JURISDICTIONAL DELINEATION REPORT

DUNCAN ROAD PHOTOVOLTAIC SITE

COMMUNITY OF PHELAN, SAN BERNARDINO COUNTY, CALIFORNIA

Prepared for:
Reno Contracting Inc.
1450 Frazee Road, Suite 100
San Diego, California 92108
Office: (619) 220-0224 x6228

Contact: Eric Scheidlinger

Prepared by:
AMEC Environment & Infrastructure, Inc.
3120 Chicago Avenue, Suite 110
Riverside, California 92507

Principal Investigator:
Scot Chandler

June 2013

AMEC Project No. 1355400534

TABLE OF CONTENTS

PAGE

ACRONYMS AND ABBREVIATIONS III
1.0 INTRODUCTION 1-1
1.1 Project Description 1-1
1.2 Project Location 1-1
2.0 ENVIRONMENTAL SETTING 2-1
2.1 Existing Conditions 2-1
2.2 Hydrology 2-1
2.3 Vegetation 2-1
2.4 Soils 2-1
2.5 National Wetlands Inventory 2-2
3.0 REGULATORY FRAMEWORK 3-1
3.1 U.S. Army Corps of Engineers 3-1
3.1.1 Waters of the U.S. 3-1
3.1.2 Wetlands and Other Special Aquatic Sites 3-2
3.1.3 Supreme Court Decisions 3-2
3.2 Regional Water Quality Control Board 3-3
3.3 California Department of Fish and Wildlife 3-3
4.0 METHODS 4-1
5.0 RESULTS 5-1
5.1 Federal Jurisdiction 5-1
5.2 State Jurisdiction 5-2
6.0 IMPACTS TO JURISDICTIONAL AREAS 6-1
6.1 Permitting Requirements 6-1
6.1.1 U.S. Army Corps of Engineers 6-1
6.1.2 Regional Water Quality Control Board 6-1
6.1.3 California Department of Fish and Wildlife 6-1
7.0 REFERENCES 7-1

LIST OF TABLES

Table 1 Summary of Jurisdictional Drainage 5-2

LIST OF FIGURES

Figure 1. Regional Location Map 1-3
Figure 2. Topographic Map 1-5
Figure 3. Jurisdictional Delineation Map 5-3

TABLE OF CONTENTS (Cont.)

LIST OF APPENDICES

APPENDIX A SITE PHOTOGRAPHS
APPENDIX B APPROVED JURISDICTIONAL DETERMINATION FROM NEARBY SITE

ACRONYMS AND ABBREVIATIONS

AMEC	AMEC Environment and Infrastructure, Inc.
AMSL	above mean sea level
CEQA	California Environmental Quality Act
CDFW	California Department of Fish and Wildlife
CWA	Clean Water Act
District	Snowline Joint Unified School District
EPA	Environmental Protection Agency
FAC	facultative
FACU	facultative upland
FACW	facultative wetland
GIS	Geographic Information System
NL	not listed
NWI	National Wetlands Inventory
OBL	obligate
OHWM	ordinary high water mark
Rapanos	Rapanos v. U.S. and Carabell v. U.S.
RPW	relatively permanent waterway
RWQCB	Regional Water Quality Control Board
SWANCC	Solid Waste Agency of Northern Cook County v. USACE
TNW	traditionally navigable waterway
UPL	upland
USACE	U.S. Army Corps of Engineers
USDA	United States Department of Agriculture, Natural Resources Conservation Service
USFWS	United States Fish and Wildlife Service
USGS	U.S. Geological Survey
WSC	Waters of the State of California
WUS	Waters of the United States

This page intentionally left blank

1.0 INTRODUCTION

The Snowline Joint Unified School District (District) is proposing to develop a photovoltaic solar farm on land owned by the District (proposed project). Reno Contracting, Inc. retained AMEC Environment and Infrastructure, Inc. (AMEC) to determine the potential for impacts to jurisdictional waters.

This report presents regulatory framework, methods, and results of a delineation of jurisdictional waters, wetlands, and associated riparian habitat potentially impacted by the development of the proposed project. The purpose of the delineation is to determine the extent of state and federal jurisdiction within the project area potentially subject to regulation by the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA), Regional Water Quality Control Board (RWQCB) under Section 401 of the CWA and Porter Cologne Water Quality Control Act, and California Department of Fish and Wildlife (CDFW) under Section 1602 of the California Fish and Game Code.

