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SAN DIEGO REGIONAL  
WATER QUALITY  
CONTROL BOARD

November 14, 2008

Mr. John Robertus  
Executive Officer  
California Regional Water Quality Control Board, San Diego Region  
9174 Sky Park Court, Suite 100  
San Diego, CA 92123-4340

Dear Mr. Robertus:

Subject: Adopted Order No. R9-2008-0039 conditionally approving *Revised Flow, Entrainment, and Impingement Minimization Plan*, Poseidon Resources Corporation, Carlsbad Desalination Project (CRU: 02-1429.02 bkelley).

Attached is the *Marine Life Mitigation Plan* (MLMP) for Poseidon's proposed Carlsbad Desalination Project. The MLMP represents a proposed amendment to the Carlsbad Desalination Project *Flow, Entrainment and Impingement Minimization Plan* (Minimization Plan), which was conditionally approved by Regional Board Resolution No. R9-2008-0039.

This MLMP was developed in consultation with several participating agencies, and through proceedings before the California Coastal Commission. The Coastal Commission approved the substance of the MLMP at its August 6, 2008 meeting, and directed Poseidon and Coastal Commission staff to reach agreement on minor administrative issues such as budget and reimbursements that would not require further Commission approval. Poseidon and Coastal Commission staff have now reached agreement on those issues, and will report the final MLMP to the Commission at the Commission's December 2008 meeting. Accordingly, the MLMP attached hereto is addressed to the Coastal Commission and its Executive Director. Once approved by the Regional Board, we understand the MLMP would be equally enforceable by the Regional Board and its Executive Officer.

As approved by the Coastal Commission, the requirements of the MLMP are consistent with, and in many respects more stringent than, the requirements under California Water Code section 13142.5, pursuant to which authority the Regional Board directed the preparation of the Minimization Plan.

**Background.** Regional Board Order No. R9-2006-0065 (NPDES CA0109223) regulates the proposed discharge of saline wastewater from the Carlsbad Desalination Project. Cooling water from the Encina Power Station (EPS) will provide the main source of desalination intake water. During times when EPS power generation is temporarily shut down, EPS will operate its intake structure to provide Poseidon with sufficient intake water to operate.

**Minimization Plan Submittal and Conditional Approval.** Order No. R9-2006-0065 required Poseidon to submit a Minimization Plan to address implementation or mitigation measures for minimizing impacts to marine organisms during periods when EPS power generation is shut down. An initial version of the Minimization Plan was submitted to the Regional Board in 2007, and an updated version was submitted to the Regional Board on February 13, 2008. Regional





- Provides that any additional future priority sites that may be recommended by the California Department of Fish and Game also may be considered.

Per the requirements of Resolution No. R9-2008-0039, Condition B of the MLMP sets forth the MLMP's administrative structure and budget, and the work plan for implementing the mitigation. As part of this administrative structure, Condition B also establishes means to remediate any deficiencies and resolve disputes associated with MLMP implementation. Poseidon's commitment to implement the MLMP as an amendment to the Mitigation Plan will be enforced by the Regional Board through the requirements of Order R9-2006-0065 and by the Coastal Commission through Condition 8 of Poseidon's CDP.

In order to facilitate the Regional Board's review of the MLMP, we would appreciate an opportunity to meet with you in the near future to discuss how the proposed MLMP accomplishes the Regional Board's resource protection objectives and Poseidon's duties under the Water Code. I look forward to speaking with you soon, and will be calling you to set up a meeting. Thank you for your assistance.

Sincerely,



Peter M. MacLaggan  
Senior Vice President

Enclosure

Cc: Mike Porter  
Chiara Clemente

# POSEIDON RESOURCES MARINE LIFE MITIGATION PLAN

## INTRODUCTION

Poseidon's Carlsbad desalination facility will be co-located with the Encina Power Station and will use the power plant's once-through cooling intake and outfall structures. The desalination facility is expected to use about 304 million gallons per day (mgd) of estuarine water drawn through the structure. The facility will operate both when the power plant is using its once-through cooling system and when it is not.

This Marine Life Mitigation Plan (the Plan) will result in mitigation necessary to address the entrainment impacts caused by the facility's use of estuarine water. The Plan includes two phases of mitigation – Poseidon is required during Phase I to provide at least 37 acres of estuarine wetland restoration, as described below. In Phase II, Poseidon is required to provide an additional 18.4 acres of estuarine wetland restoration. However, as described below, Poseidon may choose to provide all 55.4 acres of restoration during Phase I. Poseidon may also choose during Phase II to apply for a CDP to reduce or eliminate the required 18.4 acres of mitigation and instead conduct alternative mitigation by implementing new entrainment reduction technology or obtaining mitigation credit for conducting dredging.

## CONDITION A: WETLAND RESTORATION MITIGATION

The permittee shall develop, implement and fund a wetland restoration project that compensates for marine life impacts from Poseidon's Carlsbad desalination facility.

