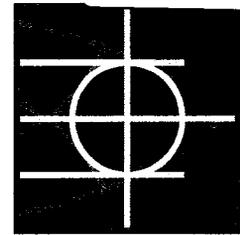




Base Realignment and Closure  
Program Management Office West  
1230 Columbia Street, Suite 1100  
San Diego, California 92101



**NAVFAC**

CONTRACT No. N68711-98-D-5713  
CTO No. 0087

**WETLAND DELINEATION REPORT  
INSTALLATION RESTORATION SITE 1, 1943-1956 DISPOSAL  
AREA AND SITE 2, (1952-1978) WEST BEACH LANDFILL**

**ALAMEDA POINT  
ALAMEDA, CALIFORNIA**

**DECEMBER 1, 2004**

**DCN: FWSD-RAC-05-0037**



**TETRA TECH FW, INC.**  
1230 Columbia Street, Suite 500  
San Diego, California 92101

A handwritten signature in black ink, appearing to read "Lenny Malo".

---

Lenny Malo  
Project Biologist

A handwritten signature in black ink, appearing to read "Abram S. Eloskof".

---

Abram S. Eloskof, M.Eng., M.Sc.  
Project Manager



TRANSMITTAL/DELIVERABLE RECEIPT

Contract No. N68711-98-D-5713 (RAC III)

Document Control No. 05-0037

File Code: 5.0

TO: Contracting Officer
Naval Facilities Engineering Command
Southwest Division
Ms. Beatrice Appling, 02R1.BA
1220 Pacific Highway
San Diego, CA 92132-5190

DATE: 12/08/04
CTO: 0087
LOCATION: Alameda Point

FROM: Neil Hart, Program Manager

DESCRIPTION: Wetland Delineation Report Installation Restoration Site 1, 1943-1956
Disposal Area and Site 2, (1952-1978) West Beach Landfill, Alameda Point, Alameda, California,
12/01/04 (Please insert Color Photos into Attachment 3, CD's to follow) 12/08/04

TYPE: [ ] Contract/Deliverable [x] CTO Deliverable [ ] Notification
[ ] Other

VERSION: Final REVISION #: N/A
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ADMIN RECORD: Yes [x] No [ ] Category [ ] Confidential [ ]
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SCHEDULED DELIVERY DATE: 12/01/04 ACTUAL DELIVERY DATE: 12/08/04

NUMBER OF COPIES SUBMITTED: 0/4C/8E Copy of SAP to N. Ancog [ ]

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TtFW: A. Eloskof M. Schneider
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DEPARTMENT OF THE NAVY  
BASE REALIGNMENT AND CLOSURE  
PROGRAM MANAGEMENT OFFICE WEST  
1230 COLUMBIA STREET, SUITE 1100  
SAN DIEGO, CA 92101-8571

5090  
Ser BPMOW0164  
December 1, 2004

Ms. Elizabeth Johnson  
Base Reuse Planner  
Development Services Department  
950 W. Mall Square, Bldg. 1  
Alameda Point  
Alameda, CA 94501

Dear Ms. Johnson:

Subj: WETLAND DELINEATION REPORT FOR IR SITES 1 AND 2 ALAMEDA POINT

This letter transmits the Wetland Delineation Report, Installation Restoration Site 1, 1943-1956 Disposal Area and Site 2, Wet Beach Landfill, Alameda Point, Alameda, California. This document is being sent without verification from the U.S. Army Corps of Engineers as agreed upon in the October 7, 2004 conference call between the Navy and the City of Alameda. In order to get this document to the City promptly, this document is being sent without color photos of the wetland areas with photo points and direction location. This will be provided shortly, which can then be inserted directly into the appendix of the document.

If you have any questions, please call Ms. Claudia Domingo, Remedial Project Manager at (619) 532-0935.

Sincerely,

RON PLASEIED  
Base Closure Manager  
By direction of the Director

Encl: (1) Wetland Delineation Report Installation Restoration Site 1, 1943-1956 Disposal Area and Site 2, West Beach Landfill, Alameda Point, Alameda, California.

Copy to:  
Mr. Stephen Proud  
Alameda Point Project Manager  
City of Alameda  
Development Services Department  
950 W. Mall Square, Bldg. 1  
Alameda Point  
Alameda, CA 94501



TETRA TECH FW, INC.

TRANSMITTAL/DELIVERABLE RECEIPT

Contract No. N68711-98-D-5713 (RAC III)

Document Control No. 05-0037

File Code: 5.0

TO: Contracting Officer
Naval Facilities Engineering Command
Southwest Division
Ms. Beatrice Appling, 02R1.BA
1220 Pacific Highway
San Diego, CA 92132-5190

DATE: 12/02/04
CTO: 0087
LOCATION: Alameda Point

FROM:

Edwin Neil Hart
Neil Hart, Program Manager

DESCRIPTION: Wetland Delineation Report Installation Restoration Site 1, 1943-1956
Disposal Area and Site 2, (1952-1978) West Beach Landfill, Alameda Point, Alameda, California,
12/01/04 (Color Photos to be inserted into the appendix and CD's will be provided at a later Date)

TYPE: [ ] Contract/Deliverable [x] CTO Deliverable [ ] Notification
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1C

TtFW:
A. Eloskof
M. Schneider

OTHER: (Distributed by TtFW)
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Date/Time Received



DEPARTMENT OF THE NAVY  
BASE REALIGNMENT AND CLOSURE  
PROGRAM MANAGEMENT OFFICE WEST  
1230 COLUMBIA STREET, SUITE 1100  
SAN DIEGO, CA 92101-8571

5090  
Ser BPMOW0164  
December 1, 2004

Ms. Elizabeth Johnson  
Base Reuse Planner  
Development Services Department  
950 W. Mall Square, Bldg. 1  
Alameda Point  
Alameda, CA 94501

Dear Ms. Johnson:

Subj: WETLAND DELINEATION REPORT FOR IR SITES 1 AND 2 ALAMEDA POINT

This letter transmits the Wetland Delineation Report, Installation Restoration Site 1, 1943-1956 Disposal Area and Site 2, Wet Beach Landfill, Alameda Point, Alameda, California. This document is being sent without verification from the U.S. Army Corps of Engineers as agreed upon in the October 7, 2004 conference call between the Navy and the City of Alameda. In order to get this document to the City promptly, this document is being sent without color photos of the wetland areas with photo points and direction location. This will be provided shortly, which can then be inserted directly into the appendix of the document.

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RON PLASEIED  
Base Closure Manager  
By direction of the Director

Encl: (1) Wetland Delineation Report Installation Restoration Site 1, 1943-1956 Disposal Area and Site 2, West Beach Landfill, Alameda Point, Alameda, California.

Copy to:  
Mr. Stephen Proud  
Alameda Point Project Manager  
City of Alameda  
Development Services Department  
950 W. Mall Square, Bldg. 1  
Alameda Point  
Alameda, CA 94501

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## APPENDICES

Appendix A           Routine Wetland Determination Data Sheets

## ATTACHMENTS

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## ABBREVIATIONS AND ACRONYMS

°C	degrees Celsius
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CWA	Clean Water Act
DOA	Department of the Army
DTSC	Department of Toxic Substances Control
EO	Executive Order
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
FAC	facultative plants
FACU	facultative upland plants
FACW	facultative wetland plants
IR	Installation Restoration
IRP	Installation Restoration Program
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NRCS	Natural Resource Conservation Service
NPL	National Priorities List
NS	No Status
NTC	National Technical Committee
OBL	obligate wetland plants
OHWM	ordinary high-water mark
RAD	radiological
SCS	Soil Conservation Service
SWANCC	Solid Waste Agency of Northern Cook County
TtFW	Tetra Tech FW, Inc.
UPL	Obligate Upland Plants
USACE	United States Army Corps of Engineers
USC	United States Code
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service

## 1.0 INTRODUCTION AND SITE DESCRIPTION

Alameda Point (formerly Naval Air Station Alameda) is located on the west end of Alameda Island, which lies on the east side of San Francisco Bay adjacent to the City of Oakland (Figures 1-1, 1-2, and 1-3). Military activities at Alameda Point were identified for closure in September 1993, and all naval operations ceased in April 1997. In July 1999, Alameda Point was identified as a National Priorities List (NPL) site. The Navy currently is conducting investigations in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) at 35 Installation Restoration (IR) sites at Alameda Point.

This section describes the wetland delineation activities associated with IR Site 1, the former disposal area (1943 through 1956) and IR Site 2, West Beach Landfill (1952-1978). In March 2004, potential wetlands were noted during a site reconnaissance to prepare for a radiological survey. This survey entailed transecting IR Sites 1 and 2 on foot and/or with slow moving all-terrain vehicles equipped with radiation detectors. In September 2004, Tetra Tech FW, Inc. (TtFW) conducted a more detailed wetland delineation for the Navy to determine the potential extent of Waters of the United States per Section 404 of the Clean Water Act (CWA), as regulated by the United States Army Corps of Engineers (USACE). The entire delineation was performed in accordance with the 1987 USACE *Wetland Delineation Manual*. A full size copy of the "West Oakland" U.S. Geological Society 7.5-minute quadrangle topographic map is provided in Attachment 1.

### 1.1 IR SITE 1

IR Site 1 is located in the northwest section of Alameda Point and encompasses approximately 78 acres (for this study, IR Site 1 includes a 24-acre piece of land in between IR Sites 1 and 2). The site is bordered on the north by the Oakland Inner Harbor and on the west by San Francisco Bay (Figure 1-4). IR Site 1 is mostly disturbed and covered by artificial fill. Historically, this area of the base was filled with bay dredge sediments and several areas within the site were used for disposal from 1943 to 1956. IR Site 1 is relatively flat with slight depressions that sometimes flood during the winter rains. Shoreline slopes exist on the northern and western boundary and are currently stabilized by large boulders (riprap).

There are concrete and asphalt runways, taxiways, and roads within IR Site 1. Taxiways and runways are inactive. Chunks of concrete and asphalt have been placed as riprap along the beach zone. There are no residential or active commercial buildings nearby. However, there are some abandoned structures that were once part of base operations. There are no utility poles or overhanging utility lines in the area. Numerous groundwater monitoring wells are located throughout the site.

The vegetation on Alameda Point that comprises IR Site 1 is mostly disturbed ruderal non-native grasslands with scattered seasonal wetland features with little topographic variation. The dominant upland plants include fennel (*Foeniculum vulgare*), thistles (*Centaurea solstitialis*), ryegrass (*Lolium perenne*), mustard (*Brassica rapa*), yellow sweet clover (*Melilotus officinalis*), coyote bush (*Baccharis pilularis*), and common plantain (*Plantago major*). The dominant wetland vegetation includes dock willow (*Rumex salicifolius*), bird's foot trefoil (*Lotus corniculatus*), creeping spike rush (*Eleocharis macrostachya*), and saltgrass (*Distichlis spicata*).

## 1.2 IR SITE 2

IR Site 2 is primarily undeveloped land that includes upland and wetland areas and encompasses approximately 127 acres. The site is adjacent to the San Francisco Bay on the south and west (Figure 1-4). Historically, this area of the base was filled with bay dredge sediments and covers an approximate 77-acre disposal area. The disposal area is on the northern and eastern portion of Site 2. IR Site 2 includes two perennial ponds. The northernmost pond is connected to the bay by a culvert (Figure 1-4). The southernmost pond was created by removal of dredged materials for use as a cover for the disposal area.

A thin strip of land between the disposal area and the bay is referred to as the coastal margin of this site. The coastal margin acts as a buffer for the disposal area and is composed of the perimeter dike and riprap seawall (creating a large impoundment). Subsurface materials in the coastal margin differ from those in the disposal area.

The land on Alameda Point that comprises IR Site 2 is mostly disturbed ruderal non-native grasslands with scattered seasonal and permanent wetland features. The dominant upland plants include fennel (*Foeniculum vulgare*), thistle (*Centaurea solstitialis*), ryegrass (*Lolium perenne*), mustard (*Brassica rapa*), ice plant (*Carpobrotus edulis*), and coyote bush (*Baccharis pilularis*). The dominant wetland vegetation includes dock willow (*Rumex salicifolius*), pickleweed (*Salicornia rubra*), bird's foot trefoil (*Lotus corniculatus*), and saltgrass (*Distichlis spicata*).

Wildlife species at both IR Sites 1 and 2 include European starlings (*Sturnus vulgaris*), red-winged blackbirds (*Agelaius phoeniceus*), snipes (*Gallinago gallinago*), common sparrows (*Spizella sp.*), Canada geese (*Branta Canadensis*) and other migratory waterfowl, Northern harriers (*Circus cyaneus*), black-tailed jackrabbits (*Lepus californicus*), California ground squirrels (*Otospermophilus beecheyi*), and feral rabbits.

A colony of California least terns (*Sterna antillarum browni*) is approximately 3,000 to 4,000 feet from IR Sites 1 and 2 and least terns have not been documented nesting or directly observed foraging in these areas (Figure 1-4). Nonetheless, the Navy coordinated with the U.S. Fish and Wildlife Service during the radiological surveys to ensure that there were no impacts to the species.

## 2.0 REGULATORY FRAMEWORK

The USACE U.S. Environmental Protection Agency (EPA) regulates the discharge of dredge and fill material into “waters of the United States” under Section 404 of the CWA. The USACE jurisdiction over non-wetland waters of the United States that are not tidally influenced extends to the “ordinary high water mark provided the jurisdiction is not extended by the presence of wetlands” [33 Code of Federal Regulations (CFR), Part 328, Section 328.4]. Waters of the United States are defined as:

*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, all interstate waters including interstate wetlands, 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 would affect interstate or foreign commerce, including such waters which are or could be used by interstate or foreign travelers for recreational or other purposes, or from which fish or shellfish are or could be taken and sold in interstate or foreign commerce, or which are used or could be used for industrial purposes by industries in interstate commerce; all impoundment of waters otherwise defined as waters of the United States interstate commerce, tributaries of waters identified in paragraphs 1-4 of this section, the territorial sea; and wetlands adjacent to waters (40 CFR, Part 230.3).*

Wetlands are defined for regulatory purposes as “those areas that are inundated or saturated by surface or groundwater 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 (33 CFR, Part 328.3 and 40 CFR, Part 230.3). The USACE will take jurisdiction over the portion of a project site that contains waters of the United States and/or adjacent jurisdictional wetlands (USACE, 1987). The USACE will not normally take jurisdiction over agricultural irrigation canals and drains or hydrologically isolated features that are not used for interstate or foreign commerce, lack vegetation or a connection to a navigable water, its tributaries, and wetlands (USACE, 2001; 1987). All potential jurisdictional features within IR Sites 1 and 2 are noted on Figures 2-1 through 2-5. Figure 2-1 has also been provided at a scale of 1”=200’ in Attachment 2.

Section 10 of the Rivers and harbors Act of 1899 applies to all navigable Waters of the United States [33 United States Code (USC) 403]. This regulation requires authorization from the USACE for all work and the construction of any structure in or over any navigable Water of the United States. None of the potential USACE jurisdictional Waters of the United States on IR Sites 1 and 2 are directly influenced by the local tides, except SM-6 on IR Site 2. SM-6 is connected to San Francisco Bay by a culvert (Figure 2-1).

### 3.0 WETLAND DELINEATION METHODS

A wetland delineation and field evaluation of vegetation, soils, and hydrology of potentially jurisdictional features were conducted in accordance with the procedures of the USACE *Wetlands Delineation Manual* (USACE, 1987), Department of the Army (DOA) *Clarification and Interpretation of the 1987 USACE Wetland Delineation Manual* (DOA, 1992), and the recent January 9, 2001, U.S. Supreme Court-issued decision for the Solid Waste Agency of Northern Cook County (SWANCC). Additionally, wetland “type” identification criteria developed by Cowardin, et al. (1979) and Reed’s 1988 *National List of Wetland Plant Species that Occur in Wetlands: California (Region 0)* were also employed. USACE Routine Wetland Determination Data Sheets (wetland and upland sampling points) are included in Appendix A.

Field methods were derived from the USACE *Wetlands Delineation Manual* Section D criteria for routine determinations in areas greater than 5 acres in size (USACE, 1987). IR Sites 1 and 2 were evaluated with a 100 percent pedestrian survey, and transect intervals did not exceed the USACE *Wetlands Delineation Manual* Section D criteria for routine determinations in areas greater than 5 acres in size (USACE, 1987). Initially vegetation was evaluated. If the vegetation observed met the USACE established criteria, then soils were examined. If the vegetation and soils were consistent with the USACE *Wetlands Delineation Manual* (1987) criteria, then hydrology data were evaluated. To the maximum extent possible, paired upland and wetland sample points were done. Representative sampling was done in areas where the wetland sample point characteristics were similar to other areas sampled. Wetland delineation photographs are included in Attachment 3.

#### 3.1 VEGETATION

Botanical species names were recorded according to *The Jepson Manual – Higher Plants of California* (Hickman, 1993) and *National List of Wetland Plant Species that Occur in Wetlands: California (Region 0)* (Reed, 1988). Wetland vegetation was classified according to the vegetation indicator categories (USACE, 1987) given in Table 3-1. Hydrophytic vegetation is defined herein as the prevalent 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. Prevalent vegetation is characterized by the dominant species that contribute more to the character of a plant community than other species present, as visually estimated or measured in terms of aerial percent cover. Wetland vegetation was determined to be present using the criteria identified in DOA *Clarification and Interpretation of the 1987 USACE Wetland Delineation Manual* (1992), which states that if more than 50 percent of the dominant species from all five strata are obligate wetland plants (OBL), facultative wetland plants (FACW), or facultative (FAC), excluding FAC-, then wetland vegetation is present.

### 3.2 SOILS

The historical record indicates that the site land area resulted from fill operations using dredged materials from the surrounding San Francisco Bay, soil types were confirmed with the United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Alameda County Soil Survey (USDA NRCS, 1981). Additionally, soils were visually evaluated. A Munsell Color Book (Munsell Color, 2000) was used<sup>1</sup> to determine the soil color(s) and any mottles that may be present. To determine soil color, a small portion of soil (moistened) was placed in the openings behind the color page to match the soil color to the nearest appropriate color chip. Furthermore, soil saturation or inundation duration was noted using the National Technical Committee for Hydric Soils June 1991 criteria (DOA, 1992). Soils were identified by digging a soil pit to a depth of 12 to 24 inches within the topographic low of the basin feature. Specific soil pit depths at each sample location are provided in Sections 4.1, 4.2 and Appendix A.

### 3.3 HYDROLOGY

Hydrology was evaluated in areas suspected of being seasonally inundated and/or saturated to the surface during the growing season [period of the year when soil temperature at 20 inches below the surface is above 5 degrees Celsius ( $^{\circ}$  C)] provided the soil and vegetation parameters were met as defined in the *Wetlands Delineation Manual* (USACE, 1987) and *USACE Clarification and Interpretation of the 1987 Manual* (USACE, 1992).

Site-specific hydrologic and growing season data are not available for this site; therefore, the local growing season was estimated from climatological data from the USDA NRCS Alameda County Soil Survey (USDA NRCS, 1981) and the Western Region Climate Center from the Oakland Museum Precipitation Data Center (Station #046336). Based on 31 years of climate records, the local growing season was determined to be 365 days (see Tables 3-2 and 3-3). Recent precipitation data was also used and consisted of the frequency and amount of rainfall events (August 2003 through August 2004).

Recent precipitation data (Figure 3-1) was provided by the Western Region Climate Center from both the Oakland Museum Precipitation Data Center (Station #046336) and the Berkeley Weather Station (Station #040693). The total rainfall during the observation period was 12.6 inches. These recent precipitation data were collected during a below-average rainfall year compared to both the last 5 or 10-year precipitation periods (25 inches and 29 inches, respectively)

---

<sup>1</sup> Three features characterize soil color: hue, value, and chroma. Hue refers to the soil color in relation to red, yellow, blue, and so forth. Value refers to the lightness of the hue. Chroma refers to the strength of the color, or departure from a neutral of the same lightness. Each Munsell Color Book has color charts of different hues, ranging from 10R to 5Y. Each page of hue has color chips that show values and chromas. Values are shown in columns down the page from as low as zero to as much as 8, and chromas are shown in rows across the page from as low as zero to as much as 8. In writing Munsell color notations, the sequence was always hue, value, and chroma for example, 10YR5/2. Mottle is defined as spots or blotches of different colors or shades of color interspersed within the dominant color in a soil layer, usually resulting from the presence of periodic reducing soil conditions.

summarized in Tables 3-2 and 3-3. Therefore, the hydrologic zonal determinations (Clark and Benforado, 1981; USACE, 1987) concluded herein are conservative relative to historical precipitation levels, as follows:

- Inundation was observed on IR Sites 1 and 2 during the period between February 28 and March 14, 2004.
- Inundated and/or saturated areas were created or sustained from a rainfall event that occurred the previous week (a cumulative 2.0 inches of rainfall within a 7-day period from February 21 to 27, 2004).
- Two other similar rainfall events (2 inches of rainfall or greater within a 7-day period) occurred during December 2003 (Figure 3-1).
- These rainfall events establish an estimated period of inundation and/or saturation that can be classified by hydrologic zones (Table 5 of USACE, 1987) to determine wetland status.
- The unique hydrologic regime for each wetland was characterized based on the hydrologic zone determination, and data gathered on both primary and secondary hydrologic indicators (primary - inundation, soil saturated in upper 12 inches, water marks, drift lines, sediment deposits, and drainage patterns; secondary – oxidized root channels in upper 12 inches, water stained leaves, local soil data).

### **3.4 POTENTIAL WATERS OF THE U.S.**

Potential waters of the U.S. were identified in the field by: 1) the presence of a well-defined bed and bank and ordinary high-water mark (OHWM); and, 2) a connection (physical nexus, groundwater connection, within 100-year floodplain, and so forth) to a navigable waterway, its tributaries, and wetlands, or be adjacent to a navigable waterway and tributary. Isolated, non-navigable, intrastate Waters of the United States that are not currently nor were they used in the past for interstate or foreign commerce are not subject to USACE jurisdiction as verified by the USACE. All potential isolated Waters of the United States were evaluated.

## 4.0 DELINEATION RESULTS

Two general categories of wetlands are recognized for the purposes of this delineation: salt marsh and seasonal wetland. Wetland types vary widely because of local differences in soils, topography, climate, hydrology, water chemistry, vegetation, and other factors, including human disturbance. Salt marshes are defined herein as coastal marshes, which are dominated by a prevalence of pickleweed (*Salicornia rubra*). Distinct salt marsh features are functional impoundments that receive direct tidal influence. In some of these instances, earthen dikes enclose the entire marsh, and culverts assist in tidal water exchange, levels and salinity. Other salt marsh features are impoundments that don't receive direct tidal influence. These features are the likely a result of the earthen dikes that were built to impound the area of the previous landfill and to control the tidal flow into the area. The salinity of the water within these impoundment features, which do not receive direct tidal flow, likely varies from near-fresh to more saline, depending on the amount of rainfall and groundwater water exchange.

Seasonal wetlands (SW) are defined herein as those features that were dominated by a prevalence of certain grasses and grass-like plants [salt grass (*Distichlis spicata*), rabbit's foot grass (*Polypogon monspeliensis*) and so forth]. These wetlands are seasonal (they are dry one or more seasons every year), and may be wet only periodically. The quantity of water present and the timing of its presence vary annually. These features may appear dry at times for substantial parts of the year. These plants, however, have successfully adapted to this environment. These features are found along the margins of San Francisco Bay throughout the sites, and in other low-lying areas where the groundwater intercepts the soil surface or where precipitation sufficiently saturates the soil.

Potential jurisdictional features found within the sites are listed in Table 4-1 and illustrated in Figures 2-1 through 2-5. A description of each identified feature is provided following the table. The descriptions of the features include characterizations of acreage, vegetation (including wetland vegetation indicator status noted in brackets), soil types, and hydrologic regime. USACE Routine Wetland Determination Data Sheets (wetland and upland sampling points) are included in Appendix A. Table 4-2 correlates wetland sample data number and upland sample data number.

### 4.1 SEASONAL WETLANDS

#### Seasonal Wetland 1 (SW1)

##### Acreage

This seasonal wetland occupies a vegetated area on the northwest side of the study area within IR Site 1. This feature is approximately 1.06 acres in size and is identified on Figure 2-2 and characterized on data sheets SW1A and UPL 22 in Appendix A.

## Vegetation

The dominant vegetation consisted of sand pygmy weed (*Crassula erecta*) [FAC], annual bluegrass (*Poa annua*) [FACW-], loose-strife hyssop (*Lythrum hyssopifolia*) [FACW], annual rabbit's foot grass (*Polypogon monspeliensis*) [FACW+], and cranesbill geranium (*Geranium dissectum*) [no indicator status] (Table 3-1). Cranesbill geranium is a non-native invasive species characteristic of open, disturbed sites and vernal pools (Hickman, 1993). As summarized in the table below, approximately 80 percent of the dominant plant species observed were facultative wetland plants and SW1 meet the USACE (1987) criteria for presence of wetland vegetation.

Common Name	Vegetation Indicator Status									
	Indicator Type									
	OBL	FACW+	FACW	FACW-	FAC+	FAC	FAC-	FACU	UPL	NS
Sand pygmy weed ( <i>Crassula erecta</i> )						X				
Annual bluegrass ( <i>Poa annua</i> )				X						
Loose-strife hyssop ( <i>Lythrum hyssopifolia</i> )			X							
Rabbit's foot grass ( <i>Polypogon monspeliensis</i> )		X								
Cranesbill geranium ( <i>Geranium dissectum</i> )										X

## Soils

Soils were identified by digging a soil pit to a depth of 16 inches within the topographic low of the basin feature. A soil pit was dug in March 2004. The soil observed was sandy and is described by the USDA NRCS as consisting of permeable sandy fill material dredged from old beach areas (USDA NRCS, 1981).

Field observations confirmed the map unit description as Xeropsamment-fill. This map unit consists of soils that formed in sandy eolian deposits on mounds and ridges derived from beach deposits and in very deep sandy material dredged from beaches. These soils are used mainly for urban/industrial development and airfields [USDA Soil Conservation Service (SCS), 1991]. Within the upper 16 inches of the soil profile, heterogeneous fill material with ubiquitous pieces of asphalt, concrete, sandstone, and fragments of glass were observed.

When the soil pit was evaluated in March, the site-specific soil profile was sandy with a matrix color 10YR 3/1 without mottles from zero to 8 inches, and consisted of a matrix color 2.5YR 4/2 without mottles from 8 to 16 inches.

Hydric soils were determined to be present due to the low-chroma color of the substrata of the soils observed in March. Soils also exhibited hydric soil conditions consistent with the hydric soil criteria established in the 1991 National Technical Committee (NTC) Hydric Soils of the United States publication. These criteria specify that hydric soils must have at least

13 consecutive days of saturation or 7 days of inundation during the growing season. Soil inundation was observed for 9 days. This hydric soil falls into the broad category of a mineral soil, which is periodically saturated for sufficient duration to produce chemical and physical soil properties associated with a reducing environment.

### Hydrology

Hydrology for this wetland is provided from upland runoff, precipitation, and a high groundwater table. Inundated and/or saturated soils were observed at the surface for 9 consecutive days (inundation and saturated soils were observed February 28 through March 8, 2004). Field hydrology observations included: 1-inch depth to surface water, 6-inch depth to free water in the soil pit, and zero-inch depth to saturated soil. Primary hydrology indicators were present: inundated, saturated soil condition in the upper 12 inches of the soil profile, watermarks, drift lines, and drainage patterns. Secondary hydrology indicators included water stained leaves within potential seasonal wetland features. Furthermore, this feature is adjacent to San Francisco Bay and hydrologically connected within the 100-year floodplain.

Based on local climate data and observations of similarly vegetated nearby jurisdictional wetlands, it is probable that this specific basin is frequently ponded during the growing season for at least 27 days (approximately 7.4 percent of the growing season). Rainfall events (Figure 3-1) establish a hydrologic regime that can support functional wetlands defined as Hydrologic Zone V (Clark and Benforado, 1981; USACE, 1987; USACE, 1992).

Pursuant to the wetland hydrology criteria presented in the *Wetlands Delineation Manual* (USACE, 1987), wetland hydrology requirements have been met: direct observation of saturated and inundated soils for 9 days in March 2004, indicating that the area is likely to be seasonally inundated/saturated for more than 5 percent of the growing season and evidence of primary and secondary hydrology indicators.

## **Seasonal Wetland 2 (SW2)**

### Acreage

This seasonal wetland occupies a vegetated area in the center of the study area within IR Site 1. This feature is approximately 1.43 acres in size and is identified on Figure 2-2 and characterized on data sheets SW2A and UPL 21 in Appendix A.

### Vegetation

The dominant vegetation consisted of sand pygmy weed (*Crassula erecta*) [FAC], annual bluegrass (*Poa annua*) [FACW-], loose-strife hyssop (*Lythrum hyssopifolia*) [FACW], rabbit's foot grass (*Polypogon monspeliensis*) [FACW+], and cranesbill geranium (*Geranium dissectum*) [no indicator status]. Cranesbill geranium is a non-native invasive species characteristic of open, disturbed sites and vernal pools (Hickman, 1993). As summarized in the table below,

approximately 80 percent of the dominant plant species observed were facultative wetland plants, and SW2 meets the USACE (1987) criteria for presence of wetland vegetation.

Vegetation Indicator Status										
Common Name	Indicator Type									
	OBL	FACW+	FACW	FACW-	FAC+	FAC	FAC-	FACU	UPL	NS
Sand pygmy weed ( <i>Crassula erecta</i> )						X				
Annual bluegrass ( <i>Poa annua</i> )				X						
Loose-strife hyssop ( <i>Lythrum hyssopifolia</i> )			X							
Rabbit's foot grass ( <i>Polypogon monspeliensis</i> )		X								
Cranesbill geranium ( <i>Geranium dissectum</i> )										X

### Soils

Soils were identified by digging a soil pit to a depth of 16 inches within the topographic low of the basin feature. A soil pit was dug in March 2004. The soil observed was sandy and is described by the USDA NRCS as consisting of permeable sandy fill material dredged from old beach areas (USDA NRCS, 1981).

Field observations confirmed the map unit description as Xeropsamment-fill, similar to soils at SW1, described above.

When the soil pit was evaluated in March, the site-specific soil profile was sandy with a matrix color 10YR 3/1 without mottles from zero to 8 inches, and consisted of a matrix color 2.5YR 4/2 without mottles from 8 to 16 inches.

Hydric soils were determined to be present due to the low-chroma color of the substrata of the soils observed in March. Soils also exhibited hydric soil conditions consistent with the hydric soil criteria established in the 1991 NTC Hydric Soils of the United States publication. These criteria specify that hydric soils must have at least 13 consecutive days of saturation or 7 days of inundation during the growing season. Soil inundation was observed for 8 days. This hydric soil falls into the broad category of a mineral soil, which is periodically saturated for sufficient duration to produce chemical and physical soil properties associated with a reducing environment.

### Hydrology

Hydrology for this wetland is provided from upland runoff, precipitation, and a high groundwater table. Inundated and/or saturated soils were observed at the surface for 8 consecutive days (inundation and saturated soils were observed February 28 through March 7, 2004). Field hydrology observations included: zero-inch depth to surface water, 14-inch depth to free water in the soil pit, and 8-inch depth to saturated soil. Primary hydrology indicators were

present: inundated, saturated soil condition in the upper 12 inches of the soil profile, watermarks, drift lines, and drainage patterns. Secondary hydrology indicators included water stained leaves within potential seasonal wetland features. Furthermore, this feature is adjacent to San Francisco Bay and hydrologically connected within the 100-year floodplain.

Based on local climate data and observations of similarly vegetated nearby jurisdictional wetlands, it is probable that this specific basin is frequently ponded during the growing season for at least 24 days (approximately 6.6 percent of the growing season). Rainfall events (Figure 3-1) establish a hydrologic regime that can support functional wetlands defined as Hydrologic Zone V (Clark and Benforado, 1981; USACE, 1987; USACE, 1992).

Pursuant to the wetland hydrology criteria presented in the *Wetlands Delineation Manual* (USACE, 1987), wetland hydrology requirements have been met: direct observation of saturated and inundated soils for 8 days in March 2004, indicating that the area is likely to be seasonally inundated/saturated for more than 5 percent of the growing season, the dominance of hydrophytic vegetation, presence of hydric soils, and evidence of primary and secondary hydrology indicators.

### **Seasonal Wetland 3 (SW3)**

#### Acreage

This seasonal wetland occupies a vegetated area on the southwest corner of the study area within IR Site 1. This feature is approximately 7.05 acres in size and is identified on Figure 2-2 and characterized on data sheets SW3A and UPL 20 in Appendix A.

#### Vegetation

The dominant vegetation sampled in March consisted of saltgrass (*Distichlis spicata*) [FACW], dock willow (*Rumex alicifolius*) [OBL], smutgrass (*Sporobolus indicus*) [no indicator status], English plantain (*Plantago lanceolata*) [FAC-], bird's foot trefoil (*Lotus corniculatus*) [FAC], and tall flatsedge (*Cyperus eragrostis*) [FACW]. Smutgrass is common in open, disturbed areas, roadsides, and lawns (Hickman, 1993). Sixty percent of the dominant plant species observed in March were obligate or facultative in nature.

The dominant vegetation sampled in September consisted of barley (*Hordeum marinum spp gussoneanum*) [FAC], fireweed (*Epilobium angustifolium*) [FAC], bird's foot trefoil (*Lotus corniculatus*) [FAC], saltgrass (*Distichlis spicata*) [FACW], and curly dock (*Rumex crispus*) [FACW-]. As summarized in the table below, approximately 80 to 100 percent of the dominant plant species observed were obligate or facultative wetland plants and SW3 met the USACE (1987) criteria for presence of wetland vegetation; however, the table below represents the cumulative list of specific vegetative species found within data points SW3 A & B, not the relative percentages of vegetative species occurrences at a data point.

Vegetation Indicator Status										
Common Name	Indicator Type									
	OBL	FACW+	FACW	FACW-	FAC+	FAC	FAC-	FACU	UPL	NS
Saltgrass ( <i>Distichlis spicata</i> )			X							
Dock willow ( <i>Rumex salicifolius</i> )	X									
Smutgrass ( <i>Sporobolus indicus</i> )										X
English plantain ( <i>Plantago lanceolata</i> )							X			
Bird's foot trefoil ( <i>Lotus corniculatus</i> )						X				
Tall flatsedge ( <i>Cyperus eragrostis</i> )			X							
Barley ( <i>Hordeum marinum spp</i> <i>gussoneanum</i> )						X				
Fireweed ( <i>Epilobium angustifolium</i> )						X				
Curly dock ( <i>Rumex crispus</i> )				X						

### Soils

Soils were identified by digging a soil pit to a depth of 16 inches within the topographic low of the basin feature. Distinct soil pits were dug in March and September 2004. The soil observed was sandy and is described by the USDA NRCS as consisting of permeable sandy fill material dredged from old beach areas (USDA NRCS, 1981).

Field observations confirmed the map unit description as Xeropsamment-fill, similar to soils at SW1, described above.

When the soil pit was evaluated in March, the site-specific soil profile was sandy with a matrix color 10YR 3/1 without mottles from zero to 8 inches, and consisted of a matrix color 2.5YR 4/2-3/2 without mottles from 8 to 16 inches. When the soil pit was evaluated in September, the site-specific soil profile was sandy with a matrix color 10YR 3/1 without mottles from zero to 18 inches.

Hydric soils were determined to be present due to the low-chroma color of the substrata of the soils observed in March and September. Soils also exhibited hydric soil conditions consistent with the hydric soil criteria established in the 1991 NTC Hydric Soils of the United States publication. These criteria specify that hydric soils must have at least 13 consecutive days of saturation or 7 days of inundation during the growing season. Soil inundation was observed for greater than 14 days. This hydric soil falls into the broad category of a mineral soil, which is periodically saturated for sufficient duration to produce chemical and physical soil properties associated with a reducing environment.

## Hydrology

Hydrology for this wetland is provided from upland runoff, precipitation, and a high groundwater table. Inundated and/or saturated soils were observed at the surface for 14 consecutive days (inundation and saturated soils were observed February 28 through March 14, 2004). Field hydrology observations included: zero-inch depth to surface water and 4-inch depth to free water in the soil pit, and zero-inch depth to saturated soil. Primary hydrology indicators were present: inundated, saturated soil condition in the upper 12 inches of the soil profile, watermarks, drift lines, and drainage patterns. Secondary hydrology indicators included water stained leaves within potential seasonal wetland features. Furthermore, this feature is adjacent to San Francisco Bay and hydrologically connected within the 100-year floodplain.

Based on local climate data and observations of similarly vegetated nearby jurisdictional wetlands, it is probable that this specific basin is frequently ponded during the growing season for at least 42 days (approximately 11.5 percent of the growing season). Rainfall events (Figure 3-1) establish a hydrologic regime that can support functional wetlands defined as Hydrologic Zone V (Clark and Benforado, 1981; USACE, 1987; USACE, 1992).

Pursuant to the wetland hydrology criteria presented in the *Wetlands Delineation Manual* (USACE, 1987), wetland hydrology requirements have been met: direct observation of saturated and inundated soils for 14 days in March 2004, indicating that the area is likely to be seasonally inundated/saturated for more than 5 percent of the growing season, dominance of hydrophytic vegetation, presence of hydric soils, and evidence of primary and secondary hydrology indicators.

### **Seasonal Wetland 4 (SW4)**

#### Acreage

This seasonal wetland occupies a vegetated area on the southwest side of the study area within IR Site 2. This feature is approximately 0.12 acres in size and is identified on Figure 2-5 and characterized on data sheets SW4A and UPL 5-8 in Appendix A.

#### Vegetation

The dominant vegetation consisted of saltgrass (*Distichlis spicata*) [FACW], bird's foot trefoil (*Lotus corniculatus*) [FAC], curly dock (*Rumex crispus*) [FACW-], Italian rye grass (*Lolium multiflorum*) [no status indicated], and brome grass (*Bromus hordeaceus*) [no status indicated]. Italian rye grass and brome grass are both common in disturbed sites and abandoned irrigated fields (Hickman, 1993). As summarized in the table below, approximately 60 percent of the dominant plant species observed were facultative wetland plants, and SW4 meet the USACE (1987) criteria for presence of wetland vegetation.

Common Name	Vegetation Indicator Status									
	Indicator Type									
	OBL	FACW+	FACW	FACW-	FAC+	FAC	FAC-	FACU	UPL	NS
Saltgrass ( <i>Distichlis spicata</i> )			X							
Bird's foot trefoil ( <i>Lotus corniculatus</i> )						X				
Curly dock ( <i>Rumex crispus</i> )				X						
Italian rye grass ( <i>Lolium multiflorum</i> )										X
Brome grass ( <i>Bromus hordeaceus</i> )										X

### Soils

Soils were identified by digging a soil pit to a depth of 16 inches within the topographic low of the basin feature. A soil pit was dug in September 2004. The soil observed was sandy and is described by the USDA NRCS as consisting of permeable sandy fill material dredged from old beach areas (USDA NRCS, 1981).

