WETLAND DELINEATION REPORT FOR PORTIONS OF THE RICHMOND FIELD STATION RICHMOND, CALIFORNIA

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LIST OF ACRONYMS

Acronym or Abbreviation Full Phrase

asl above sea level FAC facultative

FACU facultative upland FACW facultative wetland

NRCS US Department of Agriculture, Natural Resources Conservation Service

NWI National Wetland Inventory

OBL obligate

RBC Richmond Bay Campus
RFS Richmond Field Station
UC University of California

UPL upland

USACE United States Army Corps of Engineers
USDA United States Department of Agriculture

SECTION 1 INTRODUCTION

1.1 BACKGROUND

The Richmond Field Station (RFS) is an off-site academic teaching and research facility owned by the University of California (UC) and managed by UC Berkeley since 1950. The RFS was selected as the preferred site for a second campus for consolidation of biosciences projects and activities managed by the Lawrence Berkeley National Laboratory. The proposed name of the new facility is the Richmond Bay Campus (RBC). The subject of the wetland delineation is 16 acres that comprise a subset of the initial development footprint for the RBC.

The purpose of this report is to provide results of wetland delineation activities on a 16-acre portion of the initial development footprint for the RBC. Wetlands are defined as those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (USACE 1987). Explicit in the definition are positive wetland indicators of three environmental parameters: hydrology, soil, and vegetation (USACE 1987). The three criteria are evaluated using US Army Corps of Engineers (USACE) wetland delineation forms completed in the field. Wetlands generally include swamps, marshes, bogs, and similar areas. As a subset of waters of the United States, jurisdictional wetlands are subject to Section 404 of the Clean Water Act and/or or Section 10 of the Rivers and Harbors Act. Jurisdictional wetlands typically include: traditional navigable waters, wetlands adjacent to navigable waters, non-navigable tributaries of traditional navigable waters that are relatively permanent, and wetlands that abut such tributaries (EPA 2007).

As shown in this report, one area within the 16-acre footprint was found to meet the above wetland definition, which is consistent with both the Clean Water Act and the 10 CFR Part 1022 wetland definitions. As presented in Section 3.3, this wetland does not appear to fall under the jurisdiction of the USACE.

1.2 PROJECT LOCATION

The RBC project site is at 1301 South 46th Street in the City of Richmond, Contra Costa County, California (37.919° N, -122.33° W). The 133-acre RBC project site is bounded on the west by a Pacific Gas and Electric (PG&E) service station, the north by Regatta Boulevard, the northeast by Meade Street, the east by the western side of South 46th Street, and the south by the San Francisco Bay. Interstate 580 (I-580) runs parallel to Meade Street along the northeastern boundary of the RBC project site (Figure 1-1).

1.3 PROJECT STUDY AREA

The project study area is a subset of the RBC project site bordered on the east by South 46th Street, the south by the Western Stege Marsh, the west by Avocet Way, and the north by Lark Drive (Figure 1-2). The southern portion of the project study area is approximately 10 feet above sea level (asl). Current redevelopment plans for the project study area include three buildings totaling 600,000 gross square feet, parking areas, and landscaping.

1.4 GENERAL SITE CONDITIONS

1.4.1 Ecological Features

Habitat types observed in the vicinity of the RBC site include native coastal terrace grasslands, coastal scrub, tidal marsh, tidal mudflats, and open slough channels associated with Western Stege Marsh (south of and outside the project study area). The marsh includes native cordgrass (*Spartina foliosa*) and other vegetation that provides habitat for the endangered California clapper rail (*Rallus longirostris obsoletus*).

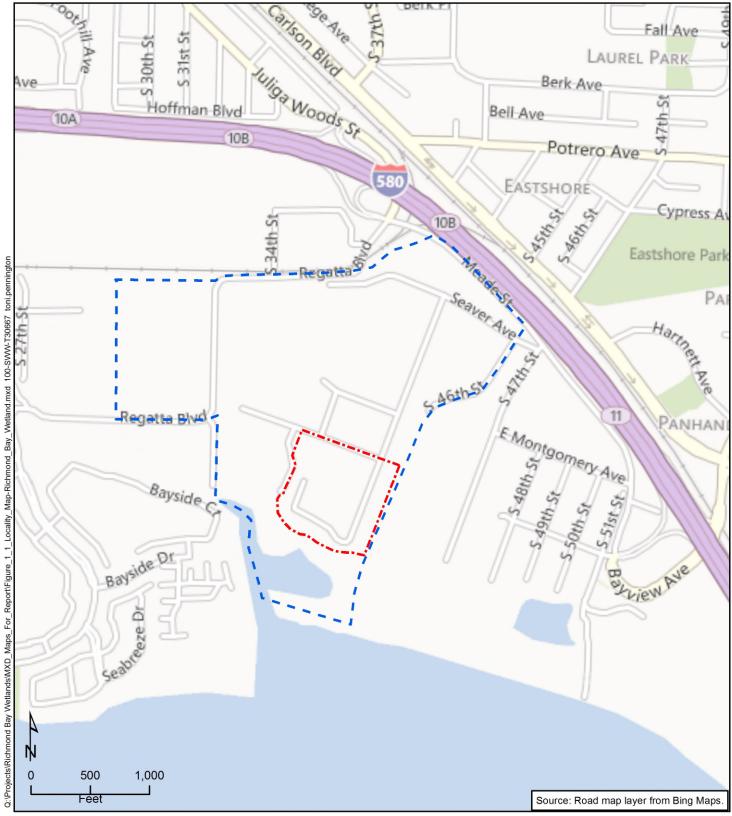
Within the project study area, the grassland habitat area includes both native and nonnative plant species, which provide primary habitat, such as nesting and foraging, and secondary habitat, such as movement corridors. Manmade landscaping and nonnative grasslands are also found. Monarch butterflies (*Danaus plexippus*) a California sensitive species, use eucalyptus trees in the central portion of the site for cover and thermal regulation during the winter months.

1.4.2 Precipitation

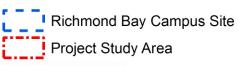
Table 1-1 lists the average and measured precipitation data (WETS table) (NRCS 2013a). Precipitation data in the days preceding the site visits was obtained from the California Department of Water Resources Data Exchange Center (Station ID: RHL). An initial investigation of the project study area was done on January 4, 2013, with focused field evaluations on February 13 and 15, 2013. In the week prior to the January 4 site visit, 0.04 inch of precipitation was recorded. In the week prior to the February 13 and 15 site visits, no precipitation was recorded.

1.4.3 Soils

Two soil types were identified from the US Department of Agriculture, Natural Resources Conservation Service (NRCS) Custom Soil Report for Contra Costa County, California: Urban Land and Clear Lake Clay (NRCS 2013b, NRCS 2013c). Clear Lake Clay is considered to have hydric properties, meaning soil map unit components are likely to meet



Legend

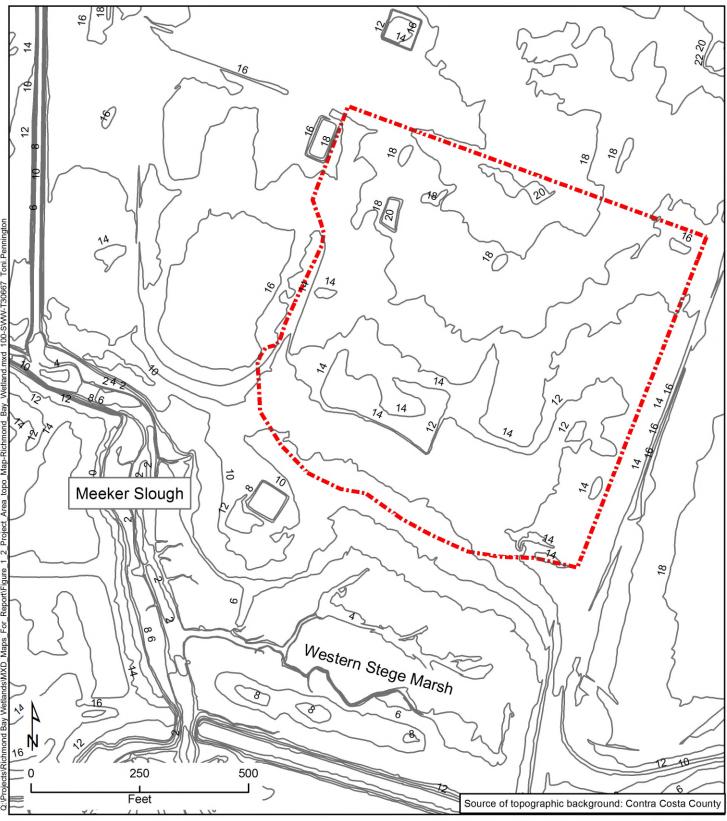




Locality Map

Richmond Field Station Wetland Delineation Richmond, California

Figure 1-1



Legend

2 ft. contour intervals

Project Study Area



Project Study Area

Richmond Field Station Wetland Delineation Richmond, California

Figure 1-2

Table 1-1
Precipitation Data

	Ter	mperature (°	Precipitation (Inches)							
Month				Avg	30% Cha Ha		Avg # of Days	Avg Total		
	Avg Daily Max	Avg Daily Min	Avg		Less Than	More Than	w/.1 or More	Snowfall		
January	57.7	42.7	50.2	4.71	2.09	5.75	7	0.0		
February	61.8	45.4	53.6	4.24	1.72	5.15	7	0.0		
March	63.9	47.1	55.5	3.55	1.31	4.29	6	0.0		
April	67.3	49.0	58.2	1.35	0.57	1.64	3	0.0		
May	69.3	51.8	60.6	0.54	0.01	0.52	1	0.0		
June	71.7	54.6	63.1	0.17	0.00	0.16	0	0.0		
July	71.5	55.8	63.6	0.07	0.00	0.00	0	0.0		
August	72.0	56.5	64.3	0.10	0.00	0.00	0	0.0		
September	74.1	56.5	65.3	0.27	0.00	0.00	0	0.0		
October	72.3	53.3	62.8	1.40	0.45	1.71	2	0.0		
November	64.4	47.9	56.2	3.31	1.15	3.98	5	0.0		
December	58.1	42.9	50.5	3.35	1.85	4.16	6	0.0		

Creation Date: 08/29/2002

Latitude: 3756 Longitude: 12221 Elevation: 00060

State FIPS/County (FIPS): 06013 County Name: Contra Costa

Start yr - 1971 End yr. - 2000

Source: WETS Station, Richmond, CA7114; NRCS 2013a

% – percent # – number Avg – average w/ – with

the hydric soil definition but field indicators are necessary for verification (NRCS 2013b). Clear Lake Clay is typically found on 0 to 2 percent slopes and is considered poorly drained (NRCS 2013b).

