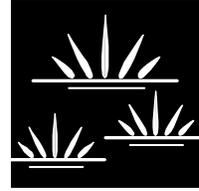


GLENN LUKOS ASSOCIATES

Regulatory Services



December 12, 2007

Robert A. Hamilton
7203 Stearns Street
Long Beach, California 90815

SUBJECT: Jurisdictional Determination for Four Lots, Broad Beach, 30732 Pacific Coast Highway, Malibu, California.

Dear Mr. Hamilton:

This letter report summarizes our preliminary findings of U.S. Army Corps of Engineers (Corps), California Department of Fish and Game (CDFG), and California Coastal Commission (CCC) jurisdiction for the above-referenced property.¹

The Broad Beach site covers approximately 2.08 acres and contains no blue-line drainages. The site is depicted on the U.S. Geological Survey (USGS) topographic map Point Dume, California [dated 1950 and photorevised in 1981]) [Exhibits 1, 2]. On November 29, 2007, Senior Regulatory Specialist Tony Bomkamp of Glenn Lukos Associates, Inc. (GLA) examined the site to determine whether it contained areas subject to the jurisdiction of the Corps pursuant to Section 404 of the Clean Water Act or of the CDFG pursuant to Division 2, Chapter 6, Section 1600 of the Fish and Game Code, and to determine whether the site contained any “wetlands” as defined by the CCC. Photographs to document the site characteristics, including areas evaluated for potential wetlands, are provided as Exhibit 3. Data sheets are attached as Appendix A.

SUMMARY

The project site includes a single erosional feature, located in the northwest quadrant that was evaluated for jurisdiction. The feature extends from north to south for approximately 50 feet, to

¹ This report presents our best effort at estimating the subject jurisdictional boundaries using the most up-to-date regulations and written policy and guidance from the regulatory agencies. Only the regulatory agencies can make a final determination of jurisdictional boundaries. If a final jurisdictional determination is required, GLA can assist in getting written confirmation of jurisdictional boundaries from the agencies.

where it is no longer visible with any flows, as they sheet onto sandy substrate. As described in more detail in the results section below, this feature would not be regulated as a “stream” by the Corps or CDFG and also would not be considered a stream in accordance with the Malibu Local Coastal Program. It also does not exhibit any wetland characteristics including a predominance of hydrophytes, hydric soils, or wetland hydrology.

In addition to the non-jurisdictional erosional feature, the site supports approximately seven individuals of seaside heliotrope (*Heliotropium curassavicum*) in two discreet areas. As addressed subsequently, seaside heliotrope is only occasionally associated with wetlands but has been designated as an obligate wetland plant. On the site, the seaside heliotrope was growing with a predominance of upland species in areas that lacked hydric soils and wetland hydrology. As such, there are no areas on the site that meet the Corps or CCC definition of wetlands.

I. METHODOLOGY

Performance of the jurisdictional delineation included a site visit that focused on collection of vegetation, soils, and hydrology data.

A. Background Review

Prior to beginning the field delineation a Biological Study² was reviewed relative to potential wetland conditions.

B. Field Procedures

In order to address the potential for portions of the project site to be subject to Corps, CDFG or CCC jurisdiction, the site was evaluated separately for each of the wetland criteria: a predominance of hydrophytic vegetation, hydric soils, and wetland hydrology, using the methodology set forth in the U.S. Army Corps of Engineers 1987 Wetland Delineation Manual³ (Wetland Manual) and the 2006 Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Supplement (Arid West Supplement).⁴ While in the field, areas

² Read, Edith. October 23, 2006. Assessment of Historic and Current Biological Resources, 30732 Pacific Coast Highway (Broad Beach). Prepared for the Malibu Bay Company.

³ Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1, U.S. Army Engineer Waterways Experimental Station, Vicksburg, Mississippi.

⁴ U.S. Army Corps of Engineers. 2006. Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Supplement. Ed. J.S. Wakeley, R.W. Lichevar, and C.V. Noble. ERDC/EL TR-06-16. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

where data were collected were recorded using GPS Technology. Other data were recorded onto wetland data sheets or in a field notebook.

