CALIFORNIA COASTAL COMMISSION
45 FREMONT STREET, SUITE 2000
SAN FRANCISCO, CA 94105-2219
VOICE (415) 904-5200
FAX (415) 904-5400
TDD (415) 597-5885

Supporting Document 5

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CONDITION COMPLIANCE

January 27, 2011

To: To Commissioners and Interested Parties

From: Peter Douglas, Executive Director
Alison Dettmer, Deputy Director, Energy, Ocean Resources, and Federal Consistency Division
Kate Huckelbridge, Energy, Ocean Resources, and Federal Consistency Division

Regarding: **Condition Compliance for CDP No. E-06-013, Special Condition 8 –** Poseidon Resources (Channelside), LLC; Submittal of a Proposed Mitigation Site and Preliminary Restoration Plan as required by the approved Marine Life Mitigation Plan

SUMMARY

In response to a requirement of CDP No. E-06-013, Poseidon Resources (Poseidon) is requesting that the Commission approve Poseidon's proposed mitigation site and preliminary restoration plan for the Otay River Floodplain in south San Diego Bay. Commission staff is recommending that the Commission ***approve*** the proposed site and preliminary plan.

Background: On November 15, 2007, the Coastal Commission approved CDP No. E-06-013 for Poseidon's proposal to construct and operate a desalination facility in Carlsbad, San Diego County. Special Condition 8 of that permit required Poseidon to submit a Marine Life Mitigation Plan (MLMP) addressing the impacts that will be caused by the facility's use of estuarine water and entrainment of marine organisms. On August 8, 2008, the Commission approved Poseidon's MLMP (see Exhibit 1). The approved MLMP requires Poseidon to take several steps to ensure it provides adequate mitigation for project impacts. The first step, which is before the Commission today, requires Poseidon to submit a proposed site and a preliminary restoration plan to the Commission for approval. After Commission approval of the preliminary site and plan, Poseidon is to conduct the necessary CEQA review, obtain necessary approvals, and submit a CDP application to the Commission for final mitigation site design. This report details staff's analysis of Poseidon's site selection process and preliminary restoration plan for its proposed site.

Proposed Mitigation Site: Poseidon proposes to build its wetland mitigation project at the Otay River Floodplain in the San Diego Bay National Wildlife Refuge (see Exhibits 2 and 3). Poseidon initially chose this site based on the results of a site comparison study that examined the advantages and disadvantages of 12 sites in the Southern California Bight. According to the study, the Otay River Floodplain site held the greatest promise for a successful mitigation project, largely because it provides adequate acreage and has an existing conceptual restoration plan developed through a programmatic EIR completed by the USFWS in August 2006. Section 5.0 of this report provides a detailed description of the site, the preliminary restoration plan (see Exhibit 4), and resolution of several site constraints identified during Commission staff's review.

Site Selection Process: In early 2010, Poseidon submitted its initial proposal for a mitigation site and restoration plan. The submittal compared about a dozen potential sites in the Southern California Bight and concluded that the Otay River Floodplain site was most suited to provide the type and amount of mitigation the Commission had required. Commission staff and members of a Scientific Advisory Panel (SAP) reviewed Poseidon's analysis and concurred that the Otay River Floodplain site was likely to meet the MLMP requirements and objectives. On October 15, 2010, staff presented its recommendation that the Commission approve the Otay site; however, the Commission postponed its decision after Commissioners expressed concerns about several aspects of the proposal, including:

- the possibility that continued operations of the nearby South Bay Power Plant would adversely affect mitigation success at the site;
- the need for an alternative or "back-up" site to address the possibility that power plant operations would continue;
- an interest in further evaluating possible mitigation sites closer to Poseidon's desalination facility (i.e., in northern San Diego County); and,
- land ownership issues at the Otay River site.

After the October 2010 meeting, Poseidon submitted a more comprehensive alternatives analysis and staff has developed a more detailed review of the site selection process, including an assessment of the expressed concerns about the Otay River site. These are more fully described in Section 4.0 and 5.0 of this report, but are briefly summarized below. Regarding power plant operations, the power plant is now permanently shut down and is scheduled to be demolished during the next few years. Regarding alternative sites and possible northern San Diego County sites, Poseidon's updated and more extensive alternatives analysis focused on sites located in North County in close proximity to the planned desalination facility. Based on this analysis, thirteen sites were eliminated from consideration because they did not meet MLMP minimum threshold requirements specifying mitigation type, mitigation size, site preservation or project timeliness. Two sites, the Otay River floodplain and the Tijuana estuary were analyzed further. Although both sites provide the basic characteristics required to meet the MLMP requirements, Poseidon determined that the Otay River Floodplain carries a greater degree of certainty for a timely and successful mitigation project. To address the land ownership issues, Poseidon met with the involved parties (i.e., the State Lands Commission, U.S. Fish and Wildlife Service, and California Coastal Conservancy) and staff understands that ownership-related issues will be resolved before submittal of Poseidon's final proposed restoration plan.

Staff and members of the SAP reviewed Poseidon's updated site comparison analyses and preliminary restoration plan and concurred that the Otay River Floodplain site is the superior site. Staff also believes the identified site constraints that could affect Poseidon's ability to meet the MLMP requirements and objectives have been adequately resolved to allow for Poseidon to develop its proposed final site restoration plan. Commission staff therefore recommends that the Commission ***approve*** Poseidon's proposed preliminary restoration plan and this mitigation site.

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EXHIBITS

Exhibit 12 - January 10, 2011 letter from Dynegy, Inc.

Exhibit 13 – October 16, 2010 Cal-ISO letter to Dynegy, Inc.

Exhibit 14 – Poseidon's Hydrology Report: "Tidal Hydraulics of Wetlands Restoration Alternatives in the Otay River Floodplain, Carlsbad Desalination Project Marine Life Mitigation Plan"

* Additional exhibits, correspondence and ex-parte disclosures included with the September 22, 2010 staff report and October 14, 2010 addendum to the staff report not included. Please see http://documents.coastal.ca.gov/reports/2010/10/F5a-10-2010.pdf for these additional materials.

1.0 MOTION AND RESOLUTION

Motion

"I move that the Commission approve the Proposed Otay River Floodplain Mitigation Site and Preliminary Restoration Plan attached to the staff recommendation as Exhibits 3 and 4, as required by the Marine Life Mitigation Plan, approved by the Commission pursuant to Special Condition 8 of No. CDP E-06-013."

Resolution

The Commission hereby approves the Proposed Otay River Floodplain Mitigation Site and Preliminary Restoration Plan submitted by the permittee, Poseidon Resources (Channelside) LLC, in compliance with the Marine Life Mitigation Plan, approved on August 6, 2008 in accordance with Special Condition 8 of CDP No. E-06-013.

Staff Recommendation

Staff recommends a "**YES**" vote, which will result in the **approval** of the proposed mitigation site and preliminary restoration plan as required by the Marine Life Mitigation Plan in accordance with CDP No. E-06-013 Special Condition 8 and adoption of the motion, resolution, and findings herein. The motion passes only by an affirmative vote of a majority of the Commissioners present. Staff's recommendation is detailed in Sections 4.0 and 5.0 of this memorandum.

