UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

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CALIFORNIA
COASTAL COMMISSION
CENTRAL COAST AREA

April 24, 2007

Mr. Dan Carl
California Coastal Commission
725 Front Street, Suite 300
Santa Cruz, CA 95060

Subject: Terrace Point Wetland Delineation, Santa Cruz County, CA

Dear Mr. Carl:

The U.S. Environmental Protection Agency (EPA) and U.S. Army Corps of Engineers (Corps), San Francisco, have completed their review and verification of the geographic extent of Clean Water Act (CWA) wetlands, and other waters of the United States (WOUS), on portions of the Terrace Point site, Santa Cruz County, CA. The site is owned by the University of California, Santa Cruz. In response to a written request (letter dated December 18, 2006) from the California Coastal Commission (CCC) to the Corps and EPA, we are providing additional information to CCC staff on our observations of hydrologic, edaphic, and vegetative conditions at the site. The primary purpose of our review is to verify the geographic extent of WOUS at the subject site. In addition, we have characterized areas with wetland vegetation in sufficient detail to assist the CCC staff in making an independent determination of the extent of wetlands pursuant to the California Coastal Management Act (CCMA).

Dan Martel of the Corps and I inspected the subject site on March 27-28, 2007. I also inspected the site alone on February 14, 2007. We followed USACE (1987) and Reed (1988) protocols for verification of the geographic extent of CWA wetlands at the subject site. We also referred to The Huffman-Broadway Group, Inc. (HBG) (2002), with updated HBG maps dated 2006, to assist in our verification. Abbreviations for plant indicator status follow Reed (1988) as: Obligate (OBL), Facultative Wetland (FACW), Facultative (FAC), Facultative Upland (FACU), and Obligate Upland (UPL).

Observations and recommendations from the February and March site inspections are discussed separately below.

February 14, 2007 Site Inspection

On February 14, 2007, I inspected the Terrace Point site to observe hydrologic and vegetative conditions following recent rainfall. Mean January and February rainfall for the period of record (1948-2007) for Santa Cruz (Station 047916) is 6.46 and 5.43 inches, respectively (Western Regional Climate Center, wrcc@dri.edu). Rainfall for January

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2007 was 0.80 inches, well below average for the period of record. Total rainfall for the 17 day period prior to my inspection was 3.47 inches, or approximately 64% of the average total February rainfall for the period of record (Rainfall in the University Terrace area, Westside Santa Cruz, California, USA, Latitude 36 58 24 N / Longitude 122 02 09 W, www.armory.com). Precipitation on February 4, 2007, ten days prior to my inspection was 3.1 inches. Please note that monthly and annual precipitation for the Santa Cruz region prior to my inspection was well below historical averages.

Based on field observations, I noted the general extent of areas exhibiting surface or near-surface soil saturation, and/or ponding. I also recorded plant community dominance at selected locations. My field observations are summarized below for specific locations. Please refer to the attached (HBG 2006) map for the location of data points referenced herein.

- **Observation Point 1** (near HBG data point c-15). Vegetation was dominated by *Baccharis douglasii* (OBL) and *Lolium perenne* (FAC). No surface or subsurface (soil pit to 15 inches depth) hydrologic indicators present. Soil well-drained. Surrounding topography not likely to promote wetland conditions.
- **Observation Point 2** (near HBG data point c-10 and c-88). *Baccharis douglasii* (OBL) patch. No surface or subsurface (soil pit to15 inches depth) hydrologic indicators present. Soil well-drained. Surrounding topography not likely to promote wetland conditions.
- **Observation Point 3** (approximately 100 feet north of HBG data point c44, north of Delaware Street). *Lolium perenne* (FAC) and *Polypogon monspeliensis* (FACW+) are dominants. Water is ponded on the soil surface to a depth of 1 inch. There is a noticeable topographic break with the loss of surface water ponding and a change in the plant community dominants to *Baccharis pilularis* (UPL) and *Bromus diandrus* (UPL) about 75-100 feet east of HBG data point c-44. The vegetative change forms a very clear boundary and likely approximates the wetland boundary.
- **Observation Point 4** (at HBG data point c-43, north of Delaware Street). *Baccharis douglasii* (OBL) and *Lolium perenne* (FAC) are plant community dominants. The soil profile is saturated to the surface. There is standing water within a 15 inch soil pit at a depth of 4 inches from the soil surface. This point is likely near the wetland boundary based on plant community and hydrology indicators.
- **Observation Point 5** (at HBG data point c-42, north of Delaware Street). *Baccharis douglasii* (OBL) and *Lolium perenne* (FAC) are plant community dominants. The soil profile is saturated to the surface. There is standing water within a 16 inch soil pit at a depth of 8 inches from the soil surface. There is a restrictive layer (aquitard) at approximately 14 inches depth. This *Baccharis douglasii* patch is within the wetland boundary. Note that a stand of *Baccharis pilularis* likely forms the wetland boundary where it becomes dominant immediately to the east of this *Baccharis douglasii* patch. I observed dead or stressed *Baccharis pilularis* within areas saturated to the soil surface or ponded.