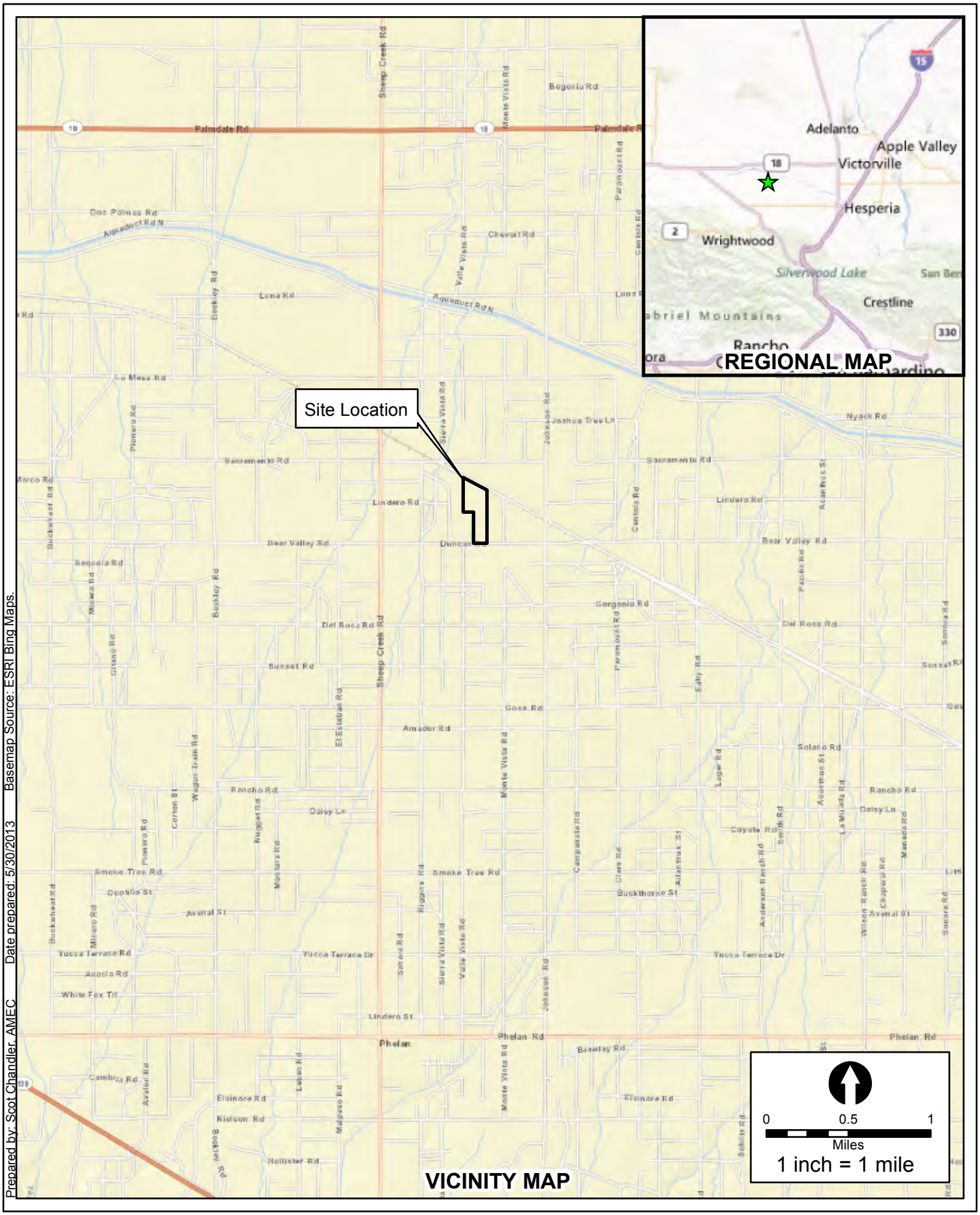
1.1 Project Description

The proposed project involves the development of a photovoltaic solar array on 25.9 acres of land.

1.2 Project Location

The study area encompasses 25.9 acres and is located in the community of Phelan, San Bernardino County, California (Figure 1). Specifically, it is located within Section 36 of Township 5 North, Range 7 West, as shown on the United States Geological Survey (USGS) 7.5 minute Phelan, California quadrangle (Figure 2). The geographic coordinates near the middle of the site are 34.47367° North latitude and -117.56257° West longitude. The proposed project site is bordered to the north by railroad tracks, to the south by Duncan Road, and a portion of the western boundary is bordered by Greystone Road.

This page intentionally left blank



Prepared by: Scot Chandler, AMEC Date prepared: 5/30/2013 Basemap Source: ESRI Bing Maps.