2.0 STANDARD OF REVIEW

The standard of review for this Commission decision is whether Poseidon's proposed site and preliminary restoration plan conforms to applicable requirements of the Marine Life Mitigation Plan (MLMP) approved by the Commission on August 8, 2008. The MLMP is provided as Exhibit 1 of these Findings. The Commission approved the MLMP as being consistent with ***Special Condition 8*** of the CDP authorizing construction and operation of Poseidon's proposed desalination facility (CDP #E-06-013).[1]

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[1] ***Special Condition 8*** states: "***Marine Life Mitigation Plan:*** PRIOR TO ISSUANCE OF THE PERMIT, the Permittee shall submit to and obtain from the Commission approval of a Marine Life Mitigation Plan (the Plan) that complies with the following:

a) Documentation of the project's expected impacts to marine life due to entrainment and impingement caused by the facility's intake of water from Agua Hedionda Lagoon. This requirement can be satisfied by submitting a full copy of the Permittee's Entrainment Study conducted in 2004-2005 for this project.
b) To the maximum extent feasible, the mitigation shall take the form of creation, enhancement, or restoration of aquatic and wetland habitat.
c) Goals, objectives and performance criteria for each of the proposed mitigation sites. It shall identify specific creation, restoration, or enhancement measures that will be used at each site, including grading and planting plans, the timing of the mitigation measures, monitoring that will be implemented to establish baseline conditions and to determine whether the sites are meeting performance criteria. The Plan shall also identify contingency measures that will be implemented should any of the mitigation sites not meet performance criteria.

The approved MLMP establishes minimum standards and objectives needed to ensure adequate mitigation for marine life impacts caused by the Carlsbad desalination facility. The Plan also includes performance standards, timing restrictions, monitoring requirements, and other elements needed to ensure successful and adequate mitigation. Regarding site selection, Section 2.0 of the Plan states that site(s) are to be selected based on an evaluation of potential sites against the minimum standards and objectives identified in Section 3.0 of the Plan. Key minimum standards applicable to site selection require that the project's mitigation:

- Be in the form of creation or substantial restoration of estuarine habitat;
- Be provided at no more than two sites;[2]
- Be protected in perpetuity; and,
- Be provided concurrent with project impacts.

The Plan, as approved by the Commission and later amended by Poseidon, provides for restoration of 66.4 acres of estuarine wetland habitat within the Southern California Bight.[3] It allows mitigation to be provided in one or two phases, with at least 42.5 acres of estuarine restoration required during Phase I, and the remaining 18.4 acres during Phase II.[4] With its current proposal, Poseidon is proposing to provide all 66.4 acres at one time and all at one site.

Regarding mitigation timing, the MLMP requires Poseidon to submit, for Commission review and approval, its proposed site(s) and preliminary wetland restoration plan within 10 months of issuance of the CDP for the desalination facility.[5] After Commission approval of that proposed site and preliminary plan, Poseidon is to submit a complete CDP application for its final proposed mitigation plan within two years of issuance of the facility CDP (i.e., November 2011), with mitigation site construction to start within six months of Commission final plan approval.

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d) Requires submittals of "as-built" plans for each site and annual monitoring reports for no less than five years or until the sites meet performance criteria.
e) Defines legal mechanism(s) proposed to ensure permanent protection of each site – e.g., conservation easements, deed restriction, or other methods.

The Permittee shall comply with the approved Plan. Prior to implementing the Plan, the Permittee shall submit a proposed wetlands restoration project that complies with the Plan in the form of a separate coastal development permit application for the planned wetlands restoration project."

[2] The Plan allows Poseidon to propose that mitigation occur on more than two sites if there is a compelling argument, approved by the Executive Director, that the Plan's minimum standards and objectives would be better met at more than two sites.

[3] The MLMP, as originally approved by the Commission, required 55.4 acres of mitigation. In September 2009, based on re-evaluation of the project's likely impingement impacts, Poseidon voluntarily agreed to provide 11 additional acres.

[4] The MLMP also allows Poseidon to propose alternative mitigation in lieu of the Phase II restoration acreage.

[5] Commission staff issued the facility CDP on November 3, 2009. On July 21, 2010, pursuant to the MLMP provision allowing extension of certain deadlines upon request and for good cause, the Executive Director provided Poseidon a one-month extension to the 10-month deadline for receipt of the preliminary site and plan. The new deadline was then October 3, 2010, and Poseidon submitted the necessary materials on September 13, 2010.

In addition to the Commission-approved MLMP, the Regional Water Quality Control Board (RWQCB) imposed its own mitigation requirements. The RWQCB adopted the Commission-approved MLMP as a requirement of Poseidon's NPDES permit and, based on its review of the expected fish losses due to impingement rates at the Carlsbad facility, additionally required Poseidon to ensure its mitigation would provide fish productivity at a rate of at least 1,715.5 kg/year to compensate for the desalination facility's projected impingement losses. The RWQCB included this requirement as a "Biological Performance Standard" in section 5.4b of the MLMP.[6]

3.0 PROJECT BACKGROUND AND SITE SELECTION PROCESS

On November 15, 2007, the Commission approved CDP No. E-06-013 for Poseidon's proposal to construct and operate a desalination facility in Carlsbad, San Diego County. As part of that approval, the Commission required Poseidon, through Special Condition 8, to submit for additional Commission review and approval a Marine Life Mitigation Plan (MLMP) addressing the impacts that will be caused by the facility's use of estuarine water and its entrainment of marine organisms. The MLMP, developed jointly by staff and Poseidon, was approved by the Commission on August 8, 2008 (see Exhibit 1).

As part of the MLMP, Poseidon is to develop a proposed site and preliminary restoration plan. To assist in the review of the more technical aspects of this project, staff formed a Scientific Advisory Panel (SAP) made up of three independent scientists with expertise in coastal biology, ecology and hydrodynamics, two of whom have previously provided scientific guidance to the Commission on the San Dieguito Restoration Project implemented by Southern California Edison as mitigation for the San Onofre Nuclear Generating Station. Currently, the SAP representatives reviewing Poseidon's proposed site and plan are Dr. Richard Ambrose, Professor and Director of Environmental Science & Engineering Program, Department of Environmental Health Sciences, University of California Los Angeles, Dr. Pete Raimondi, Professor and Chair of Ecology and Evolutionary Biology, University of California, Santa Cruz and Dr. Brett Sanders, Professor of Civil and Environmental Engineering, University of California, Irvine.