Field observations confirmed the map unit description as Xeropsamment-fill, similar to soils at SW1, described above. When the soil pit was evaluated in September, the site-specific soil profile was sandy with an organic layer and no mottle from zero to 2 inches, a matrix color 2.5Y 4/2 without mottles from 2 to 8 inches, and a matrix color 5Y 4/1 without mottles from 8 to 16 inches.

Hydric soils were determined to be present due to the low-chroma color of the substrata of the soils observed in September. This hydric soil falls into the broad category of a mineral soil, which is periodically saturated for sufficient duration to produce chemical and physical soil properties associated with a reducing environment.

### Hydrology

Hydrology for this wetland is provided from upland runoff, precipitation, and a high groundwater table. Primary hydrology indicators were present: watermarks, drift lines, sediment deposits, and drainage patterns. Secondary hydrology indicators included water stained leaves within potential seasonal wetland features. Furthermore, this feature is adjacent to San Francisco Bay and hydrologically connected within the 100-year floodplain.

Based on local climate data and observations of similarly vegetated nearby jurisdictional wetlands, it is probable that the area is seasonally inundated/saturated for more than 5 percent of the growing season (Clark and Benforado, 1981; USACE, 1987; USACE, 1992). Pursuant to the wetland hydrology criteria presented in the *Wetlands Delineation Manual* (USACE, 1987), wetland hydrology requirements have been met: dominance of hydrophytic vegetation, presence of hydric soils, and evidence of primary and secondary hydrology indicators.

## Seasonal Wetland 5 (SW5)

### Acreeage

This seasonal wetland occupies a vegetated area on the northern most portion of the study area within IR Site 2. This feature is approximately 3.05 acres in size and is identified on Figure 2-4 and characterized on a data sheets SW5A and UPL 15 in Appendix A.

### Vegetation

The dominant vegetation consisted of creeping spike rush (*Eleocharis macrostachya*) [OBL], saltgrass (*Distichlis spicata*) [FACW], bird's foot trefoil (*Lotus corniculatus*) [FAC], Italian rye grass (*Lolium multiflorum*) [no indicator status], and rabbit's foot grass (*Polypogon monspeliensis*) [FACW+]. Italian rye grass is common in disturbed sites and abandoned irrigated fields (Hickman, 1993). As summarized in the table below, approximately 80 percent of the dominant plant species observed were obligate or facultative wetland plants, and SW5 meets the USACE (1987) criteria for presence of wetland vegetation.

Common Name	Vegetation Indicator Status									
	Indicator Type									
	OBL	FACW+	FACW	FACW-	FAC+	FAC	FAC-	FACU	UPL	NS
Creeping spike rush ( <i>Eleocharis macrostachya</i> )	X									
Saltgrass ( <i>Distichlis spicata</i> )			X							
Bird's foot trefoil ( <i>Lotus corniculatus</i> )						X				
Italian rye grass ( <i>Lolium multiflorum</i> )										X
Rabbit's foot grass ( <i>Polypogon monspeliensis</i> )		X								

### Soils

Soils were identified by digging a soil pit to a depth of 16 inches within the topographic low of the basin feature. A soil pit was dug in March 2004. The soil observed was sandy and is described by the USDA NRCS as consisting of permeable sandy fill material dredged from old beach areas (USDA NRCS, 1981).

Field observations confirmed the map unit description as Xeropsamment-fill, similar to soils at SW1, described above.

When the soil pit was evaluated in March, the site-specific soil profile was sandy with a matrix color 10YR 3/1-3/2 with mottles 2.5YR 4/2-4/3 and contrast F-1-P from zero to 18 inches.

Hydric soils were determined to be present due to the low-chroma color of the substrata of the soils observed in March. Soil also exhibited hydric soil conditions consistent with the hydric soil criteria established in the 1991 NTC Hydric Soils of the United States publication. These criteria specify

that hydric soils must have at least 13 consecutive days of saturation or 7 days of inundation during the growing season. Soil inundation was observed for greater than 14 days. This hydric soil falls into the broad category of a mineral soil, which is periodically saturated for sufficient duration to produce chemical and physical soil properties associated with a reducing environment.

### Hydrology

Hydrology for this wetland is provided from upland runoff, precipitation, and a high groundwater table. Inundated and/or saturated soils were observed at the surface for 14 consecutive days (inundation and saturated soils were observed February 28 through March 14, 2004). Field hydrology observations included: zero-inch depth to surface water, 4-inch depth to free water in the soil pit, and 12-inch depth to saturated soil. The following primary hydrology indicators were present: inundated, saturated soil condition in the upper 12 inches of the soil profile, watermarks, drift lines, and drainage patterns. Secondary hydrology indicators included water stained leaves within potential seasonal wetland features. Furthermore, this feature is adjacent to San Francisco Bay and hydrologically connected within the 100-year floodplain.

Based on local climate data and observations of similarly vegetated nearby jurisdictional wetlands, it is probable that this specific basin is frequently ponded during the growing season for at least 42 days (approximately 11.5 percent of the growing season). Rainfall events (Figure 3-1) establish a hydrologic regime that can support functional wetlands defined as Hydrologic Zone V (Clark and Benforado, 1981; USACE, 1987; USACE, 1992).

Pursuant to the wetland hydrology criteria presented in the Wetlands Delineation Manual (USACE, 1987), wetland hydrology requirements have been met: direct observation of saturated and inundated soils for 14 days in March 2004, indicating the area is likely to be seasonally inundated/saturated for more than 5 percent of the growing season, dominance of hydrophytic vegetation, presence of hydric soils, and evidence of primary and secondary hydrology indicators.

### **Seasonal Wetland 6 (SW6)**

#### Acreage

This seasonal wetland occupies a vegetated area on the southwest side of the study area within IR Site 2. This feature is approximately 0.03 acres in size and is identified on Figure 2-5 and characterized on data sheets SW6A and UPL 6-11 in Appendix A.

#### Vegetation

The dominant vegetation consisted of curly dock (*Rumex crispus*) [FACW-], bird's foot trefoil (*Lotus corniculatus*) [FAC], brome grass (*Bromus hordeaceus*) [no indicator status], saltgrass (*Distichlis spicata*) [FACW], and bull thistle (*Cirsium vulgare*) [FACU]. Brome grass is common in disturbed sites and abandoned irrigated fields (Hickman, 1993). As summarized in the table

below, approximately 60 percent of the dominant plant species observed were facultative wetland plants, and SW6 meets the USACE (1987) criteria for presence of wetland vegetation.

Vegetation Indicator Status										
Common Name	Indicator Type									
	OBL	FACW+	FACW	FACW-	FAC+	FAC	FAC-	FACU	UPL	NS
Curly dock ( <i>Rumex crispus</i> )				X						
Bird's foot trefoil ( <i>Lotus corniculatus</i> )						X				
Brome grass ( <i>Bromus hordeaceus</i> )										X
Saltgrass ( <i>Distichlis spicata</i> )			X							
Bull thistle ( <i>Cirsium vulgare</i> )								X		

### Soils

Soils were identified by digging a soil pit to a depth of 16 inches within the topographic low of the basin feature. A soil pit was dug in September 2004. The soil observed was sandy and is described by the USDA NRCS as consisting of permeable sandy fill material dredged from old beach areas (USDA NRCS, 1981).

Field observations confirmed the map unit description as Xeropsamment-fill, similar to soils at SW1, described above.

When the soil pit was evaluated in September, the site-specific soil profile was sandy with an organic layer from zero to 2 inches, matrix color 5Y 5/2 without mottles from 2 to 8 inches, and sandy clay consisting of a matrix color 5Y 4/1 without mottles from 8 to 16 inches.

Hydric soils were determined to be present due to the low-chroma color of the substrata of the soils observed in September. This observed hydric soil falls into the broad category of a mineral soil, which is periodically saturated for sufficient duration to produce chemical and physical soil properties associated with a reducing environment.

### Hydrology

Hydrology for this wetland is provided from upland runoff, precipitation, and a high groundwater table. Primary hydrology indicators were present: watermarks, drift lines, and drainage patterns. Secondary hydrology indicators included water stained leaves within potential seasonal wetland features. Furthermore, this feature is adjacent to San Francisco Bay and hydrologically connected within the 100-year floodplain.

Based on local climate data and observations of similarly vegetated nearby jurisdictional wetlands, it is probable that the area is seasonally inundated/saturated for more than 5 percent of the growing season (Clark and Benforado, 1981; USACE, 1987; USACE, 1992). Pursuant to the

wetland hydrology criteria presented in the *Wetlands Delineation Manual* (USACE, 1987), wetland hydrology requirements have been met: dominance of hydrophytic vegetation, presence of hydric soils, and evidence of primary and secondary hydrology indicators.

### Seasonal Wetland 7 (SW7)

#### Acreage

This seasonal wetland occupies a vegetated area on the northeast corner of the study area within IR Site 2. This feature is approximately 0.22 acres in size and is identified on Figure 2-4 and characterized on data sheets SW7A and UPL 2-6 in Appendix A.

#### Vegetation

The dominant vegetation consists of pickleweed (*Salicornia rubra*) [OBL], saltgrass (*Distichlis spicata*) [FACW], rabbit's foot grass (*Polypogon monspeliensis*) [FACW+], and brass buttons (*Cotula coronopifolia*) [FACW+]. As summarized in the table below, approximately 100 percent of the dominant plant species observed were obligate or facultative wetland plants and SW7 meets the USACE (1987) criteria for presence of wetland vegetation. There were only four dominant plant species at this site.

Common Name	Vegetation Indicator Status									
	Indicator Type									
	OBL	FACW+	FACW	FACW-	FAC+	FAC	FAC-	FACU	UPL	NS
Pickleweed ( <i>Salicornia rubra</i> )	X									
Saltgrass ( <i>Distichlis spicata</i> )			X							
Rabbit's foot grass ( <i>Polypogon monspeliensis</i> )		X								
Brass buttons ( <i>Cotula coronopifolia</i> )		X								

#### Soils

Soils were identified by digging a soil pit to a depth of 16 inches within the topographic low of the basin feature. A soil pit was dug in March 2004. The soil observed was sandy and is described by the USDA NRCS as consisting of permeable sandy fill material dredged from old beach areas (USDA NRCS, 1981).

Field observations confirmed the map unit description as Xeropsamment-fill, similar to soils at SW1, described above.

When the soil pit was evaluated in March, the site-specific soil profile was sandy with a matrix color 10YR 3/1 without mottles from zero to 8 inches, and a matrix color 2.5YR 4/2 without mottles from 8 to 16 inches.

Hydric soils were determined to be present due to the low-chroma color of the substrata of the soils observed in March. Soil also exhibited hydric soil conditions consistent with the hydric soil criteria stated in the 1991 NTC Hydric Soils of the United States publication. These criteria specify that hydric soils must have at least 13 consecutive days of saturation or 7 days of inundation during the growing season. Soil inundation was observed for greater than 14 days. This hydric soil falls into the broad category of a mineral soil, which is periodically saturated for sufficient duration to produce chemical and physical soil properties associated with a reducing environment.

### Hydrology

Hydrology for this wetland is provided from upland runoff, precipitation, and a high groundwater table. Inundated and/or saturated soils were observed at the surface for 14 consecutive days (inundation and saturated soils were observed February 28 through March 14, 2004).

Field hydrology observations included: zero-inch depth to surface water, 4-inch depth to free water in the soil pit, and 12-inch depth to saturated soil. Primary hydrology indicators were present: inundated, saturated soil condition in the upper 12 inches of the soil profile, watermarks, drift lines, and drainage patterns. Secondary hydrology indicators included water stained leaves within potential seasonal wetland features. Furthermore, this feature is adjacent to San Francisco Bay and hydrologically connected within the 100-year floodplain.

Based on local climate data and observations of similarly vegetated nearby jurisdictional wetlands, it is probable that this specific basin is frequently ponded during the growing season for at least 42 days (approximately 11.5 percent of the growing season). Rainfall events (Figure 3-1) establish a hydrologic regime that can support functional wetlands defined as Hydrologic Zone V (Clark and Benforado, 1981; USACE, 1987; USACE, 1992).

Pursuant to the wetland hydrology criteria presented in the *Wetlands Delineation Manual* (USACE, 1987), wetland hydrology requirements have been met: direct observation of saturated and inundated soils for 14 days in March 2004, indicating the area is seasonally inundated/saturated more than 5 percent of the growing season, dominance of hydrophytic vegetation, presence of hydric soils, and evidence of primary and secondary hydrology indicators.

### **Seasonal Wetland 8 (SW8)**

#### Acreage

This seasonal wetland occupies a vegetated area on the central east side of the study area within IR Site 2. This feature is approximately 0.08 acres in size and is identified on Figure 2-4 and characterized on data sheets SW8A and UPL 14 in Appendix A.

Vegetation

The dominant vegetation consists of dock willow (*Rumex salicifolius*) [OBL], barley (*Hordeum marinum spp gussoneanum*) [no indicator status], saltgrass (*Distichlis spicata*) [FACW], bird’s foot trefoil (*Lotus corniculatus*) [FAC], and tall flatsedge (*Cyperus eragrostis*) [FACW]. Barley is common in dry to moist, disturbed sites (Hickman, 1993). As summarized in the table below, approximately 80 percent of the dominant plant species observed were obligate or facultative wetland plants, and SW8 meets the USACE (1987) criteria for presence of wetland vegetation.

Vegetation Indicator Status										
Common Name	Indicator Type									
	OBL	FACW+	FACW	FACW-	FAC+	FAC	FAC-	FACU	UPL	NS
Dock willow ( <i>Rumex salicifolius</i> )	X									
Barley ( <i>Hordeum marinum spp gussoneanum</i> )										X
Saltgrass ( <i>Distichlis spicata</i> )			X							
Bird’s foot trefoil ( <i>Lotus corniculatus</i> )						X				
Tall flatsedge ( <i>Cyperus eragrostis</i> )			X							

Soils

Soils were identified by digging a soil pit to a depth of 16 inches within the topographic low of the basin feature. A soil pit was dug in March 2004. The soil observed was sandy and is described by the USDA NRCS as consisting of permeable sandy fill material dredged from old beach areas (USDA NRCS, 1981).

Field observations confirmed the map unit description as Xeropsamment-fill, similar to soils at SW1, described above.

When the soil pit was evaluated in March the site-specific soil profile was sandy with a matrix color 10YR 3/1 without mottles from zero to 8 inches, and a matrix color 2.5YR 4/2 without mottles from 8 to 16 inches.

Hydric soils were determined to be present due to the low-chroma color of the substrata of the soils observed in March. Soils also exhibited hydric soil conditions consistent with the hydric soil criteria stated in the 1991 NTC Hydric Soils of the United States publication. These criteria specify that hydric soils must have at least 13 consecutive days of saturation or 7 days of inundation during the growing season. Soil inundation was observed for 10 days. This hydric soil falls into the broad category of a mineral soil, which is periodically saturated for sufficient duration to produce chemical and physical soil properties associated with a reducing environment.

### Hydrology

Hydrology for this wetland is provided from upland runoff, precipitation, and a high groundwater table. Inundated and/or saturated soils were observed at the surface for 10 consecutive days (inundation and saturated soils were observed February 28 through March 11, 2004).

Field hydrology observations included: zero-inch depth to surface water, 4-inch depth to free water in the soil pit, and 12-inch depth to saturated soil. Primary hydrology indicators were present: inundated, saturated soil condition in the upper 12 inches of the soil profile, watermarks, drift lines, sediment deposits, and drainage patterns. Furthermore, this feature is adjacent to San Francisco Bay and hydrologically connected within the 100-year floodplain.

Based on local climate data and observations of similarly vegetated nearby jurisdictional wetlands, it is probable that this specific basin is frequently ponded during the growing season for at least 30 days (approximately 8.2 percent of the growing season). Rainfall events (Figure 3-1) establish a hydrologic regime that can support functional wetlands defined as Hydrologic Zone V (Clark and Benforado, 1981; USACE, 1987; USACE, 1992).

Pursuant to the wetland hydrology criteria presented in the *Wetlands Delineation Manual* (USACE, 1987), wetland hydrology requirements have been satisfied: direct observation of saturated and inundated soils for 10 days in March 2004, indicates the area is seasonally inundated/saturated more than 5 percent of the growing season, dominance of hydrophytic vegetation, presence of hydric soils, and evidence of primary hydrology indicators.

### **Seasonal Wetland 9 (SW9)**

#### Acreeage

This seasonal wetland occupies a vegetated area on the southwest portion of the study area within IR Site 2. This feature is approximately 0.10 acres in size and is identified on Figure 2-5 and characterized on data sheets SW9A and UPL 6-11 in Appendix A.

#### Vegetation

The dominant vegetation consists of curly dock (*Rumex crispus*) [FACW-], bird's foot trefoil (*Lotus corniculatus*) [FAC], brome grass (*Bromus hordeaceus*) [no indicator status], saltgrass (*Distichlis spicata*) [FACW], and bull thistle (*Cirsium vulgare*) [FACU]. Brome grass is common in disturbed sites and abandoned irrigated fields (Hickman, 1993). As summarized in the table below, approximately 60 percent of the dominant plant species observed were facultative wetland plants, and SW9 meets the USACE (1987) criteria for presence of wetland vegetation.

Vegetation Indicator Status										
Common Name	Indicator Type									
	OBL	FACW+	FACW	FACW-	FAC+	FAC	FAC-	FACU	UPL	NS
Curly dock ( <i>Rumex crispus</i> )				X						
Bird's foot trefoil ( <i>Lotus corniculatus</i> )						X				
Brome grass ( <i>Bromus hordeaceus</i> )										X
Saltgrass ( <i>Distichlis spicata</i> )			X							
Bull thistle ( <i>Cirsium vulgare</i> )								X		

### Soils

Soils were identified by digging a soil pit to a depth of 16 inches within the topographic low of the basin feature. A soil pit was dug in September 2004. The soil observed was sandy and is described by the USDA NRCS as consisting of permeable sandy fill material dredged from old beach areas (USDA NRCS, 1981).

Field observations confirmed the map unit description as Xeropsamment-fill, similar to soils at SW1, described above.

When the soil pit was evaluated in September the site-specific soil profile was sandy with an organic layer from zero to 2 inches, a matrix color 5Y 5/2 without mottles from 2 to 6 inches, and sandy clay with a matrix color 5Y 4/1 without mottles from 8 to 16 inches.

Hydric soils were determined to be present due to the low-chroma color of the substrata of the soils observed in September. Soils also exhibited hydric soil conditions consistent with the hydric soil criteria established in the 1991 NTC Hydric Soils of the United States and the *Wetlands Delineation Manual* (USACE, 1987). This hydric soil falls into the broad category of a mineral soil, which is periodically saturated for sufficient duration to produce chemical and physical soil properties associated with a reducing environment.

### Hydrology

Hydrology for this wetland is provided from upland runoff, precipitation, and a high groundwater table. Primary hydrology indicators were present: watermarks, drift lines, and drainage patterns. Secondary hydrology indicators included water stained leaves within potential seasonal wetland features. Furthermore, this feature is adjacent to San Francisco Bay and hydrologically connected within the 100-year floodplain.

Based on local climate data and observations of similarly vegetated nearby jurisdictional wetlands, it is probable that this specific basin is inundated/saturated more than 5 percent of the growing season (Clark and Benforado, 1981; USACE, 1987; USACE, 1992). Pursuant to the

wetland hydrology criteria presented in the *Wetlands Delineation Manual* (USACE, 1987), wetland hydrology requirements have been met: dominance of hydrophytic vegetation, presence of hydric soils, and evidence of primary and secondary hydrology indicators.

### Seasonal Wetland 10 (SW10)

#### Acreage

This seasonal wetland occupies a vegetated area on the northeast side of the study area within IR Site 1 and extends off site. This feature is approximately 5.71 acres in size and is identified on Figure 2-3 and characterized on data sheets SW10 A-F and UPL 23-28 in Appendix A.

#### Vegetation

The dominant vegetation sampled in March consisted of cranesbill geranium (*Geranium dissectum*) [no indicator status], barley (*Hordeum marinum spp gussoneanum*) [no indicator status], curly dock (*Rumex crispus*) [FACW-], Italian rye grass (*Lolium multiflorum*) [no indicator status], saltgrass (*Distichlis spicata*) [FACW], pickleweed (*Salicornia rubra*) [OBL], velvet grass (*Holcus lanatus*) [FAC], tall flatsedge (*Cyperus eragrostis*) [FACW], and Bermuda grass (*Cynodon dactylon*) [FAC]. Cranesbill geranium is a non-native invasive species characteristic of open, disturbed sites and vernal pools (Hickman, 1993). Barley is common in dry to moist, disturbed sites; whereas, Italian rye grass is common in disturbed sites and abandoned irrigated fields (Hickman, 1993). As summarized in the table below, approximately 60 to 80 percent of the dominant plant species observed were obligate or facultative wetland plants, and SW10 meets the USACE (1987) criteria for presence of wetland vegetation.

The dominant vegetation sampled in September consisted of saltgrass (*Distichlis spicata*) [FACW], bird's foot trefoil (*Lotus corniculatus*) [FAC], curly dock (*Rumex crispus*) [FACW-], brome grass (*Bromus hordeaceus*) [no indicator status], pickleweed (*Salicornia rubra*) [OBL], Bermuda grass (*Cynodon dactylon*) [FAC], and velvet grass (*Holcus lanatus*) [FAC]. Brome grass is common in disturbed sites and abandoned irrigated fields (Hickman, 1993). As summarized in the table below, approximately 80 to 100 percent of the dominant plant species observed were obligate or facultative wetland plants and SW10 meet the USACE (1987) criteria for presence of wetland vegetation; however, the table below represents the cumulative list of specific vegetative species found within data points SW10 A-F, not the relative percentages of vegetative species occurrences at a data point.

Vegetation Indicator Status										
Common Name	Indicator Type									
	OBL	FACW+	FACW	FACW-	FAC+	FAC	FAC-	FACU	UPL	NS
Cranesbill geranium ( <i>Geranium dissectum</i> )										X
Barley ( <i>Hordeum marinum</i> <i>spp gussoneanum</i> )										X
Curley dock ( <i>Rumex crispus</i> )				X						
Italian rye grass ( <i>Lolium multiflorum</i> )										X
Saltgrass ( <i>Distichlis spicata</i> )			X							
Bermuda grass ( <i>Cynodon dactylon</i> )						X				
Tall flatsedge ( <i>Cyperus eragrostis</i> )			X							
Velvet grass ( <i>Holcus lanatus</i> )			X			X				
Pickleweed ( <i>Salicornia rubra</i> )	X							X		

### Soils

Soils were identified by digging a soil pit to a depth of 16 inches within the topographic low of the basin feature. Distinct soil pits were dug in March and September 2004. The soil observed was sandy and is described by the USDA NRCS as consisting of permeable sandy fill material dredged from old beach areas (USDA NRCS, 1981).

Field observations confirmed the map unit description as Xeropsamment-fill, similar to soils at SW1, described above.

When the soil pit was evaluated in March, the site-specific soil profile was sandy with a matrix color 10YR 3/1 without mottles from zero to 8 inches, and a matrix color 2.5YR 4/2 without mottles from 8 to 16 inches. When the soil pit was evaluated in September, the site-specific soil profile was sandy with a matrix color 10YR 4/2-3/1 and 2.5YR 4/2 with mottles 2.5YR 4/8 and contrast C-2-P from zero to 16 inches.

Hydric soils were determined to be present due to the low-chroma color of the substrata of the soils observed in March and September. Soils also exhibited hydric soil conditions consistent with the hydric soil criteria established in the 1991 NTC Hydric Soils of the United States publication. These criteria specify that hydric soils must have at least 13 consecutive days of saturation or 7 days of inundation during the growing season. Soil inundation was observed for greater than 14 days. This hydric soil falls into the broad category of a mineral soil, which is periodically saturated for sufficient duration to produce chemical and physical soil properties associated with a reducing environment.

### Hydrology

Hydrology for this wetland is provided from upland runoff, precipitation, and a high groundwater table. Inundated and/or saturated soils were observed at the surface for 14 consecutive days (inundation and saturated soils were observed February 28 through March 14, 2004).

Field hydrology observations included: zero-inch depth to surface water and 4-inch depth to free water in the soil pit, and zero-inch depth to saturated soil. Primary hydrology indicators were present: inundated, saturated soil condition in the upper 12 inches of the soil profile, watermarks, drift lines, and drainage patterns. Furthermore, this feature is adjacent to San Francisco Bay and hydrologically connected within the 100-year floodplain.

Based on local climate data and observations of similarly vegetated nearby jurisdictional wetlands, it is probable that this specific basin is frequently ponded during the growing season for at least 42 days (approximately 11.5 percent of the growing season). Rainfall events (Figure 3-1) establish a hydrologic regime that can support functional wetlands defined as Hydrologic Zone V (Clark and Benforado, 1981; USACE, 1987; USACE, 1992).

Pursuant to the wetland hydrology criteria presented in the *Wetlands Delineation Manual* (USACE, 1987), wetland hydrology requirements have been met: direct observation of saturated and inundated soils for 14 days in March 2004, indicates the area is seasonally inundated/saturated more than 5 percent of the growing season, dominance of hydrophytic vegetation, presence of hydric soils, and evidence of primary hydrology indicators.

### **Seasonal Wetland 11 (SW11)**

#### Acreage

This seasonal wetland occupies a vegetated area on the southern edge of SW10 within the study area of IR Site 1. This feature is approximately 0.08 acres in size and is identified on Figure 2-3 and characterized on data sheets SW11A and UPL 23 in Appendix A. This feature extends off site.

#### Vegetation

The dominant vegetation consists of tall flatsedge (*Cyperus eragrostis*) [FACW], Bermuda grass (*Cynodon dactylon*) [FAC], Russian thistle (*Salsola tragus*) [no indicator status], bird's foot trefoil (*Lotus corniculatus*) [FAC], and Italian rye grass (*Lolium multiflorum*) [no indicator status]. Russian thistle is common in upland open, disturbed sites (Hickman, 1993). As summarized in the table below, approximately 60 percent of the dominant plant species observed were facultative wetland plants, and SW11 meets the USACE (1987) criteria for presence of wetland vegetation.

Vegetation Indicator Status										
Common Name	Indicator Type									
	OBL	FACW+	FACW	FACW-	FAC+	FAC	FAC-	FACU	UPL	NS
Tall flatsedge ( <i>Cyperus eragrostis</i> )			X							
Bermuda grass ( <i>Cynodon dactylon</i> )						X				X
Russian thistle ( <i>Salsola tragus</i> )										
Bird's foot trefoil ( <i>Lotus corniculatus</i> )						X				
Italian rye grass ( <i>Lolium multiflorum</i> )										X

### Soils

Soils were identified by digging a soil pit to a depth of 16 inches within the topographic low of the basin feature. A soil pit was dug in September 2004. The soil observed was sandy and is described by the USDA NRCS as consisting of permeable sandy fill material dredged from old beach areas (USDA NRCS, 1981).

Field observations confirmed the map unit description as Xeropsamment-fill, similar to soils at SW1, described above. When the soil pit was evaluated in September, the site-specific soil profile was sandy with a matrix color 10YR 3/2 with mottles 2.5YR 4/6 and contrast C-2-P from zero to 18 inches.

Hydric soils were determined to be present due to the low-chroma color of the substrata of the soils observed in September. Soils also exhibited hydric soil conditions consistent with the hydric soil criteria established in the 1991 NTC Hydric Soils of the United States and the *Wetland Delineation Manual* (USACE, 1987). This hydric soil falls into the broad category of a mineral soil, which is periodically saturated for sufficient duration to produce chemical and physical soil properties associated with a reducing environment.

### Hydrology

Hydrology for this wetland is provided from upland runoff, precipitation, and a high groundwater table. Primary hydrology indicators were present: watermarks, drift lines, sediment deposits, and drainage patterns. Secondary hydrology indicators included oxidized root channels within potential seasonal wetland features. Furthermore, this feature is adjacent to San Francisco Bay and hydrologically connected within the 100-year floodplain.

Based on local climate data and observations of similarly vegetated nearby jurisdictional wetlands, it is probable that this specific basin is inundated/saturated more than 5 percent of the growing season (Clark and Benforado, 1981; USACE, 1987; USACE, 1992). Pursuant to the wetland hydrology criteria presented in the *Wetlands Delineation Manual* (USACE, 1987),

wetland hydrology requirements have been met: dominance of hydrophytic vegetation, presence of hydric soils, and evidence of primary and secondary hydrology indicators.

### Seasonal Wetland 12 (SW12)

#### Acreage

This seasonal wetland occupies a vegetated area on the southwest side of the study area within IR Site 2. This feature is approximately 0.01 acres in size and is identified on Figure 2-5 and characterized on data sheet SW12A and UPL 6-11 in Appendix A.

#### Vegetation

The dominant vegetation consists of curly dock (*Rumex crispus*) [FACW-], bird's foot trefoil (*Lotus corniculatus*) [FAC], brome grass (*Bromus hordeaceus*) [no indicator status], saltgrass (*Distichlis spicata*) [FACW], and bull thistle (*Cirsium vulgare*) [FACU]. Brome grass is common in disturbed sites and abandoned irrigated fields (Hickman, 1993). As summarized in the table below, approximately 80 percent of the dominant plant species observed were facultative wetland plants, and SW12 meets the USACE (1987) criteria for presence of wetland vegetation.

Common Name	Vegetation Indicator Status									
	Indicator Type									
	OBL	FACW+	FACW	FACW-	FAC+	FAC	FAC-	FACU	UPL	NS
Curly dock ( <i>Rumex crispus</i> )				X						
Bird's foot trefoil ( <i>Lotus corniculatus</i> )						X				
Brome grass ( <i>Bromus hordeaceus</i> )										X
Saltgrass ( <i>Distichlis spicata</i> )			X							
Bull thistle ( <i>Cirsium vulgare</i> )								X		

#### Soils

Soils were identified by digging a soil pit to a depth of 16 inches within the topographic low of the basin feature. A soil pit was dug in September 2004. The soil observed was sandy and is described by the USDA NRCS as consisting of permeable sandy fill material dredged from old beach areas (USDA NRCS, 1981).

Field observations confirmed the map unit description as Xeropsamment-fill, similar to soils at SW1, described above. When the soil pit was evaluated in September, the site-specific soil profile was sandy with an organic layer from zero to 2 inches, sandy with a matrix color 5Y 5/2 without mottles from 2 to 8 inches, and sandy clay with a matrix color 5Y 4/1 without mottles from 8 to 16 inches.

Hydric soils were determined to be present due to the low-chroma color of the substrata of the soils observed in September. Soils also exhibited hydric soil conditions consistent with the hydric soil criteria stated in the 1991 NTC Hydric Soils of the United States and the *Wetlands Delineation Manual* (USACE, 1987). This hydric soil falls into the broad category of a mineral soil, which is periodically saturated for sufficient duration to produce chemical and physical soil properties associated with a reducing environment.

### Hydrology

Hydrology for this wetland is provided from upland runoff, precipitation, and a high groundwater table. Primary hydrology indicators were present: watermarks, drift lines, sediment deposits, and drainage patterns. Secondary hydrology indicators included water stained leaves within potential seasonal wetland features. Furthermore, this feature is adjacent to San Francisco Bay and hydrologically connected within the 100-year floodplain.

Based on local climate data and observations of similarly vegetated nearby jurisdictional wetlands, it is probable that this specific basin is inundated/saturated more than 5 percent of the growing season (Clark and Benforado, 1981; USACE, 1987; USACE, 1992). Pursuant to the wetland hydrology criteria presented in the *Wetlands Delineation Manual* (USACE, 1987), wetland hydrology requirements have been met: dominance of hydrophytic vegetation, presence of hydric soils, and evidence of primary and secondary hydrology indicators.

## 4.2 SALT MARSHES

### **Salt Marsh 1 (SM1)**

#### Acreage

This salt marsh occupies a vegetated area in the north eastern corner of the study area within IR Site 2. This feature is approximately 1.04 acres in size and is identified on Figure 2-4 and characterized on data sheets SM1A and UPL 17 in Appendix A.

#### Vegetation

The dominant vegetation in March consisted of purple sandspurry (*Spergularia rubra*) [FAC-], saltgrass (*Distichlis spicata*) [FACW], and pickleweed (*Salicornia rubra*) [OBL]. As summarized in the table below, approximately 60 percent of the dominant plant species observed were obligate or facultative wetland plants, and SM1 meets the USACE (1987) criteria for presence of wetland vegetation. There were only three dominant plant species at this site.

Vegetation Indicator Status										
Common Name	Indicator Type									
	OBL	FACW+	FACW	FACW-	FAC+	FAC	FAC-	FACU	UPL	NS
Purple sandspurry ( <i>Spergularia rubra</i> )							X			
Saltgrass ( <i>Distichlis spicata</i> )			X							
Pickleweed ( <i>Salicornia rubra</i> )	X									

### Soils

Soils were identified by digging a soil pit to a depth of 16 inches within the topographic low of the basin feature. A soil pit was dug in March 2004. The soil observed was sandy and is described by the USDA NRCS as consisting of permeable sandy fill material dredged from old beach areas (USDA NRCS, 1981).

Field observations confirmed the map unit description as Xeropsamment-fill, similar to soils at SW1, described above. When the soil pit was evaluated in March, the site-specific soil profile was sandy with a matrix color 10YR 3/1 with no mottle from zero to 8 inches, and a matrix color of 2.5YR 4/2 with no mottle and contrast C-2-P from 8 to 16 inches.

Hydric soils were determined to be present due to the low-chroma color of the substrata and the aquatic moisture regime of the soils observed in March. Soils also exhibited hydric soil conditions consistent with the hydric soil criteria stated in the 1991 NTC Hydric Soils of the United States publication. These criteria specify that hydric soils must have at least 13 consecutive days of saturation or 7 days of inundation during the growing season. Soil inundation was observed for greater than 14 days. This hydric soil falls into the broad category of a mineral soil, which is periodically saturated for sufficient duration to produce chemical and physical soil properties associated with a reducing environment.

### Hydrology

Hydrology for this wetland is provided from upland runoff, precipitation, and a high groundwater table. Inundated and/or saturated soils were observed at the surface for 10 consecutive days (inundation and saturated soils were observed February 28 through March 14, 2004).

Field hydrology observations included: zero-inch depth to surface water, 4-inch depth to free water in the soil pit, and 12-inch depth to saturated soil. The following primary hydrology indicators were present: inundated, watermarks, drift lines, sediment deposits, and drainage patterns. Secondary hydrology indicators included water stained leaves within potential seasonal wetland features. Furthermore, this feature is adjacent to San Francisco Bay and hydrologically connected within the 100-year floodplain.

Based on local climate data and observations of similarly vegetated nearby jurisdictional wetlands, it is probable that this specific basin is frequently ponded during the growing season for at least 42 days (approximately 11.5 percent of the growing season). Rainfall events (Figure 3-1) establish a hydrologic regime that can support functional wetlands defined as Hydrologic Zone V (Clark and Benforado, 1981; USACE, 1987, USACE, 1992).

Pursuant to the wetland hydrology criteria presented in the *Wetlands Delineation Method* (USACE, 1987), wetland hydrology requirements have been met: direct observation of saturated and inundated soils for 14 days in March 2004, indicates that the area is seasonally inundated/saturated more than 5 percent of the growing season, dominance of hydrophytic vegetation, presence of hydric soils, and evidence of primary and secondary hydrology indicators.

### Salt Marsh 2 (SM2)

#### Acreage

This salt marsh occupies a vegetated area on the northwest border of the study area within IR Site 2. This feature is approximately 0.02 acres in size and is identified on Figure 2-5 and characterized on data sheets SM2A and UPL 3-4 in Appendix A.

#### Vegetation

The dominant vegetation consists of saltgrass (*Distichlis spicata*) [FACW], bird's foot trefoil (*Lotus corniculatus*) [FAC], brome grass (*Bromus hordeaceus*) [no indicator status], pickleweed (*Salicornia rubra*) [OBL], and bull thistle (*Cirsium vulgare*) [FACU]. Brome grass is common in disturbed sites and abandoned irrigated fields (Hickman, 1993). As summarized in the table below, approximately 60 percent of the dominant plant species observed were obligate or facultative wetland plants, and SM2 meets the USACE (1987) criteria for presence of wetland vegetation.

Common Name	Vegetation Indicator Status									
	Indicator Type									
	OBL	FACW+	FACW	FACW-	FAC+	FAC	FAC-	FACU	UPL	NS
Saltgrass ( <i>Distichlis spicata</i> )			X							
Bird's foot trefoil ( <i>Lotus corniculatus</i> )						X				
Brome grass ( <i>Bromus hordeaceus</i> )										X
Pickleweed ( <i>Salicornia rubra</i> )	X									
Bull thistle ( <i>Cirsium vulgare</i> )								X		

### Soils

Soils were identified by digging a soil pit to a depth of 16 inches within the topographic low of the basin feature. A soil pit was dug in September 2004. The soil observed was sandy and is described by the USDA NRCS as consisting of permeable sandy fill material dredged from old beach areas (USDA NRCS, 1981).

Field observations confirmed the map unit description as Xeropsamment-fill, similar to soils at SW1, described above.

When the soil pit was evaluated in September, the site-specific soil profile was sandy clay loam with a matrix color 10YR 4/2 with mottles 10YR 3/4 and contrast C-1-D from zero to 16 inches.

Hydric soils were determined to be present due to the low-chroma color of the substrata of the soils observed in September. Soils also exhibited hydric soil conditions consistent with the hydric soil criteria established in the 1991 NTC Hydric Soils of the United States and the *Wetlands Delineation Method* (USACE, 1987). This hydric soil falls into the broad category of a mineral soil, which is periodically saturated for sufficient duration to produce chemical and physical soil properties associated with a reducing environment.

### Hydrology

Hydrology for this wetland is provided from upland runoff, precipitation, and a high groundwater table. Primary hydrology indicators were present: watermarks, drift lines, and drainage patterns. Furthermore, this feature is adjacent to San Francisco Bay and hydrologically connected within the 100-year floodplain.

Based on local climate data and observations of similarly vegetated nearby jurisdictional wetlands, it is probable that this specific basin is inundated/saturated more than 5 percent of the growing season (Clark and Benforado, 1981; USACE, 1987; USACE, 1992). Pursuant to the wetland hydrology criteria presented in the *Wetlands Delineation Method* (USACE, 1987), wetland hydrology requirements have been met: dominance of hydrophytic vegetation, presence of hydric soils, and evidence of primary hydrology indicators.

### **Salt Marsh 3 (SM3)**

#### Acreage

This salt marsh occupies a vegetated area on the northwest side of the study area within IR Site 2. This feature is approximately 0.07 acres in size and is identified on Figure 2-5 and characterized on data sheets SM3A and UPL 1-1 in Appendix A.

#### Vegetation

The dominant vegetation in September consisted of brome grass (*Bromus hordeaceus*) [no indicator status], pickleweed (*Salicornia rubra*) [OBL], barley (*Hordeum marinum spp*

*gussoneanum*) [no indicator status], curly dock (*Rumex crispus*) [FACW-], and saltgrass (*Distichlis spicata*) [FACW]. Brome grass and barley are common in dry to moist, disturbed sites (Hickman, 1993). As summarized in the table below, approximately 60 percent of the dominant plant species observed were obligate or facultative wetland plants, and SM3 meets the USACE (1987) criteria for presence of wetland vegetation.