As discussed more fully below, wetland areas as defined by the Corps must exhibit positive indicators for each of the three criteria, whereas wetlands defined by the CCC can be considered a wetland where only one of the three criteria (e.g., hydric soils) is present. As appropriate, the “three-parameter” approach was used for evaluating areas of potential Corps jurisdiction and a “single-parameter” approach was used for evaluating areas potentially defined as wetlands by the CCC.

1. Hydrophytic Vegetation

The potential presence of wetland indicator plant species was determined based on *The National List of Vascular Plant Species that Occur in Wetlands: 1996 National Summary (1996 National List)*⁵ and/or *The National List of Plant Species that Occur in Wetlands*.⁶ Where differences occurred, the 1988 National List was given priority for this study as the 1996 National List is a draft update of the 1988 list and while it is presumed to be more accurate, has not been officially adopted by the Corps.⁷ The indicator list attempts to categorize plants according to their affinity

⁵ U.S. Fish and Wildlife Service. 1997. *The National List of Vascular Plant Species that Occur in Wetlands: 1996 National Summary (1996 National List)* Published by the U.S. Fish and Wildlife Service, National Wetlands Inventory, St. Petersburg, Florida.

⁶ Reed, P.B., Jr. 1988. *National List of Plant Species that Occur in Wetlands*. U.S. Fish and Wildlife Service Biological Report 88(26.10).

⁷ The Corps of Engineers has not adopted the 1996 National List of Vascular Plant Species that Occur in Wetlands (1996 National List); however, it is not due to any deficiencies or inaccuracies in the 1996 National List; rather the list has not gone through the proper rule making at the federal level necessary for adoption by the Corps. Development of the 1996 National List was implemented to incorporate new information into the 1988 National List, thereby improving the accuracy. The second paragraph on page one of the 1996 List states:

The 1996 National List reflects a significant amount of new information that has become available since 1988 on the wetland affinity of vascular plants. The new information has resulted from the extensive use of the 1988 National List in the field by individuals involved in wetland and other resource inventories, wetland identification and delineation, and wetland research.

While the Corps continues to use the 1988 List, they also recognize the improvements in the 1996 National List: “This list is not approved for use for Wetland Delineations. This list however does correct many of the errors in the 1988 list but does not replace it.”

On this site, the same overall results relative to the presence or absence of a predominance of wetland indicator species were obtained using either the 1988 or the 1996 National Lists.

for occurrence in wetlands: Obligate Wetland Plants (OBL) should occur in wetlands 99-percent of the time; Facultative Wetland Plants (FACW) should occur in wetlands between 67- and 99-percent of the time; Facultative species (FAC) should occur in wetlands between 34- and 66-percent of the time; and Facultative Upland species should occur in wetlands only 1- to 33-percent of the time (meaning they should occur in uplands from 67- to 99-percent of the time). Upland (UPL) species should occur in wetlands less than one-percent of the time.

For each data collection point (see attached data sheets in Appendix A), the vegetation data was collected from an area that included a five-foot radius from each excavated soil pit.⁸ All plant species were recorded according to relative cover for purposes of determining the hydrophytic character using the Prevalence Index.

2. Hydric Soils

The presence of hydric soils was determined in accordance with the 2006 Arid West Manual. At each data collection point, a soil pit was excavated using a “sharp-shooter” shovel to a minimum of 12 inches and the soil was evaluated for characteristics consistent with the presence of hydric soils, such as (but not limited to) sulfidic odor, gleying, or low-chroma matrix with redoximorphic features (also commonly known as “mottles”). A total of two soil pits were excavated, each associated with a few individuals of seaside heliotrope.

3. Wetland Hydrology

The presence of wetland hydrology was determined in accordance with the 1987 Manual with supplemental information from the Corps’ *Arid West Supplement*.

⁸ The 1987 Wetland Manual (page 65) suggests that herbaceous vegetation be sampled using a five-foot radius.