After approval of the MLMP, Poseidon started its site selection process by contacting about 70 different state and local agencies, non-profits and consulting firms to obtain input on potential suitable mitigation sites (see Exhibit 5 for list of organizations contacted). Based on the responses received and with input from Commission staff, Poseidon identified 12 potential restoration sites within the Southern California Bight. In January 2010, Poseidon completed a

[6] The MLMP, along with the additional fish productivity standard, was adopted by the RWQCB on May 13, 2009 as part of Order No. R9-2009-0038. The fish productivity rate of 1,715.5 kg/year is based on an impingement estimate of 4.7 kg/day at the Carlsbad desalination facility. To demonstrate that the mitigation wetlands meet this requirement, the Regional Board required Poseidon to develop a Productivity Monitoring Plan, subject to review by the SAP, which incorporates the productivity measurement methodologies presented in Allen, "Seasonal Abundance, Composition, and Productivity…" Fishery Bulletin, Vol. 80, NO.4 1982, pages 769-790. Fish productivity monitoring will be conducted once per month for a 13 month period, beginning four years after the completion of construction of the wetlands.

study, titled "Comparison of Selected Southern California Tidal Wetlands as Potential Sites for Mitigation of Impacts Associated with Poseidon Resources Proposed Carlsbad Desalination Plant" (see Exhibit 6), that evaluated each of the 12 sites based on the MLMP's objectives, criteria and timeline. Poseidon identified two sites, the Otay River floodplain in the South San Diego Bay National Wildlife Reserve and the Tijuana Estuary as the first and second preferred mitigation site options, respectively. Poseidon, Commission staff, members of the SAP, as well as representatives from other state and federal agencies, met several times over the following year to review Poseidon's analysis and collectively make decisions on how to proceed.

Staff and the SAP generally concurred with Poseidon's initial analysis (see Appendix A of Exhibit 6) that the Otay River floodplain was a suitable mitigation site because it was consistent with the requirements, objectives and restrictions outlined in the MLMP. Staff and SAP's review is discussed in more detail in Section 4. Based on Poseidon's analysis and the ensuing review and discussion, Poseidon developed a preliminary restoration plan for the site. However, completion of the plan was contingent on Poseidon resolving several potential site constraints – such as land ownership, buffer adequacy, and others, which are discussed further in Section 5.1.

On October 15, 2010, staff presented its recommendation that the Commission provide its preliminary approval of the Otay River Floodplain site. However, the Commission postponed the item to allow for a more in-depth alternatives analysis and to allow staff to address several concerns expressed by Commissioners, including:

- Continued operation of the South Bay Power Plant and the adverse effects of its estuarine water intake on success of the mitigation site;
- The need for an alternative or "back-up" mitigation site should power plant operations continue;
- An interest in further evaluating possible mitigation sites closer to Poseidon's desalination facility (i.e., in northern San Diego County); and,
- Land ownership issues at the Otay River site.

As described below in Section 5.0, staff believes these concerns have been addressed. For example, the power plant has been permanently shut down, and Poseidon has met with interested stakeholders to address the land ownership issues. Additionally, Poseidon submitted a more extensive alternatives analysis, titled "Supplemental Analysis of California Coastal Commission Standards and Objectives" (see Exhibit 7), focusing on sites located in North County in close proximity to the planned desalination facility. In addition to an analysis by their biological consultant, they also contracted Dr. Michael Josselyn, PhD, for a separate review of the mitigation site options (see Exhibit 8, "Opportunities for Meeting Poseidon Mitigation Requirements in Proximity to Project Impacts"). As described below, these analyses determined that the North County sites did not meet one or more of the MLMP's minimum thresholds for appropriate mitigation sites. Based on these additional analyses, Poseidon is proposing that the Commission approve the Otay River floodplain as the mitigation site. Staff and the SAP reviewed the alternatives analysis and concurred with Poseidon's conclusion. Poseidon is also presenting the Tijuana Estuary site as a secondary option (see Exhibit 9); however, staff at this time does not have sufficient information to recommend this site for Commission approval.

Section 4.0 describes in detail the criteria used to screen potential sites, and the reasons that each of the North County sites, and the Tijuana Estuary site were rejected as the preferred site.

4.0 ANALYSIS OF POTENTIAL SITES

4.1 INITIAL SITE SCREENING

Poseidon's comparison studies (see Exhibits 6 and 7) evaluated fifteen potential restoration sites located in the Southern California Bight against the minimum standards and criteria outlined in the MLMP:

- Loma Alta Lagoon (San Diego County)
- Agua Hedionda Lagoon (San Diego County)
- Buena Vista Lagoon (San Diego County)
- Batiquitos Lagoon (San Diego County)
- San Elijo Lagoon (San Diego County)
- San Dieguito Lagoon (San Diego County)
- Los Peñasquitos Lagoon (San Diego County)
- Lower Otay River Floodplain (San Diego County)
- Tijuana Estuary (San Diego County)
- Huntington Beach Wetlands (Orange County)
- Anaheim Bay (Orange County)
- Santa Ana River (Orange County)
- Los Cerritos Wetlands (Los Angeles County)
- Ballona Wetlands (Los Angeles County)
- Ormond Beach (Ventura County)

As noted above in Section 2.0, four key minimum standards and restrictions contained in the MLMP were used to initially screen potential mitigation sites. If a particular site did not meet one or more of these key thresholds, it was dropped from further consideration. These key requirements and restrictions are:

1. **Type of Mitigation:** The project must "create or substantially restore" habitat similar to the affected estuarine habitats in Agua Hedionda Lagoon, excluding buffer zone and upland transitional areas (MLMP, Section 3.1.c). Also, the project must provide for restoration as tidal wetland, with extensive intertidal and subtidal areas (MLMP, Section 3.1.b).
2. **Mitigation Size:** The MLMP identifies the need for 66.4 acres of mitigation, which may be provided at up to two wetland restoration sites[7] (MLMP, Section 3.3.c). The MLMP also calls for the mitigation to provide "maximum overall ecosystem benefits", which are generally greater in larger sites rather than smaller sites (MLMP, Section 3.2a).

[7] The Executive Director may approve mitigation at more than two sites if a compelling argument can be made that the standards and objectives of the MLMP will be better met at more than two sites.

3. **Site Preservation:** The MLMP requires that preservation of the site be guaranteed in perpetuity, through an appropriate agency or non-profit agency (Section 3.1.h).
4. **Timeliness:** The mitigation plan and site is to be presented for Commission review and approval within two years of permit issuance and mitigation construction is to start within six months following Commission approval.

Each is discussed in further detail below.