Common Name	Vegetation Indicator Status									
	Indicator Type									
	OBL	FACW+	FACW	FACW-	FAC+	FAC	FAC-	FACU	UPL	NS
Brome grass ( <i>Bromus hordeaceus</i> )										X
Pickleweed ( <i>Salicornia rubra</i> )	X									
Barley ( <i>Hordeum marinum</i> <i>spp gussoneanum</i> )										X
Curly dock ( <i>Rumex crispus</i> )				X						
Saltgrass ( <i>Distichlis spicata</i> )			X							

### Soils

Soils were identified by digging a soil pit to a depth of 16 inches within the topographic low of the basin feature. A soil pit was dug in September 2004. The soil observed was sandy and is described by the USDA NRCS as consisting of permeable sandy fill material dredged from old beach areas (USDA NRCS, 1981).

Field observations confirmed the map unit description as Xeropsamment-fill, similar to soils at SW1, described above.

When the soil pit was evaluated in September the site-specific soil profile was sandy clay loam with a matrix color 10YR 4/2 with mottles 10YR 3/4 and contrast C-1-D from zero to 16 inches.

Hydric soils were determined to be present due to the low-chroma color of the substrata of the soils observed in September. Soils also exhibited hydric soil conditions consistent with the hydric soil criteria established in the 1991 NTC Hydric Soils of the United States and the *Wetlands Delineation Method* (USACE, 1987). This hydric soil falls into the broad category of a mineral soil, which is periodically saturated for sufficient duration to produce chemical and physical soil properties associated with a reducing environment.

### Hydrology

Hydrology for this wetland is provided from upland runoff, precipitation, and a high groundwater table. Primary hydrology indicators were present: watermarks, drift lines, and drainage patterns. Furthermore, this feature is adjacent to San Francisco Bay and hydrologically connected within the 100-year floodplain.

Based on local climate data and observations of similarly vegetated nearby jurisdictional wetlands, it is probable that this specific basin is inundated/saturated more than 5 percent of the growing season (Clark and Benforado, 1981; USACE, 1987; USACE, 1992). Pursuant to the wetland hydrology criteria presented in the *Wetlands Delineation Method* (USACE, 1987), wetland hydrology requirements have been met: dominance of hydrophytic vegetation, presence of hydric soils, and evidence of primary hydrology indicators.

#### Salt Marsh 4 (SM4)

##### Acreage

This salt marsh occupies a vegetated area on the southwest side of the study area within IR Site 2. This feature is approximately 0.02 acres in size and is identified on Figure 2-5 and characterized on data sheets SM4A and UPL 5-8 in Appendix A.

##### Vegetation

The dominant vegetation in September consisted of brome grass (*Bromus hordeaceus*) [no indicator status], pickleweed (*Salicornia rubra*) [OBL], barley (*Hordeum marinum spp gussoneanum*) [no indicator status], ripgut grass (*Bromus diandrus*) [no status indicated], and saltgrass (*Distichlis spicata*) [FACW]. Brome grass, barley, and ripgut grass are common upland in open, disturbed sites (Hickman, 1993). As summarized in the table below, approximately 50 percent of the dominant plant species observed were obligate or facultative wetland plants, and SM4 meets the USACE (1987) criteria for presence of wetland vegetation.

Common Name	Vegetation Indicator Status									
	Indicator Type									
	OBL	FACW+	FACW	FACW-	FAC+	FAC	FAC-	FACU	UPL	NS
Brome grass ( <i>Bromus hordeaceus</i> )										X
Pickleweed ( <i>Salicornia rubra</i> )	X									
Barley ( <i>Hordeum marinum spp gussoneanum</i> )										X
Curly dock ( <i>Rumex crispus</i> )						X				
Ripgut grass ( <i>Bromus diandrus</i> )										X
Saltgrass ( <i>Distichlis spicata</i> )				X						

##### Soils

Soils were identified by digging a soil pit to a depth of 16 inches within the topographic low of the basin feature. A soil pit was dug in September 2004. The soil observed was sandy and is described by the USDA NRCS as consisting of permeable sandy fill material dredged from old beach areas (USDA NRCS, 1981).

Field observations confirmed the map unit description as Xeropsamment-fill, similar to soils at SW1, described above.

When the soil pit was evaluated in September, the site-specific soil profile was sandy clay loam with a matrix color 10YR 4/2 with mottles 10YR 3/4 from zero to 16 inches.

Hydric soils were determined to be present due to the low-chroma color of the substrata of the soils observed in September. Soils also exhibited hydric soil conditions consistent with the hydric soil criteria established in the 1991 NTC Hydric Soils of the United States and the *Wetlands Delineation Method* (USACE, 1987). This hydric soil falls into the broad category of a mineral soil, which is periodically saturated for sufficient duration to produce chemical and physical soil properties associated with a reducing environment.

### Hydrology

Hydrology for this wetland is provided from upland runoff, precipitation, and a high groundwater table. Primary hydrology indicators were present: watermarks, drift lines, and drainage patterns. Secondary hydrology indicators included water stained leaves within potential seasonal wetland features. Furthermore, this feature is adjacent to San Francisco Bay and hydrologically connected within the 100-year floodplain.

Based on local climate data and observations of similarly vegetated nearby jurisdictional wetlands, it is probable that this specific basin is inundated/saturated more than 5 percent of the growing season (Clark and Benforado, 1981; USACE, 1987; USACE, 1992). Pursuant to the wetland hydrology criteria presented in the *Wetlands Delineation Method* (USACE, 1987), wetland hydrology requirements have been met: dominance of hydrophytic vegetation, presence of hydric soils, and evidence of primary and secondary hydrology indicators.

## **Salt Marsh 5 (SM5)**

### Acreage

This salt marsh occupies a vegetated area on the central southwest portion of the study area within IR Site 2. This feature is approximately 0.02 acres in size and is identified on Figure 2-5 and characterized on data sheets SM5A and UPL 3-4 in Appendix A.

### Vegetation

The dominant vegetation consists of saltgrass (*Distichlis spicata*) [FACW], bird's foot trefoil (*Lotus corniculatus*) [FAC], brome grass (*Bromus hordeaceus*) [no indicator status], pickleweed (*Salicornia rubra*) [OBL], and bull thistle (*Cirsium vulgare*) [FACU]. Brome grass is common in disturbed sites and abandoned irrigated fields (Hickman, 1993). As summarized in the table below, approximately 60 percent of the dominant plant species observed were obligate facultative wetland plants, and SM5 meets the USACE (1987) criteria for presence of wetland vegetation.

Common Name	Vegetation Indicator Status									
	Indicator Type									
	OBL	FACW+	FACW	FACW-	FAC+	FAC	FAC-	FACU	UPL	NS
Saltgrass ( <i>Distichlis spicata</i> )			X							
Bird's foot trefoil ( <i>Lotus corniculatus</i> )						X				
Brome grass ( <i>Bromus hordeaceus</i> )										X
Pickleweed ( <i>Salicornia rubra</i> )	X									
Bull thistle ( <i>Cirsium vulgare</i> )								X		

### Soils

Soils were identified by digging a soil pit to a depth of 16 inches within the topographic low of the basin feature. A soil pit was dug in September 2004. The soil observed was sandy and is described by the USDA NRCS as consisting of permeable sandy fill material dredged from old beach areas (USDA NRCS, 1981).

Field observations confirmed the map unit description as Xeropsamment-fill, similar to soils at SW1, described above.

When the soil pit was evaluated in September, the site-specific soil profile was sandy clay loam with a matrix color 10YR 4/2 with mottles 10YR 3/4 and contrast C-1-D from zero to 16 inches.

Hydric soils were determined to be present due to the low-chroma color of the substrata of the soils observed in September. Soils also exhibited hydric soil conditions consistent with the hydric soil criteria established in the 1991 NTC Hydric Soils of the United States and the *Wetlands Delineation Method* (USACE, 1987). This hydric soil falls into the broad category of a mineral soil, which is periodically saturated for sufficient duration to produce chemical and physical soil properties associated with a reducing environment.

### Hydrology

Hydrology for this wetland is provided from upland runoff, precipitation, and a high groundwater table. Primary hydrology indicators were present: watermarks, drift lines, and drainage patterns. Secondary hydrology indicators included water stained leaves within potential seasonal wetland features. Furthermore, this feature is adjacent to San Francisco Bay and hydrologically connected within the 100-year floodplain.

Based on local climate data and observations of similarly vegetated nearby jurisdictional wetlands, it is probable that this specific basin is inundated/saturated more than 5 percent of the growing season (Clark and Benforado, 1981; USACE, 1987; USACE, 1992). Pursuant to the wetland hydrology criteria presented in the *Wetlands Delineation Method* (USACE, 1987),

wetland hydrology requirements have been met: dominance of hydrophytic vegetation, presence of hydric soils, and evidence of primary and secondary hydrology indicators.

### Salt Marsh (SM6)

#### Acreage

This salt marsh occupies a vegetated area on the south, west and central portions of the study area within IR Site 2. This feature is approximately 22.82 acres in size and is identified on Figure 2-5 and characterized on data sheets SM6 A-F and UPL 1-2, 1-3, 3-4, and 4-7 in Appendix A.

#### Vegetation

The dominant vegetation in March consisted of bird's foot trefoil (*Lotus corniculatus*) [FAC], saltgrass (*Distichlis spicata*) [FACW], and pickleweed (*Salicornia rubra*) [OBL]. As summarized in the table below, approximately 100 percent of the dominant plant species observed were obligate or facultative wetland plants and SM6 meet the USACE (1987) criteria for presence of wetland vegetation.

The dominant vegetation in September consisted of brome grass (*Bromus hordeaceus*) [no status indicated], pickleweed (*Salicornia rubra*) [OBL], barley (*Hordeum marinum spp gussoneanum*) [no status indicated], ripgut grass (*Bromus diandrus*) [no status indicated], saltgrass (*Distichlis spicata*) [FACW], bird's foot trefoil (*Lotus corniculatus*) [FAC], and Italian rye grass (*Lolium multiflorum*) [no status indicated]. Italian rye grass and brome grass are both common in disturbed sites and abandoned irrigated fields. Barley is common in dry to moist disturbed sites and ripgut grass is common upland in open, disturbed sites (Hickman, 1993). As summarized in the table below, approximately 60 to 80 percent of the dominant plant species observed were obligate or facultative wetland plants, and SM6 meets the USACE (1987) criteria for presence of wetland; however, the table below represents the cumulative list of specific vegetative species found within data points SM6 A-F, not the relative percentages of vegetative species occurrences at a data point.

Common Name	Vegetation Indicator Status									
	Indicator Type									
	OBL	FACW+	FACW	FACW-	FAC+	FAC	FAC-	FACU	UPL	NS
Bird's foot trefoil ( <i>Lotus corniculatus</i> )						X				
Saltgrass ( <i>Distichlis spicata</i> )			X							
Pickleweed ( <i>Salicornia rubra</i> )	X									
Barley ( <i>Hordeum marinum spp gussoneanum</i> )										X
Brome grass ( <i>Bromus hordeaceus</i> )										X

Vegetation Indicator Status										
Common Name	Indicator Type									
	OBL	FACW+	FACW	FACW-	FAC+	FAC	FAC-	FACU	UPL	NS
Ripgut grass ( <i>Bromus diandrus</i> )										X
Italian rye grass ( <i>Lolium multiflorum</i> )										X

### Soils

Soils were identified by digging a soil pit to a depth of 16 inches within the topographic low of the basin feature. Distinct soil pits were dug in March and September 2004. The soil observed was sandy and is described by the USDA NRCS as consisting of permeable sandy fill material dredged from old beach areas (USDA NRCS, 1981).

Field observations confirmed the map unit description as Xeropsamment-fill, similar to soils at SW1, described above.

When the soil pit was evaluated in March the site-specific soil profile was sandy clay loam with a matrix color 10YR 4/2 with mottles 10YR 3/4 and contrast C-1-D from zero to 16 inches. When the soil pit was evaluated in September the site-specific soil profile was sandy to sandy loam clay with matrix colors 10YR 4/2, 2.5Y 4/2, 5Y 4/1 with mottles ranging from none to 10YR 3/4 and contrast C-1-D from zero to 16 inches.

Hydric soils were determined to be present due to the low-chroma color of the substrata of the soils observed in March and September. Soils also exhibited hydric soil conditions consistent with the hydric soil criteria established in the 1991 NTC Hydric Soils of the United States publication. These criteria specify that hydric soils must have at least 13 consecutive days of saturation or 7 days of inundation during the growing season. Soil inundation was observed for greater than 9 days. This hydric soil falls into the broad category of a mineral soil, which is periodically saturated for sufficient duration to produce chemical and physical soil properties associated with a reducing environment.

### Hydrology

Hydrology for this wetland is provided from tidal fluctuations, upland runoff, precipitation, and a high groundwater table. Inundated and/or saturated soils were observed within sample location at the surface for 9 consecutive days (inundation and saturated soils were observed February 28 through March 10, 2004). However, substantial portions of this feature remain permanently inundated and/or saturated.

Field hydrology observations included: 1-inch depth to surface water and 6-inch depth to free water in the soil pit, and 12-inch depth to saturated soil. Primary hydrology indicators were present: inundated, saturated soil condition in the upper 12 inches of the soil profile, watermarks,

drift lines, and drainage patterns. Furthermore, this feature is adjacent to San Francisco Bay and hydrologically connected within the 100-year floodplain.

Based on local climate data and observations of similarly vegetated nearby jurisdictional wetlands, it is probable that this specific basin is frequently ponded during the growing season for at least 27 days (approximately 7.4 percent of the growing season). Rainfall events (Figure 3-1) establish a hydrologic regime that can support functional wetlands defined as Hydrologic Zone V (Clark and Benforado, 1981; USACE, 1987; USACE, 1992).

Pursuant to the wetland hydrology criteria presented in the *Wetlands Delineation Method* (USACE, 1987), wetland hydrology requirements have been met: direct observation of saturated and inundated soils for 9 days in March 2004, indicates the area is seasonally inundated/saturated more than 5 percent of the growing season, dominance of hydrophytic vegetation, presence of hydric soils, and evidence of primary hydrology indicators.

**Salt Marsh 7 (SM7)**

Acreage

This salt marsh occupies a vegetated area on the southwest portion of the study area within IR Site 2. This feature is approximately 0.01 acres in size and is identified on Figure 2-5 and characterized on data sheets SM7A and UPL 2-6 in Appendix A.

Vegetation

The dominant vegetation consists of saltgrass (*Distichlis spicata*) [FACW], bird’s foot trefoil (*Lotus corniculatus*) [FAC], brome grass (*Bromus hordeaceus*) [no indicator status], pickleweed (*Salicornia rubra*) [OBL], and bull thistle (*Cirsium vulgare*) [FACU]. Brome grass is common in disturbed sites and abandoned irrigated fields (Hickman, 1993). As summarized in the table below, approximately 60 percent of the dominant plant species observed were obligate or facultative wetland plants, and SM7 meets the USACE (1987) criteria for presence of wetland vegetation.

Common Name	Vegetation Indicator Status									
	Indicator Type									
	OBL	FACW+	FACW	FACW-	FAC+	FAC	FAC-	FACU	UPL	NS
Saltgrass ( <i>Distichlis spicata</i> )			X							
Bird’s foot trefoil ( <i>Lotus corniculatus</i> )						X				
Brome grass ( <i>Bromus hordeaceus</i> )										X
Pickleweed ( <i>Salicornia rubra</i> )	X									
Bull thistle ( <i>Cirsium vulgare</i> )								X		

### Soils

Soils were identified by digging a soil pit to a depth of 16 inches within the topographic low of the basin feature. A soil pit was dug in September 2004. The soil observed was sandy and is described by the USDA NRCS as consisting of permeable sandy fill material dredged from old beach areas (USDA NRCS, 1981).

Field observations confirmed the map unit description as Xeropsamment-fill, similar to soils at SW1, described above. When the soil pit was evaluated in September the site-specific soil profile was sandy clay loam with a matrix color 10YR 4/2 with mottles 10YR 3/4 and contrast C-1-D from zero to 16 inches.

Hydric soils were determined to be present due to the low-chroma color of the substrata of the soils observed in September. Soils also exhibited hydric soil conditions consistent with the hydric soil criteria stated in the 1991 NTC Hydric Soils of the United States and the *Wetlands Delineation Method* (USACE, 1987). This hydric soil falls into the broad category of a mineral soil, which is periodically saturated for sufficient duration to produce chemical and physical soil properties associated with a reducing environment.

### Hydrology

Hydrology for this wetland is provided from upland runoff, precipitation, and a high groundwater table. Primary hydrology indicators were present: watermarks, drift lines, and drainage patterns. Furthermore, this feature is adjacent to San Francisco Bay and hydrologically connected within the 100-year floodplain.

This feature was not observed saturated or inundated; however, based on local climate data and observations of similarly vegetated nearby jurisdictional wetlands, it is probable that this specific basin is inundated/saturated more than 5 percent of the growing season (Clark and Benforado, 1981; USACE, 1987; USACE, 1992). Pursuant to the wetland hydrology criteria presented in the *Wetlands Delineation Method* (USACE, 1987), wetland hydrology requirements have been met: dominance of hydrophytic vegetation, presence of hydric soils, and evidence of primary hydrology indicators.

## 5.0 SUMMARY

IR Sites 1 and 2 include a total of approximately 230 acres. IR Site 1 includes approximately 18 acres of seasonal wetlands, and IR Site 2 includes 4 acres of seasonal wetlands and 24 acres of salt marsh. There are approximately 84 acres of upland plant communities within IR Site 1. Additionally, there are approximately 100 acres of upland plant communities within IR Site 2. No non-wetland Waters of the United States were identified.

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## **TABLES**

TABLE 3-1

## PLANT INDICATOR STATUS CATEGORIES

Indicator Category	Indicator Symbol	Definition
Obligate Wetland Plants	OBL	Plants that occur almost always (estimated probability >99%) in wetlands under natural conditions, but which may also occur rarely (estimated probability <1%) in non-wetlands. Examples: pickleweed ( <i>Salicornia rubra</i> ) and creeping spike rush ( <i>Eleocharis macrostachya</i> ).
Facultative Wetland Plants	FACW	Plants that occur usually (estimated probability >67% to 99%) in wetlands, but also occur (estimated probability 1% to 33% in non-wetlands). Examples: saltgrass ( <i>Distichlis spicata</i> ) and rabbit's foot grass ( <i>Polypogon monspeliensis</i> ).
Facultative Plants	FAC (FAC+ FAC-)	Plants with a similar likelihood (estimated probability 33% to 67%) of occurring in both wetlands and non-wetlands. Examples: bird's foot trefoil ( <i>Lotus corniculatus</i> ) and velvet grass ( <i>Holcus lanatus</i> ).
Facultative Upland Plants	FACU	Plants that occur sometimes (estimated probability 1% to <33%) in wetlands, but occur more often (estimated probability >67% to 99%) in non-wetlands. Examples: bull thistle ( <i>Cirsium vulgare</i> ) and California coast larkspur ( <i>Delphinium californicum</i> ).
Obligate Upland Plants	UPL	Plants that occur rarely (estimated probability <1%) in wetlands, but occur almost always (estimated probability >99%) in non-wetlands under natural conditions. Examples: Pine sp. ( <i>Pinus sp</i> ) and soft brome ( <i>Bromus mollis</i> ).
No Status	NS	These plants do not have any estimated probabilities (expressed as a frequency of occurrence) of a species occurring in wetland versus non-wetland across the entire distribution of the species (Hickman, 1993).

TABLE 3-2

## ALAMEDA WEATHER DATA

WETS Station Oakland Museum, CA 6336  
 Elevation 30  
 Latitude 3748 Longitude 12216  
 State FIPS/ County (FIPS): 6001  
 County Name Alameda  
 Start Year 1971  
 End Year 2000

Month	Temperature (F)			Precipitation				
	Avg Daily Max	Avg Daily Min	Avg	Avg	30% chance will have		Avg # of days w/.1 or more	Avg Total Snow Fall
					Less Than	More Than		
January	57.3	44.6	51	4.85	2.24	5.93	7	0
February	61.6	47.9	54.7	4.4	1.83	5.35	7	0
March	63.6	49.1	56.2	3.56	1.54	4.34	6	0
April	66.5	50.6	58.5	1.35	0.53	1.66	3	0
May	69	53.4	61.2	0.59	0.05	0.65	1	0
June	71.7	55.7	63.7	0.12	0	0.12	0	0
July	72.5	56.9	64.7	0.07	0	0	0	0
August	73.5	58.3	65.9	0.1	0	0.01	0	0
September	74.7	58.3	66.5	0.31	0	0.36	0	0
October	72.1	55.4	63.8	1.38	0.53	1.69	2	0
November	63.9	49.5	56.7	3.24	1.3	3.93	5	0
December	57.7	44.6	51.1	3.13	1.71	3.88	5	0
<b>Annual</b>	--	--	--	--	16.81	25.64	--	--
<b>Average</b>	67	52	59.5	--	--	--	--	--
<b>Total</b>	--	--	--	23.1	--	--	36	0

## Growing Season Dates

Probability	Temperature		
	24 F or Higher	28 F or Higher	32 F or Higher
50 percent*	>365 Days	>365 Days	>365 Days
70 percent*	>365 Days	>365 Days	>365 Days

TABLE 3-3

## TOTAL 1971-2002 PRECIPITATION DATA

Station: CA 6336      Oakland Museum  
Unit= Inches

Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual
1971	1.73	0.43	2.8	0.93	0.13	0	0	0	0.26	0.1	2.04	4.19	12.61
1972	1.32	1.58	0.18	1.02	--	0.34	0	0.01	0.9	4.25	6.39	3.2	19.19
1973	0.43	6.31	2.95	0.02	0.04	0	0	0	0.64	1.77	9.67	5.39	37.22
1974	3.39	1.76	5.15	3.33	0	0.15	1.19	0	0	1.16	0.78	2.52	19.43
1975	2.29	3.88	5.68	2.25	0.01	0.08	0.21	0.05	0.03	3.85	0.56	0.52	19.41
1976	0.31	2.01	1.08	0.89	0	0.04	0	1.09	0.61	0.57	1.09	2.3	9.99
1977	1.55	0.77	2.1	0	0.54	0	0.01	0	0.68	0.21	2.83	--	8.69
1978	7.87	4.8	6.89	3.76	0	0	0	0	0.59	0	1.64	0.7	26.25
1979	7.18	5.52	2.82	1.04	0.1	0	0.43	0	0	2.37	3.96	5.77	29.19
1980	4.81	7.63	1.82	1.66	0.44	0	--	0	0	0.13	0.2	2.42	19.11
1981	6.15	1.33	4.41	0.3	0.1	0	0	0	0.08	2.8	5.93	4.65	25.75
1982	10.75	3.8	8.55	4.13	0	0.19	0.03	0	0	2.89	5.31	3.11	38.76
1983	7.22	8.08	9.83	3.87	0.42	--	0	0.05	0.61	0.23	7.12	6.84	44.37
1984	0.33	2.28	1.6	0.98	0.09	0	0	0.17	0.31	2.99	6.89	--	15.64
1985	0.77	2.08	3.65	0.15	0.04	--	--	0	0.53	1.18	3.26	1.67	13.33
1986	5.24	8.92	5.89	0.7	0.13	0	0.03	0	1.54	0.14	0.32	1.47	24.38
1987	3.6	4.93	2.32	0.2	0.04	0	0	0	0	1.57	2.34	4.29	19.29
1988	3.83	0.49	0.03	2.77	0.98	0.44	0	0.01	0	0.37	2.49	3.81	15.22
1989	1.27	M	5.16	0.63	0.04	0.04	0	0	1.45	1.73	1.25	0	11.57
1990	4.41	M	1.21	0.24	2.92	0.01	0	0	0.06	0.35	0.49	1.58	11.27
1991	0.42	3.49	7.04	0.72	0.2	0.24	0	0.19	0	1.2	0.36	2.22	16.08
1992	1.71	7.53	4.54	0.26	0	0.3	0	0.03	0	2.49	0.3	6.82	23.98
1993	8.9	3.94	2.61	0.6	0.94	0.11	0	0	0	0.62	2.08	3.01	22.81
1994	2.56	4.52	0.28	1.69	1.54	0	0	0	0.04	0.4	9.37	3.23	23.63
1995	9.77	0.21	7.6	1.86	1.07	0.92	0	0	0	--	--	--	21.43
1996	6.4	5.87	2.01	--	2.67	0	--	--	--	--	3.44	8.9	29.29
1997	7.8	0.22	0.56	0.57	0.27	0.28	0	1.25	0.01	1.18	6.79	3.36	22.29
1998	12.45	15.14	2.76	1.83	2.98	0.01	0	0	0.04	0.81	3.82	1.23	41.07
1999	4.04	7.17	2.89	1.8	0.09	0.03	0	0.06	0.13	0.5	2.55	0.48	19.74
2000	7.13	9.94	2.45	1.01	1.21	--	0	0	0.26	2.75	0.7	0.77	26.22
2001	3.27	7.39	1.27	1.69	0	0.07	0	0	0.26	0.54	4.41	9.4	28.3

TABLE 4-1

**POTENTIAL JURISDICTIONAL SEASONAL WETLANDS  
WITHIN THE IR SITE 1 AND 2 AREAS**

I.D. Number	Classification	Acreage	Dominant Vegetation
SW1	Seasonal Wetland	1.06	sand pygmy weed ( <i>Crassula erecta</i> ), annual bluegrass ( <i>Poa annua</i> ), loose-strife hyssop ( <i>Lythrum hyssopifolia</i> ), rabbit's foot grass ( <i>Polypogon monspeliensis</i> ), and cranesbill geranium ( <i>Geranium dissectum</i> )
SW2	Seasonal Wetland	1.43	sand pygmy weed ( <i>Crassula erecta</i> ), annual bluegrass ( <i>Poa annua</i> ), loose-strife hyssop ( <i>Lythrum hyssopifolia</i> ), rabbit's foot grass ( <i>Polypogon monspeliensis</i> ), and cranesbill geranium ( <i>Geranium dissectum</i> )
SW3	Seasonal Wetland	7.05	saltgrass ( <i>Distichlis spicata</i> ), dock willow ( <i>Rumex salicifolius</i> ), smutgrass ( <i>Sporobolus indicus</i> ), English plantain ( <i>Plantago lanceolata</i> ), bird's foot trefoil ( <i>Lotus corniculatus</i> ), tall flatsedge ( <i>Cyperus eragrostis</i> ), barley ( <i>Hordeum marinum spp gussoneanum</i> ), and fireweed ( <i>Epilobium angustifolium</i> ), curly dock ( <i>Rumex crispus</i> )
SW4	Seasonal Wetland	0.12	saltgrass ( <i>Distichlis spicata</i> ), bird's foot trefoil ( <i>Lotus corniculatus</i> ), curly dock ( <i>Rumex crispus</i> ), Italian rye grass ( <i>Lolium multiflorum</i> ), and brome grass ( <i>Bromus hordeaceus</i> )
SW5	Seasonal Wetland	3.05	creeping spike rush ( <i>Eleocharis macrostachya</i> ), saltgrass ( <i>Distichlis spicata</i> ), bird's foot trefoil ( <i>Lotus corniculatus</i> ), Italian rye grass ( <i>Lolium multiflorum</i> ), and rabbit's foot grass ( <i>Polypogon monspeliensis</i> )
SW6	Seasonal Wetland	0.03	curly dock ( <i>Rumex crispus</i> ), bird's foot trefoil ( <i>Lotus corniculatus</i> ), brome grass ( <i>Bromus hordeaceus</i> ), saltgrass ( <i>Distichlis spicata</i> ), and bull thistle ( <i>Cirsium vulgare</i> )
SW7	Seasonal Wetland	0.22	pickleweed ( <i>Salicornia rubra</i> ), saltgrass ( <i>Distichlis spicata</i> ), rabbit's foot grass ( <i>Polypogon monspeliensis</i> ), and brass buttons ( <i>Cotula coronopifolia</i> )
SW8	Seasonal Wetland	0.08	dock willow ( <i>Rumex salicifolius</i> ), barley ( <i>Hordeum marinum spp gussoneanum</i> ), saltgrass ( <i>Distichlis spicata</i> ), bird's foot trefoil ( <i>Lotus corniculatus</i> ), and tall flatsedge ( <i>Cyperus eragrostis</i> )
SW9	Seasonal Wetland	0.10	curly dock ( <i>Rumex crispus</i> ), bird's foot trefoil ( <i>Lotus corniculatus</i> ), brome grass ( <i>Bromus hordeaceus</i> ), saltgrass ( <i>Distichlis spicata</i> ), and bull thistle ( <i>Cirsium vulgare</i> )
SW10	Seasonal Wetland	5.71	cranesbill geranium ( <i>Geranium dissectum</i> ), barley ( <i>Hordeum marinum spp gussoneanum</i> ), curly dock ( <i>Rumex crispus</i> ), Italian rye grass ( <i>Lolium multiflorum</i> ), saltgrass ( <i>Distichlis spicata</i> ), pickleweed ( <i>Salicornia rubra</i> ), velvet grass ( <i>Holcus lanatus</i> ), tall flatsedge ( <i>Cyperus eragrostis</i> ), Bermuda grass ( <i>Cynodon dactylon</i> ), bird's foot trefoil ( <i>Lotus corniculatus</i> ), and brome grass ( <i>Bromus hordeaceus</i> )
SW11	Seasonal Wetland	0.08	tall flatsedge ( <i>Cyperus eragrostis</i> ), Bermuda grass ( <i>Cynodon dactylon</i> ), Russian thistle ( <i>Salsola tragus</i> ), bird's foot trefoil ( <i>Lotus corniculatus</i> ), and Italian rye grass ( <i>Lolium multiflorum</i> )
SW12	Seasonal Wetland	0.01	curly dock ( <i>Rumex crispus</i> ), bird's foot trefoil ( <i>Lotus corniculatus</i> ), brome grass ( <i>Bromus hordeaceus</i> ), saltgrass ( <i>Distichlis spicata</i> ), and bull thistle ( <i>Cirsium vulgare</i> )
SM1	Salt Marsh	1.04	purple sandspurry ( <i>Spergularia rubra</i> ), saltgrass ( <i>Distichlis spicata</i> ), and pickleweed ( <i>Salicornia rubra</i> )
SM2	Salt Marsh	0.02	saltgrass ( <i>Distichlis spicata</i> ), bird's foot trefoil ( <i>Lotus corniculatus</i> ), brome grass ( <i>Bromus hordeaceus</i> ), pickleweed ( <i>Salicornia rubra</i> ), and bull thistle ( <i>Cirsium vulgare</i> )

TABLE 4-1

**POTENTIAL JURISDICTIONAL SEASONAL WETLANDS  
WITHIN THE IR SITE 1 AND 2 AREAS**

I.D. Number	Classification	Acreage	Dominant Vegetation
SM3	Salt Marsh	0.07	brome grass ( <i>Bromus hordeaceus</i> ), pickleweed ( <i>Salicornia rubra</i> ), barley ( <i>Hordeum marinum spp gussoneanum</i> ), curly dock ( <i>Rumex crispus</i> ), and saltgrass ( <i>Distichlis spicata</i> )
SM4	Salt Marsh	0.02	brome grass ( <i>Bromus hordeaceus</i> ), pickleweed ( <i>Salicornia rubra</i> ), barley ( <i>Hordeum marinum spp gussoneanum</i> ), riggut grass ( <i>Bromus diandrus</i> ), and saltgrass ( <i>Distichlis spicata</i> )
SM5	Salt Marsh	0.02	saltgrass ( <i>Distichlis spicata</i> ), bird's foot trefoil ( <i>Lotus corniculatus</i> ), brome grass ( <i>Bromus hordeaceus</i> ), pickleweed ( <i>Salicornia rubra</i> ), and bull thistle ( <i>Cirsium vulgare</i> )
SM6	Salt Marsh	22.82	bird's foot trefoil ( <i>Lotus corniculatus</i> ), saltgrass ( <i>Distichlis spicata</i> ), pickleweed ( <i>Salicornia rubra</i> ), brome grass ( <i>Bromus hordeaceus</i> ), barley ( <i>Hordeum marinum spp gussoneanum</i> ), riggut grass ( <i>Bromus diandrus</i> ), and Italian rye grass ( <i>Lolium multiflorum</i> )
SM7	Salt Marsh	0.01	saltgrass ( <i>Distichlis spicata</i> ), bird's foot trefoil ( <i>Lotus corniculatus</i> ), brome grass ( <i>Bromus hordeaceus</i> ), pickleweed ( <i>Salicornia rubra</i> ), and bull thistle ( <i>Cirsium vulgare</i> )

\*Notes: Routine wetland delineation determination field forms are provided in Appendix A.

TABLE 4-2

WETLAND DELINEATION SAMPLE IDENTIFICATIONS

Wetland ID	IR Site	Wetland Sample Data ID	Upland Sample Data ID
SW1	1	SW1A	UPL 22
SW2	1	SW2A	UPL 21
SW3	1	SW3A	UPL 20
SW3	1	SW3B	UPL 20
SW10	1	SW10D	UPL 28
SW10	1	SW10C	UPL 27
SW10	1	SW10B	UPL 26
SW10	1	SW10A	UPL 23
SW10	1	SW10E	UPL 25
SW10	1	SW10F	UPL 24
SW11	1	SW11A	UPL 23
SW5	2	SW5A	UPL 15
SW8	2	SW8A	UPL 14
SW7	2	SW7A	UPL 17
SM1	2	SM1A	UPL 17
SM6	2	SM6A	UPL 1-3
SM6	2	SM6B	UPL 1-2
SM6	2	SM6C	UPL 3-4
SM6	2	SM6D	UPL 3-4
SM6	2 S	SM6E	UPL 4-7
SM6	2 S	SM6F	UPL 1-2
SM5	2S	SM5A	UPL 3-4
SM4	2 S	SM4A	UPL 5-8
SM3	2 S	SM3A	UPL 1-1
SM2	2 S	SM2A	UPL 3-4
SM7	2 S	SM7A	UPL 2-6
SW4	2 S	SW4A	UPL 5-8
SW6	2 S	SW6A	UPL 6-11
SW9	2 S	SW9A	UPL 6-11
SW12	2 S	SW12A	UPL 6-11

## FIGURES

DRAWING NO:

05003711.DWG

DCN: FWSD-RAC-05-0037

CTO: #0087

APPROVED BY: AE

CHECKED BY: JA

REVISION: 0

DRAWN BY: MD

DATE: 11/12/04

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PLOT/UPDATE: NOV 29 2004 15:29:45



Figure 1-1  
SITE VICINITY MAP

IR SITE 1 - ALAMEDA POINT  
ALAMEDA, CA



TETRA TECH FW, INC

DRAWING NO:  
05003711.DWG

DCN: FWS-D-RAC-05-0037

CTO: #0087

APPROVED BY: AE

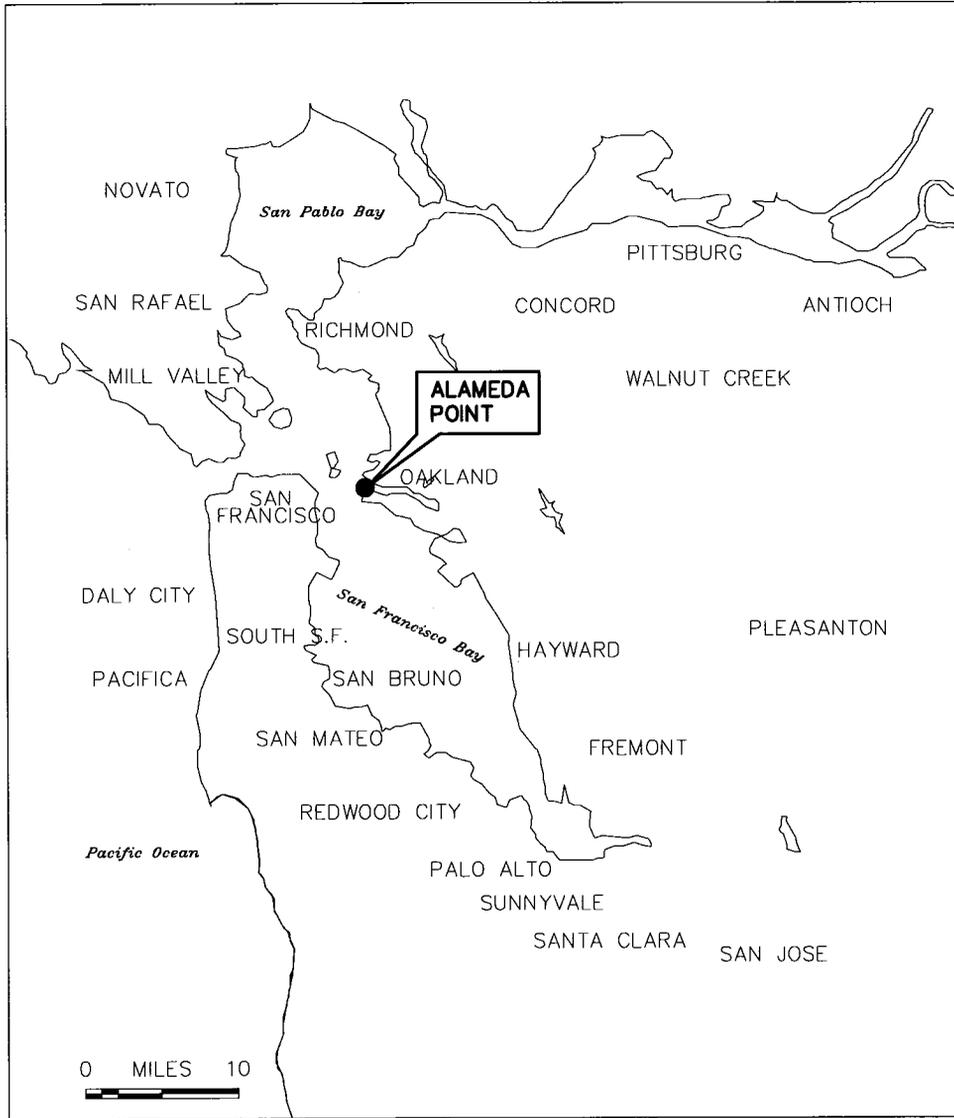
CHECKED BY: JA

REVISION: 0

DRAWN BY: MD

DATE: 11/12/04

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PLOT/UPDATE: NOV 29 2004 15:29:45



REF USGS TOPO MAP



Figure 1-2  
SITE VICINITY MAP, BAY AREA

IR SITE 1 - ALAMEDA POINT  
ALAMEDA, CA



TETRA TECH FW, INC.