II. JURISDICTION

A. Army Corps of Engineers

Pursuant to Section 404 of the Clean Water Act, the Corps regulates the discharge of dredged and/or fill material into waters of the United States. The term “waters of the United States” is defined in Corps regulations at 33 CFR Part 328.3(a) as:

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

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 123.11(m) which also meet the criteria of this definition) are not waters of the United States.

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

In the absence of wetlands, the limits of Corps jurisdiction in non-tidal waters, such as intermittent streams, extend to the OHWM which is defined at 33 CFR 328.3(e) as:

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

The term “wetlands” (a subset of “waters of the United States”) is defined at 33 CFR 328.3(b) as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support...a prevalence of vegetation typically adapted for life in saturated soil conditions.” In 1987 the Corps published a manual to guide its field personnel in determining jurisdictional wetland boundaries. The methodology set forth in the 1987 Wetland Delineation Manual generally requires that, in order to be considered a wetland, the vegetation, soils, and hydrology of an area must exhibit at least minimal hydric characteristics. While the manual provides great detail in methodology and allows for varying special conditions, a wetland should normally meet each of the following three criteria:

- more than 50 percent of the dominant plant species at the site must be typical of wetlands (i.e., rated as facultative or wetter in the National List of Plant Species that Occur in Wetlands⁹);
- soils must exhibit physical and/or chemical characteristics indicative of permanent or periodic saturation (e.g., a gleyed color, or mottles with a matrix of low chroma indicating a relatively consistent fluctuation between aerobic and anaerobic conditions); and
- hydrologic characteristics must indicate that the ground is saturated to within 12 inches of the surface for at least five percent of the growing season during a normal rainfall year¹⁰.

As noted above, features such as non-tidal drainage ditches are not typically considered jurisdictional by the Corps, regardless of the presence of positive indicators for the presence of wetland hydrology, hydric soils, or a predominance of plants that exhibit a wetland indicator status of FAC or wetter.

⁹ Reed, P.B., Jr. 1988. National List of Plant Species that Occur in Wetlands. U.S. Fish and Wildlife Service Biological Report 88(26.10).

¹⁰ For most of low-lying southern California, five percent of the growing season is equivalent to 18 days.

B. California Department of Fish and Game

Pursuant to Division 2, Chapter 6, Section 1602 of the California Fish and Game Code, the CDFG regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake which supports fish or wildlife.

CDFG defines a “stream” (including creeks and rivers) as “a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation.” CDFG’s definition of “lake” includes “natural lakes or man-made reservoirs.” The site does not contain any areas that meet the CDFG jurisdiction of a stream or lake, and the drainage feature identified on the site would not likely be subject to regulation pursuant to Section 1602 of the California Fish and Game Code.

C. California Coastal Commission

Pursuant to the California Coastal Act (California Public Resources Code Section 30233), the CCC regulates the diking, filling, or dredging of wetlands within the coastal zone. Section 30121 of the Coastal Act defines “wetlands” as land “*which may be covered periodically or permanently with shallow water.*” The 1981 CCC Statewide Interpretive Guidelines state that hydric soils and hydrophytic vegetation “*are useful indicators of wetland conditions, but the presence or absence of hydric soils and/or hydrophytes alone are not necessarily determinative when the Commission identifies wetlands under the Coastal Act. In the past, the Commission has considered all relevant information in making such determinations and relied upon the advice and judgment of experts before reaching its own independent conclusion as to whether a particular area will be considered wetland under the Coastal Act. The Commission intends to continue to follow this policy.*”

In the Statewide Interpretive Guidelines, the CCC notes similarities between the Coastal Act’s wetland definition and that used by the United States Fish and Wildlife Service (USFWS). The Guidelines state that the CCC will use the USFWS classification system “*as a guide in wetland identification*” [emphasis in source]. The USFWS uses the following definition of wetlands:

Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For purposes of this classification wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports predominantly hydrophytes, (2) the substrate is predominantly undrained hydric soil, and (3) the substrate is nonsoil and is

*saturated with water or covered by shallow water at some time during the growing season of each year.*¹¹

III. RESULTS

A. Corps Jurisdiction

One erosional feature and two areas that support seaside heliotrope were evaluated for Corps jurisdiction. Neither the erosional feature nor the two areas with seaside heliotrope were determined to be subject to Corps jurisdiction, as described below.