- **Observation Point 6** (at northeast edge of HBG data point c-41, north of Delaware Street). Dominant plants include *Lolium perenne* (FAC), *Rumex crispis* (FACW), and *Baccharis douglasii* (OBL). Just to the northeast are scattered dead individuals of *Baccharis pilularis*, bordered by live *Baccharis pilularis*. The soil profile is saturated to the surface. There is standing water within a 16 inch soil pit at a depth of 8 inches from the soil surface. There is a cemented sand restrictive layer (aquitard) at approximately 12 inches depth.
- **Observation Point 7** (at HBG data point 12 and 12b, north of Delaware Street). Dominant plant is *Lolium perenne* (FAC). There is a cemented sand restrictive layer (aquitard) at approximately 8 inches depth. The soil profile is saturated to the surface. There is standing water within a 12 inch soil pit at a depth of 6 inches from the soil surface. There are scattered small areas of ponded surface water in the vicinity at approximately 1 inch depth.
- **Observation Point 8** (within *Baccharis douglasii* patch between HBG data points 7b and c-38, north of Delaware Street). There is a mosaic of small pools of ponded surface water to 1 inch depth. The soil profile is saturated to the surface. There is standing water within a 12 inch soil pit at a depth of 2 inches from the soil surface. There is a cemented sand restrictive layer (aquitard) at approximately 8 inch depth. Dominant plants include *Baccharis douglasii* (OBL) and *Lolium perenne* (FAC). There are dead and/or stressed individuals of *Baccharis pilularis* (UPL) in the immediate vicinity of this plot.
- **Observation Point 9** (at HBG *Baccharis douglasii* patch 13, north of Delaware Street). Mosaic of small pools of ponded surface water to 1 inch depth. The dominant plants include *Baccharis douglasii* (OBL) and *Lolium perenne* (FAC). There is standing water observed in a 16 inch soil pit at a depth of 1 inch from the soil surface. There is a cemented restrictive layer (aquitard) at approximately 6 inches depth. *Lolium perenne* is the dominant plant immediately to the north-northeast of the plot.
- **Observation Point 10** (at HBG data point 33, north of Delaware Street). There is a small depression with surface water ponded to a depth of 2 inches. *Lolium perenne* (FAC), *Rumex crispis* (FACW-), and *Geranium dissectum* (UPL) are the dominant plants. An arc-shaped area approximately 100-150 in width running between HBG data points 33, to data points 15 and 16, and continuing to data points 12/12b, is ponded to a depth of 1-2 inches.
- **Observation Point 11** (walking transect from HBG data points 12 and 12b north and northeast for a distance approximately 200-250 feet). Retracing my path, I observed a mosaic of continuous surface water ponding and saturation to the soil surface along transect from south (near HBG data point 12, 12b) to north (HBG data points 15, 16, and 33). The vegetation is dominated by *Lolium perenne* (FAC). Note the line of dead *Baccharis pilularis* (UPL) in the vicinity.
- **Observation Point 12** (near HBG data point c-69, north of Delaware Street). *Lolium perenne* (FAC) and *Rumex crispis* (FACW-) are the dominant plants. Water is ponded on surface to a depth of 2 inches. There is standing water within a 16 inch soil pit at a depth of 5 inches from the soil surface. There is a cemented restrictive layer (aquitard) at approximately 12 inches depth. The wetland

boundary appears to be from 50-60 feet east of where HBG has mapped the current boundary.

- **Observation Point 13** (near HBG data points c-72, c-73, c-75, c-76, 32 and 7 continuing north to near data point 10, north of Delaware Street). Dominant plants include *Lolium perenne* (FAC), *Rumex crispis* (FACW-), and scattered patches of *Baccharis douglasii* (OBL). This entire area is covered with 4-6 inches of ponded water.
- **Observation Point 14** (transect of drainage running along western edge of property from near c-61 south t-7, t2-9, and ending near t-5). This entire drainage feature appears to be mapped too narrowly as depicted by HBG. In addition, there are jurisdictional wetlands that border the drainage feature that are not mapped by HBG as wetlands. Finally, it appears that the wetland mapped near HBG data point t-5 west of Delaware Street is larger than depicted on the HBG map, and should extend slightly further to the south.
- **Observation Point 15** (at HBG data point 12 {well no. 12?}, south of the National Marine Fisheries Service Lab). Dominant plants include *Lolium perenne* (FAC) and *Hordeum histrix* (FAC), with scattered individuals of *Baccharis douglasii* (OBL), *Polypogon monspeliensis* (FACW+), and *Rumex crispis* (FACW-). Water is ponded on the surface to a depth of 3 inches throughout the vicinity at an elevation similar to that surrounding the pond. HBG has mapped this area, in part, as CCC wetland only. I recommend expanding outward the CWA 404 and CCC wetland boundary.
- **Observation Point 16** (near HBG data point 55 and 118). The dominant plant is *Baccharis douglasii* (OBL). The soil within a 16 inch pit is saturated to within 2 inches of the surface. Standing water in is at a depth of 7 inches. I recommend expanding CWA 404 and CCC wetland boundaries to reflect these hydrologic and plant community conditions.
- **Observation Point 17** (100 feet southwest from HBG data point 44). The dominant plant is *Lolium perenne* (FAC). The soil is saturated to the surface. There is standing water in a 16 inch soil pit to within10 inches of the soil surface. I recommend expanding CWA 404 and CCC wetland boundaries from pond northeast to reflect these hydrologic and plant community conditions.

March 27-28, 2007 Site Inspection

Mean March rainfall for the period of record (1948-2007) for Santa Cruz (Station 047916) is 4.38 inches (Western Regional Climate Center, wrcc@dri.edu). Rainfall for March 2007 was 0.50 inches, well below average for the period of record (Rainfall in the University Terrace area, Westside Santa Cruz, California, USA, Latitude 36 58 24 N / Longitude 122 02 09 W, www.armory.com). Total rainfall for the 9 day period prior to our inspection was also 0.5 inches, or approximately 11% of the average total February rainfall for the period of record (Rainfall in the University Terrace area, Westside Santa Cruz, California, USA, Latitude 36 58 24 N / Longitude 122 02 09 W, www.armory.com). Precipitation on March was 25, 2007, two days prior to our inspection was 0.37 inches. Please note that monthly and annual precipitation for the Santa Cruz region prior to our inspection was well below historical averages.