DRAWING NO:  
05003711.DWG

DCN: FWS-D-RAC-05-0037

CTO: #0087

APPROVED BY: AE

CHECKED BY: JA

REVISION: 0

DRAWN BY: MD

DATE: 11/12/04

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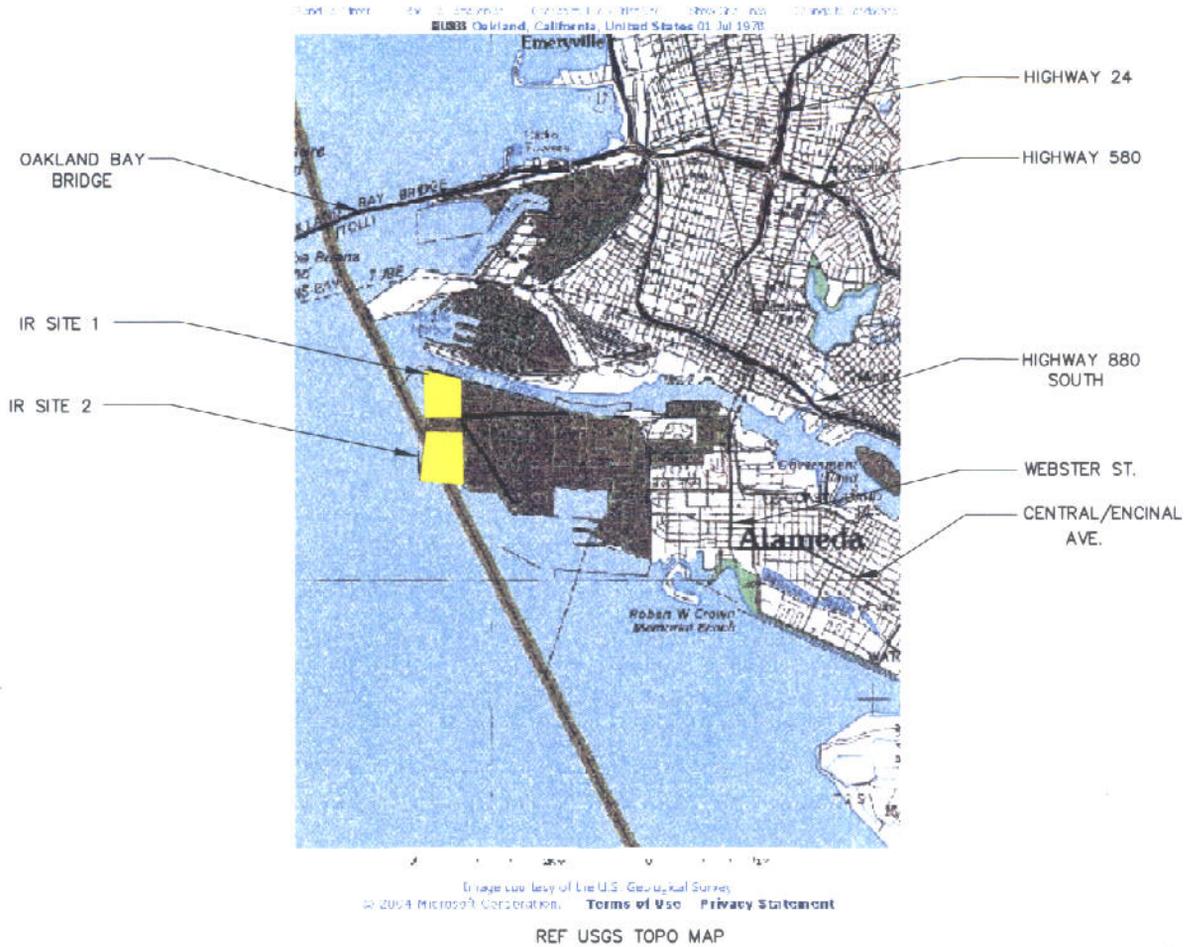


Figure 1-3  
SITE VICINITY MAP, ALAMEDA

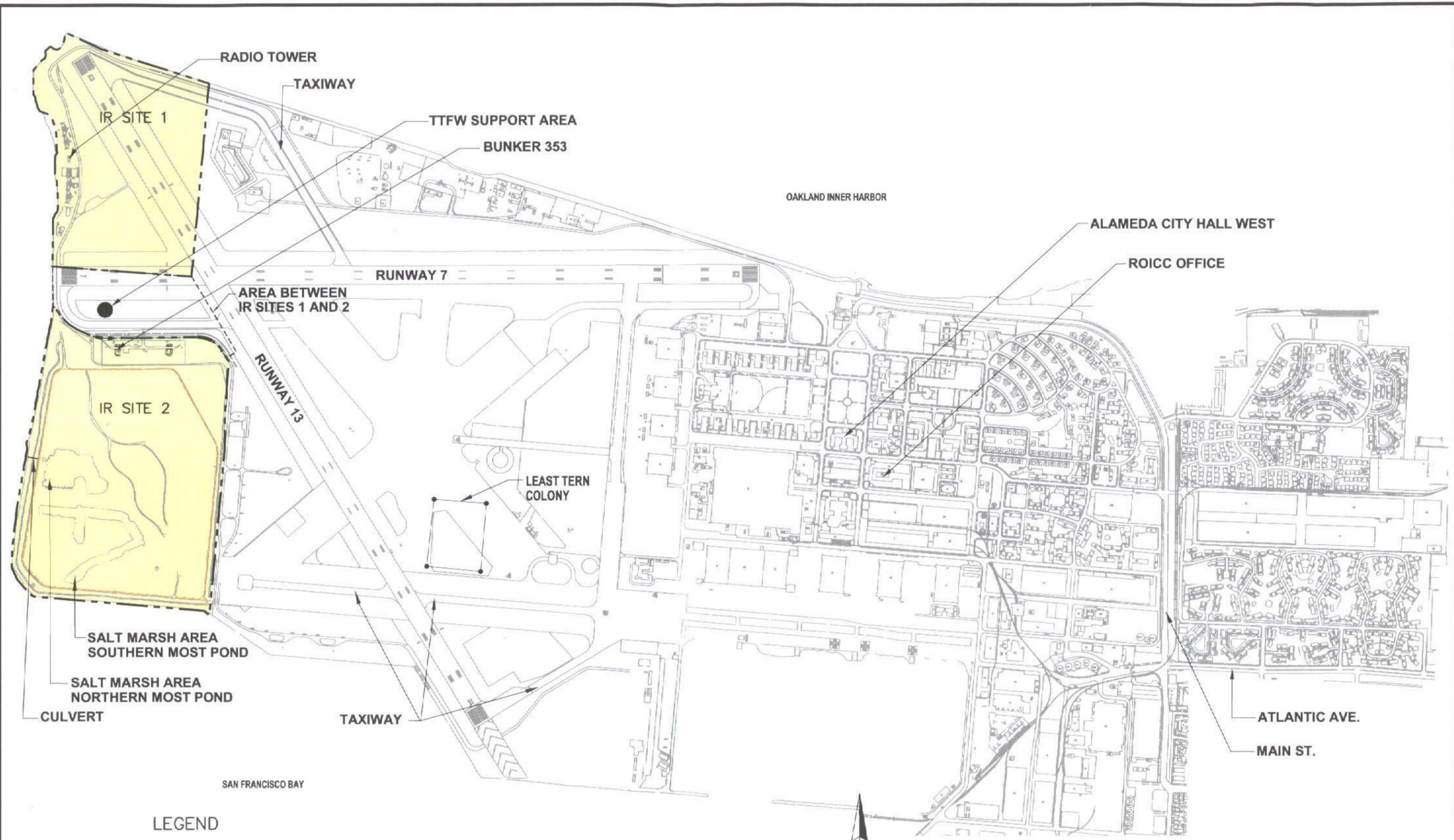
IR SITE 1 - ALAMEDA POINT  
ALAMEDA, CA



TETRA TECH FW, INC.

DRAWING NO: 05003714.DWG  
 DCN: FWS-D-RAC-05-0037  
 CTO: #0087  
 APPROVED BY: AE  
 CHECKED BY: JA  
 REV: REVISION 0  
 DATE: 11/15/04

DRAWN BY: MD  
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 PLO1/UPDATE: NOV 30 2004 09:25:24



**LEGEND**  
 - - - - - IR SITES 1 & 2 BOUNDARY  
 - - - - - EXISTING BERM

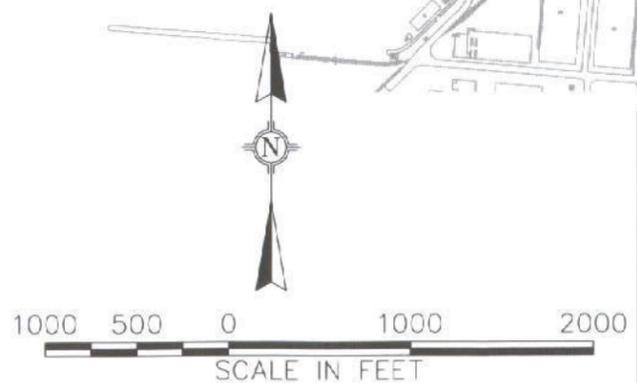
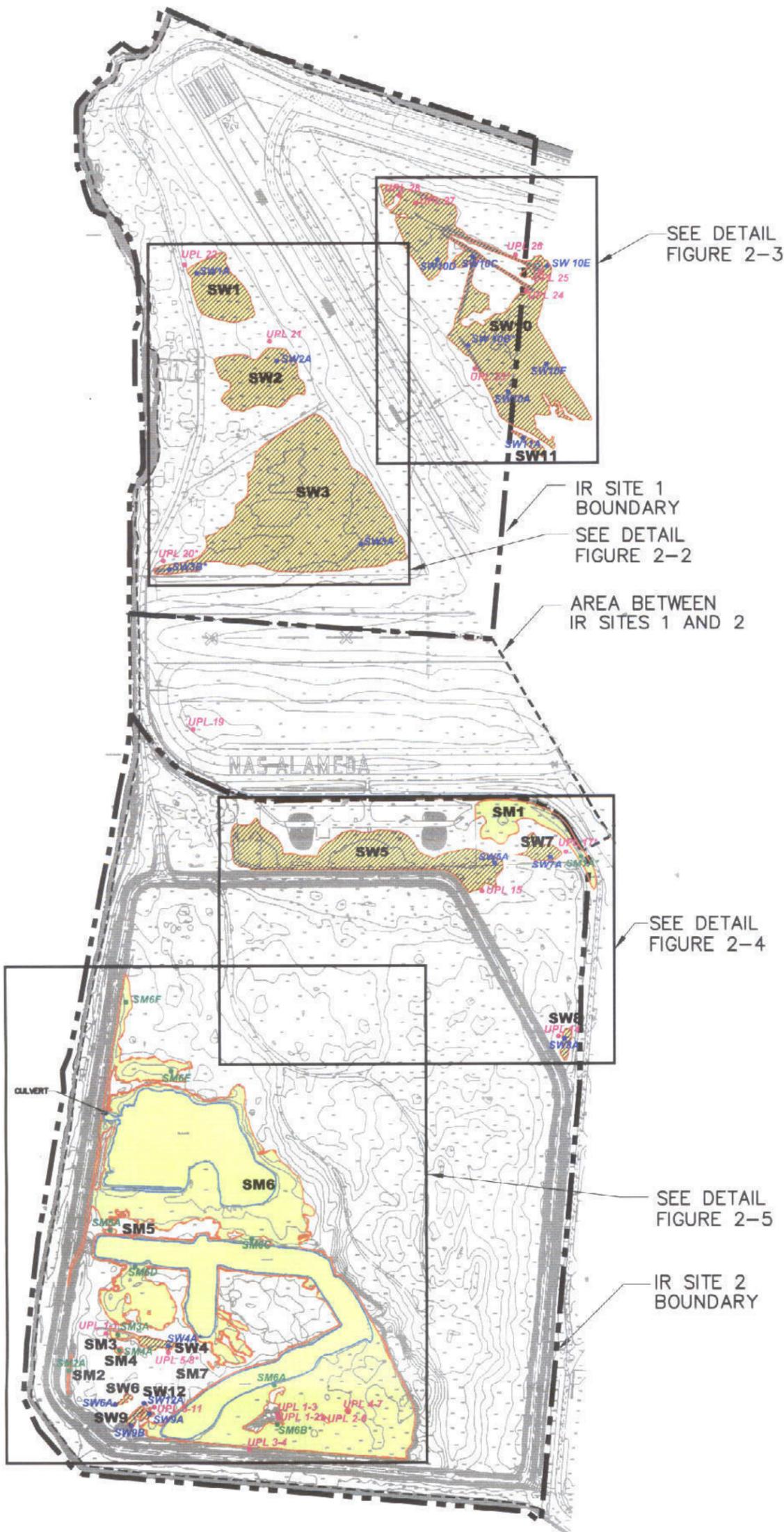


Figure 1-4  
 SITE LOCATION MAP  
 IR SITE 2 - ALAMEDA POINT  
 ALAMEDA, CA



TETRA TECH FW, INC.

DRAWN BY: MD	CHECKED BY: LM	APPROVED BY: AE	DCN: FWSR-RAC-05-0037	DRAWING NO:
DATE: 10/15/04	REV: REVISION 0		CTO: # 0087	05003702.DWG

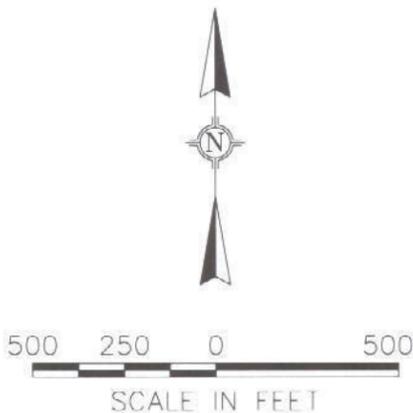


WETLAND AREAS

I.D. Number	Classification	Acreage
SW1	Seasonal Wetland	1.06
SW2	Seasonal Wetland	1.43
SW3	Seasonal Wetland	7.05
SW4	Seasonal Wetland	0.12
SW5	Seasonal Wetland	3.05
SW6	Seasonal Wetland	0.03
SW7	Seasonal Wetland	0.22
SW8	Seasonal Wetland	0.08
SW9	Seasonal Wetland	0.10
SW10	Seasonal Wetland	5.71
SW11	Seasonal Wetland	0.08
SW12	Seasonal Wetland	0.01
SM1	Salt Marsh	1.04
SM2	Salt Marsh	0.02
SM3	Salt Marsh	0.07
SM4	Salt Marsh	0.02
SM5	Salt Marsh	0.02
SM6	Salt Marsh	22.82
SM7	Salt Marsh	0.01

LEGEND

- SITE BOUNDARY
- SEASONAL WETLAND
- SALT MARSH
- RIPRAP LINE (LANDWARD EXTENT OF MATERIAL)
- 2-FOOT ELEVATION CONTOUR
- SEASONAL WETLAND DATA POINT
- UPLAND DATA POINT
- SALT MARSH DATA POINT



REFERENCE:  
 HJW-GeoSpatial, Inc., Upland topography  
 NAD27, NGVD29 - CCS Zone III.

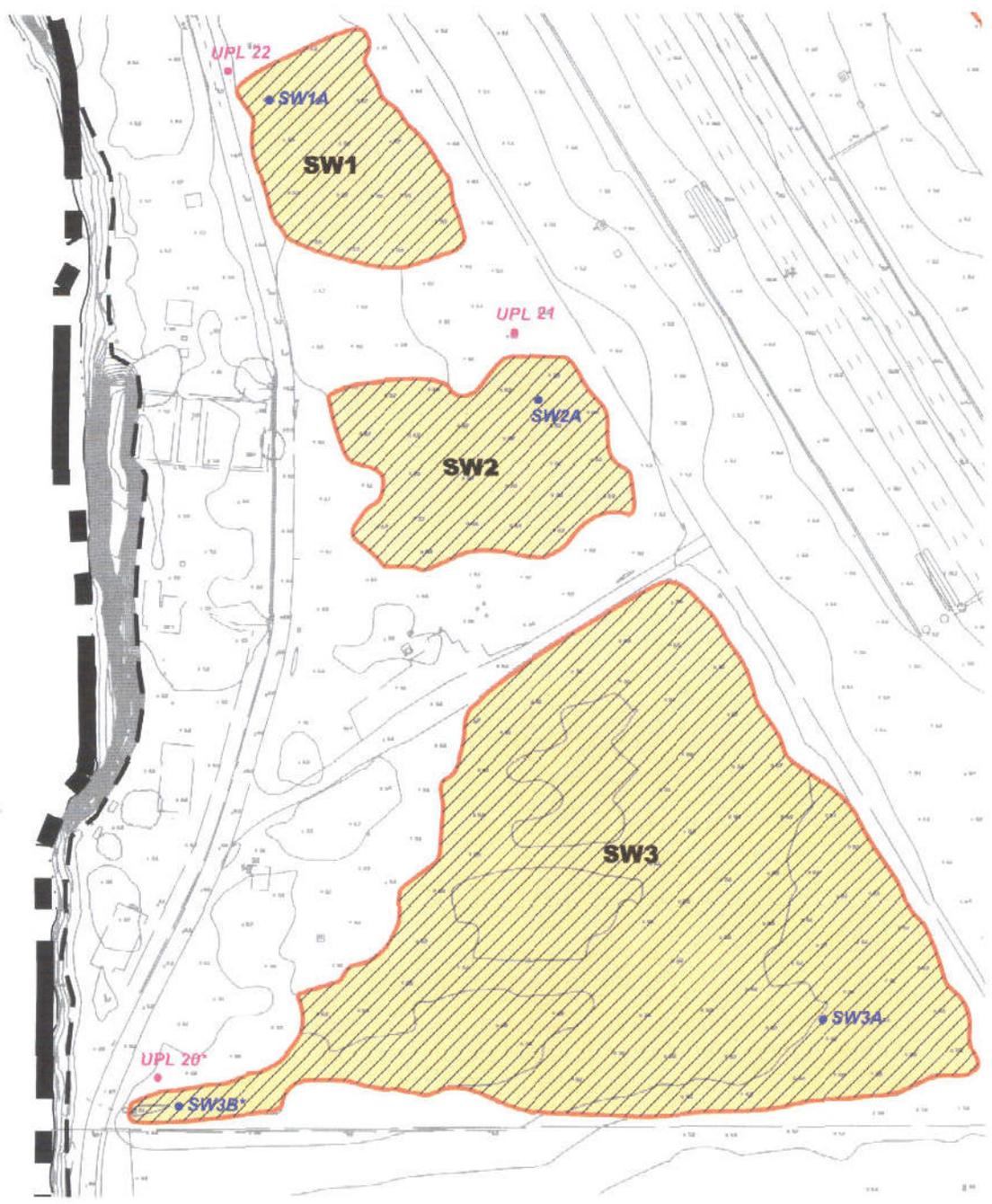
Figure 2-1  
 KEY MAP FOR WETLAND DELINEATION AREAS

IR SITE 1 AND 2 - ALAMEDA POINT  
 ALAMEDA, CA



TETRA TECH FW, INC.

DRAWN BY: MD	CHECKED BY: LM	APPROVED BY: AE	DCN: FWS-D-RAC-05-0037	DRAWING NO: 05003702.DWG
DATE: 10/15/04	REV: REVISION 0		CTO: # 0087	



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 PLOT/UPDATE: NOV 29 2004 16:11:27

**LEGEND**

-  SEASONAL WETLAND
-  SEASONAL WETLAND DATA POINT
-  UPLAND DATA POINT
-  RIPRAP LINE (LANDWARD EXTENT OF MATERIAL)
-  REPRESENTATIVE PICTURE AVAILABLE IN ATTACHMENT 3




SCALE IN FEET

**Figure 2-2**  
**IR SITE 1 WEST**

Southwest Division  
 Naval Facilities Engineering Command



**TETRA TECH FW, INC.**

DRAWING NO:  
05003702.DWG

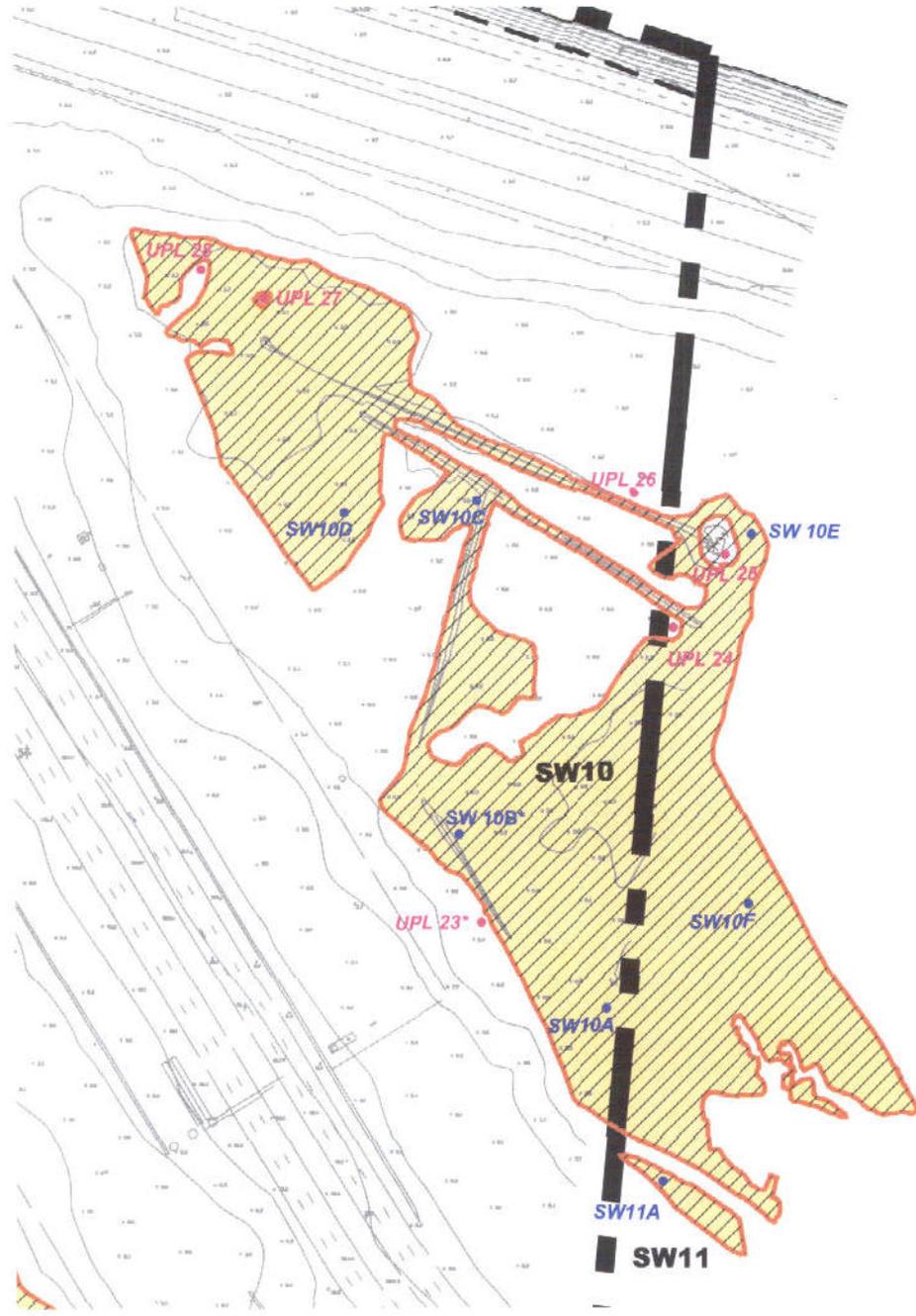
DCN: FWSR-RAC-05-0037  
CTO: # 0087

APPROVED BY: AE

CHECKED BY: LM  
REV: REVISION 0

DRAWN BY: MD  
DATE: 10/15/04

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PLOT/UPDATE: NOV 29 2004 16:11:27



### LEGEND

-  SEASONAL WETLAND
  -  SEASONAL WETLAND DATA POINT
  -  UPLAND DATA POINT
  -  RIPRAP LINE (LANDWARD EXTENT OF MATERIAL)
  -  REPRESENTATIVE PICTURE AVAILABLE IN ATTACHMENT 3
-   
  
SCALE IN FEET

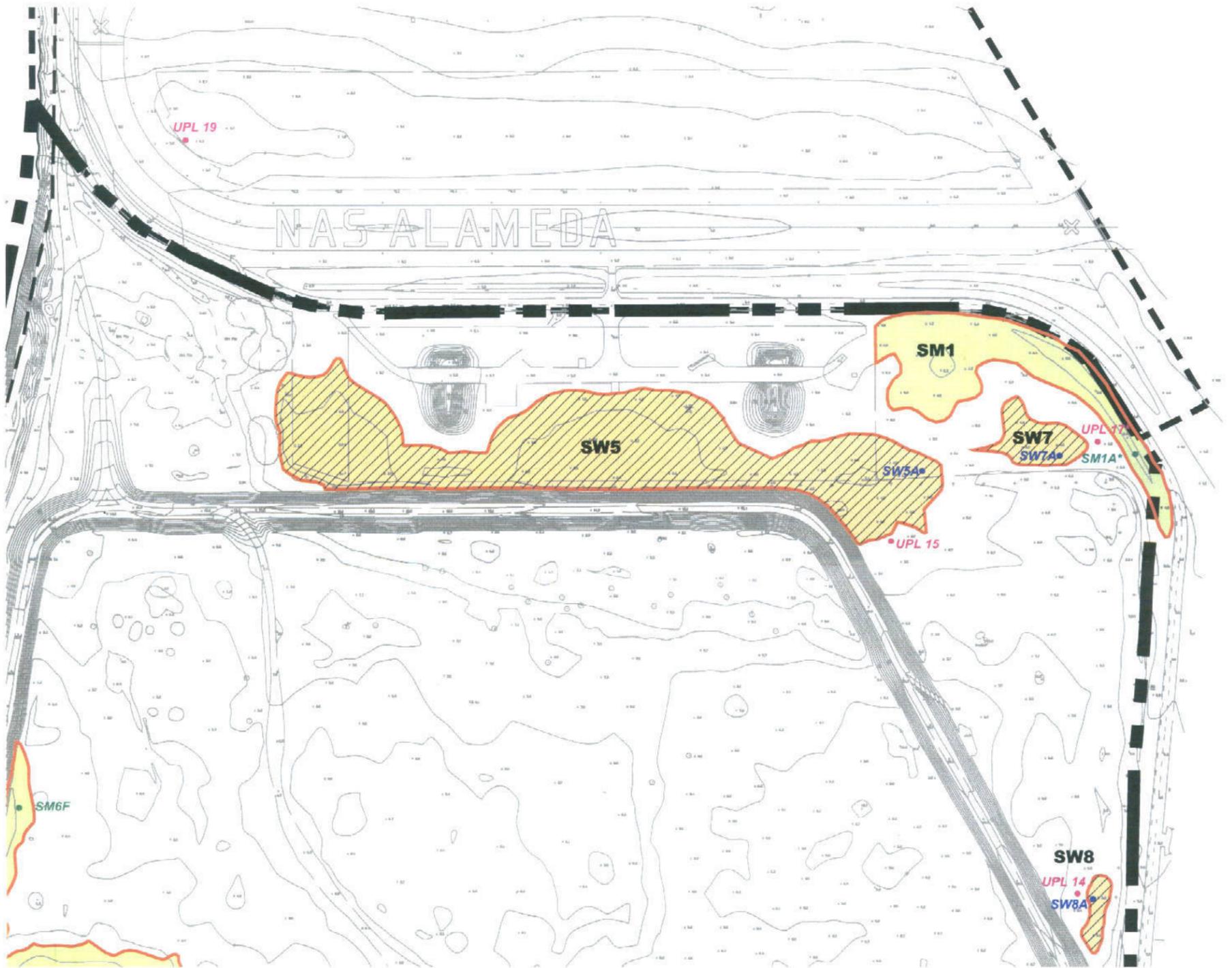
Figure 2-3  
IR SITE 1 EAST

Southwest Division  
Naval Facilities Engineering Command



TETRA TECH FW, INC.

DRAWN BY: MD	CHECKED BY: LM	APPROVED BY: AE	DCN: FWS-D-RAC-05-0037	DRAWING NO:
DATE: 10/15/04	REV: REVISION 0		CTO: # 0087	05003702.DWG



**LEGEND**

- SEASONAL WETLAND
- SALT MARSH
- SEASONAL WETLAND DATA POINT
- UPLAND DATA POINT
- SALT MARSH DATA POINT
- RIPRAP LINE (LANDWARD EXTENT OF MATERIAL)
- 2-FOOT ELEVATION CONTOUR
- \* REPRESENTATIVE PICTURE AVAILABLE IN ATTACHMENT 3

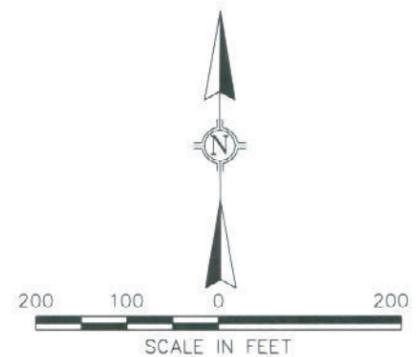


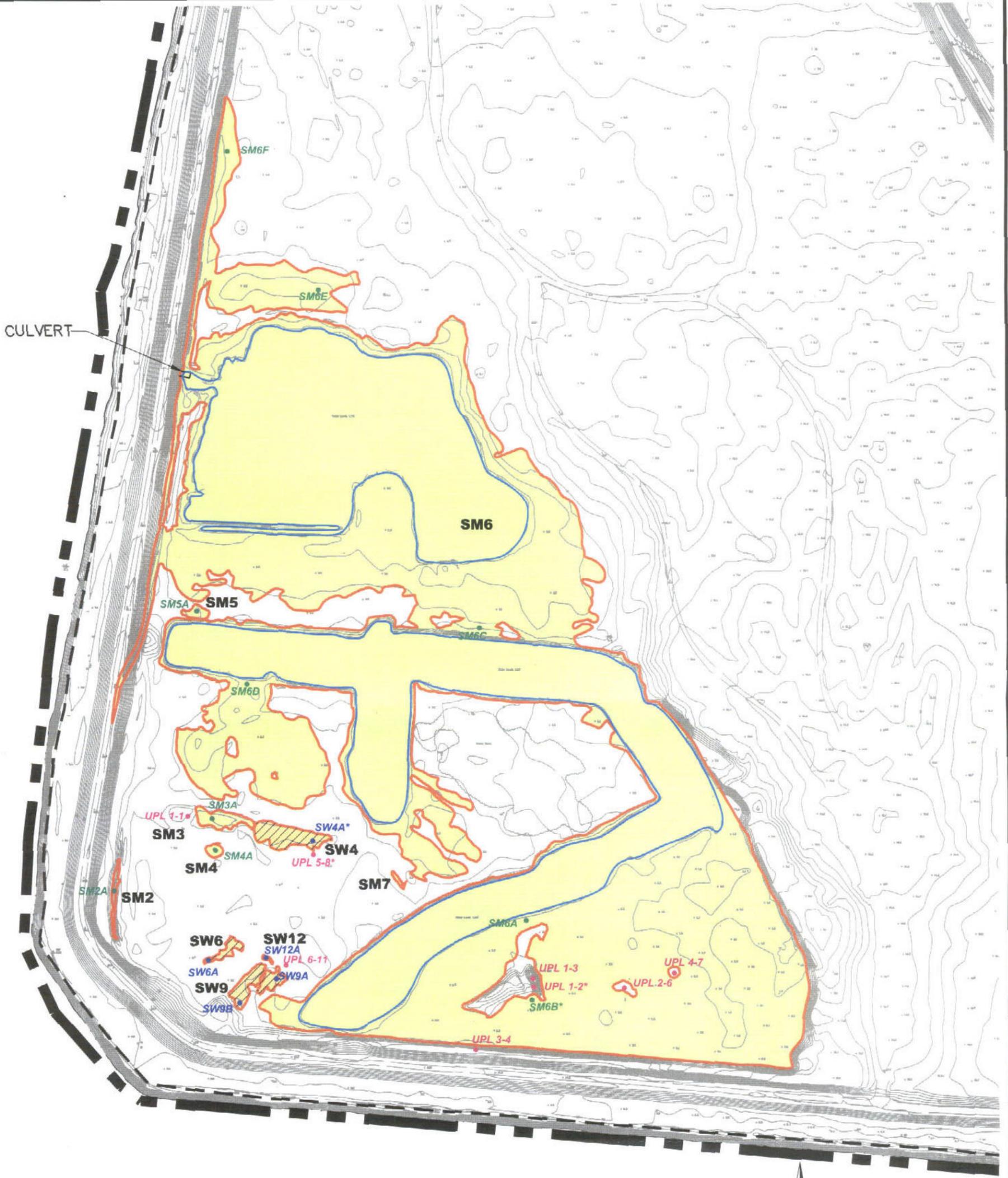
Figure 2-4  
 IR SITE 2 NORTH

Southwest Division  
 Naval Facilities Engineering Command

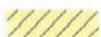
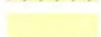


TETRA TECH FW, INC.

DRAWN BY: MD	CHECKED BY: LM	APPROVED BY: AE	DCN: FWSO-RAC-05-0037	DRAWING NO:
DATE: 10/15/04	REV: REVISION 0	CTO: # 0087	05003702.DWG	



**LEGEND**

-  SEASONAL WETLAND
-  SALT MARSH
-  SEASONAL WETLAND DATA POINT
-  UPLAND DATA POINT
-  SALT MARSH DATA POINT
-  RIPRAP LINE (LANDWARD EXTENT OF MATERIAL)
-  2-FOOT ELEVATION CONTOUR
-  \* REPRESENTATIVE PICTURE AVAILABLE IN ATTACHMENT 3

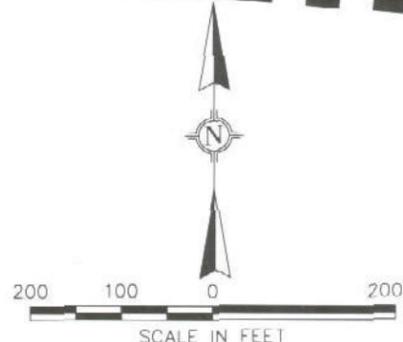


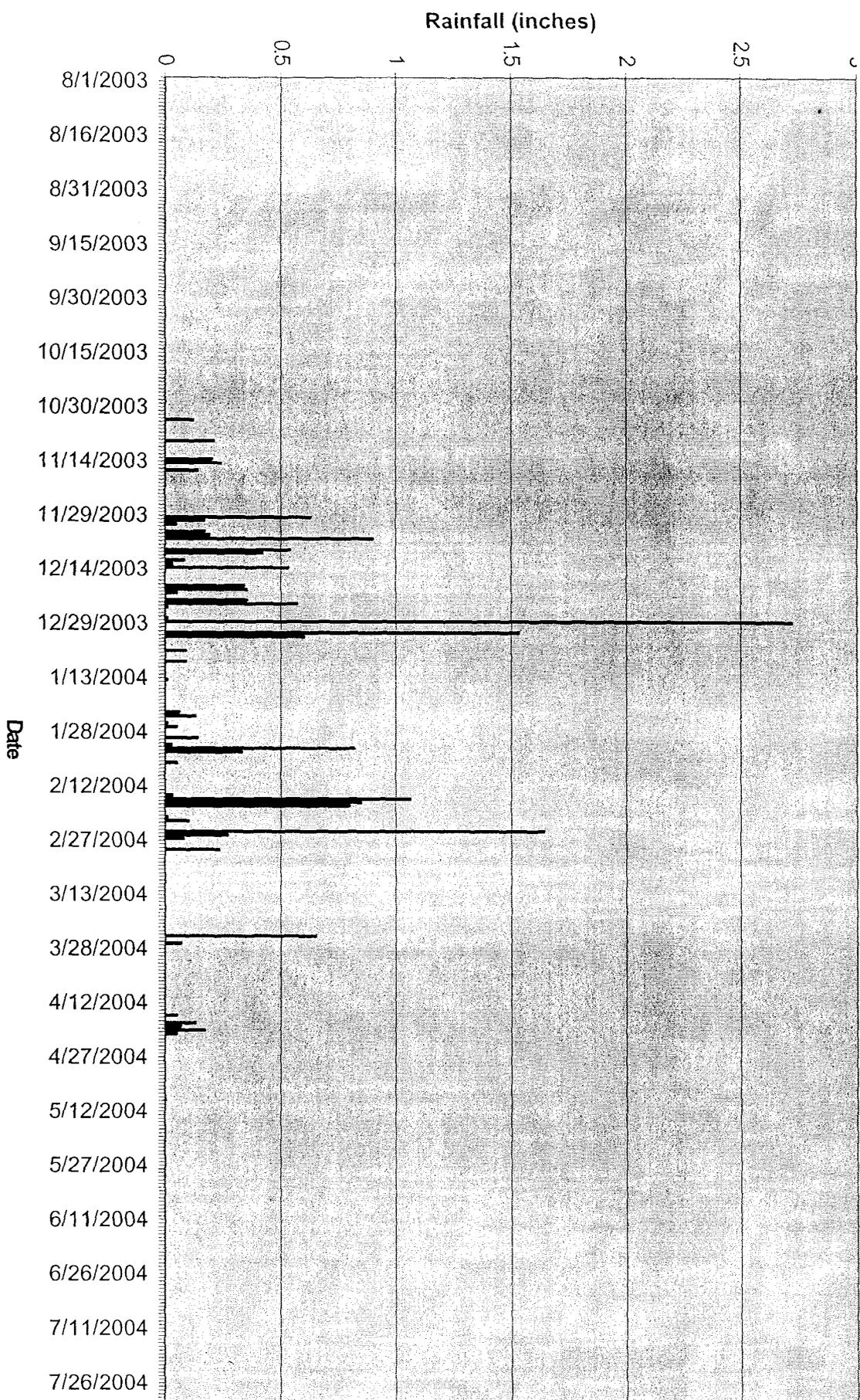
Figure 2-5  
 IR SITE 2 SOUTH

Southwest Division  
 Naval Facilities Engineering Command



TETRA TECH FW, INC.

FIGURE 3-1. PRECIPITATION DATA FROM 8-1-03 TO 8-1-04 FOR THE ALAMEDA AREA



**APPENDIX A**  
**ROUTINE WETLAND DETERMINATION DATA SHEETS**

Project/Site	ALAMEDA SITE 1	Date	MARCH 8, 2004
Applicant / Owner		County	ALAMEDA
Investigator	Helm, Malo	State	CA
o Normal Circumstances exist on the site?	YES NO	Community ID	SW
Is the site significantly disturbed (Atypical Situation)?	YES NO	Transect ID	
Is the area a potential Problem Area? (If needed, explain on reverse)	YES NO	Plot ID	SW1 A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Same as SW2			9		
2			10		
3			11		
4	See Attached		12		
5			13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-)

Remarks

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <ul style="list-style-type: none"> <li><input type="checkbox"/> Stream, Lake, or Tide Gauge</li> <li><input type="checkbox"/> Aerial Photographs</li> <li><input type="checkbox"/> Other</li> </ul> <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b> <p>Primary Indicators:</p> <input checked="" type="checkbox"/> Inundated ✓ <input checked="" type="checkbox"/> Saturated in Upper 12 Inches ✓ <input checked="" type="checkbox"/> Water Marks <input checked="" type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands	
FIELD OBSERVATIONS			
Depth of Surface Water		1	(in)
Depth to Free Water in Pit		6	(in)
Depth to Saturated Soil		at surface	(in)
		Secondary Indicators (2 or more Required): <ul style="list-style-type: none"> <li><input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</li> <li><input checked="" type="checkbox"/> Water-Stained Leaves</li> <li><input checked="" type="checkbox"/> Local Soil Survey Data</li> <li><input type="checkbox"/> FAC-Neutral Test</li> <li><input checked="" type="checkbox"/> Other (Explain in Remarks)</li> </ul>	

Direct observation  
 NRCS ALAMEDA COUNTY (1981) + WRLC DATA  
 JAN 2003 - MAR 2004 (FROM OAKLAND MUSEUM)

Map Unit Name (Series and Phase):			Drainage Class:		
Taxonomy (Subgroup)		Field Observations Confirm Mapped Type? YES NO			
PROFILE DESCRIPTION					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.