1. Erosional Feature

The erosional feature originates at a break in the curb, where storm runoff from Pacific Coast Highway runs onto the site (see Exhibit 3, Photograph 1). The feature is not a stream; but rather an artificial feature created by the concentrated runoff from the street. The feature varies in width from six to 18 inches and varies in depth from a few inches to about 12 inches at its deepest. From the opening in the curb, it extends southward for approximately 50 feet before it disappears and is no longer visible (Exhibit 3, Photograph 2 depicts the weak character of this non-jurisdictional feature).

2. Heliotrope Areas

a. Vegetation

Two areas were sampled due to the presence of a few individuals of seaside heliotrope growing with mostly upland species. Using the prevalence index as described in the Arid West Supplement, neither area supported a predominance of wetland indicator species (see Data Sheets 1 and 2 in Appendix A). In summary, species detected at Sample Point 1 included hottentot fig (*Carpobrotus edulis*, UPL), Russian thistle (*Salsola tragus*, UPL), hare barley (*Hordeum murinum* ssp. *leporinum*, UPL), seaside heliotrope (*Heliotropium curassavicum*, FAC¹²), lambs quarters (*Chenopodium album*, FAC), red-stem filaree

¹¹ Cowardin, L.M., et al. 1979. Classification of Wetlands and Deepwater Habitats of the United States. FWS/OBS-79/31. U.S. Fish and Wildlife Service, Washington D.C.

¹² Reed (1988) lists *Heliotropium curassavicum* as OBL; however, it is widely observed that this is an inaccurate designation for this species. Dr. John Dixon of the California Coastal Commission suggests that FAC is a more appropriate designation as noted Footnote 5 of a January 18, 2003 Staff Report (Staff Report for Application Number 5-01-450). Specifically, Dr. Dixon opined that heliotrope is misclassified in the *U.S. Fish and Wildlife*

(*Erodium cicutarium*, UPL), and sow thistle (*Sonchus oleraceus*, NI). The Prevalence Index score for Data Point 1 was 4.64, well into the “upland” range.¹³ Species detected at Data Point 2 were similar, with the addition of Australian saltbush (*Atriplex semibaccata*, FAC), which replaced lambs quarters. The Prevalence Index for Data Point 2 was 3.75, which is clearly upland, and the combined score for both points was 4.20. Exhibit 3, Photographs 3 and 4, depict the seaside heliotrope growing with a predominance of upland species.

b. Soils

Soils at both sites were similar and clearly not hydric. From 0 to 4 inches, the soil was a loamy sand with a matrix color of 10YR 3/3 with no redoximorphic features. From 4 to 12 inches, the profile consisted of a mix of sand and cobble with no characteristics consistent with the presence of hydric conditions (e.g., gleyed sand, sandy redox, or stripped matrix).

c. Hydrology

The site consists of well-drained loam, sandy loam, and sand, and exhibits a limited watershed. No indicators of wetland hydrology were detected on the site as set forth in the Arid West Supplement.

B. CDFG Jurisdiction

As noted in the summary above, the site’s erosional feature does not meet CDFG’s definition of a stream and does not exhibit any values for fish and wildlife. No riparian or wetland vegetation was observed within the swale; rather, the vegetation consisted of weedy, mostly non-native species including myoporum (*Myoporum laetum*), Russian

Service National List of Plant Species that Occur in Wetlands, Region 0 – California and agreed with Mr. Wayne Ferren of the U.C. Santa Barbara Herbarium that it should be reclassified from its current status of Obligate Wetland plant (OBL) (Plants that have a 99-percent occurrence rate in wetlands) to Facultative Wetland Plant (FAC), which are plants that exhibit equal likelihood of occurring in uplands and wetlands.