### 1.0 PHASED IMPLEMENTATION

Phase I: Poseidon is to provide at least 37 acres of estuarine wetland restoration. Within two years of issuance of the desalination facility's coastal development permit (CDP), Poseidon is to submit a complete CDP application for a proposed restoration project, as described below.

Phase II: Poseidon is to provide an additional 18.4 acres of estuarine wetland restoration. Within five years of issuance of the Phase I CDP, Poseidon is to submit a complete CDP application proposing up to 18.4 acres of additional restoration, subject to reduction as described below.

### 2.0 SITE SELECTION

In consultation with Commission staff, the permittee shall select a wetland restoration site or sites for mitigation in accordance with the following process and terms.

Within 9 months of the effective date of this permit, the permittee shall submit the proposed site(s) and preliminary wetland restoration plan to the Commission for its review and approval or disapproval.

The location of the wetland restoration project(s) shall be within the Southern California Bight. The permittee shall select from sites including, but not limited to, the following eleven sites: Tijuana Estuary in San Diego County; San Dieguito River Valley in San Diego County; Agua Hedionda Lagoon in San Diego County; San Elijo Lagoon in San Diego County; Buena Vista Lagoon in San Diego County; Huntington Beach Wetland in Orange County, Anaheim Bay in



- i. Does not result in an adverse impact on endangered animal species or an adverse unmitigated impact on endangered plant species.

### **3.2 Objectives**

The following objectives represent the factors that will contribute to the overall value of the wetland. The selected site(s) shall be determined to achieve these objectives. These objectives shall also guide preparation of the restoration plan.

- a. Provides maximum overall ecosystem benefits, e.g. maximum upland buffer, enhancement of downstream fish values, provides regionally scarce habitat, potential for local ecosystem diversity;
- b. Provides substantial fish habitat compatible with other wetland values at the site(s);
- c. Provides a buffer zone of an average of at least 300 feet wide, and not less than 100 feet wide, as measured from the upland edge of the transition area.
- d. Provides maximum upland transition areas (in addition to buffer zones);
- e. Restoration involves minimum adverse impacts on existing functioning wetlands and other sensitive habitats;
- f. Site selection and restoration plan reflect a consideration of site specific and regional wetland restoration goals;
- g. Restoration design is that most likely to produce and support wetland-dependent resources;
- h. Provides rare or endangered species habitat;
- i. Provides for restoration of reproductively isolated populations of native California species;
- j. Results in an increase in the aggregate acreage of wetland in the Southern California Bight;
- k. Requires minimum maintenance;
- l. Restoration project can be accomplished in a reasonably timely fashion; and,
- m. Site(s) in proximity to the Carlsbad desalination facility.

### **3.3 Restrictions**

- a. The permittee may propose a wetland restoration project larger than the minimum necessary size specified in subsection 3.1(c) above, if biologically appropriate for the site(s), but the additional acreage must (1) be clearly identified, and (2) must not be the portion of the project best satisfying the standards and objectives listed above.





8. Topographic drawings for final restoration plan at 1" = 100 foot scale, one foot contour interval; and
  9. Drawings shall be directly translatable into final working drawings.
- g. Detailed information about how monitoring and maintenance will be implemented;
  - h. Detailed information about construction methods to be used;
  - i. Defined final success criteria for each habitat type and methods to be used to determine success;
  - j. Detailed information about how Poseidon will coordinate with the Scientific Advisory Panel including its role in independent monitoring, contingency planning review, cost recovery, etc.;
  - k. Detailed information about contingency measures that will be implemented if mitigation does not meet the approved goals, objectives, performance standards, or other criteria; and,
  - l. Submittal of "as-built" plans showing final grading, planting, hydrological features, etc. within 60 days of completing initial mitigation site construction.

#### **4.2 Wetland Construction Phase**

Within 6 months of approval of the Phase I restoration plan, subject to the permittee's obtaining the necessary permits, the permittee shall commence the construction phase of the wetland restoration project. The permittee shall be responsible for ensuring that construction is carried out in accordance with the specifications and within the timeframes specified in the approved final restoration plan and shall be responsible for any remedial work or other intervention necessary to comply with final plan requirements.

#### **4.3 Timeframe for Resubmittal of Project Elements**

If the Commission does not approve any element of the project (i.e. site selection, restoration plan), the Commission will specify the time limits for compliance relative to selection of another site or revisions to the restoration plan.

### **5.0 WETLAND MONITORING, MANAGEMENT AND REMEDIATION**

Monitoring, management (including maintenance), and remediation shall be conducted over the "full operating life" of Poseidon's desalination facility, which shall be 30 years from the date "as-built" plans are submitted pursuant to subsection 4.1(1).

The following section describes the basic tasks required for monitoring, management and remediation. Condition B specifies the administrative structure for carrying out these tasks, including the roles of the permittee and Commission staff.