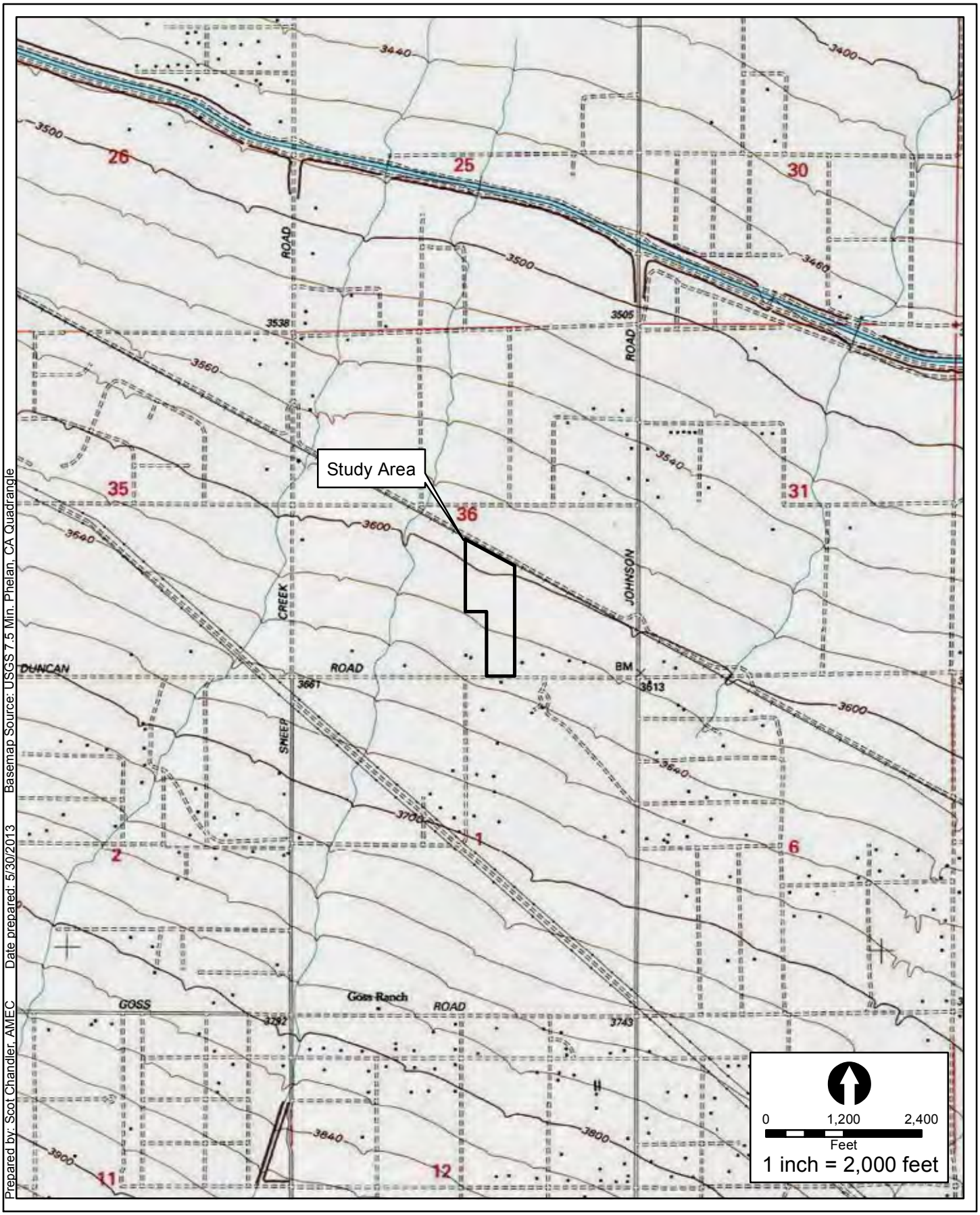
Regional and Vicinity Map

Duncan Road Photovoltaic Site

FIGURE

1

This page intentionally left blank



USGS Topographic Map

Duncan Road Photovoltaic Site

FIGURE

2

This page intentionally left blank

2.0 ENVIRONMENTAL SETTING

2.1 Existing Conditions

The study area is currently undeveloped with no existing structures. The study area shows signs of anthropogenic disturbance, such as mechanical disturbance of soil, vegetation removal, deposition of old sod and some soil piles, off road vehicle tracks, and trash.

Surrounding land uses are dominated by large lot, rural residences and undeveloped land. Railroad tracks are located directly adjacent to the northern site boundary.

Elevations within the study area range from approximately 3,640 feet above mean sea level (AMSL) near the southwest corner of the project site, to 3,595 feet AMSL near the middle of the northern boundary where an on-site drainage exits the site.

2.2 Hydrology

The average rainfall for the area is 5.8 inches per year and the average snowfall is 1.9 inches per year (Western Regional Climate Center, 2013). Weather data was recorded near El Mirage Dry Lake, approximately 9 miles northwest of the project site.

Runoff from the site generally flows north through un-named drainages before flowing into a blue-line stream soon after exiting the site through the northern boundary. Runoff flows for 10.6 river miles and 10.2 straight miles before discharging into El Mirage Dry Lake.

2.3 Vegetation

Vegetation within the study area is an intergrade of creosote bush scrub and Joshua tree woodland, dominated by creosote bush (*Larrea tridentata*), white bur-sage (*Ambrosia dumosa*), Joshua tree (*Yucca brevifolia*), peach thorn (*Lycium cooperi*), and cheesebush (*Ambrosia salsola*).

Vegetation nomenclature follows The Jepson Manual, Vascular Plants of California, 2nd Edition (Baldwin, 2012). When The Jepson Manual does not list a common name, common name nomenclature follows the United States Department of Agriculture, Natural Resources Conservation Service (USDA) Plants Database (USDA, 2013a).

2.4 Soils

The USDA online Web Soil Survey (based on the San Bernardino County, Mojave River Area Soil Survey) (Soil Survey Staff, 2013) was consulted to determine the soil types mapped as occurring within the study area. The study area contains one soil type:

- Cajon sand – This somewhat excessively drained soil occurs on alluvial fans with 0 to 9 percent slopes. It is composed of sand and the parent material is alluvium derived

from mixed sources. This soil type is not found on the National List of Hydric Soils (USDA, 2013b).

2.5 National Wetlands Inventory

The United States Fish and Wildlife Service (USFWS) is the principal Federal agency that provides information to the public on the extent and status of the Nation's wetlands. The USFWS has developed a series of maps, known as the National Wetlands Inventory (NWI) to show wetlands and deepwater habitat. This geospatial information is used by Federal, State, and local agencies, academic institutions, and private industry for management, research, policy development, education, and planning activities. The NWI program was neither designed nor intended to produce legal or regulatory products; therefore, wetlands identified by the NWI program are not the same as wetlands defined by the USACE.

The NWI Mapper (USFWS, 2013) was accessed online to review mapped wetlands within the project study area. The area in and around the study area was not part of the area mapped under the NWI program.

3.0 REGULATORY FRAMEWORK

3.1 U.S. Army Corps of Engineers

The USACE regulates the discharge of dredged or fill material in waters of the United States (WUS) pursuant to Section 404 of the CWA.

3.1.1 Waters of the U.S.

CWA regulations (33 CFR 328.3(a)) define WUS as follows:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation 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; or (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or (iii) Which are used or could be used for industrial purpose by industries in interstate commerce;
4. All impoundments of waters otherwise defined as WUS under the definition;
5. Tributaries of WUS;
6. The territorial seas;
7. Wetlands adjacent to WUS (other than waters that are themselves wetlands).

The USACE delineates non-wetland waters in the Arid West Region by identifying the ordinary high water mark (OHWM) in ephemeral and intermittent channels (USACE, 2008a). The OHWM is defined in 33 CFR 328.3(e) as:

> "…that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impresses on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas."

Identification of OHWM involves assessments of stream geomorphology and vegetation response to the dominant stream discharge. Determining whether any non-wetland water is a jurisdictional WUS involves further assessment in accordance with the regulations, case law, and clarifying guidance as discussed below.

3.1.2 Wetlands and Other Special Aquatic Sites

Wetlands are defined at 33 CFR 328.3(b) as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, 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.”