1.4.4 Land Uses

Land uses are primarily dedicated to research buildings, roadways, parking lots, and landscaped and undeveloped open areas. The adjacent lands include industrial/office uses, I-580, and low to medium density residential neighborhoods. The adjacent property to the east is the location of former chemical production operations, currently owned by Cherokee Simeon Venture I, LLC. Western Stege Marsh is immediately to the south of the RBC site and drains into San Francisco Bay. The Western Stege Marsh Project Restoration Area is a 9.40-acre compensatory mitigation wetland characterized by salt grass (*Distichlis spicata*), Pacific cordgrass (*Spartina foliosa*), and pickleweed (*Salicornia virginica*).

1.5 SITE DISTURBANCE

Historic and recent disturbance has resulted in significantly disturbed soils at the RBC site. Historic disturbance includes significant infill of Western Stege Marsh and original site development in the 1950s. Large quantities of pyrite cinders were deposited on the RBC site from prior to 1950 through 2002. Remedial activities have included removal of approximately 28,000 cubic yards of contaminated soil and marsh sediment, excavation of

an area at the outfall of a storm drain in Meeker Slough, and removal of an additional 3,300 cubic yards of contaminated soils from six upland areas.

Recent disturbance at the site includes regular maintenance of drainage swales that drain water from across the property. This has resulted in frequent soil disturbance that likely affects hydric soil indicators. Many of the dominant plant species are weedy invasives such as Harding grass (*Phalaris aquatica*) and sweet fennel (*Foeniculum vulgare*). These opportunistic species are not considered hydrophytic (Lichvar and Kartesz 2012); however, they may be taking advantage of increased soil moisture when native perennials are not yet established.

SECTION 2 METHODS

2.1 SAMPLE SCHEDULE

The project study area was visited by Tetra Tech biologist Shannon Lindquist on January 4, 2013 to assess the condition of the existing habitats. All habitat types were noted with particular consideration given to the presence of potential wetland features (e.g., a seasonal wetland, vegetated channels, and lined swales).

Tetra Tech biologists Toni Pennington and Darlene Siegel did the wetland delineation on February 13 and 15, 2013.

2.2 SAMPLING PROTOCOLS

This wetland delineation followed the 1987 Corps of Engineers Wetland Delineation Manual (USACE manual) (USACE 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.). National Wetland Inventory (NWI) (USFWS 2013) maps and the California Wetlands Portal were reviewed to determine if wetlands had been previously identified in the project study area. According to these sources, no wetlands are known to be in the project study area; however, the Western Stege Marsh, a jurisdictional water body, is immediately south of the project study area.

During the January site visit, the area was qualitatively surveyed to identify potential wetlands and other waters of the US. At that time, standing water was observed in stormwater drainages. During the formal delineation upland and wetland plots were sampled to characterize community distinctions and to facilitate wetland boundary determinations according to USACE (1987). In general, test pits were dug at locations with clear breaks of topography, vegetation, or hydrologic features. Sample points were positioned to be distinctly in wetland and upland communities, and then as necessary to identify where one or more parameters disappeared in the transitional zone between the two habitat types. At each sample plot, indicators of vegetation, hydrology, and soils were documented. Where all three wetland criteria were positive, the area was identified as a wetland (USACE 1987). Wetland determination data forms are in Appendix B.

Vegetation strata were surveyed using circular plots: 30-foot diameter for tree and woody vine stratum, 15-foot-diameter for shrub and sapling, and 5-foot diameter for herbaceous strata. Dominant plants were identified to the species level with total percent cover estimated for each stratum. All plant species were documented and dominants were calculated based on their percent cover in each stratum. Lichvar and Kartesz (2012) was used to determine a plant's indicator status (facultative upland [FACU], facultative [FAC], facultative wetland [FACW], or obligate [OBL]). Plants not listed in Lichvar and Kartesz (2012) were considered upland (UPL) plant species.

Soil test pits were dug to a standard depth of 16 inches for determination of wetland hydrology and hydric soil indicators. No standing water, saturated soils, or high water table was observed. Soil horizons and textures were identified for each sample plot and soil matrix and redoximorphic features, if present, were determined using Munsell® Soil Color Charts (Munsell 2009) and WTI (2010). All potential wetlands were mapped to sub-meter accuracy with a Trimble GeoExplorer 6000 Series Geo XH global positioning (GPS) unit. Data were post-processed and transferred to global information system (GIS) shapefiles using Pathfinder 5.0 and were then overlain onto topographic base maps using ArcMap 10.

2.3 ADDITIONAL DATA SOURCES

Additional resources used included results of a recent botanical survey at the RFS ([URS] 2007), the National Wetlands Plant List (Lichvar and Kartesz 2012), and soil surveys for Contra Costa County (NRCS 2013b).

SECTION 3 DESCRIPTION OF WETLANDS AND OTHER WATERS OF THE UNITED STATES

Based on the site visit in January, two areas were targeted for the formal delineation in February. Specific sample points were targeted for investigation as they had been previously determined as potential wetlands or other waters of the United States. A total of seven sample points were collected within the project study area, and one was collected just outside the project study area (Figure 3-1) to determine whether all wetland indicators were present. We found 1) two vegetated drainage channels with evidence of recent water flow and 2) a small herbaceous wetland swale downstream of the drainage channel (Figure 3-2).

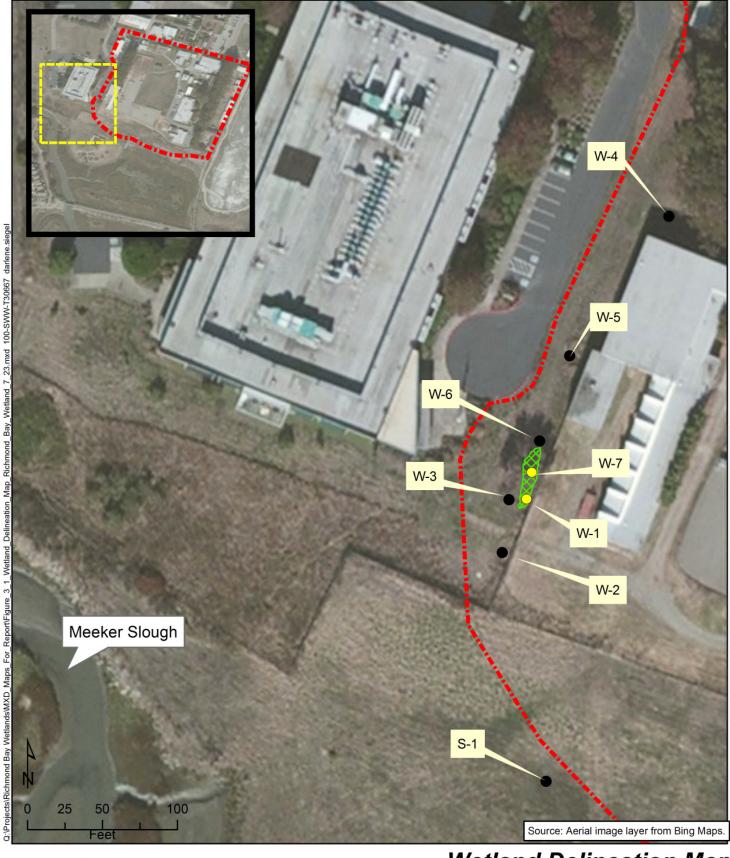
3.1 Drainage Channels

An asphalt-lined channel, located on the east side of the project study area, drains water from adjacent buildings (see inset graphic on Figure 3-2). Water moves south-southwest to a culvert under a driveway after which it daylights once before continuing underground to an outlet located outside the project area.

A vegetated channel is north of Building 128, between Building 275 and a fence line (Figure 3-2 and Photo 1, Appendix A). The channel appears to drain water from around Building 275 and carries water south for approximately 230 feet, turns west and drains to a box culvert at the northwest corner of Building 128 (Photo 2, Appendix A). From there, water flows due south (Photo 3, Appendix A) for approximately 180 feet to a 300-square-foot herbaceous wetland swale. The channel is periodically maintained to convey water. Sample points W-4, W-5, and W-6 were along this channel (Figure 3-1). Again, wetland determination data forms are in Appendix B.

3.1.1 Vegetation

Common plant species observed along this drainage channel included: Harding grass (*Phalaris aquatica*), bur clover (*Medicago polymorpha*), doves foot geranium (*Geranium molle*), narrow leaf plantain (*Plantago lanceolata*), and spring vetch (*Vinca sativa*). The dominant plant species along the channel, Harding grass, is FACU, which is not considered a vegetation indicator for wetlands.



Legend



Project Study Area



Herbaceous Wetland



•

Wetland Sample Point

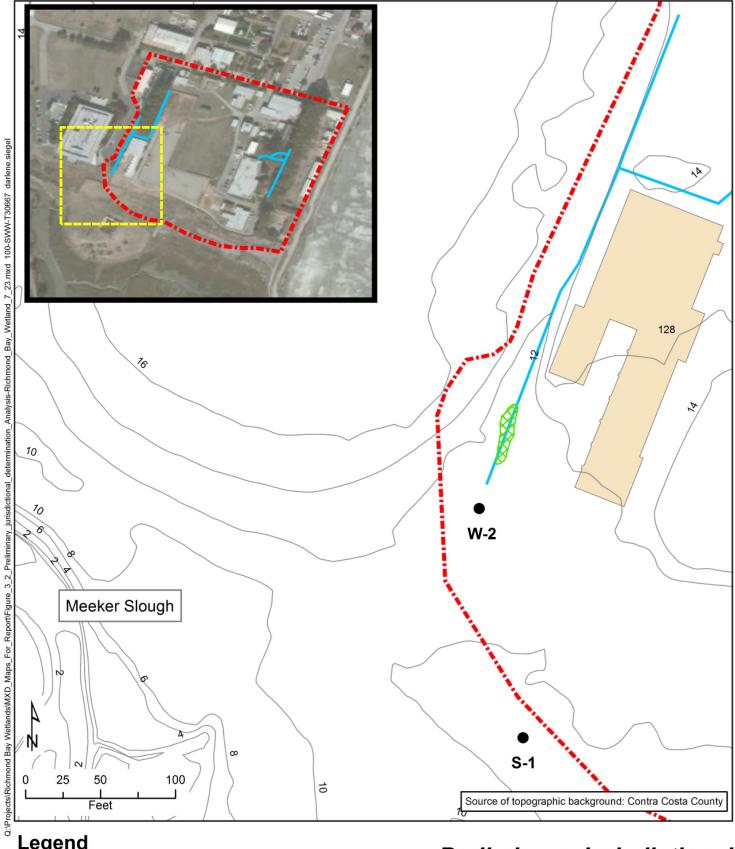
Non-wetland Sample Point

Enlarged Area

Wetland Delineation Map

Richmond Field Station Wetland Delineation Richmond, California

Figure 3-1



Legend

Non-wetland Sample Point **Drainage Channel**

2 ft. Contour Intervals





Preliminary Jurisdictional Determination Analysis

Richmond Field Station Wetland Delineation Richmond, California

Figure 3-2

3.1.2 Soils

Soils in this vicinity are delineated by the NRCS as Clear Lake Clay and Urban Land (NRCS 2013b). The description for Clear Lake Clay in the Custom Soil Resource Report is somewhat incongruent with field observations. We found relatively loamy soils at sample point W-4 with four color layers in the matrix profile, including a redox dark surface (F6) which is a hydric indicator for wetlands. Despite this indicator, all three criteria were not observed.