#### **5.1 Monitoring and Management Plan**



4. **Habitat Areas.** The area of different habitats shall not vary by more than 10% from the areas indicated in the restoration plan(s).

b. **Biological Performance Standards.** The following biological performance standards shall be used to determine whether the restoration project is successful. Table 1, below, indicates suggested sampling locations for each of the following biological attributes; actual locations will be specified in the work program:

1. **Biological Communities.** Within 4 years of construction, the total densities and number of species of fish, macroinvertebrates and birds (see Table 1) shall be similar to the densities and number of species in similar habitats in the reference wetlands;
2. **Vegetation.** The proportion of total vegetation cover and open space in the marsh shall be similar to those proportions found in the reference sites. The percent cover of algae shall be similar to the percent cover found in the reference sites;
3. **Spartina Canopy Architecture.** The restored wetland shall have a canopy architecture that is similar in distribution to the reference sites, with an equivalent proportion of stems over 3 feet tall;
4. **Reproductive Success.** Certain plant species, as specified by in the work program, shall have demonstrated reproduction (i.e. seed set) at least once in three years;
5. **Food Chain Support.** The food chain support provided to birds shall be similar to that provided by the reference sites, as determined by feeding activity of the birds; and
6. **Exotics.** The important functions of the wetland shall not be impaired by exotic species.

**Table 1: Suggested Sampling Locations**

	Salt Marsh			Open Water		Mudflat	Tidal Creeks
	Spartina	Salicornia	Upper	Lagoon	Eelgrass		
1) Density/spp:							
- Fish				X	X	X	X
- Macroinvertebrates				X	X	X	X
- Birds	X	X	X	X		X	X
2) % Cover							
Vegetation	X	X	X		X		
algae	X	X				X	
3) Spartina architecture	X						
4) Reproductive success	X	X	X				
5) Bird feeding				X		X	X

6) Exotics	X	X	X	X	X	X	X
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**6.0 ALTERNATIVE MITIGATION**

As part of Phase II, Poseidon may propose in its CDP application alternatives to reduce or eliminate the required 18.4 acres of mitigation. The alternative mitigation proposed may be in the form of implementing new entrainment reduction technology or may be mitigation credits for conducting dredging, either of which could reduce or eliminate the 18.4 acres of mitigation.

**CONDITION B: ADMINISTRATIVE STRUCTURE**

**1.0 ADMINISTRATION**

Personnel with appropriate scientific or technical training and skills will, under the direction of the Executive Director, oversee the mitigation and monitoring functions identified and required by Condition A. The Executive Director will retain scientific and administrative support staff needed to perform this function, as specified in the work program.

This technical staff will oversee the preconstruction and post-construction site assessments, mitigation project design and implementation (conducted by permittee), and monitoring activities (including plan preparation); the field work will be done by contractors under the Executive Director’s direction. The contractors will be responsible for collecting the data, analyzing and interpreting it, and reporting to the Executive Director.

The Executive Director shall convene a Scientific Advisory Panel to provide the Executive Director with scientific advice on the design, implementation and monitoring of the wetland restoration. The panel shall consist of recognized scientists, including a marine biologist, an ecologist, a statistician and a physical scientist.

**2.0 BUDGET AND WORK PROGRAM**

The funding necessary for the Commission and the Executive Director to perform their responsibilities pursuant to these conditions will be provided by the permittee in a form and manner reasonably determined by the Executive Director to be consistent with requirements of State law, and which will ensure efficiency and minimize total costs to the permittee. The amount of funding will be determined by the Commission on a biennial basis and will be based on a proposed budget and work program, which will be prepared by the Executive Director in consultation with the permittee, and reviewed and approved by the Commission in conjunction with its review of the restoration plan. If the permittee and the Executive Director cannot agree on the budget or work program, the disagreement will be submitted to the Commission for resolution.

The budget to be funded by the permittee will be for the purpose of reasonable and necessary costs to retain personnel with appropriate scientific or technical training and skills needed to assist the Commission and the Executive Director in carrying out the mitigation and lost resource compensation conditions. In addition, reasonable funding will be included in this budget for necessary support personnel, equipment, overhead, consultants, the retention of contractors





#### **4.0 ADDITIONAL PROCEDURES**

##### **4.1 Dispute Resolution**

In the event that the permittee and the Executive Director cannot reach agreement regarding the terms contained in or the implementation of any part of this Plan, the matter may be set for hearing and disposition by the Commission.

##### **4.2 Extensions**

Any of the time limits established under this Plan may be extended by the Executive Director at the request of the permittee and upon a showing of good cause.

#### **CONDITION C: SAP DATA MAINTENANCE**

The permittee shall make available on a publicly-accessible website all scientific data collected as part of the project. The website and the presentation of data shall be subject to Executive Director review and approval.