No ___

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

Remarks:
BIOTIC CRUST PRESENT

WETLAND DETERMINATION DATA FORM – Arid West Region

I3

BLANK FIELDS SAME AS WP064

Project/Site: I1 City/County: Sampling Date: 7/9/2014

Applicant/Owner: State: Sampling Point: 0606

Investigator(s): Section, Township, Range:

Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): CONCAVE Slope (%): 1

Subregion (LRR): Lat: 35.100523 Long: -116.275023 Datum:

Soil Map Unit Name: 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 X No ____

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

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

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

Remarks: SAME AS 0604 MINUS CREOSOTE

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1. SAND PAPER BUSH PETALONYX THURBERI	5	N	(FAC)
2. DISTICHLIS SPICATA	10	Y	(FAC)
3.			
4.			
	15 = Total Cover		

Sapling/Shrub Stratum (Plot size: ____)			
1. BRASSICA TOURNEFORTII	1		
2. COMPTONIA ANGUSTIFOLIA	1		(FAC)
3. PALAFOXIA SP.	1		
4.			
5.			
	3 = Total Cover		

Herb Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	____ = Total Cover		

Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 92 % 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 ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

__ Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

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

__ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks: ★ BLANK FIELDS AT TOP OF SHEET ARE SAME AS WP064 (I1)

US Army Corps of Engineers Arid West – Version 2.0

SOIL

Sampling Point: 066 I3

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
18								UNCONSOLIDATED SAND w/
								15% PEBBLES

[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 X

Remarks:

No indicators

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 X Depth (inches): _____

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

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

US Army Corps of Engineers

DMEC

I4

WETLAND DETERMINATION DATA FORM – Arid West Region

BLANK FIELDS SAME AS WP064

Project/Site: _____ City/County: _____ Sampling Date: 7/9/2014

Applicant/Owner: _____ State: _____ Sampling Point: 062

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

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

Subregion (LRR): _____ Lat: 35.1008121 Long: -116.274945 Datum: _____

Soil Map Unit Name: _____ 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 X	No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks: SPARSELY VEGETATED FLOOD PLAIN AREA (POTENTIALLY HISTORIC) - VEG COVER OVER REPRESENTED IN PLOT → TREATING AREA AS WATERS NOT WETLANDS

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 3m)			
1. DESERT WILLOW - CHILOPSIS LINEARIS	15	Y	(FACW)
2. ATRIPLEX CANESCENS	5	Y	NL-(FAC)
3.			
4.			
5.			
	20 = Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

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

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 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 _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

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

__ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks: SOMEWHAT ISOLATED CHILOPSIS INDIVIDUAL W/ IN SPARSELY VEGETATED FLOOD PLAIN AREA

US Army Corps of Engineers Arid West – Version 2.0

SOIL

Sampling Point: 067 I4

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
18"								PEBBLES/SAND
								WEAKLY CONSOLIDATED
								& STRATIFIED INTO
								THIN LAYERS
								ALTERNATING
								PEBBLES/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)
- X 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 X No ___

Remarks: FLUVIAL DEPOSITS – PEBBLES & SAND IN STRATIFIED THIN LAYERS TO 18". RECENT FLUVIAL MOISTURE TO 6".

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**)
- X Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- X 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 X Depth (inches): _____

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

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

Wetland Hydrology Present? Yes X No ___

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

Remarks: HUMMOCKS & SWALES CLEARLY INDICITIVE OF FLUVIAL ACTIVITY, POTENTIALLY HISTORIC

DMEC

WETLAND DETERMINATION DATA FORM – Arid West Region

I5

BLANK FIELDS SAME AS WP064

Project/Site: _____ City/County: _____ Sampling Date: 7/9/2014

Applicant/Owner: _____ State: _____ Sampling Point: 068

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

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

Subregion (LRR): _____ Lat: 35.101263 Long: -116.274911 Datum: _____

Soil Map Unit Name: _____ 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 X No _____

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

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

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

Remarks: SIMILAR TO PREVIOUS PLOT - STRATIFIED LAYERS OF FINE VS COARSE SANDS STILL SPARSE VEG → WATERS

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. ATRIPLEX CANESCENS	15		NI (FAC)
2.			
3.			
4.			
5.			
	15 = Total Cover		
Herb Stratum (Plot size: _____)			
1. CRYPTANTHA ANGUSTIFOLIA	1		(FAC)
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	1 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

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

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 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 _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

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

__ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: 068 15

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
15"								stratified fluvial deposits/layers

[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)
- X 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 X No ____

Remarks: STRATIFIED FLUVIAL DEPOSITS of PEBBLES & SAND IN THIN LAYERS TO 15"

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**)
- X Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- X 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 X Depth (inches): _____

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

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

Wetland Hydrology Present? Yes X No ____

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

Remarks:

DMEC

WETLAND DETERMINATION DATA FORM – Arid West Region

I6

BLANK FIELDS SAME AS WP064

Project/Site: _____ City/County: _____ Sampling Date: 7/9/2014

Applicant/Owner: _____ State: _____ Sampling Point: 069

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

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

Subregion (LRR): _____ Lat: 35.101744 Long: -116.275056 Datum: _____

Soil Map Unit Name: _____ 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 X No _____	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____ No X	
Wetland Hydrology Present?	Yes _____ No X	

Remarks: SMALL PLATEAU BETWEEN SWALES / MAJOR DRAINAGE – MICROTOPOGRAPHY INDICATING UPL. ISLAND W/IN LARGER FLOOD PLAIN

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1. _____			
2. _____			
3. _____			
4. _____			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 3m)			
1. Atriplex canescens	5	Y	FAC
2. _____			
3. _____			
4. _____			
5. _____			
	5 = Total Cover		
Herb Stratum (Plot size: 3m)			
1. Schismus sp.	2		(FAC)
2. Salsola sp.	1		(FAC)
3. _____			
4. _____			
5. _____			
6. _____			
7. _____			
8. _____			
	3 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1. _____			
2. _____			
	= Total Cover		

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

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 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 _____	x 1 =	_____
FACW species _____	x 2 =	_____
FAC species _____	x 3 =	_____
FACU species _____	x 4 =	_____
UPL species _____	x 5 =	_____
Column Totals: _____ (A)		_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

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

__ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

US Army Corps of Engineers Arid West – Version 2.0

SOIL

Sampling Point: 069 I6

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
0-6								SAND w/ SMALL PEBBLES
6-15								COARSE SAND w/PEBBLES