3.1.3 Hydrology

The channel conveys water that drains from adjacent buildings. Water is conveyed along an open swale (Photo 1, Appendix A), to an underground culvert (Photo 2, Appendix A), then daylights again and joins another underground culvert (Photo 3, Appendix A). Despite this, there were no indicators of wetland hydrology at sample point W-4. Wetland hydrology indicators were observed at sample points W-5 (water marks and sediment deposits) and W-6 (water-stained leaves). Standing water was observed during the January 2013 site visit, but no standing water was observed during the February 2013 wetland delineation.

3.2 HERBACEOUS WETLAND SWALE

A 300-square-foot herbaceous wetland swale was observed in the southwest corner of the project study area (Photos 4 and 5, Appendix A) (Figure 3-1). The area is periodically maintained to convey water. No standing water was observed during the February wetland delineation.

Sample points W-1 and W-7 were collected in this wetland and sample points W-3 and W-6 were collected immediately adjacent to, but outside the wetland. Sample point W-2 was taken below a culvert that drains the wetland; however all three wetland indicators were not met at this sample point. Sample point S-1 was collected to the southeast of the wetland and outside the project study area. During the January preliminary site visit, it appeared water could accumulate in the vicinity of sample point S-1; however no hydric indicators were found during the February wetland delineation (Figure 3-1).

3.2.1 Vegetation

The dominant plant species observed in the wetland swale was brown-headed rush, *Juncus phaeocephalus* (FACW), which is a vegetation indicator for wetlands. The *J. phaeocephalus* was not in flower, so identification was largely based on previous documentation of the species at the RFS (URS 2007). Without flowers, it could be mistaken for *J. effusus*; however, *J. effusus* is also FACW, so the indicator for hydric vegetation would remain the same.

3.2.2 Soils

Soils in the wetland swale are mapped as Urban Land (NRCS 2013b). We found clay loam soils of 7.5 YR 3/1 throughout the matrix in sample points W-1 and W-8 with prominent redoximorphic features (redox dark surface [F6]), a profile indicative of hydric soils and indicator of wetlands.

3.2.3 Hydrology

The source of water to the wetland swale is largely from the drainage channel from the north. The second culvert (Photo 3, Appendix A) appears to also convey water from the east, as indicated by the location of known underground water conveyances (Figure 3-2). Water is conveyed from the wetland swale, to the south, through a third culvert (Photo 5, Appendix A) where it flows to another open swale for approximately 20 feet. Beyond this point, there is very little evidence of an open swale. Another underground culvert carries water off the project study area to Western Stege Marsh (Figure 3-2). There were no indicators of wetland hydrology below the wetland swale.

3.3 PRELIMINARY WETLAND BOUNDARY AND JURISDICTIONAL DETERMINATION

Based on the information in Section 3.1, the drainage channel does not possess the required three wetland indicators and is not a wetland.

The boundary of the wetland swale was based on the dominance of FACW vegetation, hydric soils, and wetland hydrology indicators compared to adjacent upland vegetation, soils, and hydrology. Within the wetland, *J. phaeocephalus* was found growing in a distinct circular area with water-stained leaves around the perimeter. Soils within the wetland swale were somewhat problematic as the area is known to be regularly maintained for water conveyance; however, there was sufficient evidence for redox dark surfaces (hydric soil indicator F6). The paired upland sample points (W-3 and W-6) were dominated by FACU plant species (largely Harding grass) with brownish soils (10YR 3/2) and no hydrology indicators. Due to topographic variation (gradual slope to the southeast) below the third culvert and lack of sufficient moisture, the wetland swale is not directly hydrologically connected to the navigable waters of Meeker Slough. Also, the wetland swale is not adjacent to Meeker Slough or other navigable waters. As a result, the wetland swale does not appear to be jurisdictional.

Sample point W-2 was collected below the wetland swale and the third culvert (Figure 3-2). The site was dominated by Harding grass (FACU) and, despite being located below a culvert, there were no soil or hydrology indicators at the time of survey. Sample point S-1, collected further southeast of the wetland swale, did not provide evidence for hydric vegetation, soils, or hydrology during the February 2013 site visit (Figure 3-2).

In general, it appears that water moves from the drainage channel along the western side of the project area, through two culverts to the wetland swale, and out below the third culvert. Below this, there is a slight topographic slope toward the southeast (away from Meeker Slough) in the vicinity of sample point S-1 (Figure 3-2). The area surrounding S-1 is a slight artificial depression that appears to be an artifact of the construction activities for the remediation and restoration of the site. While this depression appears to trap runoff from above, it does not pond for sufficient duration to form all three hydric indicators, nor does it appear to allow water to drain to navigable waters. As a result, the depression surrounding sample point S-1 does not possess the required three wetland indicators and is not a wetland.

3.4 DISCLAIMER

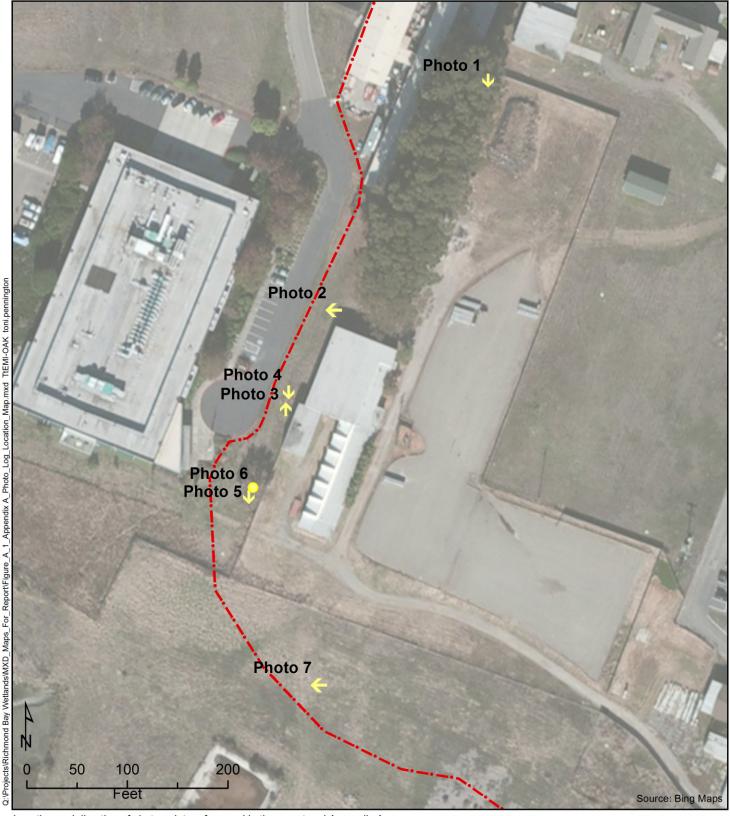
This report documents the investigation, best professional judgment, and conclusions of the investigators. It should be considered a Preliminary Jurisdictional Determination and used at your own risk until it has been approved in writing by the US Army Corps of Engineers, San Francisco District, Regulatory Program.

SECTION 4 LITERATURE CITED

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Appendix A

Photo Log



Location and direction of photo points referenced in the report and Appendix A

Photo Log Location Map

Legend



Project Study Area



Richmond Field Station Wetland Delineation Richmond, CA

Figure A-1



Photo 1. Drainage channel that flows south parallel to Building 275 (facing south).



Photo 2. Drainage shown in Photo 1, as it turns west at Building 128 and flows into a box culvert (facing west).



Photo 3. Box culvert west of Building 128. Channel flows underground from previous culvert and exits here where it combines with wetland swale (facing north).



Photo 4. Wetland swale from Photo 3 continues to flow as a channel to the fence line (facing south).



Photo 5. Wetland swale from previous photo flows into a culvert to pass under Heron Drive and continues as a narrow channel (facing south).



Photo 6. Wetland swale (300 square feet).



Photo 7. Sample point S-1 located south of Building 128 and Heron Drive, in a nonnative grassland habitat (facing west). During the January 2013 site visit, hydric vegetation in the area suggested a potential depressional wetland; however, no hydric soils or wetland hydrology indicators were recorded during the February 2013 delineation.