Based on data collected in Orange and Los Angeles counties, GLA believes that FACU is the appropriate status for this species. Specifically, Mr. Michael Condie, a graduate student at California State University at Fullerton, has sampled nearly 200 locations that support salt heliotrope, and has determined that only about 10 percent of those occurrences are associated with wetlands. This suggests that the species warrants a FACU designation (i.e., plants with occurrences in wetlands ranging between 2 and 33 percent). Nevertheless, we take the conservative approach and continue to treat this species as FAC, following the Coastal Commission until this data is published and submitted to the Corps of Engineers so that its indicator status can be officially changed.

¹³ Scores of 3.0 or less indicate a wetland vegetation association; scores greater than 3.0 indicate an upland vegetation association (5.0 is the highest possible score).

thistle (*Salsola tragus*, UPL), hottentot fig (*Carpobrotus edulis*, UPL), sweet fennel (*Foeniculum vulgare*, UPL), and telegraph weed (*Heterotheca grandiflora*, UPL). As such, it is expected that CDFG would not assert jurisdiction over this feature.

C. CCC Jurisdiction

1. Erosional Feature

As noted for both Corps and CDFG jurisdiction, the site's erosional feature does not exhibit characteristics of stream, does not support any riparian habitat, and does not support a predominance of wetland indicator species. Therefore, this feature would not be consistent with the definition of a stream within the Malibu Local Coastal Program nor would this feature meet the minimal definition of wetland.

2. Heliotrope Areas

As described under Corps jurisdiction above, the areas where scattered individuals of seaside heliotrope were observed exhibited an average Prevalence Index of 4.20, which clearly indicates the presence of upland vegetation. Similarly, the site demonstrably lacks indicators for the presence of hydric soils and wetland hydrology. Therefore, these areas do not meet the minimal CCC test for wetlands and it is concluded that there are no wetlands associated with the parcel.

If you have any questions about this letter report, please contact Tony Bomkamp at (949) 837-0404 ext. 41 or at tbomkamp@wetlandpermitting.com.

Sincerely,

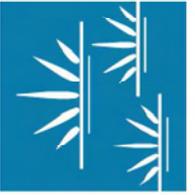
GLENN LUKOS ASSOCIATES, INC.



Tony Bomkamp
Regulatory Specialist



Adapted from USGS quadrangle Point Dume



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EXHIBIT 1

BROAD BEACH PROJECT

Vicinity Map



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EXHIBIT 2

BROAD BEACH PROJECT
Site Map and Data Point Locations



MALIBU, CA

↑↑ NORTH



PHOTOGRAPH 1: Break in curb that has resulted in creation of approximately 50-foot-long non-jurisdictional erosional feature.



PHOTOGRAPH 2: Erosional feature originates between myoporum (large shrub) and hottentot fig (A.k.a. "iceplant") in upper center of photo. Weak character of lower part of erosional feature evident on left side of photo. Arrows indicate feature.



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EXHIBIT 3





PHOTOGRAPH 3: Seaside heliotrope at Data Point 1 growing with hottentot fig, an upland species.



PHOTOGRAPH 4: Seaside heliotrope at Data Point 2 growing with a predominance of upland species.



GLENN LUKOS ASSOCIATES

EXHIBIT 3

BROAD BEACH PROJECT

Site Photographs

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Broad Beach City/County: Malibu / LA CO Sampling Date: 11-29-07
 Applicant/Owner: Malibu Bay Co State: CA Sampling Point: 1
 Investigator(s): T Bomkamp Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Beach Front / Flat Local relief (concave, convex, none): NONE Slope (%): < 2%
 Subregion (LRR): MED-CA (LLRC) Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: NA NWI classification: NONE
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks:	