[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 X

Remarks: CLEAR BOUNDARY BETWEEN FINE & COARSE SANDS BELOW 6 INCHES, BUT NO SUCCESSIVE STACKED LAYERS LIKE NEARBY PLOTS

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 X

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

Remarks:

DMEC

I7

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: EMPTY FIELD SAME AS WP0614 City/County: _____ Sampling Date: 7/9/2014

Applicant/Owner: _____ State: _____ Sampling Point: 070

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

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

Subregion (LRR): _____ Lat: 35.102392 Long: -116.275061 Datum: _____

Soil Map Unit Name: _____ 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 X No _____

Are Vegetation X, 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 Y	No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks: UNDULATING SWALE W/ SIGNIFICANT AREAS OF SOIL SURFACE CRACKS & ALONG CLEAR BANK CONDUCTING WASH, W/ E-W TRENDING LINE OF CHILOPSIS LINEARIS → ALTHOUGH NOT PRESENT IN 3M PLOT, CLEARLY CONTRIBUTES TO FORMATION OF BANK RIDGE

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1. (Chilopsis linearis)			(FACU)
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m)			
1.			
2. ATRIPLEX CANESCENS	5	Y	(FAC)
3.			
4.			
5.			
	10	= Total Cover	
Herb Stratum (Plot size: 3m)			
1. Salsola tragus	5	Y	(FACU)
2.			
3.			
4.			
5.			
6.			
7.			
8.			
		= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 90 % Cover of Biotic Crust _____

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	_____	x 1 =	_____
FACW species	_____	x 2 =	_____
FAC species	5	x 3 =	15
FACU species	_____	x 4 =	_____
UPL species	5	x 5 =	25
Column Totals:	10 (A)		40 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks: SMALL BANK DOMINATED BY SALSOLA TRAGUS, ATRIPLEX CANESCENS, & CHILOPSIS LINEARIS (NOT IN PLOT) CHILOPSIS APPEARS TO BE LARGE FORM PHREATOPHYTE CONTRIBUTING TO FORMATION OF BANK → NOT REPRESENTED W/ IN PLOT → SALSOLA TRAGUS DISCUSSED IN LICHVAR & DIXON 2007 AS DRY WASH SP. SO TREATED AS FAC

SOIL

Sampling Point: ch I7

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
0-1.5							CLAYEY SILT	
1.5-18							FINE UNCONSOLIDATED SAND	
							HIGH IN BIOTITE - SOFT	

[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)
- X 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 X No ____

Remarks:

BIOTITE APPEARS STRATIFIED NO PEBBLES

0-2" 1/2" THICK LAYER @ 4" SERIES OF THIN (YES) BIOTIE (THEN) SAND BELOW 5"

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)**
- X Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- X Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in 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 X Depth (inches): _____

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

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

Wetland Hydrology Present? Yes X No ____

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

Remarks: SIGNIFICANT SCATTERED (SOMETIMES RAISED) AREAS OF SURFACE CRACKS

I8

WETLAND DETERMINATION DATA FORM – Arid West Region

EMPTY FIELDS SAME AS WP064

Project/Site: _____ City/County: _____ Sampling Date: 7/9/14

Applicant/Owner: _____ State: _____ Sampling Point: 071

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

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

Subregion (LRR): _____ Lat: 35.102675 Long: -116.27503 Datum: _____

Soil Map Unit Name: _____ 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 X	**Is the Sampled Area within a Wetland?** WATERS Yes _____ No X
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks: CLEARLY STRATIFIED LAYERS

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1. _____			
2. _____			
3. _____			
4. _____			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. _____	1		
2. _____			
3. _____			
4. _____			
5. _____			
	1 = Total Cover		
Herb Stratum (Plot size: 3m)			
1. Schismus	1	4	(FAC)
2. Salsola tragus	1	4	(FACU)
3. _____			
4. _____			
5. _____			
6. _____			
7. _____			
8. _____			
	1 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1. _____			
2. _____			
	_____ = Total Cover		

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

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

__ 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 X

Remarks: too sparse – essentially unvegetated

SOIL

Sampling Point: 071 I8

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 - 0.5								FINES & GRAVEL
0.5 - 4								FINE SAND
4 - 18"								ALTERNATING ½" SECTION
								SAND ↔ 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)
- X 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 X No ___

Remarks:

CLEARLY FLUVIAL DEPOSITED STRATIFIED LAYERS

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**)
- X 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**)
- X 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 X Depth (inches): _____

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

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

Wetland Hydrology Present? Yes X No ___

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

Remarks:

CLEARLY MAJOR EPHEMERAL FLOOD CHANNEL | MOJAVE RIVER w/ CHILOPSIS/PROSOPIS DOMINATED BANKS

DMEC

J1

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: EAST CRONESE LAKE City/County: SAN BERNARDINO Sampling Date: 7/9/2014
Applicant/Owner: RICHARD LYONS State: CA Sampling Point: 072
Investigator(s): MAHONEY | LASHLEY Section, Township, Range: SECTION 19 T12N R7E
Landform (hillslope, terrace, etc.): POTENTIAL FLOODPLAIN Local relief (concave, convex, none): NONE Slope (%): 0
Subregion (LRR): INTERIOR DESERT (D) Lat: 35.116754 Long: -116.271247 Datum: NAD83
Soil Map Unit Name: MOJAVE DESERT AREA (GA695) ROSITAS-CARRIZO NWI classification: NONE
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation X, Soil X, or Hydrology X naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____
Is the Sampled Area within a Wetland? Yes X No ____

Remarks: SMALL DEPRESSION AMONG HUMMOCK-SWALE LAND FORM
ENTIRE ~~Project Area~~ (NE¼NE¼ OF SECTION 19) WAS ATTEMPTED AGRICULTURE IN PAST, PLOW LINES CLEARLY VISIBLE ON GROUND & AERIAL IMAGERY → VEGETATION HISTORICALLY DISTURBED
LIKELY AREA OF WIDELY DISTRIBUTED SHEET FLOW

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 3m)			
1. ATRIPLEX CANESCENS	10	Y	FAC
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 3m)			
1. LEPIDIUM NITIDUM	1		FAC (FAC)
2. SCHISMUS SP.	1		
3. AMSINCKIA TESSELLATA	1		
4.			
5.			
6.			
7.			
8.			
	3 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

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

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 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 ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks: VEG HISTORICALLY DISTURBED

US Army Corps of Engineers Arid West – Version 2.0

SOIL

Sampling Point: 072 I1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18								CLAYEY SILT UNCONS. W/ BIOTITE