**HYDRIC SOIL INDICATORS:**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol<br><input type="checkbox"/> Histic Epipedon<br><input type="checkbox"/> Sulfidic Odor<br><input type="checkbox"/> Aquic Moisture Regime<br><input type="checkbox"/> Reducing Conditions<br><input type="checkbox"/> Gleyed or Low-Chroma Colors | <input type="checkbox"/> Concretions<br><input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils<br><input type="checkbox"/> Organic Streaking in Sandy Soils<br><input type="checkbox"/> Listed on Local Hydric Soils List<br><input type="checkbox"/> Listed on National Hydric Soils List<br><input type="checkbox"/> Other (Explain in Remarks) |
|---|--|

Remarks:

Same as SW2

See Attached

**WETLAND DETERMINATION**

Hydrophytic Vegetation Present?	<input checked="" type="radio"/> YES	NO	Is this Sampling Point Within a Wetland? <input checked="" type="radio"/> YES NO
Wetland Hydrology Present?	<input checked="" type="radio"/> YES	NO	
Hydric Soils Present?	<input checked="" type="radio"/> YES	NO	

Remarks

POND OBS NINE DAYS

**ROUTINE WETLAND DETERMINATION**  
(1987 COE Wetlands Delineation Manual)

Project/Site	ALAMEDA SITE	Date	SEPT 27, 2004
Applicant / Owner		County	ALAMEDA
Investigator	MALO, HELM	State	CA
Do Normal Circumstances exist on the site?	YES NO	Community ID	UPL
Is the site significantly disturbed (Atypical Situation)?	YES NO	Transect ID	
Is the area a potential Problem Area? (If needed, explain on reverse)	YES NO	Plot ID	UPL 22

**VEGETATION**

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Bromus hordeaceus	H	FACU-	9 Rumex crispus	H	FACU-
2 Plantago lanceolata	H	FAC	10 Cirsium vulgare	H	FACU
3 Plantago coronopa	H	FAC	11		
4 Hordeum marinum ssp guss.	H	FAC	12		
5 Aira coryophyllea	H	-	13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 60%

Remarks

**HYDROLOGY**

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <ul style="list-style-type: none"> <li><input type="checkbox"/> Stream, Lake, or Tide Gauge</li> <li><input type="checkbox"/> Aerial Photographs</li> <li><input checked="" type="checkbox"/> Other</li> </ul> <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b>	
<b>FIELD OBSERVATIONS</b>		Primary Indicators:	
Depth of Surface Water	> 18 (in)	<input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands	
Depth to Free Water in Pit	> 18 (in)	Secondary Indicators (2 or more Required):	
Depth to Saturated Soil	> 18 (in)	<input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input checked="" type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input checked="" type="checkbox"/> Other (Explain in Remarks)	

NRCS ALAMEDA COUNTY (1981) & WRCC DATA  
 JAN 2003 - MAR 2004 (FROM OAKLAND MUSEUM)

uf

**SOILS**

Map Unit Name (Series and Phase):			Drainage Class:		
Taxonomy (Subgroup)			Field Observations Confirm Mapped Type?    YES    NO		
PROFILE DESCRIPTION					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretion, Structure, etc.
1-18	A	10YR 4/3	—	—	SAND
HYDRIC SOIL INDICATORS:					
<input type="checkbox"/> Histosol		<input type="checkbox"/> Concretions			
<input type="checkbox"/> Histic Epipedon		<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils			
<input type="checkbox"/> Sulfidic Odor		<input type="checkbox"/> Organic Streaking in Sandy Soils			
<input type="checkbox"/> Aquic Moisture Regime		<input type="checkbox"/> Listed on Local Hydric Soils List			
<input type="checkbox"/> Reducing Conditions		<input type="checkbox"/> Listed on National Hydric Soils List			
<input type="checkbox"/> Gleyed or Low-Chroma Colors		<input type="checkbox"/> Other (Explain in Remarks)			
Remarks:					

**WETLAND DETERMINATION**

Hydrophytic Vegetation Present?	YES	NO	Is this Sampling Point Within a Wetland?    YES    NO
Wetland Hydrology Present?	YES	NO	
Hydric Soils Present?	YES	NO	
Remarks			

**ROUTINE WETLAND DETERMINATION**  
(1987 COE Wetlands Delineation Manual)

SW 2  
SITE 1

Project/Site <u>ALAMEDA SITE 1</u>	Date <u>March 8, 2004</u>
Applicant / Owner	County <u>Alameda</u>
Investigator <u>Helm, Malo</u>	State <u>CA</u>
Do Normal Circumstances exist on the site? <u>YES</u> NO	Community ID <u>SW</u>
Is the site significantly disturbed (Atypical Situation)? <u>YES</u> NO	Transect ID
Is the area a potential Problem Area? (If needed, explain on reverse) YES <u>NO</u>	Plot ID <u>SW 2 A</u>

**VEGETATION**

H=herb      other      in holes

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <u>Crassula escreta</u>	H	FAC	9 <u>Callitriche sp</u>	H	OBL
2 <u>Lythrum hyssopifolia</u>	H	FACW	10 <u>Cotula coronopifolia</u>	H	FACW
3 <u>Geronium dissectum</u>	H	-	11		
4 <u>Poa annua</u>	H	FACW-	12		
5 <u>Polygonum monspeliensis</u>	H	OBL	13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 80%

Remarks

**HYDROLOGY**

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <ul style="list-style-type: none"> <li><input type="checkbox"/> Stream, Lake, or Tide Gauge</li> <li><input type="checkbox"/> Aerial Photographs</li> <li><input checked="" type="checkbox"/> Other</li> </ul> <input type="checkbox"/> No Recorded Data Available	<p align="center"><b>WETLAND HYDROLOGY INDICATORS</b></p> <p>Primary Indicators:</p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Inundated</li> <li><input checked="" type="checkbox"/> Saturated in Upper 12 Inches</li> <li><input checked="" type="checkbox"/> Water Marks</li> <li><input checked="" type="checkbox"/> Drift Lines</li> <li><input type="checkbox"/> Sediment Deposits</li> <li><input checked="" type="checkbox"/> Drainage Patterns in Wetlands</li> </ul> <p>Secondary Indicators (2 or more Required):</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</li> <li><input checked="" type="checkbox"/> Water-Stained Leaves</li> <li><input checked="" type="checkbox"/> Local Soil Survey Data</li> <li><input type="checkbox"/> FAC-Neutral Test</li> <li><input checked="" type="checkbox"/> Other (Explain in Remarks)</li> </ul>
<b>FIELD OBSERVATIONS</b>	
Depth of Surface Water	<u>0</u> (in)
Depth to Free Water in Pit	<u>14</u> (in)
Depth to Saturated Soil	<u>8</u> (in)

Direct observation of ponding for 8 days (March 1 to March 8, 2004)  
 NRCs ALAMEDA COUNTY (1981) & WRCC DATA  
 JAN 2002 MAR 2002

**SOILS**

SW-2

Map Unit Name (Series and Phase):			Drainage Class:		
Taxonomy (Subgroup)		Field Observations Confirm Mapped Type? YES NO			
PROFILE DESCRIPTION					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretion Structure, etc.
0-8	A1	10YR 3/1	—	—	Sand, <del>monopore</del> conc.
8-16	A2	2.5YR 4/2	—	—	

**HYDRIC SOIL INDICATORS:**

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks:

**WETLAND DETERMINATION**

Hydrophytic Vegetation Present?	(YES) NO	Is this Sampling Point Within a Wetland? (YES) NO
Wetland Hydrology Present?	(YES) NO	
Hydric Soils Present?	(YES) NO	

Remarks

POND OBS. > 8 DAYS

**ROUTINE WETLAND DETERMINATION**  
(1987 COE Wetlands Delineation Manual)

UPL-21

Project/Site <b>ALAMEDA SITE 1</b>	Date <b>MARCH 8, 2004</b>
Applicant / Owner	County <b>ALAMEDA</b>
Investigator <b>MALO, HELM</b>	State <b>CA</b>
Do Normal Circumstances exist on the site? <b>(YES) NO</b>	Community ID <b>UPL</b>
Is the site significantly disturbed (Atypical Situation)? <b>(YES) NO</b>	Transect ID
Is the area a potential Problem Area? (If needed, explain on reverse) YES <b>(NO)</b>	Plot ID <b>UPL - 21</b>

**VEGETATION**

H=herb

Dominant Plant Species	Stratum	Indicator	Sub-Dominant Plant Species	Stratum	Indicator
1 <i>Bromus hordeaceus</i>	H	FACU-	9 <i>Lotus corniculatus</i>	H	
2 <i>Aira caryophylla</i>	H	-	10 <i>Centaurea muelkenbergii</i> <i>trichanthus</i>	H	FAC-FAC-
3 <i>Plantago coronopus</i>	H	FAC	11 <i>Hieracium incana</i>	H	-
4 <i>Hordeum marinum ssp. ssp.</i>	H	FAC	12		
5			13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **40%**

Remarks

**HYDROLOGY**

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <ul style="list-style-type: none"> <li><input type="checkbox"/> Stream, Lake, or Tide Gauge</li> <li><input type="checkbox"/> Aerial Photographs</li> <li><input checked="" type="checkbox"/> Other</li> </ul> <input type="checkbox"/> No Recorded Data Available		<p align="center"><b>WETLAND HYDROLOGY INDICATORS</b></p> <p>Primary Indicators:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Inundated</li> <li><input type="checkbox"/> Saturated in Upper 12 Inches</li> <li><input type="checkbox"/> Water Marks</li> <li><input type="checkbox"/> Drift Lines</li> <li><input type="checkbox"/> Sediment Deposits</li> <li><input type="checkbox"/> Drainage Patterns in Wetlands</li> </ul> <p>Secondary Indicators (2 or more Required):</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</li> <li><input type="checkbox"/> Water-Stained Leaves</li> <li><input checked="" type="checkbox"/> Local Soil Survey Data</li> <li><input type="checkbox"/> FAC-Neutral Test</li> <li><input checked="" type="checkbox"/> Other (Explain in Remarks)</li> </ul>	
<b>FIELD OBSERVATIONS</b>			
Depth of Surface Water	<b>&gt; 18</b>	(in)	
Depth to Free Water in Pit	<b>&gt; 18</b>	(in)	
Depth to Saturated Soil	<b>&gt; 18</b>	(in)	

**NRCS ALAMEDA COUNTY (1981) & WRCC DATA  
JAN 2003 - MAR 2004 (FROM OAKLAND MUSEUM)**

**SOILS**

Map Unit Name (Series and Phase):			Drainage Class:		
Taxonomy (Subgroup)		Field Observations Confirm Mapped Type? YES NO			
PROFILE DESCRIPTION					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
Some as upl	20				
	See	Attached			
HYDRIC SOIL INDICATORS:					
<input type="checkbox"/> Histosol		<input type="checkbox"/> Concretions			
<input type="checkbox"/> Histic Epipedon		<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils			
<input type="checkbox"/> Sulfidic Odor		<input type="checkbox"/> Organic Streaking in Sandy Soils			
<input type="checkbox"/> Aquic Moisture Regime		<input type="checkbox"/> Listed on Local Hydric Soils List			
<input type="checkbox"/> Reducing Conditions		<input type="checkbox"/> Listed on National Hydric Soils List			
<input type="checkbox"/> Gleyed or Low-Chroma Colors		<input type="checkbox"/> Other (Explain in Remarks)			
Remarks:					

**WETLAND DETERMINATION**

Hydrophytic Vegetation Present?	YES <input type="radio"/> NO <input checked="" type="radio"/>	Is this Sampling Point Within a Wetland? YES <input type="radio"/> NO <input checked="" type="radio"/>
Wetland Hydrology Present?	YES <input type="radio"/> NO <input checked="" type="radio"/>	
Hydric Soils Present?	YES <input type="radio"/> NO <input checked="" type="radio"/>	
Remarks		

**ROUTINE WETLAND DETERMINATION**  
(1987 COE Wetlands Delineation Manual)

MA  
A

Project/Site	ALAMEDA - SITE 1	Date	MARCH 8, 2004
Applicant / Owner		County	ALAMEDA
Investigator	MALO, HELM	State	CA
Do Normal Circumstances exist on the site?	YES NO	Community ID	SW
Is the site significantly disturbed (Atypical Situation)?	YES NO	Transect ID	
Is the area a potential Problem Area? (If needed, explain on reverse)	YES NO	Plot ID	SW3.A

**VEGETATION**

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Distichlis spicata	H	FACW	9 Cyperus eragrostis	H	FACW
2 Rumex solicifolius var. sali.	H	OBL	10		
3 Sporobolus indicus?	H	NI	11		
4 Plantago lanceolata	H	FAC-	12		
5 Lotus corniculatus	H	FAC	13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 60%

Remarks

\* Not in flower (ID Tentative)

**HYDROLOGY**

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <ul style="list-style-type: none"> <li><input type="checkbox"/> Stream, Lake, or Tide Gauge</li> <li><input type="checkbox"/> Aerial Photographs</li> <li><input checked="" type="checkbox"/> Other</li> </ul> <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b>	
<b>FIELD OBSERVATIONS</b>		Primary Indicators:	
Depth of Surface Water	0 (in)	<input checked="" type="checkbox"/> Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 Inches <input checked="" type="checkbox"/> Water Marks <input checked="" type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands	
Depth to Free Water in Pit	4 (in)	Secondary Indicators (2 or more Required):	
Depth to Saturated Soil	0 (in)	<input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input checked="" type="checkbox"/> Water-Stained Leaves <input checked="" type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input checked="" type="checkbox"/> Other (Explain in Remarks)	

NRCS ALAMEDA COUNTY (1981) & WRCC DATA  
JAN 2003 - MARCH 2004 (FROM OAKLAND MUSEUM)

**SOILS**

Map Unit Name (Series and Phase):			Drainage Class:		
Taxonomy (Subgroup)		Field Observations Confirm Mapped Type? YES NO			
PROFILE DESCRIPTION					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions Structure, etc.
0-8	A	10YR 3/1	—	—	SANDY
8-16	B	2.5YR 4/2-3/2	—	—	"

**HYDRIC SOIL INDICATORS:**

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks: FILL MATERIAL w/ ASH, CONCRETE & GLASS IN UPPER 18"

**WETLAND DETERMINATION**

Hydrophytic Vegetation Present?	YES NO	Is this Sampling Point Within a Wetland? YES NO
Wetland Hydrology Present?	YES NO	
Hydric Soils Present?	YES NO	

Remarks: OBS. PONDING > 14 DAYS.

ROUTINE WETLAND DETERMINATION  
(1987 COE Wetlands Delineation Manual)

SW3-12  
SPE 1

Project/Site	ALAMEDA SITE 1	Date	27 Sept 2004
Applicant / Owner		County	ALAMEDA
Investigator	MALO, HELM	State	CA
Do Normal Circumstances exist on the site?	YES NO	Community ID	
Is the site significantly disturbed (Atypical Situation)?	YES NO	Transect ID	
Is the area a potential Problem Area? (If needed, explain on reverse)	YES NO	Plot ID	SW 3 B

VEGETATION

H=herb

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Hordeum marinum ssp	H	FAC	9		
2 Epilobium angustifolium	H	FAC	10		
3 Lotus corniculatus	H	FAC	11		
4 Rumex crispus	H	FACW	12		
5 Distichlis spicata	H	FACW*	13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 100%

Remarks

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <ul style="list-style-type: none"> <li><input type="checkbox"/> Stream, Lake, or Tide Gauge</li> <li><input type="checkbox"/> Aerial Photographs</li> <li><input checked="" type="checkbox"/> Other</li> </ul> <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b> Primary Indicators: <ul style="list-style-type: none"> <li><input type="checkbox"/> Inundated</li> <li><input type="checkbox"/> Saturated in Upper 12 Inches</li> <li><input checked="" type="checkbox"/> Water Marks</li> <li><input checked="" type="checkbox"/> Drift Lines</li> <li><input checked="" type="checkbox"/> Sediment Deposits</li> <li><input checked="" type="checkbox"/> Drainage Patterns in Wetlands</li> </ul> Secondary Indicators (2 or more Required): <ul style="list-style-type: none"> <li><input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</li> <li><input checked="" type="checkbox"/> Water-Stained Leaves</li> <li><input checked="" type="checkbox"/> Local Soil Survey Data</li> <li><input type="checkbox"/> FAC-Neutral Test</li> <li><input checked="" type="checkbox"/> Other (Explain in Remarks)</li> </ul>	
FIELD OBSERVATIONS			
Depth of Surface Water	* N/A	(in)	
Depth to Free Water in Pit	* N/A	(in)	
Depth to Saturated Soil	* N/A	(in)	

NRCS ALAMEDA COUNTY (1981) & WRCC DATA  
JAN 2003 - MAR 2004 (FROM OAKLAND MUSEUM)

\* DRY SEASON SAMPLING

\*\* HYDROLOGY OBS MARCH 2004



ROUTINE WETLAND DETERMINATION  
(1987 COE Wetlands Delineation Manual)

UPL-20  
Site 1

Project/Site	ALAMEDA SITE 1	Date	SEPT 27, 2004
Applicant / Owner		County	ALAMEDA
Investigator	MALO, HELM	State	CA
Do Normal Circumstances exist on the site?	YES NO	Community ID	UPL
Is the site significantly disturbed (Atypical Situation)?	YES NO	Transect ID	
Is the area a potential Problem Area? (If needed, explain on reverse)	YES NO	Plot ID	UPL - 20

VEGETATION

H = herbo

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Bromus hordeaceus	H	FACU-	9		
2 Hirschfeldia incana	H	-	10		
3 Digitalis ischaemum?	H	FAC*	11		
4 Plantago lanceolata	H	FAC-	12		
5 Rumex acetosella	H	FAC-	13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 90%

Remarks

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input checked="" type="checkbox"/> Other  <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b> Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands	
FIELD OBSERVATIONS			
Depth of Surface Water	> 18	(in)	Secondary Indicators (2 or more Required):
Depth to Free Water in Pit	> 18	(in)	<input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input checked="" type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input checked="" type="checkbox"/> Other (Explain in Remarks)
Depth to Saturated Soil	> 18	(in)	

NRCS ALAMEDA COUNTY (1981) & WRCC DATA  
JAN 2003 - MAR 2004 (FROM OAKLAND MUSEUM)



**ROUTINE WETLAND DETERMINATION**  
(1987 COE Wetlands Delineation Manual)

Project/Site <i>ALAMEDA SITE 1</i>	Date <i>Sept 27, 2007</i>
Applicant / Owner	County <i>ALAMEDA</i>
Investigator <i>MALO, HERM</i>	State <i>CA</i>
Do Normal Circumstances exist on the site? <input checked="" type="radio"/> YES <input type="radio"/> NO	Community ID <i>SW</i>
Is the site significantly disturbed (Atypical Situation)? <input checked="" type="radio"/> YES <input type="radio"/> NO	Transect ID
Is the area a potential Problem Area? (If needed, explain on reverse) YES <input type="radio"/> NO <input checked="" type="radio"/>	Plot ID <i>SW 10 D</i>

**VEGETATION**

*H = herb*

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <i>Holcus lanatus</i>	<i>H</i>	<i>FAC</i>			
2 <i>Lotus corniculatus</i>	<i>H</i>	<i>FAC</i>			
3 <i>Distichlis spicata</i>	<i>H</i>	<i>FACW</i>			
4 <i>Hordeum marianum</i> sp. grass	<i>H</i>	<i>FAC</i>			
5 <i>Rumex crispus</i>	<i>H</i>	<i>FACW</i>			
6					
7					
8					

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) *100%*

Remarks

**HYDROLOGY**

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input checked="" type="checkbox"/> Other  <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b> Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input checked="" type="checkbox"/> Water Marks <input checked="" type="checkbox"/> Drift Lines <input checked="" type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands	
<b>FIELD OBSERVATIONS</b>			
Depth of Surface Water	<i>&gt; 18</i>	(in)	Secondary Indicators (2 or more Required): <input checked="" type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input checked="" type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input checked="" type="checkbox"/> Other (Explain in Remarks)
Depth to Free Water in Pit	<i>&gt; 18</i>	(in)	
Depth to Saturated Soil	<i>718</i>	(in)	

*NRCS ALAMEDA COUNTY (1981) & WRCC DATA  
TAN 2003 - MAR 2004 (FROM SAKLAND MUSEUM)*



**ROUTINE WETLAND DETERMINATION**  
(1987 COE Wetlands Delineation Manual)

Project/Site	ALAMEDA SITE 1	Date	Sept 29, 2004
Applicant / Owner		County	ALAMEDA
Investigator	MAIO, HELM	State	CA
Do Normal Circumstances exist on the site?	YES NO	Community ID	UPL
Is the site significantly disturbed (Atypical Situation)?	YES NO	Transect ID	
Is the area a potential Problem Area? (If needed, explain on reverse)	YES NO	Plot ID	UPL 28

**VEGETATION**

H = herb

Dominant Plant Species	Stratum	Indicator	Sub Dominant Plant Species	Stratum	Indicator
1 <i>Cynodon dactylon</i>	H	FAC	9 <i>Bromus diandrus</i>	H	—
2 <i>Cirsium vulgare</i>	H	FACU	10		
3 <i>Hordeum marinum ssp gusson</i>	H	FAC	11		
4 <i>Aira coryophyllen</i>	H	—	12		
5 <i>Hirshfeldia incana</i>	H	—	13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 40%

Remarks

**HYDROLOGY**

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <ul style="list-style-type: none"> <li><input type="checkbox"/> Stream, Lake, or Tide Gauge</li> <li><input type="checkbox"/> Aerial Photographs</li> <li><input checked="" type="checkbox"/> Other</li> </ul> <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b> Primary Indicators: <ul style="list-style-type: none"> <li><input type="checkbox"/> Inundated</li> <li><input type="checkbox"/> Saturated in Upper 12 Inches</li> <li><input type="checkbox"/> Water Marks</li> <li><input type="checkbox"/> Drift Lines</li> <li><input type="checkbox"/> Sediment Deposits</li> <li><input type="checkbox"/> Drainage Patterns in Wetlands</li> </ul>	
<b>FIELD OBSERVATIONS</b>			
Depth of Surface Water	718	(in)	Secondary Indicators (2 or more Required):
Depth to Free Water in Pit	718	(in)	<input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input checked="" type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input checked="" type="checkbox"/> Other (Explain in Remarks)
Depth to Saturated Soil	>18	(in)	

NRCS ALAMEDA COUNTY (1981) & WRCC DATA

JAN 2002 - MAR 2004 (FROM OAKLAND MUSEUM)



**ROUTINE WETLAND DETERMINATION**  
(1987 COE Wetlands Delineation Manual)

Project/Site <i>ALAMEDA SITE 1</i>	Date <i>Sept 27, 2004</i>
Applicant / Owner	County <i>ALAMEDA</i>
Investigator <i>MARCO, HELM</i>	State <i>CA</i>
Do Normal Circumstances exist on the site? <input checked="" type="radio"/> YES <input type="radio"/> NO	Community ID <i>SW</i>
Is the site significantly disturbed (Atypical Situation)? <input checked="" type="radio"/> YES <input type="radio"/> NO	Transect ID
Is the area a potential Problem Area? (If needed, explain on reverse) <input checked="" type="radio"/> YES <input type="radio"/> NO	Plot ID <i>SW 10 C</i>

**VEGETATION**

*H = herb*

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <i>Hordeum marianum</i> <sup>ssp</sup> <i>gussan</i>	<i>H</i>	<i>FAC</i>			9
2 <i>Plantago lanceolata</i>	<i>H</i>	<i>FAC</i>			10
3 <i>Lotus corniculatus</i>	<i>H</i>	<i>FAC</i>			11
4 <i>Rumex crispus</i>	<i>H</i>	<i>FACW</i>			12
5 <i>Cyanodon dactylon</i>	<i>H</i>	<i>FAC</i>			13
6					14
7					15
8					16

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) *100%*

Remarks

**HYDROLOGY**

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input checked="" type="checkbox"/> Other  <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b> Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input checked="" type="checkbox"/> Water Marks <input checked="" type="checkbox"/> Drift Lines <input checked="" type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands	
<b>FIELD OBSERVATIONS</b>			
Depth of Surface Water	<i>&gt; 18</i>	(in)	Secondary Indicators (2 or more Required): <input checked="" type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input checked="" type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input checked="" type="checkbox"/> Other (Explain in Remarks)
Depth to Free Water in Pit	<i>&gt; 18</i>	(in)	
Depth to Saturated Soil	<i>&gt; 18</i>	(in)	

*NRCS ALAMEDA COUNTY (1981) & WRCC DATA  
TAN 2003 - MAR 2004 (FROM OAKLAND MUSEUM)*



**ROUTINE WETLAND DETERMINATION**  
(1987 COE Wetlands Delineation Manual)

Project/Site	ALAMEDA SITE 1	Date	Sept 27, 2004
Applicant / Owner		County	ALAMEDA
Investigator	MALO, HELM	State	CA
Do Normal Circumstances exist on the site?	<input checked="" type="radio"/> YES <input type="radio"/> NO	Community ID	UPL
Is the site significantly disturbed (Atypical Situation)?	<input checked="" type="radio"/> YES <input type="radio"/> NO	Transect ID	
Is the area a potential Problem Area? (If needed, explain on reverse)	YES <input checked="" type="radio"/> NO	Plot ID	UPL 27

**VEGETATION**

H = herbs

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <i>Cynodon dactylon</i>	H	FAC	9		
2 <i>Heiskfeldia incana</i>	H	—	10		
3 <i>Hordeum marinum ssp gusman</i>	H	FAC	11		
4 <i>Cirsium vulgare</i>	H	FAC U	12		
5 <i>Aira coryophylla</i>	H	—	13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 40%

Remarks

**HYDROLOGY**

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input checked="" type="checkbox"/> Other  <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b> Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands  Secondary Indicators (2 or more Required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input checked="" type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input checked="" type="checkbox"/> Other (Explain in Remarks)	
<b>FIELD OBSERVATIONS</b>			
Depth of Surface Water	> 18	(in)	
Depth to Free Water in Pit	> 18	(in)	
Depth to Saturated Soil	> 18	(in)	

NREG ALAMEDA COUNTY (1981) & NRCC DATA  
 JAN 2003 - MAR 2004 (FROM OAKLAND MUSEUM)

# SOILS

Map Unit Name (Series and Phase):				Drainage Class:	
Taxonomy (Subgroup)			Field Observations Confirm Mapped Type? YES NO		
PROFILE DESCRIPTION					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
* 0-16	A	10YR 3/2	—	—	SAND
HYDRIC SOIL INDICATORS:					
<input type="checkbox"/> Histosol				<input type="checkbox"/> Concretions	
<input type="checkbox"/> Histic Epipedon				<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils	
<input type="checkbox"/> Sulfidic Odor				<input type="checkbox"/> Organic Streaking in Sandy Soils	
<input type="checkbox"/> Aquic Moisture Regime				<input type="checkbox"/> Listed on Local Hydric Soils List	
<input type="checkbox"/> Reducing Conditions				<input type="checkbox"/> Listed on National Hydric Soils List	
<input type="checkbox"/> Gleyed or Low-Chroma Colors				<input type="checkbox"/> Other (Explain in Remarks)	
Remarks: * Soil is fill material that has weathered but has not had sufficient time to form and is found in a clumped state.					

## WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	NO <input checked="" type="radio"/>	Is this Sampling Point Within a Wetland? YES <input type="radio"/> NO <input checked="" type="radio"/>
Wetland Hydrology Present?	YES	NO <input checked="" type="radio"/>	
Hydric Soils Present?	YES	NO <input checked="" type="radio"/>	
Remarks			

**ROUTINE WETLAND DETERMINATION**  
(1987 COE Wetlands Delineation Manual)

Project/Site	ALAMEDA SITE 1	Date	Sept 27, 2004
Applicant / Owner		County	ALAMEDA
Investigator	MALO, HELM	State	CA
Do Normal Circumstances exist on the site?	YES NO	Community ID	SW
Is the site significantly disturbed (Atypical Situation)?	YES NO	Transect ID	
Is the area a potential Problem Area? (If needed, explain on reverse)	YES NO	Plot ID	SW 10 B

**VEGETATION**

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Distichlis spicata	H	FACW	9		
2 Plantago lanceolata	H	FAC -	10		
3 Lotus corniculatus	H	FAC	11		
4 Eleocharis macrostachya	H	OBL	12		
5 Hordeum marinum <sup>ssp</sup> gussan	H	FAC	13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 100%

Remarks

**HYDROLOGY**

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input checked="" type="checkbox"/> Other  <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b> Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input checked="" type="checkbox"/> Water Marks <input checked="" type="checkbox"/> Drift Lines <input checked="" type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands	
<b>FIELD OBSERVATIONS</b>			
Depth of Surface Water	718	(in)	Secondary Indicators (2 or more Required): <input checked="" type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input checked="" type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input checked="" type="checkbox"/> Other (Explain in Remarks)
Depth to Free Water in Pit	718	(in)	
Depth to Saturated Soil	718	(in)	

NRCS ALAMEDA COUNTY (1981) 3 WELL DATA  
 TAN 2003 - MAR 2004 (FROM OAKLAND MUSEUM)



**ROUTINE WETLAND DETERMINATION**  
(1987 COE Wetlands Delineation Manual)

Project/Site	ALAMEDA SITE 1	Date	Sept 27, 2004
Applicant / Owner		County	ALAMEDA
Investigator	MALCO HELM	State	CA
Do Normal Circumstances exist on the site?	<input checked="" type="radio"/> YES <input type="radio"/> NO	Community ID	UPL
Is the site significantly disturbed (Atypical Situation)?	<input checked="" type="radio"/> YES <input type="radio"/> NO	Transect ID	
Is the area a potential Problem Area? (If needed, explain on reverse)	YES <input checked="" type="radio"/> NO	Plot ID	UPL 26

**VEGETATION**

*H- Herb*

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <i>Hordium marinum</i> <sup>ssp</sup> <i>gussan</i>	H	FAC	9 <i>Poa coryophylla</i>	H	—
2 <i>Lotus corniculatus</i>	H	FAC	10		
3 <i>Heisterfeldia incana</i>	H	—	11		
4 <i>Solidago</i> sp	H	—	12		
5 <i>Cirsium vulgare</i>	H	FAC U	13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) *40%*

Remarks

**HYDROLOGY**

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input checked="" type="checkbox"/> Other  <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b> Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands  Secondary Indicators (2 or more Required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input checked="" type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input checked="" type="checkbox"/> Other (Explain in Remarks)	
<b>FIELD OBSERVATIONS</b>			
Depth of Surface Water	> 18	(in)	
Depth to Free Water in Pit	> 18	(in)	
Depth to Saturated Soil	> 18	(in)	

NRCS ALAMEDA COUNTY (1981) & WRCC DATA  
 APR 2003 - MAR 2004 (FROM OAKLAND MUSEUM)



**ROUTINE WETLAND DETERMINATION**  
(1987 COE Wetlands Delineation Manual)

A

Project/Site	ALAMEDA SITE 2	Date	MARCH 8, 2004
Applicant / Owner		County	ALAMEDA
Investigator	MALO, HELM	State	CA
Do Normal Circumstances exist on the site?	YES NO	Community ID	SW
Is the site significantly disturbed (Atypical Situation)?	YES NO	Transect ID	
Is the area a potential Problem Area? (If needed, explain on reverse)	YES NO	Plot ID	SW10 A

**VEGETATION**

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Geranium dissectum	H	-	9 Cyperus eragrostis	H	FACW
2 Hordeum murinum <sup>sp</sup> <sub>grass</sub>	H	FAC	10		
3 Ranex CRISPUS	H	FACW-	11		
4 Lolium subflorum	H	FAC	12		
5 Distichlis spicata	H	FACW	13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 80%

Remarks

**HYDROLOGY**

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <ul style="list-style-type: none"> <li><input type="checkbox"/> Stream, Lake, or Tide Gauge</li> <li><input type="checkbox"/> Aerial Photographs</li> <li><input checked="" type="checkbox"/> Other</li> </ul> <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b>	
<b>FIELD OBSERVATIONS</b>		<b>Primary Indicators:</b> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Inundated</li> <li><input checked="" type="checkbox"/> Saturated in Upper 12 Inches</li> <li><input checked="" type="checkbox"/> Water Marks</li> <li><input checked="" type="checkbox"/> Drift Lines</li> <li><input type="checkbox"/> Sediment Deposits</li> <li><input checked="" type="checkbox"/> Drainage Patterns in Wetlands</li> </ul>	
Depth of Surface Water	0 (in)	<b>Secondary Indicators (2 or more Required):</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</li> <li><input type="checkbox"/> Water-Stained Leaves</li> <li><input checked="" type="checkbox"/> Local Soil Survey Data</li> <li><input type="checkbox"/> FAC-Neutral Test</li> <li><input checked="" type="checkbox"/> Other (Explain in Remarks)</li> </ul>	
Depth to Free Water in Pit	4 (in)		
Depth to Saturated Soil	at surface 0 (in)		

NRCS ALAMEDA COUNTY (1981) & WELL DATA  
JAN 2003 - MARCH 2004 (FROM OAKLAND MUSEUM)

# SOILS

Map Unit Name (Series and Phase):			Drainage Class:		
Taxonomy (Subgroup)		Field Observations Confirm Mapped Type? YES NO			
PROFILE DESCRIPTION					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions Structure, etc.
0-8	A	10YR 3/1	—	—	SANDY
8-16	B	2.5YR 4/2	—		SANDY

### HYDRIC SOIL INDICATORS:

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol<br><input type="checkbox"/> Histic Epipedon<br><input type="checkbox"/> Sulfidic Odor<br><input type="checkbox"/> Aquic Moisture Regime<br><input type="checkbox"/> Reducing Conditions<br><input type="checkbox"/> Gleyed or Low-Chroma Colors | <input type="checkbox"/> Concretions<br><input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils<br><input type="checkbox"/> Organic Streaking in Sandy Soils<br><input type="checkbox"/> Listed on Local Hydric Soils List<br><input type="checkbox"/> Listed on National Hydric Soils List<br><input type="checkbox"/> Other (Explain in Remarks) |
|---|--|

Remarks:

## WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(YES) NO	Is this Sampling Point Within a Wetland? (YES) NO
Wetland Hydrology Present?	(YES) NO	
Hydric Soils Present?	(YES) NO	

Remarks

OBS. PONDING > 14 DAYS

**ROUTINE WETLAND DETERMINATION**  
(1987 COE Wetlands Delineation Manual)

Upl 23

Project/Site <b>ALAMEDA SITE 1</b>	Date <b>SEPT 27, 2004</b>
Applicant / Owner	County <b>ALAMEDA</b>
Investigator <b>MALO HELM</b>	State <b>CA</b>
Do Normal Circumstances exist on the site? <b>YES</b> NO	Community ID <b>UPL</b>
Is the site significantly disturbed (Atypical Situation)? <b>YES</b> NO	Transect ID
Is the area a potential Problem Area? (If needed, explain on reverse) YES <b>NO</b>	Plot ID <b>UPL 23</b>

**VEGETATION**

H = herb

Dominant Plant Species	Stratum	Indicator	S-b Dominant Plant Species	Stratum	Indicator
1 <i>Salsola tragus</i> (s. pestifera)	H	FACU	9 <i>Cirsium vulgare</i>	H	FACU
2 <i>Melilotus alba</i>	H	FACU†	10 <i>Bromus madritensis</i> rubens	H	NI
3 <i>Lotus corniculatus</i>	H	FAC	11		
4 <i>Centaurium <sup>much lobed</sup> trichanthus</i>	H	FAC-FAC†	12		
5			13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **50%**

Remarks

**HYDROLOGY**

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input checked="" type="checkbox"/> Other  <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b> Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands	
<b>FIELD OBSERVATIONS</b>			
Depth of Surface Water	> 18	(in)	Secondary Indicators (2 or more Required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input checked="" type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input checked="" type="checkbox"/> Other (Explain in Remarks)
Depth to Free Water in Pit	> 18	(in)	
Depth to Saturated Soil	> 18	(in)	

NRCS ALAMEDA COUNTY (1981) & WRCC DATA  
 JAN 2003 - MAR 2004 (FROM OAKLAND MUSEUM)



**ROUTINE WETLAND DETERMINATION**  
(1987 COE Wetlands Delineation Manual)

Project/Site <b>ALAMEDA SITE 1</b>	Date <b>Sept 27, 2004</b>
Applicant / Owner	County <b>ALAMEDA</b>
Investigator <b>MALO, HELM</b>	State <b>CA</b>
Do Normal Circumstances exist on the site? <b>YES</b> NO	Community ID <b>SW</b>
Is the site significantly disturbed (Atypical Situation)? <b>YES</b> NO	Transect ID
Is the area a potential Problem Area? (If needed, explain on reverse) YES <b>NO</b>	Plot ID <b>SW 90 E</b>

**VEGETATION**

*H = herb*

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <i>Distichlis spicata</i>	H	FAC W*			9
2 <i>Holcus lanatus</i>	H	FAC			10
3 <i>Lotus corniculatus</i>	H	FAC			11
4 <i>Hordeum marinum ssp. gussonii</i>	H	FAC			12
5 <i>Heischfeldia incana</i>	H	—			13
6					14
7					15
8					16

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **80%**

Remarks

**HYDROLOGY**

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input checked="" type="checkbox"/> Other  <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b> Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input checked="" type="checkbox"/> Water Marks <input checked="" type="checkbox"/> Drift Lines <input checked="" type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands	
<b>FIELD OBSERVATIONS</b>			
Depth of Surface Water	<b>&gt; 18</b>	(in)	Secondary Indicators (2 or more Required): <input checked="" type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input checked="" type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input checked="" type="checkbox"/> Other (Explain in Remarks)
Depth to Free Water in Pit	<b>&gt; 18</b>	(in)	
Depth to Saturated Soil	<b>&gt; 18</b>	(in)	

*NRCS ALAMEDA COUNTY (1981) & WRCC DATA  
JAN 2003 - MAR 2004 (FROM OAKLAND MUSEUM)*



**ROUTINE WETLAND DETERMINATION**  
(1987 COE Wetlands Delineation Manual)

Project/Site	ALAMEDA SITE 1	Date	SEPT 27, 2004
Applicant / Owner		County	ALAMEDA
Investigator	MALCO, HERM	State	CA
Do Normal Circumstances exist on the site?	YES NO	Community ID	UPL
Is the site significantly disturbed (Atypical Situation)?	YES NO	Transect ID	
Is the area a potential Problem Area? (if needed, explain on reverse)	YES NO	Plot ID	UPL 25