1. Type of Mitigation: The project is to "create or substantially restore" a site to tidal wetlands, or in other words, restore non-wetland or extremely degraded wetland acreage to tidal wetlands. This type of restoration does not include wetland conversion (e.g., converting freshwater wetlands to tidal wetlands) or wetland enhancement (e.g., improving existing tidal wetlands). As a result, three sites – Buena Vista Lagoon, San Elijo Lagoon and Agua Hedionda Lagoon – were eliminated from further consideration. Regarding Buena Vista Lagoon, although a large-scale restoration proposal is currently in the planning stages, consensus has not been reached by the stakeholders on whether the preferred alternative would be to create estuarine or freshwater wetlands. Further, even if the salt-water option were chosen as the preferred alternative, the restoration would primarily involve the conversion of freshwater wetlands to tidal wetlands, and thus, for the purposes of Poseidon's mitigation project, would not meet the requirements of the MLMP. Similarly, available restoration at the San Elijo site involves enhancing existing tidal wetlands rather than creating or restoring tidal wetlands. Only approximately 3.5 acres of conventional restoration are available at San Elijo. At Agua Hedionda Lagoon, most of the restoration projects identified by local stakeholders involved enhancement or preservation of existing lagoon habitat or adjacent upland habitat or removal of invasive exotic vegetation; projects that do not conform to the type of mitigation required by the MLMP. Poseidon estimates that there are only about 9.9 acres available in Agua Hedionda that would meet the MLMP's restoration requirements. Additionally, much of the biological productivity created through compensatory mitigation within the Lagoon would be subject to entrainment from Poseidon's desalination facility, and would therefore not provide adequate mitigation for the project's impacts.

2. Mitigation Site Size: The MLMP requires Poseidon to restore a minimum of 37 and up to 66.4 acres of tidal wetlands in the first stage of the mitigation project and requires the entire project to be completed at a maximum of two sites. As a result, several sites were eliminated from consideration because they did not provide adequate acreage. These sites included Loma Alta Lagoon (3.01 acres), Agua Hedionda Lagoon (9.9 acres), Buena Vista Lagoon (12.2 acres), Batiquitos Lagoon (14.4 acres), San Elijo Lagoon (3.5 acres), Los Peñasquitos Lagoon (8.6 acres) and Anaheim Bay (8 acres).

3. Site Preservation: The MLMP requires Poseidon to ensure preservation of the site in perpetuity. This standard requires that (1) the site is available to Poseidon for restoration; (2) that Poseidon is able to purchase or otherwise secure the site for mitigation purposes; and finally; (3) that the site be protected against future degradation or incompatible land use through ownership or agreements with an appropriate state agency, non-profit organization, or other means. Several sites that appeared promising ecologically were eliminated from consideration

due to this requirement. For example, Poseidon identified a total of 96 acres available for restoration at San Dieguito Lagoon; however, the larger potential restoration parcels are unavailable due to restoration agreements between the landowner and other entities. The remaining parcels are either owned by a party unwilling to sell, or are too small, even in aggregate, to meet the acreage demands of the MLMP. Poseidon also identified approximately 54 acres of land slated for tidal wetland restoration at the Newland Marsh in the Huntington Beach Wetlands; however, this site is owned by Caltrans and is not available for restoration by Poseidon.

4. Timeliness of Mitigation: Other sites were eliminated from consideration due to the lack of adequate restoration plans or due to lack of consensus among stakeholders as to the appropriate mitigation design. Without agreed-to and adequately detailed plans, Poseidon would likely not meet the timing of the MLMP. These sites included the Buena Vista Lagoon, Santa Ana River, Los Cerritos Wetlands, Ballona Wetlands and Ormond Beach.

Dr. Josselyn conducted a similar threshold analysis and reached the same conclusion. Please see Exhibit 8 for additional details.

4.2 SELECTION FROM REMAINING SUITABLE SITES

At the conclusion of the screening process described above, two sites remained that met the threshold criteria: the Otay River Floodplain and the Tijuana Estuary. These sites were evaluated against the other siting requirements and objectives of the MLMP to determine which site was more suitable for Poseidon's required mitigation (see Exhibit 7). Of these two sites, the Otay River Floodplain site is preferred, due largely to it having a greater likelihood of successful mitigation and fewer overall risks than the Tijuana Estuary site. An analysis of the Tijuana site is provided below, followed by a detailed evaluation of the Otay River Floodplain site and preliminary restoration plan in Section 5.0.

Tijuana Estuary

As a result of planning efforts over the past twenty years, the Tijuana Estuary has in place a restoration plan expected to eventually provide up to about 250 acres of wetland and riparian habitats. The Coastal Conservancy (Conservancy) funded a large scale planning effort in the mid to late 1980's that resulted in restoration plans for both the southern and northern arms of the Tijuana Estuary. In 1996 and 2000, two small restoration projects were constructed in north and south arms of the estuary, respectively. In 2003, the Conservancy funded a renewed look at restoration on the southern arm that resulted in the Tijuana Estuary Friendship Marsh Restoration Feasibility and Design Study, completed in 2008. The preferred alternative identified in the study included approximately 250 acres of wetland restoration. The plan is divided into five phases that can be implemented independently from one another.

Poseidon evaluated the site and concluded that the site identified as Phase 3 of the Estuary's Study could meet each of the MLMP's minimum standards, though not all of its objectives. Phase 3 has a total area of 74.9 acres, with a proposed habitat distribution of 13.0 acres of open

water, 18.3 acres of tidal mudflat, 23.7 acres of low salt marsh, and 19.9 acres of mid-high salt marsh. The objectives that would not fully be met are described below (see Exhibit 9 for additional discussion).

- **Minimum Impacts on Functioning Wetlands:** The MLMP's Objective 3.2.e states that the restoration project should involve minimum adverse impacts to existing functioning wetlands and other sensitive habitats. Further, minimum standard 3.1.h of the MLMP states that the restoration project must not result in the net loss of existing wetlands. The site is currently occupied by a combination of undisturbed and disturbed marsh and riparian vegetation. The Feasibility and Design Study estimates that over 17 acres of marsh and 15 acres of riparian habitat would be adversely affected by the restoration of Phase 3. Thus, if this site were chosen as the preferred site, in order to satisfy this minimum standard, this loss of wetlands and impacts to existing sensitive species would need to be added to Poseidon's mitigation commitment, likely requiring Poseidon to restore additional acreage at this or another site. Thus, unless Poseidon was to restore additional habitat to meet minimum standard 3.1.h, this site would not meet the objective of minimizing adverse impacts on existing functioning wetlands.

- **Minimum Maintenance:** MLMP objective 3.2.k states that the project should require minimum maintenance. The ability of the site to meet this objective is in question because of the significant sedimentation problems plaguing the Tijuana estuary. The southern arm of the Tijuana estuary is subject to significant sedimentation from cross-border canyons, most notably Goat Canyon Creek. Although sedimentation basins were constructed in 2005 to capture sediment entering the estuary, sediment within the basin continues to pose a risk to future restoration endeavors. A 2004 flood hydrology and sediment dynamics study[8] concluded that an earthen berm and weir would be required to protect the restored area from sediment deposition and scour. The necessary berm was estimated to be approximately 7000 feet long and 10 feet high, with a 700 foot long, 10 foot high armored weir. Building this berm would impact up to an acre of undisturbed and disturbed coastal salt marsh. This study has not been updated in the last 6.5 years and the issue may need to be re-evaluated, both to determine if this berm and weir system would be the most effective means of sediment control and to determine how Poseidon's proposed restoration would be affected by sedimentation and any recommended solutions to address the sedimentation issues. Further, even if sediment control methodologies are incorporated into the design, large-scale sedimentation events associated with storm events would still pose a risk to the restoration site, potentially requiring significant long-term maintenance, contrary to objective 3.2.k.