[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)
- X Other (Explain in Remarks) unconsol. dated sediments

[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 X No ___

Remarks: POSSIBLE HIGH SALINITY/ALKALINITY OR LOW PERIOD OF INUNDATION PREVENTS FORMATION OF HYDRIC SOILS → LIKELY AREA OF WIDELY DISTRIBUTED SHEET FLOW CONTRIBUTING TO PLAYA pH 8.54 on 24 June 2015

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**)
- X Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- X Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in 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 X Depth (inches): ___

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

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

Wetland Hydrology Present? Yes X No ___

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

Remarks: CRACKS PROVIDE EVIDENCE OF PAST HYDROLOGY, BUT NO EVIDENCE OF HYDROPHYTES OR HYDRIC SOILS - LIKELY UPLAND

DMEC

WETLAND DETERMINATION DATA FORM – Arid West Region

JT

Project/Site: BLANK FIELDS SAME AS 072 City/County: _____ Sampling Date: 7/9/14

Applicant/Owner: _____ State: _____ Sampling Point: 073

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

Landform (hillslope, terrace, etc.): POTENTIAL FLOODPLAIN (PLAYA EDGE) Local relief (concave, convex, none): NONE Slope (%): 0

Subregion (LRR): _____ Lat: 35.119727 Long: -116.272071 Datum: _____

Soil Map Unit Name: _____ 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 X No _____

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

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

Hydrophytic Vegetation Present? Yes X No _____

Hydric Soil Present? Yes X No _____

Wetland Hydrology Present? Yes Y No _____

Is the Sampled Area within a Wetland? Yes X No _____

Remarks: EXTENSIVE SOIL CRACKING - LESS HUMMOCKY W/ IN TAMARIX ABOVE LIKELY AREA OF WIDELY DISTRIBUTED SHEET FLOW → INUNDATION PERIOD LONGER THAN @ 072 WP021 represents Water Line (D. Magney & Vernitz (Chm) Lee 10/20/14)

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 3m)			
1. Tamarix ramosissima	10		(FAC)
2.			
3.			
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Peganum sp.	5		
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	5 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

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

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 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 _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

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

__ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks:
ENTIRE AREA HAS HISTORICALLY BEEN PLOWED (plow lines) OBVIOUS ON GROUND & IN AERIAL IMAGERY

US Army Corps of Engineers — Arid West – Version 2.0

SOIL

Sampling Point: 073 J2

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
0-3"								PLATY SILTY CLAY
3-7								LESS PLATY " "
7-15								SILTY FINE SAND W/ BIOTITE
								THIN STRATIFIED LAYERS of
	no color variation in stratified layers							BIOTITE

[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)
- X 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)
- X 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:

VERY THIN STRATIFIED LAYERS OF BIOTITE, W/ A THIN CRACKED SOIL SURFACE CRUST

Alkalinity masking hydric soil indicators - pH = 8.37 on 24 July 2015

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)**
- X Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- X Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12) ?
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in 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 X Depth (inches): _____

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

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

Wetland Hydrology Present? Yes X No _____

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

Remarks:

EXTENSIVE SURFACE CRACKS

DMEC

WETLAND DETERMINATION DATA FORM – Arid West Region

J3

BLANK FIELDS SAME AS 072

Project/Site: _____ City/County: _____ Sampling Date: 7/9/14

Applicant/Owner: _____ State: _____ Sampling Point: 074 J3

Investigator(s): _____ Section, Township, Range: * PHOTOS BEFORE NOTES

Landform (hillslope, terrace, etc.): POTENTIAL PLAYA ZONE FLOODPLAIN Local relief (concave, convex, none): NONE Slope (%): ~0

Subregion (LRR): _____ Lat: 35.121687 Long: -116.293283 Datum: _____

Soil Map Unit Name: _____ NWI classification: EMERGENT WETLAND

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

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

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

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

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

Remarks: PLOT SIMILAR TO LAST ONLY MOST TAMARIX DEAD SIMILAR TO 072 & 073 W/ GREATER PERIOD OF INUNDATION & MORE INFLUENCE FROM PLAYA SURFACE

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. dead Tamarix ramosissima			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Pectocarya sp.	5		
2. Sclerus sp.	8		(FAC)
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

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

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

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

X 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 X

Remarks: MANY SURROUNDING TAMARISK DEAD - DUE TO INUNDATION OR INCREASE IN SOIL SALINITY? AREA ~150FT FROM INUNDATION LVL VISIBLE IN 1993 ENTIRE PARCEL PREVIOUSLY PLOWED → TAMARIX RAMOSISSIMA ONLY PERENNIAL PRESENT, CAUSE OF DEATH UNKNOWN * PHOTOS BEFORE NOTES

US Army Corps of Engineers — Arid West – Version 2.0

SOIL

Sampling Point: DP4 J3

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								BLOCKY PED W/ POLYGONAL
							CLAYEY LOAM	CRACKS
2-6								BLOCKY CLAYEY SILT W/ BIOTITE
6-9							FINE SILTY	SAND UNCONSOLIDATED
9-9.5							CLAY	
9.5-10							CLAYEY-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)
- X 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)
- Y 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)
- X 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 X No _____

Remarks:

BRIGHT MOTTLES (RED)
Alkalinity masking hydric soil indicators; pH 8.15 on 29 July 2015

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)**
- X Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- X Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- X 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 X Depth (inches): _____

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

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

Wetland Hydrology Present? Yes X No _____

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

Remarks:

SUBSTANTIAL SURFACE CRACKS & some OXIDIZED RHIZOSPHERES

K1

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: EAST CRONESE LAKE City/County: SAN BERNARDINO Co. Sampling Date: 7/9/2014
Applicant/Owner: RICHARD LYONS State: CA Sampling Point: 075
Investigator(s): MAGNEY & LASHLY Section, Township, Range: SECTION 17 T12N R7E
Landform (hillslope, terrace, etc.): PLAYA SURFACE Local relief (concave, convex, none): NONE Slope (%): ~0
Subregion (LRR): INTERIOR DESERT (D) Lat: 35.126503 Long: -116.265034 Datum: NAD83
Soil Map Unit Name: MOJAVE DESERT AREA (CA695) PLAYAS (S1137) NWI classification: LAKE
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil X, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____
Is the Sampled Area within a Wetland? Yes X No ____