**VEGETATION**

H = herb

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <i>Hordeum marinum ssp gossan</i>	H	FAC			
2 <i>Distichlis spicata</i>	H	FAC W*			
3 <i>Aira coryphylla</i>	H	—			
4 <i>Bromus hordeaceus</i>	H	FACU -			
5 <i>Plantago lanceolata</i>	H	FAC -			
6					
7					
8					

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 40%

Remarks

**HYDROLOGY**

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input checked="" type="checkbox"/> Other  <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b> Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands	
<b>FIELD OBSERVATIONS</b>			
Depth of Surface Water	> 18	(in)	Secondary Indicators (2 or more Required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input checked="" type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input checked="" type="checkbox"/> Other (Explain in Remarks)
Depth to Free Water in Pit	> 18	(in)	
Depth to Saturated Soil	> 18	(in)	

NRCS ALAMEDA COUNTY (1981) & WRCC DATA  
 JAN 2003 - MAR 2004 (FROM OAKLAND MUSEUM)



**ROUTINE WETLAND DETERMINATION**  
(1987 COE Wetlands Delineation Manual)

Project/Site	ALAMEDA SITE 2	Date	SEPT 17, 2004
Applicant / Owner		County	ALAMEDA
Investigator	MALO, HELM	State	CA
Do Normal Circumstances exist on the site?	YES NO	Community ID	SW
Is the site significantly disturbed (Atypical Situation)?	YES NO	Transect ID	
Is the area a potential Problem Area? (If needed, explain on reverse)	YES NO	Plot ID	SW10 F

**VEGETATION**

H = herb

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Distichlis spicata	H	FACW	9		
2 Lotus corniculatus	H	FAC	10		
3 Rumex crispus	H	FACW-	11		
4 Salicornia rubra	H	OBL	12		
5 Hordeum marinum ssp. guss.	H	FAC	13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 100%

Remarks

**HYDROLOGY**

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <ul style="list-style-type: none"> <li><input type="checkbox"/> Stream, Lake, or Tide Gauge</li> <li><input type="checkbox"/> Aerial Photographs</li> <li><input checked="" type="checkbox"/> Other</li> </ul> <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b>	
<b>FIELD OBSERVATIONS</b>		<b>Primary Indicators:</b>	
Depth of Surface Water	* N/A (in)	<input type="checkbox"/> Inundated	
Depth to Free Water in Pit	* N/A (in)	<input type="checkbox"/> Saturated in Upper 12 Inches	
Depth to Saturated Soil	* N/A (in)	<input checked="" type="checkbox"/> Water Marks	
		<input checked="" type="checkbox"/> Drift Lines	
		<input checked="" type="checkbox"/> Sediment Deposits	
		<input checked="" type="checkbox"/> Drainage Patterns in Wetlands	
		<b>Secondary Indicators (2 or more Required):</b>	
		<input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches	
		<input checked="" type="checkbox"/> Water-Stained Leaves	
		<input checked="" type="checkbox"/> Local Soil Survey Data	
		<input type="checkbox"/> FAC-Neutral Test	
		<input checked="" type="checkbox"/> Other (Explain in Remarks)	

NRCS ALAMEDA COUNTY (1981) & WRCC DATA

JAN 2003 - 2004 (FROM OAKLAND MUSEUM)

\* DRY SEASON SAMPLING - HYDROLOGY OBS MARCH 2004

Map Unit Name (Series and Phase):			Drainage Class:		
Taxonomy (Subgroup)		Field Observations Confirm Mapped Type? YES NO			
PROFILE DESCRIPTION					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16	A	10YR 4/2 - 3/2	2.5YR 4/8	C-2-P	SANDY

**HYDRIC SOIL INDICATORS:**

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks:

**WETLAND DETERMINATION**

Hydrophytic Vegetation Present?	(YES) NO	Is this Sampling Point Within a Wetland? (YES) NO
Wetland Hydrology Present?	(YES) NO	
Hydric Soils Present?	(YES) NO	

Remarks

**ROUTINE WETLAND DETERMINATION**  
(1987 COE Wetlands Delineation Manual)

SITE 1

Project/Site	ALAMEDA SITE 1	Date	Sept 27, 2004
Applicant / Owner		County	ALAMEDA
Investigator	MALO, HELM	State	CA
Do Normal Circumstances exist on the site?	YES NO	Community ID	UPL
Is the site significantly disturbed (Atypical Situation)?	YES NO	Transect ID	
Is the area a potential Problem Area? (If needed, explain on reverse)	YES NO	Plot ID	UPL 24

**VEGETATION**

H = herb

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <i>Lolium multiflorum</i>	H	FAC*	9		
2 <i>Hordeum marinum</i> <sup>gussakii</sup>	H	FAC	10		
3 <i>Bromus hordeaceus</i>	H	FACU-	11		
4 <i>Aira caryophylla</i>	H	-	12		
5 <i>Cirsium vulgare</i>	H	FACU	13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 40%

Remarks

**HYDROLOGY**

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input checked="" type="checkbox"/> Other  <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b> Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands	
<b>FIELD OBSERVATIONS</b>			
Depth of Surface Water	> 18	(in)	Secondary Indicators (2 or more Required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input checked="" type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input checked="" type="checkbox"/> Other (Explain in Remarks)
Depth to Free Water in Pit	> 18	(in)	
Depth to Saturated Soil	> 18	(in)	

NRCS ALAMEDA COUNTY (1981) & WECC DATA

JAN 2003 - MAR 2004 (FROM OAKLAND MUSEUM)



**ROUTINE WETLAND DETERMINATION**  
(1987 COE Wetlands Delineation Manual)

Project/Site <i>ALAMEDA SITE 1</i>	Date <i>Sept 27, 2004</i>
Applicant / Owner	County <i>ALAMEDA</i>
Investigator <i>MALO, HELM</i>	State <i>CA</i>
Do Normal Circumstances exist on the site? <input checked="" type="radio"/> YES <input type="radio"/> NO	Community ID <i>SW</i>
Is the site significantly disturbed (Atypical Situation)? <input checked="" type="radio"/> YES <input type="radio"/> NO	Transect ID
Is the area a potential Problem Area? (If needed, explain on reverse) YES <input type="radio"/> NO <input checked="" type="radio"/>	Plot ID <i>SW 11A</i>

**VEGETATION**

*H = Herb*

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <i>Cyperus eragrostis</i>	<i>H</i>	<i>FAC W.</i>	9		
2 <i>Cyperus dactylon</i>	<i>H</i>	<i>FAC</i>	10		
3 <i>Salsola tragus pestifera</i>	<i>H</i>	<i>FAC U</i>	11		
4 <i>Lotus corniculatus</i>	<i>H</i>	<i>FAC</i>	12		
5 <i>Coloium multiflorum</i>	<i>H</i>	<i>FAC +</i>	13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) *80%*

Remarks

**HYDROLOGY**

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input checked="" type="checkbox"/> Other  <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b> Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input checked="" type="checkbox"/> Water Marks <input checked="" type="checkbox"/> Drift Lines <input checked="" type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands	
<b>FIELD OBSERVATIONS</b>			
Depth of Surface Water	<i>&gt; 18</i>	(in)	Secondary Indicators (2 or more Required): <input checked="" type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input checked="" type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input checked="" type="checkbox"/> Other (Explain in Remarks)
Depth to Free Water in Pit	<i>&gt; 18</i>	(in)	
Depth to Saturated Soil	<i>&gt; 18</i>	(in)	

*NRCS ALAMEDA COUNTY (1981) & WRCC DATA*

*JAN 2003 - MAR 2004 (FROM OAKLAND MUSEUM)*

**SOILS**

Map Unit Name (Series and Phase):			Drainage Class:		
Taxonomy (Subgroup)			Field Observations Confirm Mapped Type? YES NO		
PROFILE DESCRIPTION					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-18	A	10YR 3/2	2.5YR 4/6	C-2-P	SAND

**HYDRIC SOIL INDICATORS:**

- |  |   |
|--|---|
| <input type="checkbox"/> Histosol                    | <input type="checkbox"/> Concretions  |
| <input type="checkbox"/> Histic Epipedon             | <input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils |
| <input type="checkbox"/> Sulfidic Odor               | <input type="checkbox"/> Organic Streaking in Sandy Soils                     |
| <input type="checkbox"/> Aquic Moisture Regime       | <input type="checkbox"/> Listed on Local Hydric Soils List                    |
| <input type="checkbox"/> Reducing Conditions         | <input type="checkbox"/> Listed on National Hydric Soils List                 |
| <input type="checkbox"/> Gleyed or Low-Chroma Colors | <input type="checkbox"/> Other (Explain in Remarks)                           |

**Remarks:**

\* Soil is fill material that has weathered but has not had sufficient time to form and is found in a clumped state

**WETLAND DETERMINATION**

Hydrophytic Vegetation Present?	<input checked="" type="radio"/> YES NO	Is this Sampling Point Within a Wetland? <input checked="" type="radio"/> YES NO
Wetland Hydrology Present?	<input checked="" type="radio"/> YES NO	
Hydric Soils Present?	<input checked="" type="radio"/> YES NO	
Remarks		

**ROUTINE WETLAND DETERMINATION**  
(1987 COE Wetlands Delineation Manual)

Project/Site <i>ALAMEDA - SITE 2</i>	Date <i>MARCH 8, 2004</i>
Applicant / Owner	County <i>ALAMEDA</i>
Investigator <i>MALO, HELM</i>	State <i>CA</i>
Do Normal Circumstances exist on the site? <input checked="" type="radio"/> YES <input type="radio"/> NO	Community ID <i>SW</i>
Is the site significantly disturbed (Atypical Situation)? <input checked="" type="radio"/> YES <input type="radio"/> NO	Transect ID
Is the area a potential Problem Area? (If needed, explain on reverse) YES <input type="radio"/> NO <input checked="" type="radio"/>	Plot ID <i>SW5 - A</i>

**VEGETATION** = *H = herb*

Dominant Plant Species	Stratum	Indicator	Sub Dominant Plant Species	Stratum	Indicator
<i>1 Eleocharis macrostachya</i>	<i>H</i>	<i>OBL</i>	<i>9 Chenopodium chenopodioides</i>	<i>H</i>	<i>FACW</i>
<i>2 Lotus corniculatus</i>	<i>H</i>	<i>FAC</i>	<i>10 Plantago coronopus</i>	<i>H</i>	<i>FAC</i>
<i>3 Distichlis spicata</i>	<i>H</i>	<i>FACW</i>	<i>11</i>		
<i>4 Lolium multiflorum</i>	<i>H</i>	<i>FAC+</i>	<i>12</i>		
<i>5 Polygonum monspeliensis</i>	<i>H</i>	<i>OBL</i>	<i>13</i>		
<i>6</i>			<i>14</i>		
<i>7</i>			<i>15</i>		
<i>8</i>			<i>16</i>		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) *100%*

Remarks

**HYDROLOGY**

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <ul style="list-style-type: none"> <li><input type="checkbox"/> Stream, Lake, or Tide Gauge</li> <li><input type="checkbox"/> Aerial Photographs</li> <li><input checked="" type="checkbox"/> Other</li> </ul> <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b>	
<b>FIELD OBSERVATIONS</b>		<b>Primary Indicators:</b> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Inundated</li> <li><input checked="" type="checkbox"/> Saturated in Upper 12 Inches</li> <li><input checked="" type="checkbox"/> Water Marks</li> <li><input checked="" type="checkbox"/> Drift Lines</li> <li><input type="checkbox"/> Sediment Deposits</li> <li><input checked="" type="checkbox"/> Drainage Patterns in Wetlands</li> </ul>	
Depth of Surface Water	<i>0</i> (in)	<b>Secondary Indicators (2 or more Required):</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</li> <li><input checked="" type="checkbox"/> Water-Stained Leaves</li> <li><input checked="" type="checkbox"/> Local Soil Survey Data</li> <li><input type="checkbox"/> FAC-Neutral Test</li> <li><input checked="" type="checkbox"/> Other (Explain in Remarks)</li> </ul>	
Depth to Free Water in Pit	<i>4</i> (in)		
Depth to Saturated Soil	<i>12</i> (in)		

*NRCS ALAMEDA COUNTY (1981) & WRCC DATA  
JAN 2003 - MARCH 2004 (FROM OAKLAND MUSEUM)*



ROUTINE WETLAND DETERMINATION  
(1987 COE Wetlands Delineation Manual)

upl 15  
SITE 2

Project/Site	ALAMEDA SITE 2	Date	MARCH 8, 2004
Applicant / Owner		County	ALAMEDA
Investigator	MALO, HELM 	State	CA
Do Normal Circumstances exist on the site?	<input checked="" type="radio"/> YES <input type="radio"/> NO	Community ID	AG UPL
Is the site significantly disturbed (Atypical Situation)?	<input checked="" type="radio"/> YES <input type="radio"/> NO	Transect ID	
Is the area a potential Problem Area? (If needed, explain on reverse)	YES <input type="radio"/> NO <input checked="" type="radio"/>	Plot ID	UPL 15

VEGETATION

H=herb

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <i>Hordeum marinum</i> ssp. <i>guss</i>	H	FAC	9		
2 <i>Hirschfeldia incana</i>	H	—	10		
3 <i>Cirsium vulgare</i>	H	FACU	11		
4 <i>Lolium multiflorum</i>	H	FAC*	12		
5			13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 50%

Remarks

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <ul style="list-style-type: none"> <li><input type="checkbox"/> Stream, Lake, or Tide Gauge</li> <li><input type="checkbox"/> Aerial Photographs</li> <li><input checked="" type="checkbox"/> Other</li> </ul> <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b> Primary Indicators: <ul style="list-style-type: none"> <li><input type="checkbox"/> Inundated</li> <li><input type="checkbox"/> Saturated in Upper 12 Inches</li> <li><input type="checkbox"/> Water Marks</li> <li><input type="checkbox"/> Drift Lines</li> <li><input type="checkbox"/> Sediment Deposits</li> <li><input type="checkbox"/> Drainage Patterns in Wetlands</li> </ul> Secondary Indicators (2 or more Required): <ul style="list-style-type: none"> <li><input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</li> <li><input type="checkbox"/> Water-Stained Leaves</li> <li><input checked="" type="checkbox"/> Local Soil Survey Data</li> <li><input type="checkbox"/> FAC-Neutral Test</li> <li><input checked="" type="checkbox"/> Other (Explain in Remarks)</li> </ul>	
<b>FIELD OBSERVATIONS</b>			
Depth of Surface Water	> 18	(in)	
Depth to Free Water in Pit	> 18	(in)	
Depth to Saturated Soil	> 18	(in)	

NRCS ALAMEDA COUNTY (1981) & WRCC DATA  
 JAN 2003 - MAR 2004 (FROM OAKLAND MUSEUM)



ROUTINE WETLAND DETERMINATION  
(1987 COE Wetlands Delineation Manual)

SW8

SITE 2

Project/Site	ALAMEDA SITE 2	Date	MARCH 8, 2004
Applicant / Owner		County	ALAMEDA
Investigator	MALO, HEIM	State	CA
Do Normal Circumstances exist on the site?	YES NO	Community ID	SW8
Is the site significantly disturbed (Atypical Situation)?	YES NO	Transect ID	
Is the area a potential Problem Area? (If needed, explain on reverse)	YES NO	Plot ID	SW 8 - A

VEGETATION

H=herb

Dominant Plant Species	Stratum	Indicator	SubDominant Plant Species	Stratum	Indicator
1 Rumex salicifolius	H	OBL	9 Geranium dissectum	H	-
2 Hordeum marianum ssp. gus	H	FAC	10 Holcus lanatus	H	FAC
3 Distichlis spicata	H	FACW	11		
4 Lotus corniculatus	H	FAC	12		
5 Cyperus eragrostis	H	FACW	13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 100%

Remarks

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <ul style="list-style-type: none"> <li><input type="checkbox"/> Stream, Lake, or Tide Gauge</li> <li><input type="checkbox"/> Aerial Photographs</li> <li><input checked="" type="checkbox"/> Other</li> </ul> <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b> Primary Indicators: <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Inundated</li> <li><input checked="" type="checkbox"/> Saturated in Upper 12 Inches</li> <li><input checked="" type="checkbox"/> Water Marks</li> <li><input type="checkbox"/> Drift Lines</li> <li><input checked="" type="checkbox"/> Sediment Deposits</li> <li><input checked="" type="checkbox"/> Drainage Patterns in Wetlands</li> </ul> Secondary Indicators (2 or more Required): <ul style="list-style-type: none"> <li><input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</li> <li><input type="checkbox"/> Water-Stained Leaves</li> <li><input checked="" type="checkbox"/> Local Soil Survey Data</li> <li><input type="checkbox"/> FAC-Neutral Test</li> <li><input checked="" type="checkbox"/> Other (Explain in Remarks)</li> </ul>	
<b>FIELD OBSERVATIONS</b>			
Depth of Surface Water	10	(in)	
Depth to Free Water in Pit	4	(in)	
Depth to Saturated Soil	12	(in)	

NRCS ALAMEDA COUNTY (1981) & WRC DATA  
JAN 2003 - MARCH 2004 (FROM OAKLAND MUSEUM)



ROUTINE WETLAND DETERMINATION  
(1987 COE Wetlands Delineation Manual)

4/1/14

Project/Site	ALAMEDA - SITE 2	Date	MARCH 8, 2004
Applicant / Owner		County	ALAMEDA
Investigator	Malo, Helm	State	CA
Do Normal Circumstances exist on the site?	YES NO	Community ID	UPL
Is the site significantly disturbed (Atypical Situation)?	YES NO	Transect ID	
Is the area a potential Problem Area? (If needed, explain on reverse)	YES NO	Plot ID	UPL 14

VEGETATION

H=herb

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <i>Carpobrotus edulis</i>	H	-	9		
2 <i>Hordeum marinum</i> ssp. <i>guss</i>	H	FAC	10		
3 <i>Cirsium vulgare</i>	H	FACU	11		
4 <i>Lolium multiflorum</i>	H	FAC*	12		
5			13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 50%

Remarks

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <ul style="list-style-type: none"> <li><input type="checkbox"/> Stream, Lake, or Tide Gauge</li> <li><input type="checkbox"/> Aerial Photographs</li> <li><input checked="" type="checkbox"/> Other</li> </ul> <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b>	
<b>FIELD OBSERVATIONS</b>		Primary Indicators:	
Depth of Surface Water	> 18 (in)	<input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands	
Depth to Free Water in Pit	> 18 (in)	Secondary Indicators (2 or more Required):	
Depth to Saturated Soil	> 18 (in)	<input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input checked="" type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input checked="" type="checkbox"/> Other (Explain in Remarks)	

NRCS ALAMEDA COUNTY (1981) & WRCC DATA  
JAN 2003 - MAR 2004 (FROM OAKLAND MUSEUM)



**ROUTINE WETLAND DETERMINATION**  
(1987 COE Wetlands Delineation Manual)

SW7

Project/Site	ALAMEDA - SITE 2	Date	MARCH 8, 2004
Applicant / Owner		County	ALAMEDA
Investigator	MALO, HELM	State	CA
Do Normal Circumstances exist on the site?	YES NO	Community ID	SW
Is the site significantly disturbed (Atypical Situation)?	YES NO	Transect ID	
Is the area a potential Problem Area? (If needed, explain on reverse)	YES NO	Plot ID	SW 7-A

**VEGETATION**

H=herb

Dominant Plant Species	Stratum	Indicator	Sub Dominant Plant Species	Stratum	Indicator
1 Solicarnia rubra	H	OBL	9 Plantago coronopus	H	FAC
2 Distichlis spicata	H	FACW*	10 Juncus bufonius	H	FACW*
3 Polygonon monspeliensis	H	OBL	11 Hordeum marinum ssp. guss	H	FAC
4 Cotula coronopifolia	H	FACW+	12		
5			13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 100%

Remarks

**HYDROLOGY**

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <ul style="list-style-type: none"> <li><input type="checkbox"/> Stream, Lake, or Tide Gauge</li> <li><input type="checkbox"/> Aerial Photographs</li> <li><input checked="" type="checkbox"/> Other</li> </ul> <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b> Primary Indicators: <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Inundated</li> <li><input checked="" type="checkbox"/> Saturated in Upper 12 Inches</li> <li><input checked="" type="checkbox"/> Water Marks</li> <li><input checked="" type="checkbox"/> Drift Lines</li> <li><input type="checkbox"/> Sediment Deposits</li> <li><input checked="" type="checkbox"/> Drainage Patterns in Wetlands</li> </ul> Secondary Indicators (2 or more Required): <ul style="list-style-type: none"> <li><input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</li> <li><input checked="" type="checkbox"/> Water-Stained Leaves</li> <li><input checked="" type="checkbox"/> Local Soil Survey Data</li> <li><input type="checkbox"/> FAC-Neutral Test</li> <li><input checked="" type="checkbox"/> Other (Explain in Remarks)</li> </ul>	
<b>FIELD OBSERVATIONS</b>			
Depth of Surface Water	0	(in)	
Depth to Free Water in Pit	4	(in)	
Depth to Saturated Soil	12	(in)	

NRCS ALAMEDA COUNTY (1981) & WRCC DATA  
 JAN 2003 - MARCH 2004 (FROM OAK LAND MUSEUM)

\* DRY SEASON SAMPLING

SW7

**SOILS**

Map Unit Name (Series and Phase):				Drainage Class:	
Taxonomy (Subgroup)			Field Observations Confirm Mapped Type?    YES    NO		
PROFILE DESCRIPTION					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
		SWR	AS	SWR	
		—			
HYDRIC SOIL INDICATORS:					
<input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime <input type="checkbox"/> Reducing Conditions <input type="checkbox"/> Gleyed or Low-Chroma Colors		<input type="checkbox"/> Concretions <input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils <input type="checkbox"/> Organic Streaking in Sandy Soils <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Other (Explain in Remarks)			
Remarks:					

**WETLAND DETERMINATION**

Hydrophytic Vegetation Present?	<input checked="" type="radio"/> YES	NO	Is this Sampling Point Within a Wetland? <input checked="" type="radio"/> YES    NO
Wetland Hydrology Present?	<input checked="" type="radio"/> YES	NO	
Hydric Soils Present?	<input checked="" type="radio"/> YES	NO	
Remarks			
OBS .    PONDING    > 14 DAYS			

**ROUTINE WETLAND DETERMINATION**  
(1987 COE Wetlands Delineation Manual)

UPL 17  
Site 2

Project/Site <u>ALAMEDA SITE 2</u>	Date <u>SEPT 27, 2004</u>
Applicant / Owner	County <u>ALAMEDA</u>
Investigator <u>MALD, HELM</u>	State <u>CA</u>
Do Normal Circumstances exist on the site? <u>(YES)</u> NO	Community ID <u>A6 UPL</u>
Is the site significantly disturbed (Atypical Situation)? <u>(YES)</u> NO	Transect ID
Is the area a potential Problem Area? (If needed, explain on reverse) YES <u>(NO)</u>	Plot ID <u>UPL 17</u>

**VEGETATION**

H=herb

Dominant Plant Species	Stratum	Indicator	Sub Dominant Plant Species	Stratum	Indicator
1 <u>Airs coryophylla</u>	<u>H</u>	<u>-</u>	9 <u>Plantago coronopus</u>	<u>H</u>	<u>FAC</u>
2 <u>Distichlis spicata</u>	<u>H</u>	<u>FACW*</u>	10 <u>Lotus corniculatus</u>	<u>H</u>	<u>FAC</u>
3 <u>Lolium multiflorum</u>	<u>H</u>	<u>FAC*</u>	11		
4 <u>Hordeum maritimum ssp. grus</u>	<u>H</u>	<u>FAC</u>	12		
5			13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 80%

Remarks

**HYDROLOGY**

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <ul style="list-style-type: none"> <li><input type="checkbox"/> Stream, Lake, or Tide Gauge</li> <li><input type="checkbox"/> Aerial Photographs</li> <li><input checked="" type="checkbox"/> Other</li> </ul> <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b>	
<b>FIELD OBSERVATIONS</b>		Primary Indicators: <ul style="list-style-type: none"> <li><input type="checkbox"/> Inundated</li> <li><input type="checkbox"/> Saturated in Upper 12 Inches</li> <li><input type="checkbox"/> Water Marks</li> <li><input type="checkbox"/> Drift Lines</li> <li><input type="checkbox"/> Sediment Deposits</li> <li><input type="checkbox"/> Drainage Patterns in Wetlands</li> </ul>	
Depth of Surface Water	<u>&gt; 18</u> (in)	Secondary Indicators (2 or more Required): <ul style="list-style-type: none"> <li><input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</li> <li><input type="checkbox"/> Water-Stained Leaves</li> <li><input checked="" type="checkbox"/> Local Soil Survey Data</li> <li><input type="checkbox"/> FAC-Neutral Test</li> <li><input checked="" type="checkbox"/> Other (Explain in Remarks)</li> </ul>	
Depth to Free Water in Pit	<u>&gt; 18</u> (in)		
Depth to Saturated Soil	<u>&gt; 18</u> (in)		

NRCS ALAMEDA COUNTY (1981) & WRCC DATA  
JAN 2003 - MAR 2004 (FROM OAKLAND MUSEUM)

**SOILS**

Map Unit Name (Series and Phase):				Drainage Class:	
Taxonomy (Subgroup)			Field Observations Confirm Mapped Type? YES NO		
PROFILE DESCRIPTION					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions Structure, etc.
				SM-MS	1-19
See Attached					
HYDRIC SOIL INDICATORS:					
<input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime <input type="checkbox"/> Reducing Conditions <input type="checkbox"/> Gleyed or Low-Chroma Colors			<input type="checkbox"/> Concretions <input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils <input type="checkbox"/> Organic Streaking in Sandy Soils <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Other (Explain in Remarks)		
Remarks:					

**WETLAND DETERMINATION**

Hydrophytic Vegetation Present?	YES NO	Is this Sampling Point Within a Wetland? YES NO
Wetland Hydrology Present?	YES NO	
Hydric Soils Present?	YES NO	
Remarks		

**ROUTINE WETLAND DETERMINATION**  
(1987 COE Wetlands Delineation Manual)

(107)

Project/Site	ALAMEDA SITE 2	Date	MARCH 8, 2004
Applicant / Owner		County	ALAMEDA
Investigator	MALO, HELM	State	CA
Do Normal Circumstances exist on the site?	YES NO	Community ID	SM
Is the site significantly disturbed (Atypical Situation)?	YES NO	Transect ID	
Is the area a potential Problem Area? (If needed, explain on reverse)	YES NO	Plot ID	SM 1A

**VEGETATION**

H=herb

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Spergularia rubra	H	FAC-	9		
2 Distichlis Spicata	H	FACW*	10		
3 Solicostema rubra	H	OBL	11		
4			12		
5			13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 66%

Remarks

**HYDROLOGY**

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <ul style="list-style-type: none"> <li><input type="checkbox"/> Stream, Lake, or Tide Gauge</li> <li><input type="checkbox"/> Aerial Photographs</li> <li><input checked="" type="checkbox"/> Other</li> </ul> <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b>	
<b>FIELD OBSERVATIONS</b>		Primary Indicators:	
Depth of Surface Water	0 (in)	<input checked="" type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input checked="" type="checkbox"/> Water Marks <input checked="" type="checkbox"/> Drift Lines <input checked="" type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands	
Depth to Free Water in Pit	4 (in)	Secondary Indicators (2 or more Required):	
Depth to Saturated Soil	12 (in)	<input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input checked="" type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input checked="" type="checkbox"/> Other (Explain in Remarks)	

NRCS ALAMEDA COUNTY (1981) & WRCC DATA  
 JAN 2003 - MAR 2004 (FROM OAKLAND MUSEUM)

**SOILS**

Map Unit Name (Series and Phase):			Drainage Class:		
Taxonomy (Subgroup)			Field Observations Confirm Mapped Type? YES NO		
PROFILE DESCRIPTION					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions Structure, etc.
0-8	A	10YR 3/1	—	—	SANDY
8-16	B	2.5YR 4/2	—	C-2-P	SANDY
HYDRIC SOIL INDICATORS:					
<input type="checkbox"/> Histosol				<input type="checkbox"/> Concretions	
<input type="checkbox"/> Histic Epipedon				<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils	
<input type="checkbox"/> Sulfidic Odor				<input type="checkbox"/> Organic Streaking in Sandy Soils	
<input type="checkbox"/> Aquic Moisture Regime				<input type="checkbox"/> Listed on Local Hydric Soils List	
<input type="checkbox"/> Reducing Conditions				<input type="checkbox"/> Listed on National Hydric Soils List	
<input type="checkbox"/> Gleyed or Low-Chroma Colors				<input type="checkbox"/> Other (Explain in Remarks)	
Remarks:					

**WETLAND DETERMINATION**

Hydrophytic Vegetation Present?	(YES) NO	Is this Sampling Point Within a Wetland? (YES) NO
Wetland Hydrology Present?	(YES) NO	
Hydric Soils Present?	(YES) NO	
Remarks		
POND OBS > 14 DAYS		

ROUTINE WETLAND DETERMINATION  
(1987 COE Wetlands Delineation Manual)

SITE 2 (lot)  
SM 1-5 A

Project/Site	ALAMEDA SITE 2	Date	SEPT 27, 2004
Applicant / Owner		County	Alameda
Investigator	HELM, MALO	State	CA
Do Normal Circumstances exist on the site?	YES NO	Community ID	SM
Is the site significantly disturbed (Atypical Situation)?	YES NO	Transect ID	
Is the area a potential Problem Area? (If needed, explain on reverse)	YES NO	Plot ID	SM 6-A

VEGETATION

H: herb

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 BROMUS MONDEACEUS	H	FAC0-	9		
2 SALICORNIA RUBRA	H	OBL	10		
3 HORDEUM MARINUM sp	H	FAC	11		
4 Bromus diandrus	H	-	12		
5 DISTICHLIS SPIRATA	H	FACW	13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 80%

Remarks

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input checked="" type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b> Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input checked="" type="checkbox"/> Water Marks <input checked="" type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands  Secondary Indicators (2 or more Required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input checked="" type="checkbox"/> Water-Stained Leaves <input checked="" type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input checked="" type="checkbox"/> Other (Explain in Remarks)	
FIELD OBSERVATIONS			
Depth of Surface Water	* N/A	(in)	
Depth to Free Water in Pit	* N/A	(in)	
Depth to Saturated Soil	* N/A	(in)	

NRCS ALAMEDA COUNTY (1981) & WRCC DATA  
JAN 2003 - MAR 2004 (FROM OAKLAND MUSEUM)

\* DRY SEASON SAMPLING  
\* \* HYDROLOGY OBS. MARCH 2004

SM 1-5  
B

**SOILS**

Map Unit Name (Series and Phase):				Drainage Class:	
Taxonomy (Subgroup)			Field Observations Confirm Mapped Type? YES NO		
PROFILE DESCRIPTION					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions: Structure, etc.
	SAME AS	SM 1-1	(SM 6-3)		
See Attached.					
HYDRIC SOIL INDICATORS:					
<input type="checkbox"/> Histosol		<input type="checkbox"/> Concretions			
<input type="checkbox"/> Histic Epipedon		<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils			
<input type="checkbox"/> Sulfidic Odor		<input type="checkbox"/> Organic Streaking in Sandy Soils			
<input type="checkbox"/> Aquic Moisture Regime		<input type="checkbox"/> Listed on Local Hydric Soils List			
<input type="checkbox"/> Reducing Conditions		<input type="checkbox"/> Listed on National Hydric Soils List			
<input type="checkbox"/> Gleyed or Low-Chroma Colors		<input type="checkbox"/> Other (Explain in Remarks)			
Remarks:					

**WETLAND DETERMINATION**

Hydrophytic Vegetation Present?	<input checked="" type="radio"/> YES	<input type="radio"/> NO	Is this Sampling Point Within a Wetland? <input checked="" type="radio"/> YES <input type="radio"/> NO
Wetland Hydrology Present?	<input checked="" type="radio"/> YES	<input type="radio"/> NO	
Hydric Soils Present?	<input checked="" type="radio"/> YES	<input type="radio"/> NO	
Remarks			

**ROUTINE WETLAND DETERMINATION**  
(1987 COE Wetlands Delineation Manual)

A UPL-3

Project/Site	ALAMEDA - SITE 2	Date	MARCH 8, 2004
Applicant / Owner		County	ALAMEDA
Investigator	MALD, HELM	State	CA
Do Normal Circumstances exist on the site?	YES NO	Community ID	UPL
Is the site significantly disturbed (Atypical Situation)?	YES NO	Transect ID	
Is the area a potential Problem Area? (If needed, explain on reverse)	YES NO	Plot ID	UPL 1-3

**VEGETATION**

H = herb

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <i>Carpobrotus edulis</i>	H	-	9		
2 <i>Bromus diandrus</i>	H	-	10		
3			11		
4			12		
5			13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 0%

Remarks

**HYDROLOGY**

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <ul style="list-style-type: none"> <li><input type="checkbox"/> Stream, Lake, or Tide Gauge</li> <li><input type="checkbox"/> Aerial Photographs</li> <li><input checked="" type="checkbox"/> Other</li> </ul> <input type="checkbox"/> No Recorded Data Available		<p align="center"><b>WETLAND HYDROLOGY INDICATORS</b></p> <p>Primary Indicators:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Inundated</li> <li><input type="checkbox"/> Saturated in Upper 12 Inches</li> <li><input type="checkbox"/> Water Marks</li> <li><input type="checkbox"/> Drift Lines</li> <li><input type="checkbox"/> Sediment Deposits</li> <li><input type="checkbox"/> Drainage Patterns in Wetlands</li> </ul> <p>Secondary Indicators (2 or more Required):</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</li> <li><input type="checkbox"/> Water-Stained Leaves</li> <li><input checked="" type="checkbox"/> Local Soil Survey Data</li> <li><input type="checkbox"/> FAC-Neutral Test</li> <li><input checked="" type="checkbox"/> Other (Explain in Remarks)</li> </ul>	
<b>FIELD OBSERVATIONS</b>			
Depth of Surface Water	> 18	(in)	
Depth to Free Water in Pit	> 18	(in)	
Depth to Saturated Soil	> 18	(in)	

NRCS ALAMEDA COUNTY (1981) & WRCC DATA  
JAN 2003 - MAR 2004 (FROM OAKLAND MUSEUM)



**ROUTINE WETLAND DETERMINATION**  
(1987 COE Wetlands Delineation Manual)

SM-1  
SITE 2

Project/Site	ALAMEDA SITE 2	Date	MARCH 8, 2004
Applicant / Owner		County	ALAMEDA
Investigator	HELM, MAUD	State	CA
Do Normal Circumstances exist on the site?	YES NO	Community ID	SM 1
Is the site significantly disturbed (Atypical Situation)?	YES NO	Transect ID	
Is the area a potential Problem Area? (If needed, explain on reverse)	YES NO	Plot ID	SM 6-B

**VEGETATION**

H=herb

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Lotus corniculatus	H	FAC	9		
2 Distichlis spicata	H	FACW+	10		
3 Solicornia rubra	H	OBL	11		
4			12		
5			13		
6			14		
7			15		
8			16		
Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 100%					
Remarks					

**HYDROLOGY**

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <ul style="list-style-type: none"> <li><input type="checkbox"/> Stream, Lake, or Tide Gauge</li> <li><input type="checkbox"/> Aerial Photographs</li> <li><input checked="" type="checkbox"/> Other</li> </ul> <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b>	
<b>FIELD OBSERVATIONS</b>		<b>Primary Indicators:</b> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Inundated</li> <li><input checked="" type="checkbox"/> Saturated in Upper 12 Inches</li> <li><input checked="" type="checkbox"/> Water Marks</li> <li><input checked="" type="checkbox"/> Drift Lines</li> <li><input type="checkbox"/> Sediment Deposits</li> <li><input checked="" type="checkbox"/> Drainage Patterns in Wetlands</li> </ul>	
Depth of Surface Water	1 (in)	<b>Secondary Indicators (2 or more Required):</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</li> <li><input type="checkbox"/> Water-Stained Leaves</li> <li><input checked="" type="checkbox"/> Local Soil Survey Data</li> <li><input type="checkbox"/> FAC-Neutral Test</li> <li><input checked="" type="checkbox"/> Other (Explain in Remarks)</li> </ul>	
Depth to Free Water in Pit	6 (in)		
Depth to Saturated Soil	Upper 12 (in)		

NRCS ALAMEDA COUNTY (1981) & WRCC DATA  
 JAN 2003 - MAR 2004 (FROM OAKLAND MUSEUM)

**SOILS**

SM1-1

Map Unit Name (Series and Phase):			Drainage Class:		
Taxonomy (Subgroup)		Field Observations Confirm Mapped Type? YES NO			
PROFILE DESCRIPTION					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions Structure, etc.
0-9	A	10YR 4/2	10YR 3/4	C-1-d	Sandy clay loam
9-16	A	10YR 4/2	5YR 3/4 *	C-1-d	Sandy clay loam

**HYDRIC SOIL INDICATORS:**

- |  |   |
|--|---|
| <input type="checkbox"/> Histosol                    | <input type="checkbox"/> Concretions  |
| <input type="checkbox"/> Histic Epipedon             | <input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils |
| <input type="checkbox"/> Sulfidic Odor               | <input type="checkbox"/> Organic Streaking in Sandy Soils                     |
| <input type="checkbox"/> Aquic Moisture Regime       | <input type="checkbox"/> Listed on Local Hydric Soils List                    |
| <input type="checkbox"/> Reducing Conditions         | <input type="checkbox"/> Listed on National Hydric Soils List                 |
| <input type="checkbox"/> Gleyed or Low-Chroma Colors | <input type="checkbox"/> Other (Explain in Remarks)                           |

Remarks:  
\* inclusion of Sand 20% below 9"

**WETLAND DETERMINATION**

Hydrophytic Vegetation Present?	<input checked="" type="radio"/> YES <input type="radio"/> NO	Is this Sampling Point Within a Wetland? <input checked="" type="radio"/> YES <input type="radio"/> NO
Wetland Hydrology Present?	<input checked="" type="radio"/> YES <input type="radio"/> NO	
Hydric Soils Present?	<input checked="" type="radio"/> YES <input type="radio"/> NO	

Remarks  
STANDING WATER & SATURATED SOILS DIRECTLY OBS.  
> 9 DAYS

**ROUTINE WETLAND DETERMINATION**  
(1987 COE Wetlands Delineation Manual)

UPL 1-2

Project/Site <b>ALAMEDA - SITE 2</b>	Date <b>SEPT 27, 2004</b>
Applicant / Owner	County <b>ALAMEDA</b>
Investigator <b>MALO, HELM</b>	State <b>CA</b>
Do Normal Circumstances exist on the site? <b>(YES) NO</b>	Community ID <b>UPL</b>
Is the site significantly disturbed (Atypical Situation)? <b>(YES) NO</b>	Transect ID
Is the area a potential Problem Area? (If needed, explain on reverse) YES <b>(NO)</b>	Plot ID <b>UPL 1-2</b>