Appendix B

Wetland Determination Data Forms

Project/Site: Phase I RBC	(City/Cour	nty: Contra Co	sta	Sam	pling Da	te: 2/13/13	
Applicant/Owner: UC Berkeley				State: <u>CA</u>	Sam	pling Po	int: S-1	
Investigator(s): Pennington, Siegel	;	Section, ⁻	Township, Rar	nge: <u>NW1/4 SW1/4</u>	1 S20, T1NR	4W		
Landform (hillslope, terrace, etc.): Flat		Local rel	ief (concave, c	convex, none): Nor	ne		Slope (%):	<1
Subregion (LRR): C	_ Lat: <u>37.9</u>	1245297	41	Long: -122.3363	46409)atum: <u>WG</u>	S 84
Soil Map Unit Name: Urban Land				NWI cl	lassification:	None		
Are climatic / hydrologic conditions on the site typical for this	s time of yea	ar? Yes	XNo	(If no, expla	in in Remark	(s.)		
Are Vegetation, SoilX, or Hydrologys	significantly of	disturbed	l? Are "l	Normal Circumstar	nces" presen	t? Yes	_X No	o
Are Vegetation, Soil, or Hydrology r	naturally prol	blematic?	? (If ne	eded, explain any a	answers in F	Remarks	.)	
SUMMARY OF FINDINGS – Attach site map	showing	sampli	ing point lo	ocations, trans	sects, imp	ortan	t feature	s, etc.
Hydrophytic Vegetation Present? Yes N	lo X	10	the Commission	A				
Hydric Soil Present? Yes N	lo X		the Sampled ithin a Wetlan		s	No	Χ	
Wetland Hydrology Present? Yes N	loX				<u> </u>			
Remarks:								
Area has been significantly altered with	in the la	ist nin	e years.					
VEGETATION – Use scientific names of plan	ts.							
T 0. (D. 1. 30 ft	Absolute		nt Indicator	Dominance Test	t worksheet	:		
Tree Stratum (Plot size: 30 ft.)			s? Status	Number of Domin			1	(4)
1				That Are OBL, F	ACVV, OF FAC	J	<u> </u>	(A)
3				Total Number of Species Across A			2	(B)
4.								(-)
15 ft	0	= Total (Cover	Percent of Domir That Are OBL, F			50%	(A/B)
Sapling/Shrub Stratum (Plot size: 15 ft.				Prevalence Inde				
1				Total % Cov			ultiply by:	
2				OBL species		x 1 = _		_
4				FACW species	•		^	_
5				FAC species _		x 3 = _	180	_
	0	= Total (Cover	FACU species _		x 4 = _		_
Herb Stratum (Plot size: 5 ft.) 1 Lotus corniculatus	25	Υ	FAC	UPL species _	40=	x 5 = _		_
2 Plantago lanceolata	10	N	FAC	Column Totals: _	105	(A)	375	_ (B)
3. Rumex crispus	15	N	FAC	Prevalence	Index = B/A	\ =	3.57	
4. Geranium molle	15	N	UPL	Hydrophytic Ve				
5. Helminthotheca echiodes	5	N	FACU	Dominance ⁻	Test is >50%)		
6. Phalaris aquatica	25	Υ	FACU	Prevalence I	ndex is ≤3.0	1		
7. Distichlis spicata	10	N	FAC	Morphologic				
8				Problematic	emarks or or Hydrophytic			
Woody Vine Stratum (Plot size: 30 ft.)	100	= Total (Cover		riyaropiiyao	vegetat	ion (Explai	"")
1				¹ Indicators of hyd	dric soil and v	wetland	hydrology r	nust
2.				be present, unles				
	0	= Total (Cover	Hydrophytic				
% Bare Ground in Herb Stratum0 % Cover	r of Biotic Cr	rust		Vegetation Present?	Yes	N	o X	
Remarks:								

SOIL Sampling Point: S-1

SOIL								Sampling Point:
Profile Desc	ription: (Describe	to the depth	needed to docun	nent the i	ndicator	or confirm t	he absenc	e of indicators.)
Depth	Matrix			K Features				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-16	10YR 3/1	100						
				·				
								- <u> </u>
								<u> </u>
1- 0.0							2.	
	ncentration, D=Dep					ed Sand Grain		s for Problematic Hydric Soils ³ :
	ndicators: (Applic	able to all Li			ea.)			
Histosol			Sandy Redo					Muck (A9) (LRR C)
	ipedon (A2)		Stripped Ma					Muck (A10) (LRR B)
Black His	` '		Loamy Muc					uced Vertic (F18)
	n Sulfide (A4)		Loamy Gley		(F2)			Parent Material (TF2)
	Layers (A5) (LRR	C)	Depleted Ma				Other	r (Explain in Remarks)
_	ck (A9) (LRR D)	(8.4.4)	Redox Dark	•	,			
	Below Dark Surfac	e (A11)	Depleted Da				31 11 1	
	rk Surface (A12)		Redox Depr		-8)			s of hydrophytic vegetation and
	ucky Mineral (S1)		Vernal Pool	s (F9)				d hydrology must be present,
	leyed Matrix (S4)						uniess	disturbed or problematic.
	ayer (if present):							
Type:								v
Depth (inc	:hes):		_				Hydric So	il Present? Yes NoX
Remarks:								
Filled in 2	2002 with app	roximate	elv 4 ft top so	oil Hist	toric ae	erials ind	licate in	undation by Stege Marsh in
	t substantial f							
1959, bu	i Substantiai i	iii prior to	13003 and	iui ii iei	шаш	Julation	oi liile a	16a 111 2004.
HYDROLO	GY							
Wetland Hyd	Irology Indicators:							
Primary Indic	ators (minimum of c	ne required;	check all that apply	()			Seco	ondary Indicators (2 or more required)
Surface \	Water (A1)		Salt Crust	(B11)				Water Marks (B1) (Riverine)
	ter Table (A2)		Biotic Crus					Sediment Deposits (B2) (Riverine)
	, ,			` ,	o (D12)			. , , , ,
Saturation	` '		Aquatic Inv					Drift Deposits (B3) (Riverine)
	arks (B1) (Nonriver		Hydrogen					Drainage Patterns (B10)
	t Deposits (B2) (No	*				Living Roots		Dry-Season Water Table (C2)
	osits (B3) (Nonrive	rine)	Presence		•	*		Crayfish Burrows (C8)
Surface	Soil Cracks (B6)		Recent Iro	n Reduction	on in Tille	d Soils (C6)		Saturation Visible on Aerial Imagery (C9)
Inundation	on Visible on Aerial	lmagery (B7)	Thin Muck	Surface (C7)			Shallow Aquitard (D3)
Water-St	ained Leaves (B9)		Other (Exp	lain in Re	marks)			FAC-Neutral Test (D5)
Field Observ	ations:							
Surface Water	er Present? Y	es No	o X Depth (ind	hes):		_		
Water Table			Depth (inc	ches):				
Saturation Pr			Depth (inc				d Hydrolo	gy Present? Yes No _X
(includes cap		es IN	Deptil (III	, i i e s)		_ Wellan	id Hydrolo	gy riesent: Tes No
	orded Data (stream	gauge, mon	itoring well, aerial p	hotos, pre	evious ins	pections), if	available:	
Remarks:								

Project/Site: Phase I RBC	(City/Co	ounty: Contra Co	esta	Sampling Da	ate: 2/13/13	
Applicant/Owner: UC Berkeley		-	-	State: CA		·	
• • • • • • • • • • • • • • • • • • • •				nge: NW1/4 SW1/4 S20			
				convex, none): Concave		Slone (%)· 0	
Subregion (LRR): C							_
Soil Map Unit Name: Urban Land	Lat			NWI classif			
Are climatic / hydrologic conditions on the site typical for th	is time of ves						_
Are Vegetation, SoilX, or Hydrology				Normal Circumstances"		s X No	
							_
Are Vegetation, Soil, or Hydrology SUMMARY OF FINDINGS - Attach site map				eded, explain any answ			c.
Hydrophytic Vegetation Present? Yes X	No						_
Hydric Soil Present? Yes X			Is the Sampled		·		
Wetland Hydrology Present? Yes X			within a Wetlan	nd? Yes	<u>\</u> No		
Remarks:							_
Low area that drains adjacent upland area Receiving area has no significant wetland	•	_		•			
VEGETATION – Use scientific names of plan	nts.						
	Absolute	Domi	nant Indicator	Dominance Test wor	rksheet:		
Tree Stratum (Plot size: 30 ft.) 1	% Cover	Spec	ies? Status	Number of Dominant S That Are OBL, FACW	Species . or FAC:	1 (A)	
2.							
3				Total Number of Domi Species Across All Str	nant rata:	1 (B)	
4				Percent of Dominant S	Species		
Sapling/Shrub Stratum (Plot size: 15 ft.)	0	= Tota	al Cover	That Are OBL, FACW		100 (A/B	3)
1				Prevalence Index wo	rksheet:		
2				Total % Cover of:			
3				OBL species			
4				FACW species			
5				FAC species			
Herb Stratum (Plot size: 5 ft.)	0	= Tota	al Cover	FACU species			
1. Phalaris aquatica	10	N	FACU		x 5 =		,
2 Lotus corniculatus	5	N	FAC	Column Totals:	(A)	(B))
3. Medicago polymorpha	5	N	FACU	Prevalence Inde	x = B/A =		
4. Geranium molle	10	N	UPL	Hydrophytic Vegetat	ion Indicators	;:	
5. Vinca sativa	5	N	UPL	Dominance Test i	is >50%		
6. Juncus phacocephalus	65	Y	FACW	Prevalence Index	is ≤3.0 ¹		
7				Morphological Ad	aptations¹ (Pro	vide supporting	
8					ks or on a sepa		
30 ft	130	= Tota	al Cover	Problematic Hydro	opnytic vegeta	llion (Explain)	
Woody Vine Stratum (Plot size: 30 ft.				¹ Indicators of hydric so	oil and wetland	hydrology must	
1				be present, unless dis			
		= Tota	al Cover	Hydrophytic			
		-		Vegetation	, Y N		
% Bare Ground in Herb Stratum % Cove	er of Blotic Cr	rust		Present? Y	'es <u>X</u> N	<u> </u>	
Remarks:					,		
J. phaeorephalris conspicuous, but iso							
phaeoephalus previously reported on state wetland.	site. Euca	aıypt	us polyanti	nemos growing	adjacent t	o, but not in	1

SOIL Sampling Point: W-1

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

Depth	<u>Matrix</u>			lox Features	- 1 .			
(inches)	Color (moist)		Color (moist)				<u>exture</u> _	Remarks
0-8	7.5 YR 3/1	92	5 YR 3/4		<u> </u>	<u> </u>	CL _	
8-16	7.5 YR 3/1	100					CL	
	-							
		_						
								
