Eelgrass Survey Reporting Form
2222 Channel Road Newport Beach, CA 92660
Eelgrass (Zostera marina) Survey

Survey Date:
July 19th, 2013
Report Date:
July 26th, 2013

Prepared by: Coastal Resources Management, Inc.
PMB 327, 3334 East Coast Highway
Corona del Mar, CA 92625
Contact: Rick Ware, Senior Marine Biologist
(949) 412-9446

Prepared for:

Mr. John Abell
2222 Channel Road
Newport Beach, CA 92660

This form is required to be submitted for any surveys conducted for the eelgrass, Zostera marina, that are required to be conducted under federal or state permits and authorizations issued by the U.S. Army Corps of Engineers and the Coastal Commission. The form has been designed to assist in identifying eelgrass while ensuring that the required information is consistently documented. Surveys required to be conducted for this species are subject to modification through publication of revisions to the eelgrass survey policy. It is incumbent upon the authorized permittee to ensure that survey work is following the latest protocols. For further information on these protocols, contact: Robert Hoffman, National Marine Fisheries Service, 562-980-4043, or William Paznokas, California Department of Fish & Game, 858-467-4218.
| **Site Name:** (common reference) | 2222 Channel Road, Newport Beach, California on the Balboa Peninsula. See Figures 1 and 2 |
| **Survey Contact:** (name, phone, e-mail) | Rick Ware, Senior Marine Biologist, Coastal Resources Management, Inc. (949) 412-9446, rware.crm@earthlink.net  
Lisa Miller, Shellmaker, Inc. Shellmaker@sbcglobal.net |
| **Permit Reference:** (ACOE Permit No., CCC Permit No.) | ACOE SPL-2012-474-BLR  
CCC: 5-1-178 |
| **Hydrographic System:** (bay, estuary, lagoon, or harbor) | Newport Harbor |
| **Specific Location:** (UTM, Lat./Long., datum, accuracy level, attach electronic survey area map if possible) | 33°35.89’ N, 117°52.95’ W.  
NAD 83. Accuracy within 1 meter. See accompanying figures of locations. |
| **Was Eelgrass Detected:** | Yes, Eelgrass was found at this site.  
EELGRASS WITHIN 15’ OF PROJECT  
* No, Eelgrass was not found at this site. |
| **Description of Permitted Work:** (describe briefly the work to be conducted at the site under the permits identified above) | The property owners subdivided the existing 2222 Channel Road lot into a 36 ft-wide lot at 2218 Channel Road (Carol Helou, property owner) and a 35 ft-wide lot at 2222 Channel Road (John Abell, property owner). A new home was constructed on each lot and each property will have new dock system in front of the residence. The dock systems are being designed by William Simpson and Associates, Inc. Shellmaker Inc. is the project contractor. The project components for 2222 Channel Road include: (1) a dock with an outside length dimension of 18’ 5”, inside length dimension of 5’ 6” and a width of 10’; (2) a 4’ x 12’ 8” pier supported by a “T” pile and (3) a 3” 5” x 24’ gangway. |
**Description of Site:**
(describe the physical and biological conditions within the survey area at the time of the survey and provide insight into variability, if known. Please provide units for all numerical information).

<table>
<thead>
<tr>
<th>Description of Site</th>
<th>Depth range:</th>
<th>Substrate type:</th>
<th>Temperature:</th>
<th>Salinity:</th>
</tr>
</thead>
<tbody>
<tr>
<td>(describe the physical and biological conditions within the survey area at the time of the survey and provide insight into variability, if known. Please provide units for all numerical information).</td>
<td>-2.0 to -18.0 ft MLLW based on Corona del Mar Newport Entrance Channel Tide Station</td>
<td>fine sand to silt</td>
<td>Water temperature during the survey was 63 degrees F.</td>
<td>Harbor Range: 25-33 ppt</td>
</tr>
</tbody>
</table>

**Dominant flora:**
A total of 7,231 square feet (sq ft) of eelgrass (*Zostera marina*) was mapped in the project area (Figure 3). Of this total, 2,489.3 sq ft were within the boundaries of the 2222 Channel Road (Figure 3 and 4) including two eelgrass patches close to the bulkhead (42.2 and 98.2 sq ft) and a separate larger bed (2,348.9 sq ft). Eelgrass depth limits varied from -2.0 to -18.0 feet Mean Lower Low Water, and extended from the shallow habitat near the bulkhead to the slope of the main channel.

Eelgrass turion density counts (turions per sq meter) were recorded throughout the survey area:

- **South eelgrass patch:**
  - mean=200  n=3, 2-3 ft depth

- **North eelgrass patch:**
  - mean=117  n=13, 2-3.5 ft depth

**Eelgrass Bed Seaward of Patches**
Overall mean turion density was 159.5 +/- 57/1  n=33

**Impacts on Eelgrass:**
There will be no direct project-related impacts on eelgrass (Figure 5). The two small eelgrass patches will have a potential to be affected by dock and
gangway shading requiring that a two-year post-construction monitoring survey be conducted to determine if shading results in a loss of eelgrass, per Southern California Eelgrass Mitigation Policy Guidelines (NMFS 1991 as amended).