Special aquatic sites are geographic areas, large or small, possessing special ecological characteristics of productivity, habitat, wildlife protection, or other important and easily disrupted ecological values. These areas are generally recognized as significantly influencing or positively contributing to the general overall environmental health or vitality of the entire ecosystem of a region. Special aquatic sites include sanctuaries and refuges, wetlands, mud flats, vegetated shallows, coral reefs, and riffle and pool complexes. They are defined in 40 CFR 230 Subpart E.

3.1.3 Supreme Court Decisions

3.1.3.1 Solid Waste Agency of Northern Cook County

On January 9, 2001, the Supreme Court of the United States issued a decision on Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers, et al. with respect to whether the USACE could assert jurisdiction over isolated waters. The Solid Waste Agency of North Cook County (SWANCC) ruling stated that the USACE does not have jurisdiction over “non-navigable, isolated, intrastate” waters.

3.1.3.2 Rapanos/Carabell

In the Supreme Court cases of Rapanos v. United States and Carabell v. United States (herein referred to as Rapanos), the court attempted to clarify the extent of USACE jurisdiction under the CWA. The nine Supreme Court justices issued five separate opinions (one plurality opinion, two concurring opinions, and two dissenting opinions) with no single opinion commanding a majority of the Court. In light of the Rapanos decision, the USACE will assert jurisdiction over a traditional navigable waterway (TNW), wetlands adjacent to TNWs, non-navigable tributaries of TNWs that are a relatively permanent waterway (RPW) where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months) and wetlands that directly abut such tributaries. The USACE will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with a TNW: non-navigable tributaries that are not relatively permanent, wetlands adjacent to non-navigable tributaries that are not RPWs, and wetlands adjacent to but that do not directly abut a non-navigable RPW.

Flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary indicate whether they significantly affect the chemical, physical and biological integrity of downstream TNWs. Analysis of potentially jurisdictional

streams includes consideration of hydrologic and ecologic factors. The consideration of hydrological factors includes volume, duration, and frequency of flow, proximity to traditional navigable waters, size of watershed, average annual rainfall, and average annual winter snow pack. The consideration of ecological factors also includes the ability for tributaries to carry pollutants and flood waters to a TNW, the ability of a tributary to provide aquatic habitat that supports a TNW, the ability of wetlands to trap and filter pollutants or store flood waters, and maintenance of water quality.

3.2 Regional Water Quality Control Board

The RWQCB regulates activities pursuant to Section 401(a)(1) of the CWA. Section 401 of the CWA specifies that certification from the State is required for any applicant requesting a federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities that may result in any discharge into navigable waters. Through the Porter Cologne Water Quality Control Act, the RWQCB asserts jurisdiction over Waters of the State of California (WSC) which is generally the same as WUS, but may also include isolated waterbodies. The Porter Cologne Act defines WSC as “surface water or ground water, including saline waters, within the boundaries of the state”.

3.3 California Department of Fish and Wildlife

The State of California regulates water resources under Section 1600-1616 of the California Fish and Game Code. Section 1602 states:

> “An entity may not substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.”

In practice, the CDFW generally interprets their jurisdictional limits to include the following:

1. At minimum, intermittent and seasonal flow through a bed or channel with banks and that also supports fish or other aquatic life.
2. A watercourse having a surface or subsurface flow regime that supports or that has supported riparian vegetation.
3. Hydrogeomorphically distinct top-of-embankment to top-of-embankment limits.
4. Outer ground cover and canopy extents of typically riparian associated vegetation species that that would be sustained by surface and/or subsurface waters of the watercourse.

This page intentionally left blank

4.0 METHODS

Prior to conducting delineation fieldwork, the following literature and materials were reviewed:

- Aerial photographs of the project site at a scale of 1:4800 with 1-foot elevation contours to determine the potential locations of USACE, RWQCB, and CDFW jurisdictional waters or wetlands;
- USGS topographic map (Figure 2) to determine the presence of any “blue line” drainages or other mapped water features;
- USFWS NWI maps to identify areas mapped as wetland features; and
- USDA soil mapping data.

Field surveys of the study area were conducted by AMEC biologist Scot Chandler on 1 May 2013. Surveys consisted of walking the entire study area and identifying potentially jurisdictional water features. Visual observations of vegetation types and changes in hydrology were used to locate areas for evaluation. Weather conditions during delineation fieldwork were conducive for surveying with generally clear skies.

USACE regulated WUS, including wetlands, and RWQCB WSC were delineated according to the methods outlined in and A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (USACE, 2008a). The extent of WUS was determined based on indicators of an OHWM. The OHWM width was measured at points wherever clear changes in width occurred.

Federally regulated wetlands were identified based on the Wetlands Delineation Manual (USACE, 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE, 2008b). Additional data was recorded to determine if an area fulfilled the wetland criteria parameters. Three criteria must be fulfilled in order to classify an area as a wetland under the jurisdiction of the USACE: 1) a predominance of hydrophytic vegetation, 2) the presence of hydric soils, and 3) the presence of wetland hydrology. Details of these criteria are described below:

- **Hydrophytic Vegetation.** The hydrophytic vegetation criterion is satisfied at a location if greater than 50% of all the dominant species present within the vegetation unit have a wetland indicator status of obligate (OBL), facultative wetland (FACW), or facultative (FAC) (USACE, 2008b). An OBL indicator status refers to plants that almost always are a hydrophyte, rarely in uplands. A FACW indicator status refers to plants that usually are a hydrophyte but are occasionally found in uplands. A FAC indicator status refers to plants that commonly occur as either a hydrophyte or non-hydrophyte. Other wetland indicator statuses include facultative upland (FACU) which includes plants that occasionally are a hydrophyte but usually occur in uplands, upland (UPL) which refers to plants that rarely are a hydrophyte and are almost

always in uplands, and plants that are not listed (NL) for plants that do not occur on the National Wetlands Plant List. The wetland indicator status used for this report follows the National Wetland Plant List, Arid West Region (Lichvar and Kartesz, 2009).