On March 27-28, 2007, Dan Martel and I reviewed and revised the proposed jurisdictional determination for CWA Section 404 WOUS at Terrace Point submitted by HBG (2002). Per the CCC request, we also evaluated the project study area for the presence of hydrophytic plant communities that were not identified as WOUS. Included in our assessment were patches of *Baccharis douglasii* (OBL) and other FAC, FACW, or OBL plant communities. The following comments and recommendations are the result of our field observations:

(1) Please revise the proposed CWA Section 404 WOUS map to enlarge the geographic extent of federal wetlands associated with areas W-2, W-3, W-4 and W-5. This revision extends federal wetland areas into some of the *Baccharis douglasii* patches, especially those patches associated with the fringe of the previously identified federal wetlands. With proper revisions, the Section 404 WOUS jurisdictional verification request can be finalized without further site evaluation.

(2) Revise the proposed CCC map to include all previously identified CCC wetlands, and all areas added to the Section 404 wetlands map as federal wetlands, as CCC wetlands. Additionally, we recommended that HBG identify four areas of interest on the proposed map for CCC staff consideration as CCMA wetlands. These areas are identified on the map and legend as Groups A through D.

- **Group A** consists of patches of *Baccharis douglasii* growing within a FAC, FACW, or OBL plant dominated community, with conditions that meet Corps hydric soil and wetland hydrology criteria.

- **Group B** consists of patches of *Baccharis douglasii* not meeting Corps hydric soil and/or wetland hydrology criteria, and in a landscape position, and with soil characteristics unlikely to promote wetland conditions. Group B includes patches of *Baccharis douglasii* scattered throughout the project study area characterized by one or more of the following conditions: (1) *Baccharis douglasii* was no longer present at a location previously identified by HBG; (2) the sample plot at the identified *Baccharis douglasii* patch did not have a hydrophytic plant community (standard Corps 87 Manual routine sample plot) even though there were individuals of *Baccharis douglasii*, which may or may not have been a dominant; (3) the *Baccharis douglasii* patch was within a hydrophytic plant community but lacked observable or inferred hydric soil and/or wetland hydrology, and/or was located in a landscape position comparable to adjacent and obvious upland plant communities. We recovered/observed each identified location of *Baccharis douglasii* on the proposed HBG 2002 delineation map, sampled soil profile conditions at many of these locations, and noted observable hydrology conditions. In general, the soil profiles of condition (3) are characterized by at least 24 inches of soil coarser than fine sandy loam, with no apparent surface or sub-surface hydrologic indicators. Based on our observations of current site conditions, we do not believe plant communities identified in Group B are the result of wetness conditions that are significantly different from those existing in adjacent upland plant communities.

- **Group C** consists of six identified patches of *Baccharis douglasii* not meeting Corps hydric soil and/or wetland hydrology criteria. However, landscape position and/or subsurface wetness associated with a shallow aquitard may support a wetland plant community pursuant to the CCMA definition of wetlands. We refer Group C to CCC staff.

  Baccharis douglasii patch C-1 had moist soil below 12 inches and was at a slightly higher elevation than the expanded Corps wetland boundary. *Baccharis douglasii* patch C-2 had a soil textural change at 24 inches consistent with impeded drainage and development of short-to-long- duration seasonal water table, development of faint contrast at 16 inches in the soil, and a relative shallow landscape depression on the soil surface. *Baccharis douglasii* patch C-3 had soil depletions below 15 inches, and abuts a historic drainage way constructed to drain surface water from area W-5. *Baccharis douglasii* patch C-4 has a depleted matrix and shallow aquitard beginning at 15 inches depth, and is likely to have short-to-long-duration perched water tables close enough to the surface to cause periodic wet soil conditions. *Baccharis douglasii* patch C-5 has conditions similar to C-4. *Baccharis douglasii* patch C-6 (identified as C-7 on the CCC map) was in a low topographic landscape position, had moist soil conditions, and supported wetter-end plant species.

- **Group D** consists of two relatively large areas with plant communities dominated by FAC, FACW, or OBL plant species other than *Baccharis douglasii* that do not meet the Corps hydric soil and wetland hydrology criteria. However, landscape position and subsurface wetness associated with a shallow aquitard may support a wetland plant community pursuant to the CCMA definition of wetlands. We refer Group C to CCC staff. Area D-1 was adjacent to an expanded area of federal wetlands characterized by a sample point with a depleted soil matrix at 15 inches and saturated soil between 3 and 15 inches. D-1 was at a slightly higher elevation than the federal wetland and sloped, but was still dominated by FAC grasses and likely to have seasonally wet soil conditions. D-1 also included a *Baccharis douglasii* patch. Area D-2 was a large patch of FAC dominated grasses with a depleted soil matrix at 16 inches, and saturated soil at 24 inches depth. D-2 is immediately upslope (1%) of area C-4 and is likely to have seasonal wet soil conditions.

Conclusions

Data and observations made during the February and March field inspections indicate that the geographic extent of CWA wetlands and WOUS and CCC wetlands were under-delineated on the HBG map. As a result of the March 27-28, 2007 field inspection, the Corps and EPA have referred several areas to CCC staff for further consideration as wetlands under the CCMA. In addition, EPA recommends that CCC staff reassess several areas north of Delaware Street that were not identified as CCMA wetlands on the original HBG (2002) delineation, nor included on the most recent HBG (2007) map. Specifically,

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I recommend that areas in the vicinity of HBG data points t-1; 12, 12b; 13; 15; 16; and 33 be reassessed in light of the surface and/or near-surface saturation and shallow ponding that I observed on February 14, 2007. At the time of my inspection, a large portion of this area was dominated by *Lolium perenne*, a FAC plant.