**Mitigation Measures:**
Construction mitigation measures to avoid and reduce impacts to eelgrass include:

- The project marine biologist shall mark the positions of eelgrass beds in the vicinity of the dock and gangway construction area with buoys prior to the initiation of any construction activities;

- The project marine biologist shall meet with the construction crew prior to construction to orient them to specific areas where eelgrass occurs;

- The project marine biologist will perform weekly on-site inspections to ensure that BMPs and mitigation measures are being implemented during construction;

- Support vessels and the work barge should maneuver and work over eelgrass beds only during tides of +2 feet MLLW or higher to prevent grounding within eelgrass beds, damage to eelgrass from propellers, and to limit water turbidity. The work barge and work boat shall not be continuously moored over eelgrass beds;

- Anchors and anchor chains shall not impinge upon eelgrass habitat; and
- Post-construction marine biological surveys (per the Southern California Eelgrass Mitigation Policy and any permit conditions) will be performed to map eelgrass cover in the project area to determine actual impacts of short-term construction and long-term shading effects on eelgrass bed resources.

| Dominant fauna: | One giant kelp (*Macrocystis pyrifera*) was present. This will not be affected by the project. Macro-invertebrates observed during the dive survey included the spiny sand star (*Astropecten armatus*), the tube-dwelling anemone (*Pachycerianthus fimbriatus*), and the ornate tube worm *Diopatra ornata*. black perch (*Embiotoca jacksoni*), kelp bass (*Paralabrax clathratus*), and round sting ray (*Urolophus halleri*). |
| Exotic species encountered: | *Zoobotryon verticillatum* |
| Other site description notes: | None |
| **Description of Survey Effort:** (please describe the surveys conducted including type of survey (SCUBA, remote video, etc.) and survey methods employed, date of work, and survey density (estimated percentage of) | **Survey date and time period:** July 19\textsuperscript{th}, 2013 0800-1000 hrs The survey was conducted by marine biologists using SCUBA, using agency-approved transect techniques and mapping techniques using a diver-biologist, a surface-biologist in a kayak following the diver-biologist, and a GPS mapping of the bed’s perimeter. 100 % |
the bottom actually viewed). Describe any limitations encountered during the survey efforts.

| Horizontal visibility in water: | 20 ft |
| Survey type and methods: | Underwater surveys were conducted by using SCUBA. Reconnaissance dives were first made to determine the extent of eelgrass in the project area. Where eelgrass was located, divers buoyed the location and continued the reconnaissance survey. Once the reconnaissance survey was completed, GPS (Global Positioning System) technology and a Thales Mobile Mapper GPS/GIS Unit were used to map eelgrass areas. A biologist in a kayak equipped with the GPS followed a SCUBA-diving biologist who towed a surface buoy to mark the perimeter of the eelgrass vegetation. Small patches that were too small for mapping were recorded as point values and an estimated size of the patch was determined by the diver. The estimated GPS error of the Thales Mobile Mapper unit with post-processing correction was approximately 1 meter. GPS data were initially entered into the Mobile Mapper Software and then transferred into GPS TRACKER and ARCVIEW GIS software. The amount of eelgrass habitat in the survey area was calculated using ArcGIS 10.1 and Mobile Mapper Software, and distances from the eelgrass vegetation to the existing docks observed. No limitations were encountered during the survey. See more detail below. |
and the bulkhead was calculated to assist in determining potential project impacts on eelgrass bed resources.

Eelgrass turion counts were made within all of the eelgrass vegetation within the 2222 Channel Road project area.

Bottom type, common marine life, and the presence or absence of *Caulerpa taxifolia* and *Zostera marina* was noted. Depths were standardized to Mean Lower Low Water (MLLW) based upon time of observation and tidal corrections for the Corona del Mar/Newport Bay Entrance Channel NOAA tide station.

### Survey personnel:
Rick Ware, Senior Marine Biologist and Tom Gerlinger, Marine Biologist, CRM

### Survey density:
A total of 25 underwater transects (averaging 122 ft long) were swam between the bulkhead and out past the dock line. These transects were spaced approximately 3 meters apart during the recon survey. From this recon survey, the eelgrass bed perimeters were mapped and eelgrass turion densities counted.

100% of the bottom habitat was surveyed during the field investigation due to excellent visibility.

### Survey Limitations:
None.

### Other Information:
See attached project figures.
Figure 1.

Figure 2. Location of Where Dock Will Be Constructed at 2222 Channel Road
Figure 3. Pre-Construction Eelgrass Survey, 2222 Channel Road. 19 July 2013
Note: Aerial Photograph Does Not Show New Split of 2222 and 2218 Channel Road
Figure 4. 2222 Channel Road Dock Layout With July 2013 Eelgrass Survey Superimposed on the Layout.
(Note: Black lines indicate boundary of 2013 eelgrass survey)
Source Dock Design: William Simpson and Associates