- **Hydric Soils**. The hydric soil criterion is satisfied at a location if soils in the area can be inferred or observed to have a high groundwater table, if there is evidence of prolonged soil saturation, or if there are any indicators suggesting a long-term reducing environment in the upper part of the soil profile. Reducing conditions are most easily assessed using soil color. Soil colors were evaluated using the Munsell Soil Color Charts (Gretag/Macbeth, 2000).
- **Wetland Hydrology.** The wetland hydrology criterion is satisfied at a location based upon conclusions inferred from field observations that indicate an area has a high probability of being inundated or saturated (flooded, ponded, or tidally influenced) long enough during the growing season to develop anaerobic conditions in the surface soil environment, especially the root zone (USACE, 1987 and 2008b).

Areas meeting all three parameters would be designated as USACE wetlands. There were no wetlands identified in the study area during this investigation based of the absence of hydric soil indicators and hydrophytic vegetation.

Evaluation of CDFW jurisdiction followed guidance in the Fish and Game Code and A Field Guide to Lake and Streambed Alteration Agreements (California Department of Fish and Game, 1994). Specifically, CDFW jurisdiction was delineated by measuring the outer width and length boundaries of on-site streambeds which consisted of either the top of bank measurement (bankfull width) or the extent of associated riparian vegetation.

To determine jurisdictional boundaries, the surveyor walked the length of the drainage within the project area and recorded the centerline with a Trimble GeoXH global positioning system. The width of the drainage was determined by the OHWM and bankfull width measurements at locations where transitions were apparent. Other data recorded included bank height and morphology, substrate type, and all vegetation within the streambed and riparian vegetation adjacent to the streambed. Upon completion of fieldwork, all data collected in the field were incorporated into a Geographic Information System (GIS) along with basemap data. The GIS was then used to quantify the extent of jurisdictional waters.

5.0 RESULTS

The study area contains one drainage identified as Drainage A. The Jurisdictional Delineation Map (Figure 3) identifies the location and width of the on-site drainage and includes the photo point locations and direction the photo was taken. Drainage A is shown on Figure 3 and in Appendix A, Photos 1 through 4. Drainage A enters the study area near the southern portion of the western boundary and flows for approximately 1,670 feet before exiting the site near the middle of the northern boundary. The width of the drainage ranged from 2 to 3 feet based on OHWM limits which included a break in bank slope. The banks of Drainage A ranged from vertically-incised to steeply-sloping, averaging 1 foot deep. The substrate of Drainage A ranged from coarse sand to coarse sand with gravel. No wetlands or adjacent riparian habitat was identified in the project study area.

The streambed of Drainage A was largely unvegetated and the banks were dominated by creosote bush (*Larrea tridentata, NL*), Joshua tree (*Yucca brevifolia*, NL), Nevada ephedra (*Ephedra nevadensis*, NL), cheesebush (*Ambrosia salsola*, NL) and peach thorn (*Lycium cooperi*, NL).

5.1 Federal Jurisdiction

Drainage A is an ephemeral stream that likely flows for less than 3 months per year, and would therefore be classified as a non-RPW by the USACE. Drainage A flows into El Mirage Dry Lake approximately 10 miles north of the study area. El Mirage Dry Lake is an intrastate dry lake. Currently, there are no known or published recreational uses of this non-RPW. Furthermore, the published recreational uses of El Mirage Dry lake are limited to a few non-water (no recreational navigation) related activities including hiking, rock hounding, wildlife watching, off-roading, and ultra-light and other aircraft activity. El Mirage Dry Lake is not a TNW or an (a)(3) water as defined by 33 CFR 324.3. This non-RPW has no downstream connectivity to a TNW and has no nexus to interstate or foreign commerce. The non-RPW is not an (a)(3) water, and the non-RPW does not meet any of the i-iii criteria (no recreation or interstate commerce related to fisheries or industry).

An approved jurisdictional determination from a site nearby is included as Appendix B. The nearby waterbody lies approximately 3 miles southwest of the project study area and is composed of a non-RPW with an approximate width of 14 feet and a linear footage of 752 feet. The nearby non-RPW flows into El Mirage Dry Lake and was determined not to be jurisdictional to the USACE based on it being an “isolated” waterbody with no connection to interstate commerce (Appendix B), removed from federal jurisdiction by SWANCC (USACE, 2007). It is likely that Drainage A in the project area would have the same jurisdictional status based on similar conditions and downstream flow regime.

The USACE, in combination with the Environmental Protection Agency (EPA), when necessary, reserves the ultimate authority in making the final jurisdictional determination of WUS. This report has been prepared to provide the necessary information to assist the

USACE with that determination. An Approved Jurisdictional Determination could be requested of the USACE to provide an analysis to determine if waters of the US and/or wetlands are present on the site.