The remainder of the project study area at the time of our inspections exhibited upland conditions based on standing vegetation, permeable soils, lack of surface hydrologic indicators, and landscape positions unlikely to promote sub-surface saturation. We could not locate areas W-7, W-8, W-9, and W-10 and recommended their removal from the federal WOUS map.

Please contact me at (415) 972-3463, or email me at leidy.robert@epa.gov, should you have any questions.

Sincerely,

Robert A. Leidy

Robert A. Leidy, Ph.D.
Senior Wetlands Science and
Field Program Manager

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References

Reed, P.B. 1988. National List of Plant Species that occur in Wetlands: California (Region 0). Biological Report 88(26.10), May 1988. U.S. Fish and Wildlife Service, National Ecology Research Center, St. Petersburg, FL.

The Huffman-Broadway Group, Inc (HBG). 2002. Investigation of the Geographic Extent of Wetlands and "Other Waters of the U.S." on Terrace Point and Younger Lagoon Reserve, University of California, Santa Cruz. October 2002. Larkspur, CA.

U.S. Army Corps of Engineers. 1987. Corps of Engineers Wetlands Delineation Manual. Wetlands Research Program Technical Report Y-87-1. U.S. Army Corps of Engineers, Waterways Experiment Station, Environmental Laboratory. Vicksburg, MS

cc:

Dr. John Dixon, CCC, Eureka, CA
Dan Martel, USACE, San Francisco, CA

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DATA FORM

ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site	Terrace Point, near HBG ~~data~~ pt. 52	Date	3/27/07
Applicant / Owner	University of California	County	Santa Cruz
Investigator	D. Martel / R. Leidy	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	1

* below average rainfall

VEGETATION

% Cover	Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator	% Cover
40	1 Bromus mollis *	H	FACU	9 Medicago polymorpha *	H	UPL	30
30	2 Raphanus sativus *	H	UPL	10 Sonchus arvensis	H	UPL	2
30	3 Bacchoris douglasii *	H	OBL	11			TC 189%
20	4 Vulpia bromoides	H	FACW	12			
20	5 Geranium dissectum	H	UPL	13			
10	6 Bromus diandrus	H	UPL	14			
5	7 Lolium perenne	H	FAC	15			
2	8 Polypogon monspeliensis	H	FACW+	16			

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

Remarks * dominants

HYDROLOGY

☐ Recorded Data (Describe in Remarks)
- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☐ No Recorded Data Available

FIELD OBSERVATIONS 24" pit

Depth of Surface Water	none obs.	(in)
Depth to Free Water in Pit	none obs.	(in)
Depth to Saturated Soil	none obs.	(in)

WETLAND HYDROLOGY INDICATORS

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more Required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

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Note: No surface hydrologic indicators on 3/27/07 or 2/~~15~~14/07 site visits.

DATA FORM

ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site	Terrace Point, Baccharis douglasii patch (near HBB pt. 67)	Date	3/27/07
Applicant / Owner	University of California	County	Santa Cruz
Investigator	D. Martel / R. Leidy	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	2

* below average rainfall

VEGETATION

% cover	Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
80	1 Baccharis douglasii *	H	OBL	9		
5	2 Geranium dissectum	H	UPL	10		
2	3 Raphanus sativus	H	UPL	11		
TC=87	4			12		
	5			13		
	6			14		
	7			15		
	8			16		

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

Remarks * dominants

HYDROLOGY

☐ Recorded Data (Describe in Remarks)
- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☐ No Recorded Data Available

*FIELD OBSERVATIONS 25" pit

Depth of Surface Water	none obs.	(in)
Depth to Free Water in Pit	none obs.	(in)
Depth to Saturated Soil	none obs.	(in)

WETLAND HYDROLOGY INDICATORS

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more Required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

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* No surface hydrologic indicators on 3/27/07. Surface soil moist on 2/14/07 site visit.

DATA FORM

ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site	Terrace Point, near HBG data pt. 45*	Date	3/27/07
Applicant / Owner	University of California	County	Santa Cruz
Investigator	D. Martel & R. Eddy	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)[1] NO	Plot ID	3

* near Baccharis douglasii / Bac. pilularis transition

(1) below average rainfall

VEGETATION

	Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
60	1 Hordeum hystrix	H	FAC	9		
20	2 Lolium perenne	H	FAC	10		
15	3 Baccharis douglasii	H	OBL	11		
2	4 Geranium dissectum	H	UPL	12		
2	5 Medicago polymorpha	H	UPL	13		
2	6 Bromus diandrus	H	UPL	14		
2	7 Vicia sativa	H	FACU	15		
C=103	8			16		

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

Remarks

HYDROLOGY

☐ Recorded Data (Describe in Remarks)
- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☐ No Recorded Data Available

WETLAND HYDROLOGY INDICATORS

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches * see below
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more Required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

* FIELD OBSERVATIONS 24" pit

Depth of Surface Water	none obs.	(in)
Depth to Free Water in Pit	none obs. *	(in)
Depth to Saturated Soil	none obs.	(in)

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* No surface hydrologic indicators on 3/27/07. Observed saturation @ standard in pit @ 10" depth. Soil surface 2/14/07, w/water

DATA FORM

ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site	Terrace Point, near HBG data point 46.	Date	3/27/07
Applicant / Owner	University of California	County	Santa Cruz
Investigator	D. Martel / R. Eddy	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	4