Remarks: CLEARLY PLAYA SURFACE w/ INDICATORS OF OHW TO THE EAST & SLIGHTLY UPLAND

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 3m)			
1. SUEDA NIGRA	30	Y	OBL
2.			
3.			
4.			
5.			
	30 = Total Cover		
Herb Stratum (Plot size: 3m)			
1. LEPIDIUM NITIDUM	1		FAC
2. SCHISMUS BARBATUS	1		(FAC)
3.			
4.			
5.			
6.			
7.			
8.			
	2 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____ % 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	1	x 1 =	1
FACW species	____	x 2 =	____
FAC species	____	x 3 =	____
FACU species	____	x 4 =	____
UPL species	____	x 5 =	____
Column Totals:	1 (A)		1 (B)

Prevalence Index = B/A = 1

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
X Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

Arid West – Version 2.0

SOIL

Sampling Point: 075 K1

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
0-1							SILTY CLAY	BLOCKY POLYGONAL
1-20							BLOCKY SILTY CLAY	CRACKS
SUB 20	MOIST REDISH							

[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)
- X 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)
- X 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 X No ___

Remarks:

PLAYA SURFACE W/ POORLY DEFINED STRATIFIED LAYERS AT SAMPLE PLOT – HOWEVER CLEAR INDICATORS OF OHW TO THE HIGHER ELEVATIONS ON EAST SIDE. POSSIBLE SALINE/ALKALINE CONDITIONS PREVENTED FORMATION OF INDICATORS LOCALLY

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**)
- X Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- X Surface Soil Cracks (B6)
- X 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)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes X No ___

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

Remarks:

EXTENSIVE SOIL SURFACE CRACKS

K2

WETLAND DETERMINATION DATA FORM – Arid West Region

BLANK FIELDS SAME AS 075

Project/Site: _____ City/County: _____ Sampling Date: 7/9/14

Applicant/Owner: _____ State: _____ Sampling Point: 076

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

Landform (hillslope, terrace, etc.): PLAYA SURFACE Local relief (concave, convex, none): NONE Slope (%): NO

Subregion (LRR): _____ Lat: 35.126312 Long: -116.263941 Datum: _____

Soil Map Unit Name: _____ 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 X No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes X No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 3M)			
1. TAMARIX RAMOSISSIMA	20	Y	(FAC)
2.			
3.			
4.			
5.			
	20 = Total Cover		
Herb Stratum (Plot size: 3M)			
1. (RUMEX ACUTIFOLIA	15	Y	(FAC)
2. SCHISMUS BARBATUS	2		(FAC)
3.			
4.			
5.			
6.			
7.			
8.			
	17 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

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

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 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 _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species 45	x 3 = 135
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: 45 (A)	135 (B)

Prevalence Index = B/A = 3

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

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

__ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: OK K2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4							BLOCKY SILTY CLAY (SAMPLE)	
4-12							FINE UNCONSOLIDATED (LOOSE) SAND	
12-15							CEMENTED SAND (SAMPLE)	
15-BD							LOOSELY CONSOLIDATED FINE 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)
- X 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 X No ___

Remarks: STRATIFIED LAYERS OF LOOSE & CONSOLIDATED SANDS

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- X Water Marks (B1) (**Nonriverine**)
- X Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- X Surface Soil Cracks (B6)
- X 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)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes X No ___

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

Remarks: EXTENSIVE SOIL CRACKS

DMEC

WETLAND DETERMINATION DATA FORM – Arid West Region

K3

Project/Site: BLANK FIELDS SAME AS 075 City/County: _____ Sampling Date: 7/9/14

Applicant/Owner: _____ State: _____ Sampling Point: 077

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

Landform (hillslope, terrace, etc.): PLAYA FRINGE Local relief (concave, convex, none): VERY GENTLE SLOPE Slope (%): 2

Subregion (LRR): _____ Lat: 35.126258 Long: -116.263778 Datum: _____

Soil Map Unit Name: MOJAVE DESERT AREA (CA695) RODITAS-CARIZO 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 X	No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 3m)			
1. ABROW WEED - PLUCHEA SERICEA	30	Y	FACW
2. ATRIPLEX CANESCENS	2	Y	FAC
3. SUAEDA NIGRA	3	Y	OBL
4.			
5.			
	3m = Total Cover		
Herb Stratum (Plot size: _____)			
1. SCHISMUS BARBATUS	30	Y	(FAC)
2. PELTOCARYA SP.	10		
3. CRYPTANTHA ANGUSTIFOLIA	5		(FAC)
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

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

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	30	x 2 =	60
FAC species	5	x 3 =	15
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	40 (A)		80 (B)

Prevalence Index = B/A = 2

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

X Prevalence Index is ≤3.0[1]

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

__ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks:
SHRUB STRATUM: ALL DOMINANT VEG IN LANDSCAPE – NOT WELL REPRESENTED IN PLOT (COVER %'S → SCHISMUS SP. DOMINANT IN HERB STRATUM

SOIL

Sampling Point: ~~07~~ K3

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18							SEMI CONSOLIDATED FINE 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)
- X 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 X No ___

Remarks:
VAGUE STRATIFICATION 2-4" DEEP

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**)
- X Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- X Surface Soil Cracks (B6)
- X 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)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes X No ___

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

Remarks:
VISIBLY INUNDATED IN 1993

DMEC

WETLAND DETERMINATION DATA FORM – Arid West Region

K4

Project/Site: _____ City/County: _____ Sampling Date: _____

Applicant/Owner: _____ State: _____ Sampling Point: 078

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

Landform (hillslope, terrace, etc.): PLAYA EDGE Local relief (concave, convex, none): SLIGHT SLOPE Slope (%): 3

Subregion (LRR): _____ Lat: 35.126226 Long: -116.263404 Datum: _____

Soil Map Unit Name: _____ 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 X	No _____	Is the Sampled Area within a Wetland? Yes _____ No X
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes _____	No X	

Remarks: ~25ft. ABOVE ROCKS w/ CLEAR WATERMARKS & OBVIOUS PLAYA SURFACE STRATIFICATION LIKELY ANCIENT LAKEBED COVERED IN ALLUVIUM

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1. _____			
2. _____			
3. _____			
4. _____			
= Total Cover			
Sapling/Shrub Stratum (Plot size: _____)			
1. T. RAMOSISSIMA (TAMARIX)	10	Y	FAC
2. ATRIPLEX CANESCENS	5	Y	FAC
3. _____			
4. _____			
5. _____			
= Total Cover			
Herb Stratum (Plot size: _____)			
1. MALACOTHRIX RAFINESQUIA	5		
2. [illegible]			
3. CRYPTANTHA ANGUSTIFOLIA	1		(FAC)
4. PECTOCARYA	1		
5. SCHISMUS	1		(FAC)
6. _____			
7. _____			
8. _____			
= Total Cover	8		
Woody Vine Stratum (Plot size: _____)			
1. _____			
2. _____			
= Total Cover			