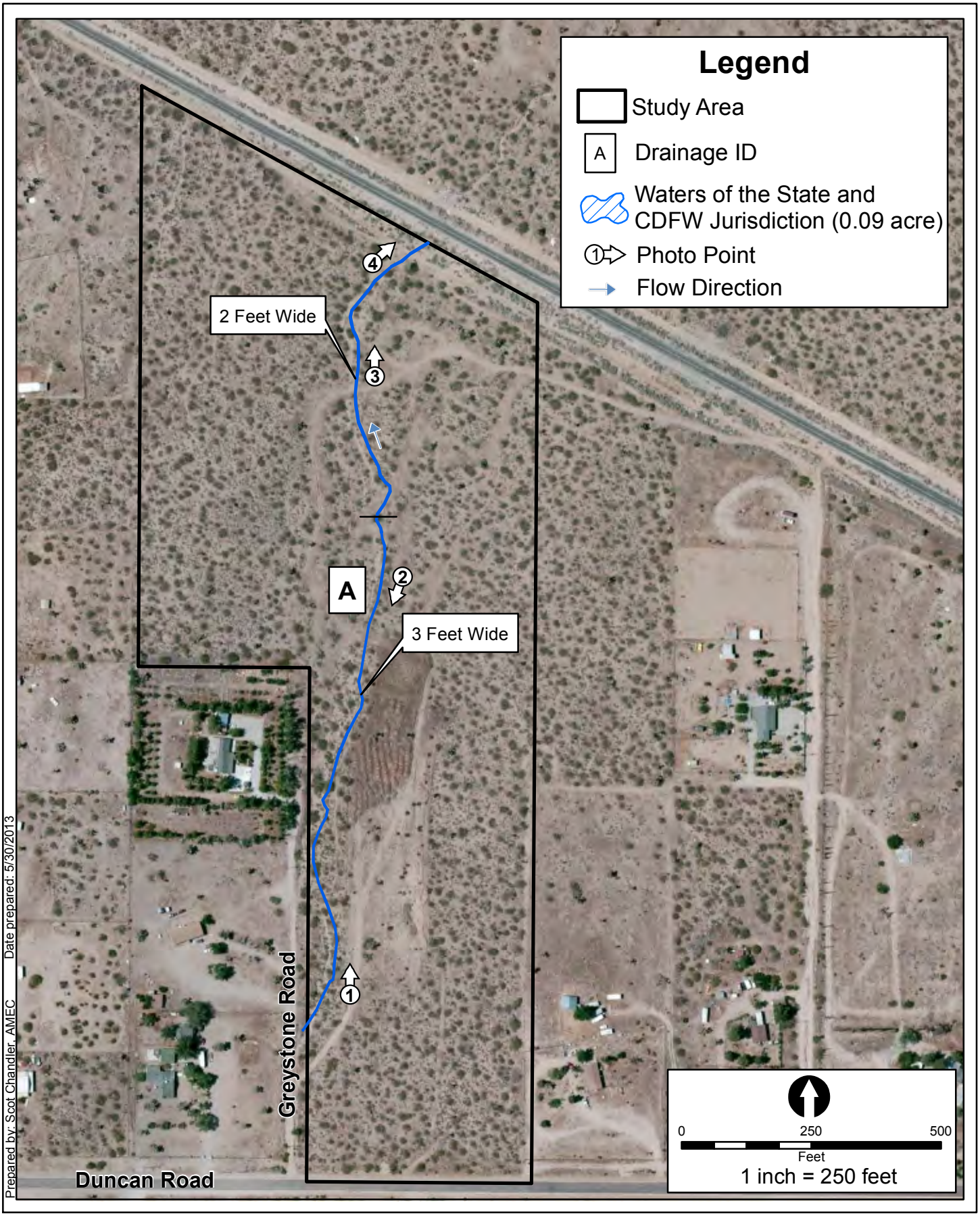
5.2 State Jurisdiction

Ephemeral washes with OHWM and hydrogeomorphically distinct top-of-embankment to top-of-embankment limits are likely to be considered WSC by the RWQCB under the Porter Cologne Water Quality Control Act and by CDFW under Section 1602 of the California Fish and Game Code. The RWQCB reserves the ultimate authority in making the final jurisdictional determination of WSC and CDFW has ultimate discretion in the determination of their jurisdiction. A total of 0.09 acre of jurisdictional WSC and CDFW streambed was identified within the project area as shown in Table 1.

Table 1
Summary of Jurisdictional Drainage

Drainage ID	WSC and CDFW Jurisdiction (acres)	Length (feet)	Latitude/ Longitude	Cowardin Class
A	0.09	1,670	34.47297/ -117.56244	R4SBJ

WSC – Waters of the State
CDFW – California Department of Fish and Wildlife
R4SBJ – Riverine, Intermittent, Streambed, Intermittently Flooded, based on Classification of Wetlands and Deepwater Habitats of the United States (Cowardin, et. al., 1979).



Jurisdictional Delineation Map

Duncan Road Photovoltaic Site

FIGURE

3

This page intentionally left blank

6.0 IMPACTS TO JURISDICTIONAL AREAS

A development plan was not available at the time of this delineation report and; therefore, an impact analysis has not been completed.

6.1 Permitting Requirements

If the proposed project requires temporary and/or permanent impacts to Drainage A, then authorizations from the USACE, RWQCB, and CDFW may be required as described below.

6.1.1 U.S. Army Corps of Engineers

Drainage A is likely not under the jurisdiction of the USACE and therefore; a Section 404 permit should not be required.

6.1.2 Regional Water Quality Control Board

The project area is within the jurisdiction of the Lahontan RWQCB (Region 6). Under Section 401 of the CWA, the RWQCB must certify that the discharge of dredged or fill material into WUS does not violate state water quality standards. The project site will likely not need a 401 certification since there are likely no WUS on the site.

The RWQCB also regulates impacts to WSC under the Porter Cologne Water Quality Control Act through issuance of a Construction General Permit, State General Waste Discharge Order, or Waste Discharge Requirements, depending upon the level of impact and the properties of the waterway. The project will likely need to obtain Waste Discharge Requirements.

In addition to the formal application materials and fee (based on area of impact), a copy of the appropriate California Environmental Quality Act (CEQA) documentation must be included with the application.

6.1.3 California Department of Fish and Wildlife

A 1602 Streambed Alteration Agreement is required for all activities that alter streams and lakes and their associated riparian habitat. In addition to the formal application materials and fee (based on cost of the project), a copy of the appropriate CEQA documentation must be included with the application.

This page intentionally left blank

7.0 REFERENCES

Baldwin. 2012. The Jepson Manual, Vascular Plants of California, 2nd Edition. University of California Press. Berkeley, California.

California Department of Fish and Game 1994. A field Guide to Lake and Streambed Alteration Agreements. Environmental Services Division. January.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Department of the Interior.