**VEGETATION**

H = herb

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <i>Distichlis spicata</i>	H	FACW+	9		
2 <i>Bromus diandrus</i>	H	-	10		
3			11		
4			12		
5			13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **50%**

Remarks

**HYDROLOGY**

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <ul style="list-style-type: none"> <li><input type="checkbox"/> Stream, Lake, or Tide Gauge</li> <li><input type="checkbox"/> Aerial Photographs</li> <li><input checked="" type="checkbox"/> Other</li> </ul> <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b>	
<b>FIELD OBSERVATIONS</b>		<b>Primary Indicators:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Inundated</li> <li><input type="checkbox"/> Saturated in Upper 12 Inches</li> <li><input type="checkbox"/> Water Marks</li> <li><input type="checkbox"/> Drift Lines</li> <li><input type="checkbox"/> Sediment Deposits</li> <li><input type="checkbox"/> Drainage Patterns in Wetlands</li> </ul>	
Depth of Surface Water	<b>&gt; 18</b> (in)	<b>Secondary Indicators (2 or more Required):</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</li> <li><input type="checkbox"/> Water-Stained Leaves</li> <li><input checked="" type="checkbox"/> Local Soil Survey Data</li> <li><input type="checkbox"/> FAC-Neutral Test</li> <li><input checked="" type="checkbox"/> Other (Explain in Remarks)</li> </ul>	
Depth to Free Water in Pit	<b>&gt; 18</b> (in)		
Depth to Saturated Soil	<b>&gt; 18</b> (in)		

*NRCS ALAMEDA COUNTY (1981) & WRCC DATA  
JAN 2003 - MARCH 2004 (FROM OAKLAND MUSEUM)*

**SOILS**

upl 1-2

Map Unit Name (Series and Phase):				Drainage Class:	
Taxonomy (Subgroup)			Field Observations Confirm Mapped Type? YES NO		
PROFILE DESCRIPTION					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretion Structure, etc.
0-16	A-B	10YR 3/2	50/50 mix	—	Sandy clay loam
0-16	A-B	10YR 4/2	2.5YR 4.6	F-1-p	Sand

**HYDRIC SOIL INDICATORS:**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol<br><input type="checkbox"/> Histic Epipedon<br><input type="checkbox"/> Sulfidic Odor<br><input type="checkbox"/> Aquic Moisture Regime<br><input type="checkbox"/> Reducing Conditions<br><input type="checkbox"/> Gleyed or Low-Chroma Colors | <input type="checkbox"/> Concretions<br><input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils<br><input type="checkbox"/> Organic Streaking in Sandy Soils<br><input type="checkbox"/> Listed on Local Hydric Soils List<br><input type="checkbox"/> Listed on National Hydric Soils List<br><input type="checkbox"/> Other (Explain in Remarks) |
|---|--|

**Remarks:**

\* Soil is fill material that has weathered but has not had sufficient time to form and is found in a clumped state

**WETLAND DETERMINATION**

Hydrophytic Vegetation Present?	YES	NO <input checked="" type="radio"/>	Is this Sampling Point Within a Wetland? YES <input type="radio"/> NO <input checked="" type="radio"/>
Wetland Hydrology Present?	YES	NO <input checked="" type="radio"/>	
Hydric Soils Present?	YES <input checked="" type="radio"/>	NO	

**Remarks**

DATA FORM

ROUTINE WETLAND DETERMINATION  
(1987 COE Wetlands Delineation Manual)

Project/Site	Alameda Site 2	Date	Sept 27, 2004
Applicant / Owner		County	Alameda
Investigator	Helm, MACO	State	CA
Do Normal Circumstances exist on the site?	YES NO	Community ID	SM
Is the site significantly disturbed (Atypical Situation)?	YES NO	Transect ID	
Is the area a potential Problem Area? (If needed, explain on reverse)	YES NO	Plot ID	SM 6C

VEGETATION

H = herb

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <i>Distichlis spicata</i>	H	FACW+			9
2 <i>Bromus diandrus</i>	H	-			10
3 <i>Hordernum marianus</i> sp	H	FAC			11
4 <i>Salicornia rubra</i>	H	OBL			12
5 <i>Bromus hordeaceus</i>	H	FAC0-			13
6					14
7					15
8					16

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 80%

Remarks

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input checked="" type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b> Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input checked="" type="checkbox"/> Water Marks <input checked="" type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands	
FIELD OBSERVATIONS			
Depth of Surface Water	* n/a	(in)	Secondary Indicators (2 or more Required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input checked="" type="checkbox"/> Water-Stained Leaves <input checked="" type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input checked="" type="checkbox"/> Other (Explain in Remarks)
Depth to Free Water in Pit	* n/a	(in)	
Depth to Saturated Soil	* n/a	(in)	

NRCS Alameda County (1981) & WRCC DATA  
 JAN 2003 - MAR 2004 (FROM OAKLAND MUSEUM)  
 \* DRY SEASON SAMPLING  
 ... .. 2004

**SOILS**

Map Unit Name (Series and Phase):			Drainage Class:		
Taxonomy (Subgroup)		Field Observations Confirm Mapped Type? YES NO			
PROFILE DESCRIPTION					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16	A	10YR 4/2	10YR 3/1	C-1-d	Sandy Clay Loam

**HYDRIC SOIL INDICATORS:**

- |  |   |
|--|---|
| <input type="checkbox"/> Histosol                    | <input type="checkbox"/> Concretions  |
| <input type="checkbox"/> Histic Epipedon             | <input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils |
| <input type="checkbox"/> Sulfidic Odor               | <input type="checkbox"/> Organic Streaking in Sandy Soils                     |
| <input type="checkbox"/> Aquic Moisture Regime       | <input type="checkbox"/> Listed on Local Hydric Soils List                    |
| <input type="checkbox"/> Reducing Conditions         | <input type="checkbox"/> Listed on National Hydric Soils List                 |
| <input type="checkbox"/> Gleyed or Low-Chroma Colors | <input type="checkbox"/> Other (Explain in Remarks)                           |

Remarks: inclusion of sand 20% below 9"

**WETLAND DETERMINATION**

Hydrophytic Vegetation Present?	<input checked="" type="radio"/> YES <input type="radio"/> NO	Is this Sampling Point Within a Wetland? <input checked="" type="radio"/> YES <input type="radio"/> NO
Wetland Hydrology Present?	<input checked="" type="radio"/> YES <input type="radio"/> NO	
Hydric Soils Present?	<input checked="" type="radio"/> YES <input type="radio"/> NO	
Remarks		

ROUTINE WETLAND DETERMINATION  
(1987 COE Wetlands Delineation Manual)

UPL3-4

Project/Site	ALAMEDA - SITE 2	Date	SEPT 27, 2004
Applicant / Owner		County	ALAMEDA
Investigator	MALD, HEZM	State	CA
Do Normal Circumstances exist on the site?	YES NO	Community ID	UPL
Is the site significantly disturbed (Atypical Situation)?	YES NO	Transect ID	
Is the area a potential Problem Area? (If needed, explain on reverse)	YES NO	Plot ID	UPL 3-4

VEGETATION

H = herb

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Distichlis spicata	H	FACW+			9
2 Rhexosia setosa	H	-			10
3 Bromus hordeaceus	H	FACU-			11
4 Avena sp.	H	-			12
5					13
6					14
7					15
8					16

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 25%

Remarks

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <ul style="list-style-type: none"> <li><input type="checkbox"/> Stream, Lake, or Tide Gauge</li> <li><input type="checkbox"/> Aerial Photographs</li> <li><input checked="" type="checkbox"/> Other</li> </ul> <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b> Primary Indicators: <ul style="list-style-type: none"> <li><input type="checkbox"/> Inundated</li> <li><input type="checkbox"/> Saturated in Upper 12 Inches</li> <li><input type="checkbox"/> Water Marks</li> <li><input type="checkbox"/> Drift Lines</li> <li><input type="checkbox"/> Sediment Deposits</li> <li><input type="checkbox"/> Drainage Patterns in Wetlands</li> </ul> Secondary Indicators (2 or more Required): <ul style="list-style-type: none"> <li><input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</li> <li><input type="checkbox"/> Water-Stained Leaves</li> <li><input checked="" type="checkbox"/> Local Soil Survey Data</li> <li><input type="checkbox"/> FAC-Neutral Test</li> <li><input checked="" type="checkbox"/> Other (Explain in Remarks)</li> </ul>	
<b>FIELD OBSERVATIONS</b>			
Depth of Surface Water	> 18	(in)	
Depth to Free Water in Pit	> 18	(in)	
Depth to Saturated Soil	> 18	(in)	

NRCS ALAMEDA COUNTY & WRCC DATA  
JAN 2003 - MAR 2004 (FROM OAKLAND MUSEUM)



ROUTINE WETLAND DETERMINATION  
(1987 COE Wetlands Delineation Manual)

Project/Site <i>Alameda Site 2</i>	Date <i>Sept 27, 2004</i>
Applicant / Owner	County <i>Alameda</i>
Investigator <i>Malo, Helen</i>	State <i>CA</i>
Do Normal Circumstances exist on the site? <input checked="" type="radio"/> YES <input type="radio"/> NO	Community ID <i>SM</i>
Is the site significantly disturbed (Atypical Situation)? <input checked="" type="radio"/> YES <input type="radio"/> NO	Transect ID
Is the area a potential Problem Area? (If needed, explain on reverse) <input checked="" type="radio"/> YES <input type="radio"/> NO	Plot ID <i>SM 6D</i>

VEGETATION

H = herb

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <i>Hordeum marianum</i> sp	H	FAC	9		
2 <i>Districhlis spicata</i>	H	FACW+	10		
3 <i>Bromus hordeaceus</i>	H	FACU-	11		
4 <i>Bromus diandrus</i>	H	-	12		
5 <i>Salicornia rubra</i>	H	OBL	13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) *80%*

Remarks

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <ul style="list-style-type: none"> <li><input type="checkbox"/> Stream, Lake, or Tide Gauge</li> <li><input type="checkbox"/> Aerial Photographs</li> <li><input checked="" type="checkbox"/> Other</li> </ul> <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b>	
<b>FIELD OBSERVATIONS</b>		Primary Indicators:	
Depth of Surface Water	<i>* n/a</i> (in)	<input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input checked="" type="checkbox"/> Water Marks <input checked="" type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands	
Depth to Free Water in Pit	<i>* n/a</i> (in)	Secondary Indicators (2 or more Required):	
Depth to Saturated Soil	<i>* n/a</i> (in)	<input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input checked="" type="checkbox"/> Water-Stained Leaves <input checked="" type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input checked="" type="checkbox"/> Other (Explain in Remarks)	

*NRCS Alameda County (1981) & NRCC DATA  
 JAN 2003 - MAR 2004 (FROM OAKLAND MUSEUM)  
 \* DRY Season Sampling*

**SOILS**

Map Unit Name (Series and Phase):			Drainage Class:		
Taxonomy (Subgroup)		Field Observations Confirm Mapped Type? YES NO			
PROFILE DESCRIPTION					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16	A	10YR 4/2	10YR 3/4	C-1-D	Sandy (clay loam)

**HYDRIC SOIL INDICATORS:**

- |  |   |
|--|---|
| <input type="checkbox"/> Histosol                    | <input type="checkbox"/> Concretions  |
| <input type="checkbox"/> Histic Epipedon             | <input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils |
| <input type="checkbox"/> Sulfidic Odor               | <input type="checkbox"/> Organic Streaking in Sandy Soils                     |
| <input type="checkbox"/> Aquic Moisture Regime       | <input type="checkbox"/> Listed on Local Hydric Soils List                    |
| <input type="checkbox"/> Reducing Conditions         | <input type="checkbox"/> Listed on National Hydric Soils List                 |
| <input type="checkbox"/> Gleyed or Low-Chroma Colors | <input type="checkbox"/> Other (Explain in Remarks)                           |

Remarks:

inclusion of sand below 9"

**WETLAND DETERMINATION**

Hydrophytic Vegetation Present?	<input checked="" type="radio"/> YES	<input type="radio"/> NO	Is this Sampling Point Within a Wetland? <input checked="" type="radio"/> YES <input type="radio"/> NO
Wetland Hydrology Present?	<input checked="" type="radio"/> YES	<input type="radio"/> NO	
Hydric Soils Present?	<input checked="" type="radio"/> YES	<input type="radio"/> NO	

Remarks:

ROUTINE WETLAND DETERMINATION  
(1987 COE Wetlands Delineation Manual)

Project/Site <i>Alameda SITE 2</i>	Date <i>Sept 27</i>
Applicant / Owner	County <i>Alameda</i>
Investigator <i>Helm, MALCO</i>	State <i>CA</i>
Do Normal Circumstances exist on the site? <i>YES</i> NO	Community ID <i>SM</i>
Is the site significantly disturbed (Atypical Situation)? <i>YES</i> NO	Transect ID
Is the area a potential Problem Area? (If needed, explain on reverse) <i>YES</i> <i>NO</i>	Plot ID <i>SM 6E</i>

VEGETATION

*H = herb*

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <i>Distichlis spicata</i>	<i>H</i>	<i>FACW+</i>			9
2 <i>Bromus hordeaceus</i>	<i>H</i>	<i>FACU-</i>			10
3 <i>Salicornia rubra</i>	<i>H</i>	<i>OBL</i>			11
4 <i>Bromus diandrus</i>	<i>H</i>	<i>-</i>			12
5 <i>Hordeum marinum</i>	<i>H</i>	<i>FAC</i>			13
6					14
7					15
8					16

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) *80%*

Remarks

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <ul style="list-style-type: none"> <li><input type="checkbox"/> Stream, Lake, or Tide Gauge</li> <li><input type="checkbox"/> Aerial Photographs</li> <li><input checked="" type="checkbox"/> Other</li> </ul> <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b>	
<b>FIELD OBSERVATIONS</b>		Primary Indicators:	
Depth of Surface Water	<i>d - / a</i> (in)	<input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input checked="" type="checkbox"/> Water Marks <input checked="" type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands	
Depth to Free Water in Pit	<i>d - / a</i> (in)	Secondary Indicators (2 or more Required):	
Depth to Saturated Soil	<i>d - / a</i> (in)	<input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input checked="" type="checkbox"/> Water-Stained Leaves <input checked="" type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input checked="" type="checkbox"/> Other (Explain in Remarks)	

*NRCS Alameda County (1981) { WRCC DATA  
 JAN 2003 - MAR 2004 (FROM OAKLAND - MUSEUM)  
 \* DRY SEASON SAMPLING*



ROUTINE WETLAND DETERMINATION  
(1987 COE Wetlands Delineation Manual)

UPL 4-7  
A

Project/Site <i>ALAMEDA - SITE 2</i>	Date <i>SEPT 27, 2004</i>
Applicant / Owner	County <i>ALAMEDA</i>
Investigator <i>MALO, HERN</i>	State <i>CA</i>
Do Normal Circumstances exist on the site? <input checked="" type="radio"/> YES <input type="radio"/> NO	Community ID <i>UPL</i>
Is the site significantly disturbed (Atypical Situation)? <input checked="" type="radio"/> YES <input type="radio"/> NO	Transect ID
Is the area a potential Problem Area? (If needed, explain on reverse) YES <input type="radio"/> NO <input checked="" type="radio"/>	Plot ID <i>UPL 4-7</i>

VEGETATION

H = herb

Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1 <i>Bromus hordeaceus</i>	H	FACU-	9			
2 <i>Bromus diandrus</i>	H	-	10			
3 <i>Selicornia rubra</i>	H	OBL	11			
4 <i>Distichlis spicata</i>	H	FACW*	12			
5			13			
6			14			
7			15			
8			16			

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) *40%*

Remarks

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <ul style="list-style-type: none"> <li><input type="checkbox"/> Stream, Lake, or Tide Gauge</li> <li><input type="checkbox"/> Aerial Photographs</li> <li><input checked="" type="checkbox"/> Other</li> </ul> <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b> Primary Indicators: <ul style="list-style-type: none"> <li><input type="checkbox"/> Inundated</li> <li><input type="checkbox"/> Saturated in Upper 12 Inches</li> <li><input type="checkbox"/> Water Marks</li> <li><input type="checkbox"/> Drift Lines</li> <li><input type="checkbox"/> Sediment Deposits</li> <li><input type="checkbox"/> Drainage Patterns in Wetlands</li> </ul> Secondary Indicators (2 or more Required): <ul style="list-style-type: none"> <li><input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</li> <li><input type="checkbox"/> Water-Stained Leaves</li> <li><input checked="" type="checkbox"/> Local Soil Survey Data</li> <li><input type="checkbox"/> FAC-Neutral Test</li> <li><input checked="" type="checkbox"/> Other (Explain in Remarks)</li> </ul>	
FIELD OBSERVATIONS			
Depth of Surface Water	<i>&gt; 18</i>	(in)	
Depth to Free Water in Pit	<i>&gt; 18</i>	(in)	
Depth to Saturated Soil	<i>&gt; 18</i>	(in)	

*NECS ALAMEDA COUNTY (1981) 1/3 WRCC DATA  
JAN 2003 - MAR 2004 (FROM OAKLAND MUSEUM)*

upl 4-7

**SOILS**

Map Unit Name (Series and Phase):			Drainage Class:		
Taxonomy (Subgroup)			Field Observations Confirm Mapped Type? YES NO		
PROFILE DESCRIPTION					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
		SAME AS 1-2			
		upl			
See Attached					
HYDRIC SOIL INDICATORS:					
<input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime <input type="checkbox"/> Reducing Conditions <input type="checkbox"/> Gleyed or Low-Chroma Colors			<input type="checkbox"/> Concretions <input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils <input type="checkbox"/> Organic Streaking in Sandy Soils <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Other (Explain in Remarks)		
Remarks:					

**WETLAND DETERMINATION**

Hydrophytic Vegetation Present?	YES	NO <input checked="" type="radio"/>	Is this Sampling Point Within a Wetland? YES <input type="radio"/> NO <input checked="" type="radio"/>
Wetland Hydrology Present?	YES	NO <input checked="" type="radio"/>	
Hydric Soils Present?	<input checked="" type="radio"/> YES	NO	
Remarks			

ROUTINE WETLAND DETERMINATION  
(1987 COE Wetlands Delineation Manual)

Project/Site	Alameda SITE 2	Date	Sept 17, 2004
Applicant / Owner		County	Alameda
Investigator	Helm, Malo	State	CA
Do Normal Circumstances exist on the site?	<input checked="" type="radio"/> YES <input type="radio"/> NO	Community ID	SM
Is the site significantly disturbed (Atypical Situation)?	<input checked="" type="radio"/> YES <input type="radio"/> NO	Transect ID	
Is the area a potential Problem Area? (if needed, explain on reverse)	YES <input type="radio"/> NO <input checked="" type="radio"/>	Plot ID	SM 6 F

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Distichlis Spicata	H	FACWT			9
2 Bromus hordeaceus	H	FACU-			10
3 Lotus corniculatus	H	FAC			11
4 Rumex crispus	H	FACW-			12
5 Lolium multiflorum	H	FAC			13
6					14
7					15
8					16

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 80%

Remarks

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <ul style="list-style-type: none"> <li><input type="checkbox"/> Stream, Lake, or Tide Gauge</li> <li><input type="checkbox"/> Aerial Photographs</li> <li><input checked="" type="checkbox"/> Other</li> </ul> <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b> <p>Primary Indicators:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Inundated</li> <li><input type="checkbox"/> Saturated in Upper 12 Inches</li> <li><input checked="" type="checkbox"/> Water Marks</li> <li><input checked="" type="checkbox"/> Drift Lines</li> <li><input type="checkbox"/> Sediment Deposits</li> <li><input checked="" type="checkbox"/> Drainage Patterns in Wetlands</li> </ul> <p>Secondary Indicators (2 or more Required):</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</li> <li><input checked="" type="checkbox"/> Water-Stained Leaves</li> <li><input checked="" type="checkbox"/> Local Soil Survey Data</li> <li><input type="checkbox"/> FAC-Neutral Test</li> <li><input checked="" type="checkbox"/> Other (Explain in Remarks)</li> </ul>	
<b>FIELD OBSERVATIONS</b>			
Depth of Surface Water	* N/A	(in)	
Depth to Free Water in Pit	* N/A	(in)	
Depth to Saturated Soil	* N/A	(in)	

\* IRCS Alameda County (1981) & WRCC DATA  
 JAN 2003 - MAR 2004 (FROM OAKLAND MUSEUM)  
 \* DRY SEASON SAMPLING

**SOILS**

Map Unit Name (Series and Phase):			Drainage Class:		
Taxonomy (Subgroup)		Field Observations Confirm Mapped Type?    YES    NO			
PROFILE DESCRIPTION					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2	O				
2-8	A	2.5Y 4/2	—	—	SAND
8-14	B	5Y 4/1	—	—	SAND
<b>HYDRIC SOIL INDICATORS:</b>					
<input type="checkbox"/> Histosol		<input type="checkbox"/> Concretions			
<input type="checkbox"/> Histic Epipedon		<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils			
<input type="checkbox"/> Suffidic Odor		<input type="checkbox"/> Organic Streaking in Sandy Soils			
<input type="checkbox"/> Aquic Moisture Regime		<input type="checkbox"/> Listed on Local Hydric Soils List			
<input type="checkbox"/> Reducing Conditions		<input type="checkbox"/> Listed on National Hydric Soils List			
<input type="checkbox"/> Gleyed or Low-Chroma Colors		<input type="checkbox"/> Other (Explain in Remarks)			
Remarks:					

**WETLAND DETERMINATION**

Hydrophytic Vegetation Present?	<input checked="" type="radio"/> YES	<input type="radio"/> NO	Is this Sampling Point Within a Wetland? <input checked="" type="radio"/> YES <input type="radio"/> NO
Wetland Hydrology Present?	<input checked="" type="radio"/> YES	<input type="radio"/> NO	
Hydric Soils Present?	<input checked="" type="radio"/> YES	<input type="radio"/> NO	
Remarks			

ROUTINE WETLAND DETERMINATION  
(1987 COE Wetlands Delineation Manual)

Project/Site	Alameda SITE 2	Date	Sept 27, 2004
Applicant / Owner		County	Alameda
Investigator	Helm, MALO	State	CA
Do Normal Circumstances exist on the site?	YES NO	Community ID	SM
Is the site significantly disturbed (Atypical Situation)?	YES NO	Transect ID	
Is the area a potential Problem Area? (If needed, explain on reverse)	YES NO	Plot ID	SM5 A1

VEGETATION

H = herbs

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Bromus hordeaceus	H	FACU-			9
2 Cirsium vulgare	H	FAC VI			10
3 Soliveria rubra	H	FACW+			11
4 Lotus corniculatus	H	FAC			12
5 Pistichilis spicata	H	FACW+			13
6					14
7					15
8					16

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 60%

Remarks

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <ul style="list-style-type: none"> <li><input type="checkbox"/> Stream, Lake, or Tide Gauge</li> <li><input type="checkbox"/> Aerial Photographs</li> <li><input checked="" type="checkbox"/> Other</li> </ul> <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b> <p>Primary Indicators:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Inundated</li> <li><input type="checkbox"/> Saturated in Upper 12 Inches</li> <li><input checked="" type="checkbox"/> Water Marks</li> <li><input checked="" type="checkbox"/> Drift Lines</li> <li><input type="checkbox"/> Sediment Deposits</li> <li><input checked="" type="checkbox"/> Drainage Patterns in Wetlands</li> </ul> <p>Secondary Indicators (2 or more Required):</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</li> <li><input checked="" type="checkbox"/> Water-Stained Leaves</li> <li><input checked="" type="checkbox"/> Local Soil Survey Data</li> <li><input type="checkbox"/> FAC-Neutral Test</li> <li><input checked="" type="checkbox"/> Other (Explain in Remarks)</li> </ul>	
<b>FIELD OBSERVATIONS</b>			
Depth of Surface Water	0 n/a	(in)	
Depth to Free Water in Pit	4 n/a	(in)	
Depth to Saturated Soil	2 n/a	(in)	

NRCS Alameda County (1981) & well DATA  
Jan 2003 - mar 2004 (from OAKLAND MUSEUM)



DATA FORM

ROUTINE WETLAND DETERMINATION  
(1987 COE Wetlands Delineation Manual)

Project/Site	Alameda Site 2	Date	Sept 27, 2004
Applicant / Owner		County	Alameda
Investigator	Helm, Malo	State	CA
Do Normal Circumstances exist on the site?	YES NO	Community ID	SM
Is the site significantly disturbed (Atypical Situation)?	YES NO	Transect ID	
Is the area a potential Problem Area? (If needed, explain on reverse)	YES NO	Plot ID	SM 4A

VEGETATION

H =

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <i>Salicornia rubra</i>	H	OBL			
2 <i>Bromus hordeaceus</i>	H	—			
3 <i>Lythrum cuneatum</i>	H	FACW			
4 <i>Dactyloctenium aegyptium</i>	H	FACW			
5 <i>Bromus diandrus</i>	H	—			
6					
7					
8					

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 60%

Remarks

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <ul style="list-style-type: none"> <li><input type="checkbox"/> Stream, Lake, or Tide Gauge</li> <li><input type="checkbox"/> Aerial Photographs</li> <li><input checked="" type="checkbox"/> Other</li> </ul> <input type="checkbox"/> No Recorded Data Available		<p>WETLAND HYDROLOGY INDICATORS</p> <p>Primary Indicators:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Inundated</li> <li><input type="checkbox"/> Saturated in Upper 12 Inches</li> <li><input checked="" type="checkbox"/> Water Marks</li> <li><input checked="" type="checkbox"/> Drift Lines</li> <li><input type="checkbox"/> Sediment Deposits</li> <li><input checked="" type="checkbox"/> Drainage Patterns in Wetlands</li> </ul> <p>Secondary Indicators (2 or more Required):</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</li> <li><input checked="" type="checkbox"/> Water-Stained Leaves</li> <li><input checked="" type="checkbox"/> Local Soil Survey Data</li> <li><input type="checkbox"/> FAC-Neutral Test</li> <li><input checked="" type="checkbox"/> Other (Explain in Remarks)</li> </ul>	
FIELD OBSERVATIONS			
Depth of Surface Water	* N/A	(in)	
Depth to Free Water in Pit	* N/A	(in)	
Depth to Saturated Soil	* N/A	(in)	

NRCS ALAMEDA COUNTY (1981) & WRCC DATA  
 JAN 2003 - MAR 2004 (FROM OAKLAND MUSEUM)  
 \* DRY SEASON SAMPLING  
 \* Hydrology obs march 2004

**SOILS**

Map Unit Name (Series and Phase):	Drainage Class:
Taxonomy (Subgroup)	Field Observations Confirm Mapped Type?    YES    NO

**PROFILE DESCRIPTION**

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-9	A	10 YR 4/2	10 YR 3/4		
9-16	A	10 YR 4/2	10 YR 3/4		

**HYDRIC SOIL INDICATORS:**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol<br><input type="checkbox"/> Histic Epipedon<br><input type="checkbox"/> Sulfidic Odor<br><input type="checkbox"/> Aquic Moisture Regime<br><input type="checkbox"/> Reducing Conditions<br><input type="checkbox"/> Gleyed or Low-Chroma Colors | <input type="checkbox"/> Concretions<br><input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils<br><input type="checkbox"/> Organic Streaking in Sandy Soils<br><input type="checkbox"/> Listed on Local Hydric Soils List<br><input type="checkbox"/> Listed on National Hydric Soils List<br><input type="checkbox"/> Other (Explain in Remarks) |
|---|--|

Remarks:

**WETLAND DETERMINATION**

Hydrophytic Vegetation Present?	YES NO	Is this Sampling Point Within a Wetland?    YES    NO
Wetland Hydrology Present?	YES NO	
Hydric Soils Present?	YES NO	

Remarks:

DATA FORM

ROUTINE WETLAND DETERMINATION  
(1987 COE Wetlands Delineation Manual)

UPL 5-8

Project/Site <b>ALAMEDA - SITE 2</b>	Date <b>SEPT 27, 2004</b>
Applicant / Owner	County <b>ALAMEDA</b>
Investigator <b>MALO, HELM</b>	State <b>CA</b>
Do Normal Circumstances exist on the site? <b>YES</b> NO	Community ID <b>UPL</b>
Is the site significantly disturbed (Atypical Situation)? <b>YES</b> NO	Transect ID
Is the area a potential Problem Area? (If needed, explain on reverse) YES <b>NO</b>	Plot ID <b>UPL 5-8</b>

VEGETATION

H=herb

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <i>Hordeum marianum</i> ssp <i>goss</i>	H	FAC	9		
2 <i>Bromus hordeaceus</i>	H	FACU-	10		
3 <i>Rumex crispus</i>	H	FACW-	11		
4 <i>Lotus corniculatus</i>	H	FAC	12		
5			13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **60%**

Remarks

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <ul style="list-style-type: none"> <li><input type="checkbox"/> Stream, Lake, or Tide Gauge</li> <li><input type="checkbox"/> Aerial Photographs</li> <li><input checked="" type="checkbox"/> Other</li> </ul> <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b> Primary Indicators: <ul style="list-style-type: none"> <li><input type="checkbox"/> Inundated</li> <li><input type="checkbox"/> Saturated in Upper 12 Inches</li> <li><input type="checkbox"/> Water Marks</li> <li><input type="checkbox"/> Drift Lines</li> <li><input type="checkbox"/> Sediment Deposits</li> <li><input type="checkbox"/> Drainage Patterns in Wetlands</li> </ul> Secondary Indicators (2 or more Required): <ul style="list-style-type: none"> <li><input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</li> <li><input type="checkbox"/> Water-Stained Leaves</li> <li><input checked="" type="checkbox"/> Local Soil Survey Data</li> <li><input type="checkbox"/> FAC-Neutral Test</li> <li><input checked="" type="checkbox"/> Other (Explain in Remarks)</li> </ul>	
<b>FIELD OBSERVATIONS</b>			
Depth of Surface Water	> 18	(in)	
Depth to Free Water in Pit	> 18	(in)	
Depth to Saturated Soil	> 18	(in)	

NRLS ALAMEDA COUNTY (1981) & WRCC DATA  
 JAN 2003 - MAR 2004 (FROM OAKLAND MUSEUM)

**SOILS**

Map Unit Name (Series and Phase):			Drainage Class:		
Taxonomy (Subgroup)		Field Observations Confirm Mapped Type? YES NO			
PROFILE DESCRIPTION					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2	O				
2-8	A	2.5Y 4/2	—	—	Sandy loam
8-16	B	2.5Y 5/2-4/2	—	—	Sand
HYDRIC SOIL INDICATORS:					
<input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime <input type="checkbox"/> Reducing Conditions <input type="checkbox"/> Gleyed or Low-Chroma Colors		<input type="checkbox"/> Concretions <input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils <input type="checkbox"/> Organic Streaking in Sandy Soils <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Other (Explain in Remarks)			
Remarks:					

**WETLAND DETERMINATION**

Hydrophytic Vegetation Present?	YES NO	Is this Sampling Point Within a Wetland? YES NO
Wetland Hydrology Present?	YES NO	
Hydric Soils Present?	YES NO	
Remarks		

ROUTINE WETLAND DETERMINATION  
(1987 COE Wetlands Delineation Manual)

Project/Site	Alameda SITE 2	Date	Sept 27, 2004
Applicant / Owner		County	Alameda
Investigator	MALCO, HELM	State	CA
Do Normal Circumstances exist on the site?	YES NO	Community ID	SM
Is the site significantly disturbed (Atypical Situation)?	YES NO	Transect ID	
Is the area a potential Problem Area? (If needed, explain on reverse)	YES NO	Plot ID	SM-3A

VEGETATION

H = herb

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Bromus hordeaceus	H	—			
2 Distichlis spicata	H	FACW			
3 Hordeum marium ssp.	H	—			
4 <del>Salicornia</del>	H	OBL			
5 REX CRISPUS	H	FACW			
6					
7					
8					

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 60%

Remarks

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <ul style="list-style-type: none"> <li><input type="checkbox"/> Stream, Lake, or Tide Gauge</li> <li><input type="checkbox"/> Aerial Photographs</li> <li><input checked="" type="checkbox"/> Other</li> </ul> <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b> Primary Indicators: <ul style="list-style-type: none"> <li><input type="checkbox"/> Inundated</li> <li><input type="checkbox"/> Saturated in Upper 12 Inches</li> <li><input checked="" type="checkbox"/> Water Marks</li> <li><input checked="" type="checkbox"/> Drift Lines</li> <li><input type="checkbox"/> Sediment Deposits</li> <li><input checked="" type="checkbox"/> Drainage Patterns in Wetlands</li> </ul> Secondary Indicators (2 or more Required): <ul style="list-style-type: none"> <li><input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</li> <li><input type="checkbox"/> Water-Stained Leaves</li> <li><input type="checkbox"/> Local Soil Survey Data</li> <li><input type="checkbox"/> FAC-Neutral Test</li> <li><input type="checkbox"/> Other (Explain in Remarks)</li> </ul>	
<b>FIELD OBSERVATIONS</b>			
Depth of Surface Water	R N/A	(in)	
Depth to Free Water in Pit	R N/A	(in)	
Depth to Saturated Soil	R N/A	(in)	

NRCS Alameda County (1981) & WAC DATA  
 JAN 2002 - MAR 2004 (from oakland museum)  
 4 DAY Season Sampling  
 Hydrology obs. in March

**SOILS**

Map Unit Name (Series and Phase):			Drainage Class:		
Taxonomy (Subgroup)		Field Observations Confirm Mapped Type?    YES    NO			
PROFILE DESCRIPTION					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0 - 9	A	10 YR 4/2	10 YR 3/4	C - 1 - d	Sandy Clay Loam
9 - 16	A	10 YR 4/2	10 YR 3/4	C - 1 - d	Sandy Clay Loam
HYDRIC SOIL INDICATORS:					
<input type="checkbox"/> Histosol			<input type="checkbox"/> Concretions		
<input type="checkbox"/> Histic Epipedon			<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils		
<input type="checkbox"/> Sulfidic Odor			<input type="checkbox"/> Organic Streaking in Sandy Soils		
<input type="checkbox"/> Aquic Moisture Regime			<input type="checkbox"/> Listed on Local Hydric Soils List		
<input type="checkbox"/> Reducing Conditions			<input type="checkbox"/> Listed on National Hydric Soils List		
<input type="checkbox"/> Gleyed or Low-Chroma Colors			<input type="checkbox"/> Other (Explain in Remarks)		
Remarks: * inclusion of Sand 20% below 9"					

**WETLAND DETERMINATION**

Hydrophytic Vegetation Present?	YES	NO	Is this Sampling Point Within a Wetland?    YES    NO
Wetland Hydrology Present?	YES	NO	
Hydric Soils Present?	YES	NO	
Remarks			

ROUTINE WETLAND DETERMINATION  
(1987 COE Wetlands Delineation Manual)

UPL 1-1  
A

Project/Site <i>ALAMEDA - SITE 2</i>	Date <i>Sept 27, 2004</i>
Applicant / Owner	County <i>ALAMEDA</i>
Investigator <i>MALO, HELM</i>	State <i>CA</i>
Do Normal Circumstances exist on the site? <input checked="" type="radio"/> YES <input type="radio"/> NO	Community ID <i>UPL</i>
Is the site significantly disturbed (Atypical Situation)? <input checked="" type="radio"/> YES <input type="radio"/> NO	Transect ID
Is the area a potential Problem Area? (If needed, explain on reverse) YES <input type="radio"/> NO <input checked="" type="radio"/>	Plot ID <i>UPL 1-1</i>

VEGETATION

H=herb

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <i>Lotus corniculatus</i>	H	FAC	9		
2 <i>Bromus hordeaceus</i>	H	FACU	10		
3 <i>Hordeum marinum ssp. guss</i>	H	FAC	11		
4 <i>Cirsium vulgare</i>	H	FACU	12		
5 <i>Cortaderis jubata</i>	H	—	13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) *40%*

Remarks

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <ul style="list-style-type: none"> <li><input type="checkbox"/> Stream, Lake, or Tide Gauge</li> <li><input type="checkbox"/> Aerial Photographs</li> <li><input checked="" type="checkbox"/> Other</li> </ul> <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b>	
<b>FIELD OBSERVATIONS</b>		Primary Indicators:	
Depth of Surface Water	<i>7 18'</i> (in)	<input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands	
Depth to Free Water in Pit	<i>7 18'</i> (in)	Secondary Indicators (2 or more Required):	
Depth to Saturated Soil	<i>7 18'</i> (in)	<input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input checked="" type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input checked="" type="checkbox"/> Other (Explain in Remarks)	

*NRCS ALAMEDA COUNTY (1981) & WRCC DATA  
JAN 2003 - MARCH 2004 (FROM OAKLAND MUSEUM)*

upl 1-1 B

**SOILS**

Map Unit Name (Series and Phase):			Drainage Class:		
Taxonomy (Subgroup)		Field Observations Confirm Mapped Type? YES NO			
PROFILE DESCRIPTION					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
		SAME	AS upl	6-11	SOIL
See Attached					

**HYDRIC SOIL INDICATORS:**

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks:

**WETLAND DETERMINATION**

Hydrophytic Vegetation Present?	YES	NO <input checked="" type="radio"/>	Is this Sampling Point Within a Wetland? YES <input type="radio"/> NO <input checked="" type="radio"/>
Wetland Hydrology Present?	YES	NO <input checked="" type="radio"/>	
Hydric Soils Present?	YES	NO <input checked="" type="radio"/>	

Remarks

ROUTINE WETLAND DETERMINATION  
(1987 COE Wetlands Delineation Manual)

Project/Site	Alameda Site 2	Date	Sept 27, 2001
Applicant / Owner		County	Alameda
Investigator	Helm, Muelo	State	CA
Do Normal Circumstances exist on the site?	<input checked="" type="radio"/> YES <input type="radio"/> NO	Community ID	SM
Is the site significantly disturbed (Atypical Situation)?	<input checked="" type="radio"/> YES <input type="radio"/> NO	Transect ID	
Is the area a potential Problem Area? (If needed, explain on reverse)	YES <input checked="" type="radio"/> NO	Plot ID	SM-2A

VEGETATION

H = herb

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Lotus corniculatus	H	FAC	9		
2. Solicormia rubra	H	FACW	10		
3. Distichlis spicata	H	FACW	11		
4. Bromus hordeaceus	H	—	12		
5. Cirsium vulgare	H	FACU	13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 60%

Remarks

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <ul style="list-style-type: none"> <li><input type="checkbox"/> Stream, Lake, or Tide Gauge</li> <li><input type="checkbox"/> Aerial Photographs</li> <li><input checked="" type="checkbox"/> Other</li> </ul> <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b>	
<b>FIELD OBSERVATIONS</b>		<b>Primary Indicators:</b>	
Depth of Surface Water	* n/a (in)	<input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input checked="" type="checkbox"/> Water Marks <input checked="" type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands	
Depth to Free Water in Pit	* n/a (in)	<b>Secondary Indicators (2 or more Required):</b>	
Depth to Saturated Soil	* n/a (in)	<input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input checked="" type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input checked="" type="checkbox"/> Other (Explain in Remarks)	