* below average rainfall

VEGETATION

% cover	Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
90	1 Lolium perenne	H	FAC	9		
20	2 Hordeum hystrix	H	FAC	10		
2	3 Polypogon monspeliensis	H	FACW+	11		
2	4 Rumex crispus	H	FAC~~W~~ FACW-	12		
TC=114	5			13		
	6			14		
	7			15		
	8			16		

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

Remarks

HYDROLOGY

☐ Recorded Data (Describe in Remarks)
- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☐ No Recorded Data Available

FIELD OBSERVATIONS 24" pit

Depth of Surface Water	———	(in)
Depth to Free Water in Pit	——— *	(in)
Depth to Saturated Soil	0-12	(in)

WETLAND HYDROLOGY INDICATORS

Primary Indicators:
- ☒ Inundated observed: 2/14/07
- ☒ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☒ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

* Algal matting

Secondary Indicators (2 or more Required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

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* saturated from surface to 12". Not saturated @ 12"+. Observed saturation @ 2" depth and standing water in soil pit @ 7" depth on 2/14/07.

DATA FORM

ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

⇒ lot, Baccharis douglasii patch

Project/Site	Terrace Point, opposite NMFS parking	Date	3/27/07
Applicant / Owner	University of California	County	Santa Cruz
Investigator	D. Martel & R. Kelly	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	5

* below average rainfall | - South of HBG pt. 57.

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Baccharis douglasii *	H	OBL	9		
2			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-)

Remarks * dominant. Bare ground = 20%.

HYDROLOGY

☐ Recorded Data (Describe in Remarks)
- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☐ No Recorded Data Available

CCC Exhibit (page 13 of 26 pages)

FIELD OBSERVATIONS 20" pit

Depth of Surface Water	—	(in)
Depth to Free Water in Pit	—	(in)
Depth to Saturated Soil *2	—	(in)

WETLAND HYDROLOGY INDICATORS

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches *3
- ☐ Water Marks
- ☐ Drift Lines
- ☒ Sediment Deposits *1
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more Required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

*1 bare ground may pond after rain for short duration. *3 Soil saturated to surface on 2/14/07.
*2 glistening/moist ped faces @ 8-9" depth.

DATA FORM

ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

→ near HBB data pt. C89C.

Project/Site	Terrace Point, opposite CDFG lab,	Date	3/27/07
Applicant / Owner	University of California	County	Santa Cruz
Investigator	D. Martel / R. Cody	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	6

* below average rainfall

VEGETATION

% cover	Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator	% cover
60 *	1 Vulpia bromoides	H	FACW	9 Cirsium vulgare	+1	FACUP	2
10	2 Baccharis douglasii	H	OBL	10			
10	3 Lolium perenne	H	FAC	11		TC =	109
10	4 Bromus diandrus	H	UPL	12			
5	5 Vicia sativa	H	FACU	13			
5	6 Medicago polymorpha	H	UPL	14			
5	7 Geranium dissectum	H	UPL	15			
2	8 Avena barbata	H	UPL	16			

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

Remarks * dominants

HYDROLOGY

☐ Recorded Data (Describe in Remarks)
- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☐ No Recorded Data Available

FIELD OBSERVATIONS 20" pit

Depth of Surface Water	—	(in)
Depth to Free Water in Pit	—	(in)
Depth to Saturated Soil	—	(in)

WETLAND HYDROLOGY INDICATORS

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more Required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

CCC Exhibit H (page 14 of 26 pages)

* No surface hydrologic indicators. Soil not moist.
* No surface hydrologic indicators observed in vicinity on 2/14/07.

DATA FORM

ROUTINE WETLAND DETERMINATION (north of Delaware St.)
(1987 COE Wetlands Delineation Manual)

→ NE of ABB data pt. 33

Project/Site	Terrace Point, depression area approx. 100'	Date	3/27/07
Applicant / Owner	University of California	County	Santa Cruz
Investigator	D. Martel / S. Leidy	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	7

* below average rainfall

VEGETATION

o/o Cover

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Lolium perenne *80	H	FAC	9		
2 Geranium dissectum *30	H	NPL	10		
3 Picris echioides 2	H	FAC*	11		
4 TC= 112			12		
5			13		
6			14		
7			15		
8			16		

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

Remarks * dominants

HYDROLOGY

☐ Recorded Data (Describe in Remarks)
- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☐ No Recorded Data Available

FIELD OBSERVATIONS 12" pit

Depth of Surface Water	—	(1) (in)
Depth to Free Water in Pit	—	(in)
Depth to Saturated Soil	—	(in)

WETLAND HYDROLOGY INDICATORS

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches (1)
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more Required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

CCC Exhibit H (page 15 of 26 pages)

* No surface hydrologic indicators on 3/27/07.
(1) Soil ~~profile~~ moist (not saturated) on 2/14/07. Some ponding to 2" depth in small depression on 2/14/07.

DATA FORM

ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

(Baccharis douglasii potential ⇒ near HBG data pt. C67

Project/Site	Terrace Point, north of Delaware St.	Date	3/27/07
Applicant / Owner	University of California	County	Santa Cruz
Investigator	D. Martel / L. Eidy	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	8

* below average rainfall.