Gretag/Macbeth. 2000. Munsell color. New Windsor, NY.

Lichvar, R.W. and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0. (https://wetland_plants.usace.army.mil) U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC.

Soil Survey Staff. 2013. Natural Resources Conservation Service, United States Department of Agriculture. Soil Survey Geographic (SSURGO) Database for Mojave River Area, San Bernardino, CA. Available online at http://soildatamart.nrcs.usda.gov . Accessed 29 May 2013.

U.S. Army Corps of Engineers (USACE). 1987. Wetlands Delineation Manual, Technical Report Y-8. U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi. 100 pp. + append.

USACE. 2007. Jurisdictional Determination Form Instructional Guidebook. Joint EPA and Corps guidance document for completion of Approved Jurisdictional Determination Form.

USACE. 2008a. A Field Guide to the Identification of the Ordinary High Water Mark in the Arid West Region of the Western United States. A Delineation Manual. Lichvar and McColley. August.

USACE. 2008b. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region. September.

United States Department of Agriculture, Natural Resources Conservation Service (USDA). 2013a. The PLANTS Database. National Plant Data Team, Greensboro, NC 27401-4901 USA. Available online at: http://plants.usda.gov. Accessed 29 May 2013.

USDA. 2013b. List of Hydric Soils. Available online at: ftp://ftp-fc.sc.egov.usda.gov/NSSC/Hydric_Soils/Lists/hydric_soils.xlsx

U.S. Fish and Wildlife Service (USFWS). 2013. National Wetlands Inventory Mapper. Accessed from: http://www.fws.gov/wetlands/Data/Mapper.html on 29 May 2013.

Western Regional Climate Center. 2012. Desert Research Institute. Available online at: http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?caidyl+sca. Accessed 29 May 2013.

APPENDIX A

SITE PHOTOGRAPHS

This page intentionally left blank

Photo 1 – View of Drainage A facing downstream near the upstream end. The drainage width is approximately 2 feet at this point.

Photo 2 – Upstream-facing perspective of Drainage A near the middle of the site. The drainage width is approximately 2 feet at this point.

Photo 4 – Downstream-facing perspective of Drainage A near the downstream end where the drainage width averages 3 feet.

Photo 3 – View of downstream end of Drainage A where it exits the site through a 2-foot corrugated metal pipe beneath the railroad tracks at the north end of the study area.

APPENDIX B

APPROVED JURISDICTIONAL DETERMINATION FROM NEARBY SITE

This page intentionally left blank

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): 14-Dec-2009

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Los Angeles District, SPL-2009-00884-JD1

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State :	CA - California
County/parish/borough:	San Bernardino
City:	Phelan
Lat:	34.42636
Long:	-117.5841
Universal Transverse Mercator	Folder UTM List *UTM list determined by folder location* ● NAD83 / UTM zone 36S Waters UTM List *UTM list determined by waters location* ● NAD83 / UTM zone 36S
Name of nearest waterbody:	El Mirage Dry Lake
Name of nearest Traditional Navigable Water (TNW):	NA
Name of watershed or Hydrologic Unit Code (HUC):	

☑ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.

☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc¿) are associated with the action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION:

☑ Office Determination Date: 20-Nov-2009

☐ Field Determination Date(s): ☐

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION

There [ ] "navigable waters of the U.S." within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area.

☐ Waters subject to the ebb and flow of the tide.

☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.

Explain:

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There [ ] "waters of the U.S." within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area.

1. Waters of the U.S.
a. Indicate presence of waters of U.S. in review area:[1]

Water Name	Water Type(s) Present
Unnamed drainage	Isolated (interstate or intrastate) waters, including isolated wetlands

b. Identify (estimate) size of waters of the U.S. in the review area:

Area: (m^2)
Linear: (m)

c. Limits (boundaries) of jurisdiction:

based on: [ ]
OHWM Elevation: (if known)

2. Non-regulated waters/wetlands:[3]

Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain:
This non-RPW water has been defined as an ephemeral wash with an approximate width of 14-feet and a linear footage of 752-feet within the general project area. The non-RPW is situated in the City of Phelan, and is approximately 14 miles south of El Mirage Dry Lake. Surface flows in the area travel in a general northward direction to El Mirage Dry Lake which is the terminus for most drainages in the area. El Mirage Dry Lake is an intrastate dry lake. Currently, there are no known or published recreational uses of this non-RPW. Furthermore, the published recreational uses of El Mirage Dry lake are limited to a few non-water (no recreational navigation) related activities including hiking, rock hounding, wildlife watching, off-roading area, and ultra-light and other aircraft activity. El Mirage Dry Lake is NOT a TNW or an (a)(3) water. This non-RPW has no downstream connectivity to a TNW and has no nexus to interstate or foreign commerce. The non-RPW is NOT an (a)(3) water as defined by 33 CFR 324.3, and the non-RPW does not meet any of the i-iii criteria (no recreation or interstate commerce related to fisheries or industry) Based on the above information, the Corps concludes that this non-RPW is NOT a jurisdictional water of the United States, since the non-RPW has no commerce connection and is not an (a)(3) water by 33 CFR 328.3 and is isolated with no connection to a downstream TNW.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

1.TNW
Not Applicable.

2. Wetland Adjacent to TNW
Not Applicable.

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: [ ]
Drainage area: [ ]
Average annual rainfall: inches
Average annual snowfall: inches

(ii) Physical Characteristics
(a) Relationship with TNW:

☐ Tributary flows directly into TNW.
☐ Tributary flows through [ ] tributaries before entering TNW.
:Number of tributaries

Project waters are [ ] river miles from TNW.
Project waters are [ ] river miles from RPW.
Project Waters are [ ] aerial (straight) miles from TNW.
Project waters are [ ] aerial(straight) miles from RPW.

☐ Project waters cross or serve as state boundaries.