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
4. _____	_____	_____	_____	
Total Cover: _____				
<u>Sapling/Shrub Stratum</u>				<u>Prevalence Index worksheet:</u>
1. _____	_____	_____	_____	Total % Cover of: _____ Multiply by: _____
2. _____	_____	_____	_____	OBL species <u>0</u> x 1 = <u>0</u>
3. _____	_____	_____	_____	FACW species <u>0</u> x 2 = <u>0</u>
4. _____	_____	_____	_____	FAC species <u>12</u> x 3 = <u>36</u>
5. _____	_____	_____	_____	FACU species <u>0</u> x 4 = <u>0</u>
Total Cover: _____				UPL species <u>55</u> x 5 = <u>275</u>
<u>Herb Stratum</u>				Column Totals: <u>67</u> (A) <u>311</u> (B)
1. <u>Carpobrotus edulis</u>	<u>40</u>	<u>Yes</u>	<u>VPL</u>	Prevalence Index = B/A = <u>4.64</u>
2. <u>Heliotropium curassavicum</u>	<u>10</u>	<u>NO</u>	<u>FAC</u>	
3. <u>Salsola tragus</u>	<u>10</u>	<u>NO</u>	<u>VPL</u>	
4. <u>Chenopodium album</u>	<u>2</u>	<u>NO</u>	<u>FAC</u>	
5. <u>Erodium cicutarium</u>	<u>2</u>	<u>NO</u>	<u>VPL</u>	
6. <u>Hordeum murinum lewinum</u>	<u>3</u>	<u>N</u>	<u>UPL</u>	
7. <u>Sonchus oleraceus</u>	<u>1</u>	<u>N</u>	<u>NI</u> *	
8. _____	_____	_____	_____	
Total Cover: <u>68%</u>				
<u>Woody Vine Stratum</u>				<u>Hydrophytic Vegetation Indicators:</u>
1. _____	_____	_____	_____	— Dominance Test is >50% <u>NONE</u>
2. _____	_____	_____	_____	— Prevalence Index is ≤3.0 ¹
Total Cover: _____				— Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				— Problematic Hydrophytic Vegetation ¹ (Explain)
				¹ Indicators of hydric soil and wetland hydrology must be present.
				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
Remarks: * NI species are not included in calculations ∴ actual total cover, for purposes of predominance determination = 67%				

SOIL

Sampling Point: 1

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 3/3	100	None				Sandy loam	
4-12	Sand + Cobble		NOT		colored			

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix. ²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

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

Indicators for Problematic Hydric Soils³:

- | | | |
|--|---|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> 1 cm Muck (A9) (LRR C) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> 2 cm Muck (A10) (LRR B) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) | <input type="checkbox"/> Reduced Vertic (F18) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR C) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR D) | <input type="checkbox"/> Redox Dark Surface (F6) | |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) | |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Depressions (F8) | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Vernal Pools (F9) | |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | | |

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: NONE
Depth (inches): NA

Hydric Soil Present? Yes No

Remarks: Clearly non-Hydric soils

HYDROLOGY

Wetland Hydrology Indicators:

Secondary Indicators (2 or more required)

Primary Indicators (any one indicator is sufficient)

- | | | |
|--|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Water Marks (B1) (Riverine) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Biotic Crust (B12) | <input type="checkbox"/> Sediment Deposits (B2) (Riverine) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) | <input type="checkbox"/> Drift Deposits (B3) (Riverine) |
| <input type="checkbox"/> Water Marks (B1) (Nonriverine) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | | <input type="checkbox"/> Shallow Aquitard (D3) |
| | | <input type="checkbox"/> FAC-Neutral Test (D5) |

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): _____
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): _____

Wetland Hydrology Present? Yes No

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Broad Beach City/County: MALIBU/LA CO Sampling Date: 11-29-07
 Applicant/Owner: Malibu Bay Co. State: CA Sampling Point: 2
 Investigator(s): T Benkamp Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Beach Front / FLAT Local relief (concave, convex, none): NONE Slope (%): < 2%
 Subregion (LRR): MED-CA (LRRC) Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: NA NWI classification: NONE
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks:	