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Baccharis douglasii	H	OBL	9		
2 Geranium dissectum	H	NPL	10		
3			11		
4			12		
5			13		
6			14		
7			15		
8			16		

% cover: *90, 5

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

Remarks * dominants

HYDROLOGY

☐ Recorded Data (Describe in Remarks)
- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☐ No Recorded Data Available 12" pit

FIELD OBSERVATIONS		
Depth of Surface Water	0*	(in)
Depth to Free Water in Pit	0	(in)
Depth to Saturated Soil	0	(in)

WETLAND HYDROLOGY INDICATORS

Primary Indicators:
- ☐ Inundated
- ☒ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☒ Sediment Deposits
- ☒ Drainage Patterns in Wetlands

Secondary Indicators (2 or more Required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

CCC Exhibit H (page 16 of 26 pages)

* soil saturated to surface on 3/27/07 and on 2/14/07.

NOTE:

NO ROUTINE WETLAND DETERMINATION DATA SHEET RECORDED FOR

PLOT ID 9

CCC Exhibit H
(page 17 of 26 pages)

DATA FORM

ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site Terrace Point, near HBG data pt. C69	Date 3/28/07
Applicant / Owner University of California	County Santa Cruz
Investigator D. Martel / R. Leidy	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 10

* below average rainfall : note Mollie epipedon

VEGETATION

% cover	Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
90	1 Lolium perenne *	H	FAC	9		
10	2 Medicago polymorpha	H	UPL	10		
5	3 Picris echioides	H	FAC*	11		
2	4 Hordeum histrix	H	FAC	12		
2	5 Geranium dissectum ①	H	UPL	13		
TC= 109	6			14		
	7			15		
	8			16		

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

Remarks * dominants ① water stressed

HYDROLOGY

☐ Recorded Data (Describe in Remarks)
- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☐ No Recorded Data Available

FIELD OBSERVATIONS 24" + pit

Depth of Surface Water	0	(in)
Depth to Free Water in Pit	0	(in)
Depth to Saturated Soil	0	(in)

WETLAND HYDROLOGY INDICATORS

Primary Indicators:
- ☐ Inundated
- ☒ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☒ Sediment Deposits
- ☒ Drainage Patterns in Wetlands

Secondary Indicators (2 or more Required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

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(page 18 of 26 pages)

* saturated from 0 (surface) to 18" on 3/28/07. Water ponded to 2" depth on 2/14/07.

DATA FORM

ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

→ no. 10 (ABB data pt. c69)

Project/Site	Terrace Point, approx. 50 E of plot ID	Date	3/28/07
Applicant / Owner	University of California	County	Santa Cruz
Investigator	D. Martel / R. Vicky	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	11

* below average rainfall

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Lolium perenne	H	FAC	9		
2 Geranium dissectum	H	UPL	10		
3 Rumex crispus	H	FACW	11		
4 Epilobium sp.	H	FAC①	12		
5			13		
6 Baccharis pilularis	S	UPL	14		
7			15		
8			16		

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

Remarks * Baccharis pilularis water stressed. Non/at wetland vegetation boundary.
① FAC or wetter.

HYDROLOGY

☐ Recorded Data (Describe in Remarks)
- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☐ No Recorded Data Available

FIELD OBSERVATIONS 24"+ pit

Depth of Surface Water	— ①(in)
Depth to Free Water in Pit	12 — 14 (in)
Depth to Saturated Soil	0-14" (in)

WETLAND HYDROLOGY INDICATORS

Primary Indicators:
- ☐ Inundated
- ☒ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

blistering ped faces.

Secondary Indicators (2 or more Required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

CCC Exhibit H (page 19 of 26 pages)

Zones of saturation @ 0-6".

* saturated soil from 0 (surface) to 14". Water flowing into pit. No surface hydrologic indicators. ① Water to 1" depth on surface on 2/14/07.

DATA FORM

ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

→ data pt: C69.

Project/Site	Terrace Point, approx 100'S. of HBB	Date	3/28/07
Applicant / Owner	University of California	County	Santa Cruz
Investigator	D. Martel / R. Leidy	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	12

* below average rainfall

VEGETATION

% cover	Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
40	1 Baccharis douglasii *	H	OBL	9		
70	2 Lolium perenne *	H	FAC	10		
10	3 Bromus diandrus ①	H	UPL	11		
2	4 Geranium dissectum	H	UPL	12		
122 TC	5			13		
	6			14		
	7			15		
	8			16		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 180

Remarks * Dominants
① stressed, flowering @ small size

HYDROLOGY

☐ Recorded Data (Describe in Remarks)
- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☐ No Recorded Data Available

FIELD OBSERVATIONS 20+" pit

Depth of Surface Water	— ①	(in)
Depth to Free Water in Pit	—	(in)
Depth to Saturated Soil *	0 - 14	(in)

WETLAND HYDROLOGY INDICATORS

Primary Indicators:
- ☐ Inundated
- ☒ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☒ Sediment Deposits (slight)
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more Required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

CCC Exhibit H (page 20 of 26 pages)

* saturated from 0 (surface) to 14" on 3/28/07. ① Surface water ponded to 2" depth on 2/14/07.

DATA FORM

ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

→ HBG data pt. c38

Project/Site	Terrace Point, approx 50-100' W. of	Date	3/28/07
Applicant / Owner	University of California	County	Santa Cruz
Investigator	D. Mastel / K. Leidy	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	13

* below average rainfall

VEGETATION

% cover	Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
80	*1 Lolium perenne	H	FAC	9		
20	*2 Picris echioides	H	FAC*	10		
10	3 Bromus diandrus ①	H	UPL	11		
5	4 Geranium dissectum	A	UPL	12		
2	5 Polypogon monspeliensis	H	FACW	13		
FC= 117	6			14		
	7			15		
	8			16		

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

Remarks ① stressed. Seeding @ short height.