Explain:

Identify flow route to TNW:[5]

Tributary Stream Order, if known:
Not Applicable.

(b) General Tributary Characteristics:

Tributary is:
Not Applicable.

Tributary properties with respect to top of bank (estimate):
Not Applicable.

Primary tributary substrate composition:
Not Applicable.

Tributary (conditions, stability, presence, geometry, gradient):
Not Applicable.

(c) Flow:
Not Applicable.

Surface Flow is:
Not Applicable.

Subsurface Flow:
Not Applicable.

Tributary has:
Not Applicable.

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction:

High Tide Line indicated by:
Not Applicable.

Mean High Water Mark indicated by:
Not Applicable.

(iii) Chemical Characteristics:
Characterize tributary (e.g., water color is clear, discolored, oily film; water quality;general watershed characteristics, etc.).
Not Applicable.

(iv) Biological Characteristics. Channel supports:
Not Applicable.

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:
(a) General Wetland Characteristics:
Properties:
Not Applicable.

(b) General Flow Relationship with Non-TNW:

Flow is:
Not Applicable.

Surface flow is:
Not Applicable.

Subsurface flow:
Not Applicable.

(c) Wetland Adjacency Determination with Non-TNW:
Not Applicable.

(d) Proximity (Relationship) to TNW:
Not Applicable.

(ii) Chemical Characteristics:
Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Not Applicable.

(iii) Biological Characteristics. Wetland supports:

Not Applicable.

3. Characteristics of all wetlands adjacent to the tributary (if any):

All wetlands being considered in the cumulative analysis:
Not Applicable.

Summarize overall biological, chemical and physical functions being performed:
Not Applicable.

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Significant Nexus: Not Applicable

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE:

1. TNWs and Adjacent Wetlands:
Not Applicable.

2. RPWs that flow directly or indirectly into TNWs:
Not Applicable.

Provide estimates for jurisdictional waters in the review area:
Not Applicable.

3. Non-RPWs that flow directly or indirectly into TNWs:[8]
Not Applicable.

Provide estimates for jurisdictional waters in the review area:

Not Applicable.

4. Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.
Not Applicable.

Provide acreage estimates for jurisdictional wetlands in the review area:
Not Applicable.

5. Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs:
Not Applicable.

Provide acreage estimates for jurisdictional wetlands in the review area:
Not Applicable.

6. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs:
Not Applicable.

Provide estimates for jurisdictional wetlands in the review area:
Not Applicable.

7. Impoundments of jurisdictional waters:[9]
Not Applicable.

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS:[10]

Waters Name	Interstate\Foreign Travelers	Fish/Shellfish Commerce	Industrial Commerce	Interstate Isolated	Explain	Other Factors	Explain
Unnamed drainage	-	-	-	-	-	-	-

Identify water body and summarize rationale supporting determination:

Water Name	Adjacent To TNW Rationale	TNW Rationale
Unnamed drainage	-	-

Provide estimates for jurisdictional waters in the review area:

Water Name	Type	Size (Linear) (m)	Size (Area) (m²)
Unnamed drainage	Isolated (interstate or intrastate) waters, including isolated wetlands	-	971.24544
Total:		**0**	**971.24544**

F. NON-JURISDICTIONAL WATERS. INCLUDING WETLANDS

☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements:

☑ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce:

☐ Prior to the Jan 2001 Supreme Court decision in "SWANCC," the review area would have been regulated based soley on the "Migratory Bird Rule" (MBR):

☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (Explain):

☐ Other (Explain):

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (ie., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment:
Not Applicable.

Provide acreage estimates for non-jurisdictional waters in the review area, that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction.
Not Applicable.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD
(listed items shall be included in case file and, where checked and requested, appropriately reference below):

Data Reviewed	Source Label	Source Description
--Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant	-	-
--U.S. Geological Survey map(s).	-	-
--Photographs	-	-
----Aerial	-	-
--Other information	-	California Groudwater Bulletin Number 118, El Mirage Valley Grounwater Basin; El Mirage Dry Lake Off-Highway Vehicle Recreation Area (http://www.blm.gov/ca/st/en/fo/barstow/mirage.html);

B. ADDITIONAL COMMENTS TO SUPPORT JD:

Description
This non-RPW water has been defined as an ephemeral wash with an approximate width of 14-feet and a linear footage of 752-feet within the general project area. The non-RPW is situated in the City of Phelan, and is approximately 14 miles south of El Mirage Dry Lake. Surface

flows in the area travel in a general northward direction to El Mirage Dry Lake which is the terminus for most drainages in the area. El Mirage Dry Lake is an intrastate dry lake. Currently, there are no known or published recreational uses of this non-RPW. Furthermore, the published recreational uses of El Mirage Dry lake are limited to a few non-water (no recreational navigation) related activities including hiking, rock hounding, wildlife watching, off-roading area, and ultra-light and other aircraft activity. El Mirage Dry Lake is NOT a TNW or an (a)(3) water. This non-RPW has no downstream connectivity to a TNW and has no nexus to interstate or foreign commerce. The non-RPW is NOT an (a)(3) water as defined by 33 CFR 324.3, and the non-RPW does not meet any of the i-iii criteria (no recreation or interstate commerce related to fisheries or industry) Based on the above information, the Corps concludes that this non-RPW is NOT a jurisdictional water of the United States, since the non-RPW has no commerce connection and is not an (a)(3) water by 33 CFR 328.3 and is isolated with no connection to a downstream TNW.

---

[1]-Boxes checked below shall be supported by completing the appropriate sections in Section III below.

[2]-For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

[3]-Supporting documentation is presented in Section III.F.

[4]-Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

[5]-Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

[6]-A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.

[7]-Ibid.

[8]-See Footnote #3.

[9] -To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

[10]-Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA Memorandum Regarding CWA Act Jurisdiction Following Rapanos.