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

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 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 _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

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

__ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

N-S TRENDING LINE OF SCATTERED PROSOPIS

BLANK FIELDS AT TOP OF SHEET SAME AS 075 (K1)

US Army Corps of Engineers Arid West – Version 2.0

SOIL

Sampling Point: 070K4

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
0-3								LOOSE SAND
3-4								2 SANDWICHED LAYERS OF FINE GRAVEL
4-12								CEMENTED SANDY LOAM
12-18							L	LOOSE FINE 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)
- X 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 X No ___

Remarks:

LIKELY ANCIENT SCOURING -

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 X

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

Remarks:

ABOVE VISIBLE INUNDATION IN 1993.

DMEC

WETLAND DETERMINATION DATA FORM – Arid West Region

DMEC 1

Project/Site: E. CRONESE City/County: SAN BERNARDINO Co. Sampling Date: 3/12/14
Applicant/Owner: RICHARD LYONS T4G, Inc. State: CA Sampling Point: 1236
Investigator(s): MAHNEY | LASHLEY Section, Township, Range: S19 T12N R6E
Landform (hillslope, terrace, etc.): FLAT PLAYA BOTTOM Local relief (concave, convex, none): FLAT Slope (%): 0
Subregion (LRR): INTERIOR DESERT (D) Lat: 35.11919 Long: 116.29917 Datum: NAD83
Soil Map Unit Name: MOJAVE DESERT AREA (CA695) NWI classification: L2UBF
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation N, Soil Y, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 10m)			
1. ATRIPLEX TORREYI	30	Y	FAC
2.			
3.			
4.			
5.			
	30 = Total Cover		
Herb Stratum (Plot size: 10m)			
1. SCHISMUS	5		NL
2. CHRYSANTHE	1		NL
3. AMSINCKIA TESSELLATA	1		NL
4.			
5.			
6.			
7.			
8.			
	7 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 63 % 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 ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species 30	x 3 = 90
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: 30 (A)	90 (B)

Prevalence Index = B/A = 3

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
X Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

DMEC

SOIL

Sampling Point: 36 DMEC

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
0-½	10YR 4/2						CRACKED PLATES	CLAY
½-24"	10YR 3/2						UNCONSOLIDATED SOFT	CLAY
>24" 26"	10YR 4/3							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)
- X 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: LIKELY ALKALINE SOILS

Gas bubbles pH = 8.61, Conductivity (MS) = 495 on 24 June 2015

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)**
- X Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in 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 X No ___

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

Remarks:

DMEC

WETLAND DETERMINATION DATA FORM – Arid West Region

DMEC 2

Project/Site: CRONESE LAKE City/County: SAN BERNARDINO Co. Sampling Date: 1/31/14
Applicant/Owner: RICHARD LYONS T40, Inc. State: _____ Sampling Point: 4G
Investigator(s): MAGNEN / LASHLY Section, Township, Range: S19 T12N R6E
Landform (hillslope, terrace, etc.): PLAYA BOTTOM Local relief (concave, convex, none): UNDULATING Slope (%): 0
Subregion (LRR): D Lat: 35.10516 Long: -116.25810 Datum: NAD83
Soil Map Unit Name: MOJAVE DESERT AREA (CA695) NWI classification: NONE / RIVERINE ADJACENT
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. PROSOPIS GLANDULOSA	5	Y	(FAC)
2. ATRIPLEX CANESCENS	5	Y	(FAC)
3.			
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

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

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 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	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks: ECOTONAL AREA IN MOJAVE RIVER FLOOD PLAIN
Atriplex canescens is often found in playa sinks in desert region and function as a hydrophyte
Prosopis glandulosa is nearly always associated w/ river washes and edges of playa lakes

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SOIL

Sampling Point: 049 DMEC2

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
0-15		100	NONE				FINE SAND	UNCONSOLIDATED
15-18	10YR 4/2	100					CLAYEY LOAMY SAND	FAINT FEW MOTTLES

[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)
- X 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 X No ____

Remarks:

POOR CONDITIONS FOR HYDRIC INDICATORS - SEASONALLY (RARELY) PONDED

925 bubbler pH = 7.99, Conductivity (MS) = 472

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- X Water Marks (B1) **(Nonriverine)**
- X Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- X Surface Soil Cracks (B6)
- X 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)**
- X Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes X No ____

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

Landsat imagery

Remarks:

DMEC

WETLAND DETERMINATION DATA FORM – Arid West Region

DMEC3

Project/Site: E. CRONESE City/County: SAN BERNARDINO Sampling Date: 3/12/14
Applicant/Owner: RICHARD LYONS State: CA Sampling Point: 035 DM
Investigator(s): MAHNEY / LASHLY Section, Township, Range: S25 T12N R6E
Landform (hillslope, terrace, etc.): UNDULATING Local relief (concave, convex, none): ~~CONCAVE~~ FLAT UNDULATING Slope (%): 0
Subregion (LRR): INTERIOR DESERT (D) Lat: 35.10452 Long: 116.28817 Datum: NAD83
Soil Map Unit Name: MOJAVE DESERT AREA (CA695) NWI classification: NONE
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation Y, Soil N, or Hydrology Y naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: SAME AS LAST - STRANGE UNDULATIONS - EVIDENCE OF AEOLIAN & FLUVIAL PROCESSES

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10M)			
1. FREMALCHE	5		
2. RUSSIAN THISTLE - SALSOLA TRAGUS	5		(FACU)
3. CRYPTANTHA ANGUSTIFOLIA	1		
4.			
5.			
6.			
7.			
8.			
	11 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 89 % 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: ____ (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
__ 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 X

Remarks: TOO SPARSE

SOIL

Sampling Point: 035 DP03

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 - 1/2							GEM. CONSOL. CRUST	BIOTITE LOAM)
1/2 - 15							FINE SAND	UNCONSOLIDATED
								RICH IN BIOTITE

[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 X

Remarks: FINE LAYER OF SILT DEPOSITED AS CRUST + FLUVIAL
VERY SPARSE VEGETATED HUMMOCKS

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**)
- X Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- X 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 X No ____

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

Remarks: PROBLEM AREA. CLEAR FLOODPLAIN w/ DRAINAGE PATTERNS → COMBO FLUVIAL & AEOLIAN PROCESSES?

DMEC

WETLAND DETERMINATION DATA FORM – Arid West Region

DMEC 4

Project/Site: E. Croneye City/County: San Bernardino Sampling Date: 3/12/14
Applicant/Owner: Richard Lyons State: CA Sampling Point: 022
Investigator(s): Magney / Lashly Section, Township, Range: S25 T12N R6E
Landform (hillslope, terrace, etc.): undulating playa Local relief (concave, convex, none): undulating Slope (%): 0
Subregion (LRR): Interior Desert (D) Lat: 35.10766 Long: 116.29675 Datum: NAD83
Soil Map Unit Name: Mojave Desert Area (CA695) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation Y, Soil Y, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10m)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10m)			
1. Schismus	20	Y	NL
2. Amsinckia	2	N	
3. Malacothrix	2	↓	
4. Plagiocarya	1		
5.			
6.			
7.			
8.			
	25 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 75 % 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: ____ (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = N/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)
X 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 X

Remarks:
Sparse Hummockery veg

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SOIL

Sampling Point: 022 DMEC4

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
0-1/2	10YR 5-2						SEMI CONSOLIDATED	
1/2-15	10YR 5-2						UNCONSOLIDATED FLUFFY SILT HIGH IN	
15-18	10YR 3-3						CLAY	BIOTITE
18-30	10YR 3-3						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)
- X 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 X

Remarks:

VEGETATED OUT LOOPS & HUMMOCKS → FLOODPLAIN LIKELY (PROBLEMATIC)

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**)
- X Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in 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**)
- X 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 X Depth (inches): _____

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

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

Wetland Hydrology Present? Yes X No _____

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

Remarks:

NETWORK OF SWALES PATCHY BAND OF TAMARIX ~ 50% TCTAM.

WP023 35.10805 116.29640 N & SOUTH MUCH THINNER & SPARSE

US Army Corps of Engineers

Arid West – Version 2.0

DMEC

DMEC 5

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: E. CRONESE City/County: SAN BERNARDINO Co. Sampling Date: 3/12/14

Applicant/Owner: RICHARD LYONS State: CA Sampling Point: WP 002

Investigator(s): MAGNEY / LASHLEY Section, Township, Range: S25 T12N R6E

Landform (hillslope, terrace, etc.): UP DUNE DULATING FIELD BOTTOMLAND Local relief (concave, convex, none): UNDULATING Slope (%): 0

Subregion (LRR): INTERIOR DESERT (D) Lat: 35.10149 Long: 116.29192 Datum: NAD 83

Soil Map Unit Name: MOJAVE DESERT AREA (CA695) NWI classification: NONE

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

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

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

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

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

Remarks: EDGE OF DRY DESERT PLAYA - INDICATORS PROBLEMATIC BUT SOIL CRACKS PRESENT & WEAKLY STRATIFIED LAYERS w/ VEGETATED DUNES & SAND BARS

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: X)			
1.			
2.			
3.			
4.			
	20 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10M)			
1. PROSOPIS GLANDULOSA	10	Y	(FAC)
2. ATRIPLEX CANESCENS	5	Y	(FAC)
3. LARREA TRIDENTATA	5	N	NL
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot size: 10M)			
1. SCHISMUS	2		
2. LEPIDIUM	2		
3. SISYMBRIUM	2		
4. CHENOPODIUM	2		
5. ABRONIA	2		
6.			
7.			
8.			
	= Total Cover		
Woody Vine Stratum (Plot size: X)			
1.			
2.			
	= Total Cover		

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

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

___ 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 X

Remarks:

US Army Corps of Engineers — Arid West – Version 2.0

SOIL

DMEC 5 Sampling Point: 002 DMEC5

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
3 mm							CLAY CRUST 3 mm THICK	
3mm - 30in							SAND TO 30in	
30-36in							SILT BELOW 30in	

[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)
- X 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)
- X 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 X No ___

Remarks: HUMMOCKS & VEGETATED DUNES & SAND-GRAVEL BARS NEAR BY
WEAKLY STRATIFIED LAYERS - CRUST/SAND/SILT

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)**
- X Surface Soil Cracks (B6)
- ? Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in 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 X Depth (inches): _____

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

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

Wetland Hydrology Present? Yes X No ___

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

Remarks:
UNDULATING SAND DUNE FIELD W/ SWALES INBETWEEN W/ EVIDENCE OF PONDING

APPENDIX B.
COMPLETED CNPS RELEVÉ FIELD FORMS

Atriplex torreyi Provisional Shrubland Alliance

(3 pages)

Stutzia covillei-Lepidium nitidum-Cressa truxillensis Provisional Herbaceous Association

(2 pages)

Atriplex torreyi Provisional Shrubland Alliance

CALIFORNIA NATIVE PLANT SOCIETY RELEVÉ FIELD FORM
(Revised 8/23/07)

Page 1 of Relevé # 1

	FOR OFFICE USE ONLY
Polygon # _____ or Relevé # 1	Permanent Number:
Date ___/___/___ (MM DD YYYY) Airphoto #	Community Name:
	Community Number: Occurrence Number:
County San Bernardino	Source Code:
USGS Quad. Cave Mountain (7.5' or 15' (Circle one))	Quad Code: Map Index Number: Quad Name:
CNPS Chapter	Update: Yes No (Circle one)

Landowner Richard Lyons

Contact Person David Magney

Address PO Box 1346

City Ojai | Zip 93024 | Phone number (805) 646-6045

Observers David Magney & Evan Lashly

Relevé plot shape (square, rectangle, triangle, circle, entire stand) Circle

Relevé plot size (length and width of rectangle, or circle-*diameter*) _____ 30 (m.) (1000m²)

NOTE: Forest/woodland plots should be 1000m² if upland or 400m² if riparian. All shrub plots should be 400m². Herb plots should be 100 or 10m²*. *Please consult with CNPS Vegetation Ecologist on herb plots. For circle radiuses: 5.64m (100m²), 11.28m (400m²), 17.84m

Study Plot Revisit? Yes or No (Circle one) Photo Interpreter Community Code for Polygon _____

Other polygons of same type? Yes or No Is plot representative of whole polygon? Yes or No (Circle one) If not, why not? _____