	_							
	_							
Type: C=0	Concentration, D=De	epletion, RM	=Reduced Matrix, C	S=Covered or	Coated Sa	nd Grains	² Loca	tion: PL=Pore Lining, M=Matrix.
lydric Soi	I Indicators: (Appli	icable to all	LRRs, unless oth	erwise noted.))	l		or Problematic Hydric Soils ³ :
Histos	ol (A1)		Sandy Re	dox (S5)		_	1 cm Mu	ıck (A9) (LRR C)
Histic I	Epipedon (A2)		Stripped N	/latrix (S6)		_		ıck (A10) (LRR B)
	Histic (A3)			ıcky Mineral (F		_		d Vertic (F18)
	gen Sulfide (A4)	. 0)		eyed Matrix (F2	2)	-		rent Material (TF2)
	ed Layers (A5) (LRR luck (A9) (LRR D)	(C)	4	Matrix (F3) rk Surface (F6)	١	-	Other (E	xplain in Remarks)
	ed Below Dark Surfa	ice (A11)		Dark Surface (F6)	•			
	Dark Surface (A12)	(00 () (1) ()		pressions (F8)		3	Indicators of	f hydrophytic vegetation and
	Mucky Mineral (S1)		Vernal Po					vdrology must be present,
Sandy	Gleyed Matrix (S4)		_					turbed or problematic.
Restrictive	Layer (if present):							
Type: _								
Depth (i	nches):					H ₂	ydric Soil P	resent? Yes X No
Remarks:								
YDROL	ngy							
	ydrology Indicators	<u>. </u>						
	licators (minimum of		d: check all that an	olv)			Second	ary Indicators (2 or more required)
	e Water (A1)	one require	Salt Crus					ater Marks (B1) (Riverine)
	/ater Table (A2)			ust (B12)				diment Deposits (B2) (Riverine)
	tion (A3)			nvertebrates (E	313)			ft Deposits (B3) (Riverine)
	Marks (B1) (Nonriv e	erine)		n Sulfide Odor				ainage Patterns (B10)
	ent Deposits (B2) (N	,		Rhizospheres		a Roots (C		y-Season Water Table (C2)
	eposits (B3) (Nonriv			e of Reduced Ir		9 1 10010 (0		ayfish Burrows (C8)
	e Soil Cracks (B6)	····················		ron Reduction i		ls (C6)		turation Visible on Aerial Imagery (C9)
	tion Visible on Aeria	l Imagery (B		k Surface (C7)		(00)		allow Aquitard (D3)
	Stained Leaves (B9)		· —	xplain in Rema	•			C-Neutral Test (D5)
Field Obse		'		•	<u> </u>			
Surface Wa	ater Present?	Yes	No X Depth (i	nches):				
Water Tabl			No X Depth (i					
Saturation			No X Depth (i			Wetland	Hydrology	Present? Yes X No No
	ecorded Data (strea	m gauge, mo	onitoring well, aeria	l photos, previo	ous inspecti	ons), if av	ailable:	
Standin	g water obse	rved ab	ove this area	a 1/4/13				
Remarks:								
Ponded	water reporte	ed to occ	cur during the	rainy sea	son (O	ct - Mai	rch for th	nis area). None observed
	-		_	-	-			Co. Flood Control and
_				willilli iasl	i i uays	COLL	a Cosia	Co. I lood Control and
rvaler C	Conservation [JISHICT -	Gage 21).					

Project/Site: Phase I RBC	(City/Co	unty:	Contra Co	sta	Sam	pling Da	ate: 2/13/13	3
Applicant/Owner: UC Berkeley					State: <u>CA</u>	Sam	pling Po	oint: W-2	
Investigator(s): Pennington, Siegel	;	Section	n, Tov	vnship, Raı	nge: <u>NW1/4 SW1/4</u>	S20, T1NR	4W		
Landform (hillslope, terrace, etc.): Flat								Slope (%):	<1
Subregion (LRR): C	Lat: 37.9	128709	9279		Long: -122.3364	58151		Datum: WG	SS 84
Soil Map Unit Name: Urban Land					NWI c	lassification:	None		
Are climatic / hydrologic conditions on the site typical for this									
Are Vegetation, Soil, or Hydrology signature.	gnificantly	disturbe	ed?	Are "	Normal Circumstar	nces" preser	nt? Yes	. <u> </u>	o
Are Vegetation, Soil, or Hydrology na					eded, explain any				
SUMMARY OF FINDINGS – Attach site map s	howing	samp	pling	point lo	ocations, trans	sects, imp	portan	t feature	s, etc.
Hydrophytic Vegetation Present? Yes No	Х				_				
Hydric Soil Present? Yes No	X			Sampled		s	Na	X	
Wetland Hydrology Present? Yes No	X		witiii	n a Wetlan	iur res	·——	NO		
Remarks:									
VECETATION Has a significant and a significant a									
VEGETATION – Use scientific names of plant					- · -				
Tree Stratum (Plot size: 30 ft.)	Absolute % Cover			Indicator Status	Dominance Tes				
1					Number of Domin			0	(A)
2.									, ,
3					Total Number of Species Across A			1	(B)
4					Percent of Domir	ant Species	2		
Sapling/Shrub Stratum (Plot size: 15 ft)	0	= Tota	al Cov	er	That Are OBL, F			0	(A/B)
l					Prevalence Inde	v workshe	ot·		
1 2					Total % Cov			ultiply by:	
3					OBL species	0			_
4.					FACW species	0			
5.					FAC species	_			_
	0	= Tota	al Cov	er	FACU species	105	x 4 =	420	_
Herb Stratum (Plot size: 5 ft.)	10	N.		LIDI	UPL species	20	x 5 =	100	_
1. Vinca sativa 2. Helminthotheca echiodes	10	N		UPL FACU	Column Totals:	125	(A)	520	_ (B)
Medicago polymorpha	5	N		FACU	Prevalence	Index = B/	Δ =	4.16	
4. Geranium molle		N		UPL	Hydrophytic Ve				
5. Phalaris aquatica	90	Y		FACU	Dominance	-			
6. Foeniculum vulgare	5	N		UPL	Prevalence I				
7.					Morphologic				
8.						emarks or o	•	,	
20.6	125	= Tota	al Cov	er	Problematic	Hydrophytic	Vegeta	tion' (Expla	in)
Woody Vine Stratum (Plot size: 30 ft.)					11	است انت ا	41	la al . a	4
1			<u> </u>		¹ Indicators of hyd be present, unles				must
2	0	= Tota	ol Cov		Hydrophytic				
		•			Vegetation			V	
	of Biotic Ci	rust			Present?	Yes	N	o_X	
Remarks:			_						

SOIL Sampling Point: W-2

	cription: (Describe	to the depti				or confirm	the absence of	indicators.)
Depth (inches)	Matrix Color (moist)	%	Redo Color (moist)	ox Feature %	S Type ¹	Loc²	Texture	Remarks
0-18	10YR 3/1	100	20.0. (1110101)				CL	. committee
								_
					. ——			
				_				
				_				
								_
1- 0.0							21	DI D. III MAN
	oncentration, D=Deplicators: (Application)					d Sand Gr		on: PL=Pore Lining, M=Matrix. r Problematic Hydric Soils ³ :
Histosol		able to all L			eu.)			•
_	pipedon (A2)		Sandy Red Stripped M	. ,				k (A9) (LRR C) k (A10) (LRR B)
	istic (A3)		Loamy Mu		l (F1)			Vertic (F18)
_	en Sulfide (A4)		Loamy Gle	•	` '			nt Material (TF2)
	d Layers (A5) (LRR	C)	Depleted M	-	,		· 	plain in Remarks)
1 cm Mu	uck (A9) (LRR D)	,	Redox Dar	k Surface	(F6)			·
Deplete	d Below Dark Surfac	ce (A11)	Depleted D		. ,			
	ark Surface (A12)		Redox Dep		F8)			hydrophytic vegetation and
	Mucky Mineral (S1)		Vernal Poo	ls (F9)			•	drology must be present,
	Gleyed Matrix (S4)						unless distu	irbed or problematic.
_	Layer (if present):							
· · ·								osant? Vas No X
Depth (in	ches):						Hydric Soil Pre	esent? Yes NoX
Remarks:								
HYDROLO	GY							
Wetland Hy	drology Indicators	:						
Primary Indi	cators (minimum of	one required;	check all that app	ly)			Seconda	ry Indicators (2 or more required)
Surface	Water (A1)		Salt Crust	(B11)			Wate	er Marks (B1) (Riverine)
_	ater Table (A2)		Biotic Cru	` ,				ment Deposits (B2) (Riverine)
Saturati			Aquatic In		es (B13)			Deposits (B3) (Riverine)
	larks (B1) (Nonrive	rine)	Hydrogen					nage Patterns (B10)
	nt Deposits (B2) (No					Livina Roo		Season Water Table (C2)
	posits (B3) (Nonrive	•	Presence					rfish Burrows (C8)
	Soil Cracks (B6)	,	· · · · · · · · · · · · · · · · · · ·			d Soils (C6		ration Visible on Aerial Imagery (C9)
	on Visible on Aerial	Imagery (B7				,		low Aquitard (D3)
	Stained Leaves (B9)		· · · · · · · · · · · · · · · · · · ·	plain in Re				-Neutral Test (D5)
Field Obser	. ,						<u> </u>	. ,
Surface Wat	er Present?	res N	o X Depth (in	ches):				
Water Table			o X Depth (in					
Saturation P			o X Depth (in				and Hydrology P	resent? Yes NoX
	pillary fringe)	.es I	o Deptil (iii	iciles)		_ well	and Hydrology F	resent: res NO
	corded Data (strean	n gauge, mor	nitoring well, aerial	photos, pr	evious ins	pections),	if available:	
Remarks:								
Drained	area helow si	mall culv	ert: below sa	mple n	oint W	-1· how	ever no hy	draulic indicators.
	water may o						•	
Stariding	, water may u	oour dull	ng wet seas	ori, but	110 611	acrice (or long dura	aon ponding.