- **Site Stability:** Finally, inlet stability of the Tijuana estuary, especially the southern channel, is uncertain. The southern channel is particularly susceptible to closure due to the significant sedimentation in the basin over the last several decades. The channel was

[8] Hydraulics and Sedimentation Study for Marsh Restoration in the Tijuana River Estuary, prepared for Tierra Environmental Services, 9915 Businesspark Ave., Suite C, San Diego, CA 92131-1120. Prepared by Howard Chang, Ph.D., P.E. September 2004.

most recently closed in January 2010. In this instance, the channel was reopened by mechanical means from an accessible beach. Although in this case, channel closure and the subsequent maintenance actions did not result in any impacts to upstream wetlands or sensitive beach habitat, it is impossible to know if this will be the outcome in the future. The potential instability of the estuary inlet adds another layer of uncertainty to the success of a wetland restoration project in this location.

In summary, the Tijuana Estuary holds some promise as a potential mitigation site and could meet the MLMP's minimum standards. Based on Poseidon's analysis (see Exhibits 6, 7, 8 and 9), this site appears to meet all of the MLMP's minimum standards, as long as Poseidon increases its mitigation acreage to address any wetlands lost or degraded due to this project, and most of its objectives. For example, the Estuary's Phase 3 site would likely provide adequate acreage to complete the entire restoration project at one site (assuming minimal impacts to existing wetlands); it would provide the type of tidal wetland mitigation required by the MLMP, and the MLMP's requirements would likely integrate well with the site's existing restoration plans. However the significant amount of uncertainty associated with sedimentation, necessary maintenance, and channel stability at this site could limit Poseidon's ability to provide successful mitigation. The Commission's preliminary approval of this site would require additional, detailed information and analyses to resolve these uncertainties.

5.0 SELECTION OF OTAY RIVER FLOODPLAIN SITE AND PRELIMINARY RESTORATION PLAN

Poseidon's proposed mitigation site is a 90-acre site in the lower Otay River Floodplain. The site is part of the South San Diego Bay Unit of the San Diego National Wildlife Refuge, managed by the US Fish and Wildlife Service (see Exhibits 2 and 3). It is approximately 35 miles south of the Aqua Hedionda Lagoon where Poseidon's Carlsbad Desalination Plant will be located. The South San Diego Bay Unit includes 2,300 acres of open bay, solar salt evaporation ponds and the Otay River floodplain subarea, consisting of approximately 140 acres of upland and wetland habitat. The site contains a relatively long channel flowing south and east from the southern tip of San Diego Bay and opening into the historic floodplain of the Otay River. To the north and west of the site is a system of large ponds that currently or historically were used for salt production. To the east of the site is Interstate 5 and to the south are both developed and undeveloped properties owned by the City of San Diego and the Port of San Diego. Historically, the Otay River floodplain subarea consisted of intertidal mudflats and salt marsh, but it was filled in for agricultural use and salt production. Currently, the site consists largely of disturbed uplands with little to no habitat value. The Lower Otay River is dammed approximately 11 miles upstream of the Otay River Floodplain site and drains a watershed consisting of a mix of residential, commercial, industrial and undeveloped land. For most of its length, the Otay River retains a natural channel with few flood control improvements. The River exits into south side of San Diego Bay, a relatively protected position where it is shielded from open ocean waves and sediment deposition.

As it did with the Tijuana estuary site, Poseidon conducted an in-depth analysis comparing the characteristics of the site with the standards and objectives of the MLMP (see Exhibits 6 and 7). This study concluded that the site would meet all of the minimum standards and objectives outlined in the MLMP. For example, the site appears to contain enough area to meet the full acreage requirements in the MLMP, including space for transition and buffer areas. With proper design and implementation, the acreage devoted to subtidal habitat is likely sufficient to meet the fish productivity requirements imposed by the RWQCB. In addition, the site currently consists largely of uplands occupied by non-native and invasive vegetation with minimal habitat value, so site restoration is not likely to cause substantial impacts to existing wetlands or to sensitive habitats or species. Further, the site is part of the broad planning and restoration efforts of the San Diego Bay NWR.[9] This is important in two ways. First, because a programmatic EIS has already been completed, the project specific environmental review process should be somewhat faster, thus increasing the likelihood that Poseidon will be able to complete the project in the timeframe provided in the MLMP. Second, the site, once restored, will not be an isolated system, but will be contiguous to a larger complex of critical wetland and shallow water habitat and easily integrated into a larger mitigation management structure.

Although this site has many advantages, Commission staff and the SAP identified several potential constraints on the site's ability to provide adequate mitigation, such as land ownership, adequate buffers, nearby power plant operations, etc. Poseidon conducted additional analysis to address these issues, and, as described below in Section 5.1, each has been resolved to the satisfaction of staff and the SAP.

5.1 RESOLUTION OF POTENTIAL SITE CONSTRAINTS

Commission staff and the SAP evaluated several identified site constraints to be resolved before recommending Commission approval of the site. These issues, described in further detail below, include:

- land ownership and restrictions on the use of the site;
- ensuring adequate buffers;
- the status of the South Bay Power Plant;
- potential soil contamination at the site; and,
- hydrologic suitability of the site for Poseidon's planned mitigation project.

5.1.1 Land Ownership/Restrictions on Use of Site

The MLMP requires that site preservation be guaranteed in perpetuity (through appropriate agency or nonprofit ownership, or other means approved by the Executive Director), to protect against future degradation or incompatible land use. Although the USFWS manages the entire site, it owns just part of the land. The western portion of the site was purchased by the State

[9] Although the Otay River Floodplain site was included in the Comprehensive Conservation Plan (CCP) and Environment Impact Statement (EIS) for the Sweetwater Marsh and South San Diego Bay Units of the San Diego Bay NWR, prior to Poseidon's involvement, no funding source had been identified for restoration of this area.

Lands Commission (SLC) using Port district airport user fees and is leased to USFWS for its use as part of the San Diego Bay NWR. The land is owned by the State of California, and there are no known restrictions on using the property for wetland mitigation. On October 12, 2010, SLC staff submitted a letter to the Commission noting that Poseidon's proposed mitigation project may require SLC approval (see Exhibit 10). The letter also stated that the Public Resources Code prevents the SLC from leasing any public trust lands for any purpose in perpetuity. However, the SLC has the authority to enter into 49-year leases and has done so for other mitigation sites (including the one currently held by the USFWS). The SLC can consider entering into subsequent 49-year leases when the original lease expires. On January 21, 2011, Poseidon and representatives of the USFWS met with SLC staff to discuss the project. Depending on the structure of the agreement between USFWS and Poseidon, SLC staff believes that Poseidon's proposed mitigation project, if conducted under the direction of the USFWS as proposed, may meet the conditions of the current lease held by the USFWS, and thus would not require further action from the SLC. The Commission's preliminary approval of the Otay site is contingent upon Poseidon including with its CDP application for the final site plan written confirmation from the SLC that Poseidon's proposal is consistent with the USFWS lease for the Otay Estuary site.