NRCS Alameda County (1991) & WRCC DATA  
JAN 2003 - MAR 2004 (from Oakland Museum)



ROUTINE WETLAND DETERMINATION  
(1987 COE Wetlands Delineation Manual)

Project/Site <i>ALAMEDA SITE 2</i>	Date <i>Sept 27, 2004</i>
Applicant / Owner	County <i>ALAMEDA</i>
Investigator <i>MALD, HELM</i>	State <i>CA</i>
Do Normal Circumstances exist on the site? <i>YES</i> NO	Community ID <i>SM</i>
Is the site significantly disturbed (Atypical Situation)? <i>YES</i> NO	Transect ID
Is the area a potential Problem Area? (If needed, explain on reverse) <i>YES</i> NO	Plot ID <i>SM 7A</i>

VEGETATION

*H = herb*

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <i>Bromus hordeaceus</i>	<i>H</i>	<i>FAU-</i>			
2 <i>Cyperus vulgare</i>	<i>H</i>	<i>FAC U</i>			
3 <i>Salicornia rubra</i>	<i>H</i>	<i>FACW+</i>			
4 <i>Lotus corniculatus</i>	<i>H</i>	<i>FAC</i>			
5 <i>Distichlis spicata</i>	<i>H</i>	<i>FACW+</i>			
6					
7					
8					

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) *60%*

Remarks

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <ul style="list-style-type: none"> <li><input type="checkbox"/> Stream, Lake, or Tide Gauge</li> <li><input type="checkbox"/> Aerial Photographs</li> <li><input checked="" type="checkbox"/> Other</li> </ul> <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b> Primary Indicators: <ul style="list-style-type: none"> <li><input type="checkbox"/> Inundated</li> <li><input type="checkbox"/> Saturated in Upper 12 Inches</li> <li><input checked="" type="checkbox"/> Water Marks</li> <li><input checked="" type="checkbox"/> Drift Lines</li> <li><input type="checkbox"/> Sediment Deposits</li> <li><input checked="" type="checkbox"/> Drainage Patterns in Wetlands</li> </ul> Secondary Indicators (2 or more Required): <ul style="list-style-type: none"> <li><input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</li> <li><input type="checkbox"/> Water-Stained Leaves</li> <li><input checked="" type="checkbox"/> Local Soil Survey Data</li> <li><input type="checkbox"/> FAC-Neutral Test</li> <li><input checked="" type="checkbox"/> Other (Explain in Remarks)</li> </ul>	
<b>FIELD OBSERVATIONS</b>			
Depth of Surface Water	<i>0 n/a</i>	(in)	
Depth to Free Water in Pit	<i>4 n/a</i>	(in)	
Depth to Saturated Soil	<i>4 n/a</i>	(in)	

*NRCS ALAMEDA County (1981) & WRCC DATA  
Jan 2003 - Mar 2004 (from OAKLAND museum)*

**SOILS**

Map Unit Name (Series and Phase):			Drainage Class:		
Taxonomy (Subgroup)		Field Observations Confirm Mapped Type? YES NO			
PROFILE DESCRIPTION					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16	A	10YR 4/2	10YR 3/4	C-1-D	Sandy Clay Loam

**HYDRIC SOIL INDICATORS:**

- |  |   |
|--|---|
| <input type="checkbox"/> Histosol                    | <input type="checkbox"/> Concretions  |
| <input type="checkbox"/> Histic Epipedon             | <input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils |
| <input type="checkbox"/> Sulfidic Odor               | <input type="checkbox"/> Organic Streaking in Sandy Soils                     |
| <input type="checkbox"/> Aquic Moisture Regime       | <input type="checkbox"/> Listed on Local Hydric Soils List                    |
| <input type="checkbox"/> Reducing Conditions         | <input type="checkbox"/> Listed on National Hydric Soils List                 |
| <input type="checkbox"/> Gleyed or Low-Chroma Colors | <input type="checkbox"/> Other (Explain in Remarks)                           |

Remarks:

an inclusion of sandstone below 9"

**WETLAND DETERMINATION**

Hydrophytic Vegetation Present?	<input checked="" type="radio"/> YES	<input type="radio"/> NO	Is this Sampling Point Within a Wetland? <input checked="" type="radio"/> YES <input type="radio"/> NO
Wetland Hydrology Present?	<input checked="" type="radio"/> YES	<input type="radio"/> NO	
Hydric Soils Present?	<input checked="" type="radio"/> YES	<input type="radio"/> NO	

Remarks

ROUTINE WETLAND DETERMINATION  
(1987 COE Wetlands Delineation Manual)

UPL 2-6 A

Project/Site	ALAMEDA - SITE 2	Date	SEPT 27, 2004
Applicant / Owner		County	ALAMEDA
Investigator	MALO, HELM	State	CA
Do Normal Circumstances exist on the site?	<input checked="" type="radio"/> YES <input type="radio"/> NO	Community ID	UPL
Is the site significantly disturbed (Atypical Situation)?	<input checked="" type="radio"/> YES <input type="radio"/> NO	Transect ID	
Is the area a potential Problem Area? (If needed, explain on reverse)	YES <input checked="" type="radio"/> NO	Plot ID	UPL 2-6

VEGETATION

H=herb

Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1 Bromus hordeaceus	H	FACU-	9			
2 Salicornia rubra	H	OBL	10			
3 Bromus diandrus	H	-	11			
4 Distichlis spicata	H	FACU*	12			
5			13			
6			14			
7			15			
8			16			

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 50%

Remarks

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <ul style="list-style-type: none"> <li><input type="checkbox"/> Stream, Lake, or Tide Gauge</li> <li><input type="checkbox"/> Aerial Photographs</li> <li><input checked="" type="checkbox"/> Other</li> </ul> <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b> <p>Primary Indicators:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Inundated</li> <li><input type="checkbox"/> Saturated in Upper 12 Inches</li> <li><input type="checkbox"/> Water Marks</li> <li><input type="checkbox"/> Drift Lines</li> <li><input type="checkbox"/> Sediment Deposits</li> <li><input type="checkbox"/> Drainage Patterns in Wetlands</li> </ul> <p>Secondary Indicators (2 or more Required):</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</li> <li><input type="checkbox"/> Water-Stained Leaves</li> <li><input checked="" type="checkbox"/> Local Soil Survey Data</li> <li><input type="checkbox"/> FAC-Neutral Test</li> <li><input checked="" type="checkbox"/> Other (Explain in Remarks)</li> </ul>	
FIELD OBSERVATIONS			
Depth of Surface Water	> 18	(in)	
Depth to Free Water in Pit	> 18	(in)	
Depth to Saturated Soil	> 18	(in)	

NRCS ALAMEDA COUNTY (1981) & WRCC DATA  
JAN 2003 - MAR 2004 (FROM OAKLAND MUSEUM)

**SOILS**

Map Unit Name (Series and Phase):			Drainage Class:		
Taxonomy (Subgroup)		Field Observations Confirm Mapped Type? YES NO			
PROFILE DESCRIPTION					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
		SAME	AS 1-2		
	See Attached				
HYDRIC SOIL INDICATORS:					
<input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime <input type="checkbox"/> Reducing Conditions <input type="checkbox"/> Gleyed or Low-Chroma Colors		<input type="checkbox"/> Concretions <input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils <input type="checkbox"/> Organic Streaking in Sandy Soils <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Other (Explain in Remarks)			
Remarks:					

**WETLAND DETERMINATION**

Hydrophytic Vegetation Present?	YES	(NO)	Is this Sampling Point Within a Wetland? YES (NO)
Wetland Hydrology Present?	YES	(NO)	
Hydric Soils Present?	(YES)	NO	
Remarks			

ROUTINE WETLAND DETERMINATION  
(1987 COE Wetlands Delineation Manual)

SW1-9  
SITE 2

Project/Site <b>ALAMEDA SITE 2</b>	Date <b>SEPT 17, 2004</b>
Applicant / Owner	County <b>ALAMEDA</b>
Investigator <b>MALO, HELM</b>	State <b>CA</b>
Do Normal Circumstances exist on the site? <b>(YES) NO</b>	Community ID <b>SW</b>
Is the site significantly disturbed (Atypical Situation)? <b>(YES) NO</b>	Transect ID
Is the area a potential Problem Area? (If needed, explain on reverse) <b>YES (NO)</b>	Plot ID <b>SW 4-A</b>

VEGETATION

Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1 <b>Distichlis Spicata</b>	<b>H</b>	<b>FACW+</b>	<b>9</b>			
2 <b>Lolium corniculatus</b>	<b>H</b>	<b>FAC</b>	<b>10</b>			
3 <b>Rumex crispus</b>	<b>H</b>	<b>FACW-</b>	<b>11</b>			
4 <b>Lolium multiflorum</b>	<b>H</b>	<b>FAC</b>	<b>12</b>			
5 <b>Bromus hordeaceus</b>	<b>H</b>	<b>FACW-</b>	<b>13</b>			
6			<b>14</b>			
7			<b>15</b>			
8			<b>16</b>			

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **80%**

Remarks

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <ul style="list-style-type: none"> <li><input type="checkbox"/> Stream, Lake, or Tide Gauge</li> <li><input type="checkbox"/> Aerial Photographs</li> <li><input checked="" type="checkbox"/> Other</li> </ul> <input type="checkbox"/> No Recorded Data Available		<p align="center"><b>WETLAND HYDROLOGY INDICATORS</b></p> <p>Primary Indicators:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Inundated</li> <li><input type="checkbox"/> Saturated in Upper 12 Inches</li> <li><input checked="" type="checkbox"/> Water Marks</li> <li><input checked="" type="checkbox"/> Drift Lines</li> <li><input checked="" type="checkbox"/> Sediment Deposits</li> <li><input checked="" type="checkbox"/> Drainage Patterns in Wetlands</li> </ul> <p>Secondary Indicators (2 or more Required):</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</li> <li><input checked="" type="checkbox"/> Water-Stained Leaves</li> <li><input checked="" type="checkbox"/> Local Soil Survey Data</li> <li><input type="checkbox"/> FAC-Neutral Test</li> <li><input checked="" type="checkbox"/> Other (Explain in Remarks)</li> </ul>	
<b>FIELD OBSERVATIONS</b>			
Depth of Surface Water	<b>* N/A</b>	(in)	
Depth to Free Water in Pit	<b>* N/A</b>	(in)	
Depth to Saturated Soil	<b>* N/A</b>	(in)	

NRCS ALAMEDA COUNTY (1981) & WRCC DATA  
 JAN 2003 - MAR 2004 (FROM OAKLAND MUSEUM)  
 \* DRY SEASON SAMPLING

**SOILS**

Map Unit Name (Series and Phase):			Drainage Class:		
Taxonomy (Subgroup)		Field Observations Confirm Mapped Type? YES NO			
PROFILE DESCRIPTION					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2	O				
2-8	A	2.5Y 4/2	—	—	Sand
8-16	B	5Y 4/1	—	—	Sand

**HYDRIC SOIL INDICATORS:**

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks:

**WETLAND DETERMINATION**

Hydrophytic Vegetation Present?	<input checked="" type="radio"/> YES	<input type="radio"/> NO	Is this Sampling Point Within a Wetland? <input checked="" type="radio"/> YES <input type="radio"/> NO
Wetland Hydrology Present?	<input checked="" type="radio"/> YES	<input type="radio"/> NO	
Hydric Soils Present?	<input checked="" type="radio"/> YES	<input type="radio"/> NO	

Remarks

ROUTINE WETLAND DETERMINATION  
(1987 COE Wetlands Delineation Manual)

Project/Site	Alameda SITE 2	Date	Sept 27, 2004
Applicant / Owner		County	Alameda
Investigator	MALO, Helen	State	CA
Do Normal Circumstances exist on the site?	YES NO	Community ID	SW
Is the site significantly disturbed (Atypical Situation)?	YES NO	Transect ID	
Is the area a potential Problem Area? (If needed, explain on reverse)	YES NO	Plot ID	SW 6-A

VEGETATION

H = herb

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Rumex crispus	H	FAC W 9			
2 Lotus corniculatus	H	FAC			
3 Distichlis spicata	H	FACW*			
4 Cirsium vulgare	H	FAC W			
5 Bromus hordeaceus	H	FAC W			
6					
7					
8					

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 60%

Remarks

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input checked="" type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b> Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input checked="" type="checkbox"/> Water Marks <input checked="" type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands  Secondary Indicators (2 or more Required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input checked="" type="checkbox"/> Water-Stained Leaves <input checked="" type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input checked="" type="checkbox"/> Other (Explain in Remarks)	
FIELD OBSERVATIONS			
Depth of Surface Water	* N/A	(in)	
Depth to Free Water in Pit	* N/A	(in)	
Depth to Saturated Soil	* N/A	(in)	

NRCS ALAMEDA COUNTY (1981) & WRCC DATA  
 JAN 2003 - MARCH 2004 (FROM OAKLAND MUSEUM)  
 \* DRY SEASON SAMPLING

**SOILS**

Map Unit Name (Series and Phase):				Drainage Class:	
Taxonomy (Subgroup)			Field Observations Confirm Mapped Type?    YES    NO		
PROFILE DESCRIPTION					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions Structure, etc.
0-2	O	—	—	—	
2-6	A	5Y 5/2	—	—	SANDY
8-16	B	5Y 4/1	—	—	SANDY CLAY
HYDRIC SOIL INDICATORS:					
<input type="checkbox"/> Histosol				<input type="checkbox"/> Concretions	
<input type="checkbox"/> Histic Epipedon				<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils	
<input type="checkbox"/> Sulfidic Odor				<input type="checkbox"/> Organic Streaking in Sandy Soils	
<input type="checkbox"/> Aquic Moisture Regime				<input type="checkbox"/> Listed on Local Hydric Soils List	
<input type="checkbox"/> Reducing Conditions				<input type="checkbox"/> Listed on National Hydric Soils List	
<input type="checkbox"/> Gleyed or Low-Chroma Colors				<input type="checkbox"/> Other (Explain in Remarks)	
Remarks:					

**WETLAND DETERMINATION**

Hydrophytic Vegetation Present?	YES	NO	Is this Sampling Point Within a Wetland?    YES    NO
Wetland Hydrology Present?	YES	NO	
Hydric Soils Present?	YES	NO	
Remarks			

ROUTINE WETLAND DETERMINATION  
(1987 COE Wetlands Delineation Manual)

UPL 6-11  
SITE 1

Project/Site	ALAMEDA - SITE 2	Date	27 Sept 2004
Applicant / Owner		County	ALAMEDA
Investigator	MALO, Helen	State	CA
Do Normal Circumstances exist on the site?	YES NO	Community ID	UPL
Is the site significantly disturbed (Atypical Situation)?	YES NO	Transect ID	
Is the area a potential Problem Area? (If needed, explain on reverse)	YES NO	Plot ID	UPL 6-11

VEGETATION

H=herb

Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1 Distichlis spicata	H	FACW*	9			
2 Cirsium vulgare	H	FACU	10			
3 Bromus hordeaceus	H	FACU-	11			
4 Carpobrotus edulis	H	-	12			
5 Rumex crispus	H	FACW-	13			
6			14			
7			15			
8			16			

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 40% hydrophytes

Remarks

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <ul style="list-style-type: none"> <li><input type="checkbox"/> Stream, Lake, or Tide Gauge</li> <li><input type="checkbox"/> Aerial Photographs</li> <li><input checked="" type="checkbox"/> Other</li> </ul> <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b>	
<b>FIELD OBSERVATIONS</b>		Primary Indicators:	
Depth of Surface Water	> 18 (in)	<input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands	
Depth to Free Water in Pit	> 18 (in)	Secondary Indicators (2 or more Required):	
Depth to Saturated Soil	> 18 (in)	<input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input checked="" type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input checked="" type="checkbox"/> Other (Explain in Remarks)	

NRCS ALAMEDA COUNTY (1981) & WRCC DATA  
JAN 2003 - MARCH 2004 (FROM OAKLAND MUSEUM)



ROUTINE WETLAND DETERMINATION  
(1987 COE Wetlands Delineation Manual)

SW2-10  
SITE 2

Project/Site	ALAMEDA SITE 2	Date	17 Sept 2004
Applicant / Owner		County	ALAMEDA
Investigator	Malo, Helm	State	CA
Do Normal Circumstances exist on the site?	YES NO	Community ID	SW
Is the site significantly disturbed (Atypical Situation)?	YES NO	Transect ID	
Is the area a potential Problem Area? (If needed, explain on reverse)	YES NO	Plot ID	SW 9 - A

VEGETATION

H = herb

Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1 Rumex crispus	H	FACW+	9			
2 Lotus corniculatus	H	FAC	10			
3 Bromus hordeaceus	H	FACU-	11			
4 Distichlis spicata	H	FACW*	12			
5 Cirsium vulgare	H	FACU	13			
6			14			
7			15			
8			16			

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 60%

Remarks

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <ul style="list-style-type: none"> <li><input type="checkbox"/> Stream, Lake, or Tide Gauge</li> <li><input type="checkbox"/> Aerial Photographs</li> <li><input checked="" type="checkbox"/> Other</li> </ul> <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b>	
<b>FIELD OBSERVATIONS</b>		<b>Primary Indicators:</b>	
Depth of Surface Water	* N/A (in)	<input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input checked="" type="checkbox"/> Water Marks <input checked="" type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands	
Depth to Free Water in Pit	* N/A (in)	<b>Secondary Indicators (2 or more Required):</b>	
Depth to Saturated Soil	* N/A (in)	<input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input checked="" type="checkbox"/> Water-Stained Leaves <input checked="" type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input checked="" type="checkbox"/> Other (Explain in Remarks)	

NRCS ALAMEDA COUNTY (1981) & WRCC DATA  
 JAN 2003 - MAR 2004 (FROM OAKLAND MUSEUM)  
 & DRY SEASON SAMPLING

**SOILS**

Map Unit Name (Series and Phase):				Drainage Class:	
Taxonomy (Subgroup)			Field Observations Confirm Mapped Type? YES NO		
PROFILE DESCRIPTION					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2	C	---	---	---	
2-6	A	5Y 5/2	---	---	SANDY
8-16	B	5Y 4/1	---	---	SANDY CLAY
<b>HYDRIC SOIL INDICATORS:</b>					
<input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime <input type="checkbox"/> Reducing Conditions <input type="checkbox"/> Gleyed or Low-Chroma Colors		<input type="checkbox"/> Concretions <input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils <input type="checkbox"/> Organic Streaking in Sandy Soils <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Other (Explain in Remarks)			
Remarks:					

**WETLAND DETERMINATION**

Hydrophytic Vegetation Present?	(YES) NO	Is this Sampling Point Within a Wetland? (YES) NO
Wetland Hydrology Present?	(YES) NO	
Hydric Soils Present?	(YES) NO	
Remarks		

ROUTINE WETLAND DETERMINATION  
(1987 COE Wetlands Delineation Manual)

Project/Site	Alameda Site 2	Date	Sept 17, 2004
Applicant / Owner		County	Alameda
Investigator	Malo, Helan	State	CA
Do Normal Circumstances exist on the site?	YES NO	Community ID	SW
Is the site significantly disturbed (Atypical Situation)?	YES NO	Transect ID	
Is the area a potential Problem Area? (If needed, explain on reverse)	YES NO	Plot ID	SW 12-A

VEGETATION

H = herbs

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <i>Rumex crispus</i>	H	FACW+	9		
2 <i>Lotus corniculatus</i>	H	FAC	10		
3 <i>Bromus hordeaceus</i>	H	FACU-	11		
4 <i>Distichlis spicata</i>	H	FACW*	12		
5 <i>Cirsium vulgare</i>	H	FACU	13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-)

Remarks

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <ul style="list-style-type: none"> <li><input type="checkbox"/> Stream, Lake, or Tide Gauge</li> <li><input type="checkbox"/> Aerial Photographs</li> <li><input checked="" type="checkbox"/> Other</li> </ul> <input type="checkbox"/> No Recorded Data Available		<p>WETLAND HYDROLOGY INDICATORS</p> <p>Primary Indicators:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Inundated</li> <li><input type="checkbox"/> Saturated in Upper 12 Inches</li> <li><input checked="" type="checkbox"/> Water Marks</li> <li><input checked="" type="checkbox"/> Drift Lines</li> <li><input checked="" type="checkbox"/> Sediment Deposits</li> <li><input checked="" type="checkbox"/> Drainage Patterns in Wetlands</li> </ul> <p>Secondary Indicators (2 or more Required):</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</li> <li><input checked="" type="checkbox"/> Water-Stained Leaves</li> <li><input checked="" type="checkbox"/> Local Soil Survey Data</li> <li><input type="checkbox"/> FAC-Neutral Test</li> <li><input checked="" type="checkbox"/> Other (Explain in Remarks)</li> </ul>	
FIELD OBSERVATIONS			
Depth of Surface Water	* N/A	(in)	
Depth to Free Water in Pit	* N/A	(in)	
Depth to Saturated Soil	* N/A	(in)	

NRCS Alameda County (1981) & NRCC DATA  
 JAN 2003 - MAR 2004 (FROM) OAKLAND MUSEUM  
 \* DRY SEASON sampling

**SOILS**

Map Unit Name (Series and Phase):				Drainage Class:	
Taxonomy (Subgroup)			Field Observations Confirm Mapped Type?    YES    NO		
PROFILE DESCRIPTION					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2	O	—	—	—	
2-6	A	5Y 5/2	—	—	SANDY
8-16	B	5Y 4/1	—	—	SANDY CLAY

**HYDRIC SOIL INDICATORS:**

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks:

**WETLAND DETERMINATION**

Hydrophytic Vegetation Present?	<u>YES</u>	NO	Is this Sampling Point Within a Wetland? <u>YES</u> NO
Wetland Hydrology Present?	<u>YES</u>	NO	
Hydric Soils Present?	<u>YES</u>	NO	
Remarks			

ROUTINE WETLAND DETERMINATION  
(1987 COE Wetlands Delineation Manual)

UPL-19  
TRA-LEI

Project/Site	ALAMEDA - BETWEEN SITE 1 & 2	Date	SEPT 27, 2004
Applicant / Owner		County	ALAMEDA
Investigator	MALO, HELM	State	CA
Do Normal Circumstances exist on the site?	<input checked="" type="radio"/> YES <input type="radio"/> NO	Community ID	UPL
Is the site significantly disturbed (Atypical Situation)?	<input checked="" type="radio"/> YES <input type="radio"/> NO	Transect ID	
Is the area a potential Problem Area? (If needed, explain on reverse)	YES <input checked="" type="radio"/> NO	Plot ID	UPL-19

VEGETATION

H=herb

Dominant Plant Species	Stratum	Indicator	Sub_Dominant Plant Species	Stratum	Indicator
1 Distichlis spicata	H	FACW <sup>+</sup>	9 Bromus hordeaceus	H	FACU-
2 Polypogon monspeliensis	H	OBL	10		
3 Plantago coronopus	H	FAC	11		
4 Centaurea <sup>mucklenbergiana</sup> trichanthus	H	FAC-FAC <sup>+</sup>	12		
5 Juncus bufonius	H	FACW <sup>+</sup>	13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 100%

Remarks

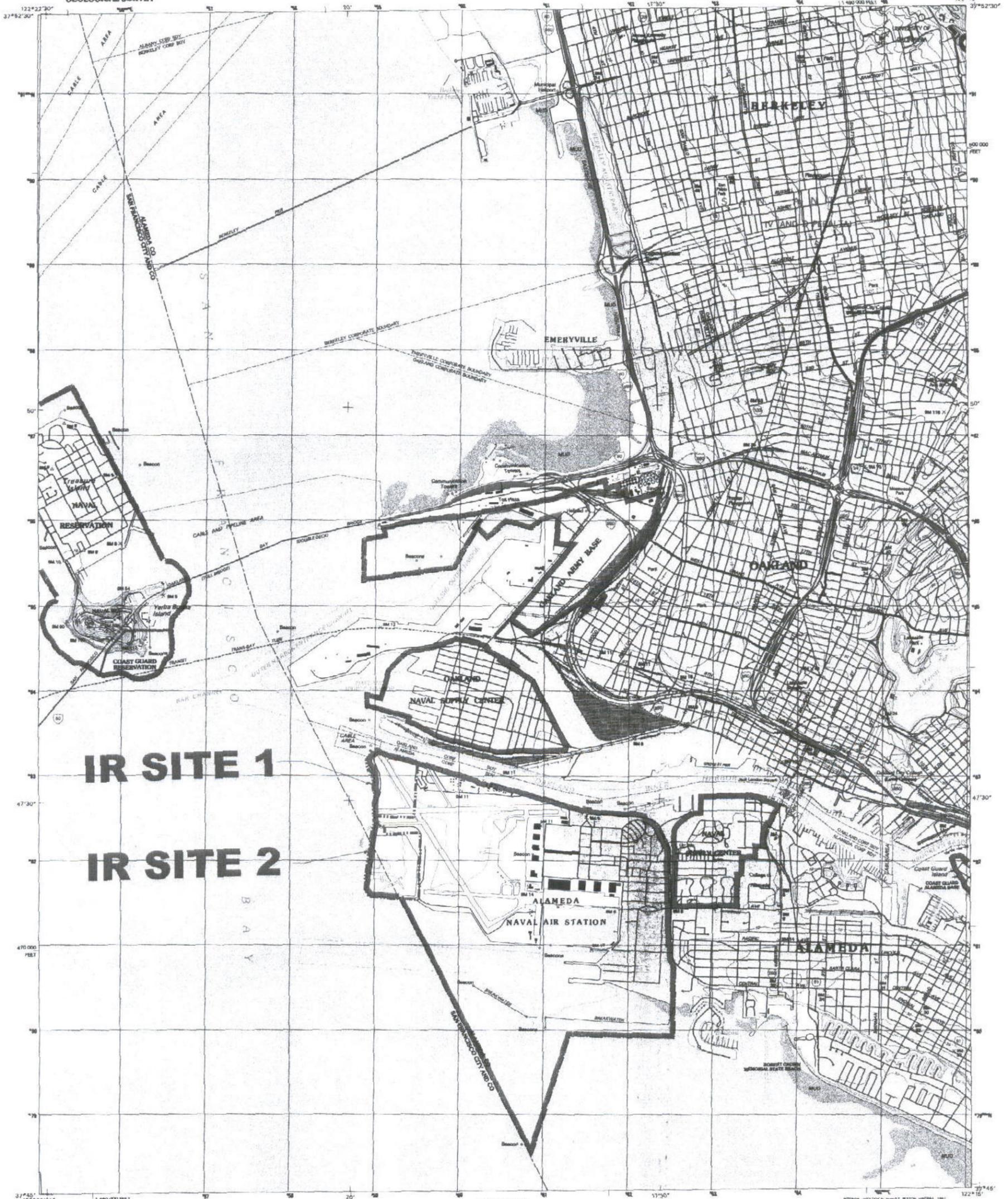
HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks) <ul style="list-style-type: none"> <li><input type="checkbox"/> Stream, Lake, or Tide Gauge</li> <li><input type="checkbox"/> Aerial Photographs</li> <li><input checked="" type="checkbox"/> Other</li> </ul> <input type="checkbox"/> No Recorded Data Available		<b>WETLAND HYDROLOGY INDICATORS</b>	
<b>FIELD OBSERVATIONS</b>		<b>Primary Indicators:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Inundated</li> <li><input type="checkbox"/> Saturated in Upper 12 Inches</li> <li><input type="checkbox"/> Water Marks</li> <li><input type="checkbox"/> Drift Lines</li> <li><input type="checkbox"/> Sediment Deposits</li> <li><input type="checkbox"/> Drainage Patterns in Wetlands</li> </ul>	
Depth of Surface Water	> 18 (in)	<b>Secondary Indicators (2 or more Required):</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</li> <li><input type="checkbox"/> Water-Stained Leaves</li> <li><input checked="" type="checkbox"/> Local Soil Survey Data</li> <li><input type="checkbox"/> FAC-Neutral Test</li> <li><input checked="" type="checkbox"/> Other (Explain in Remarks)</li> </ul>	
Depth to Free Water in Pit	> 18 (in)		
Depth to Saturated Soil	> 18 (in)		

NRCS ALAMEDA COUNTY (1981) & NRCC DATA  
 JAN 2003 - MAR 2004 (FROM OAKLAND MUSEUM)



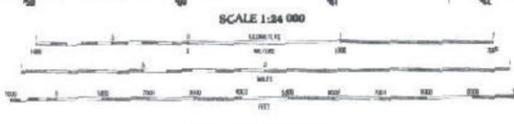
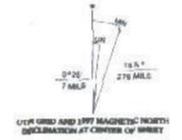
**ATTACHMENT 1**  
**FULL SIZE USGS TOPOGRAPHIC MAP**



**IR SITE 1**

**IR SITE 2**

Produced by the United States Geological Survey  
Compiled from imagery dated 1987. Revised from topographic  
data 1978, 1950 and survey control records as of 1967. Map edited 1996.  
North American Datum of 1983 (NAD 83). Projection and  
1983 datum grid (Universal Transverse Mercator, zone 18  
18 800,000 East; California Coordinate System (zone 3)  
North American Datum of 1983 (NAD 83) is shown by dashed  
contour lines. The values of the 1983 datum (NAD 83) and NAD 83  
for 7.5 minute topographic maps are obtainable from National Geographic  
Survey (NADCON) software.  
See National Geographic Survey website for additional data.  
There may be slight misalignments within the boundaries of  
the National Geographic Survey maps on this map.



CONTOUR INTERVAL 20 FEET  
SUPPLEMENTARY CONTOUR INTERVAL 5 FEET  
NATIONAL GEODESIC VERTICAL DATUM OF 1985

THIS MAP COMPLES WITH NATIONAL SAFE ACCURACY STANDARDS  
FOR SALE BY U.S. GEOLOGICAL SURVEY, P.O. BOX 25286, DENVER, COLORADO 80225  
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE UPON REQUEST



QUADRANGLE LOCATION

1	2	3
4	5	6
7	8	9

ADJOINING 7.5 QUADRANGLE NUMBERS

ROAD CLASSIFICATION

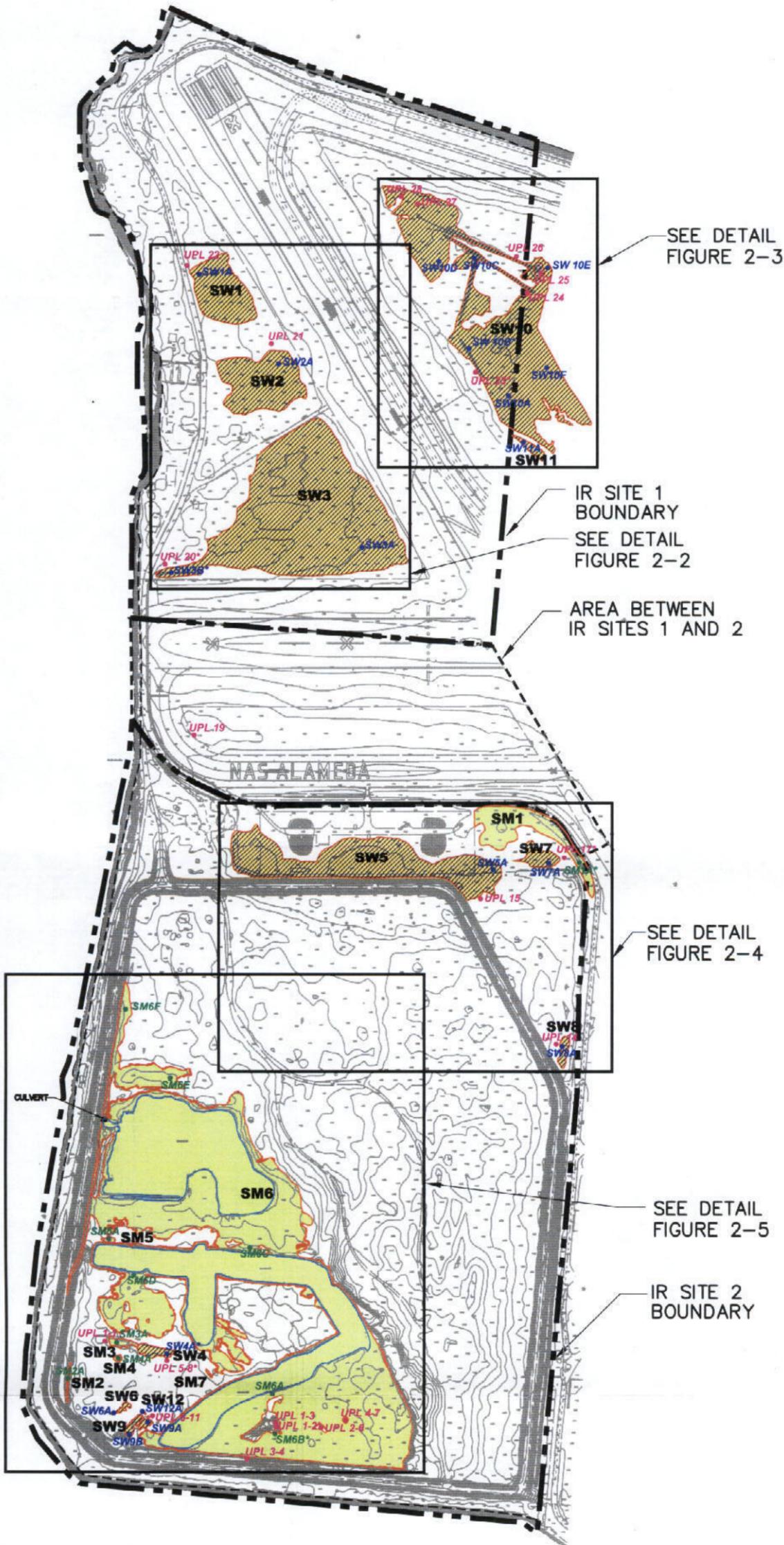
Proprietary highway	Light-duty road, 1980 or
Interstate	Improved surface
State highway	Unimproved road
Local road	

OAKLAND WEST, CA  
1993

158N-C-1057-B53A(1)-E

**ATTACHMENT 2**  
**1"=200' MAP OF FIGURE 2-1**

DRAWN BY: MD	CHECKED BY: LM	APPROVED BY: AE	DCN: FWS-D-RAC-05-0037	DRAWING NO:
DATE: 10/15/04	REV: REVISION 0		CTO: # 0087	05003702.DWG



WETLAND AREAS

I.D. Number	Classification	Acreage
SW1	Seasonal Wetland	1.06
SW2	Seasonal Wetland	1.43
SW3	Seasonal Wetland	7.05
SW4	Seasonal Wetland	0.12
SW5	Seasonal Wetland	3.05
SW6	Seasonal Wetland	0.03
SW7	Seasonal Wetland	0.22
SW8	Seasonal Wetland	0.08
SW9	Seasonal Wetland	0.10
SW10	Seasonal Wetland	5.71
SW11	Seasonal Wetland	0.08
SW12	Seasonal Wetland	0.01
SM1	Salt Marsh	1.04
SM2	Salt Marsh	0.02
SM3	Salt Marsh	0.07
SM4	Salt Marsh	0.02
SM5	Salt Marsh	0.02
SM6	Salt Marsh	22.82
SM7	Salt Marsh	0.01

LEGEND

- SITE BOUNDARY
- SEASONAL WETLAND
- SALT MARSH
- RIPRAP LINE (LANDWARD EXTENT OF MATERIAL)
- 2-FOOT ELEVATION CONTOUR
- SEASONAL WETLAND DATA POINT
- UPLAND DATA POINT
- SALT MARSH DATA POINT



REFERENCE:  
 HJW-GeoSpatial, Inc., Upland topography  
 NAD27, NGVD29 - CCS Zone III.

Figure 2-1  
 KEY MAP FOR WETLAND DELINEATION AREAS

IR SITE 1 AND 2 - ALAMEDA POINT  
 ALAMEDA, CA



TETRA TECH FW, INC.

**ATTACHMENT 3**  
**REPRESENTATIVE WETLAND PHOTOGRAPHS**  
**(To be provided later)**



SM 1A – Salt marsh facing north



UPL 17 – Upland adjacent to SM 1A and SW 7 facing north



UPL 1-2 – Upland adjacent to SM 6 facing north



SW 4A – Seasonal wetland facing north



SM 6 – Salt marsh facing east



SM 6B – Salt marsh facing north



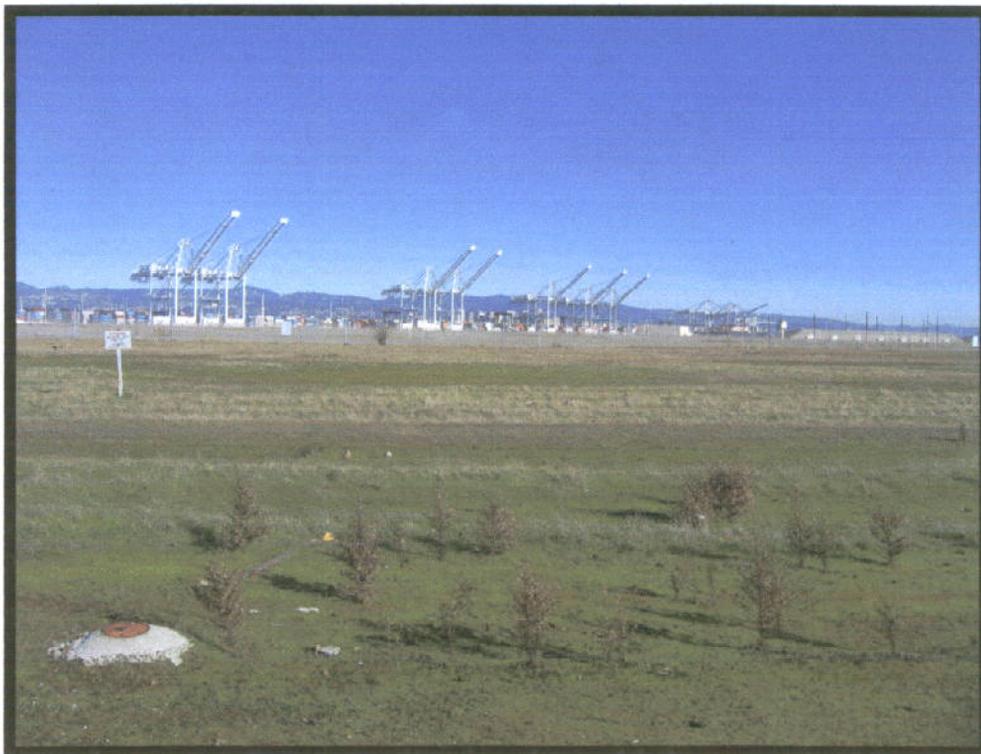
SW 10B – Seasonal wetland SW 10 facing northeast



UPL 23 – Upland adjacent to SW 10 facing northwest



UPL 20 – Upland adjacent to SW 3 facing east



SW 2 – Seasonal wetland SW 2 facing east



SW 7 – Seasonal wetland facing west



SW 3B – Seasonal wetland facing east



UPL 5B – Upland adjacent to SW 4