Project/Site: Phase I RBC	(City/Co	unty: _	Contra Co	esta	Sam	npling Da	ate: 2/13/13	3
Applicant/Owner: UC Berkeley					State: <u>CA</u>	Sam	pling Po	oint: W-3	
Investigator(s): Pennington, Siegel		Section	, Tow	nship, Rai	nge: <u>NW1/4 SW1/4</u>	S20, T1NR	4W		
Landform (hillslope, terrace, etc.): Flat								Slope (%)	<1
Subregion (LRR): C	Lat: 37.9	9129680	0169		Long: -122.3364	14924		Datum: WG	SS 84
Soil Map Unit Name: Urban Land					NWI cl	assification	None		
Are climatic / hydrologic conditions on the site typical for this									
Are Vegetation, Soil, or Hydrology signature.	gnificantly	disturbe	ed?	Are "	Normal Circumstar	nces" preser	nt? Yes	s_XN	lo
Are Vegetation, Soil, or Hydrology na					eded, explain any a				
SUMMARY OF FINDINGS – Attach site map s	howing	samp	oling	point le	ocations, trans	sects, im	portar	nt feature	s, etc.
Hydrophytic Vegetation Present? Yes No	Х								
Hydric Soil Present? Yes No	X			Sampled a Wetlar		.	No	X	
Wetland Hydrology Present? Yes No	X	'	within	a wellar	iu? res	·——	МО		
Remarks:									
VECETATION III a a significa managa of mlant									
VEGETATION – Use scientific names of plant									
Tree Stratum (Plot size: 30 ft.)	Absolute % Cover			ndicator Status	Dominance Test				
1. Eucalyptus polyanthemos	25	Υ		UPL	Number of Domine That Are OBL, F			0	(A)
2.									, , ,
3					Total Number of Species Across A			2	(B)
4					Percent of Domir		_		
0 1: (0) 1 0: (1) (D) 1 15 ft	25	_= Tota	I Cove	er	That Are OBL, F			0	(A/B)
Sapling/Shrub Stratum (Plot size: 15 ft.)					Prevalence Inde	v worksho	ot·		
1					Total % Cov			ultiply by:	
2. 3.					OBL species		x 1 =		_
4					FACW species		x 2 =		
5.					FAC species		x 3 =		
	0	= Tota	I Cove	er	FACU species		x 4 =	372	
Herb Stratum (Plot size: 5 ft.)	00	- 		E4011	UPL species	38	x 5 =	190	_
1. Phalaris aquatica	80	<u>Y</u>		FACU	Column Totals: _	136	(A)	577	_ (B)
2. Lotus cornicalatus 3. Helminthotheca echioldes	5 5	N	— -	FACU FACU	Prevalence	Indox = D/	^ -	4 24	
Vinca sativa		N		UPL	Hydrophytic Ve				_
5. Geranium molle	8	N		UPL	Dominance	-			
6. Medicago polymorpha	8	N		FACU	Prevalence I				
7.					Morphologic	al Adaptatio	ns¹ (Pro	vide suppo	rting
8.						emarks or o			
	111	= Tota	I Cove	er	Problematic	Hydrophytic	: Vegeta	ition¹ (Expla	ıin)
Woody Vine Stratum (Plot size: 30 ft.)		-			1				
1					¹ Indicators of hyd be present, unles				must
2					·		o. p. o.		
	0	_= Tota	II Cove	er	Hydrophytic Vegetation				
% Bare Ground in Herb Stratum0 % Cover	of Biotic C	rust			Present?	Yes	^	lo <u>X</u>	
Remarks:					•				

SOIL Sampling Point: W-3

Profile Desc	cription: (Descr	be to the dept	h needed to docu	ment the i	ndicator	or confirm	the absence of in	ndicators.)	
Depth	Matri			x Features					
(inches)	Color (moist)		Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks	<u> </u>
<u>0-16</u>	10YR 3/2	100					CL		
									_
	-								
l ———									
	•								_
	-								
1							2.		
			Reduced Matrix, C			d Sand Gra		n: PL=Pore Lining, Problematic Hydri	
1		Discable to all L	RRs, unless othe		eu.)			•	C Soils :
Histosol	` '		Sandy Red					(A9) (LRR C)	
ı —	pipedon (A2) istic (A3)		Stripped M		I (E4)		2 cm Muck Reduced V	(A10) (LRR B)	
_	` '		Loamy Muc	-	. ,			` '	
	en Sulfide (A4) d Layers (A5) (LF	PR C\	Loamy Gle Depleted M		(FZ)			t Material (TF2) lain in Remarks)	
	u Layers (A5) (Lr uck (A9) (LRR D)	ar C)	Redox Dar	, ,	E6)		Other (Expi	iaiii iii Reiliaiks)	
	d Below Dark Su	face (A11)	Depleted D	•	,				
	ark Surface (A12)		Redox Dep		. ,		3Indicators of hy	drophytic vegetation	on and
	Mucky Mineral (S		Vernal Poo		• ,		•	ology must be pres	
	Gleyed Matrix (S4		_	()				bed or problematic.	
	Layer (if present								
Type:									
Depth (in	ches):						Hydric Soil Pres	sent? Yes	NoX_
Remarks:	,		<u> </u>				1		
HYDROLO	GY								
Wetland Hy	drology Indicate	rs:							
Primary India	cators (minimum	of one required	check all that app	ly)			Secondary	/ Indicators (2 or me	ore required)
Surface	Water (A1)		Salt Crust	(B11)			Water	Marks (B1) (River	ine)
I —	ater Table (A2)		Biotic Cru	` '				nent Deposits (B2)	
Saturation			Aquatic In		s (B13)			eposits (B3) (Rive	
ı —	/larks (B1) (Nonri	verine)	Hydrogen					age Patterns (B10)	,
	nt Deposits (B2) (Living Root	ts (C3) Dry-Se		(C2)
	posits (B3) (Nonr		Presence	•	_	_	· · — ·	sh Burrows (C8)	(02)
	Soil Cracks (B6)	ivernie,			•	d Soils (C6)		ation Visible on Aer	ial Imagery (C9)
	ion Visible on Aer	ial Imagony (B7		Surface (a dolla (do)	· —	ow Aquitard (D3)	iai iiilagery (C3)
					,		·		
	Stained Leaves (B	9)	Other (Ex	plain in Re	marks)		FAC-I	Neutral Test (D5)	
Field Obser			. X						
Surface Wat			lo X Depth (in						
Water Table	Present?		lo X Depth (in						V
Saturation P		Yes N	lo X Depth (in	ches):		_ Wetla	and Hydrology Pre	esent? Yes	NoX
(includes cap		am dalide moi	nitoring well, aerial	nhotos pre	evious ins	nections) i	if available		
Describe IVE	corded Data (Stie	am yauye, mu	moning well, aerial	priotos, pre	OVIOUS IIIS	peciona <i>)</i> , 1	n avanabic.		
Remarks:									

Project/Site: Phase I RBC		City/County	Contra Co	osta	Samplin	g Date: 2/13/13	3	
Applicant/Owner: UC Berkeley				State: CA Sampling Point: W-4				
Investigator(s): Pennington, Siegel		Section, To	wnship, Ra	nge: NW1/4 SW1/4	S20, T1NR4W			
				convex, none): None		Slope (%)	· <1	
Subregion (LRR): C								
Soil Map Unit Name: Clear Lake Clay				NWI cla				
Are climatic / hydrologic conditions on the site typical for this	time of yea							
Are Vegetation, SoilX, or Hydrology si							lo	
Are Vegetation, Soil, or Hydrology n				eeded, explain any a				
SUMMARY OF FINDINGS – Attach site map s			g point l	ocations, transe	ects, impor	tant feature	s, etc.	
Hydrophytic Vegetation Present? Yes			e Sampled in a Wetlar		No	X		
Area is periodically maintained for wate	r conve	yance.	Drains \	water from adj	acent roo	f tops.		
VEGETATION – Use scientific names of plant								
Tree Stratum (Plot size: 30 ft.	Absolute % Cover	Dominant Species?		Dominance Test				
1. Eucalyptus polyanthemos	5	Y	UPL	Number of Domina That Are OBL, FA		0	(A)	
2				Total Number of D	ominant			
3				Species Across Al		2	(B)	
4		Tatal Oa		Percent of Domina		0		
Sapling/Shrub Stratum (Plot size: 15 ft.)		. = Total Co	ver	That Are OBL, FA	CW, or FAC:	0	(A/B)	
1				Prevalence Index	worksheet:			
2				Total % Cove		Multiply by:	_	
3				OBL species	0 x		_	
4				FACW species		3 = 0	_	
5		= Total Co		FAC species FACU species		4 = 400	_	
Herb Stratum (Plot size: 5 ft.)		_ Total Co	vei	UPL species	^	5 = 75	_	
1. Medicago polymorpha	5	N	FACU	Column Totals:	120 (A		(B)	
2. Geranium molle	5	N	UPL	_	•		_ (-/	
3. Phalaris aquatica	90	<u>Y</u>	FACU		ndex = B/A =		_	
4. Plantago lanceolata		N	FAC	Hydrophytic Veg		tors:		
5. Helminthotheca echiodes		N	FACU	Dominance Te				
6. Vinca sativa	5	N	UPL	Prevalence In		(D.		
7				Morphological data in Rei	Adaptations marks or on a s	(Provide suppoi separate sheet)	rting	
8	120			Problematic H				
Woody Vine Stratum (Plot size: 30 ft.)		= Total Co	ver					
1				¹ Indicators of hydr be present, unless			must	
	0	= Total Co	ver	Hydrophytic				
% Bare Ground in Herb Stratum0 % Cover	of Biotic Cı	rust		Vegetation Present?	Yes	No X		
Remarks:				1				
1								

SOIL Sampling Point: W-4

Profile Des	cription: (Describe	to the dep	oth needed to docur	nent the i	ndicator	or confirm	the absence	of indicators.)				
Depth	Matrix	0/		x Feature		12	Tandona	Damanda				
(inches) 0-3	Color (moist) 10YR 3/2	100	Color (moist)		Type ¹	Loc ²	<u>Texture</u>	Remarks Remarks				
l ———	10 YR 3/1		7.E.VD.E/0		LL		— LL					
3-9	•	65	7.5 YR 5/2									
9-10	10 YR 3/1	95	5 YR 4/4	5			SCL					
10-16	10 YR 3/1	90	5 YR 4/4	10			SCL					
		-										
1- 0.0							. 2,					
	Concentration, D=Dep Indicators: (Applic					d Sand Gr		cation: PL=Pore Lining, M=Matrix. for Problematic Hydric Soils ³ :				
Histoso		abic to all	Sandy Red		cu.,			Muck (A9) (LRR C)				
_	pipedon (A2)		Stripped Ma					Muck (A10) (LRR B)				
1	listic (A3)		Loamy Muc		I (F1)			ed Vertic (F18)				
Hydrog	en Sulfide (A4)		Loamy Gley				Red P	arent Material (TF2)				
	ed Layers (A5) (LRR (C)	Depleted M					(Explain in Remarks)				
l 	luck (A9) (LRR D)		✓ Redox Dark		. ,							
	ed Below Dark Surfac	e (A11)	Depleted Da				3					
_	Park Surface (A12)		Redox Depi		F8)			of hydrophytic vegetation and				
	Mucky Mineral (S1)		Vernal Pool	s (F9)				hydrology must be present,				
	Gleyed Matrix (S4) Layer (if present):						uniess a	listurbed or problematic.				
_												
	achoo):						Hydric Soil	Present? Yes X No No				
Remarks:	nches):						nyuric Soii	Present? Yes X No No				
HYDROLO	DGY											
1	drology Indicators:											
Primary Indi	icators (minimum of c	ne require	d; check all that appl	y)			<u>Secor</u>	ndary Indicators (2 or more required)				
Surface	e Water (A1)		Salt Crust	(B11)			Water Marks (B1) (Riverine)					
	ater Table (A2)		Biotic Crus				Sediment Deposits (B2) (Riverine)					
	ion (A3)		Aquatic In				Drift Deposits (B3) (Riverine)					
	Marks (B1) (Nonriver		Hydrogen					Prainage Patterns (B10)				
	ent Deposits (B2) (No			-	-	_	—	ry-Season Water Table (C2)				
l —	eposits (B3) (Nonrive	rine)	Presence				· · · · · · · · · · · · · · · · · · ·	Crayfish Burrows (C8)				
	e Soil Cracks (B6)		Recent Iro			d Soils (C6		Saturation Visible on Aerial Imagery (C9)				
l —	tion Visible on Aerial	lmagery (E	· —				Shallow Aquitard (D3)					
	Stained Leaves (B9)		Other (Exp	plain in Re	marks)		F	AC-Neutral Test (D5)				
Field Obse			Y									
			No X Depth (inc									
Water Table			No X Depth (in					v				
Saturation F		es	No X Depth (in	ches):		_ Wetla	and Hydrolog	y Present? Yes No _X				
	apillary fringe) ecorded Data (stream	gauge, m	onitoring well, aerial i	ohotos, pr	evious ins	pections), i	if available:					
	•	·		•								
Remarks:												
	nnle noint is in	the im	mediate vicinit	v of a	culvert	that dra	ains wate	r from adjacent roof tops;				
i iiie saii	•			-		anat ur	anio wale	i nom adjacent roor tops,				
howovo	r no ovidonoo	of non	dina durina tha	s cita v	ricit							
howeve	r, no evidence	of pon	ding during the	e site v	isit.							
howeve	r, no evidence	of pon	ding during the	e site v	isit.							