The eastern portion of the site, also known as the "Egger-Ghio" property was purchased by the Southwest Wetlands Interpretive Association (SWIA) using funds from the California Coastal Conservancy (Conservancy) and then conveyed to the USFWS in fee title. Prior to the land purchase and transfer to the USFWS, the Conservancy adopted the "Lower Otay River Wetlands Enhancement Plan" which calls for the acquisition, protection and restoration of wetland and riparian habitats on the Egger-Ghio property. The MOU governing the land deal between SWIA, the Conservancy and USFWS states that the Egger-Ghio property shall be restored and managed in "a manner consistent with" the Enhancement Plan. The CCP, released by the USFWS, incorporated the goals, objectives and conceptual plans outlined in the Enhancement Plan. In order for Poseidon to be able to use this site for mitigation, its final restoration plan must be consistent with the CCP, and therefore the terms of the MOU governing use of the property. In addition, in a letter to Chairperson Neely, dated September 21, 2010 (Exhibit 11), the Conservancy also raised the issue that the people of the State of California should be compensated by Poseidon for its use of public, rather than private, property for its mitigation project. Although this issue does not affect the site's potential for providing successful wetland restoration, the Commission would like to see this issue resolved to the Conservancy's satisfaction before issuing a CDP for the restoration project. Since the October 2010 meeting, Poseidon has contacted the Conservancy to address this issue. The Conservancy has indicated preliminary support for the project, based on resolution of the compensation issue and review of the final mitigation plan, and both parties are optimistic that a satisfactory resolution can be reached.

5.1.2 Buffers

Another potential site constraint was the feasibility of incorporating adequate buffers into the restoration design. The MLMP requires a buffer zone of at least 100 feet, but also includes an objective of an average 300-foot buffer as measured from the upland edge of the transition area.

The initial conceptual design presented by Poseidon did not include buffers, and the Commission staff and SAP questioned whether restrictions on the availability of land surrounding the site would make it difficult to meet this standard while also meeting the minimum mitigation acreage requirements. In response to this question, both Poseidon and the USFWS assured Commission staff and the SAP that the restoration design could accommodate a minimum 100-foot buffer to ensure protection of wetland values and to satisfy the requirements of the MLMP. The initial restoration designs submitted by Poseidon, discussed in further detail in section 5.2 (see Exhibit 4), appear to support this contention, though final resolution of this issue will occur as part of the Commission's review of Poseidon's final design proposal.

5.1.3 Status of the South Bay Power Plant

At the time of the October 2010 hearing, there was uncertainty about how long the South Bay Power Plant would continue to operate and how long its once-through cooling system would continue to cause adverse impacts to marine life in San Diego Bay. As described at that hearing, the power plant's continued operations would have negatively affected restoration at the Otay River Floodplain site.[10] As of January 1, 2011, however, the power plant has been permanently shut down (see Exhibit 12 – January 10, 2011 letter from Dynegy, Inc.) and it is no longer a constraint to successful mitigation at the site.

Background: The power plant, which is owned by the Port of San Diego and was operated by Dynegy, Inc., used a "once-through cooling system" capable of pulling in up to several hundred million gallons per day of estuarine water to cool the plant's generating unit. At peak capacity, the intake was estimated to kill about 17% of all larval species in San Diego Bay, and its discharge created a thermal plume that extended up to about 1.7 miles into the bay. The power plant intake and outfall are about a mile from the proposed Otay mitigation site, and their adverse impacts on marine life would have substantially reduced the usefulness of restoring wetlands at the site.

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[10] The October 2010 staff report stated: "*Continued operation of the power plant's intake system would compromise any benefits provided by the Otay River floodplain site to adequately compensate for wildlife impacts at the Carlsbad desalination facility. The purpose of the MLMP is to ensure mitigation for entrainment impacts at the desalination plant. If the intake and discharge systems at the South Bay Power Plant are not shut down, a substantial proportion of the marine life "created" at the Otay River floodplain site will be killed or injured due to entrainment, impingement or thermal effects. This would significantly decrease the efficacy of Poseidon's mitigation project, and could result in the project not meeting some of the MLMP objectives – i.e., the objective to "provide maximum overall ecosystem benefits". Staff and members of the SAP raised these concerns with Poseidon during the site selection review process and recommended that if Poseidon did propose this site as its preferred site that it also develop a back-up site in case the power plant issue is not favorably resolved. Poseidon chose to move forward with the Otay River floodplain site and has not presented a secondary site alternative. If the intakes and outfalls at the South Bay Power Plant continue to operate, this site will not provide adequate mitigation for the impacts at the Carlsbad desalination plant and thus, will not meet the requirements and objectives of the MLMP or constitute compliance with the conditions of the CDP. Thus, the Commission's approval of the Otay River Floodplain site is necessarily contingent upon the termination of use of the intakes and outfalls at the South Bay Power Plant before Poseidon completes construction of its mitigation site. If the intakes and outfalls at the South Bay Power Plant do not cease to operate, as is expected, then Poseidon will need to seek approval for an alternative mitigation site.*"

Earlier in 2010, the State Water Resources Control Board adopted a policy to phase out most of the power plants using once-through cooling systems in the state. However, the South Bay plant was operating under a "Reliability-Must Run" (RMR) contract with the California Independent System Operator (Cal-ISO), which suggested that operations might continue into the indefinite future.[11] Additionally, and in part due to Cal-ISO identifying the power plant as a necessary power provider for the region, Dynegy had requested an extension of its NPDES permit, which was due to expire on December 31, 2010.

However, after the Commission's October 2010 hearing, two key events occurred that resulted in the plant's permanent closure:

- **Loss of power purchase contract:** In October, Cal-ISO determined that the South Bay plant was no longer needed to support local electricity needs and it rescinded the RMR contract with Dynegy (see Exhibit 13 – October 16, 2010 Cal-ISO letter to Dynegy, Inc.). Cal-ISO's decision allowed the Port to exercise a provision of its lease with Dynegy to shut the plant down once Cal-ISO had determined the plant's power generation was no longer needed (the Port had purchased the plant in 1999 with the express purpose of shutting it down and redeveloping the site once the plant no longer operated under an RMR contract). In anticipation of this shutdown, the Port had earlier in 2010 issued a Request for Proposals to develop the environmental documents needed for power plant removal and site remediation. The Port is planning to start the necessary environmental review sometime later this year.

- **Expiration of power plant NPDES permit:** After rescission of the RMR contract, Dynegy withdrew its request that the Regional Water Quality Control Board extend the plant's NPDES permit, which expired on December 31, 2010. As a result, the plant no longer has the permit, which is necessary for operations.

The end of power plant operations and its planned demolition removes one of the main limitations to using the Otay River Floodplain site for mitigation. Even so, because the demolition and redevelopment plans are not final, there is still some potential that the plant's intake and/or outfall might be used for other similar environmentally damaging purposes – for example, using the structures to take in estuarine water for desalination or other uses. Continued water withdrawal from south San Diego Bay would be incompatible with siting Poseidon's required mitigation at the Otay River Floodplain site, as it would likely reduce the expected amount and value of the mitigation.