GPS File # _____ GPS name (or points in file) _____ Start Time 3:19 (am or pm) GPS Datum (from GPS setup) (e.g. WGS 84, NAD 27) NAD83

File type: Point or Polygon (circle one) Releve: UTME 5 6 4 8 4 4 UTMN 3 8 8 6 2 2 2 Error ± 5m ft/m UTM Zone 11S

Transect: Start UTME _____ UTMN _____ End: UTME _____ UTMN _____

Elevation (ft.) 1064 Slope (°) 0 Aspect (°) 0 Topography: *Macro* FLAT *Micro* CRACKED SILT CRUST

VEGETATION DESCRIPTION *See code list for italicized fields*

Dominant Layer ___ 0-0.5 m, X 0.5-5 m, ___ >5 m Preliminary Alliance Name Torrey's Saltbush Scrub (Atriplex torreyi var. torreyi Alliance)

Stand Size ___ <1 acre, ___ 1-5 acres, X >5 acres *Dominant Vegetation Group* _____ *(use codes from code list)*

Phenology: Ground LATE Shrub _____ Tree N/A (Early, Peak, Late)

Wetland Community Type WETLAND → DESERT PLAYA (Wetland or Upland)

If Community Type = Wetland (see Artificial Keys to Cowardin Systems and Names)

Cowardin System PALUSTRINE Subsystem INTERMITTENTLY FLOODED Class EVERGREEN SCRUB-SHRUB BROAD-LEAVED WETLAND

Distance to water (m): Vertical _____ Horizontal _____ Channel form (if riverine) _____ (Straight, Meandering, Braided)

Adjacent Alliance	Location (e.g., North, South, East, or West of stand)	Description (up to 4 species by layer)
EAST - Suaeda nigra shrubland alliance		Suaeda nigra /
WEST - Prosopis glandulosa Alliance		Prosopis glandulosa, Larrea tridentata / Malacothrix glabrata
WEST - Larrea tridentata Alliance		Larrea tridentata / Malacothrix glabrata, Cryptantha angustifolia

Photographs – *Note which camera, photo JPEG/frame numbers, and photo direction relative to plot.*

20140409-DSCN6702 - facing N	20140409-DSCN6703 - facing E	
20140409-DSCN6704 - facing S	20140409-DSCN6707 - facing W	

Atriplex torreyi Provisional Shrubland Alliance

CALIFORNIA NATIVE PLANT SOCIETY RELEVÉ FIELD FORM

Page 2 of Releve # 1

STAND AND ENVIRONMENTAL DESCRIPTION

Trend code 2 - STABLE (1. Increasing 2. Stable 3. Decreasing 4. Fluctuating 5. Unknown)

Site Impact codes 02 05

Site Intensity 1 3 (List codes in order, with most significant first) 1. Light 2. Moderate 3. Heavy (List beneath each impact code)

Site Location and Plot Description – Describing where the plot is located and what the main vegetation and environmental features are

EAST CRONESE DRY LAKE, MOJAVE DESERT. LOCATED IN THE PLAYA BOTTOM, INTERMIXED WITH STANDS OF TAMARIX RAMOSISSIMA AND SWALES OF DEAD VEGETATION. E. CRONESE LAKE IS A DISTRIBUTARY OF THE MOJAVE RIVER AND RECIEVES INFREQUENT FLOODING. THIS PLOT IS ON THE CENTRAL-SOUTH SIDE OF THE PLAYA SURFACE & THE ALLIANCE DOMINATES ALL EDGES OF THE PLAYA THAT ARE NOT INVADED BY TAMARIX RAMOSISSIMA, OF CREOSOTE SCRUB & MESQUITE BOSQUE ADJACENT TO UPLAND COMUNITIES

Site History – Including observations of fire scars, insect/disease damage, grazing/browsing, human disturbance

LITTLE ANTHROPOGENIC DISTURBANCE ASIDE FROM SEVERAL OLD ROADS. INFREQUENTLY FLOODED BY THE MOJAVE RIVER - MAJOR INUNDATION EVENTS OCCUR APPROXIMATELY ONCE EVERY 10 YEARS. SOME BIOTURBATION EVIDENT AS EXCAVATED & CHEWED ON ROOTS OF ATRIPLEX TORREYI VAR TORREYI - APPARENTLY BLACK TAILED JACKRABBIT

Sensitive Species – List species observed and GPS UTM's; Estimate size and extent of local populations

Unknown Specimens – List code, identification notes (e.g. Genus, condition of specimen) of unknowns

Additional Comments – Including animal observations, anthropological observations, abiotic features

ABUNDANT GAS FISSURES & SINK HOLES ON PLAYA SURFACE. WITNESSED BLACK-THROATED SPARROW, HORNED LARK, & WHITE-CROWNED SPARROW UTILIZING HABITAT - ALSO BLACK TAILED JACKRABBIT

Surface Coarse Fragments and Soils Information (see cover class intervals-below ⇓)

Type:	Fines	Gravel	Cobble	Stone	Boulders	Bedrock	Litter	Water	Living stems
Descriptor:	Including sand, mud	2mm-7.5 cm diameter	7.5-25 cm diam	25-60cm diam.	>60cm diam.	Including outcrops	Organic matter covering ground	Standing or running water	Vascular plants at ground surface
Cover class (see below):	5						3a		3b
% Cover*:	60						15		25

*note all surface fragments, non-vegetation, living stems, etc., should add up to 100%

Cover Class Intervals: 1 (<1%), 2 (1-5%), 3a (>5-15%), 3b (>15-25%), 4 (>25-50%), 5 (>50-75%), 6 (>75%)

% Bioturbation 0 ***Soil Texture*** FISN, FISC *(Code)* ***Parent Material*** UNKN *(Code)*

Atriplex torreyi Provisional Shrubland Alliance

CALIFORNIA PLANT COMMUNITIES RELEVÉ FIELD FORM (PART 2)
SPECIES SHEET (Revised 8/23/07)

Page 3 of Relevé # 1

Layer: T = Canopy tree, U = Low-Medium tree, S = Shrub, H = Herb, and N=Non-vascular

Cover Class Intervals: 1 (<1%), 2 (1-5%), 3a (>5-15%), 3b (>15-25%), 4 (>25-50%), 5 (>50-75%), 6 (>75%)

Layer	Vascular plant name or lichen/bryophyte cover	Collection	Final species determination or Tree dbh	Cover Class	% Cover
S	ATRIPLEX TORREYI VAR. TORREYI	CC	ATRIPLEX TORREYI VAR. TORREYI	4	35
H	AMSINCKIA	CC	AMSINCKIA TESSELLATA VAR. TESSELLATA	2	2
H	SISYMBRIUM	CC	SISYMBRIUM IRIO	2	2
H	SCHISMUS	CC	SCHISMUS BARBATUS	3a	10
H	CRYPTANTHA	CC	CRYPTANTHA ANGUSTIFOLIA	2	1

Total % Cover: Overstory Conifer _____ Overstory Hardwood _____ Low-Medium Tree _____ Shrub 35 Herb 15 **Total Vascular % cover** 50

Height class: Overstory Conifer _____ Overstory Hardwood _____ Low-Medium Tree _____ Shrub 02 Herb 01 **Total Non-Vasc. % cover** 0

Height classes: 01=<1/2m, 02=1/2-1m, 03=1-2m, 04=2-5m, 05=5-10m, 06=10-15m, 07=15-20m, 08=20-35m, 09=35-50m, 10=>50m.