Project/Site: Phase I RBC	City/County: Contra Costa Sampling Date: 2/13/13						
Applicant/Owner: UC Berkeley				State: CA Sampling Point: _			
Investigator(s): Pennington, Siegel		Section, 1	Γownship, Ra	nge: NW1/4 SW1/4 S20), T1NR4W		
		convex, none): Concav		Slope (%)	: <u><1</u>		
Subregion (LRR): C	Lat: <u>37.9</u>	91323366 ²	13	_ Long: <u>-122.33631077</u>	6	_ Datum: Wo	SS 84
Soil Map Unit Name: Clear Lake Clay				NWI classi	fication: None	e	
Are climatic / hydrologic conditions on the site typical for t	his time of yea						
Are Vegetation, Soil X, or Hydrology	significantly	disturbed	? Are '	'Normal Circumstances'	" present? Y	es X N	lo
Are Vegetation, Soil, or Hydrology	naturally pro	blematic?	(If ne	eeded, explain any ansv	vers in Remai	rks.)	
SUMMARY OF FINDINGS – Attach site ma	showing	sampli	ng point l	ocations, transect	ts, importa	ant feature	es, etc.
Hydrophytic Vegetation Present? Yes	No X						
Hydric Soil Present? Yes X			the Sampled thin a Wetlar		No	Χ	
Wetland Hydrology Present? Yes X	No	WI	uiiii a vveuai	id! Tes	NO_		
Remarks:							
Areas is periodically maintained for wa	ater conv	eyanc	e. Drains	water from adja	acent roo	f tops.	
VEGETATION – Use scientific names of pla	ints.						
7 0 30 ft	Absolute		nt Indicator	Dominance Test wo	rksheet:		
Tree Stratum (Plot size: 30 ft.			? Status	Number of Dominant That Are OBL, FACW	•	0	(A)
1 2					_		. (^)
3.				Total Number of Dom Species Across All St		1	(B)
4.					_		. (=)
45.4	0	= Total C	Cover	Percent of Dominant That Are OBL, FACW		50	(A/B)
Sapling/Shrub Stratum (Plot size: 15 ft.)							
1				Prevalence Index we Total % Cover of		Multiply by:	
2				·		=	
3 4				FACW species	${0}$ x2	=	_
5.				FAC species			
	0	= Total C	Cover			= 400	
Herb Stratum (Plot size: 5 ft)	0.5		E4011	UPL species	5 x 5	= 25	_
Phalaris aquatica Medicago polymorpha			FACU FACU	Column Totals:	105 (A)	425	(B)
Medicago polymorpha Geranium molle	 5	N	UPL	Prevalence Inde	ον = R/Δ =	4.04	
A Plantago lanceolata	$-\frac{5}{5}$	N	FAC	Hydrophytic Vegeta			_
5				Dominance Test			
6.				Prevalence Index			
7				Morphological Ad	daptations¹ (P		
8.				data in Rema		• ,	
	110	= Total C	Cover	Problematic Hyd	rophytic Vege	tation (Expla	ain)
Woody Vine Stratum (Plot size: 30 ft.				¹ Indicators of hydric s	oil and watla	nd bydrology	munt
1				be present, unless dis			must
2		= Total C	Cover	Hydrophytic			
N Pour Orange d'in Hart Otantons		•		Vegetation		N. X	
	ver of Biotic C	ust		Present?	/es	NO	
Remarks:							

SOIL Sampling Point: W-5

Profile Desc	cription: (Describe	to the de	pth needed to docun	nent the i	indicator o	r confirm	n the absence of i	ndicators.)				
Depth <u>Matrix</u>				x Feature	S							
(inches)	Color (moist)	_ %	Color (moist)		Type ¹ .	Loc ²	Texture	Remarks				
0-4	10YR 4/1	95	5 YR 4/6	5	. <u> </u>	M	CL					
4-16	10 YR 4/1	98	5 YR 4/6		. <u> </u>	M	CL					
			-									
		_	·									
1 _{Tyme} , C=C	oncentration D-De	nlotion DA	4-Daduard Matrix CC		 d ar Caataa	d Cand Cr	raina ² l acatio	n: PL=Pore Lining, M=Matrix.				
			M=Reduced Matrix, CS II LRRs, unless other			ı Sanu Gi		Problematic Hydric Soils ³ :				
Histosol		ouble to u	Sandy Redo		ou.,			(A9) (LRR C)				
ı —	pipedon (A2)		Stripped Ma				_	(A3) (LRR B)				
. —	istic (A3)		Loamy Mucl		ıl (F1)			/ertic (F18)				
_	en Sulfide (A4)		Loamy Gley					t Material (TF2)				
	d Layers (A5) (LRR	C)	Depleted Ma		()			plain in Remarks)				
1 cm Mu	uck (A9) (LRR D)	,	Redox Dark	Surface	(F6)			· ·				
Deplete	d Below Dark Surfa	ce (A11)	Depleted Da	ark Surfac	ce (F7)							
	ark Surface (A12)		Redox Depr	essions (F8)			ydrophytic vegetation and				
	Mucky Mineral (S1)		Vernal Pools	s (F9)				ology must be present,				
	Gleyed Matrix (S4)						unless distur	bed or problematic.				
Restrictive	Layer (if present):											
ı —								v				
Depth (in	ches):						Hydric Soil Pre	sent? Yes X No No				
Remarks:												
HYDROLO	GY											
	drology Indicators											
1			ed; check all that apply	٨			Casandar	uladicatora (2 or mara required)				
		one require						y Indicators (2 or more required)				
Surface	` ,		Salt Crust	` '			Water Marks (B1) (Riverine)					
	ater Table (A2)		Biotic Crus		(D40)		Sediment Deposits (B2) (Riverine)					
Saturati			Aquatic Inv		. ,			Deposits (B3) (Riverine)				
	Marks (B1) (Nonrive		Hydrogen					age Patterns (B10)				
	nt Deposits (B2) (No							eason Water Table (C2)				
	posits (B3) (Nonrive	erine)	Presence of					ish Burrows (C8)				
	Soil Cracks (B6)		Recent Iron			Soils (C6		ation Visible on Aerial Imagery (C9)				
	on Visible on Aerial							ow Aquitard (D3)				
	stained Leaves (B9)		Other (Exp	olain in Re	emarks)		FAC-	Neutral Test (D5)				
Field Obser			V									
Surface Wat			No X Depth (inc									
Water Table			No X Depth (inc					V				
Saturation P	resent?	Yes	No X Depth (inc	ches):		_ Wetl	and Hydrology Pr	esent? Yes X No No				
(includes ca		m dollas =	onitoring well seriel	hotos ==	ovious inc	noctions)	if available:					
Describe Re	corded Data (Stream	ıı yauge, n	nonitoring well, aerial p	niolos, pr	evious insp	rections),	ıı avallable.					
Dan 1												
Remarks:												

Project/Site: Phase I RBC	City/County: Contra Costa Sampling Date:						ate: <u>2/15/13</u>	}
Applicant/Owner: UC Berkeley				State: CA Samplir			mpling Point: W-6	
Investigator(s): Pennington, Siegel		Section, 7	Γownship, Ra	nge: NW1/4 SW1/4	S20, T1NR	4W		
				convex, none): Con			Slope (%):	<1
Subregion (LRR): C	_ Lat: <u>37.9</u>	13076593	36	Long: -122.33637	623		Datum: WG	SS 84
Soil Map Unit Name: Urban Land				NWI cla	assification:	None		
Are climatic / hydrologic conditions on the site typical for this								
Are Vegetation, SoilX, or Hydrologys	ignificantly	disturbed	? Are "	Normal Circumstan	ces" preser	nt? Yes	s_XN	o
Are Vegetation, Soil, or Hydrology n	aturally pro	blematic?	(If ne	eded, explain any a	inswers in F	Remarks	s.)	
SUMMARY OF FINDINGS – Attach site map				ocations, trans	ects, im _l	portan	it feature	s, etc.
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No Remarks:	X		the Sampled thin a Wetlar			No	x	
Areas is periodically maintained for wat		eyanc	e. Drains	water from a	djacent	roof	tops.	
VEGETATION – Use scientific names of plant		D	at lastication	l D		4.		
Tree Stratum (Plot size: 30 ft.) 1		Species	nt Indicator ? Status	Dominance Test Number of Domin That Are OBL, FA	ant Species	s	0	(A)
3.				Total Number of I Species Across A		_	1	(B)
4	0	= Total C	Cover	Percent of Domin That Are OBL, FA			50	(A/B)
Sapling/Shrub Stratum (Plot size: 15 ft.)				Prevalence Index	v worksho	ot·		
1 2				Total % Cove			ultiply by:	
3				OBL species _				_
4.				FACW species				_
5				FAC species _	1	x 3 =	15	_
	0	= Total C	Cover	FACU species _		x 4 =	400	_
Herb Stratum (Plot size: 5 ft. 1. Phalaris aquatica	95	Y	FACU	UPL species _		x 5 =		_
2. Geranium molle	· — 95 — 5	N	UPL	Column Totals: _	110	_ (A)	440	_ (B)
3. Helminthotheca echiodes		N	FACU	Prevalence	Index = B/	A =	4.0	
A Plantago lanceolata	5	N	FAC	Hydrophytic Veg				_
5.				Dominance T				
6.				Prevalence Ir				
7.				Morphologica				
8.							arate sheet)	
20.4	110	= Total C	Cover	Problematic I	Hydrophytic	Vegeta	ition' (Expla	in)
Woody Vine Stratum (Plot size: 30 ft.) 1				¹ Indicators of hyd be present, unless				must
2	0	= Total C	<u></u>	Hydrophytic				
% Bare Ground in Herb Stratum0	of Biotic C	•		Vegetation Present?	Yes	N	lo X	
Remarks:								