However, for the following reasons, it appears the risk of such uses occurring is low:

[11] Cal-ISO, which is responsible for maintaining California's electricity grid and ensuring adequate electricity supplies for the state, establishes RMR contracts with several power plant operators around the state to provide certainty that particular power plants will generate electricity when Cal-ISO identifies the need. The South Bay plant operated under these RMR contracts for the past several years.

- **Current redevelopment plans identify restoration as the only expected use of the intake and outfall channels:** Both the Final EIR for the proposed redevelopment project and the approved ***Chula Vista Bayfront Master Plan & Port Master Plan Amendment*** identify wetland and marine life habitat protection as the only uses being considered for the power plant intake and discharge channels.[12]

- **Proposals for new or continued estuarine water withdrawals would adversely affect other significant mitigation and restoration efforts:** Lower San Diego Bay is the site of several hundred acres of other mitigation and restoration projects, and any proposal for future water withdrawals would have to justify reducing the environmental benefits of all of these projects. Such a proposal would create a situation similar to that described in Section 4.1 above, where Agua Hedionda Lagoon was found to be an unsuitable site for compensatory mitigation for entrainment effects because many of the organisms produced at a site within the lagoon would be subject to entrainment.

- **Any proposed water withdrawals would be subject to review and approval by the Coastal Commission and other regulatory agencies:** Both removal of the power plant and subsequent site redevelopment, including disposition of the intake and outfall channels, will be subject to coastal development permit review. The site is currently within the City of Chula Vista's Local Coastal Program jurisdiction and any CDP issued for this site would be subject to appeal to the Coastal Commission. A planned land exchange between the City and the Port would transfer jurisdiction of the site to the Port and would require a Port Master Plan Amendment, which would be subject to Commission review and approval.

While none of these considerations would entirely prevent additional future water withdrawals, they combine to create a very low risk of such withdrawals. Therefore, with the cessation of power plant operations and little likelihood of new or continued impacts due to similar water withdrawals, the proposed Otay River Floodplain mitigation site is no longer considered a significant site constraint.

5.1.4 Potential Soil Contamination

The MLMP requires that any existing site contamination be controlled or remediated so as not to hinder restoration. Land with a history of agricultural or industrial uses, such as the Otay River floodplain site, may contain contaminated soils that if not addressed, could seriously impair the restoration potential for that site. To explore this issue at the Otay River floodplain site, Poseidon presented the results from two relatively recent soil sampling programs and also conducted its own preliminary soil assessment (see p. A-3 of Exhibit 6). The results from the

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[12] See, for example, Table 1-9 on page 1-80 of the ***Final Environmental Impact Report (EIR) for the Chula Vista Bayfront Master Plan***, which states, "*The Port will include an analysis of the appropriate level and method for wetland and marine life habitat restoration of the intake/discharge channels associated with the South Bay Power Plant in the environmental review document for the demolition of the South Bay Power Plant.*" See also the ***Chula Vista Bayfront Master Plan & Port Master Plan Amendment***, at page 19, which states, "*Other than potential habitat restoration activities, no alterations to the existing intake/discharge channel are proposed.*"

earliest soil test, sampled in 1989, indicated the presence of DDT and its derivatives (2,200 parts per billion (ppb) – 4,050 ppb), toxaphene (3,000 ppb – 4,200 pb) and several heavy metals (concentrations unknown) on the surface, although it is important to note that this test included a very small sample set of only three samples. Additional soil testing conducted in 1999 as part of the USFWS pre-acquisition activities, involved the collection of 15 samples across the property. Results of this sampling effort also indicated the presence of DDT and its metabolites, with concentrations ranging from 8 to 1,400 ppb. Heavy metals were not analyzed in the 1999 soil test. In December 2009, Poseidon conducted a screening level soil contaminants assessment that involved collecting eight soil borings, four in the Pond 20A area and four in the former agricultural lands adjacent to the Otay River (see Exhibit 3). Only one of the eight soil borings indicated the presence of DDT and its derivatives.

Poseidon's data suggest that there may be areas of the site that are uncontaminated and thus suitable for restoration without further intervention. However, all three sets of soil samples were limited in scope and analysis, and thus, do not provide an adequate picture of possible contamination at this site. A thorough soil analysis is necessary before a final restoration plan may be approved by the Commission. In the event that significant soil contamination is found, in order to meet the requirements of the MLMP and therefore Poseidon's CDP, Poseidon will be obligated to clean up the contaminated portion of the site as part of its restoration project (in which case, a detailed soil remediation plan would need to be included in the final restoration plan).

5.1.5 Hydrology/Tidal Prism

Hydrology is one of the key components driving any wetland restoration project. As staff and the SAP reviewed the Otay River floodplain site for compatibility with the objectives of the MLMP, two related hydrological concerns were raised: 1) Is the hydrology and tidal prism available to this site sufficient to sustain a functioning tidal wetland?; and 2) Can this site support enough subtidal habitat to meet the fish productivity requirement added to the MLMP by the RWQCB? To respond to these concerns, Poseidon contracted with Scott Jenkins of Jenkins Engineering, Inc. to provide a preliminary hydrological analysis. The results of this analysis were presented to staff and the SAP on June 20, 2010, and a final report was issued on September 13, 2010 (see Exhibit 14). Mr. Jenkins' analysis was based on the preliminary restoration plan developed by Poseidon and discussed in further detail in Section 5.2. The plan includes three conceptual designs, each with different acreages and configurations of subtidal (i.e., permanently flooded) areas, mudflats, low marsh, mid marsh, upper marsh, uplands transitional zone and buffer areas (See Exhibit 4).

Mr. Jenkins analyzed tidal exchange and sediment dynamics of the three different design concepts in his initial study. He determined that the Otay River channel leading to the restoration site could convey the potential tidal prism required for this restoration project. Historic maps indicate that before the area was developed, tidal marshes and various channels of the Otay River covered the entire site. Mr. Jenkins determined that if the Otay River channel was dredged to approximately –6 ft NGVD, the former floodplain could be recontoured to support a maximum of 75 acres of marsh, including subtidal, intertidal and supratidal zones.

This analysis estimated that, depending on the specific wetland design, the mean inundated area of marsh over an average diurnal tidal cycle would fluctuate between 18.5 acres (at San Diego Bay's mean lower low water levels) and 60.6 acres (at mean higher high water levels) for design concept 1 (Exhibit 4a), between 32.8 and 62.6 acres for design concept 2 (Exhibit 4b), and between 14.8 and 60.0 acres for design concept 3 (Exhibit 4c). This result is significant in two ways. First, Mr. Jenkins calculated that the wetland would need to have an absolute minimum of 11 acres to meet the fish productivity requirement imposed by the RWQCB. Even at San Diego Bay's extreme low water elevations, the minimum subtidal area is estimated to be 14.3 acres for the design with the smallest subtidal basin, larger than the minimum of 11 acres estimated for fish production to meet the RWQCB requirement.[13] Second, the mean inundated area at mean higher high water was calculated to be between 60 and 62.6 acres, which means that over an average daily tidal cycle, 60-62.6 acres of marsh will be inundated at high tide. At San Diego Bay's extreme high water levels, approximately 82.8-6-82.8 acres of marsh would be inundated, depending on the design chosen. This is consistent with the requirement that Poseidon restore up to 66.4 acres of wetland, including extensive intertidal and subtidal areas as well as high marsh and uplands that are not inundated on a daily basis.