DMEC

Stutzia covillei-Lepidium nitidum-Cressa truxillensis Provisional Herbaceous Association

CNPS and CDFW Combined Vegetation Rapid Assessment and Relevé Field Form
(Revised February 27, 2014)

For Office Use | **Final vegetation type:** Alliance ____ Association ____
Final database #:

I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Stand ID: WP004-20140408 **Date:** 4/8/2014, 2/6/2015 **Name of recorder:** David L. Magney **Other surveyors:** Evan Lashly

GPS name: Garmin eTrex **Datum:** NAD83 or ____ For Relevé: **Bearing°**, left axis at SW point ____ of **Long / Short** side

~~UTME~~ 35.12545 ~~UTMN~~ -116.27343 **Zone:** ~~10~~ 11 (circle one) **Error:** ± ~~15~~ 5 (ft) / m / pdop

GPS within stand? Yes / No If No, cite from GPS to stand: distance (m) ____ bearing ° ____ inclination ° ____ and record projected UTMs: UTME ____ UTMN ____

Elevation: 06 ft / m **Camera Name/Photograph #'s:** Nikon Coolpix P80 - 6671, 6673, 6676, 6689, 6691 **, **

Stand Size (acres): <1, 1-5, >5 | **Plot Size** (m^2): 10 / 100 / 400 / 1000 | **Plot Shape** ~~10~~ x ____ ft / m **or Circle Radius** 16 ft / m

Exposure, Actual °: ____ NE NW SE SW Flat Variable All | **Steepness, Actual °:** ____ 0° 1-5° 5-25° > 25

Topography: Macro: top upper mid lower bottom | **Micro:** convex flat concave undulating

Geology code: QLAL **Soil Texture code:** Silty clay | **Upland** or **Wetland/Riparian** (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)

H20: * **BA Stems:** <1 **Litter:** <1 **Bedrock:** 0 **Boulder:** 0 **Stone:** 0 **Cobble:** 0 **Gravel:** 0 **Fines:** 99 **=100%**

% Current year bioturbation 0 **Past bioturbation present?** Yes / No | **% Hoof punch** 0

Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments:
unmolested – few vehicle tire tracks but of not consequence

Disturbance code / Intensity (L,M,H): ____/____ ____/____ ____/____ ____/____ ____/____ **"Other"** ____/____

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH : T1 (<1" dbh), **T2** (1-6" dbh), **T3** (6-11" dbh), **T4** (11-24" dbh), **T5** (>24" dbh), **T6** multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), **S2** young (<1% dead), **S3** mature (1-25% dead), **S4** decadent (>25% dead)

Herb: H1 (<12" plant ht.), **H2** (>12" ht.) **Desert Riparian Tree/Shrub: 1** (<2ft. stem ht.), **2** (2-10ft. ht.), **3** (10-20ft. ht.), **4** (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), **2** (1.5-6" diam.), **3** (>6" diam.) **% NonVasc cover:**____ **% Vasc Veg cover:**____

% Cover: Conifer tree / Hardwood tree: 0 / 0 **Regenerating Tree:** ____ **Shrub:** ____ **Herbaceous:** ____

Height Class: Conifer tree / Hardwood tree: ____/____ **Regenerating Tree:** ____ **Shrub:** ____ **Herbaceous:** ____

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S = Shrub, H= Herb, E = SEedling, A = SApling, N= Non-vascular.
% cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.

Strata	Species		% cover	C	Strata	Species	% cover	C
H	Stutzia covillei	15	15	01				
H	Lepidium nitidum	10	10	01				
A	Cressa truxillensis		5	01				

Unusual species: ____

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Stutzia covillei - Lepidium nitidum Provisional Alliance

Field-assessed association name (optional): Stutzia covillei - Lepidium nitidum - Cressa truxillensis Assoc.

Adjacent alliances/direction: Atriplex torreyi, Suaeda nigra - Atriplex torreyi / ____

Confidence in alliance identification: L M (H) **Explain:** new alliance/association

Phenology (E,P,L): **Herb** P **Shrub** – **Tree** – **Other identification or mapping information:**

* = playa bottom - sometimes flooded
** = photo names each preceded by: 20140408-DSCN____

Stutzia covillei-Lepidium nitidum-Cressa truxillensis Provisional Herbaceous Association

CNPS and CDFW Combined Vegetation Rapid Assessment and Relevé Field Form
RELEVE SPECIES SHEET (Revised 2/27/2014)

Page 2 of Polygon/Stand #: WP004-20140408

Stratum categories: T = Tree, S = Shrub, H = Herb, E = SEedling, A = SApling, and N=Non-vascular
% Cover Intervals for reference: r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

Strata	Vascular plant name or lichen/bryophyte	% Cover	Collection	Final species determination (or DBH)		
H	Stutzia covillei	15	94-14	Magney & Lashly		UCSB
H	Lepidium nitidum	10	97-14	"	"	"
H	Cressa truxilensis	5	93-14	"	"	"
H	Schismus barbatus	1	86-14	"	"	"
H	Dieteria canescens var. canescens	T	95-14	"	"	"
H	Salsola tragus	T	83-14	"	"	"
H	Cryptantha angustifolia	1	10-14	"	"	"
H	Malacothrix glabrata	T	—	"		
H	Amsinckia tessellata	1	27-14	"	"	"
H	~~Ambrosia Salsola~~ unknown	T	—	"	"	
H	Chaenactis stevioides	T	8-14	"	"	"
H	Sisymbrium irio	T	46-14	"	"	"