HYDROLOGY

☐ Recorded Data (Describe in Remarks)
- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☐ No Recorded Data Available

FIELD OBSERVATIONS 20+" pit

Depth of Surface Water	——— ①	(in)
Depth to Free Water in Pit	15	(in)
Depth to Saturated Soil	*3-15	(in)

WETLAND HYDROLOGY INDICATORS

Primary Indicators:
- ☐ Inundated
- ☒ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☒ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more Required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

CCC Exhibit H (page 21 of 26 pages)

* saturated soil @ 3-15" on 3/28/07. ① Surface ponding to 1" depth on 2/14/07.
– water table @ 15" in pit (free water)

DATA FORM

ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

→ C/13 (South of Delaware Rd).

Project/Site	Terrace Point, @ HBG data pt.	Date	3/28/07
Applicant / Owner	University of California	County	Santa Cruz
Investigator	D. Markel & R. Heidy	State	CA
Do Normal Circumstances exist on the site?	(YES) NO	Community ID	
Is the site significantly disturbed (Atypical Situation)?	YES (NO)	Transcript ID	
Is the area a potential Problem Area? (If needed, explain on reverse)	* (YES) NO	Plot ID	14

CCC wetland only * below average rainfall.

VEGETATION

% cover	Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
60	*1 Baccharis douglasii	H	OB	9		
20	*2 Lolium perenne	H	FAC	10		
60	*3 Vulpia bromoides	H	FACW	11		
5	4 Geranium dissectum	H	UPL	12		
5	5 Orobus canescens	H	FACU	13		
	6			14		
	7			15		
	8			16		

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

Remarks * dominants. Roots of Baccharis douglasii and Lolium perenne to depths of 14"+.

HYDROLOGY

☐ Recorded Data (Describe in Remarks)
- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☐ No Recorded Data Available

FIELD OBSERVATIONS 24"+ pit

Depth of Surface Water	—	(in)
Depth to Free Water in Pit	—	(in)
Depth to Saturated Soil	—	(in)

WETLAND HYDROLOGY INDICATORS

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☒ Drainage Patterns in Wetlands *

Secondary Indicators (2 or more Required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

CCC Exhibit H (page 22 of 26 pages)

* slight depression. No surface hydrologic indicators. Inferring subsurface saturation above restrictive layer @ 24".

DATA FORM

ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

(upslope) from Sample pt. 2

Project/Site	Terrace Point, approx 150' N	Date	3/28/07
Applicant / Owner	University of California	County	Santa Cruz
Investigator	D. Martel / R. Leidy	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	15

* below avg. rainfall (Baccharis douglasii patch at HBG data pt. 67)

VEGETATION

% cover	Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
90	1 Hordeum histrix *	H	FAC	9		
40	2 Lolium perenne *	H	FAC	10		
2	3 Geranium dissectum	H	UPL	11		
2	4 Rumex crispus	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 * Dominants

HYDROLOGY

☐ Recorded Data (Describe in Remarks)
- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☐ No Recorded Data Available

FIELD OBSERVATIONS 30+" pit

Depth of Surface Water	—	(in)
Depth to Free Water in Pit	—	(in)
Depth to Saturated Soil	—	(in)

WETLAND HYDROLOGY INDICATORS

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more Required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

CCC Exhibit H
(page 23 of 26 pages)

* No surface hydrologic indicators. Subsurface saturation system. Moist @ surface. Saturated @ 24". No surface indicators on 2/14/07.

DATA FORM

ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

→ near data pt. 35.

Project/Site	Terrace Point, @ HBG Well 2	Date	3/28/07
Applicant / Owner	University of California	County	Santa Cruz
Investigator	D. Martel / R. Cody	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	16

* below average rainfall

VEGETATION

% cover	Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator	% cover
60	1 *Vulpia bromoides	H	FACW	9 *Baccharis pilularis	S	UPL	50
50	2 *Baccharis douglasii	H	OBL	10			
15	3 Polypogon monspeliensis	H	FACW	11			TC= 50
10	4 Lolium perenne	H	FAC	12			
5	5 Medicago polymorpha	H	UPL	13			
5	6 Anagallis arvensis	H	FAC	14			
<2	7 Bromus mollis	H	UPL	15			
<2	8 Geranium dissectum	H	UPL	16			

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

TC= 149

Remarks * dominants

HYDROLOGY

☐ Recorded Data (Describe in Remarks)
- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☐ No Recorded Data Available

FIELD OBSERVATIONS 25" + pit

Depth of Surface Water	—	(in)
Depth to Free Water in Pit	—	(in)
Depth to Saturated Soil	—	(in)

WETLAND HYDROLOGY INDICATORS

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more Required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

CCC Exhibit H
(page 24 of 26 pages)

- historical drainage way from pond that appears to carry surface / shallow - subsurface flow still.
- Accretion landscape. No surface hydrologic indicators. No surface indicators observed on 2/14/07.

Attachment 1. Areas Subject to CORPS Jurisdiction Under Section 404 of the Clean Water Act, Terrace Point, Santa Cruz, CA

Legend

- WOUS/Drainage Subject to CORPS Section 404 Jurisdiction (0.2 AC)
- Wetlands Subject to CORPS Section 404 Jurisdiction (8.21 AC)
- CORPS/EPA Delineation Boundary
- Younger Lagoon Natural Reserve Boundary

N

1 inch equals 100 feet

Map Dated March 30, 2007

CCC Exhibit H
(page 25 of 26 pages)

Attachment 2. March 2007 CORPS Delineation with Additional Areas Identified For CCC Staff Consideration Regarding CMA Status, Terrace Point, Santa Cruz, CA

Legend

- Younger Lagoon Natural Reserve Boundary
- CORPS/EPA Delineation Boundary March 2007
- March 2007 Verified CORPS Wetlands (8.21 AC)
- Wetland Drainage (0.2 AC)

CORPS-EPA VERIFICATION OF POTENTIAL JURISDICTIONAL AREAS SUMMARY OF CHANGES TO LEGEND TERRACE POINT/LONG MARINE LABORATORY

The Corps (Dan Martel) and EPA (Robert Leidy) visited the Terrace Point property at the request of the California Coastal Commission to inspect areas that are subject to Clean Water Act jurisdiction, as well as areas that have a prevalence of hydrophytic vegetation that may or may not be subject to California Coastal Act jurisdiction as wetlands.