Mr. Jenkins' initial analyses of sediment dynamics also indicate that the site is suitable for tidal wetland restoration. The relatively long Otay channel that drains into San Diego Bay was formed by scour resulting from historic flooding on the Otay River. Because it was a naturally formed channel, as opposed to an "engineered" channel, it can be considered relatively stable and should be able to withstand the additional flow required to support a tidal wetland. Hydrologic modeling showed that flow velocities generally stay below the threshold velocity for erosion and scour for all three design concepts. There are a few pinch points in the channel where, depending on the design, maximum velocities equal or even exceed the threshold velocity and thus could be at risk for erosion. Depending on the wetland design chosen, it may be desirable to widen the channel at these pinch points to increase the capacity of the channel and reduce the risk of erosion. Mr. Jenkins also concluded that because the Otay River carries a relatively small sediment load due to the upstream dam, sediment deposition in the project area should not be a significant concern. Thus, after initial project-related dredging, the channel could be self-sustaining and might not require additional dredging. Similarly, the inlet to the Otay River should not require dredging to keep it open. The lower energies present in the San Diego Bay, as opposed to the open ocean, make the inlet more stable and less prone to sediment deposition. The likely dredging and channel maintenance requirements are expected to be addressed during the upcoming CEQA review for the mitigation site.

One related issue raised by Commission staff and the SAP was the potential impact of the large-scale restoration of the South Bay Salt Ponds on the Otay River Floodplain site. As mentioned previously, the Otay River Floodplain site is part of the San Diego National Wildlife Refuge, South San Diego Bay Unit (see Exhibit 2b). Currently, most of the acreage included in the South San Diego Bay Unit consists of managed salt ponds. A few of these ponds are currently undergoing restoration to tidal wetlands, some are inactive and some are still actively managed

[13] In a letter dated September 21, 2010 (see Exhibit 8), RWQCB staff noted that they intend to bring Poseidon's site selection and preliminary restoration plan to their Board in November and will be recommending approval.

for salt production. The long term goal for this part of the Refuge is to restore most of the former salt ponds to tidal wetlands and shallow water habitat. This large-scale restoration effort would alter the regional hydrology of the South San Diego Bay and thus affect the tidal dynamics in the Otay River channel; however, Mr. Jenkins thought, based on his knowledge of the system, that these impacts would be insignificant. Regardless, Commission staff and SAP members intend to evaluate this issue further during the upcoming CEQA and CDP review process. It is also important to note that any potential hydrologic impacts from restoration of the South Bay salt ponds are not likely to affect the overall suitability of the Otay River Floodplain as Poseidon's mitigation site, though they may affect the specific wetland design selected for the site.

Staff and the SAP reviewed Mr. Jenkins' hydrologic analysis and determined that it had addressed the major concerns raised above. When asked by Dr. Raimondi if he could think of any hydrologic issues that would preclude the restoration of this site to tidal wetlands, Mr. Jenkins replied that he did not see any problematic hydrologic issue that could not be addressed by the wetland design and that in fact, this site had several advantages, such as the lack of a need for maintenance dredging, that are absent at many other sites. Mr. Jenkins' analysis, although preliminary, was sufficient to convince staff and the SAP that there are no major hydrological issues that would preclude the use of the Otay River floodplain site as mitigation for Poseidon's Carlsbad desalination plant.

5.2 POSEIDON'S PRELIMINARY RESTORATION PLAN

Poseidon's preliminary restoration plan is based largely on a conceptual restoration plan already developed for the site by the USFWS. In August of 2006, the USFWS released a Comprehensive Conservation Plan (CCP) and Environment Impact Statement (EIS) for the Sweetwater Marsh and South San Diego Bay Units of the San Diego Bay NWR. The CCP/EIS proposed two alternative restoration scenarios for the Otay River Floodplain. The second option, which is most similar to the restoration requirements in the MLMP, called for restoration of approximately 90 acres of intertidal salt marsh and mudflat, 35 acres of native uplands and 15 acres of freshwater marsh. The USFWS has indicated enthusiastic interest in working with Poseidon to restore the Otay River Floodplain within the framework of the MLMP.

Poseidon's preliminary plan for the site includes three different wetland design concepts (see Exhibit 4) based on the USFWS adopted Comprehensive Conservation Plan. Each concept includes subtidal (i.e., permanently flooded) areas, mudflats, low marsh, mid marsh, upper marsh, an uplands transitional zone and a buffer zone on the eastern and southern portions of the site. The concepts differ in the specific acreage of each wetland zone and the manner in which these zones are laid out on the landscape. Generally, the intertidal areas are expected to provide mitigation for the desalination facility's expected entrainment impacts while the subtidal areas are largely meant to provide the level of fish productivity required by the RWQCB. Concept 1, also called the mixed habitat plan (Exhibit 4a), consists of 74.25 acres of marsh and is characterized by a fairly large subtidal basin at the center of the site, accounting for approximately 25% of the total area. Intertidal areas account for about 57% of the marsh acreage. Concept 2, also called the maximum subtidal plan (Exhibit 4b), includes more subtidal

habitat and less intertidal habitat as compared to Concept 1. In Concept 2, the subtidal basin makes up about 44% of the total marsh area, while intertidal areas decrease by approximately 30% from Concept 1. Concept 3, also called the maximum intertidal plan (Exhibit 4c) takes the opposite approach from Concept 2, maximizing intertidal areas and minimizing subtidal areas. In this design, subtidal areas account for about 20% of the overall acreage, while intertidal areas account for about 61% (an increase of about 7% from Concept 1).

Poseidon's current preliminary plan will require substantial additional detail before it is presented to the Commission as a final restoration proposal; however, from the available information, and with resolution of the identified site constraints described above, staff believes the preliminary plan is suitable for Commission approval, pursuant to the requirements of Special Condition 8 and the MLMP.

5.3 APPROVAL OF PROPOSED SITE AND PRELIMINARY RESTORATION PLAN

In summary, staff and the SAP believe that based on available information, including the assumption that estuarine water withdrawals from south San Diego Bay will cease, Poseidon has chosen an appropriate site for mitigation of impacts from the Carlsbad desalination plant and has adequately addressed the potential site constraints raised in the previous section. Based on the above, the Commission hereby provides its approval of the Otay River Floodplain site and preliminary approval of the above-referenced restoration plan, pursuant to Special Condition 8 and the approved MLMP.