SOIL Sampling Point: W-6

Depth	cription: (Describe Matrix		Red	ox Feature	s						
(inches)	Color (moist)		Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks			
0-8	10YR 3/1	100					CL				
8-16	10 YR 4/1	_ 92	7.5 YR 5/1	_ 8		<u>M</u>	CL				
	-										
				_							
Type: C=C	Concentration, D=De	 pletion. RM	=Reduced Matrix. 0	S=Covere	d or Coate	d Sand Gr	rains. ² Loc	cation: PL=Pore Lining, M=Matrix.			
	Indicators: (Appli							for Problematic Hydric Soils ³ :			
Histoso	` '		Sandy Re	dox (S5)			1 cm N	fluck (A9) (LRR C)			
Histic E	Epipedon (A2)		Stripped N	latrix (S6)			2 cm N	Muck (A10) (LRR B)			
	listic (A3)			ıcky Minera				ed Vertic (F18)			
	en Sulfide (A4)			eyed Matrix	(F2)			arent Material (TF2)			
	ed Layers (A5) (LRR	C)		Matrix (F3)			_ V Other	(Explain in Remarks)			
	luck (A9) (LRR D)			rk Surface							
	ed Below Dark Surfa	ce (A11)		Dark Surfac			3				
	Dark Surface (A12)			pressions (F8)			of hydrophytic vegetation and			
	Mucky Mineral (S1) Gleyed Matrix (S4)		Vernal Po	ols (F9)				hydrology must be present, isturbed or problematic.			
	Layer (if present):						T unicss u	istarbed of problematic.			
Туре:											
Depth (ir	nches):						Hydric Soil	Present? Yes No _X			
Remarks:											
YDROLO	nev										
	ydrology Indicators										
-	icators (minimum of		ad: check all that an	alv)			Socor	ndary Indicators (2 or more required)			
		one require									
_	e Water (A1)		Salt Crus	` ,				Vater Marks (B1) (Riverine)			
	ater Table (A2)		Biotic Cr				Sediment Deposits (B2) (Riverine)				
	tion (A3)		 ·	nvertebrate	` ,		Drift Deposits (B3) (Riverine)				
	Marks (B1) (Nonrive			n Sulfide O	, ,			rainage Patterns (B10)			
	ent Deposits (B2) (No		· 	Rhizosphe			· · —	ry-Season Water Table (C2)			
	eposits (B3) (Nonrive	erine)	· 	e of Reduce				rayfish Burrows (C8)			
	e Soil Cracks (B6)			on Reducti		d Soils (C6		aturation Visible on Aerial Imagery (C9			
	tion Visible on Aerial		· · · · · · · · · · · · · · · · · · ·	k Surface (hallow Aquitard (D3)			
	Stained Leaves (B9)		Other (E	xplain in Re	emarks)		F	AC-Neutral Test (D5)			
Field Obse		Voc	No X Depth (i	nches):							
Water Table			No X Depth (i								
Saturation F			No X Depth (i				and Hydrolog	y Present? Yes X No			
(includes ca	apillary fringe)							, 11000iki 100 iko			
Describe Re	ecorded Data (strear	n gauge, m	ionitoring well, aeria	l photos, pr	evious ins	pections),	if available:				
Remarks:											
remants.											

Project/Site: Phase I RBC	(City/County	Contra Co	osta	Sampling Date: 2/15/13
Applicant/Owner: UC Berkeley				State: CA	Sampling Point: W-7
Investigator(s): Pennington, Siegel	;	Section, To	wnship, Ra	nge: NW1/4 SW1/4 S20,	T1NR4W
Landform (hillslope, terrace, etc.): Flat		Local relief	(concave,	convex, none): Concave	Slope (%): <1
Subregion (LRR): C	Lat: <u>37.9</u>	13018875		Long: <u>-122.336392944</u>	Datum: WGS 84
Soil Map Unit Name: Urban Land				NWI classific	cation: None
Are climatic / hydrologic conditions on the site typical for thi					
Are Vegetation, Soil, or Hydrologys	significantly (disturbed?	Are "	Normal Circumstances"	present? Yes X No
Are Vegetation, Soil, or Hydrology r	naturally prof	blematic?	(If ne	eded, explain any answe	ers in Remarks.)
SUMMARY OF FINDINGS – Attach site map	showing	samplin	g point le	ocations, transects	s, important features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Yes X Wetland Hydrology Present? Remarks:	lo		ie Sampled iin a Wetlar		⁽ No
Areas is periodically maintained for wa	ter conv	eyance	. Drains	water from adjac	cent roof tops.
VEGETATION – Use scientific names of plan	ıts.				
<u>Tree Stratum</u> (Plot size: 30 ft.) 1	Absolute <u>% Cover</u>	Species?	Status	Dominance Test work Number of Dominant S That Are OBL, FACW,	Species
2				Total Number of Domir Species Across All Stra	4
4	•	= Total Co		Percent of Dominant S That Are OBL, FACW,	
1				Prevalence Index wor	rksheet:
2.				Total % Cover of:	Multiply by:
3.				OBL species	x 1 =
4					x 2 =
5				FAC species	x 3 =
Herb Stratum (Plot size: 5 ft.)	0	= Total Co	ver		x 4 =
Herb Stratum (Plot size: 5 II.) 1. Juncus phaecephalus	90	Υ	FACW		x 5 =
2 Vinca sativa	5	N	UPL	Column Totals:	(A) (B)
3. Helminthotheca echiodes	5	N	FACU	Prevalence Index	x = B/A =
4.				Hydrophytic Vegetati	
5				Dominance Test is	
6				Prevalence Index	
7					aptations ¹ (Provide supporting s or on a separate sheet)
8					ophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size: 30 ft)		= Total Co	ver		priyae vogetation (Explain)
1				¹ Indicators of hydric so be present, unless dist	oil and wetland hydrology must turbed or problematic.
2		= Total Co	ver	Hydrophytic	
% Bare Ground in Herb Stratum0	r of Biotic Cr	ust		Vegetation Present? Ye	es <u>X</u> No
Remarks:				I	
Eucalyptus polyanthemos growing adja	acent to,	but not	inside t	he wetland.	

SOIL Sampling Point: W-7

Profile Desc	cription: (Describe	to the de	pth needed to docun	nent the	indicator o	or confir	m the absence of i	ndicators.)			
Depth	Matrix	21		x Feature		. 2					
(inches)	Color (moist)	<u> %</u>	Color (moist)		Type'	Loc ²		Remarks			
0-8	7.5 YR 3/1	95	5 YR 3/4	5	<u>C</u>						
8-10	7.5 YR 3/1	65	5 YR 3/4	35		M	CL				
10-16	7.5 YR 3/1	90	5 YR 3/4	10	C	M	CL				
			·								
			M=Reduced Matrix, CS I LRRs, unless other			d Sand G		n: PL=Pore Lining, M=Matrix. Problematic Hydric Soils ³ :			
Histosol		able to al	Sandy Redo		eu.,			(A9) (LRR C)			
_	oipedon (A2)		Stripped Ma					(A10) (LRR B)			
	istic (A3)		Loamy Mucl		al (F1)		Reduced V				
	en Sulfide (A4)		Loamy Gley					t Material (TF2)			
Stratified	d Layers (A5) (LRR	C)	Depleted Ma				Other (Exp	lain in Remarks)			
	uck (A9) (LRR D)		_ ∠ Redox Dark								
	d Below Dark Surfac	e (A11)	Depleted Da		` '		3				
	ark Surface (A12)		Redox Depr		F8)			ydrophytic vegetation and			
	Mucky Mineral (S1) Gleyed Matrix (S4)		Vernal Pools	s (F9)				ology must be present, bed or problematic.			
	Layer (if present):						uriless distai	bed of problematic.			
Type:											
''	ches):						Hydric Soil Pre	sent? Yes X No			
Remarks:											
Aron con	nmonly maint	ainad f	or water conve	vanco		nally	nandad dua t	o run-off from adjacent			
	•	airieu i	or water conve	yance	, seasu	niany	ponded due ti	o run-on nom adjacem			
roof tops	•										
L HYDROLO	GY										
	drology Indicators:	1									
I -			ed; check all that apply	()			Secondar	y Indicators (2 or more required)			
	Water (A1)		Salt Crust					Marks (B1) (Riverine)			
—	ater Table (A2)		Biotic Crus				Sediment Deposits (B2) (Riverine)				
Saturati	` ,		Aquatic Inv	, ,	es (B13)		Drift Deposits (B3) (Riverine)				
	larks (B1) (Nonrive r	ine)	Hydrogen		, ,			age Patterns (B10)			
	nt Deposits (B2) (No				, ,	Livina Ra		eason Water Table (C2)			
l —	posits (B3) (Nonrive		Presence of		_	-	· · — ·	ish Burrows (C8)			
l —	Soil Cracks (B6)	-,	Recent Iron					ation Visible on Aerial Imagery (C9)			
	on Visible on Aerial	lmagery (E				(ow Aquitard (D3)			
l <u> </u>	tained Leaves (B9)		Other (Exp					Neutral Test (D5)			
Field Obser	vations:				-						
Surface Wat	er Present?	'es	No X Depth (inc	ches):		_					
Water Table			No X Depth (inc								
Saturation P			No X Depth (inc				tland Hydrology Pr	esent? Yes X No No			
(includes ca	pillary fringe)										
Describe Re	corded Data (stream	n gauge, m	nonitoring well, aerial p	onotos, pr	evious insp	pections)	, it available:				
Domarka											
Remarks:											