The areas that the Corps and EPA inspected can be put into 4 general categories. The legend on the map/aerial photograph should read as follows:

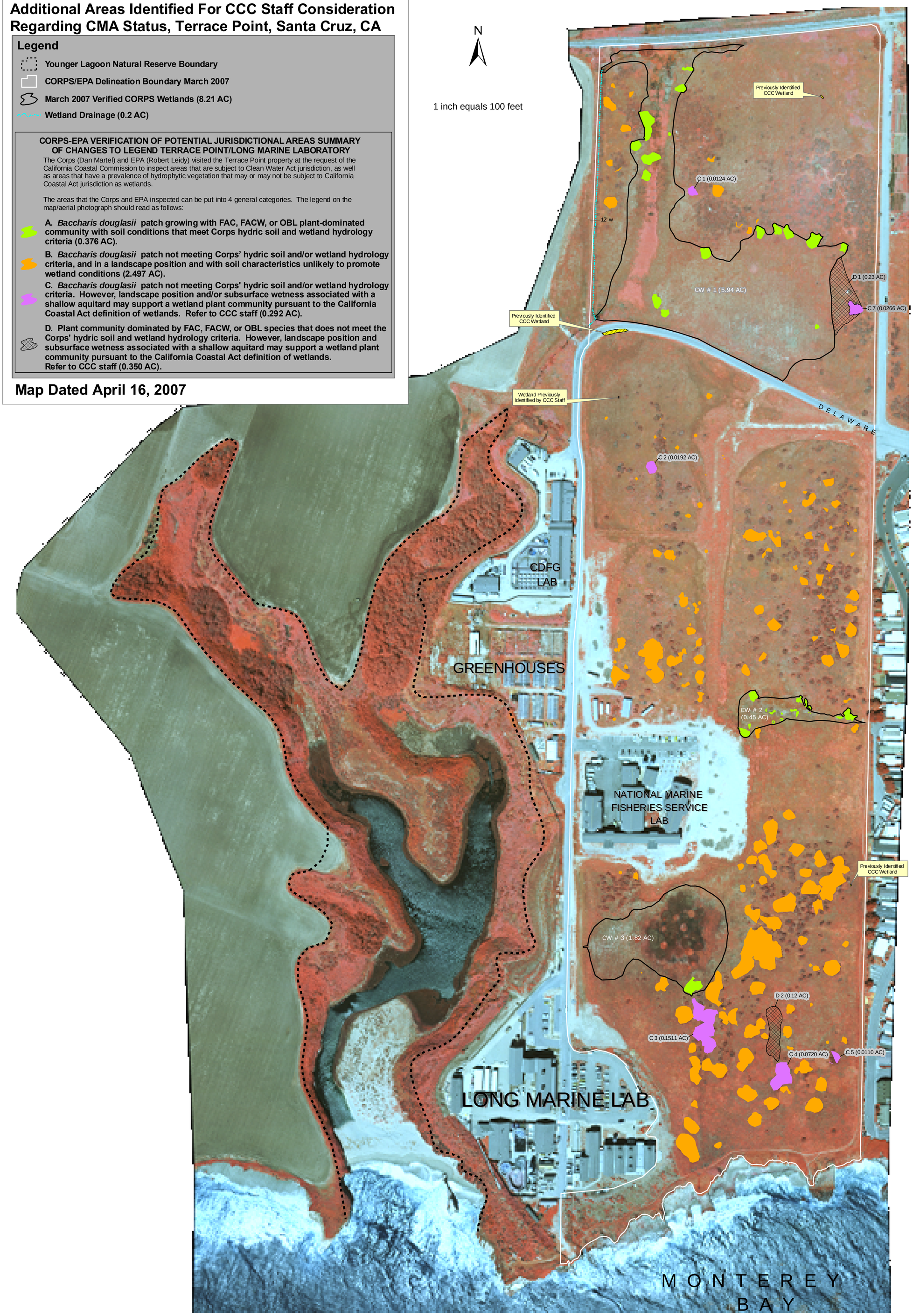
A. *Baccharis douglasii* patch growing with FAC, FACW, or OBL plant-dominated community with soil conditions that meet Corps hydric soil and wetland hydrology criteria (0.376 AC).

B. *Baccharis douglasii* patch not meeting Corps' hydric soil and/or wetland hydrology criteria, and in a landscape position and with soil characteristics unlikely to promote wetland conditions (2.497 AC).

C. *Baccharis douglasii* patch not meeting Corps' hydric soil and/or wetland hydrology criteria. However, landscape position and/or subsurface wetness associated with a shallow aquitard may support a wetland plant community pursuant to the California Coastal Act definition of wetlands. Refer to CCC staff (0.292 AC).

D. Plant community dominated by FAC, FACW, or OBL species that does not meet the Corps' hydric soil and wetland hydrology criteria. However, landscape position and subsurface wetness associated with a shallow aquitard may support a wetland plant community pursuant to the California Coastal Act definition of wetlands. Refer to CCC staff (0.350 AC).

Map Dated April 16, 2007

N

1 inch equals 100 feet