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:																																
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67%</u> (A/B)																																
2. _____	_____	_____	_____																																	
3. _____	_____	_____	_____																																	
4. _____	_____	_____	_____																																	
Total Cover: _____				Prevalence Index worksheet: <table style="width:100%; border-collapse: collapse;"> <tr> <td align="center" colspan="2">Total % Cover of:</td> <td align="center" colspan="2">Multiply by:</td> </tr> <tr> <td>OBL species</td> <td align="center"><u>0</u></td> <td align="center">x 1 =</td> <td align="center"><u>0</u></td> </tr> <tr> <td>FACW species</td> <td align="center"><u>0</u></td> <td align="center">x 2 =</td> <td align="center"><u>0</u></td> </tr> <tr> <td>FAC species</td> <td align="center"><u>35</u></td> <td align="center">x 3 =</td> <td align="center"><u>105</u></td> </tr> <tr> <td>FACU species</td> <td align="center"><u>0</u></td> <td align="center">x 4 =</td> <td align="center"><u>0</u></td> </tr> <tr> <td>UPL species</td> <td align="center"><u>21</u></td> <td align="center">x 5 =</td> <td align="center"><u>105</u></td> </tr> <tr> <td>Column Totals:</td> <td align="center"><u>56</u></td> <td align="center">(A)</td> <td align="center"><u>210</u> (B)</td> </tr> <tr> <td align="center" colspan="4">Prevalence Index = B/A = <u>3.75</u></td> </tr> </table>	Total % Cover of:		Multiply by:		OBL species	<u>0</u>	x 1 =	<u>0</u>	FACW species	<u>0</u>	x 2 =	<u>0</u>	FAC species	<u>35</u>	x 3 =	<u>105</u>	FACU species	<u>0</u>	x 4 =	<u>0</u>	UPL species	<u>21</u>	x 5 =	<u>105</u>	Column Totals:	<u>56</u>	(A)	<u>210</u> (B)	Prevalence Index = B/A = <u>3.75</u>			
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FACU species	<u>0</u>	x 4 =	<u>0</u>																																	
UPL species	<u>21</u>	x 5 =	<u>105</u>																																	
Column Totals:	<u>56</u>	(A)	<u>210</u> (B)																																	
Prevalence Index = B/A = <u>3.75</u>																																				
Sapling/Shrub Stratum 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ Total Cover: _____																																				
Herb Stratum 1. <u>Carpobrotus edulis</u> <u>10</u> <u>no</u> <u>UPL</u> 2. <u>Heliotropium curassavicum</u> <u>15</u> <u>yes</u> <u>FAC</u> 3. <u>Atriplex semibaccata</u> <u>20</u> <u>yes</u> <u>FAC</u> 4. <u>Hordeum apparium leporinum</u> <u>5</u> <u>no</u> <u>UPL</u> 5. <u>Brodium acutatum</u> <u>3</u> <u>no</u> <u>UPL</u> 6. <u>Salsola tragus</u> <u>3</u> <u>no</u> <u>UPL</u> 7. <u>Sonchus oleraceus</u> <u>1</u> <u>no</u> <u>NE</u> 8. _____ Total Cover: <u>57</u>																																				
Woody Vine Stratum 1. _____ 2. _____ Total Cover: _____																																				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____																																				
Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>																																				
Remarks: <u>FAC-Neutral Test and Prevalence Index Both indicate UPLAND conditions ∴ The presence of two "FAC" species is not indicative of wetlands</u>																																				

SOIL

Sampling Point: 2

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 3/3	100	NONE				Sandy loam	
4-12	Sand and cobble		not colored					

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix. ²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR C) <input type="checkbox"/> 1 cm Muck (A9) (LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)
<input type="checkbox"/> 1 cm Muck (A9) (LRR C) <input type="checkbox"/> 2 cm Muck (A10) (LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (Explain in Remarks)	<p style="text-align: center; font-size: 2em;"><i>NONE Present</i></p> <p>³Indicators of hydrophytic vegetation and wetland hydrology must be present.</p>

Restrictive Layer (if present):
 Type: NONE
 Depth (inches): NA

Hydric Soil Present? Yes No

Remarks: Clearly non-Hydric soils

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (2 or more required)
<u>Primary Indicators (any one indicator is sufficient)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) (Nonriverine) <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Water Marks (B1) (Riverine) <input type="checkbox"/> Sediment Deposits (B2) (Riverine) <input type="checkbox"/> Drift Deposits (B3) (Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5)	

Field Observations:

Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	

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

Remarks: